



Prediction of *Eucalyptus dunnii* and *Pinus radiata* Timber Stiffness Using Acoustics

A report for the RIRDC/Land and Water
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Foreword

Increasing the recovery of high grade material is a primary objective of improving the profitability of growing trees for sawn products. Stiffness is the major basis of machine stress grading of sawn timber, and has a major influence on price. It is not a parameter, however, that is readily measured in logs or standing trees. Derivation of a surrogate indicator for stiffness would facilitate more effective planning and permit effective log sorting, while also providing a valuable tool for breeders and silviculturists working with standing trees.

This study examined the relationship between stiffness and acoustic properties measured with a variety of stress wave timer tools, for both *Eucalyptus dunnii* and *Pinus radiata*.

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This report, an addition to RIRDC's diverse range of over 1000 research publications, forms part of our Agroforestry and Farm Forestry R&D program, which aims to integrate sustainable and productive agroforestry within Australian farming systems.

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Managing Director

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Executive Summary

Farm forestry woodlots produce significant amounts of high quality wood based products for both domestic and international applications. There are new opportunities for farmers to grow trees to diversify income and ameliorate land and water degradation. Forest product value-adding and diversification are key drivers along the value chain that underpin the commercial reality of on-farm woodlots in rural and regional Australia. We argue that improvements in the value recovered from logs and the performance of sawn timber in service are critical for the commercial viability of growing of trees on farms.

Intrinsic wood properties at harvest-age vary enormously both within and among trees, leading to a wide range in log quality. It is highly desirable to be able to accurately sort logs according to the quality of their wood at the time of merchandising or in the processing yard so as to ensure the higher quality logs are sold to saw and veneer mills. Accordingly, this leads to a premium for the production and certification of high quality wood and fibre. Current visual grading systems only partially indicate the likely quality of boards sawn from logs.

The non-destructive testing (NDT) technology reported here measured the stiffness (MOE) of logs cut from both hardwood and pine plantations. The primary objective of the study was to evaluate the applicability of a range of stress wave timer tools for non-destructive prediction of stiffness of standing trees, logs and sawn timber. A secondary objective was to establish whether physical and form characteristics of logs along with sound flight time could predict grade recovery. This study explored whether sound flight velocity (m/s) and Pilodyn measurements provide a measure of wood stiffness of sawn timber from planted *Eucalyptus dunnii* and *Pinus radiata* stands in New South Wales.

A sample of *P. radiata* and *E. dunnii* trees was selected from uniform plantation sites managed by State Forests of New South Wales. The intent was to ensure that robust information is collected on the level of variability in wood properties within a site; with good stand and site records. This information was reliable and underpinned the testing stage and the ability of the stress wave technology to segregate the less stiff and more stiff trees within farmers' woodlot. This knowledge will ultimately assist with price negotiations and allocation of logs to appropriate processors.

In Newry State Forest, seventy *E. dunnii* trees across two age classes (9-year-old and 25-year-old) were measured before and after harvest with a non-destructive acoustic device (FAKOPP stress wave timer). Prior to milling the stress wave speed was recorded in all logs with two acoustic devices, namely a FAKOPP stress wave timer and a commercial spectrum analyser (resonance device) used by the CSIRO. After sawing and again after drying all boards were tested acoustically using a FAKOPP. A subset of boards was then machine stress graded. The relationship between board stiffness and the stress wave speed in trees and logs was determined.

In Tallaganda State Forest, 316 trees of *Pinus radiata* growing in a progeny trial planted in 1973 were mechanically harvested. As for the hardwood experiment,

standing trees were measured with the FAKOPP stress wave timer. Prior to milling sound flight speed was measured in all the logs using a FAKOPP, the CSIRO resonance tool and Hitman®, a resonance acoustic tool developed by Carter Holt Harvey. After milling and drying all the boards were passed through a machine stress grader to determine MOE along the board and MGP-grade.

The outcomes of this study indicate that non-destructive evaluation (NDE) using acoustic tools offers a means of pre-sorting logs according to wood stiffness prior to milling. A highly significant and positive relationship was found between acoustic measurements made with all three of the tools on logs and board stiffness. A weaker, but still significant, relationship was obtained for the FAKOPP acoustic measurements made on standing trees. In both sawing studies some basic wood properties were also measured. In the hardwood experiment, basic density of the butt log from which boards were sawn was found to be strongly correlated with log stiffness (average of individual mean board stiffness for log), as well as with stiffness and strength of axial clearwood specimens taken from the butt end of logs. This effect was reflected in Pilodyn measurements that were significantly correlated with basic density and in turn machine stress grader MOE values. Relationships amongst variables indicated no significant correlation between tree size as measured by diameter at 1.3 m (DBH) and each of, log stiffness, log basic density, and 9-year-old clearwood MOE and MOR. In the pine study, the Pilodyn measurements were significantly correlated with stiffness but not well as acoustic measurements, thus supporting published work that density is a poorer surrogate of stiffness compared to acoustics. As for the hardwood study, relationships amongst variables in the pine study indicated no significant correlation between tree size as measured by diameter (DBHOB) at 1.3m and log stiffness.

New information on the wood properties of plantation grown *E. dunnii* was obtained from this study. The stiffness, strength and basic density of *E. dunnii* are very comparable to those reported for other key plantation grown hardwood species supporting the establishment of this Eucalyptus species on farms. Both the young and mature plantation grown *E. dunnii* (grown in a direct sawlog regime) met the stiffness thresholds to be classified into Strength Group SD4 under the Australian strength grading system, and these data will strongly underpin the visual grading system. It is known that *E. dunnii* is a medium density hardwood species. However, the machine stress grading data from this study has verified that *E. dunnii* does have a mean timber engineering quality that complies with market requirements even at age 9; and the non-destructive tool measurements have the potential to assist with this verification process.

The outcomes of this study are directly applicable to the management and merchandising of on-farm wood lots and will assist with the value-adding of the forestry ventures in an agricultural setting. The key outputs reported in this document indicate that acoustic tools would enable agro-foresters and woodlot owners, along with timber processors, to improve stand and log allocation for "fitness for use". Currently, sawn hardwood boards are valued according to a minimum visual grade system making stiffness indirectly relevant. However, sorting hardwood timber according to stiffness and in turn hardness may be economically desirable. If the hardness of boards, particularly in young material, falls too low they may be unsuitable for high value flooring applications, for example. It is known that density is

strongly correlated with hardness. This study reports that sound flight speed is strongly correlated with density, thus it follows that stress wave measurements may usefully sort *E. dunnii* logs according to stiffness and hardness. A further application of acoustic log sorting is in the hardwood value-added markets, eg., the veneer and LVL industries. Here, and in the pine sawing industry, stiffness is directly measured to control grade outturn. Based on economic calculations in an associated study (Dickson and Matheson, 1999), there is scope through sorting radiata pine logs according to stiffness to capture around \$6.0/m³ through reductions in downgrade. Further work is required to establish this value for the hardwood veneer industry, for example. The hardwood machine stress grade data in this study indicate that stiffness within an age-class can vary as much as 9.0 GPa. Pre-sorting logs prior to milling will allow mills to improve quality control. The acoustic data collected in both sawing studies will greatly assist in the design of future projects to establish whether stress waves can pick-up defects and growth stresses impacting on product performance.

This study identified the need for further work on the methodology and hardware required for the segregation of *Eucalyptus* logs to optimise value recovery. Future work will evaluate the potential of acoustic testing for identifying logs with defects and high levels of growth stresses in addition to evaluating stiffness. Stress waves were unable to detect knots as the impact methods generated long wavelengths that were not able "to see" branch knots. During the course of this study it has become apparent that there are some real advantages in using resonance measurements as opposed to single pass measurements as only one end of the log needs to be impacted with a hammer. In the case of standing tree measurements it is not possible to use resonance tools as there are no end faces to hit with a hammer. Further technological developments are required to design tools to accurately measure the MOE of standing trees, and this will greatly advance the selection of improved wood stiffness and strength traits in both hardwood and softwood tree improvement programs.

1 GENERAL INTRODUCTION

Processors often find it difficult to consistently process wood into quality products because of its wide range of properties caused through genetics, stand conditions, silviculture and site. Growers are becoming increasingly aware that effective management of the wood supply and the allocation of logs according to "fitness for purpose" are fundamental if they are going to capture greater value from the forest product value chain. The variation in wood quality within the current wood basket is large. Currently, the lack of good surrogate measures of wood quality means that processors are unaware of the intrinsic wood properties of logs until they are in the mill and committed to a particular process. Accordingly, there is a regular mis-match of log wood quality with wood processes at large cost to the industry. Essentially, size and visual characteristics of logs are **poor** predictors of the quality, and particularly the stability and biological integrity, of sawn wood.

Hardwood growers are in agreement with their major customers that the segregation of logs according to intrinsic wood quality and the removal of outliers (eg., logs with defects and growth stresses) from within the wood flow will be a vital management tool adding value to the resource. Hardwood sawn timber generally meets stiffness requirements for structural applications. However, defects and dimensional stability greatly impact on product conversion efficiency and product performance (Hillis, 2000). Common defects include poor form, excessive taper, large knots, growth stresses and decay. The latter two are common in forest trees in Australia. Decay may originate from stem or pruning wounds or from termite attack to the heartwood, which results in a central hollowed region, that is referred to as a pipe. Growth stress is a term used to describe the gradient between wood fibre under longitudinal compression at the centre of the tree, and under longitudinal tension at the circumference. Growth stress effects result in severe distortion (spring and bow) and end splits in sawn boards, and greatly reduce mill conversion efficiency.

It is possible to use sound wave technologies to more directly assess the mechanical properties of timber (Ross, 1999; Ross, *et al.*, 1997; Kaiserlik and Pellerin, 1977). There is a strong relationship between stiffness of logs (measured acoustically) and mean stiffness of boards cut from the logs (measured using transverse vibration techniques) (Ross, *et al.*, 1997; Ross *et al.* 1991). Although actual correlations are highly species-specific. For example, the correlation was $r=0.57$ for Balsam fir and $r=0.91$ for White spruce. Correlations for individual boards were poorer ($r=0.41$ and $r=0.71$ respectively) because of the variation between boards cut from the same log.

Nakamura *et al.* (1994) reported a good relationship between stiffness and the square of the wave velocity for standing trees across a range of stands. In their study, they calculated MOE from wave velocity from the equation:

$$MOE = v^2 \frac{\rho}{g}$$

where MOE is the modulus of elasticity or stiffness, v is the velocity of the stress wave, ρ is the density and g is acceleration due to gravity ($=980 \text{ cm/s}$). Variation in

MOE is primarily due to v and ρ , and a good relationship seems inevitable from the equation.

There are numerous reports of a strong relationship between sound velocity and stiffness of logs, but stiffness or strength was usually determined under controlled laboratory conditions for clearwood. Comparatively few studies have examined the relationship between acoustic sound velocity and machine stress grades, which take into account the effect on stiffness of branch knots and other defects both of which reduce stiffness and strength. (Ross, 1999; Snyder *et al.*, 2000). Further, there are few reported studies linking acoustic measurements of standing trees to machine stress grades of boards sawn from them. Walker and Nakada (1999) showed that acoustic measurements allowed the sorting of *P. radiata* logs according to stiffness. However, this still relied on using felled trees. Clearly, it would be desirable to have a method that measured standing trees non-destructively, but there are a few reports that have related standing tree and log acoustic measurements to machine stress grades.

Acoustic tools are commercially available to measure sound flight (stress wave) speed in wood to provide an indication of the stiffness of logs at the landing before being transferred to any particular processor (Walker and Nakada, 1999). Acoustic tests are ideal for undertaking stiffness measurements as they are simple, and the tools are not bulky and do not require exceptional skills to operate them. Further the measurements are quick and are relatively free of operator bias. Ultimately, the ideal would be to incorporate acoustic segregation tools into mechanical harvester heads or onto forwarder machinery. Today there are numerous machines on the market to generate stress waves in wood. Essentially, the machines can be classified into two categories, one being a single measurement system (eg., FAKOPP) and the other where resonance measurements are recorded in a frequency spectrum. Recently, engineers have indicated that they favour the resonance systems as they tend to measure the average speed of a number of reverberating waves as opposed to the speed of a single wave front that arrives at the receiving accelerometer first (Andrews, 2000).

Although there are reports of a strong relationship between stress wave velocity and stiffness of softwood logs (Tsehaye, *et al.*, 1997; Ross, 1999; Snyder *et al.*, 2000), little work has been undertaken on eucalypts and even fewer studies have attempted to non-destructively measure the effect of branch knots, growth stresses and defects on strength and stability of eucalyptus timber (McHugh and Booth, 1958; Mattheck and Bethge, 1993).

Basic density is a well reported wood property and has been associated to varying extents with wood stiffness and strength. It is one of the most easily measured wood properties. We chose to measure wood density with a Pilodyn, which has been reported to be a useful non-destructive method for deriving standing tree basic density in radiata pine. The Pilodyn wood tester was developed in Switzerland to test for soft rot in wooden poles. As for stress wave timers the Pilodyn is a useful instrument for obtaining an indirect indication of basic density in standing trees, and is attractive because the method is quick and relatively free of operator bias. It comprises a striker pin, loaded by either a 6 joule or 12 joule spring, which is fired into the outer wood of the tree and the depth of penetration is read off the body of

the instrument and the depth of pin penetration is negatively related to the density (pin penetrates more deeply in low density wood). The depth of pin penetration is then used to derive basic density values from calibration curves.

The key objective in this study was to evaluate the use of non-destructive acoustic measurements to estimate wood stiffness in trees and logs of a hardwood species, namely Dunn's White Gum (*E. dunnii*) and Radiata pine. A secondary objective was to establish whether a combination of branch size and position, log dimensions, and density would be useful for predicting grade recovery. Finally, it is our intent to build further technical links between tree farmers and wood processors.

Initially, a sample of *P. radiata* and *E. dunnii* trees was selected from uniform plantation sites managed by State Forests of NSW. The intent was to ensure that information was collected on the level of variability in wood properties within a site with good stand and site records. This information strongly underpinned the next stage of testing the ability of the stress wave technology to segregate wood according to stiffness. This information is transferable to on-farm woodlots, and will ultimately assist with price negotiations and allocation of logs to appropriate processors.

2 EUCALYTUS DUNNII SAWING STUDY

2.1 Introduction

Eucalyptus dunnii is a large hardwood that grows in the richer soils adjacent to the rainforests of the far north coast and coastal ranges of New South Wales and southern Queensland. Dunn's White Gum is used for the production of light construction timber and is currently sold on minimum visual grades. There is only limited market acceptance for *E. dunnii* timber as its suitability for structural applications requires on-going verification. The impact of knots (knotty core), growth stresses and defects (decay) on strength and dimensional stability need to be routinely established for effective conversion of logs during milling. Ultimately, acoustic testing of logs will assist with log sorting according to stress wave velocity to provide an indication of wood quality, and this should lead to a more efficient use of the resource by directing the appropriate quality timber to the right market (Ouis, 1999). It is envisaged that further work will explore the use of acoustic tools for the direct measurement of defects at harvest-age (eg., knotty core, and growth stress).

2.2 Materials and Methods

2.2.1 Tree samples and measurements

From a plantation of *E. dunnii* growing in Newry State Forest, south of Coffs Harbour, 70 trees across two age classes (9-year-old and 25-year-old) growing adjacent to each other were selected for this study (Plates 1 & 2). The 35 trees from each age class were selected across a diameter range. Conventional growth measurements were made on the sample trees, including diameter at breast height over bark

(DBHOB), height and merchantable log classes according to MARVL⁶. The trees were measured acoustically with a FAKOPP (stress wave timer) while standing. At the same time, Pilodyn (6J and 12J) readings were made to assess wood density. The trees were then manually felled, cut into logs and tagged to identify tree number and age class. Only the butt log of each sample tree was taken to the mill for sawing.



Plate 1 Plantation of 9-yr old *E. dunnii* sample trees



Plate 2 Plantation of 25-yr old *E. dunnii* sample trees

⁶ Method for assessment of recoverable volume by log type.

2.2.2 Stress wave measurements

All of the stress wave measurements in the standing trees and logs were recorded using a FAKOPP microsecond (single pass) timer. This instrument comprised two probes, namely a transmitting accelerometer and a receiving accelerometer that were penetrated into the wood and detected the transmitting and receiving stress wave signals. Tapping the transmitting accelerometer with a hammer induced the stress waves.

For the standing tree measurements, the transmitting accelerometer was inserted into the tree stem (beyond bark layer) 0.5 m above the ground, and the receiving accelerometer was inserted 1 m above this on the opposite side of the stem. Tapping the transmitting probe repeatedly propagated radial stress waves. The flight time of the stress waves was calculated by the difference in times of the transmission and arrival of the signals. Two separate measurements were made per tree where each probe was shifted halfway around the circumference of the tree stem between measurements.

Longitudinal stress wave measurements were made on individual logs in the sawmill yard, soon after harvest. This comprised the insertion of the transmitting accelerometer into one end of the log and the receiving accelerometer in the other end. As for the standing tree measurements, the stress waves were propagated by tapping the transmitting accelerometer and recording sound flight time. Two measurements per log were recorded by re-inserting the probes in a different area of the log end. Stress wave measurements were similar when the probes were either inserted immediately adjacent to the pith or on the outer wood.

2.2.3 Pilodyn measurements

In the hardwood study the opportunity was taken to develop statistical relationships between Pilodyn readings and basic density, as there is limited published information on the use of Pilodyns to derive basic density in *E. dunnii*. Two Pilodyns were tested in this study, namely a 6-J and 12-J unit. The 12-joule unit was trialed to establish whether it predicted density more accurately in the hardwood study. A small bark window was removed (60mm x 60mm) at points 90 degrees to each other on each tree, as close to breast height as possible. For each Pilodyn, a single pin penetration reading was taken at each sample window and the two readings averaged for each tree. The readings were rounded off to the nearest 0.5mm.

Correlation curves were prepared between the depth of pin penetration and actual basic density determined for the butt log. The basic density of butt log was determined by measuring the basic density of whole discs cut from the two ends of the log, and then calculating the mean from the two discs values, weighted according to disc cross-sectional area. Essentially, the basic density of the log is a weighted average of the two disc basic densities.

2.2.4 Log preparation and measurements

Logs were transported to a co-operating sawmill in Grafton, where they were spread on skids for further processing and measurements. Each log was then measured acoustically using the FAKOPP and a resonance stress wave timer (HP resonance velocity) under development by CSIRO (Plate 3). The individual log lengths together with top and butt end diameters (over bark), and sapwood/heartwood content were also recorded. The latter was determined with the aid of di-methyl orange sprayed onto the ends of logs to demarcate the sapwood and heartwood zones. Log volumes were calculated using Smalian's formula.

A 50-mm thick disc from the two ends, and a 400 mm long axial clearwood specimen from the butt end, were collected for laboratory determination of wood properties. The axial specimen was taken from the outer part of the log, which was largely sapwood or sapwood plus some heartwood.

Prior to sawing the butt and top ends were painted with colour combinations to permit tree, log and board identification. The final lengths of the logs were 5.3 m and 4.2 m for the 25-yr and 9-yr old *E. dunnii*, respectively.



Plate 3 *E. dunnii* logs being measured acoustically with a HP stress wave resonance device.

2.2.5 Sawmill conversion

Log conversion was carried out in a conventional sawmill using run-of-the-mill cutting patterns for appearance grade products.

The logs from each batch, which have been pre-sorted according to age-class, were processed individually through a twin circular saw edger with overhead dogged carriage (Plate 4). From this breakdown unit, the flitches were passed through a bottom arbour multi-saw edger, then to a Gibson hob resaw bench to produce backsawn boards with nominal dimensions of 50, 75, 100 mm wide by 25 and 15 mm thick. The target board sizes were 75 and 100 mm by 25 mm. The boards then proceeded onto the green chain without any docking to be labelled, tallied and stacked (Plate 6).

The boards were then pressure impregnated to H1 requirements using Koppers-Hickson Diffusol boron solution in an autoclave for prevention of lyctid borer attack in the sapwood.

After treatment the boards were strip stacked into 6 m packs, using 25 mm by 19 mm racking sticks in preparation for kiln drying.



Plate 4 *E. dunnii* log being processed through a twin circular saw edger



Plate 5 *E. dunnii* flitches being processed at a Gibson hob resaw bench.



Plate 6 *E. dunnii* boards from the green chain with unique identification

2.2.6 Kiln drying

The packs were initially air dried under cover to around 20 to 25% moisture content for about three months. These packs were then loaded into a reconditioning chamber and steamed for 4 hours at 100°C to recover collapse prior to final kiln drying. The boards were kiln dried in a conventional steam heated kiln using

conventional drying schedules, until they reached an average moisture content of 9.5 to 10%. This was followed by conditioning the boards with steam in the reconditioning chamber for 4 hours at 75°C to remove drying stresses, and shrinkage gradients that had occurred during the drying process.

The boards were then allowed to stand under cover for a period of 10 days to further equalise moisture content prior to subsequent handling and processing.

2.2.7 Board measurements and machine grading

Acoustic measurements using the FAKOPP were made on the boards both before and after drying. Measurements using the HP resonance device were made only on the green boards. Only the 75 and 100 mm by 25 mm boards were assessed, as these were the boards of interest. Any obvious defects such as termite galleries, decay and distortion affecting the readings were also noted.

A sub-sample of the dry boards that had been measured acoustically, were selected for machine grading. Samples were selected to ensure there were at least two boards from each tree and that one of these boards had a high stiffness value and the other had a low stiffness value based on the FAKOPP readings. The sample boards were put through a moulder and skim dressed before the grading.

Grading was carried out at the State Forests' Research and Development Division in Sydney using an ELDECO "Dart" grading machine. The machine was set at a relatively low feed speed (ca. 50 m/min) to minimise vibrational effects on the stiffness measurements as the boards were being graded. Each board was passed through the grading machine once and the information on stiffness along its length together with minimum and mean values were captured directly with a computer.

As there are no current established grading programs (grading threshold values) for machine grading of hardwoods in Australia, no stress grade rating was actually assigned to any of the boards. However, it is one of the aims of this sawing trial to explore the grade potential for these boards based on the grading stiffness information collected.

2.2.8 Testing for wood properties

Prior to the mechanical testing for wood properties, the axial clearwood specimens cut from the butt end of the log (within 400 mm from the end and from the outer wood) were air dried to a standard moisture content of 12% under controlled conditions for a period of three months and then re-conditioned with steam to recover collapse.

Tests for bending strength (modulus of rupture -MOR) and stiffness (modulus of elasticity- MOE) were performed in accordance with a standard test method⁷ using a

⁷ Australian methods for mechanically testing small clear specimens of timber, J.J. Mack, CSIRO DBR Tech. Paper 31 (2nd series), 1979.

specimen size of 20 x 20 x 300 mm. This test involved loading the test specimens at mid-span at a pre-determined rate until failure had occurred.

The air dried densities for the bending specimens and the basic densities for the discs were both determined gravimetrically in accordance with the Australian/New Zealand Standard AS/NZS 1080.3:2000 (Standards Australia, 2000a).

As mentioned previously, the basic density for the log were determined from the mean of the top and bottom disc densities, weighted according to the disc areas.

Microfibril angle (MFA) has been shown to have a significant effect on fibre stiffness in pine (Walker and Nakada, 1999). Accordingly, it was decided to establish, to a limited extent, whether this is the case for *E. dunnii*. One cross-cut wood sample (50 mm wide) was taken from the end of the lowest stiffness board machine-stress graded and another sample from the board that was found to have the highest stiffness. The samples were then processed through SilviScan 2 (SS2), and the response variables basic density, MFA and SS2-MOE were measured.

2.3 Analyses

Data from each board (ie, individual mean board stiffness, E_{mean}) for each tree were collated and the mean value calculated to give an individual tree value for log stiffness ($\log_{10} E_{\text{mean}}$). The data were split into two age classes (9 and 25 years old) and Pearson correlations calculated amongst variables for each age class. Variables examined included DBH, log basic density, log and tree FAKOPP velocities, the two Pilodyn readings plus MOE and MOR from short clearwood specimens. Significance tests of the correlations were carried out at the 5% and 1% levels. Least-squares linear regression equations were determined for predicting $\log_{10} E_{\text{mean}}$ from variables on the standing trees or logs. The estimated regression coefficients were then tested to determine whether the slopes were parallel across age classes. Analysis of variance was used to test the goodness of fit of each model and to determine whether the regression coefficients were significant at the 5% and 1% levels.

2.4 Results and discussion

2.4.1 Wood properties

Individual tree, log, board and clearwood data are given in Appendix A. A summary of the mean wood properties along with tree and log measurements for each age class of *E. dunnii* are presented in Table 1. Overall, the more mature wood was superior to that of less mature wood sawn from the 9-year-old trees. The logs from the 25-year-old trees were significantly larger in diameter than those from the 9-year-old age class. This was reflected in a 8% higher green sawn recovery from the 25-year-old compared with the 9-year-old logs.

The superior wood qualities of the 25-year-old age-class compared with the 9-year-old material was also reflected in the higher values for wood properties of the more mature wood. The 25-year-old trees had a significantly higher basic density (18%

higher), and comprised around 20% more heartwood. This resulted in the 25-year-old wood being around 2.0 GPa stiffer than that milled from the 9-year-old trees. Similarly, the clearwood strength (MOR) in the 25-year-old trees was significantly greater (18% stronger) than in the 9-year-old trees. Based on these small clearwood specimen tests, the dried sawn timber in this study could be classified as Strength Group SD4 within the Australian strength grading system, regardless of age (Standards Australia, 2000b). On this basis, the *F-grades* that could be visually assigned to the dried boards if sawn for structural purposes would be F22, F17, F14 and F11 for Structural Grades 1 to 4, with the lowest being F11. These results demonstrate that in hardwood generally, the stiffness of the sawn timber meets the thresholds for structural application.

The difference in clearwood air-dry densities between the older and younger material was about 20%, which was consistent with the difference in log basic density due to age. The basic density along with stiffness and strength measured on the *E. dunnii* sample in this study were comparable to those reported for other plantation-grown species, namely *E. pilularis*, *E. grandis* and *E. maculata*.

Table 1 A summary of the mean wood properties of 9-year-old and 25-year-old *E. dunnii* grown in Newry State Forest, Coffs Harbour.

<i>Harvest-age traits</i>	<i>Age 9</i>	<i>Age 25</i>
Tree data:		
No. of trees	35	35
DBHOB (cm)	23.8	39.8
Tree height (m)	25.7	30.6
Tree FAKOPP velocity (m/s)	1837	1672
Log data:		
Log green density (kg/m ³)	1087	1147
Log basic density (kg/m ³)	508	599
Log FAKOPP velocity (m/s)	3884	3901
SED (cm)	17.2	29.0
LED (cm)	21.4	35.7
Heartwood (%)	41	61
Sawn recovery - green (%)	29.4	37.0
Bending: (short clearwood)		
MOE – static (GPa)	13.7	15.3
MOR – static (MPa)	104	123
Air-dry density (kg/m ³)	653	788
Microfibril angle	n/a	12.75
Log stiffness: log_ _E E _{mean} (GPa)	13.1	15.3

2.4.2 Statistical correlations

Correlations amongst variables (Table 2) indicated no significant correlation between tree diameter at 1.3 m (DBH) and log stiffness ($\log E_{\text{mean}}$) or log basic density. Clearwood MOE or MOR were only moderately correlated (positively) with tree diameter for the 25-year-old trees, but not the 9-year-old trees. The reason for this is probably due to the composition of sapwood and heartwood in the clearwood specimens tested. Given that all specimens were cut from the outer part of the stem, it is conceivable that specimens cut from larger trees will contain more sapwood or outer wood, where wood properties are generally superior to that near the heart. Hence, for smaller 25-year-old trees, it is likely that specimens cut from them will contain a portion the weaker heart material that would affect the overall MOR and MOE of the clearwood specimens. In the case of the 9-year-old trees, the stem from which specimens were cut is largely “juvenile” sapwood (see Table 1) and hence, the effect of tree size on clearwood MOE and MOR would be minimal.

Table 2 Pearson correlations for each age class between tree diameter at breast height (DBH), log stiffness ($\log E_{\text{mean}}$), log basic density, acoustic velocity as measured by HP and FAKOPP, Pilodyn penetration for both 6J and 12J machines and clearwood MOE and MOR.

	DBH	$\log E_{\text{mean}}$	log basic density	HP Velocity	log FAKOPP Velocity	tree FAKOPP Velocity	Pilodyn 6J	Pilodyn 12J	MOR
Age 9									
$\log E_{\text{mean}}$	-0.30								
log basic density	-0.08	0.61**							
HP resonance velocity	-0.49**	0.55**	0.52**						
log FAKOPP Velocity	-0.36*	0.72**	0.67**	0.80**					
tree FAKOPP Velocity	-0.18	0.40*	0.66**	0.47**	0.62**				
Pilodyn 6J	0.33	-0.58**	-0.63**	-0.48**	-0.61**	-0.46**			
Pilodyn 12J	0.11	-0.46**	-0.66**	-0.46**	-0.52**	-0.40*	0.83**		
MOR (clearwood)	-0.08	0.35*	0.70**	0.35**	0.45*	0.61**	-0.45*	-0.55**	
MOE (clearwood)	-0.05	0.37*	0.67**	0.27**	0.49**	0.64**	-0.34	-0.43*	0.91**
Age 25									
$\log E_{\text{mean}}$	0.30								
log basic density	0.17	0.57**							
HP resonance velocity	0.20	0.61**	0.49**						
log FAKOPP Velocity	0.14	0.73**	0.71**	0.72**					
tree FAKOPP Velocity	0.01	0.44*	0.23	0.40*	0.41*				
Pilodyn 6J	0.23	-0.31	-0.63**	-0.49**	-0.50**	-0.38*			
Pilodyn 12J	-0.15	-0.46*	-0.69**	-0.59**	-0.62**	-0.46**	0.75**		
MOR (clearwood)	0.48*	0.31	0.60**	0.03	0.37	0.09	-0.32	-0.54**	
MOE (clearwood)	0.48*	0.35	0.61**	0.33	0.65**	0.07	-0.30	-0.48*	0.77**

* significant at the 5% level; ** significant at the 1% level

Log stiffness ($\log E_{\text{mean}}$), and clearwood MOE and MOR were all significantly positively correlated with log basic density. The $\log E_{\text{mean}}$ was significantly correlated with both measures of acoustic velocity at both ages. The largest correlations were

for $\log_{E_{\text{mean}}}$ and $\log$ FAKOPP velocity. When FAKOPP velocity was measured on the standing trees the correlations were much reduced, possibly due to the shorter transmission distance (1.5 m of tree height as opposed to 4.2 m or 5.3 m of log) and the less direct pathway for sound to travel transversely and longitudinally through the standing tree. When sound flight speed is measured across the stem the radial MOE is measured, not the longitudinal MOE. It is conceivable that the radial response variable is less correlated with sound flight velocity (J. Walker *pers. comm.*).

Log stiffness ($\log_{E_{\text{mean}}}$) was not strongly correlated with clearwood MOE or MOR at either (Table 2), indicating that defects in the boards may be more important in determining the overall stiffness of the log than strength or stiffness as measured on short clears. Clearwood MOE was significantly correlated with $\log$ FAKOPP velocity at both ages. However, clearwood MOR showed a significant correlation with $\log$ FAKOPP velocity only in the 9-year-old trees, possibly because the younger trees had narrower green knots. Interestingly, for the age 9 data, the correlation of both MOE and MOR with FAKOPP velocity was higher in the standing trees than the logs, although this was not the case for the older material. The reason here may be attributed to the smaller branches in the 9-year-old trees and the shorter path travelled between the FAKOPP probes in the tree.

Both of the Pilodyn tests gave good correlations between depth of pin penetration and log basic density. In addition, the Pilodyn 12J gave reasonably good correlations between pin penetration and clearwood MOE and MOR at both ages.

Regression equations for predicting log stiffness (Table 3) indicate that the best single predicting variable was $\log$ FAKOPP velocity which accounted for 51% of the variation in stiffness at age 9, and 54% of the variation at age 25 (Figure 1). When the slopes of the regression lines were tested they were found to be parallel but the intercepts were different indicating that for a given velocity the predicted stiffness will differ depending upon the age of the tree. Addition of log basic density or Pilodyn penetration to the equations for predicting log stiffness from $\log$ FAKOPP velocity did not yield any great effect.

Log basic density was strongly correlated with clearwood MOE and MOR, $\log_{E_{\text{mean}}}$ and $\log$ FAKOPP velocity (Table 2). The strong correlations found for basic density with clearwood MOE and MOR are similar to those found for other hardwood species, namely *E. globulus* and *E. nitens* (McKimm *et al.*, 1988; Yang, 1997). However, the strong relationship between basic density and $\log$ FAKOPP velocity was unexpected and the explanation for this effect is not obvious. There are few published data indicating that sound flight speed is related to the density of wood in softwood pine species. Further, there is evidence that basic density is not a primary predictor of MOE in pines (Tsehaye *et al.*, 2000b).

In radiata pine, microfibril angle (MFA) has been shown to impact greatly on stiffness (Tsehaye, *et al.*, 1998). In this study the silviscan measurements on the limited number of samples indicated that density accounted for around a third of the difference in stiffness, while changes in MFA in two-thirds (R. Evans *pers comm*). This is in accord with results from other hardwood species where the relationship between MOE and density is linear, whilst the MOE and MFA one is non-linear (R.

Evans *pers comm.*). Further, work is required to establish the extent that both density and MFA account for stiffness variation in *E. dunnii*.

Table 3 Regression equations for predicting log stiffness $\log_{E_{\text{mean}}}$ from Pilodyn penetration (6J and 12J), log basic density, tree and log FAKOPP velocity and HP velocity for each age class.

Regression equation	(R^2) x100
Age 9	
$\log_{E_{\text{mean}}} = 23.20 - 0.931 * \text{Pilodyn (6J)}$	34.0**
$\log_{E_{\text{mean}}} = 21.83 - 0.432 * \text{Pilodyn (12J)}$	21.5**
$\log_{E_{\text{mean}}} = -5.99 + 0.038 * \text{log basic density}$	37.2**
$\log_{E_{\text{mean}}} = -1.53 + 0.008 * \text{tree FAKOPP vel.}$	16.3*
$\log_{E_{\text{mean}}} = -22.30 + 0.009 * \text{log FAKOPP vel.}$	51.1**
$\log_{E_{\text{mean}}} = -8.64 + 0.006 * \text{HP vel.}$	30.5**
$\log_{E_{\text{mean}}} = 15.58 - 0.805 * \text{Pilodyn (6J)} + 0.003 * \text{tree FAKOPP vel.}$	36.4**
$\log_{E_{\text{mean}}} = 10.51 - 0.335 * \text{Pilodyn (12J)} + 0.005 * \text{tree FAKOPP vel.}$	27.1**
$\log_{E_{\text{mean}}} = -11.54 - 0.366 * \text{Pilodyn (6J)} + 0.007 * \text{log FAKOPP vel.}$	54.2**
$\log_{E_{\text{mean}}} = -17.26 - 0.105 * \text{Pilodyn (12J)} + 0.008 * \text{log FAKOPP vel.}$	52.0**
$\log_{E_{\text{mean}}} = -5.98 + 0.038 * \text{log basic density} + 0.000 * \text{tree FAKOPP vel.}$	37.2**
$\log_{E_{\text{mean}}} = -22.40 + 0.017 * \text{log basic density} + 0.007 * \text{log FAKOPP vel.}$	54.6**
$\log_{E_{\text{mean}}} = -14.56 + 0.030 * \text{log basic density} + 0.003 * \text{HP vel.}$	45.5**
Age 25	
$\log_{E_{\text{mean}}} = 21.49 - 0.622 * \text{Pilodyn (6J)}$	9.6
$\log_{E_{\text{mean}}} = 24.65 - 0.535 * \text{Pilodyn (12J)}$	20.5**
$\log_{E_{\text{mean}}} = -6.94 + 0.037 * \text{log basic density}$	32.7**
$\log_{E_{\text{mean}}} = 10.18 + 0.003 * \text{tree FAKOPP vel.}$	18.9**
$\log_{E_{\text{mean}}} = -11.98 + 0.007 * \text{log FAKOPP vel.}$	53.5**
$\log_{E_{\text{mean}}} = 1.33 + 0.004 * \text{HP vel.}$	37.8**
$\log_{E_{\text{mean}}} = 14.32 - 0.340 * \text{Pilodyn (6J)} + 0.003 * \text{tree FAKOPP vel.}$	21.3*
$\log_{E_{\text{mean}}} = 18.55 - 0.380 * \text{Pilodyn (12J)} + 0.002 * \text{tree FAKOPP vel.}$	27.1**
$\log_{E_{\text{mean}}} = -14.79 - 0.147 * \text{Pilodyn (6J)} + 0.007 * \text{log FAKOPP vel.}$	53.9**
$\log_{E_{\text{mean}}} = -12.24 - 0.007 * \text{Pilodyn (12J)} + 0.007 * \text{log FAKOPP vel.}$	53.5**
$\log_{E_{\text{mean}}} = -7.79 + 0.032 * \text{log basic density} + 0.002 * \text{tree FAKOPP vel.}$	42.3**
$\log_{E_{\text{mean}}} = -13.25 + 0.007 * \text{log basic density} + 0.006 * \text{log FAKOPP vel.}$	54.1**
$\log_{E_{\text{mean}}} = -9.14 + 0.025 * \text{log basic density} + 0.003 * \text{HP vel.}$	49.3**

* significant at the 5% level; ** significant at the 1% level

Essentially, in this study the sound flight speed along *E. dunnii* logs was sufficiently correlated with stiffness to allow logs to be broadly sorted into classes. It was possible to segregate the bottom 10% of the low stiffness logs out of the sample population. These results agree with those reported for radiata pine (Dickson and Matheson, 1999). They also indicate that acoustics technology may be suitable in the immediate future for the sorting of hardwood logs according to stiffness for the veneer and LVL industry. However, the bending tests that were undertaken indicated that the timber sawn from *E. dunnii* crossed the threshold for structural application; even the logs which fell within the bottom 10% of the samples illustrated in Figure 1. Considering this, the application of acoustics in the hardwood industry is probably more likely to be primarily the detection of defects and growth stresses, for example, while sorting out low stiffness logs if it can be shown that it can be useful for detecting defects and growth stresses. Alternatively, acoustics could be used to identify those logs that exhibit exceptionally high stiffness, and the growers could

then demand a premium royalty for these for use in LVL and plywood production. The acoustic data will certainly strongly underpin the visual grading system for sawn timber.

An interesting proposal is the use of acoustics not only for measuring stiffness for value-added markets, but also for sorting timber according to hardness. If the hardness of sawn timber falls too low, particularly in young material, it may become undesirable for use in flooring. It is known that hardness and density are strongly related. The results in this study indicate that the relationship between acoustic sound flight speed and density were strongly related. Thus, stress waves may be used to sort wood according to stiffness and in turn hardness, and may offer significant economic advantages.

In this study a State Forests' Timber Inspector visually graded all of the boards with the intent of relating branch and defect information to both stress wave and machine stress grade data. Work is on going to test these relationships. There is limited information indicating that acoustics can directly measure defects and growth stresses in hardwood timber. A recent report indicates that ultrasonic waves may be able to detect knots and the effect of growth ring angle in *P. radiata* timber (Karsulovic, *et. al.*, 2000). More research is required to develop techniques suitable to assess wood quality and detect defects in hardwood.

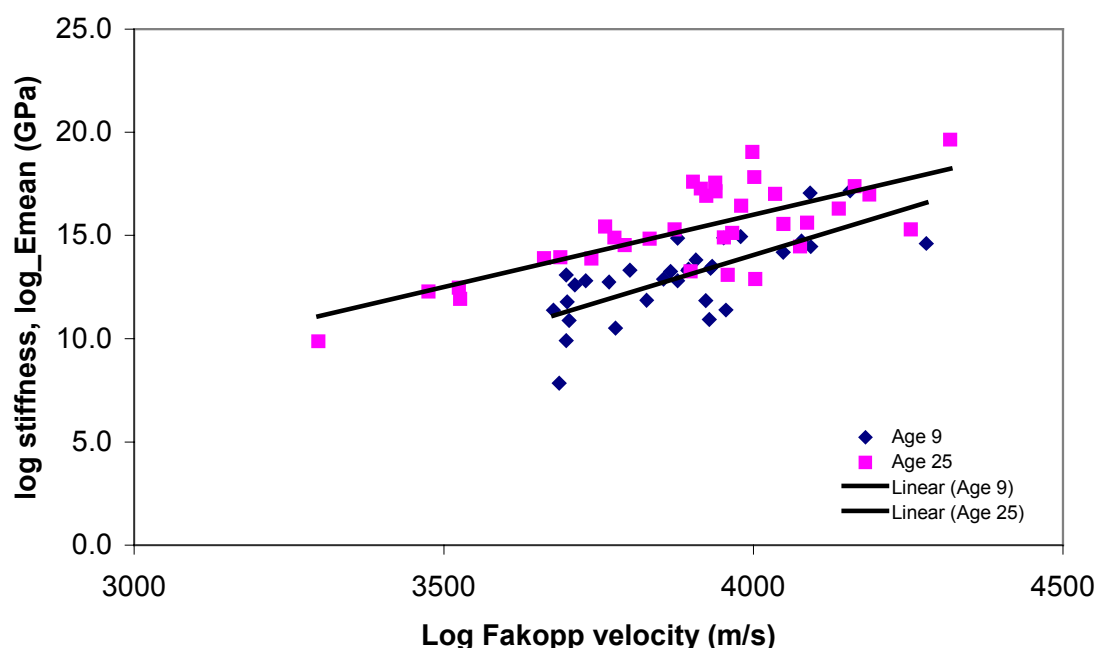


Figure 1 Relationship between mean stress grade and log FAKOPP velocity for each age class.

The benefits from log segregation and collection of wood quality information from NDE tool measurements would accrue within the time of the current crop rotation (eg., sorting production thinnings and logs at clearfell). Further, they would assist

with the planning and tending of rotations ahead by underpinning spatial information systems for future plantings, eg., clonal forestry.

Log segregation could potentially take place at two locations in the merchandising chain, namely in the field on the landing site or in-line at the mill (Synder *et al.*, 2000). Taking the first example, it is conceivable that acoustic devices could be attached to harvester processing head used to mechanically delimb and buck logs following felling. While the logs are being mechanically processed the stiffness of each log could be automatically measured and then the bucked log dropped into the most appropriate sort pile, to be transported to a processing plant. This will then ensure that any energy used or costs incurred is for the movement of wood only to the most appropriate processor who will be able to realise the greatest value from the properties of the timber.

2.5 Economic gains through log segregation

There are significant economic gains to be had by sorting the *E. dunnii* log resource. The potential wholesale price for *E. dunnii* timber could be as high as \$1,200/m³, for the best quality timber for flooring and furniture. If the wood quality is not measured and logs are not sorted prior to milling then these prices range from \$800-1,200/m³. Thus, through NDT measurement of wood quality and the sorting of logs according to quality there is scope to capture a further \$400/m³. Taking the \$400/m³ value and realising that there is 30% recovery at the mill the net revenue gain/m³ is estimated to be around \$100/m³.

Australia-wide the wholesale prices for hardwood range from \$480/m³ to \$970/m³. The total volume of hardwood sawn Australia wide is 1,410,000 m³. Regardless of species, if wood property information gathered at the forest or log level were to be adopted for optimal log allocation to mills, for example, then again there is the potential to conservatively capture around \$200/m³, and around \$50/m³ with 30% mill recovery. This equates to a gross increase of revenue of \$70x10⁶.

2.6 Conclusion

The findings of this study indicate that *E. dunnii* may be a successful plantation timber species producing timber with acceptable strength properties. However, as with any forest tree species the variation in wood quality within and among trees was significant, leading to a wide range in sawlog quality. The use of acoustic tools appears viable for this species as the sound flight speed along the logs was sufficiently correlated with log stiffness to allow logs to be broadly sorted into classes. It may also be possible to use acoustic tools to sort *E. dunnii* logs according to hardness, defects and growth stresses. The non-destructive measurement of termite attack (pipe), growth stresses and the impact of knots along with stiffness is considered economically desirable.

3 PINUS RADIATA SAWING STUDY

3.1 Introduction

A key objective of tree breeders is to quantify genetic gain by measuring the changes in product outturn from a processing mill due to a generation of selection. In the past most of the breeding effort in radiata pine has been for increased yield, and to a lesser extent wood quality. CSIRO have during the past 30 odd years have been planting progeny trials to measure growth and yield responses to improved tree selection. As can be appreciated the impact of tree improvement on product yield (eg., sawn boards, veneer) is not often measured as the cost of running processing studies is high and the logistics complicated. Although not originally proposed in the application of this project, it was decided that this sawing study provided a good opportunity to harvest and mill a mature progeny trial established by CSIRO in 1973. This way extra genetic information along with non-destructive tool evaluation data could be obtained from the study. Our original intent was to mill run-of-bush logs for acoustic testing. State Forests of NSW along with CSIRO funded the extra work to harvest and transport the logs from Tallaganda State Forest to Weyerhaeuser Australia's Tumut mill, thus the results from sawing the genetic treatments are not reported here.

3.2 Materials and Methods

Progeny test 56 (PT56) was planted in Compartment 19 Tallaganda State Forest of NSW (80 km southeast of Canberra) in 1973, and was designed to estimate genetic parameters such as heritability and genetic correlations for economically important traits. The trial contains clones of 147 control-pollinated crosses of selected radiata pine. PT56 is a composite of three genetic experiments, each with different parent material and each designed to assist in estimating genetic parameters of randomly breeding populations as well as estimating environmental variances. The pedigree of every tree in the trial is known. The adjacent progeny test 52, planted in 1971, contains seedlings of the same 147 families plus 100 others. The three experiments forming PT56 are:

- Experiment 1. Random pair crosses, six replicates
- Experiment 2. North Carolina Design 2, four replicates
- Experiment 3. Diallel cross, six replicates.

Each replicate in each experiment contains one ramet of each of three seedlings of each cross used. In Experiment 1, there are 33 full-sib families in three groups of 11 unrelated crosses including 80055 as a parent. In Experiment 2, there are 104 full-sib families (26 females x 4 tester males). Experiment 3 is an incomplete diallel of crosses among the 5 parents listed at the head of the columns in Table 4. Management of Experiment 3 was different from that in Experiment 2. Experiment 3 was planted with alternate trees designed to be removed at around age 10 (carried out). Experiment 2 was planted with each 5th row being an outrow to be removed at first thinning (carried out). This should be taken into account in any analysis (by using experiment as a dummy covariate) .

Due to financial considerations, it was not possible to use all families in PT56 in the sawmill study and so the subset of families given in Table 4 was chosen to maximise the information gained from the trial.

Crosses with the first four parents of Table 4 are in Experiment 3 of PT 56 whereas the latter four are a small subset of Experiment 2. Crosses in experiment 3 form an incomplete diallel and those in Experiment 2 are a North Carolina design 2 crossing system. Together they can be considered as an incomplete factorial mating design. The two sets of crosses were combined to give a more representative set of parents than either the diallel or the Experiment 2 crosses could do by themselves.

Table 4 Crosses and numbers of trees selected for the sawmill study. Numbers in roman font are what was planted, numbers in italics are existing trees and those in brackets are seedlings.

Female parent (expt)	Male parent				
	12038	12197	12447	10994	80055
12038 (3)		20 (6) 20	22 (5) 22		17 16
12197 (3)	16 16		22 (6) 22		
12447 (3)	22 (5) 21	14 14			17 17
80055 (3)	24 (6) 24	15 (6) 21		6 (6) 6	
30007 (2)	12 8	12 10	12 9	12 7	
12236 (2)	9 9	12 12	12 12	12 8	
30040 (2)	12 11	11 9	12 9	12 11	
10956 (2)	10 9	11 9	12 10	12 12	

Conventional growth measurements were made on the sample trees, including diameter at breast height over bark (DBHOB), height and merchantable log classes according to MARVL. The trees were measured acoustically while standing with a FAKOPP stress wave timer (Plate 7). At the same time, Pilodyn (6 J and 12 J) readings were made to predict wood density (Plate 8). The trees were then mechanically felled, cut into logs and tagged to identify tree number and genetic origin (Plate 9). Only the butt log of each sample tree was taken to the mill for sawing. Log butts were painted with colour combinations to permit tree, log and board identification. Individual logs were then measured acoustically and sawn into boards. Boards were kiln dried, dressed and machine stress graded following which the stress grade of each board was recorded.



Plate 7 A standing tree of *Pinus radiata* being measured acoustically using a FAKOPP stress wave timer. A stress wave is induced by tapping the “start” probe (located at the bottom of tree) with a hammer, and the time it takes to reach the “stop” probe is read off from the instrument.



Plate 8 A Pilodyn wood tester is fired into the outer wood of the standing tree and the depth of pin penetration is read off the instrument to nearest 0.5 mm.



Plate 9 Sample trees of *Pinus radiata* being mechanically harvested and cut into logs for sawing.

3.2.1 Sampling strategy

The unthinned plots had been thinned to waste before the present project began. The nine innermost trees in all thinned plots (350 spha stocking) were selected for this study. Four plots from each replicate were available, making a total of 316 trees. Tree numbers running from 1 to 316 were blazed on sample trees before the harvesting began. Following harvesting, each log was numerically coded incorporating the tree number so that logs and their position in the crown of each tree could be identified. Logs were transported to the sawmill's log yard where each log was colour coded (Plate 10), measured for length, diameter and stress wave prior to being sawn.

3.2.2 Stress wave timer measurements

All of the standing trees were measured using a FAKOPP microsecond timer, as described for the hardwood study (see Section 2.2.2) The distance in height between the start and stop probes was, however, 1.5 m in this pine study.

Longitudinal stress wave measurements were made on individual logs in the sawmill yard, soon after harvest, using three different stress wave timer tools. As for the hardwood, measurements were made using the FAKOPP (Plate 11) and the HP resonance tool under development by CSIRO. A third stress wave timer Hitman®, which is owned by Carter Holt Harvey, was also tested in this study on logs. The

CSIRO tool and Hitman® could not be used to test for wood stiffness in standing trees, as there were no clear end faces to generate a stress wave with a hammer.



Plate 10 Colour coded logs with unique colour and pattern for identification and tracking in the sawmill.



Plate 11 A sample log shown is being measured acoustically with a FAKOPP stress wave timer at the mill yard.

3.2.3 Pilodyn measurements

These were carried out using the 12 J and 6 J Pilodyn units as described for the *E. dunnii* sawing study (see Section 2.2.3). However, in the case of pine, regression lines for wood density and penetration depth have been well established in New Zealand by Cown (1978). The correlation coefficients are very highly significant across age classes (State Forests of NSW research file Q11/7) and so we have a high level of confidence that the Pilodyn readings are a reasonable measure of outer wood density.

3.2.4 Log sorting, sawing and grading

A total of 316 butt logs were cut into boards in the Tumut sawmill. The logs were sorted into 11 diameter classes (Table 5) and sawn using one of eight sawing patterns, which depend primarily on log size (Appendix C).

Table 5 A summary of the logs and cutting patterns used in the study

Log Sort SED (mm)	Log Length	No. of logs	Cutting pattern⁸
38+	5.4	13	1
36	5.4	18	20
34	5.4	27	9
32	5.4	48	2
30	5.4	27	12
28	5.4	43	15
26	5.4	37	5
24	5.4	31	5
22	5.4	35	8
20	5.4	21	4
16-20	5.4	18	4

The logs were sawn into two target size classes of boards, namely 90 x 35 mm and 190 x 35 mm. The 190 x 35 mm boards were subsequently split into two 90 x 35 mm boards after drying and prior to machine grading. In total, there were 1320, 90 x 35 mm (22.4 m³) and 446, 190 x 35 mm (16 m³) boards.

After sawing, the corewood ("Heart-in") and outer wood boards ("SAP") were segregated and kiln dried, dressed and then machine stress graded during which dyes were sprayed on boards continuously to indicate the MGP stress grade at any point along the board. The colours used to mark stress grades comply with Australian Standard AS1613 (Standards Australia, 1997a) and the stress grading requirements conform to Australian and New Zealand Standard AS/NZS 1748 (Standards Australia, 1997b). The stress grader-determined MOE values were recorded electronically at 13 cm intervals along every board so that the mean (E_{mean}) and minimum (E_{min}) MOE values could be calculated for analysis. The grades assigned by the grading machine were MGP grades 10, 12 and 15, along with F4 and reject (no colour spray applied).

⁸ Refer to Appendix C

3.3 Analysis

Total volume recovered from each seedlot was calculated and will be reported elsewhere.

As for the hardwood study, data from each board (ie. individual mean board stiffness, E_{mean}) for each tree were collated and the mean value calculated to give an individual tree value for log stiffness ($\log_{\text{E}_{\text{mean}}}$). Pearson correlations were calculated amongst each of the variables: DBHOB, log and tree FAKOPP velocities, HP and Hitman® velocities for the logs and the two Pilodyn readings. In addition, the data were split into two product types (HI and SAP) and correlations re-calculated amongst variables for each product type. We believe this latter analysis is justified, as most pine processors will segregate the two products for kiln drying under quite different drying schedules. Furthermore, it is common practice for the wood processors to visually re-grade boards that failed to make a machine grade, and in the case of heart-in boards, these would usually make it into *Heart-in stud grade* as defined in the Australian Standard AS 2858 (Standards Australia, 1986).

Significance tests of the correlations were carried out at the 5% and 1% levels. Least-squares linear regression equations were determined for predicting $\log_{\text{E}_{\text{mean}}}$ from variables on the standing trees or logs. Analysis of variance was used to test the goodness of fit of each model and to determine whether the regression coefficients were significant at the 5% and 1% levels.

3.4 Results and Discussion

3.4.1 Diameter distribution

Diameter measurements at breast height (1.3 m) were carried out in December 1999 and January 2000. The resulting distribution of these measurements are shown in Figure 2.

Small end diameter (SED) measurements were carried out at harvest and logs with SED < 20 cm were not processed through the sawmill.

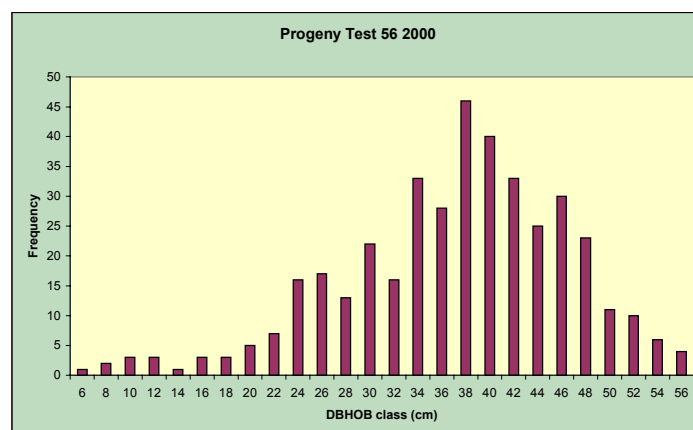


Figure 2 Diameter (DBHOB) distribution for Progeny test PT56

3.4.2 Tree, log and board data

Individual tree, log and board data are given in Appendix B. These have been summarised and presented in Table 6. The data on log stiffness ($\log_{E_{\text{mean}}}$) is calculated from the E_{mean} of all boards sawn from the same the log (see Section 3.3). Basic density was a derived value from published relationships between Pilodyn 6 J readings and outer wood basic density at breast height measurements. This basic density value should be taken as indicative only subject to further work to develop site-specific relationships.

Table 6 Mean values for sampled tree and log measurements

Variable	mean
Tree data:	
No. of trees	316
DBHOB (cm)	38.1
Height (m)	31.5
Pilodyn penetration-6J (mm)	12.3
Pilodyn penetration-12J (mm)	21.5
Derived outer wood basic density ⁹ (kg/m ³)	526
Tree FAKOPP velocity (m/s)	2683
Log data:	
Log FAKOPP velocity (m/s)	3706
Hitman® velocity (m/s)	3385
HP velocity -CSIRO (m/s)	3538
Log data calculated from boards:	
Log stiffness: $\log_{E_{\text{mean}}}$ (GPa)	7.98
Log stiffness (SAP only): $\log_{E_{\text{mean}}}$ (GPa)	9.45
Log stiffness (HI only): $\log_{E_{\text{mean}}}$ (GPa)	6.14
Grade recovery:	
MGP10	57%
MGP12	1%
MGP15	0%
F4	13%
Reject/falldown	29%

3.4.3 Pearson correlation matrix

Correlations were statistically significant between log stiffness ($\log_{E_{\text{mean}}}$) - as determined from the mean stiffness of sawn boards from each log - and sound flight speed as measured using the FAKOPP, HP and Hitman® (Table 7, Figure 3, Figure 4, Figure 5). The correlations between $\log_{E_{\text{mean}}}$ and the three acoustic tools were similar, although the largest correlation was for $\log_{E_{\text{mean}}}$ and Hitman®. The

⁹ Refer to Cown, , 1978

resonance tools (ie, Hitman® and HP) were not more significantly correlated with $\log_{E_{\text{mean}}}$ than the FAKOPP, a single pass system.

Correlations improved significantly when the boards were grouped by product types (SAP & HI) from each log and the data re-analysed. The correlation between $\log_{E_{\text{mean}}}$ (SAP-boards only) and log acoustic measurements with the FAKOPP, Hitman® and HP were 0.69, 0.73 and 0.66, respectively. A weaker, but still highly significant, correlation (ca. 0.60) was obtained for $\log_{E_{\text{mean}}}$ (HI-boards only). The stronger correlation with the SAP boards suggested that the log acoustic measurements might be biased toward the stiffer outer wood of the log. An examination of the relationship between log stiffness and log acoustic measurement also found that as log acoustic velocity increased, average stiffness of the SAP boards increased by about twice as much as the HI boards (Figure 6).

Basic density was moderately correlated with stress wave velocity. These results are in agreement with previous reports for *P. radiata*. Compared to the *E. dunnii* study, the correlations between the machine grading measurements and the FAKOPP and HP velocity measurements on the pine logs were around 43% and 26% weaker, respectively. Nonetheless, these findings support the proposal that outliers within a log population can be identified using acoustics and allocated to an alternative non-structural application (Tsehaye, *et al.*, 1997; Walker and Nakada, 1999). Logistically the resonance machines (Hitman® and HP) have an advantage over the FAKOPP for measuring logs as only one end face needs to have a sensor attached. The FAKOPP requires a probe to be inserted at each end of a log.

When FAKOPP velocity was measured on the standing trees the correlations were reduced, possibly due to the shorter transmission distance (1.5 m of tree height compared with 4.2 m or 5.3 m of log) and the less direct pathway for sound to travel transversally and longitudinally through the standing tree. Interestingly, the tree correlation between the FAKOPP and the machine stress grading data ($\log_{E_{\text{mean}}}$) was stronger than that reported for a similar study carried out on trees grown adjacent to those milled in this study (Dickson and Matheson, 1999). The reason for this is unclear. Nonetheless, this finding does offer some hope that the stiffness in standing trees may be measured using acoustic devices.

There was no correlation between diameter at breast height (DBHOB) and log stiffness ($\log_{E_{\text{mean}}}$), whilst tree height was only moderately correlated with $\log_{E_{\text{mean}}}$. Tree height had no influence on both tree and log acoustic measurements (Table 7). Interestingly, whilst DBHOB had no effect on $\log_{E_{\text{mean}}}$, it had a significant effect on the acoustic measurements, which should in turn affect $\log_{E_{\text{mean}}}$. Both tree and log acoustic measurements were significantly negatively correlated with DBHOB. The reasons for this are unclear, but may be related to how $\log_{E_{\text{mean}}}$ is determined and the possible bias of the acoustic measurements toward the stiffer outer wood. The calculated log stiffness value, $\log_{E_{\text{mean}}}$, is essentially a weighted average of board stiffness with a higher weighting given to SAP boards as there are generally more of these in the log than HI boards. Combining the SAP and HI boards in the calculations to give an overall average for log stiffness may have confounded its relationship with DBHOB. This contention is supported by the fact that when the boards were segregated into product types and the data re-analysed, DBHOB did have a significant (negative) effect on the overall stiffness of the SAP boards and HI

boards, albeit to varying degrees depending on product type (Table 7). DBHOB was correlated strongly with the SAP boards, but only weakly with the HI boards. It is this difference in effects that may have confounded the relationship between DBHOB and log stiffness ($\log_{E_{\text{mean}}}$) when all the boards (SAP & HI) were considered together. The stronger correlation between the DBHOB and the stiffness of the SAP boards, again suggests the acoustic measurements may be biased toward the stiffer outer wood of the log. We therefore contend that DBHOB as a measure of tree size influenced the tree and log acoustic measurements, and this in turn had an effect on log stiffness, but only to the extent when the boards were considered separately according to product type. DBHOB had no direct effect on the overall stiffness of the log.

The penetration for both 6 J and 12 J Pilodyn tools, a measure of outer wood density, was significantly correlated with log stiffness ($\log_{E_{\text{mean}}}$), although not as well as with the acoustic measurements.

Table 7 Pearson correlation with mean log data (mean of all boards from same log).

	$\log_{E_{\text{mean}}}$	log FAKOPP vel.	log Hitman vel.	HP/ CSIRO vel.	tree FAKOPP vel.	Pilodyn 12J	Pilodyn 6J	DBHOB	$\log_{E_{\text{mean}}}$ (SAP)	$\log_{E_{\text{mean}}}$ (HI)
log FAKOPP vel.	0.37**									
log Hitman® vel.	0.40**	0.94**								
HP/CSIRO vel.	0.35**	0.90**	0.91**							
tree FAKOPP vel.	0.23**	0.62**	0.66**	0.64**						
Pilodyn 12J	-0.32**	-0.56**	-0.59**	-0.54**	-0.49**					
Pilodyn 6J	-0.27**	-0.55**	-0.58**	-0.55**	-0.44**	0.80**				
DBHOB	0.00	-0.69**	-0.69**	-0.69**	-0.58**	0.37**	0.44*			
$\log_{E_{\text{mean}}}$ (SAP)	0.78**	0.69**	0.73**	0.66**	0.49**	-0.45**	-0.43**	-0.42**		
$\log_{E_{\text{mean}}}$ (HI)	0.54**	0.60**	0.61**	0.57**	0.36**	-0.29**	-0.25**	-0.26**	0.54**	
tree height	0.23**	-0.06	-0.05	-0.07	-0.02	-0.06	0.05	0.37	0.10	0.09

significant at the 5% level; ** significant at the 1% level

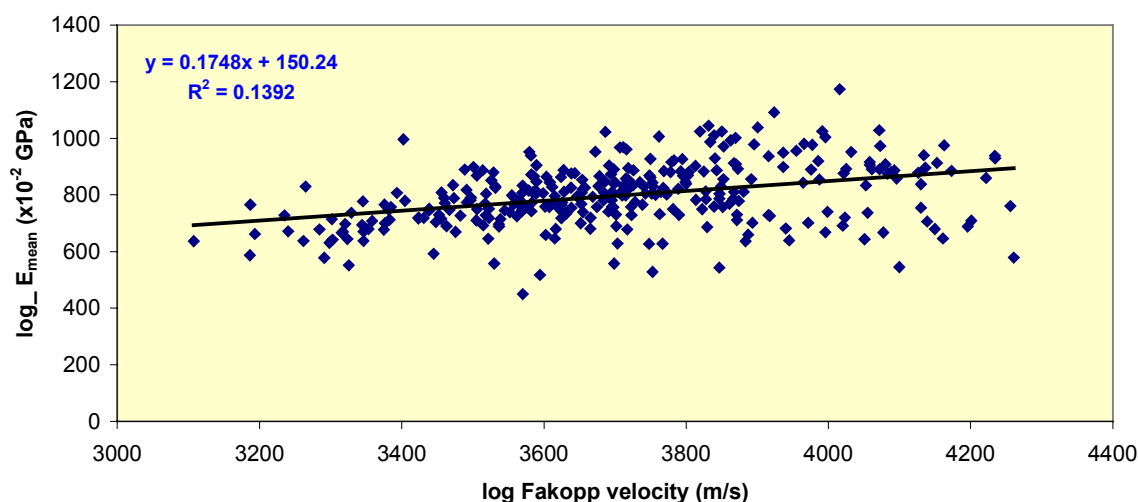


Figure 3 Relationship between mean log stiffness (mean of all boards from log) and log FAKOPP velocity. N=316

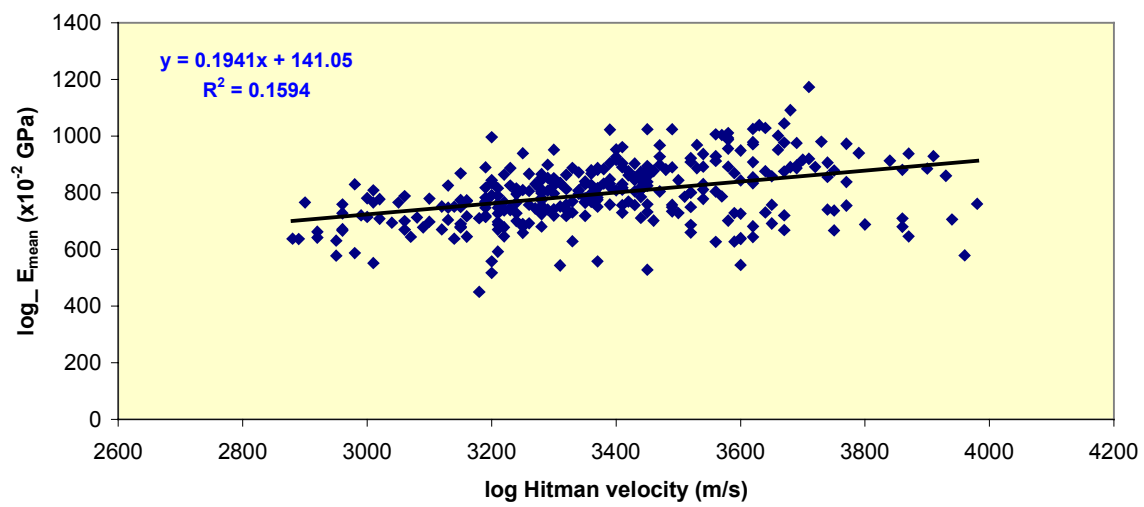


Figure 4 Relationship between mean log stiffness (mean of all boards from log) and log Hitman® velocity. N=316

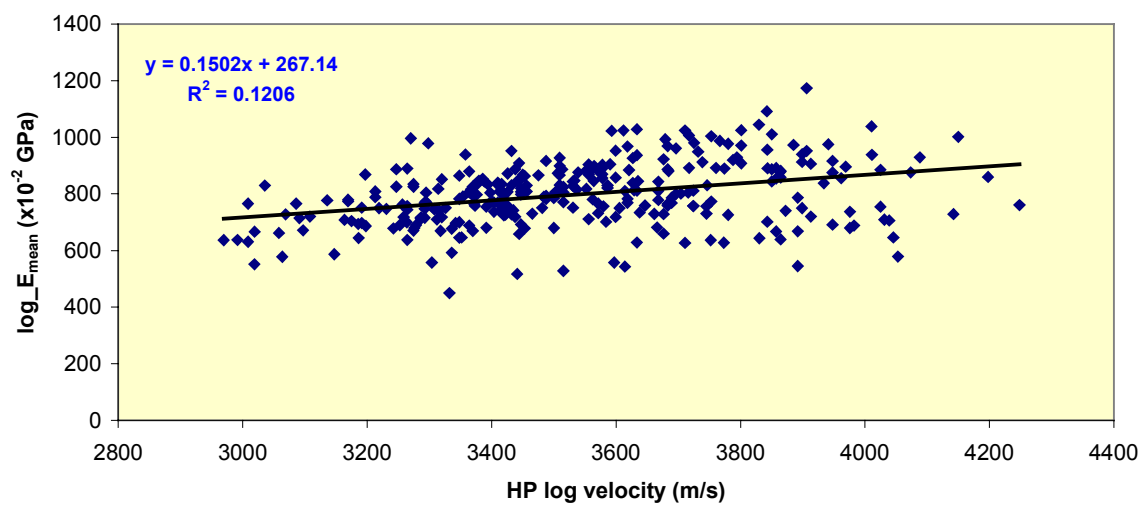


Figure 5 Relationship between mean log stiffness (mean of all boards from log) and log HP velocity. N=316

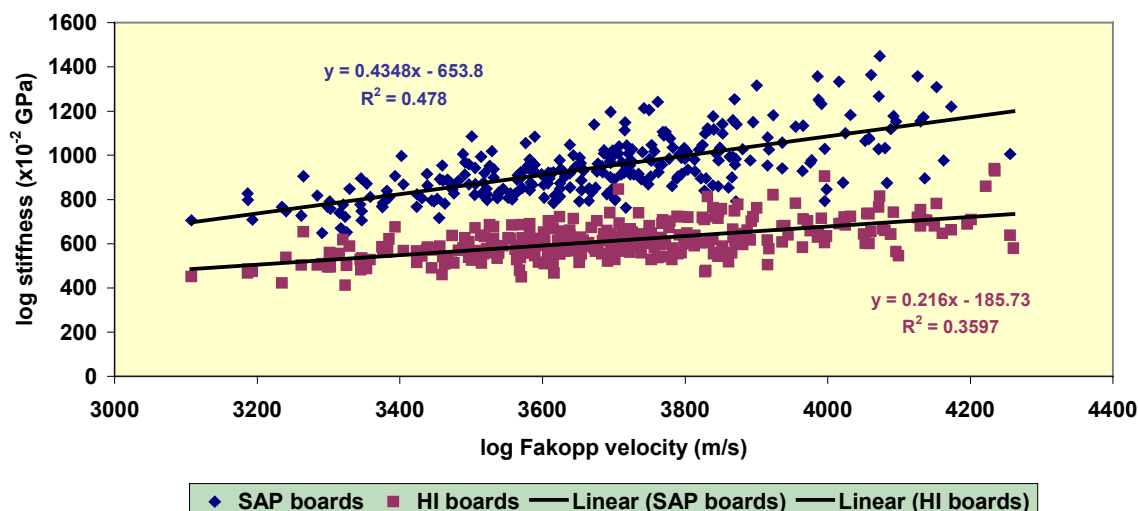


Figure 6 Relationship between mean log stiffness (mean of all boards from log) grouped into product type and log FAKOPP velocity. N=316

Regression equations for predicting overall log stiffness ($\log_{E_{\text{mean}}}$) indicate that the best single predicting variable was log Hitman® velocity which accounted for 16% of the variation in stiffness, followed closely by log FAKOPP and HP velocities (Table 8). If a measure of Pilodyn penetration was added to the equation, the amount of variation in stiffness accounted for by the regression increased only marginally. However, if DBHOB was added to the equation, the amount of variation in stiffness accounted for, increased by about two fold to about 24% to 31% depending on the acoustic measurement used.

It would appear that the greatest potential for the acoustic measurements is in predicting average stiffness of the boards in a log when the boards were segregated by product types (SAP and HI). The single best predicting variable for $\log_{E_{\text{mean}}}$ (SAP) was again the log Hitman® velocity which accounted for nearly 53% of the variation in stiffness, followed closely by the log FAKOPP and HP velocities, accounting for about 48% and 44% of the variation, respectively. Similarly, the prediction of $\log_{E_{\text{mean}}}$ (HI) with these acoustic measurements was fairly reasonable. The addition of DBHOB or Pilodyn measurements in these equations did little to improve the prediction.

Table 8 Regression equations for predicting log stiffness $\log_{E_{\text{mean}}}$, $\log_{E_{\text{mean}}}$ (SAP only), and $\log_{E_{\text{mean}}}$ (HI only) from acoustic measurements (FAKOPP, Hitman®, HP), Pilodyn 12J penetration and DBHOB. All equations significant at the 1% level.

Regression equation	(R^2)x100
Overall log stiffness:	
$\log_{E_{\text{mean}}} = 1026.8 - 18.6 * \text{Pilodyn penetration (6J)}$	7.2**
$\log_{E_{\text{mean}}} = 1084.4 - 13.3 * \text{Pilodyn penetration (12J)}$	10.4**
$\log_{E_{\text{mean}}} = 502.3 + 0.110 * \text{tree FAKOPP velocity}$	5.5**
$\log_{E_{\text{mean}}} = 150.2 + 0.175 * \log \text{FAKOPP velocity}$	13.9**
$\log_{E_{\text{mean}}} = 141.0 + 0.194 * \log \text{Hitman® velocity}$	15.9**
$\log_{E_{\text{mean}}} = 267.1 + 0.150 * \log \text{HP velocity}$	12.1**
$\log_{E_{\text{mean}}} = 456.8 - 6.83 * \text{Pilodyn penetration (12J)} + 0.132 * \log \text{FAKOPP velocity}$	15.8**
$\log_{E_{\text{mean}}} = 384.2 - 5.41 * \text{Pilodyn penetration (12J)} + 0.156 * \log \text{Hitman® velocity}$	17.0**
$\log_{E_{\text{mean}}} = 588.0 - 7.74 * \text{Pilodyn penetration (12J)} + 0.106 * \log \text{HP velocity}$	14.5**
$\log_{E_{\text{mean}}} = -726.7 + 7.40 * \text{DBHOB} + 0.334 * \log \text{FAKOPP velocity}$	26.8**
$\log_{E_{\text{mean}}} = -757.4 + 7.88 * \text{DBHOB} + 0.370 * \log \text{Hitman® velocity}$	30.6**
$\log_{E_{\text{mean}}} = -517.0 + 7.18 * \text{DBHOB} + 0.293 * \log \text{HP velocity}$	24.0**
log stiffness (SAP boards only):	
$\log_{E_{\text{mean}}} (\text{SAP}) = 1431.4 - 39.29 * \text{Pilodyn penetration (6J)}$	18.8**
$\log_{E_{\text{mean}}} (\text{SAP}) = 1480.7 - 24.79 * \text{Pilodyn penetration (12J)}$	20.5**
$\log_{E_{\text{mean}}} (\text{SAP}) = 132.0 + 0.305 * \text{tree FAKOPP velocity}$	23.6**
$\log_{E_{\text{mean}}} (\text{SAP}) = -653.8 + 0.435 * \log \text{FAKOPP velocity}$	47.8**
$\log_{E_{\text{mean}}} (\text{SAP}) = -662.7 + 0.479 * \log \text{Hitman® velocity}$	53.0**
$\log_{E_{\text{mean}}} (\text{SAP}) = -390.7 + 0.381 * \log \text{HP velocity}$	43.6**
$\log_{E_{\text{mean}}} (\text{SAP}) = -347.3 - 7.03 * \text{Pilodyn penetration (12J)} + 0.393 * \log \text{FAKOPP velocity}$	49.0**
$\log_{E_{\text{mean}}} (\text{SAP}) = -33.1 - 8.90 * \text{Pilodyn penetration (12J)} + 0.334 * \log \text{HP velocity}$	45.6**
log stiffness (HI boards only):	
$\log_{E_{\text{mean}}} (\text{HI}) = 779.3 - 13.41 * \text{Pilodyn penetration (6J)}$	6.4**
$\log_{E_{\text{mean}}} (\text{HI}) = 811.2 - 9.17 * \text{Pilodyn penetration (12J)}$	8.5**
$\log_{E_{\text{mean}}} (\text{HI}) = 266.7 + 0.129 * \text{tree FAKOPP velocity}$	13.1**
$\log_{E_{\text{mean}}} (\text{HI}) = -185.7 + 0.216 * \log \text{FAKOPP velocity}$	36.0**
$\log_{E_{\text{mean}}} (\text{HI}) = -147.1 + 0.225 * \log \text{Hitman® velocity}$	37.2**
$\log_{E_{\text{mean}}} (\text{HI}) = -51.7 + 0.189 * \log \text{HP velocity}$	32.5**

* significant at the 5% level; ** significant at the 1% level

3.5 Conclusion

There is a significant positive relationship between acoustic wave velocity in logs and trees and the timber stiffness in *Pinus radiata*, which suggests an opportunity for segregation while the trees are still standing and to select logs that will yield predominantly high stiffness lumber. For sawmills cutting structural and framing products, sorting logs according to stiffness along the merchandising chain offers an enormous opportunity for improving grade outturn and significantly reducing down fall in the mill. Currently, broad-acre information from harvest optimisation systems gives overall estate information on merchantable wood that meets physical specification but does not take into account the wood quality of smaller harvest units let alone the stiffness of individual stems. The key findings of this study indicate that acoustic tools may assist with individual stem segregation for the current crop and the

selection trees expressing improved wood stiffness traits for the deployment into future plantings (Dickson and Matheson, 1999).

4 GENERAL DISCUSSION AND CONCLUSIONS

The key objective of this study was to explore the use of acoustic tools to derive the stiffness of wood in standing trees and logs of *E. dunnii* and *P. radiata*. A secondary objective was to establish whether log dimensions and basic density were useful for predicting grade recovery. A key outcome of this study is results that indicate quick and non-destructive acoustic measurements reliably predict wood stiffness in logs and to a lesser extent standing trees of *E. dunnii* and *P. radiata*. This finding agrees with other published findings for *P. radiata* that propose the use of acoustic tools for log segregation according to stiffness. In the case of *E. dunnii* there are few, if any, reports on the use of acoustics to derive stiffness in standing trees and logs. The relationship between the standing tree measurements and stiffness is around 74% stronger than that for pine. Associated work found that the FAKOPP measure had a genetic heritability (ie., proportion of the total observed variation that is genetic in origin) of around 0.3 for *Pinus radiata* indicating scope to use this tool to select for stiffness traits. The results of this study suggest that for *E. dunnii*, genetic heritability for the FAKOPP measure may be stronger than pine.

In the hardwood sawing study, basic density was found to predict stiffness to a similar extent as sound flight speed, and to a much greater extent than recorded in the pine sawing study. The reasons for this are unclear. It was found that stress wave velocity was strongly correlated with density in both standing trees and logs. These relationships may be used to our advantage, as not only stiffness can be derived from acoustic measurements, but also hardness which is an important parameter underpinning the performance of hardwood timber in flooring applications.

All of the acoustic tools tested in this study predicted stiffness in sawn boards to a similar level of accuracy.

The FAKOPP, which is a single pass stress wave timer, was the only tool that could be used to provide an indication of the stiffness of standing trees as it does not require end faces to generate a stress wave. The probe systems of the FAKOPP allowed this operation. In this study, the FAKOPP probes were inserted into the tree stem on opposite sides - ie, diagonally directly above each other. The placement of the probes on opposite sides of the stem may have resulted in measurement error as we were forcing the wave through the stem across changing moisture conditions. Further, the probes were inserted at diagonal ends of the stem about 1.5 m along, ie. about five times the size of the average tree diameter. The stress wave would most likely have travelled around a curved (longer) path still tending to go along the grain, perhaps with some transverse skips as the tracheids and fibres are connected to varying degrees by their side walls. Thus, the path would have been more tortuous in the standing trees compared to logs, but still relatively high compared with the radial path. In this case, the appropriate path length would be difficult to determine and it would not have been 1.5 m. This we suspect is the likely reason for the poorer

correlation of the standing tree measurements with the machine stress grade data. It would seem that placing the probes at diagonal ends was a poor choice.

This study identified scope for the development of a new generation of non-destructive acoustic tools that will predict the wood quality of stands throughout the rotation. There is real potential in using acoustic tools to make *in situ* measurements that provide relatively accurate and reliable information on wood properties in standing trees. Accordingly, this approach would greatly assist tree breeders to make early wood property trait selections and silviculturists to analyse the impact of stand management operations on wood properties. Ultimately, standing tree measurements in a pre-harvest cruise (eg., MARVL) would improve the accuracy of the inventory with respect to wood properties, and assist with the accurate allocation of logs into the various grades. This should lead to a more efficient use of the resource by directing the appropriate quality timber to the right market. Similarly, standing tree measurements would greatly assist tree breeders to select stiffer trees for deployment across farm lands.

Log dimension data were not as strongly related to grade outturn data as that recorded for the acoustic tools. Further work is required to establish from visual grade information on the hardwood timber whether defects and growth stresses impacted on stress wave behaviour.

This study has provided new wood property data on plantation grown *E. dunnii* that indicates for the stands sampled, regardless of age classes, and milled produced sawn wood of a quality comparable to that of other key plantation hardwood species in NSW.

5 PROJECT OUTCOMES

- Wood quality information on *E. dunnii* to assist farmers with the future planting and stand management decisions.
- Robust information on the potential application of acoustic tools for the sorting hardwood and softwood logs according to stiffness at harvest time.
- Underpinning wood stiffness information from non-destructive tools for the minimum visual grading system for *E. dunnii*. Further, these data may assist further research into segregation systems for wood hardness.
- New information on the ability of a FAKOPP to predict the stiffness of standing trees. This information will greatly assist with the selection of superior families and clones and ensure farmers deploy genotypes with superior wood properties.
- Information on the accuracy of a single pass stress wave timer to predict wood stiffness compared to resonance stress wave tools.
- Data that supports published information that dimensional measures currently used to grade wood (eg., DBHOB) of standing trees and logs are less able to predict grade outturn than acoustic tools.
- A preliminary understanding that the relatively simple technology used for evaluating stress wave velocity in this project does not directly lend itself for detecting the disposition of branches and knots and other defects, and other approaches may be required in addition.

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Appendix A E. dunnii measurements

Notations:

AD density	= air-dried wood density of clearwood specimens (kg/m^3)
DBHOB	= diameter at breast height over bark
Fak1, Fak2	= FAKOPP readings (micro second)
Ht	= total tree height (m)
HPVel	= log velocity from CSIRO's HP 3560A Dynamic Signal Analyzer (m/s)
Lgth	= log length (m)
logbden	= log basic density determined from discs cut from the ends of logs (kg/m^3)
LogE _{mean}	= overall stiffness of all boards sawn from the same log ($\text{GPa} \times 10^{-2}$)
LogFak	= log FAKOPP sound velocity (m/s)
P12J	= Pilodyn 12J penetration at breast height (mm)
P6J	= Pilodyn 6J penetration at breast height (mm)
MOE	= modulus of elasticity (stiffness) determined from clearwood specimens (MPa)
MOR	= modulus of rupture (strength) determined from clearwood specimens (MPa)
TreeFak	= tree FAKOPP sound velocity (m/s)

E. dunnii sawmill study – mean tree and log measurements													
	Tree data						Butt log data				Small clear specimen data		
age	tree	Ht	DBHOB	TreeFak	P6J	P12J	logbden	HPvel	LogFak	logEmean	MOR	MOE	AD density
9	2	21.2	24.3	1655	9.5	18.3	474	3333	3729	12.8	85.2	11152	578
9	3	20.6	21.6								99.4	11652	613
9	4	23.9	20.4	1860	10.3	19.8	505	3692	3907	13.8	92.6	11114	568
9	6	24.8	21.1	1786	11.0	23.0	480	3798	3878	14.9	105.7	14515	642
9	8	27.7	27.8	1903	10.0	18.0	516	3754	3952	14.9	102.6	11671	592
9	9	28.4	27.0	2005	12.0	21.3	537	3465	3677	11.4	117.2	16066	772
9	12	23.3	20.3	1840	10.3	21.5	495	3638	3979	14.9	90.1	10916	572
9	14	27.4	21.9	1816	13.5	25.5	442	3379	3777	10.5	98.8	13985	601
9	15	27.1	22.6								87.4	11824	560
9	16	27.0	31.0	1705	12.0	21.3	507	3323	3699	11.8	98.8	13524	619
9	18	25.1	24.6	1791	10.5	19.8	493	3780	3956	11.4	96.4	12468	612
9	19	22.5	21.2	1802	10.5	21.5	513	3738	3931	13.4	79.3	10986	635
9	20	28.0	28.3	1831	12.5	22.0	499	3685	3933	13.5	97.2	14032	607
9	21	26.9	24.3	1858	9.5	18.0	525	3766	3894	13.3	121.3	14138	788
9	22	26.1	21.6	1688	11.3	21.3	516	3646	3767	12.7	89.5	11122	582
9	23	27.9	24.4	1824	10.5	19.3	547	3545	4078	14.7	124.8	18463	801
9	24	24.6	25.0	1801	12.5	22.3	489	3830	3923	11.8	95.8	11913	603
9	25	26.2	26.5	1712	11.5	21.0	480	3439	3698	9.9	98.1	11611	616
9	26	26.5	25.4	1928	10.5	19.8	534	3491	3866	13.3	123.8	18203	730
9	27	26.2	21.3	1972	9.3	18.0	542	3806	4092	17.1	129.0	18710	776
9	28	24.1	20.5	1861	10.5	18.3	526	3902	4093	14.5	113.1	15662	673
9	30	26.1	23.6	1899	10.8	19.0	529	3820	4048	14.2	115.7	15740	663
9	31	24.2	22.8	1753	12.3	21.0	477	3579	3686	7.8	118.1	14515	755
9	36	26.2	22.5	1910	10.3	21.0	489	3572	3929	10.9	100.6	14032	631
9	37	26.4	20.9	1969	9.3	19.0	572			14.3	133.9	16840	745
9	42	22.1	21.3	1763	12.0	22.3	474	3605	3712	12.6			
9	45	29.1	28.4	1811	11.0	20.5	494	3357	3703	10.9	96.3	12853	619
9	46	26.5	20.2	2041	8.5	16.8	559	4058	4279	14.6	118.5	16410	787
9	49	26.0	22.8	1639	12.5	22.3	455	3471	3698	13.1	88.1	10194	576
9	50	24.8	21.4	1803	10.8	19.3	522		3801	13.3	102.7	13496	644
9	52	28.1	27.8	1766	11.5	21.0	499	3519	3855	12.9	101.6	13088	652
9	53	25.9	22.7	1891	11.3	18.0	488	3592	3828	11.9	100.7	13942	595
9	54	24.9	25.1	1878	13.0	24.5	502	3505	3877	12.8	81.7	11641	569
9	57	27.8	23.5	1933	9.5	16.8	577	3852	4156	17.2	133.4	17627	762
9	59	25.8	23.0	1914	10.0	20.5	494	3550	3895	13.4	107.5	13858	652
25	1	33.9	43.3	1553	9.3	17.0	648	3657	3952	14.9	136.1	16434	874
25	3	31.6	30.7	1704	8.5	16.8	598	3895	3924	16.9			
25	5	29.5	39.9	1240	10.3	19.0	607	3586	3959	13.1	130.6	17363	817
25	6	31.3	37.5	1605	10.5	20.0	561	3511	3899	13.3	117.4	14037	738
25	7	32.7	42.5	1868	8.8	16.8	656	3866	4164	17.4	133.5	17731	862
25	9	29.4	32.7	1773	10.5	21.3	547	3551	3792	14.5	99.8	13816	737
25	14	29.3	43.9	1154	11.5	20.8	568	3680	3903	17.6	105.3	14172	691
25	15	26.8	37.7	1756	11.3	20.0	565	3424	3688	13.9	106.5	12898	677
25	17	27.3	34.7	1363	12.3	21.5	559	3034	3298	9.9			
25	20	31.8	42.1	1943	8.0	15.5	661	3465	4002	17.8	143.4	15853	866
25	21	31.6	43.1	1916	10.0	16.8	597	3806	4188	17.0	123.2	17587	848
25	23	29.0	36.0	1776	9.5	17.8	546	3294	3525	12.5			
25	24	27.9	28.2	1874	8.0	16.0	634	3990	4254	15.3	99.6	14184	830
25	25	28.3	33.4	1635	11.3	18.8	552	3157	3662	13.9			
25	27	31.1	50.6	894	11.0	18.3	553	3074	3475	12.3			
25	28	28.7	45.8	1905	11.0	18.3	593	3618	3776	14.9	120.9	15311	756
25	29	21.4	27.0	908	10.0	20.0	584	2765	3527	11.9			
25	33	30.4	32.8	1795	9.5	16.8	588	3646	3939	17.1	115.0	13611	771
25	34	35.1	40.8	1477	8.5	15.0	620	4543	3966	15.1	129.1	15932	852
25	36	35.6	44.3	957	10.5	16.8	641	3898	4138	16.3	124.1	15483	848
25	37	35.6	44.2	1798	9.3	16.8	609	3492	3738	13.9	118.8	13611	724
25	38	34.9	41.2	1825	9.8	15.8	596	3741	4076	14.5	145.2	16971	838
25	39	37.2	40.5	1870	9.8	17.5	604	3890	3998	19.0	127.5	15669	711
25	40	32.2	43.4	1894	9.3	15.8	624	3710	3915	17.3			
25	44	32.4	38.2	1777	10.5	17.8	594	3710	3873	15.3	128.4	15489	762
25	45	30.7	49.9	1905	10.5	16.8	605	3650	3980	16.4	124.9	14647	775
25	48	34.6	42.8	1817	9.0	15.8	615	3643	4035	17.0	156.2	17184	873

E. dunnii sawmill study – mean tree and log measurements													
	Tree data						Butt log data				Small clear specimen data		
age	tree	Ht	DBHOB	TreeFak	P6J	P12J	logbden	HPvel	LogFak	logEmean	MOR	MOE	AD density
25	50	32.8	48.3	1897	10.0	17.8	568	4103	3761	15.4	112.9	15141	815
25	51	35.6	39.5	1872	10.8	16.8	585	3780	4087	15.6	112.9	15795	724
25	52	24.1	22.0								106.0	11617	788
25	53	36.9	49.0	1868	10.0	16.0	660	3900	4318	19.6	149.9	19073	829
25	56	35.5	47.6	1659	11.3	18.0	573	3329	3833	14.8	121.6	13751	733
25	57	32.2	32.4	1881	8.0	13.8	618		4003	12.9	128.4	16480	808
25	58	32.0	35.0	1865	10.3	16.3	628		3939	17.6			
25	60	31.6	34.3	1838	9.3	16.8	605	3869	4049	15.5	108.0	14184	736

		Board data										Tree data						Log data					
		Before drying			After drying						Pilodyn												
Board	Size (mm)	HPVel (m/s)	FakVel (m/s)	MC% (%)	FakVel (m/s)	Emin (GPa)	Emean (GPa)	Age (yrs)	Tree	FakVel (m/s)	6J (mm)	12J (mm)	Bden (kg/m³)	HPVel (m/s)	Fak1 (µs)	Fak2 (µs)	Lgth (m)	FakVel (m/s)					
B1-8	85x22	3089	3248	19	4052	7.77	12.30	25	23	1776	9.5	17.8	546	3294	1557	1507	5.40	3525					
B1-2	85x22	3285	3187	15	4392	5.89	12.63	25	23	1776	9.5	17.8	546	3294	1557	1507	5.40	3525					
B2-10	85x22	3802	3725	17	4426	10.01	17.15	25	45	1905	10.5	16.8	605	3650	1323	1335	5.29	3980					
B2-11	85x22	3612	3633	14	4654	9.38	16.55	25	45	1905	10.5	16.8	605	3650	1323	1335	5.29	3980					
B2-20	85x22	3936	3893	13	4914	14.77	17.09	25	45	1905	10.5	16.8	605	3650	1323	1335	5.29	3980					
B2-3	85x22	3439	3481	16	3964	11.60	14.98	25	45	1905	10.5	16.8	605	3650	1323	1335	5.29	3980					
B3-15	85x22	3606	3666	16	4392	13.39	17.40	25	28	1905	11.0	18.3	593	3618	1480	1338	5.32	3776					
B3-8	85x22		3186	14	3768	8.12	12.38	25	28	1905	11.0	18.3	593	3618	1480	1338	5.32	3776					
B4-14	85x22	3604	3860	17	4755	10.70	17.26	25	40	1894	9.3	15.8	624	3710	1335	1357	5.27	3915					
B5-5	85x22	4350	4225	16	4886	17.57	20.28	25	39	1870	9.8	17.5	604	3890	1325	1326	5.30	3998					
B5-3	85x22	3952	3879	12	4440	12.77	18.04	25	39	1870	9.8	17.5	604	3890	1325	1326	5.30	3998					
B5-9	85x22	4028	3969	13	4543	12.61	18.78	25	39	1870	9.8	17.5	604	3890	1325	1326	5.30	3998					
B8-1	85x22	3519	3533	13	4554	11.55	12.64	9	52	1766	11.5	21.0	499	3519	1356	1394	5.30	3855					
B8-3	85x22	3383	3447	13	4493	10.66	13.12	9	52	1766	11.5	21.0	499	3519	1356	1394	5.30	3855					
B1-2	85x22	2646	3148	13	3649	4.70	8.53	25	17	1363	12.3	21.5	559	3034	1596	1667	5.38	3298					
B1-1	85x22	3024	3127	12	4006	8.40	11.22	25	17	1363	12.3	21.5	559	3034	1596	1667	5.38	3298					
B2-4	85x22	3512	3553	14	4338	13.51	15.79	25	51	1872	10.8	16.8	585	3780	1273	1355	5.37	4087					
B2-3	85x22	3866	3826	14	4906	12.61	15.45	25	51	1872	10.8	16.8	585	3780	1273	1355	5.37	4087					
B3-3	85x22	3827	3775	17	4411	12.86	16.65	25	3	1704	8.5	16.8	598	3895	1359	1383	5.38	3924					
B3-7	85x22	3820	3812	16	4563	14.97	17.18	25	3	1704	8.5	16.8	598	3895	1359	1383	5.38	3924					
B4-2	85x22	3895	3975	14	4984	11.64	16.18	25	5	1240	10.3	19.0	607	3586	1358	1370	5.40	3959					
B4-6	85x22	3046	3287	15	4403	8.22	9.99	25	5	1240	10.3	19.0	607	3586	1358	1370	5.40	3959					
B5-1	85x22	3663	3710	13	4333	13.73	15.62	25	34	1477	8.5	15.0	620	4543	1331	1352	5.32	3966					
B5-2	85x22	3418	3671	14	4421	7.61	14.61	25	34	1477	8.5	15.0	620	4543	1331	1352	5.32	3966					
B6-1	85x22	3814	3716	12	5027	12.84	16.51	9	8	1903	10.0	18.0	516	3754	1380	1373	5.44	3952					
B6-4	85x22	3688	3729	12	4699	14.19	15.25	9	8	1903	10.0	18.0	516	3754	1380	1373	5.44	3952					
B6-2	85x22	3570	3496	13	4736	11.70	12.88	9	8	1903	10.0	18.0	516	3754	1380	1373	5.44	3952					
B7-1	85x22	3603	3586	16	4895	13.47	14.69	9	26	1928	10.5	19.8	534	3491	1382	1396	5.37	3866					
B7-4	85x22	3276	3327	13	4257	10.71	11.85	9	26	1928	10.5	19.8	534	3491	1382	1396	5.37	3866					
G1-7	85x22	3698	3462	14	4451	8.40	12.89	25	57	1881	8.0	13.8	618		1367	1331	5.40	4003					
G2-11	85x22	3405	3528	13	4680	10.99	13.33	25	50	1897	10.0	17.8	568	4103	1456	1400	5.37	3761					

Board	Size (mm)	Board data						Tree data						Log data					
		Before drying			After drying			Tree	Pilodyn			Bden (kg/m³)	HPVel (m/s)	Fak1 (µs)	Fak2 (µs)	Lgth (m)	FakVel (m/s)		
		HPVel (m/s)	FakVel (m/s)	MC% (%)	FakVel (m/s)	Emin (GPa)	Emean (GPa)		Age (yrs)	FakVel (m/s)	6J (mm)							12J (mm)	
G2-15	85x22	3841	3864	14	4726	13.63	17.15	25	50	1897	10.0	17.8	568	4103	1456	1400	5.37	3761	
G2-3	85x22	3673	3758	14	4986	12.38	15.78	25	50	1897	10.0	17.8	568	4103	1456	1400	5.37	3761	
G3-2	85x22	3119	3263	14	4552	7.44	11.16	25	9	1773	10.5	21.3	547	3551	1400	1395	5.30	3792	
G3-3	85x22	3592	3642	17	4721	15.55	17.90	25	9	1773	10.5	21.3	547	3551	1400	1395	5.30	3792	
G4-1	85x22	3712	3876	19	4339	6.61	14.29	25	7	1868	8.8	16.8	656	3866	1295	1270	5.34	4164	
G4-7	85x22	3952	4054	15	4557	7.95	17.66	25	7	1868	8.8	16.8	656	3866	1295	1270	5.34	4164	
G4-4	85x22	4444	4174	16	5119	18.48	20.21	25	7	1868	8.8	16.8	656	3866	1295	1270	5.34	4164	
G5-3	85x22	3551	3514	13	4112	9.37	14.52	25	37	1798	9.3	16.8	609	3492	1413	1444	5.34	3738	
G5-1	85x22	3665	3683	12	4350	9.66	14.19	25	37	1798	9.3	16.8	609	3492	1413	1444	5.34	3738	
G5-6	85x22	3142	3192	15	3937	8.27	10.98	25	37	1798	9.3	16.8	609	3492	1413	1444	5.34	3738	
G5-13	85x22	3590	3710	13	4404	10.71	15.81	25	37	1798	9.3	16.8	609	3492	1413	1444	5.34	3738	
G7-1	85x22	3671	3819	14	4859	14.09	15.39	9	37	1969	9.3	19.0	572						
G9-6	85x22	3334	3169	16	4137	8.99	10.68	9	9	2005	12.0	21.3	537	3465	1447	1452	5.33	3677	
G9-3	85x22	3486	3387	12	4384	11.42	12.08	9	9	2005	12.0	21.3	537	3465	1447	1452	5.33	3677	
P1-6	85x22	2846	3193	16	4057	9.93	13.90	25	25	1635	11.3	18.8	552	3157	1452	1470	5.35	3662	
P2-3	85x22	3231	3616	16	4703	9.18	14.26	25	24	1874	8.0	16.0	634	3990	1280	1221	5.32	4254	
P2-1	85x22	3799	3938	19	4714	10.33	16.31	25	24	1874	8.0	16.0	634	3990	1280	1221	5.32	4254	
P3-5	85x22		2894	13	3780	6.52	9.34	25	27	894	11.0	18.3	553	3074	1550	1500	5.30	3475	
P3-8	85x22	3631	3445	17	4690	11.64	14.39	25	27	894	11.0	18.3	553	3074	1550	1500	5.30	3475	
P3-2	85x22	3358	3397	19	4092	9.60	13.13	25	27	894	11.0	18.3	553	3074	1550	1500	5.30	3475	
P3-7	85x22	3439	3269	14	4324	10.28	12.29	25	27	894	11.0	18.3	553	3074	1550	1500	5.30	3475	
P4-9	85x22	3819	3795	12	4522	11.12	13.26	25	38	1825	9.8	15.8	596	3741	1313	1332	5.39	4076	
P4-4	85x22	3772	3731	19	4268	9.05	15.65	25	38	1825	9.8	15.8	596	3741	1313	1332	5.39	4076	
P5-1	85x22	3759	3649	14	4324	10.72	15.04	25	44	1777	10.5	17.8	594	3710	1370	1367	5.30	3873	
P5-9	85x22	3891	3751	16	4295	12.58	15.53	25	44	1777	10.5	17.8	594	3710	1370	1367	5.30	3873	
P7-1	85x22	3520	3445	15	4464	9.78	11.20	9	25	1712	11.5	21.0	480	3439	1433	1455	5.34	3698	
P7-3	85x22	2979	2921	14	4050	7.71	8.61	9	25	1712	11.5	21.0	480	3439	1433	1455	5.34	3698	
R1-6	85x22	3719	3561	15	4350	8.33	16.79	25	58	1865	10.3	16.3	628		1368	1369	5.39	3939	
R1-4	85x22	3935	3694	17	4442	10.18	18.34	25	58	1865	10.3	16.3	628		1368	1369	5.39	3939	
R2-2	85x22	3838	3649	15	4859	10.42	17.13	25	33	1795	9.5	16.8	588	3646	1328	1378	5.33	3939	
R3-10	85x22	3995	4015	16	5038	14.63	20.08	25	21	1916	10.0	16.8	597	3806	1275	1285	5.36	4188	
R3-4	85x22	3389	3331	14	4158	5.31	10.42	25	21	1916	10.0	16.8	597	3806	1275	1285	5.36	4188	
R3-13	85x22	3974	3923	13	4993	12.37	16.77	25	21	1916	10.0	16.8	597	3806	1275	1285	5.36	4188	

		Board data										Tree data					Log data						
		Before drying			After drying								Pilodyn										
Board	Size (mm)	HPVel (m/s)	FakVel (m/s)	MC% (%)	FakVel (m/s)	Emin (GPa)	Emean (GPa)	Age (yrs)	Tree	FakVel (m/s)	6J (mm)	12J (mm)	Bden (kg/m³)	HPVel (m/s)	Fak1 (µs)	Fak2 (µs)	Lgth (m)	FakVel (m/s)	FakVel (m/s)				
R4-1	85x22	3276	3388	17	4393	9.51	11.78	25	36	957	10.5	16.8	641	3898	1307	1274	5.34	4138	4138				
R4-12	85x22	4135	4085	16	5038	11.84	16.39	25	36	957	10.5	16.8	641	3898	1307	1274	5.34	4138	4138				
R4-3	85x22	4189	4238	18	5134	13.22	20.76	25	36	957	10.5	16.8	641	3898	1307	1274	5.34	4138	4138				
R5-1	85x22	3441	3520	19	4278	11.82	13.39	25	56	1659	11.3	18.0	573	3329	1372	1430	5.37	3833	3833				
R5-10	85x22	3700	3654	14	4565	14.01	16.28	25	56	1659	11.3	18.0	573	3329	1372	1430	5.37	3833	3833				
R7-5	85x22	3536	3476	12	4385	11.67	14.19	9	20	1831	12.5	22.0	499	3685	1354	1346	5.31	3933	3933				
R7-4	85x22	3520	3352	13	4469	11.36	12.84	9	20	1831	12.5	22.0	499	3685	1354	1346	5.31	3933	3933				
W1-1	85x22	3703	3744	12	4582	12.48	15.94	25	60	1838	9.3	16.8	605	3869	1292	1326	5.30	4049	4049				
W1-4	85x22	3999	3658	17	4462	10.48	15.15	25	60	1838	9.3	16.8	605	3869	1292	1326	5.30	4049	4049				
W2-1	85x22	3424	3436	18	4115	9.18	13.09	25	15	1756	11.3	20.0	565	3424	1479	1422	5.35	3688	3688				
W2-10	85x22	3478	3597	17	4500	11.44	14.79	25	15	1756	11.3	20.0	565	3424	1479	1422	5.35	3688	3688				
W3-7	85x22	3755	3859	19	5009	13.82	17.53	25	14	1154	11.5	20.8	568	3680	1372	1385	5.38	3903	3903				
W3-13	85x22	3917	3885	19	4725	8.67	17.68	25	14	1154	11.5	20.8	568	3680	1372	1385	5.38	3903	3903				
W4-5	85x22	3930	3746	16	4533	14.56	18.01	25	6	1605	10.5	20.0	561	3511	1390	1339	5.32	3899	3899				
W4-3	85x22	2675	3172	18	3777	6.27	8.52	25	6	1605	10.5	20.0	561	3511	1390	1339	5.32	3899	3899				
W5-3	85x22	3969	3942	13	4456	11.44	16.82	25	48	1817	9.0	15.8	615	3643	1330	1287	5.28	4035	4035				
W5-4	85x22	3171	3284	12	4150	7.89	11.10	25	48	1817	9.0	15.8	615	3643	1330	1287	5.28	4035	4035				
W5-10	85x22	4022	4142	15	4673	15.61	20.28	25	48	1817	9.0	15.8	615	3643	1330	1287	5.28	4035	4035				
W5-15	85x22	4211	4200	12	4809	16.93	19.89	25	48	1817	9.0	15.8	615	3643	1330	1287	5.28	4035	4035				
W7-4	85x22	2841	2976	15	4032	7.94	8.87	9	45	1811	11.0	20.5	494	3357	1439	1467	5.38	3703	3703				
W7-2	85x22	2968	3067	15	4204	7.38	9.07	9	45	1811	11.0	20.5	494	3357	1439	1467	5.38	3703	3703				
Y1-11	85x22	3852	3976	13	4475	16.96	19.86	25	20	1943	8.0	15.5	661	3465	1297	1367	5.33	4002	4002				
Y1-7	85x22	4066	4000	13	4691	14.31	17.27	25	20	1943	8.0	15.5	661	3465	1297	1367	5.33	4002	4002				
Y1-2	85x22	3349	3719	13	4444	8.41	16.34	25	20	1943	8.0	15.5	661	3465	1297	1367	5.33	4002	4002				
Y2-14	85x22	4102	4232	13	5319	14.81	20.04	25	53	1868	10.0	16.0	660	3900	1215	1226	5.27	4318	4318				
Y2-9	85x22	4102	4319	15	5168	10.65	17.36	25	53	1868	10.0	16.0	660	3900	1215	1226	5.27	4318	4318				
Y2-10	85x22	4004	3978	13	5072	15.34	19.78	25	53	1868	10.0	16.0	660	3900	1215	1226	5.27	4318	4318				
Y2-7	85x22	3738	3699	13	4887	13.92	15.61	25	53	1868	10.0	16.0	660	3900	1215	1226	5.27	4318	4318				
Y2-4	85x22	4150	4156	14	4921	16.11	20.50	25	53	1868	10.0	16.0	660	3900	1215	1226	5.27	4318	4318				
Y2-1	85x22	4301	4303	13	5165	23.27	24.57	25	53	1868	10.0	16.0	660	3900	1215	1226	5.27	4318	4318				
Y3-3	85x22	3376	3299	19	4131	11.94	14.04	25	29	908	10.0	20.0	584	2765	1536	1515	5.38	3527	3527				
Y3-1	85x22	2976	3107	19	3979	7.31	9.80	25	29	908	10.0	20.0	584	2765	1536	1515	5.38	3527	3527				
Y4-4	85x22	3539	3578	15	4445	10.84	15.10	25	1	1553	9.3	17.0	648	3657	1312	1370	5.30	3952	3952				

		Board data						Tree data						Log data					
		Before drying			After drying					Pilodyn									
Board	Size (mm)	HPVel (m/s)	FakVel (m/s)	MC% (%)	FakVel (m/s)	Emin (GPa)	Emean (GPa)	Age (yrs)	Tree	FakVel (m/s)	6J (mm)	12J (mm)	Bden (kg/m³)	HPVel (m/s)	Fak1 (µs)	Fak2 (µs)	Lgth (m)	FakVel (m/s)	
Y4-1	85x22	3752	3893	14	4403	8.05	15.65	25	1	1553	9.3	17.0	648	3657	1312	1370	5.30	3952	
Y4-3	85x22	3699	3451	16	4492	11.68	13.98	25	1	1553	9.3	17.0	648	3657	1312	1370	5.30	3952	
Y7-8	85x22	3284	3279	15	4179	9.12	11.43	9	16	1705	12.0	21.3	507	3323	1465	1433	5.36	3699	
Y7-1	85x22	3334	3335	14	4308	9.52	12.66	9	16	1705	12.0	21.3	507	3323	1465	1433	5.36	3699	
Y7-3	85x22	3165	3259	13	4315	10.21	11.23	9	16	1705	12.0	21.3	507	3323	1465	1433	5.36	3699	
Y9-2	85x22	3629	3492	13	4739	9.25	13.51	9	24	1801	12.5	22.3	489	3830	1343	1354	5.29	3923	
Y9-1	85x22	3275	3135	12	4158	9.28	10.19	9	24	1801	12.5	22.3	489	3830	1343	1354	5.29	3923	
B10-2	65x22	3520	3392	12	4834	10.86	13.41	9	19	1802	10.5	21.5	513	3738	1361	1356	5.34	3931	
B6-1	65x22	3687	3675	11	5073	9.05	14.27	9	12	1840	10.3	21.5	495	3638	1341	1348	5.35	3979	
B6-2	65x22	3729	3705	12	5079	13.29	14.95	9	12	1840	10.3	21.5	495	3638	1341	1348	5.35	3979	
B7-1	65x22	3579	3666	13	4982	11.17	13.81	9	4	1860	10.3	19.8	505	3692	1367	1356	5.32	3907	
B9-1	65x22	3477	3267	12	4515		7.55	9	31	1753	12.3	21.0	477	3579	1438	1443	5.31	3686	
B9-2	65x22	3138	2973	12	4318	5.81	8.14	9	31	1753	12.3	21.0	477	3579	1438	1443	5.31	3686	
BR10-1	65x22	3478	3572	12	4935	11.59	13.68	9	21	1858	9.5	18.0	525	3766	1375	1388	5.38	3894	
BR10-3	65x22	3562	3466	11	4772	9.39	12.92	9	21	1858	9.5	18.0	525	3766	1375	1388	5.38	3894	
BR8-2	65x22	3621	3597	13	5018	11.14	13.64	9	54	1878	13.0	24.5	502	3505	1375	1364	5.31	3877	
BR8-3	65x22	3502	3501	13	4930	9.37	11.98	9	54	1878	13.0	24.5	502	3505	1375	1364	5.31	3877	
BR9-2	65x22	3225	3221	12	4642	9.28	10.19	9	36	1910	10.3	21.0	489	3572	1349	1349	5.30	3929	
BR9-3	65x22	3393	3312	12	4709	9.57	11.66	9	36	1910	10.3	21.0	489	3572	1349	1349	5.30	3929	
G10-2	65x22	3814	3827	12	5085	11.03	13.52	9	49	1639	12.5	22.3	455	3471	1420	1468	5.34	3698	
G10-3	65x22	3444	3456	13	4896	10.52	12.67	9	49	1639	12.5	22.3	455	3471	1420	1468	5.34	3698	
G6-1	65x22	3427	3179	13	4811	10.70	12.84	9	50	1803	10.8	19.3	522		1387	1402	5.30	3801	
G6-3	65x22	3511	3184	12	4855	12.55	13.78	9	50	1803	10.8	19.3	522		1387	1402	5.30	3801	
G7-2	65x22	3739	3534	12	5134	7.92	13.13	9	37	1969	9.3	19.0	572						
G8-2	65x22	3443	3344	12	4802	8.61	12.04	9	53	1891	11.3	18.0	488	3592	1395	1390	5.33	3828	
G8-3	65x22	3587	3580	12	4982	8.02	11.69	9	53	1891	11.3	18.0	488	3592	1395	1390	5.33	3828	
P10-1	65x22	4169	4004	11	5138	14.64	16.78	9	57	1933	9.5	16.8	577	3852	1287	1273	5.32	4156	
P10-3	65x22	4237	4019	12	5101	12.98	17.54	9	57	1933	9.5	16.8	577	3852	1287	1273	5.32	4156	
P8-2	65x22	4028	4052	12	5326	11.13	14.61	9	46	2041	8.5	16.8	559	4058	1243	1253	5.34	4279	
P9-2	65x22	3528	3456	12	4845	10.72	12.61	9	18	1791	10.5	19.8	493	3780	1338	1377	5.37	3956	
P9-4	65x22	3081	3145	12	4528	8.26	10.17	9	18	1791	10.5	19.8	493	3780	1338	1377	5.37	3956	
R10-1	65x22	4000	3769	12	5036	10.34	15.66	9	28	1861	10.5	18.3	526	3902	1322	1312	5.39	4093	
R10-2	65x22	3486	3675	12	5030	11.35	13.28	9	28	1861	10.5	18.3	526	3902	1322	1312	5.39	4093	

		Board data						Tree data						Log data					
		Before drying			After drying					Pilodyn									
Board	Size (mm)	HPVel (m/s)	FakVel (m/s)	MC% (%)	FakVel (m/s)	Emin (GPa)	Emean (GPa)	Age (yrs)	Tree	FakVel (m/s)	6J (mm)	12J (mm)	Bden (kg/m³)	HPVel (m/s)	Fak1 (µs)	Fak2 (µs)	Lgth (m)	FakVel (m/s)	
R6-1	65x22	3655	3186	12	4874	8.97	13.37	9	59	1914	10.0	20.5	494	3550	1332	1333	5.19	3895	
R8-1	65x22	3376	3573	13	4936	11.74	13.55	9	2	1655	9.5	18.3	474	3333	1423	1414	5.29	3729	
R8-2	65x22	3452	3384	12	4856	8.18	12.08	9	2	1655	9.5	18.3	474	3333	1423	1414	5.29	3729	
R9-2	65x22	3799	3674	11	5102	11.15	13.73	9	22	1688	11.3	21.3	516	3646	1401	1429	5.33	3767	
R9-4	65x22	3350	3242	12	4675	9.97	11.75	9	22	1688	11.3	21.3	516	3646	1401	1429	5.33	3767	
W10-3	65x22	3528	3559	14	4857	9.63	12.67	9	30	1899	10.8	19.0	529	3820	1323	1320	5.35	4048	
W10-4	65x22	3868	3896	13	5202	13.67	15.69	9	30	1899	10.8	19.0	529	3820	1323	1320	5.35	4048	
W7-1	65x22	3765	3525	13	4971	12.71	14.73	9	45	1811	11.0	20.5	494	3357	1439	1467	5.38	3703	
W8-3	65x22	3856	3523	12	5134	10.86	14.86	9	23	1824	10.5	19.3	547	3545	1304	1276	5.26	4078	
W8-6	65x22	3722	3763	12	5072	12.85	14.59	9	23	1824	10.5	19.3	547	3545	1304	1276	5.26	4078	
W9-1	65x22	3163	3070	13	4584	8.17	9.37	9	14	1816	13.5	25.5	442	3379	1422	1400	5.33	3777	
W9-3	65x22	3367	3231	12	4790	10.50	11.65	9	14	1816	13.5	25.5	442	3379	1422	1400	5.33	3777	
Y10-2	65x22	3503	3570	12	4994	10.83	13.42	9	42	1763	12.0	22.3	474	3605	1447	1452	5.38	3712	
Y10-3	65x22	3275	3336	12	4747	10.67	11.78	9	42	1763	12.0	22.3	474	3605	1447	1452	5.38	3712	
Y6-1	65x22	4136	4066	12	5302	17.89	18.94	9	27	1972	9.3	18.0	542	3806	1320	1300	5.36	4092	
Y6-2	65x22			12		12.86	15.17	9	27	1972	9.3	18.0	542	3806	1320	1300	5.36	4092	
Y8-1	65x22	3908	3944	13	5223	10.99	13.96	9	6	1786	11.0	23.0	480	3798	1364	1380	5.32	3878	
Y8-3	65x22	3781	3689	12	5078	11.92	15.78	9	6	1786	11.0	23.0	480	3798	1364	1380	5.32	3878	

Appendix B Pinus radiata measurements

Notations:

DBHOB	= diameter at breast height over bark
HitVel	= log HITMAN sound velocity (m/s)
JugoVel	= log velocity from CSIRO's HP 3560A Dynamic Signal Analyzer (m/s)
LED	= large end diameter under bark (cm)
LogE _{mean}	= overall stiffness of all boards sawn from the same log (GPa x 10 ⁻²)
LogE _{mean} (SAP)	= overall stiffness of "SAP" boards sawn from the same log (GPa x 10 ⁻²)
LogE _{mean} (HI)	= overall stiffness of "HI" boards sawn from the same log (GPa x 10 ⁻²)
LogFak	= log FAKOPP sound velocity (m/s)
P12J	= Pilodyn 12J penetration at breast height (mm)
P6J	= Pilodyn 6J penetration at breast height (mm)
SED	= small end diameter under bark (cm)
TreeFak	= tree FAKOPP sound velocity (m/s)
Tot Ht	= total tree height (m)

Overall log wood properties (mean values of all boards from each log)											
Tree	LogEmean (GPa/100)	LogFak (m/s)	HitVel (m/s)	JugoVel (m/s)	TreeFak (m/s)	P12J (mm)	P6J (mm)	DBHOB (cm)	LogEmean Sap (GPa/100)	LogEmean HI (GPa/100)	Tot Ht (m)
1	840	3698	3350	3410	2530	19.8	10.5	43.5	995	582	31.8
2	793	3669	3370	3488	2727	20.3	12.5	43.7	833	674	33.8
3	816	3588	3210	3367	2355	21.5	12.0	47.1	930	588	31.2
4	846	3799		3564	2788	19.5	10.0	34.9	1032	599	33.1
6	997	3402	3200	3270	2256	20.5	12.3	54.0	997		34.3
7	1173	4016	3710	3906	2791	17.0	11.8	32.9	1334	690	31.7
8	833	3570	3300	3376	2755	20.8	11.3	44.4	907	687	33.3
9	956	3955	3580	3843	2705	19.5	10.5	36.8	1130	783	35.1
10	835	3720	3310	3416	2099	20.3	12.0	42.0	1008	574	34.8
11	773	3626	3280	3753	2742	21.5	11.0	39.1	938	609	32.9
12	881	3778	3480	3684	2560	16.8	9.5	43.6	985	674	34.9
13	796	3615	3340	3419	2725	19.0	12.5	51.9	923	669	33.0
14	810	3584	3250	3413	2515	21.8	12.8	52.8	936	557	35.5
15	940	4134	3790	3899	3261	18.8	9.8	32.9	1173	708	34.2
16	720	3424	2990	3108	2519	21.5	13.3	51.1	823	515	33.0
17	766	3187	2900	3008	2573	20.3	11.5	55.1	797	484	31.7
18	825	3657	3230	3275	2676	21.0	12.0	50.5	930	616	36.9
19	804	3752	3470	3503	2597	21.5	12.3	38.7	904	604	31.1
20	973	4073	3770	3885	3009	20.5	10.0	29.2	1449	814	29.7
21	854	3987	3620	3857	2745	19.3	10.0	32.5	1251	656	29.8
22	1025	3991	3620	3801	2822	20.3	10.8	38.6	1232	714	31.3
23	799	3715	3360	3500	1884	22.3	14.0	45.8	922	614	32.7
24	922	3783	3520	3676	2857	21.3	10.5	30.9	1036	581	30.4
25	887	4092	3690	3850	2879	20.5	13.3	35.2	1178	742	29.2
26	949	3936	3600	3732	2506	20.8	13.5	41.0	1057	680	32.0
27	977	3977	3670	3780	2775	20.5	12.8	29.6	977		28.6
28	1091	3924	3680	3842	2820	20.8	12.3	33.4	1181	821	33.4
29	930	3840	3560	3794	2765	19.5	10.8	33.9	1117	554	32.4
30	890	3976	3490	3774	2611	19.5	11.0	41.9	967	658	34.6
31	741	3568	3290	3316	2558	21.5	12.5	41.8	845	480	30.5
32	1025	3850	3490	3612	2825	20.0	12.3	35.9	1025		31.7
33	877	3643	3460	3556	2775	21.0	11.3	43.2	1000	713	35.9
34	719	3665	3300	3438	2755	22.5	13.3	44.2	851	588	34.4
35	816	3770	3370	3509	2953	19.8	11.5	33.5	1091	541	28.5
36	904	3691	3410	3556	2786	18.8	11.0	38.0	1000	521	32.1
37	834	3725	3310	3394	2586	21.3	12.0	36.5	973	626	29.1
38	759	3602	2960	3647	2562	26.0	12.3	41.1	866	652	31.4
39	1004	3996	3570	3753	2683	20.5	10.5	39.8	1029	906	35
40	700	3652	3240	3348	2568	21.5	12.5	30.9	792	515	26.8
41	818	3717	3410	3552	2564	24.5	13.5	42.3	929	652	33.4
42	887	3843	3530	3683	2571	23.8	14.5	41.6	1010	723	30.5
43	867	3795	3360	3450	2717	20.0	12.8	44.3	916	722	34.4
44	756	3698	3410	3580	2582	25.0	14.8	44.9	846	622	34.4
45	891	4061	3720	3857	2799	22.8	11.8	34.6	1364	655	34.5
46	968	3707	3470	3618	2791	22.0	11.8	44.8	1008	847	35.3
47	1038	3901	3630	4010	2830	19.0	11.5	33.0	1316	761	32.5
48	828	3612	3360	3531	2353	20.0	12.3	48.1	919	676	32.8
49	811	3696	3410	3634	2622	22.8	12.3	40.9	966	605	33.9
50	688	3537	3210	3364	2750	25.0	14.5	41.9	816	560	32.6
51	852	3719	3290	3447	2918	23.3	12.5	42.9	964	628	32.4

Overall log wood properties (mean values of all boards from each log)											
Tree	LogEmean (GPa/100)	LogFak (m/s)	HitVel (m/s)	JugoVel (m/s)	TreeFak (m/s)	P12J (mm)	P6J (mm)	DBHOB (cm)	LogEmean Sap (GPa/100)	LogEmean HI (GPa/100)	Tot Ht (m)
52	864	3624	3320	3453	2595	23.0	12.5	45.8	977	721	34.1
53	762	3572	3210	3257	2486	22.3	14.3	49.9	852	627	35.7
54	887	3514	3230	3247	2740	20.8	12.3	55.7	994	638	36.1
55	783	3814	3370	3618	2534	20.0	11.8	37.1	928	637	33.8
56	979	3895	3620	3298	2765	20.8	10.8	35.2	1150	722	31.2
57	903	3813	3430	3578	2804	20.0	11.5	35.8	981	591	32.9
58	862	3750	3420	3450	2408	20.5	11.8	45.2	983	681	33.8
59	844	3753	3500	3850	2806	18.5	10.5	37.4	975	648	33.9
60	1045	3832	3670	3830	2801	20.3	12.0	36.8	1122	814	36.4
61	909	3870	3520	3444	2530	21.0	10.3	37.8	958	615	32.6
62	844	3700	3440	3531	2830	19.5	10.5	38.8	891	610	34.9
63	869	3748	3440	3556	2812	19.0	12.5	33.8	869		30.2
64	876	3638	3420	3539	2674	19.3	12.0	45.6	1048	662	31.6
65	899	3936	3470	3565	2660	18.0	11.3	39.2	941	608	33.1
66	847	3686	3390	3533	2752	21.3	12.8	44.6	1009	645	35.1
67	896	4136	3690	3969	3033	19.8	10.8	25.8	896		23.9
68	867	3678	3260	3509	2760	20.0	11.8	37.7	962	581	28.1
69	832	3712	3380	3410	2732	20.8	12.5	48.4	917	664	34.7
71	752	3439	3120	3191	2437	22.3	12.8	46.3	863	584	33.4
72	864	3603	3220	3348	2525	24.5	14.3	37.4	906	615	27.2
73	791	3497	3200	3354	2547	21.0	12.0	41.9	959	538	30.9
74	795	3646	3240	3370	2465	20.3	11.5	42.0	947	567	32.8
78	806	3599	3260	3364	2492	22.5	12.8	46.9	914	591	35.6
79	660	3887	3520	3676	2568	21.8	11.5	26.6		660	30.0
80	631	3298	2950	3008	2257	23.8	12.5	46.4	767	494	32.7
81	770	3517	3190	3404	2249	23.0	12.0	40.3	876	557	33.8
82	750	3506	3150	3219	2459	19.5	12.5	44.6	870	568	34.1
83	637	3108	2890	2969	2340	21.8	12.3	49.0	706	451	21.6
84	994	3863	3580	3679	2817	18.0	10.8	32.8	994		29.7
86	708	3359	3020	3164	2500	21.0	11.5	52.4	811	528	32.4
87	678	3284	3090	3242	2122	22.0	13.5	46.3	818	504	34.3
88	831	3532	3270	3432	2970	22.8	13.5	33.8	900	622	27.8
90	778	3345	3020	3136	2625	25.5	13.3	42.7	896	481	33.9
91	638	3262	2880	2992	2586	21.5	12.3	46.5	727	503	31.9
92	811	3881	3540	3724	2653	23.3	11.3	28.8	1027	596	26.9
93	927	3750	3470	3509	2703	19.0	12.3	33.8	1205	650	34.6
94	894	3718	3450	3565	2650	18.5	10.0	26.1	1044	595	34.1
95	825	3768	3450	3515	2506	19.0	12.0	36.3	958	692	31.1
96	727	3482	3210	3422	2562	21.0	14.0	38.5	885	570	32.3
97	890	3489	3190	3264	2385	20.8	12.8	48.8	1006	579	31.3
98	971	3853	3620	3801	2786	20.3	10.0	30.2	1098	590	31.5
99	729	3790	3410	3661	2669	21.0	12.0	32.2	904	555	33.4
100	856	3891	3430	3578	2101	24.0	12.5	34.6	976	617	35.2
101	811	3628	3280	3416	2591	21.0	13.0	44.9	924	585	35.0
102	716	3455	3190	3292	2575	22.5	14.0	31.3	716		24.0
103	807	3569	3280	3413	2542	22.0	13.0	41.0	897	536	30.0
104	881	3804	3370	3571	2681	21.0	13.0	36.3	935	719	32.8
105	774	3583	3160	3294	2636	21.3	13.0	40.0	876	603	30.1
106	804	3847	3560	3716	2806	20.8	11.0	32.2	976	747	28.8
107	781	3684	3000	3562	2646	21.5	11.5	41.4	950	555	35.8
108	831	3677	3390	3509	2727	23.3	13.0	39.7	927	703	35.6

Overall log wood properties (mean values of all boards from each log)											
Tree	LogEmean (GPa/100)	LogFak (m/s)	HitVel (m/s)	JugoVel (m/s)	TreeFak (m/s)	P12J (mm)	P6J (mm)	DBHOB (cm)	LogEmean Sap (GPa/100)	LogEmean HI (GPa/100)	Tot Ht (m)
109	831	3753	3410	3586	2712	20.0	12.3	32.2	1047	614	32.8
110	698	3320	3100	3191	2335	22.5	14.0	40.7	777	618	28.9
112	829	3740	3350	3456	2674	22.8	13.5	39.5	1014	644	29.0
113	783	3565	3190	3348	2573	25.3	13.0	36.4	910	592	17
114	876	4022	3640	4073	2833	20.5	11.3	28.7	876		30.5
115	757	3608	3260	3426	2588	22.5	12.0	39.6	873	564	30.1
116	552	3325	3010	3019	2521	25.0	16.0	33.2	652	501	22.1
118	834	4053	3620		2788	21.8	11.3	30.0	1065	602	31.7
119	694	3344	3040	3186	2451	24.3	14.3	46.5	778	528	36.7
120	775	3728	3370	3400	2618	23.3	12.8	38.8	913	591	32.8
121	1028	4071	3640	3634		21.0	12.3	27.6	1028		28.9
122	642	3303	2920		2538	23.3	15.0	46.7	759	495	31.1
123	939	3582	3250	3358	2657	24.0	13.5	38.2	939		32.9
124	904	3589	3390	3590	2620	24.8	13.5	32.6	1084	545	33.6
125	690	3463	3150	3253	2508	26.3	14.5	44.3	781	508	35.7
126	758	3723	3390	3422	2786	22.5	12.8	31.6	954	562	28.0
127	714	3302	3000	3091	2560	26.5	15.5	51.5	791	560	31.9
128	765	3625	3350	3683	2586	26.0	12.8	40.0	874	656	32.6
129	692	3515	3260	3447	2523	22.8	13.0	42.4	827	512	32.9
130	697	3537	3210	3342	2604	27.5	17.5	42.9	806	534	32.7
131	830	3265	2980	3036	2392	25.5	15.0	51.9	905	653	31.9
132	690	3702	3250	3278	2389	23.5	13.0	45.2	797	528	29.8
133	671	3240	2960	3097	2431	25.8	15.0	53.1	747	538	38.1
134	449	3570	3180	3332	2224	30.5	16.8	30.0		449	29.0
135	768	3617	3360	3419	2469	24.0	13.5	41.3	819	566	35.2
136	662	3193	2920	3058	2206	28.5	17.3	53.2	709	475	31.8
137	701	3893	3460	3584	2691	18.5	10.5	29.1		701	28.0
138	809	3456	3010	3213	2515	24.5	14.5	46.7	892	588	33.2
139	798	3710	3300	3376	2833	22.0	13.5	43.8	914	566	32.8
140	751	3522	3140	3326	2521	26.5	14.0	46.2	797	566	35.4
141	670	3317	3060	3318	2417	27.5	15.8	36.6	670		28.1
142	745	3545	3230	3308	2657	22.3	11.8	42.9	848	591	33.3
143	667	3315	2960	3019	2551	24.3	14.3	53.8	740	556	32.6
144	818	3491	3190	3314	2521	26.0	13.5	49.4	913	626	33.7
145	822	3789	3390	3586	2591	22.5	12.3	42.2	896	723	34.5
146	812	3827	3320	3629	2445	28.8	15.0	39.5	839	708	28.6
147	747	3569	3210	3231	2479	26.5	14.3	43.3	922	572	31.4
149	758	3695	3320	3373	2317	21.3	11.5	46.0	902	543	33.5
150	845	3735	3430	3635	2662	22.3	14.8	44.2	916	739	34.9
151	805	3589	3240	3398	2453	25.3	15.3	46.6	925	564	31.9
152	852	3526	3300	3320	2564	23.5	14.5	44.7	952	685	34.4
153	782	3497	3280	3419	2555	26.0	12.8	44.5	868	608	36.7
154	873	3694	3440	3506	2586	27.0	14.5	44.5	973	740	35.5
155	739	3655	3320	3426	2392	26.0	13.3	46.7	843	584	30.1
156	765	3610	3240	3372	2412	24.3	14.5	49.1	896	568	33.4
157	807	3685	3340	3447	2632	21.5	14.3	46.0	924	613	35.5
158	741	3690	3320	3432	2693	21.3	12.8	44.1	824	659	33.0
159	845	3609	3280	3441	2688	26.8	16.0	43.9	916	703	32.4
160	758	3385	3190	3264	2542	27.8	14.0	49.1	809	621	38.0
161	737	3329	3220	3404	2641	26.3	13.8	42.8	848	589	16.9
162	638	3346	3140	3264	2538	24.5	11.3	45.5	706	535	16.0

Overall log wood properties (mean values of all boards from each log)											
Tree	LogEmean (GPa/100)	LogFak (m/s)	HitVel (m/s)	JugoVel (m/s)	TreeFak (m/s)	P12J (mm)	P6J (mm)	DBHOB (cm)	LogEmean Sap (GPa/100)	LogEmean HI (GPa/100)	Tot Ht (m)
163	884	3792	3380	3552	2799	20.5	11.3	46.5	1006	640	35.5
165	779	3405	3100	3169	2562	23.8	13.8	50.8	869	569	37.6
166	747	3382	3130	3308	2639	24.3	15.5	44.6	839	562	33.3
167	844	3608	3200	3388	2646	23.8	14.0	49.1	921	536	34.0
168	888	3628	3330	3438	2609	20.3	11.5	41.5	932	622	31.9
169	750	3782	3520	3899	2740	18.5	11.5	32.7	861	529	25.9
170	869	3506	3150	3197	1961	22.5	12.0	47.9	943	672	30.2
171	728	3235	2960	3069	1858	25.5	14.3	51.5	766	422	30.0
172	739	3552	3230	3413	2346	22.3	13.0	44.3	807	627	33.8
173	826	3638	3130	3370	2618	22.0	14.3	44.9	918	640	33.1
174	788	3473	3060	3213	2381	24.8	13.5	55.0	846	636	34.7
175	872	3582	3340	3426	2525	23.3	14.3	43.8	981	690	36.7
176	782	3695	3350	3488	2691	23.0	12.8	36.0	1196	644	33.5
177	807	3393	3290	3426	2538	18.5	12.0	44.4	906	676	34.1
178	728	3518	3240	3432	2584	24.0	14.8	46.1	815	553	32.9
179	754	3639	3280	3392	2616	22.0	13.8	43.1	855	603	33.2
180	804	3519	3280	3295	2671	22.8	13.5	46.0	919	632	32.6
181	1025	3819	3450	3711	2620	21.0	13.0	38.8	1025		29.4
182	835	3472	3200	3275	2674	24.0	13.8	50.7	870	517	35.6
183	742	3582	3300	3435	2809	24.5	13.3	40.0	843	640	34.7
184	710	3505	3180	3312	2613	21.3	12.8	47.1	821	544	35.2
185	747	3467	3190	3292	2600	20.5	12.8	50.8	890	534	33.0
187	952	4032	3660	3906	3093	19.5	11.0	25.7	1182	723	26.0
188	767	3558	3220	3292	2082	20.3	12.0	41.7	801	684	34.1
189	704	3448	3130	3175	2396	20.8	13.3	48.6	792	572	31.3
190	766	3571	3190	3296	2463	22.5	13.0	46.2	904	558	34.1
191	853	3654	3280	3386	2616	19.5	11.5	40.9	965	629	33.3
193	644	3323	3070	3186	2498	23.5	12.8	41.6	722	412	29.8
194	687	3829	3520	3198	2686	19.3	10.3	31.3	895	478	28.4
196	927	3795	3400	3627	2901	22.5	12.5	37.2	989	557	32.5
197	810	3867	3440	3668	2196	19.0	10.3	38.7	993	628	26.4
199	774	3491	3150	3169	2575	22.5	11.5	46.5	968	580	31.6
200	866	3586	3280	3475	2627	19.0	10.3	38.3	866		32.2
201	882	3825	3480	3573	2745	18.0	9.8	40.7	1047	718	30.5
202	646	3615	3220	3352	2023	23.0	10.5	39.6	784	509	29.4
204	884	3769	3450	3621	2643	20.0	13.3	39.6	1106	707	32.6
205	671	3346	3120	3275	2322	25.3	14.5	45.1	748	515	36.7
206	1023	3686	3390	3593	2613	19.3	12.0	39.4	1023		34.0
207	680	3353	3150	3276	2667	24.3	12.0	33.4	872	488	30.6
208	700	3376	3060	3264	2618	22.5	12.5	43.6	784	561	29.5
209	953	3672	3400	3599	2822	23.5	13.5	34.1	1139	580	29.1
210	587	3186	2980	3147	2353	23.0	13.8	41.8	827	467	26.4
211	713	3383	3080	3286	2793	22.3	12.0	47.3	820	578	31.4
212	729	3723	3500	3676	2778	25.0	13.5	30.8	914	667	28.6
213	968	3711	3530	3683	2778	21.0	11.5	38.7	968		31.5
214	886	4173	3900	4025	3043	21.8	11.5	26.2	1220	663	35.6
215	732	3763	3450	3571	2913	23.8	13.8	36.6	924	539	30.8
216	807	3653	3340	3503	2801	24.8	14.5	41.5	951	590	38.2
217	892	4025	3580	3760	2742	21.5	11.5	36.8	1100	684	29.6
218	847	3589	3300	3379	2629	26.8	16.0	46.8	958	624	40.6
219	981	3966	3730	3725	3061	22.5	12.5	41.7	1134	712	33.8

Overall log wood properties (mean values of all boards from each log)											
Tree	LogEmean (GPa/100)	LogFak (m/s)	HitVel (m/s)	JugoVel (m/s)	TreeFak (m/s)	P12J (mm)	P6J (mm)	DBHOB (cm)	LogEmean Sap (GPa/100)	LogEmean HI (GPa/100)	Tot Ht (m)
220	913	4152	3840	3899	2982	16.8	10.5	30.6	1309	781	33.3
221	766	3739	3010	3571	2737	23.3	13.3	38.5	891	558	33.4
222	711	3871	3440	3556	2896	21.8	13.0	25.9	792	629	23.3
223	800	3757	3520	3696	2907	17.0	10.5	29.7	1018	583	33.6
224	744	3438	3270	3264	2500	22.3	12.0	43.2	916	573	37.1
225	916	3779	3400	3488	2735	20.0	14.5	40.5	1077	702	30.3
226	543	3846	3310	3614	2542	19.8	12.3	29.9		543	27.0
227	805	3742	3430	3515	2994	20.5	11.5	32.8	1213	601	33.2
228	681	3940	3620	3666	2899	18.8	11.8	33.2		681	36.4
229	756	3576	3430	3745	2913	19.5	11.3	34.8	1055	607	35.6
230	667	4077	3750	3857	3036	18.5	10.8	25.9		667	24.7
231	907	4058	3740	3913	2791	19.5	12.0	28.8	1078	735	28.7
232	737	4055	3750	3976	3077	20.5	11.0	30.2		737	34.8
233	637	3883	3600	3752	2857	18.8	11.3	28.3		637	30.0
234	706	4139	3940	4039	2979	19.3	10.0	23.7		706	26.7
235	769	3564	3330	3410	2768	17.5	10.0	38.7	890	528	36.5
236	778	3874	3540	3668	2988	20.8	12.0	35.3		778	34.5
237	757	3675	3490	3724	2571	21.5	13.8	51.3	853	565	33.8
238	628	3703	3330	3634	2437	25.3	13.3	32.5		628	26.0
240	810	3764	3440	3614	2705	22.5	13.5	44.9	954	595	36.2
241	718	3625	3320	3320	2377	18.0	11.5	43.5	849	553	34.4
242	627	3747	3560	3711	2997	21.8	13.3	35.3		627	39.1
243	726	3917	3600	3780	2703	19.3	8.8	31.1	1026	577	32.4
244	1011	3839	3580	3850	2953	20.8	10.3	41.7	1176	762	34.1
245	843	3965	3600	3668	2863	19.0	12.3	38.5	929	584	36.3
246	730	3871	3640	3745	2982	21.0	11.0	34.8	984	603	33.3
247	869	3803	3590	3578	2997	19.0	11.5	37.7	1017	648	28.7
248	916	4058	3700	3948	3112	17.5	11.3	33.2	1074	601	35.8
249	557	3530	3200	3304	2863	25.0	13.5	32.3		557	26.6
250	929	4234	3910	4088	2956	15.8	9.0	27.0		929	28.4
251	976	4163	3690	3941	2742	18.3	10.0	34.1	976		33.3
252	875	4083	3670	3948	2976	17.8	9.0	29.1	875		30.9
253	952	3579	3300	3432	2863	19.0	10.0	34.2	952		35.8
255	961	3716	3410	3696	2985	18.5	11.3	37.6	1149	584	32.4
256	759	3839	3450	3683	2715	20.8	12.5	39.4	864	619	30.8
257	937	3916	3540	3634	3052	17.8	11.3	37.3	1081	504	34.2
258	820	3654	3440	3447	2817	19.8	10.3	36.5	887	554	31.1
259	718	3523	3350	3599	2344	18.8	10.3	40.0	823	561	33.8
261	680	3616	3250	3500	2822	21.5	10.5	35.3	786	467	28.6
262	786	3866	3510	3689	2988	18.8	10.5	31.7	900	558	32.7
263	920	3986	3710	3788	2913	19.8	11.5	36.6	1357	629	33.8
265	839	4130	3770	3934	2896	17.5	10.8	28.8	1154	681	31.9
266	670	3476	3210	3370	2885	18.8	11.5	36.8	828	512	35.6
267	659	3602	3250	3444	2775	21.5	12.5	42.2	808	510	34.5
268	899	3501	3290	3509	2879	19.8	11.5	36.4	1085	525	31.5
269	709	4201	3860	4031	3205	16.0	7.5	22.2		709	27.3
270	640	3945	3600	3864	3122	18.8	10.8	25.2		640	27.6
271	769	3861	3420	3618	2814	20.3	10.5	32.1	853	517	36.8
273	592	3445	3210	3336	2720	23.3	12.5	32.9	796	490	27.9
274	785	3828	3440	3500	2691	21.0	11.3	34.4	1098	472	29.5
275	789	3459	3210	3484	2725	21.8	13.5	37.0	954	459	32.2

Overall log wood properties (mean values of all boards from each log)											
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276	754	4130	3770	4025	3215	17.5	10.3	23.6		754	32.1
277	856	3852	3740	3962	3074	18.0	10.0	32.7	1142	570	31.4
278	768	3652	3350	3689	2349	22.0	11.3	36.6	989	547	12.6
279	912	3867	3560	3739	2708	21.0	11.8	36.2	1159	666	29.7
280	757	3851	3650	3724	2899	19.0	11.3	33.8		757	32.9
282	702	3972	3580	3843	2849	24.8	13.5	29.6		702	28.7
283	771	3460	3160	3515	2502	21.5	12.5	49.3	886	541	37.2
284	528	3753	3450	3515	2379	20.0	12.3	28.3		528	32.0
286	987	3834	3580	3767	3018	17.0	10.3	36.3	1114	605	31.7
287	750	3822	3490	3606	3000	22.3	14.0	37.9	896	603	34.2
289	892	3873	3540	3717	2913	19.8	10.3	30.8	1140	645	38.2
290	890	4072	3680	3843	3030	18.5	10.5	29.2	1267	764	33.9
291	578	3291	2950	3064	2410	32.5	15.8	24.4	648	508	22.7
292	816	3579	3240	3537	2730	21.0	11.3	41.2	943	624	37.5
293	714	3539	3190	3286	2688	23.0	13.5	39.0	832	557	29.7
294	729	3915	3590	4142	2988	20.5	11.0	27.3	954	616	26.3
295	677	3375	3150	3336	2508	21.0	12.3	38.0	769	586	34.1
296	645	3522	3160	3348	2750	25.0	15.0	28.9	848	578	31.0
297	720	4023	3670	3913	3151	15.3	10.5	29.0		720	35.1
298	887	3726	3370	3514	2408	22.5	12.0	38.0	1027	652	29.6
299	839	3800	3450	3627	2667	20.3	12.3	36.7	985	620	34.7
300	680	3665	3280	3392	2469	23.8	13.8	38.0	794	605	35.0
301	717	3423	3160	3286	2634	23.5	12.5	45.5	767	566	13.2
302	751	3622	3370	3481	2560	23.8	14.5	38.6	818	615	31.4
303	517	3595	3200	3441	2595	26.0	16.0	31.4		517	30.4
304	719	3431	3190	3258	2820	20.0	12.5	47.7	806	544	32.1
305	826	3532	3300	3247	2924	22.5	13.5	40.8	938	677	35.2
306	751	3625	3310	3531	2783	20.8	12.5	41.0	813	565	34.8
308	1001	3869	3660	4150	2676	22.5	12.0	35.9	1254	749	32.9
309	858	3715	3450	3599	2778	21.0	11.0	35.5	1113	603	34.3
310	730	3452	3280	3419	2809	22.3	12.3	39.7	803	582	35.0
311	860	4222	3930	4198	2854	17.5	10.8	26.5		860	31.6
312	787	3846	3570	3892	2899	17.5	10.0	37.2	860	714	33.3
313	644	4051	3620	3830	2648	23.5	14.3	27.9		644	27.0
314	731	3701	3330	3465	2788	17.8	11.0	43.3	804	584	33.1
315	678	3717	3220	3453	2742	22.3	12.8	29.2	763	593	35.3
316	881	4088	3860	3864	3074	17.5	11.0	29.0	1119	644	30.9
317	798	3555	3280	3447	2671	18.0	12.0	37.2	828	624	34.4
318	831	3849	3540	3746	2860	20.8	11.5	40.0	1035	559	35.8
319	766	3376	3050	3086	2191	24.0	13.0	54.6	766		35.1
320	545	4100	3600	3892	2698	18.0	9.5	30.8		545	28.8
321	890	3698	3410	3578	3012	21.8	13.5	35.2	1022	627	31.0
322	808	3708	3400	3456	2750	20.3	12.0	26.1	1041	692	20.1
323	879	4126	3750	3864	2918	19.5	10.8	30.9	1358	719	28.9
324	760	4256	3980	4248	2836	17.5	9.0	29.9	1005	638	32.5
325	740	3999	3740	3873	2846	22.8	12.5	23.5	846	634	24.4
326	688	4196	3800	3983	3202	18.3	10.5	22.3		688	26.9
327	858	4096	3650	3864	2833	21.0	13.0	33.2	1153	564	31.9
328	938	4234	3870	4011	2893	20.3	12.3	35.6		938	31.8
329	880	3529	3360	3364	2828	18.5	11.8	42.2	1018	603	32.0
330	627	3767	3590	3773	2899	20.0	11.0	31.8		627	31.8

Overall log wood properties (mean values of all boards from each log)											
Tree	LogEmean (GPa/100)	LogFak (m/s)	HitVel (m/s)	JugoVel (m/s)	TreeFak (m/s)	P12J (mm)	P6J (mm)	DBHOB (cm)	LogEmean Sap (GPa/100)	LogEmean HI (GPa/100)	Tot Ht (m)
331	801	3772	3520	3704	2584	21.5	12.3	37.5	1106	598	31.2
333	668	3996	3670	3892	2836	17.3	9.0	27.4	793	605	30.6
334	735	3632	3490	3638	2791	20.3	11.3	35.4	904	565	33.1
336	908	4080	3620	3801	2994	17.8	12.8	38.2	1033	660	33.6
337	1007	3762	3560	3717	2849	17.3	10.0	34.2	1242	537	34.1
338	557	3699	3370	3597	2705	20.3	12.3	27.3		557	26.2
339	646	4161	3870	4046	3012	17.5	10.0	26.1		646	29.5
341	725	3562	3280	3419	2806	19.0	9.8	41.9	825	574	33.7
342	679	4150	3860	3976	3125	18.5	11.0	25.2		679	27.3
343	579	4261	3960	4053	3243	16.0	9.5	24.5		579	29.0
345	691	4020	3650	3948	3067	21.8	12.5	25.6		691	27.0

Individual Board Data

Board data					Tree data										Log data														
BoardID	Emean	Emin	Emedian	MGP	Prod	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
					Type								(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
1066	1337	1095	1364	12	SAP	244	2	2	44	956	38 A	2	494	522	508	2953	20.8	10.3	41.7	34.1	554	36	32.4	1454	1432	3.58	347.5	3839	3850
1068	903	711	893	10	SAP	64	3	4	4	12197	12038	2	562	560	561	2674	19.3	12	45.6	31.6	553	38.8	34.1	1488	1552	3.42	320	3638	3539
1069	755	619	757	10	SAP	23	3	2	2	12038	12447	4	693	899	796	1884	22.3	14	45.8	32.7	560	38.8	34.2	1507	1508	3.36	312.5	3715	3500
1070	773	654	763	10	SAP	23	3	2	2	12038	12447	4	693	899	796	1884	22.3	14	45.8	32.7	560	38.8	34.2	1507	1508	3.36	312.5	3715	3500
1071	760	632	755	10	SAP	173	3	2	10	80055	12197	3	582	564	573	2618	22	14.3	44.9	33.1	557	38.3	34.8	1510	1552	3.13	302.5	3638	3370
1072	845	716	843	10	SAP	173	3	2	10	80055	12197	3	582	564	573	2618	22	14.3	44.9	33.1	557	38.3	34.8	1510	1552	3.13	302.5	3638	3370
1074	1321	1060	1311	12	SAP	244	2	2	44	956	38 A	2	494	522	508	2953	20.8	10.3	41.7	34.1	554	36	32.4	1454	1432	3.58	347.5	3839	3850
1075	873	748	873	10	SAP	150	3	2	9	80055	12038	4	570	557	563.5	2662	22.3	14.8	44.2	34.9	555	38.5	35.3	1490	1482	3.43	327.5	3735	3635
1077	935	737	905	10	SAP	175	3	3	10	80055	12197	4	570	618	594	2525	23.3	14.3	43.8	36.7	557	37	33.1	1552	1558	3.34	307.5	3582	3426
1079	694	596	703	10	SAP	314	2	3	59	CR40	994	2	550	526	538	2788	17.8	11	43.3	33.1	550	38.2	32.3	1475	1497	3.33	315	3701	3465
1080	658	558	654	10	SAP	314	2	3	59	CR40	994	2	550	526	538	2788	17.8	11	43.3	33.1	550	38.2	32.3	1475	1497	3.33	315	3701	3465
1081	1120	733	1124	10	SAP	175	3	3	10	80055	12197	4	570	618	594	2525	23.3	14.3	43.8	36.7	557	37	33.1	1552	1558	3.34	307.5	3582	3426
1082	768	588	771	10	SAP	205	3	3	21	0	TSO	0	640	652	646	2322	25.3	14.5	45.1	36.7	555	38.5	34.4	1653	1664	3.12	295	3346	3275
1083	758	586	764	10	SAP	205	3	3	21	0	TSO	0	640	652	646	2322	25.3	14.5	45.1	36.7	555	38.5	34.4	1653	1664	3.12	295	3346	3275
1084	927	710	918	10	SAP	101	3	3	6	12447	12038	4	583	575	579	2591	21	13	44.9	35	560	36.8	32.1	1530	1557	3.28	305	3628	3416
1085	885	717	898	10	SAP	101	3	3	6	12447	12038	4	583	575	579	2591	21	13	44.9	35	560	36.8	32.1	1530	1557	3.28	305	3628	3416
1086	1121	972	1130	10	SAP	175	3	3	10	80055	12197	4	570	618	594	2525	23.3	14.3	43.8	36.7	557	37	33.1	1552	1558	3.34	307.5	3582	3426
1087	1108	808	1126	10	SAP	64	3	4	4	12197	12038	2	562	560	561	2674	19.3	12	45.6	31.6	553	38.8	34.1	1488	1552	3.42	320	3638	3539
1088	1259	972	1250	10	SAP	64	3	4	4	12197	12038	2	562	560	561	2674	19.3	12	45.6	31.6	553	38.8	34.1	1488	1552	3.42	320	3638	3539
1089	839	632	841	10	SAP	292	2	2	57	CR40	197 A	2	535	564	549.5	2730	21	11.3	41.2	37.5	557	36.4	33	1556	1557	3.24	317.5	3579	3537
1090	595	459	583	R	SAP	292	2	2	57	CR40	197 A	2	535	564	549.5	2730	21	11.3	41.2	37.5	557	36.4	33	1556	1557	3.24	317.5	3579	3537
1091	1198	896	1215	10	SAP	10	3	3	1	12038	12197	2	798	631	714.5	2099	20.3	12	42	34.8	551	37	33	1467	1495	3.31	310	3720	3416
1092	1205	971	1168	10	SAP	10	3	3	1	12038	12197	2	798	631	714.5	2099	20.3	12	42	34.8	551	37	33	1467	1495	3.31	310	3720	3416
1093	778	669	767	10	SAP	216	2	3	9	236 A	38 A	3	534	537	535.5	2801	24.8	14.5	41.5	38.2	556	34.9	31.8	1505	1539	3.34	315	3653	3503
1094	864	730	851	10	SAP	216	2	3	9	236 A	38 A	3	534	537	535.5	2801	24.8	14.5	41.5	38.2	556	34.9	31.8	1505	1539	3.34	315	3653	3503
1095	587	481	578	R	SAP	205	3	3	21	0	TSO	0	640	652	646	2322	25.3	14.5	45.1	36.7	555	38.5	34.4	1653	1664	3.12	295	3346	3275
1096	661	539	660	F4	SAP	205	3	3	21	0	TSO	0	640	652	646	2322	25.3	14.5	45.1	36.7	555	38.5	34.4	1653	1664	3.12	295	3346	3275
1098	867	621	853	10	SAP	208	3	6	21	0	TSO	0	586	560	573	2618	22.5	12.5	43.6	29.5	535	37	32.8	1575	1594	3.06	305	3376	3264
1099	739	563	756	10	SAP	190	3	3	11	80055	12447	4	614	604	609	2463	22.5	13	46.2	34.1	554	38.8	33.6	1545	1558	3.19	297.5	3571	3296
1100	730	619	721	10	SAP	190	3	3	11	80055	12447	4	614	604	609	2463	22.5	13	46.2	34.1	554	38.8	33.6	1545	1558	3.19	297.5	3571	3296
1101	898	782	875	10	SAP	153	3	3	9	80055	12038	3	564	610	587	2555	26	12.8	44.5	36.7	556	37	33.8	1630	1550	3.28	307.5	3497	3419
1102	911	750	906	10	SAP	153	3	3	9	80055	12038	3	564	610	587	2555	26	12.8	44.5	36.7	556	37	33.8	1630	1550	3.28	307.5	3497	3419
1103	837	682	826	10	SAP	8	3	3	1	12038	12197	1	528	561	544.5	2755	20.8	11.3	44.4	33.3	558	37	32.5	1526	1600	3.3	302.5	3570	3376
1104	902	752	900	10	SAP	8	3	3	1	12038	12197	1	528	561	544.5	2755	20.8	11.3	44.4	33.3	558	37	32.5	1526	1600	3.3	302.5	3570	3376
1105	1033	874	1044	10	SAP	173	3	2	10	80055	12197	3	582	564	573	2618	22	14.3	44.9	33.1	557	38.3	34.8	1510	1552	3.13	302.5	3638	3370
1106	1001	828	986	10	SAP	173	3	2	10	80055	12197	3	582	564	573	2618	22	14.3	44.9	33.1	557	38.3	34.8	1510	1552	3.13	302.5	3638	3370

Board data										Tree data										Log data													
BoardID	E	mean	E	min	E	median	MGP	Prod	Type	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
																	(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
1107	715	589	712	10	SAP	153	3	3	9	80055	12038	3	564	610	587	2555	26	12.8	44.5	36.7	556	37	33.8	1630	1550	3.28	307.5	3497	3419				
1108	741	626	730	10	SAP	153	3	3	9	80055	12038	3	564	610	587	2555	26	12.8	44.5	36.7	556	37	33.8	1630	1550	3.28	307.5	3497	3419				
1109	892	766	872	10	SAP	158	3	4	9	80055	12038	3	552	562	557	2693	21.3	12.8	44.1	33	558	37.8	32.7	1492	1532	3.32	307.5	3690	3432				
1110	1012	704	1020	10	SAP	158	3	4	9	80055	12038	3	552	562	557	2693	21.3	12.8	44.1	33	558	37.8	32.7	1492	1532	3.32	307.5	3690	3432				
1111	1036	746	1027	10	SAP	190	3	3	11	80055	12447	4	614	604	609	2463	22.5	13	46.2	34.1	554	38.8	33.6	1545	1558	3.19	297.5	3571	3296				
1112	1102	843	1099	10	SAP	190	3	3	11	80055	12447	4	614	604	609	2463	22.5	13	46.2	34.1	554	38.8	33.6	1545	1558	3.19	297.5	3571	3296				
1113	979	817	986	10	SAP	90	3	6	5	12197	12447	1	569	574	571.5	2625	25.5	13.3	42.7	33.9	555	36.5	32.7	1659	1659	3.02	282.5	3345	3136				
1114	994	716	1019	10	SAP	90	3	6	5	12197	12447	1	569	574	571.5	2625	25.5	13.3	42.7	33.9	555	36.5	32.7	1659	1659	3.02	282.5	3345	3136				
1115	951	762	933	10	SAP	51	3	5	3	12038	80055	3	514	514	514	2918	23.3	12.5	42.9	32.4	556	36.8	33.7	1488	1502	3.29	310	3719	3447				
1116	984	850	981	10	SAP	51	3	5	3	12038	80055	3	514	514	514	2918	23.3	12.5	42.9	32.4	556	36.8	33.7	1488	1502	3.29	310	3719	3447				
1117	771	679	777	10	SAP	41	3	1	3	12038	80055	2	600	570	585	2564	24.5	13.5	42.3	33.4	555	37.6	33.2	1483	1503	3.41	320	3717	3552				
1118	807	693	804	10	SAP	41	3	1	3	12038	80055	2	600	570	585	2564	24.5	13.5	42.3	33.4	555	37.6	33.2	1483	1503	3.41	320	3717	3552				
1119	792	677	796	10	SAP	101	3	3	6	12447	12038	4	583	575	579	2591	21	13	44.9	35	560	36.8	32.1	1530	1557	3.28	305	3628	3416				
1120	789	663	790	10	SAP	101	3	3	6	12447	12038	4	583	575	579	2591	21	13	44.9	35	560	36.8	32.1	1530	1557	3.28	305	3628	3416				
1121	928	848	921	10	SAP	190	3	3	11	80055	12447	4	614	604	609	2463	22.5	13	46.2	34.1	554	38.8	33.6	1545	1558	3.19	297.5	3571	3296				
1122	891	798	883	10	SAP	190	3	3	11	80055	12447	4	614	604	609	2463	22.5	13	46.2	34.1	554	38.8	33.6	1545	1558	3.19	297.5	3571	3296				
1123	877	742	892	10	SAP	211	3	6	21	0	TSO	0	541	533	537	2793	22.3	12	47.3	31.4	557	38.8	35.7	1659	1634	3.08	295	3383	3286				
1124	881	644	874	10	SAP	211	3	6	21	0	TSO	0	541	533	537	2793	22.3	12	47.3	31.4	557	38.8	35.7	1659	1634	3.08	295	3383	3286				
1125	806	715	801	10	SAP	191	3	4	11	80055	12447	4	562	585	573.5	2616	19.5	11.5	40.9	33.3	555	34.8	32.2	1525	1513	3.28	305	3654	3386				
1126	838	633	857	10	SAP	191	3	4	11	80055	12447	4	562	585	573.5	2616	19.5	11.5	40.9	33.3	555	34.8	32.2	1525	1513	3.28	305	3654	3386				
1127	976	755	986	10	SAP	23	3	2	2	12038	12447	4	693	899	796	1884	22.3	14	45.8	32.7	560	38.8	34.2	1507	1508	3.36	312.5	3715	3500				
1128	862	643	864	10	SAP	23	3	2	2	12038	12447	4	693	899	796	1884	22.3	14	45.8	32.7	560	38.8	34.2	1507	1508	3.36	312.5	3715	3500				
1129	723	591	733	10	SAP	142	3	6	8	12447	80055	3	552	577	564.5	2657	22.3	11.8	42.9	33.3	556	36.8	33	1587	1550	3.23	297.5	3545	3308				
1130	806	722	795	10	SAP	142	3	6	8	12447	80055	3	552	577	564.5	2657	22.3	11.8	42.9	33.3	556	36.8	33	1587	1550	3.23	297.5	3545	3308				
1131	973	786	966	10	SAP	64	3	4	4	12197	12038	2	562	560	561	2674	19.3	12	45.6	31.6	553	38.8	34.1	1488	1552	3.42	320	3638	3539				
1132	996	822	995	10	SAP	64	3	4	4	12197	12038	2	562	560	561	2674	19.3	12	45.6	31.6	553	38.8	34.1	1488	1552	3.42	320	3638	3539				
1133	1017	753	1007	10	SAP	8	3	3	1	12038	12197	1	528	561	544.5	2755	20.8	11.3	44.4	33.3	558	37	32.5	1526	1600	3.3	302.5	3570	3376				
1134	1163	1015	1164	10	SAP	8	3	3	1	12038	12197	1	528	561	544.5	2755	20.8	11.3	44.4	33.3	558	37	32.5	1526	1600	3.3	302.5	3570	3376				
1135	643	409	646	R	SAP	306	2	4	58	CR40	447 A	1	552	526	539	2783	20.8	12.5	41	34.8	556	36.1	32.5	1523	1545	3.31	317.5	3625	3531				
1136	590	390	572	R	SAP	306	2	4	58	CR40	447 A	1	552	526	539	2783	20.8	12.5	41	34.8	556	36.1	32.5	1523	1545	3.31	317.5	3625	3531				
1137	773	544	732	F4	SAP	306	2	4	58	CR40	447 A	1	552	526	539	2783	20.8	12.5	41	34.8	556	36.1	32.5	1523	1545	3.31	317.5	3625	3531				
1138	896	622	861	10	SAP	306	2	4	58	CR40	447 A	1	552	526	539	2783	20.8	12.5	41	34.8	556	36.1	32.5	1523	1545	3.31	317.5	3625	3531				
1139	996	802	1004	10	SAP	10	3	3	1	12038	12197	2	798	631	714.5	2099	20.3	12	42	34.8	551	37	33	1467	1495	3.31	310	3720	3416				
1140	1073	792	1099	10	SAP	10	3	3	1	12038	12197	2	798	631	714.5	2099	20.3	12	42	34.8	551	37	33	1467	1495	3.31	310	3720	3416				
1141	1021	952	1026	10	SAP	41	3	1	3	12038	80055	2	600	570	585	2564	24.5	13.5	42.3	33.4	555	37.6	33.2	1483	1503	3.41	320	3717	3552				
1142	1024	895	1015	10	SAP	41	3	1	3	12038	80055	2	600	570	585	2564	24.5	13.5	42.3	33.4	555	37.6	33.2	1483	1503	3.41	320	3717	3552				
1143	708	546	697	F4	SAP	10	3	3	1	12038	12197	2	798	631	714.5	2099	20.3	12	42	34.8	551	37	33	1467	1495	3.31	310	3720	3416				
1144	870	594	863	10	SAP	10	3	3	1	12038	12197	2	798	631	714.5	2099	20.3	12	42	34.8	551	37	33	1467	1495	3.31	310	3720	3416				

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lgth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
					Type								(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
1145	635	370	659	R	SAP	129	3	1	8	12447	80055	3	585	604	594.5	2523	22.8	13	42.4	32.9	556	37.4	33.2	1604	1560	3.26	310	3515	3447
1146	748	445	753	R	SAP	129	3	1	8	12447	80055	3	585	604	594.5	2523	22.8	13	42.4	32.9	556	37.4	33.2	1604	1560	3.26	310	3515	3447
1147	826	733	830	10	SAP	12	3	4	1	12038	12197	3	597	575	586	2560	16.8	9.5	43.6	34.9	554	37	33.1	1440	1493	3.48	332.5	3778	3684
1148	759	579	764	10	SAP	12	3	4	1	12038	12197	3	597	575	586	2560	16.8	9.5	43.6	34.9	554	37	33.1	1440	1493	3.48	332.5	3778	3684
1149	905	744	909	10	SAP	173	3	2	10	80055	12197	3	582	564	573	2618	22	14.3	44.9	33.1	557	38.3	34.8	1510	1552	3.13	302.5	3638	3370
1150	966	800	985	10	SAP	173	3	2	10	80055	12197	3	582	564	573	2618	22	14.3	44.9	33.1	557	38.3	34.8	1510	1552	3.13	302.5	3638	3370
1151	829	701	822	10	SAP	139	3	5	8	12447	80055	3	525	534	529.5	2833	22	13.5	43.8	32.8	558	37.8	33.4	1503	1505	3.3	302.5	3710	3376
1152	747	656	739	10	SAP	139	3	5	8	12447	80055	3	525	534	529.5	2833	22	13.5	43.8	32.8	558	37.8	33.4	1503	1505	3.3	302.5	3710	3376
1153	994	783	994	10	SAP	191	3	4	11	80055	12447	4	562	585	573.5	2616	19.5	11.5	40.9	33.3	555	34.8	32.2	1525	1513	3.28	305	3654	3386
1154	949	679	939	10	SAP	191	3	4	11	80055	12447	4	562	585	573.5	2616	19.5	11.5	40.9	33.3	555	34.8	32.2	1525	1513	3.28	305	3654	3386
1155	792	518	790	F4	SAP	325	2	2	102	MY 7	197 A	2	562	492	527	2846	22.8	12.5	23.5	24.4	558	20.6	17.1	1404	1387	3.74	347	3999	3873
1156	899	743	874	10	SAP	325	2	2	102	MY 7	197 A	2	562	492	527	2846	22.8	12.5	23.5	24.4	558	20.6	17.1	1404	1387	3.74	347	3999	3873
1157	849	607	854	10	SAP	208	3	6	21	0	TSO	0	586	560	573	2618	22.5	12.5	43.6	29.5	535	37	32.8	1575	1594	3.06	305	3376	3264
1158	874	745	880	10	SAP	208	3	6	21	0	TSO	0	586	560	573	2618	22.5	12.5	43.6	29.5	535	37	32.8	1575	1594	3.06	305	3376	3264
1159	936	710	965	10	SAP	216	2	3	9	236 A	38 A	3	534	537	535.5	2801	24.8	14.5	41.5	38.2	556	34.9	31.8	1505	1539	3.34	315	3653	3503
1160	905	745	849	10	SAP	216	2	3	9	236 A	38 A	3	534	537	535.5	2801	24.8	14.5	41.5	38.2	556	34.9	31.8	1505	1539	3.34	315	3653	3503
1161	946	666	939	10	SAP	129	3	1	8	12447	80055	3	585	604	594.5	2523	22.8	13	42.4	32.9	556	37.4	33.2	1604	1560	3.26	310	3515	3447
1162	980	706	978	10	SAP	129	3	1	8	12447	80055	3	585	604	594.5	2523	22.8	13	42.4	32.9	556	37.4	33.2	1604	1560	3.26	310	3515	3447
1163	613	437	594	R	SAP	130	3	2	8	12447	80055	2	562	590	576	2604	27.5	17.5	42.9	32.7	557	37.5	32.5	1560	1590	3.21	300	3537	3342
1164	627	507	616	F4	SAP	130	3	2	8	12447	80055	2	562	590	576	2604	27.5	17.5	42.9	32.7	557	37.5	32.5	1560	1590	3.21	300	3537	3342
1165	1001	728	1014	10	SAP	306	2	4	58	CR40	447 A	1	552	526	539	2783	20.8	12.5	41	34.8	556	36.1	32.5	1523	1545	3.31	317.5	3625	3531
1166	974	704	963	10	SAP	306	2	4	58	CR40	447 A	1	552	526	539	2783	20.8	12.5	41	34.8	556	36.1	32.5	1523	1545	3.31	317.5	3625	3531
1167	733	475	733	R	SAP	211	3	6	21	0	TSO	0	541	533	537	2793	22.3	12	47.3	31.4	557	38.8	35.7	1659	1634	3.08	295	3383	3286
1168	754	544	750	F4	SAP	211	3	6	21	0	TSO	0	541	533	537	2793	22.3	12	47.3	31.4	557	38.8	35.7	1659	1634	3.08	295	3383	3286
1169	879	681	883	10	SAP	142	3	6	8	12447	80055	3	552	577	564.5	2657	22.3	11.8	42.9	33.3	556	36.8	33	1587	1550	3.23	297.5	3545	3308
1170	916	722	922	10	SAP	142	3	6	8	12447	80055	3	552	577	564.5	2657	22.3	11.8	42.9	33.3	556	36.8	33	1587	1550	3.23	297.5	3545	3308
1171	968	806	939	10	SAP	73	3	1	5	12197	12447	1	583	595	589	2547	21	12	41.9	30.9	559	36	32.6	1553	1644	3.2	300	3497	3354
1172	1020	742	1014	10	SAP	73	3	1	5	12197	12447	1	583	595	589	2547	21	12	41.9	30.9	559	36	32.6	1553	1644	3.2	300	3497	3354
1173	907	742	873	10	SAP	314	2	3	59	CR40	994	2	550	526	538	2788	17.8	11	43.3	33.1	550	38.2	32.3	1475	1497	3.33	315	3701	3465
1174	915	736	890	10	SAP	314	2	3	59	CR40	994	2	550	526	538	2788	17.8	11	43.3	33.1	550	38.2	32.3	1475	1497	3.33	315	3701	3465
1175	979	871	964	10	SAP	153	3	3	9	80055	12038	3	564	610	587	2555	26	12.8	44.5	36.7	556	37	33.8	1630	1550	3.28	307.5	3497	3419
1176	966	848	974	10	SAP	153	3	3	9	80055	12038	3	564	610	587	2555	26	12.8	44.5	36.7	556	37	33.8	1630	1550	3.28	307.5	3497	3419
1177	1010	864	994	10	SAP	139	3	5	8	12447	80055	3	525	534	529.5	2833	22	13.5	43.8	32.8	558	37.8	33.4	1503	1505	3.3	302.5	3710	3376
1178	1147	941	1141	10	SAP	139	3	5	8	12447	80055	3	525	534	529.5	2833	22	13.5	43.8	32.8	558	37.8	33.4	1503	1505	3.3	302.5	3710	3376
1179	1188	700	1175	10	SAP	244	2	2	44	956	38 A	2	494	522	508	2953	20.8	10.3	41.7	34.1	554	36	32.4	1454	1432	3.58	347.5	3839	3850
1180	1145	969	1137	10	SAP	244	2	2	44	956	38 A	2	494	522	508	2953	20.8	10.3	41.7	34.1	554	36	32.4	1454	1432	3.58	347.5	3839	3850
1181	879	700	871	10	SAP	130	3	2	8	12447	80055	2	562	590	576	2604	27.5	17.5	42.9	32.7	557	37.5	32.5	1560	1590	3.21	300	3537	3342
1182	953	794	967	10	SAP	130	3	2	8	12447	80055	2	562	590	576	2604	27.5	17.5	42.9	32.7	557	37.5	32.5	1560	1590	3.21	300	3537	3342

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
					Type								(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
1183	848	621	801	10	SAP	130	3	2	8	12447	80055	2	562	590	576	2604	27.5	17.5	42.9	32.7	557	37.5	32.5	1560	1590	3.21	300	3537	3342
1184	913	690	919	10	SAP	130	3	2	8	12447	80055	2	562	590	576	2604	27.5	17.5	42.9	32.7	557	37.5	32.5	1560	1590	3.21	300	3537	3342
1185	1073	951	1069	10	SAP	216	2	3	9	236 A	38 A	3	534	537	535.5	2801	24.8	14.5	41.5	38.2	556	34.9	31.8	1505	1539	3.34	315	3653	3503
1186	1150	948	1151	10	SAP	216	2	3	9	236 A	38 A	3	534	537	535.5	2801	24.8	14.5	41.5	38.2	556	34.9	31.8	1505	1539	3.34	315	3653	3503
1187	928	796	922	10	SAP	139	3	5	8	12447	80055	3	525	534	529.5	2833	22	13.5	43.8	32.8	558	37.8	33.4	1503	1505	3.3	302.5	3710	3376
1188	822	675	809	10	SAP	139	3	5	8	12447	80055	3	525	534	529.5	2833	22	13.5	43.8	32.8	558	37.8	33.4	1503	1505	3.3	302.5	3710	3376
1189	817	580	824	10	SAP	179	3	4	10	80055	12197	4	552	595	573.5	2616	22	13.8	43.1	33.2	556	36.4	32.3	1494	1562	3.28	305	3639	3392
1190	964	656	946	10	SAP	179	3	4	10	80055	12197	4	552	595	573.5	2616	22	13.8	43.1	33.2	556	36.4	32.3	1494	1562	3.28	305	3639	3392
1191	1021	790	1021	10	SAP	12	3	4	1	12038	12197	3	597	575	586	2560	16.8	9.5	43.6	34.9	554	37	33.1	1440	1493	3.48	332.5	3778	3684
1192	1038	814	1040	10	SAP	12	3	4	1	12038	12197	3	597	575	586	2560	16.8	9.5	43.6	34.9	554	37	33.1	1440	1493	3.48	332.5	3778	3684
1193	1092	931	1097	10	SAP	191	3	4	11	80055	12447	4	562	585	573.5	2616	19.5	11.5	40.9	33.3	555	34.8	32.2	1525	1513	3.28	305	3654	3386
1194	1111	811	1125	10	SAP	191	3	4	11	80055	12447	4	562	585	573.5	2616	19.5	11.5	40.9	33.3	555	34.8	32.2	1525	1513	3.28	305	3654	3386
1195	1046	902	1065	10	SAP	244	2	2	44	956	38 A	2	494	522	508	2953	20.8	10.3	41.7	34.1	554	36	32.4	1454	1432	3.58	347.5	3839	3850
1196	1019	856	1030	10	SAP	244	2	2	44	956	38 A	2	494	522	508	2953	20.8	10.3	41.7	34.1	554	36	32.4	1454	1432	3.58	347.5	3839	3850
1197	898	540	943	F4	SAP	241	2	3	12	236 A	994	1	641	621	631	2377	18	11.5	43.5	34.4	558	36.5	33.5	1535	1544	3.32	297.5	3625	3320
1198	1060	626	972	10	SAP	241	2	3	12	236 A	994	1	641	621	631	2377	18	11.5	43.5	34.4	558	36.5	33.5	1535	1544	3.32	297.5	3625	3320
1199	724	527	717	F4	SAP	179	3	4	10	80055	12197	4	552	595	573.5	2616	22	13.8	43.1	33.2	556	36.4	32.3	1494	1562	3.28	305	3639	3392
1200	607	456	613	R	SAP	179	3	4	10	80055	12197	4	552	595	573.5	2616	22	13.8	43.1	33.2	556	36.4	32.3	1494	1562	3.28	305	3639	3392
1201	961	690	938	10	SAP	341	2	2	104	MY 7	994	3	524	545	534.5	2806	19	9.8	41.9	33.7	556	35.5	33	1562	1560	3.28	307.5	3562	3419
1202	874	616	873	10	SAP	341	2	2	104	MY 7	994	3	524	545	534.5	2806	19	9.8	41.9	33.7	556	35.5	33	1562	1560	3.28	307.5	3562	3419
1203	913	736	924	10	SAP	142	3	6	8	12447	80055	3	552	577	564.5	2657	22.3	11.8	42.9	33.3	556	36.8	33	1587	1550	3.23	297.5	3545	3308
1204	852	736	856	10	SAP	142	3	6	8	12447	80055	3	552	577	564.5	2657	22.3	11.8	42.9	33.3	556	36.8	33	1587	1550	3.23	297.5	3545	3308
1205	847	690	850	10	SAP	87	3	5	5	12197	12447	1	820	594	707	2122	22	13.5	46.3	34.3	559	39.5	35.1	1701	1703	3.09	290	3284	3242
1206	772	671	780	10	SAP	87	3	5	5	12197	12447	1	820	594	707	2122	22	13.5	46.3	34.3	559	39.5	35.1	1701	1703	3.09	290	3284	3242
1208	638	564	644	10	SAP	87	3	5	5	12197	12447	1	820	594	707	2122	22	13.5	46.3	34.3	559	39.5	35.1	1701	1703	3.09	290	3284	3242
1209	1006	752	1018	10	SAP	179	3	4	10	80055	12197	4	552	595	573.5	2616	22	13.8	43.1	33.2	556	36.4	32.3	1494	1562	3.28	305	3639	3392
1210	1013	750	1029	10	SAP	179	3	4	10	80055	12197	4	552	595	573.5	2616	22	13.8	43.1	33.2	556	36.4	32.3	1494	1562	3.28	305	3639	3392
1211	943	732	949	10	SAP	172	3	2	10	80055	12197	2	612	667	639.5	2346	22.3	13	44.3	33.8	555	38.7	34	1565	1560	3.23	307.5	3552	3413
1212	902	749	914	10	SAP	172	3	2	10	80055	12197	2	612	667	639.5	2346	22.3	13	44.3	33.8	555	38.7	34	1565	1560	3.23	307.5	3552	3413
1213	931	626	931	10	SAP	87	3	5	5	12197	12447	1	820	594	707	2122	22	13.5	46.3	34.3	559	39.5	35.1	1701	1703	3.09	290	3284	3242
1214	899	763	905	10	SAP	87	3	5	5	12197	12447	1	820	594	707	2122	22	13.5	46.3	34.3	559	39.5	35.1	1701	1703	3.09	290	3284	3242
1215	931	800	922	10	SAP	166	3	6	9	80055	12038	4	575	562	568.5	2639	24.3	15.5	44.6	33.3	556	39.3	34.3	1648	1640	3.13	297.5	3382	3308
1216	829	631	847	10	SAP	166	3	6	9	80055	12038	4	575	562	568.5	2639	24.3	15.5	44.6	33.3	556	39.3	34.3	1648	1640	3.13	297.5	3382	3308
1217	701	503	705	F4	SAP	241	2	3	12	236 A	994	1	641	621	631	2377	18	11.5	43.5	34.4	558	36.5	33.5	1535	1544	3.32	297.5	3625	3320
1218	562	383	566	R	SAP	241	2	3	12	236 A	994	1	641	621	631	2377	18	11.5	43.5	34.4	558	36.5	33.5	1535	1544	3.32	297.5	3625	3320
1219	934	682	937	10	SAP	199	3	6	20	0	PCU	0	549	616	582.5	2575	22.5	11.5	46.5	31.6	556	39.1	32.8	1565	1620	3.15	285	3491	3169
1220	828	678	833	10	SAP	301	2	2	58	CR40	447 A	3	582	557	569.5	2634	23.5	12.5	45.5	13.2	557	40.6	35	1642	1612	3.16	295	3423	3286
1221	786	630	800	10	SAP	301	2	2	58	CR40	447 A	3	582	557	569.5	2634	23.5	12.5	45.5	13.2	557	40.6	35	1642	1612	3.16	295	3423	3286

Board data					Tree data										Log data														
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lgth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
		GP a × 10 ²			Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
1223	705	493	686	F4	SAP	90	3	6	5	12197	12447	1	569	574	571.5	2625	25.5	13.3	42.7	33.9	555	36.5	32.7	1659	1659	3.02	282.5	3345	3136
1224	757	681	753	10	SAP	172	3	2	10	80055	12197	2	612	667	639.5	2346	22.3	13	44.3	33.8	555	38.7	34	1565	1560	3.23	307.5	3552	3413
1225	687	556	688	10	SAP	172	3	2	10	80055	12197	2	612	667	639.5	2346	22.3	13	44.3	33.8	555	38.7	34	1565	1560	3.23	307.5	3552	3413
1226	872	748	884	10	SAP	314	2	3	59	CR40	994	2	550	526	538	2788	17.8	11	43.3	33.1	550	38.2	32.3	1475	1497	3.33	315	3701	3465
1227	778	589	788	10	SAP	314	2	3	59	CR40	994	2	550	526	538	2788	17.8	11	43.3	33.1	550	38.2	32.3	1475	1497	3.33	315	3701	3465
1228	913	822	901	10	SAP	44	3	3	3	12038	80055	2	578	584	581	2582	25	14.8	44.9	34.4	555	37.3	33.8	1492	1510	3.41	322.5	3698	3580
1229	811	624	803	10	SAP	44	3	3	3	12038	80055	2	578	584	581	2582	25	14.8	44.9	34.4	555	37.3	33.8	1492	1510	3.41	322.5	3698	3580
1230	683	601	676	10	SAP	162	3	5	9	80055	12038	3	620	562	591	2538	24.5	11.3	45.5	16	558	39.4	33	1652	1683	3.14	292.5	3346	3264
1231	725	598	729	10	SAP	162	3	5	9	80055	12038	3	620	562	591	2538	24.5	11.3	45.5	16	558	39.4	33	1652	1683	3.14	292.5	3346	3264
1232	1080	884	1083	10	SAP	12	3	4	1	12038	12197	3	597	575	586	2560	16.8	9.5	43.6	34.9	554	37	33.1	1440	1493	3.48	332.5	3778	3684
1233	1186	963	1186	10	SAP	12	3	4	1	12038	12197	3	597	575	586	2560	16.8	9.5	43.6	34.9	554	37	33.1	1440	1493	3.48	332.5	3778	3684
1234	852	766	857	10	SAP	205	3	3	21	0	TSO	0	640	652	646	2322	25.3	14.5	45.1	36.7	555	38.5	34.4	1653	1664	3.12	295	3346	3275
1235	863	726	867	10	SAP	205	3	3	21	0	TSO	0	640	652	646	2322	25.3	14.5	45.1	36.7	555	38.5	34.4	1653	1664	3.12	295	3346	3275
1236	915	805	904	10	SAP	90	3	6	5	12197	12447	1	569	574	571.5	2625	25.5	13.3	42.7	33.9	555	36.5	32.7	1659	1659	3.02	282.5	3345	3136
1237	889	667	894	10	SAP	90	3	6	5	12197	12447	1	569	574	571.5	2625	25.5	13.3	42.7	33.9	555	36.5	32.7	1659	1659	3.02	282.5	3345	3136
1238	897	613	932	10	SAP	157	3	4	9	80055	12038	4	572	568	570	2632	21.5	14.3	46	35.5	556	39.8	35.8	1505	1513	3.34	310	3685	3447
1239	875	771	877	10	SAP	157	3	4	9	80055	12038	4	572	568	570	2632	21.5	14.3	46	35.5	556	39.8	35.8	1505	1513	3.34	310	3685	3447
1241	766	619	764	10	SAP	154	3	3	9	80055	12038	4	570	590	580	2586	27	14.5	44.5	35.5	561	38.8	33.8	1520	1517	3.44	312.5	3694	3506
1243	782	687	766	10	SAP	66	3	5	4	12197	12038	2	563	527	545	2752	21.3	12.8	44.6	35.1	552	38.5	34	1503	1492	3.39	320	3686	3533
1245	1106	931	1115	10	SAP	157	3	4	9	80055	12038	4	572	568	570	2632	21.5	14.3	46	35.5	556	39.8	35.8	1505	1513	3.34	310	3685	3447
1247	1112	945	1104	10	SAP	74	3	2	5	12197	12447	1	587	630	608.5	2465	20.3	11.5	42	32.8	557	36.3	32.2	1525	1530	3.24	302.5	3646	3370
1248	1034	834	1048	10	SAP	74	3	2	5	12197	12447	1	587	630	608.5	2465	20.3	11.5	42	32.8	557	36.3	32.2	1525	1530	3.24	302.5	3646	3370
1249	991	870	987	10	SAP	41	3	1	3	12038	80055	2	600	570	585	2564	24.5	13.5	42.3	33.4	555	37.6	33.2	1483	1503	3.41	320	3717	3552
1250	958	818	948	10	SAP	41	3	1	3	12038	80055	2	600	570	585	2564	24.5	13.5	42.3	33.4	555	37.6	33.2	1483	1503	3.41	320	3717	3552
1251	1053	741	1069	10	SAP	154	3	3	9	80055	12038	4	570	590	580	2586	27	14.5	44.5	35.5	561	38.8	33.8	1520	1517	3.44	312.5	3694	3506
1252	1002	803	1027	10	SAP	154	3	3	9	80055	12038	4	570	590	580	2586	27	14.5	44.5	35.5	561	38.8	33.8	1520	1517	3.44	312.5	3694	3506
1253	803	627	812	10	SAP	166	3	6	9	80055	12038	4	575	562	568.5	2639	24.3	15.5	44.6	33.3	556	39.3	34.3	1648	1640	3.13	297.5	3382	3308
1254	617	467	603	R	SAP	166	3	6	9	80055	12038	4	575	562	568.5	2639	24.3	15.5	44.6	33.3	556	39.3	34.3	1648	1640	3.13	297.5	3382	3308
1255	1013	744	1025	10	SAP	1	3	1	1	12038	12197	2	584	602	593	2530	19.8	10.5	43.5	31.8	559	37.7	33.2	1510	1513	3.35	305	3698	3410
1256	1189	936	1164	10	SAP	1	3	1	1	12038	12197	2	584	602	593	2530	19.8	10.5	43.5	31.8	559	37.7	33.2	1510	1513	3.35	305	3698	3410
1257	899	698	913	10	SAP	301	2	2	58	CR40	447 A	3	582	557	569.5	2634	23.5	12.5	45.5	13.2	557	40.6	35	1642	1612	3.16	295	3423	3286
1258	808	691	812	10	SAP	301	2	2	58	CR40	447 A	3	582	557	569.5	2634	23.5	12.5	45.5	13.2	557	40.6	35	1642	1612	3.16	295	3423	3286
1259	889	677	885	10	SAP	125	3	5	7	12447	12197	3	587	609	598	2508	26.3	14.5	44.3	35.7	556	39.2	34.2	1580	1631	3.15	292.5	3463	3253
1260	985	748	937	10	SAP	125	3	5	7	12447	12197	3	587	609	598	2508	26.3	14.5	44.3	35.7	556	39.2	34.2	1580	1631	3.15	292.5	3463	3253
1261	929	696	950	10	SAP	147	3	1	9	80055	12038	2	622	588	605	2479	26.5	14.3	43.3	31.4	557	39.7	34.6	1556	1565	3.21	290	3569	3231
1262	946	807	882	10	SAP	147	3	1	9	80055	12038	2	622	588	605	2479	26.5	14.3	43.3	31.4	557	39.7	34.6	1556	1565	3.21	290	3569	3231
1263	1072	904	1071	10	SAP	154	3	3	9	80055	12038	4	570	590	580	2586	27	14.5	44.5	35.5	561	38.8	33.8	1520	1517	3.44	312.5	3694	3506
1265	945	695	916	10	SAP	82	3	4	5	12197	12447	1	620	600	610	2459	19.5	12.5	44.6	34.1	555	38.4	33.1	1567	1599	3.15	290	3506	3219

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lqth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
					Type								(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
1266	895	688	909	10	SAP	82	3	4	5	12197	12447	1	620	600	610	2459	19.5	12.5	44.6	34.1	555	38.4	33.1	1567	1599	3.15	290	3506	3219
1267	780	514	769	F4	SAP	44	3	3	3	12038	80055	2	578	584	581	2582	25	14.8	44.9	34.4	555	37.3	33.8	1492	1510	3.41	322.5	3698	3580
1268	692	588	688	10	SAP	44	3	3	3	12038	80055	2	578	584	581	2582	25	14.8	44.9	34.4	555	37.3	33.8	1492	1510	3.41	322.5	3698	3580
1269	998	742	991	10	SAP	329	2	3	102	MY 7	197 A	3	535	526	530.5	2828	18.5	11.8	42.2	32	556	36.3	33.2	1531	1620	3.36	302.5	3529	3364
1270	1056	900	1031	10	SAP	329	2	3	102	MY 7	197 A	3	535	526	530.5	2828	18.5	11.8	42.2	32	556	36.3	33.2	1531	1620	3.36	302.5	3529	3364
1271	857	654	876	10	SAP	157	3	4	9	80055	12038	4	572	568	570	2632	21.5	14.3	46	35.5	556	39.8	35.8	1505	1513	3.34	310	3685	3447
1272	887	698	872	10	SAP	157	3	4	9	80055	12038	4	572	568	570	2632	21.5	14.3	46	35.5	556	39.8	35.8	1505	1513	3.34	310	3685	3447
1273	1070	808	1073	10	SAP	66	3	5	4	12197	12038	2	563	527	545	2752	21.3	12.8	44.6	35.1	552	38.5	34	1503	1492	3.39	320	3686	3533
1274	1185	786	1201	10	SAP	66	3	5	4	12197	12038	2	563	527	545	2752	21.3	12.8	44.6	35.1	552	38.5	34	1503	1492	3.39	320	3686	3533
1275	609	509	607	F4	SAP	162	3	5	9	80055	12038	3	620	562	591	2538	24.5	11.3	45.5	16	558	39.4	33	1652	1683	3.14	292.5	3346	3264
1276	585	424	568	R	SAP	162	3	5	9	80055	12038	3	620	562	591	2538	24.5	11.3	45.5	16	558	39.4	33	1652	1683	3.14	292.5	3346	3264
1277	819	583	841	10	SAP	341	2	2	104	MY 7	994	3	524	545	534.5	2806	19	9.8	41.9	33.7	556	35.5	33	1562	1560	3.28	307.5	3562	3419
1278	843	617	848	10	SAP	341	2	2	104	MY 7	994	3	524	545	534.5	2806	19	9.8	41.9	33.7	556	35.5	33	1562	1560	3.28	307.5	3562	3419
1279	999	808	990	10	SAP	166	3	6	9	80055	12038	4	575	562	568.5	2639	24.3	15.5	44.6	33.3	556	39.3	34.3	1648	1640	3.13	297.5	3382	3308
1280	855	750	848	10	SAP	166	3	6	9	80055	12038	4	575	562	568.5	2639	24.3	15.5	44.6	33.3	556	39.3	34.3	1648	1640	3.13	297.5	3382	3308
1281	737	610	726	10	SAP	237	2	4	11	236 A	447 A	1	592	575	583.5	2571	21.5	13.8	51.3	33.8	560	45.3	38.3	1482	1566	3.49	332.5	3675	3724
1282	809	688	799	10	SAP	237	2	4	11	236 A	447 A	1	592	575	583.5	2571	21.5	13.8	51.3	33.8	560	45.3	38.3	1482	1566	3.49	332.5	3675	3724
1283	744	645	738	10	SAP	172	3	2	10	80055	12197	2	612	667	639.5	2346	22.3	13	44.3	33.8	555	38.7	34	1565	1560	3.23	307.5	3552	3413
1285	1002	695	1028	10	SAP	199	3	6	20	0	PCU	0	549	616	582.5	2575	22.5	11.5	46.5	31.6	556	39.1	32.8	1565	1620	3.15	285	3491	3169
1286	739	636	730	10	SAP	167	3	6	9	80055	12038	3	584	550	567	2646	23.8	14	49.1	34	560	42.7	36	1557	1547	3.2	302.5	3608	3388
1287	731	567	748	10	SAP	167	3	6	9	80055	12038	3	584	550	567	2646	23.8	14	49.1	34	560	42.7	36	1557	1547	3.2	302.5	3608	3388
1288	931	522	974	F4	SAP	82	3	4	5	12197	12447	1	620	600	610	2459	19.5	12.5	44.6	34.1	555	38.4	33.1	1567	1599	3.15	290	3506	3219
1289	961	809	958	10	SAP	82	3	4	5	12197	12447	1	620	600	610	2459	19.5	12.5	44.6	34.1	555	38.4	33.1	1567	1599	3.15	290	3506	3219
1290	1027	832	1024	10	SAP	241	2	3	12	236 A	994	1	641	621	631	2377	18	11.5	43.5	34.4	558	36.5	33.5	1535	1544	3.32	297.5	3625	3320
1292	1173	866	1172	10	SAP	1	3	1	1	12038	12197	2	584	602	593	2530	19.8	10.5	43.5	31.8	559	37.7	33.2	1510	1513	3.35	305	3698	3410
1294	770	643	768	10	SAP	125	3	5	7	12447	12197	3	587	609	598	2508	26.3	14.5	44.3	35.7	556	39.2	34.2	1580	1631	3.15	292.5	3463	3253
1295	677	580	675	10	SAP	125	3	5	7	12447	12197	3	587	609	598	2508	26.3	14.5	44.3	35.7	556	39.2	34.2	1580	1631	3.15	292.5	3463	3253
1296	927	673	910	10	SAP	237	2	4	11	236 A	447 A	1	592	575	583.5	2571	21.5	13.8	51.3	33.8	560	45.3	38.3	1482	1566	3.49	332.5	3675	3724
1297	972	785	969	10	SAP	237	2	4	11	236 A	447 A	1	592	575	583.5	2571	21.5	13.8	51.3	33.8	560	45.3	38.3	1482	1566	3.49	332.5	3675	3724
1298	759	659	748	10	SAP	167	3	6	9	80055	12038	3	584	550	567	2646	23.8	14	49.1	34	560	42.7	36	1557	1547	3.2	302.5	3608	3388
1299	898	681	915	10	SAP	167	3	6	9	80055	12038	3	584	550	567	2646	23.8	14	49.1	34	560	42.7	36	1557	1547	3.2	302.5	3608	3388
1300	735	598	722	10	SAP	341	2	2	104	MY 7	994	3	524	545	534.5	2806	19	9.8	41.9	33.7	556	35.5	33	1562	1560	3.28	307.5	3562	3419
1301	722	516	709	F4	SAP	341	2	2	104	MY 7	994	3	524	545	534.5	2806	19	9.8	41.9	33.7	556	35.5	33	1562	1560	3.28	307.5	3562	3419
1302	868	683	866	10	SAP	97	3	2	6	12447	12038	4	583	675	629	2385	20.8	12.8	48.8	31.3	558	40.3	37.3	1589	1610	3.19	292.5	3489	3264
1303	865	546	888	F4	SAP	97	3	2	6	12447	12038	4	583	675	629	2385	20.8	12.8	48.8	31.3	558	40.3	37.3	1589	1610	3.19	292.5	3489	3264
1304	668	592	677	10	SAP	125	3	5	7	12447	12197	3	587	609	598	2508	26.3	14.5	44.3	35.7	556	39.2	34.2	1580	1631	3.15	292.5	3463	3253
1305	700	559	705	10	SAP	125	3	5	7	12447	12197	3	587	609	598	2508	26.3	14.5	44.3	35.7	556	39.2	34.2	1580	1631	3.15	292.5	3463	3253
1306	959	750	951	10	SAP	156	3	4	9	80055	12038	2	624	620	622	2412	24.3	14.5	49.1	33.4	562	43.2	37.9	1543	1571	3.24	300	3610	3372

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
					Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
1307	886	726	874	10	SAP	156	3	4	9	80055	12038	2	624	620	622	2412	24.3	14.5	49.1	33.4	562	43.2	37.9	1543	1571	3.24	300	3610	3372
1308	1134	828	1141	10	SAP	97	3	2	6	12447	12038	4	583	675	629	2385	20.8	12.8	48.8	31.3	558	40.3	37.3	1589	1610	3.19	292.5	3489	3264
1309	1090	760	1107	10	SAP	97	3	2	6	12447	12038	4	583	675	629	2385	20.8	12.8	48.8	31.3	558	40.3	37.3	1589	1610	3.19	292.5	3489	3264
1312	810	433	830	R	SAP	162	3	5	9	80055	12038	3	620	562	591	2538	24.5	11.3	45.5	16	558	39.4	33	1652	1683	3.14	292.5	3346	3264
1313	824	626	804	10	SAP	162	3	5	9	80055	12038	3	620	562	591	2538	24.5	11.3	45.5	16	558	39.4	33	1652	1683	3.14	292.5	3346	3264
1314	842	668	832	10	SAP	329	2	3	102	MY 7	197 A	3	535	526	530.5	2828	18.5	11.8	42.2	32	556	36.3	33.2	1531	1620	3.36	302.5	3529	3364
1315	795	652	782	10	SAP	329	2	3	102	MY 7	197 A	3	535	526	530.5	2828	18.5	11.8	42.2	32	556	36.3	33.2	1531	1620	3.36	302.5	3529	3364
1316	756	563	766	10	SAP	82	3	4	5	12197	12447	1	620	600	610	2459	19.5	12.5	44.6	34.1	555	38.4	33.1	1567	1599	3.15	290	3506	3219
1317	735	349	777	R	SAP	82	3	4	5	12197	12447	1	620	600	610	2459	19.5	12.5	44.6	34.1	555	38.4	33.1	1567	1599	3.15	290	3506	3219
1318	633	416	656	R	SAP	301	2	2	58	CR40	447 A	3	582	557	569.5	2634	23.5	12.5	45.5	13.2	557	40.6	35	1642	1612	3.16	295	3423	3286
1319	651	485	662	F4	SAP	301	2	2	58	CR40	447 A	3	582	557	569.5	2634	23.5	12.5	45.5	13.2	557	40.6	35	1642	1612	3.16	295	3423	3286
1320	894	713	894	10	SAP	283	2	2	56	CR40	38 A	2	617	582	599.5	2502	21.5	12.5	49.3	37.2	558	43	37	1582	1643	3.16	315	3460	3515
1321	691	536	702	F4	SAP	283	2	2	56	CR40	38 A	2	617	582	599.5	2502	21.5	12.5	49.3	37.2	558	43	37	1582	1643	3.16	315	3460	3515
1322	1066	756	1059	10	SAP	283	2	2	56	CR40	38 A	2	617	582	599.5	2502	21.5	12.5	49.3	37.2	558	43	37	1582	1643	3.16	315	3460	3515
1323	898	779	894	10	SAP	283	2	2	56	CR40	38 A	2	617	582	599.5	2502	21.5	12.5	49.3	37.2	558	43	37	1582	1643	3.16	315	3460	3515
1324	886	775	881	10	SAP	44	3	3	3	12038	80055	2	578	584	581	2582	25	14.8	44.9	34.4	555	37.3	33.8	1492	1510	3.41	322.5	3698	3580
1325	993	825	998	10	SAP	44	3	3	3	12038	80055	2	578	584	581	2582	25	14.8	44.9	34.4	555	37.3	33.8	1492	1510	3.41	322.5	3698	3580
1326	863	734	860	10	SAP	178	3	4	10	80055	12197	2	620	541	580.5	2584	24	14.8	46.1	32.9	558	40.1	36.8	1612	1560	3.24	307.5	3518	3432
1327	929	800	922	10	SAP	178	3	4	10	80055	12197	2	620	541	580.5	2584	24	14.8	46.1	32.9	558	40.1	36.8	1612	1560	3.24	307.5	3518	3432
1328	1000	724	983	10	SAP	167	3	6	9	80055	12038	3	584	550	567	2646	23.8	14	49.1	34	560	42.7	36	1557	1547	3.2	302.5	3608	3388
1329	1117	921	1115	10	SAP	167	3	6	9	80055	12038	3	584	550	567	2646	23.8	14	49.1	34	560	42.7	36	1557	1547	3.2	302.5	3608	3388
1330	990	845	988	10	SAP	66	3	5	4	12197	12038	2	563	527	545	2752	21.3	12.8	44.6	35.1	552	38.5	34	1503	1492	3.39	320	3686	3533
1331	1017	843	997	10	SAP	66	3	5	4	12197	12038	2	563	527	545	2752	21.3	12.8	44.6	35.1	552	38.5	34	1503	1492	3.39	320	3686	3533
1332	922	317	939	R	SAP	16	3	6	1	12038	12197	4	582	609	595.5	2519	21.5	13.3	51.1	33	555	43.5	36.5	1619	1623	2.99	280	3424	3108
1333	915	734	917	10	SAP	16	3	6	1	12038	12197	4	582	609	595.5	2519	21.5	13.3	51.1	33	555	43.5	36.5	1619	1623	2.99	280	3424	3108
1334	925	522	875	F4	SAP	237	2	4	11	236 A	447 A	1	592	575	583.5	2571	21.5	13.8	51.3	33.8	560	45.3	38.3	1482	1566	3.49	332.5	3675	3724
1335	983	637	974	10	SAP	237	2	4	11	236 A	447 A	1	592	575	583.5	2571	21.5	13.8	51.3	33.8	560	45.3	38.3	1482	1566	3.49	332.5	3675	3724
1336	630	275	581	R	SAP	158	3	4	9	80055	12038	3	552	562	557	2693	21.3	12.8	44.1	33	558	37.8	32.7	1492	1532	3.32	307.5	3690	3432
1337	760	500	748	F4	SAP	158	3	4	9	80055	12038	3	552	562	557	2693	21.3	12.8	44.1	33	558	37.8	32.7	1492	1532	3.32	307.5	3690	3432
1338	857	689	852	10	SAP	211	3	6	21	0	TSO	0	541	533	537	2793	22.3	12	47.3	31.4	557	38.8	35.7	1659	1634	3.08	295	3383	3286
1342	668	553	663	10	SAP	74	3	2	5	12197	12447	1	587	630	608.5	2465	20.3	11.5	42	32.8	557	36.3	32.2	1525	1530	3.24	302.5	3646	3370
1343	811	680	807	10	SAP	74	3	2	5	12197	12447	1	587	630	608.5	2465	20.3	11.5	42	32.8	557	36.3	32.2	1525	1530	3.24	302.5	3646	3370
1344	863	728	848	10	SAP	1	3	1	1	12038	12197	2	584	602	593	2530	19.8	10.5	43.5	31.8	559	37.7	33.2	1510	1513	3.35	305	3698	3410
1345	737	562	744	10	SAP	1	3	1	1	12038	12197	2	584	602	593	2530	19.8	10.5	43.5	31.8	559	37.7	33.2	1510	1513	3.35	305	3698	3410
1346	1220	886	1239	10	SAP	329	2	3	102	MY 7	197 A	3	535	526	530.5	2828	18.5	11.8	42.2	32	556	36.3	33.2	1531	1620	3.36	302.5	3529	3364
1347	1197	969	1175	10	SAP	329	2	3	102	MY 7	197 A	3	535	526	530.5	2828	18.5	11.8	42.2	32	556	36.3	33.2	1531	1620	3.36	302.5	3529	3364
1348	873	756	879	10	SAP	147	3	1	9	80055	12038	2	622	588	605	2479	26.5	14.3	43.3	31.4	557	39.7	34.6	1556	1565	3.21	290	3569	3231
1349	939	838	917	10	SAP	147	3	1	9	80055	12038	2	622	588	605	2479	26.5	14.3	43.3	31.4	557	39.7	34.6	1556	1565	3.21	290	3569	3231

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lgth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
					Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
1350	1036	825	1042	10	SAP	74	3	2	5	12197	12447	1	587	630	608.5	2465	20.3	11.5	42	32.8	557	36.3	32.2	1525	1530	3.24	302.5	3646	3370
1351	1019	876	1019	10	SAP	74	3	2	5	12197	12447	1	587	630	608.5	2465	20.3	11.5	42	32.8	557	36.3	32.2	1525	1530	3.24	302.5	3646	3370
1352	1065	927	1075	10	SAP	51	3	5	3	12038	80055	3	514	514	514	2918	23.3	12.5	42.9	32.4	556	36.8	33.7	1488	1502	3.29	310	3719	3447
1353	1006	893	994	10	SAP	51	3	5	3	12038	80055	3	514	514	514	2918	23.3	12.5	42.9	32.4	556	36.8	33.7	1488	1502	3.29	310	3719	3447
1354	794	683	793	10	SAP	8	3	3	1	12038	12197	1	528	561	544.5	2755	20.8	11.3	44.4	33.3	558	37	32.5	1526	1600	3.3	302.5	3570	3376
1355	728	550	713	F4	SAP	8	3	3	1	12038	12197	1	528	561	544.5	2755	20.8	11.3	44.4	33.3	558	37	32.5	1526	1600	3.3	302.5	3570	3376
1356	879	703	885	10	SAP	51	3	5	3	12038	80055	3	514	514	514	2918	23.3	12.5	42.9	32.4	556	36.8	33.7	1488	1502	3.29	310	3719	3447
1357	899	719	925	10	SAP	51	3	5	3	12038	80055	3	514	514	514	2918	23.3	12.5	42.9	32.4	556	36.8	33.7	1488	1502	3.29	310	3719	3447
1358	964	632	1015	10	SAP	156	3	4	9	80055	12038	2	624	620	622	2412	24.3	14.5	49.1	33.4	562	43.2	37.9	1543	1571	3.24	300	3610	3372
1359	1004	820	977	10	SAP	156	3	4	9	80055	12038	2	624	620	622	2412	24.3	14.5	49.1	33.4	562	43.2	37.9	1543	1571	3.24	300	3610	3372
1360	905	693	866	10	SAP	160	3	5	9	80055	12038	2	565	615	590	2542	27.8	14	49.1	38	558	43.2	37	1668	1629	3.19	292.5	3385	3264
1361	873	776	861	10	SAP	160	3	5	9	80055	12038	2	565	615	590	2542	27.8	14	49.1	38	558	43.2	37	1668	1629	3.19	292.5	3385	3264
1362	1091	811	1096	10	SAP	14	3	5	1	12038	12197	4	579	614	596.5	2515	21.8	12.8	52.8	35.5	555	45.9	39.8	1543	1554	3.25	307.5	3584	3413
1363	1073	738	1085	10	SAP	14	3	5	1	12038	12197	4	579	614	596.5	2515	21.8	12.8	52.8	35.5	555	45.9	39.8	1543	1554	3.25	307.5	3584	3413
1364	1078	931	1068	10	SAP	73	3	1	5	12197	12447	1	583	595	589	2547	21	12	41.9	30.9	559	36	32.6	1553	1644	3.2	300	3497	3354
1365	1105	982	1092	10	SAP	73	3	1	5	12197	12447	1	583	595	589	2547	21	12	41.9	30.9	559	36	32.6	1553	1644	3.2	300	3497	3354
1366	983	778	988	10	SAP	292	2	2	57	CR40	197 A	2	535	564	549.5	2730	21	11.3	41.2	37.5	557	36.4	33	1556	1557	3.24	317.5	3579	3537
1367	1186	929	1164	10	SAP	292	2	2	57	CR40	197 A	2	535	564	549.5	2730	21	11.3	41.2	37.5	557	36.4	33	1556	1557	3.24	317.5	3579	3537
1368	619	451	616	R	SAP	17	3	6	1	12038	12197	2	590	576	583	2573	20.3	11.5	55.1	31.7	552	48	41.7	1754	1710	2.9	272.5	3187	3008
1370	672	307	659	R	SAP	319	2	2	101	MY 7	38 A	2	685	684	684.5	2191	24	13	54.6	35.1	556	49.6	42.2	1664	1630	3.05	277.5	3376	3086
1371	633	374	621	R	SAP	319	2	2	101	MY 7	38 A	2	685	684	684.5	2191	24	13	54.6	35.1	556	49.6	42.2	1664	1630	3.05	277.5	3376	3086
1372	735	568	745	10	SAP	143	3	6	8	12447	80055	1	578	598	588	2551	24.3	14.3	53.8	32.6	554	45.3	41.2	1693	1649	2.96	272.5	3315	3019
1373	731	659	733	10	SAP	143	3	6	8	12447	80055	1	578	598	588	2551	24.3	14.3	53.8	32.6	554	45.3	41.2	1693	1649	2.96	272.5	3315	3019
1374	786	486	752	F4	SAP	319	2	2	101	MY 7	38 A	2	685	684	684.5	2191	24	13	54.6	35.1	556	49.6	42.2	1664	1630	3.05	277.5	3376	3086
1376	591	478	598	R	SAP	133	3	3	8	12447	80055	1	580	654	617	2431	25.8	15	53.1	38.1	558	45.8	41.2	1780	1664	2.96	277.5	3240	3097
1377	716	613	715	10	SAP	133	3	3	8	12447	80055	1	580	654	617	2431	25.8	15	53.1	38.1	558	45.8	41.2	1780	1664	2.96	277.5	3240	3097
1378	931	793	903	10	SAP	168	3	1	10	80055	12197	1	590	560	575	2609	20.3	11.5	41.5	31.9	559	35.7	30	1540	1542	3.33	307.5	3628	3438
1379	956	787	940	10	SAP	168	3	1	10	80055	12197	1	590	560	575	2609	20.3	11.5	41.5	31.9	559	35.7	30	1540	1542	3.33	307.5	3628	3438
1380	770	685	765	10	SAP	133	3	3	8	12447	80055	1	580	654	617	2431	25.8	15	53.1	38.1	558	45.8	41.2	1780	1664	2.96	277.5	3240	3097
1381	867	759	859	10	SAP	133	3	3	8	12447	80055	1	580	654	617	2431	25.8	15	53.1	38.1	558	45.8	41.2	1780	1664	2.96	277.5	3240	3097
1382	759	649	768	10	SAP	182	3	5	10	80055	12197	3	550	572	561	2674	24	13.8	50.7	35.6	555	43.2	38.8	1590	1607	3.2	295	3472	3275
1383	761	561	758	10	SAP	182	3	5	10	80055	12197	3	550	572	561	2674	24	13.8	50.7	35.6	555	43.2	38.8	1590	1607	3.2	295	3472	3275
1385	627	523	621	F4	SAP	143	3	6	8	12447	80055	1	578	598	588	2551	24.3	14.3	53.8	32.6	554	45.3	41.2	1693	1649	2.96	272.5	3315	3019
1386	771	624	774	10	SAP	171	3	2	10	80055	12197	4	950	665	807.5	1858	25.5	14.3	51.5	30	553	44.8	40.1	1725	1694	2.96	277.5	3235	3069
1387	774	682	754	10	SAP	171	3	2	10	80055	12197	4	950	665	807.5	1858	25.5	14.3	51.5	30	553	44.8	40.1	1725	1694	2.96	277.5	3235	3069
1388	804	462	834	R	SAP	17	3	6	1	12038	12197	2	590	576	583	2573	20.3	11.5	55.1	31.7	552	48	41.7	1754	1710	2.9	272.5	3187	3008
1389	723	531	704	F4	SAP	17	3	6	1	12038	12197	2	590	576	583	2573	20.3	11.5	55.1	31.7	552	48	41.7	1754	1710	2.9	272.5	3187	3008
1390	713	597	710	10	SAP	171	3	2	10	80055	12197	4	950	665	807.5	1858	25.5	14.3	51.5	30	553	44.8	40.1	1725	1694	2.96	277.5	3235	3069

Board data										Tree data										Log data													
BoardID	E	mean	E	min	E	median	MGP	Prod	Type	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
																	(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
1392	1032	822	1054	10	SAP	182	3	5	10	80055	12197	3	550	572	561	2674	24	13.8	50.7	35.6	555	43.2	38.8	1590	1607	3.2	295	3472	3275				
1393	965	676	970	10	SAP	182	3	5	10	80055	12197	3	550	572	561	2674	24	13.8	50.7	35.6	555	43.2	38.8	1590	1607	3.2	295	3472	3275				
1395	1160	955	1155	10	SAP	61	3	3	4	12197	12038	1	556	630	593	2530	21	10.3	37.8	32.6	560	31.3	28.6	1461	1433	3.52	307.5	3870	3444				
1396	1002	786	1015	10	SAP	196	3	5	20	0	PCU	0	514	520	517	2901	22.5	12.5	37.2	32.5	558	32.3	28.5	1426	1515	3.4	325	3795	3627				
1397	975	789	982	10	SAP	196	3	5	20	0	PCU	0	514	520	517	2901	22.5	12.5	37.2	32.5	558	32.3	28.5	1426	1515	3.4	325	3795	3627				
1398	943	689	950	10	SAP	206	3	4	21	0	TSO	0	528	620	574	2613	19.3	12	39.4	34	557	33.5	30.5	1506	1516	3.39	322.5	3686	3593				
1399	1201	991	1204	10	SAP	206	3	4	21	0	TSO	0	528	620	574	2613	19.3	12	39.4	34	557	33.5	30.5	1506	1516	3.39	322.5	3686	3593				
1400	1000	828	987	10	SAP	317	2	4	59	CR40	994	2	552	571	561.5	2671	18	12	37.2	34.4	556	31.5	28	1582	1546	3.28	310	3555	3447				
1401	964	753	907	10	SAP	317	2	4	59	CR40	994	2	552	571	561.5	2671	18	12	37.2	34.4	556	31.5	28	1582	1546	3.28	310	3555	3447				
1402	1075	745	1105	10	SAP	123	3	4	7	12447	12197	3	574	555	564.5	2657	24	13.5	38.2	32.9	555	33.9	29.7	1542	1557	3.25	302.5	3582	3358				
1403	986	781	993	10	SAP	123	3	4	7	12447	12197	3	574	555	564.5	2657	24	13.5	38.2	32.9	555	33.9	29.7	1542	1557	3.25	302.5	3582	3358				
1404	943	556	884	10	SAP	200	3	6	20	0	PCU	0	590	552	571	2627	19	10.3	38.3	32.2	556	32.9	28.8	1580	1521	3.28	312.5	3586	3475				
1405	1126	905	1113	10	SAP	200	3	6	20	0	PCU	0	590	552	571	2627	19	10.3	38.3	32.2	556	32.9	28.8	1580	1521	3.28	312.5	3586	3475				
1406	942	720	972	10	SAP	72	3	1	5	12197	12447	3	600	588	594	2525	24.5	14.3	37.4	27.2	558	32.6	29.2	1543	1554	3.22	300	3603	3348				
1407	899	613	907	10	SAP	72	3	1	5	12197	12447	3	600	588	594	2525	24.5	14.3	37.4	27.2	558	32.6	29.2	1543	1554	3.22	300	3603	3348				
1408	743	629	738	10	SAP	317	2	4	59	CR40	994	2	552	571	561.5	2671	18	12	37.2	34.4	556	31.5	28	1582	1546	3.28	310	3555	3447				
1409	683	570	655	10	SAP	317	2	4	59	CR40	994	2	552	571	561.5	2671	18	12	37.2	34.4	556	31.5	28	1582	1546	3.28	310	3555	3447				
1410	953	770	966	10	SAP	61	3	3	4	12197	12038	1	556	630	593	2530	21	10.3	37.8	32.6	560	31.3	28.6	1461	1433	3.52	307.5	3870	3444				
1411	1039	826	1030	10	SAP	61	3	3	4	12197	12038	1	556	630	593	2530	21	10.3	37.8	32.6	560	31.3	28.6	1461	1433	3.52	307.5	3870	3444				
1412	1178	1015	1184	10	SAP	181	3	4	10	80055	12197	1	570	575	572.5	2620	21	13	38.8	29.4	558	33.7	28.3	1475	1447	3.45	332.5	3819	3711				
1413	1232	1048	1230	12	SAP	181	3	4	10	80055	12197	1	570	575	572.5	2620	21	13	38.8	29.4	558	33.7	28.3	1475	1447	3.45	332.5	3819	3711				
1414	1111	915	1094	10	SAP	30	3	4	2	12038	12447	2	549	600	574.5	2611	19.5	11	41.9	34.6	555	35.5	30.3	1410	1382	3.49	340	3976	3774				
1415	1006	772	1005	10	SAP	30	3	4	2	12038	12447	2	549	600	574.5	2611	19.5	11	41.9	34.6	555	35.5	30.3	1410	1382	3.49	340	3976	3774				
1416	1083	917	1099	10	SAP	318	2	1	101	MY 7	38 A	2	538	511	524.5	2860	20.8	11.5	40	35.8	555	35.3	30.4	1441	1443	3.54	337.5	3849	3746				
1417	975	718	999	10	SAP	318	2	1	101	MY 7	38 A	2	538	511	524.5	2860	20.8	11.5	40	35.8	555	35.3	30.4	1441	1443	3.54	337.5	3849	3746				
1418	971	554	972	10	SAP	213	2	1	9	236 A	38 A	1	530	550	540	2778	21	11.5	38.7	31.5	558	32.1	28.3	1485	1522	3.53	330	3711	3683				
1419	1048	728	984	10	SAP	213	2	1	9	236 A	38 A	1	530	550	540	2778	21	11.5	38.7	31.5	558	32.1	28.3	1485	1522	3.53	330	3711	3683				
1420	794	563	781	10	SAP	31	3	4	2	12038	12447	4	607	566	586.5	2558	21.5	12.5	41.8	30.5	562	34.4	30.5	1554	1596	3.29	295	3568	3316				
1421	922	809	916	10	SAP	31	3	4	2	12038	12447	4	607	566	586.5	2558	21.5	12.5	41.8	30.5	562	34.4	30.5	1554	1596	3.29	295	3568	3316				
1422	1135	918	1125	10	SAP	65	3	4	4	12197	12038	3	514	614	564	2660	18	11.3	39.2	33.1	557	32.9	29.2	1388	1442	3.47	320	3936	3565				
1423	1127	951	1121	10	SAP	65	3	4	4	12197	12038	3	514	614	564	2660	18	11.3	39.2	33.1	557	32.9	29.2	1388	1442	3.47	320	3936	3565				
1424	1120	920	1140	10	SAP	196	3	5	20	0	PCU	0	514	520	517	2901	22.5	12.5	37.2	32.5	558	32.3	28.5	1426	1515	3.4	325	3795	3627				
1425	1082	804	1102	10	SAP	196	3	5	20	0	PCU	0	514	520	517	2901	22.5	12.5	37.2	32.5	558	32.3	28.5	1426	1515	3.4	325	3795	3627				
1426	903	819	896	10	SAP	103	3	4	6	12447	12038	2	580	600	590	2542	22	13	41	30	555	34.5	31.7	1573	1537	3.28	307.5	3569	3413				
1428	1054	875	1017	10	SAP	213	2	1	9	236 A	38 A	1	530	550	540	2778	21	11.5	38.7	31.5	558	32.1	28.3	1485	1522	3.53	330	3711	3683				
1429	1064	799	1077	10	SAP	213	2	1	9	236 A	38 A	1	530	550	540	2778	21	11.5	38.7	31.5	558	32.1	28.3	1485	1522	3.53	330	3711	3683				
1430	856	715	855	10	SAP	200	3	6	20	0	PCU	0	590	552	571	2627	19	10.3	38.3	32.2	556	32.9	28.8	1580	1521	3.28	312.5	3586	3475				
1432	969	704	974	10	SAP	221	2	1	10	236 A	197 A	2	553	543	548	2737	23.3	13.3	38.5	33.4	558	35	28.9	1481	1504	3.01	320	3739	3571				

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
		GPa x 10 ⁻²			Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
1433	867	622	828	10	SAP	221	2	1	10	236 A	197 A	2	553	543	548	2737	23.3	13.3	38.5	33.4	558	35	28.9	1481	1504	3.01	320	3739	3571
1434	769	558	777	10	SAP	193	3	6	11	80055	12447	4	600	601	600.5	2498	23.5	12.8	41.6	29.8	559	35.5	29.5	1709	1655	3.07	285	3323	3186
1435	905	690	905	10	SAP	193	3	6	11	80055	12447	4	600	601	600.5	2498	23.5	12.8	41.6	29.8	559	35.5	29.5	1709	1655	3.07	285	3323	3186
1436	1081	881	1085	10	SAP	168	3	1	10	80055	12197	1	590	560	575	2609	20.3	11.5	41.5	31.9	559	35.7	30	1540	1542	3.33	307.5	3628	3438
1437	916	775	922	10	SAP	168	3	1	10	80055	12197	1	590	560	575	2609	20.3	11.5	41.5	31.9	559	35.7	30	1540	1542	3.33	307.5	3628	3438
1438	944	673	946	10	SAP	72	3	1	5	12197	12447	3	600	588	594	2525	24.5	14.3	37.4	27.2	558	32.6	29.2	1543	1554	3.22	300	3603	3348
1439	943	702	961	10	SAP	72	3	1	5	12197	12447	3	600	588	594	2525	24.5	14.3	37.4	27.2	558	32.6	29.2	1543	1554	3.22	300	3603	3348
1440	992	698	981	10	SAP	105	3	4	6	12447	12038	3	571	567	569	2636	21.3	13	40	30.1	540	33.8	30.3	1490	1524	3.16	305	3583	3294
1441	921	691	939	10	SAP	105	3	4	6	12447	12038	3	571	567	569	2636	21.3	13	40	30.1	540	33.8	30.3	1490	1524	3.16	305	3583	3294
1442	940	713	938	10	SAP	145	3	1	9	80055	12038	3	591	567	579	2591	22.5	12.3	42.2	34.5	556	36	30.7	1472	1463	3.39	322.5	3789	3586
1443	864	632	881	10	SAP	145	3	1	9	80055	12038	3	591	567	579	2591	22.5	12.3	42.2	34.5	556	36	30.7	1472	1463	3.39	322.5	3789	3586
1444	1102	1015	1093	10	SAP	298	2	1	58	CR40	447 A	3	626	620	623	2408	22.5	12	38	29.6	549	32.7	29.2	1482	1465	3.37	320	3726	3514
1445	1054	843	1068	10	SAP	298	2	1	58	CR40	447 A	3	626	620	623	2408	22.5	12	38	29.6	549	32.7	29.2	1482	1465	3.37	320	3726	3514
1446	965	621	976	10	SAP	65	3	4	4	12197	12038	3	514	614	564	2660	18	11.3	39.2	33.1	557	32.9	29.2	1388	1442	3.47	320	3936	3565
1447	1058	677	1092	10	SAP	65	3	4	4	12197	12038	3	514	614	564	2660	18	11.3	39.2	33.1	557	32.9	29.2	1388	1442	3.47	320	3936	3565
1448	726	569	679	10	SAP	120	3	3	7	12447	12197	3	555	591	573	2618	23.3	12.8	38.8	32.8	562	34.5	30.6	1512	1503	3.37	302.5	3728	3400
1449	943	685	960	10	SAP	120	3	3	7	12447	12197	3	555	591	573	2618	23.3	12.8	38.8	32.8	562	34.5	30.6	1512	1503	3.37	302.5	3728	3400
1451	757	559	747	10	SAP	300	2	2	58	CR40	447 A	1	625	590	607.5	2469	23.8	13.8	38	35	556	33.3	28.9	1514	1520	3.28	305	3665	3392
1452	884	675	860	10	SAP	38	3	6	2	12038	12447	2	580	591	585.5	2562	26	12.3	41.1	31.4	561	35	29.6	1581	1534	2.96	325	3602	3647
1453	889	689	896	10	SAP	38	3	6	2	12038	12447	2	580	591	585.5	2562	26	12.3	41.1	31.4	561	35	29.6	1581	1534	2.96	325	3602	3647
1454	1068	643	1060	10	SAP	217	2	3	9	236 A	38 A	2	540	554	547	2742	21.5	11.5	36.8	29.6	553	32	29.3	1354	1394	3.58	340	4025	3760
1455	1169	715	1206	10	SAP	217	2	3	9	236 A	38 A	2	540	554	547	2742	21.5	11.5	36.8	29.6	553	32	29.3	1354	1394	3.58	340	4025	3760
1456	876	659	891	10	SAP	31	3	4	2	12038	12447	4	607	566	586.5	2558	21.5	12.5	41.8	30.5	562	34.4	30.5	1554	1596	3.29	295	3568	3316
1457	839	626	860	10	SAP	31	3	4	2	12038	12447	4	607	566	586.5	2558	21.5	12.5	41.8	30.5	562	34.4	30.5	1554	1596	3.29	295	3568	3316
1458	957	834	946	10	SAP	103	3	4	6	12447	12038	2	580	600	590	2542	22	13	41	30	555	34.5	31.7	1573	1537	3.28	307.5	3569	3413
1459	831	671	834	10	SAP	103	3	4	6	12447	12038	2	580	600	590	2542	22	13	41	30	555	34.5	31.7	1573	1537	3.28	307.5	3569	3413
1461	867	647	849	10	SAP	146	3	1	9	80055	12038	4	627	600	613.5	2445	28.8	15	39.5	28.6	554	34.7	30.2	1448	1447	3.32	327.5	3827	3629
1462	1121	950	1100	10	SAP	39	3	1	3	12038	80055	3	567	551	559	2683	20.5	10.5	39.8	35	556	33.8	29.8	1383	1400	3.57	337.5	3996	3753
1463	984	880	979	10	SAP	39	3	1	3	12038	80055	3	567	551	559	2683	20.5	10.5	39.8	35	556	33.8	29.8	1383	1400	3.57	337.5	3996	3753
1464	782	607	768	10	SAP	2	3	1	1	12038	12197	1	570	530	550	2727	20.3	12.5	43.7	33.8	558	34.2	31.3	1520	1522	3.37	312.5	3669	3488
1465	927	699	940	10	SAP	2	3	1	1	12038	12197	1	570	530	550	2727	20.3	12.5	43.7	33.8	558	34.2	31.3	1520	1522	3.37	312.5	3669	3488
1467	1008	874	1015	10	SAP	181	3	4	10	80055	12197	1	570	575	572.5	2620	21	13	38.8	29.4	558	33.7	28.3	1475	1447	3.45	332.5	3819	3711
1468	682	618	673	10	SAP	193	3	6	11	80055	12447	4	600	601	600.5	2498	23.5	12.8	41.6	29.8	559	35.5	29.5	1709	1655	3.07	285	3323	3186
1469	834	687	846	10	SAP	193	3	6	11	80055	12447	4	600	601	600.5	2498	23.5	12.8	41.6	29.8	559	35.5	29.5	1709	1655	3.07	285	3323	3186
1470	1080	750	1104	10	SAP	42	3	2	3	12038	80055	1	575	592	583.5	2571	23.8	14.5	41.6	30.5	558	34.3	30.3	1454	1450	3.53	330	3843	3683
1471	1116	651	1140	10	SAP	42	3	2	3	12038	80055	1	575	592	583.5	2571	23.8	14.5	41.6	30.5	558	34.3	30.3	1454	1450	3.53	330	3843	3683
1472	887	809	862	10	SAP	123	3	4	7	12447	12197	3	574	555	564.5	2657	24	13.5	38.2	32.9	555	33.9	29.7	1542	1557	3.25	302.5	3582	3358
1473	1048	902	1053	10	SAP	123	3	4	7	12447	12197	3	574	555	564.5	2657	24	13.5	38.2	32.9	555	33.9	29.7	1542	1557	3.25	302.5	3582	3358

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
		GP a × 10 ²			Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
1474	989	793	977	10	SAP	96	3	2	6	12447	12038	3	558	613	585.5	2562	21	14	38.5	32.3	561	32.2	29	1608	1614	3.21	305	3482	3422
1475	947	830	964	10	SAP	96	3	2	6	12447	12038	3	558	613	585.5	2562	21	14	38.5	32.3	561	32.2	29	1608	1614	3.21	305	3482	3422
1476	1020	849	1000	10	SAP	120	3	3	7	12447	12197	3	555	591	573	2618	23.3	12.8	38.8	32.8	562	34.5	30.6	1512	1503	3.37	302.5	3728	3400
1477	964	782	927	10	SAP	120	3	3	7	12447	12197	3	555	591	573	2618	23.3	12.8	38.8	32.8	562	34.5	30.6	1512	1503	3.37	302.5	3728	3400
1478	891	797	899	10	SAP	115	3	1	7	12447	12197	3	573	586	579.5	2588	22.5	12	39.6	30.1	557	34.1	31	1552	1536	3.26	307.5	3608	3426
1479	888	809	878	10	SAP	115	3	1	7	12447	12197	3	573	586	579.5	2588	22.5	12	39.6	30.1	557	34.1	31	1552	1536	3.26	307.5	3608	3426
1481	962	744	951	10	SAP	256	2	3	45	956	197 A	3	550	555	552.5	2715	20.8	12.5	39.4	30.8	558	35.2	30.5	1455	1452	3.45	330	3839	3683
1482	828	589	787	10	SAP	33	3	5	2	12038	12447	2	556	525	540.5	2775	21	11.3	43.2	35.9	560	35.7	31.5	1502	1572	3.46	317.5	3643	3556
1483	1105	759	1124	10	SAP	33	3	5	2	12038	12447	2	556	525	540.5	2775	21	11.3	43.2	35.9	560	35.7	31.5	1502	1572	3.46	317.5	3643	3556
1484	1200	841	1210	10	SAP	26	3	2	2	12038	12447	2	625	572	598.5	2506	20.8	13.5	41	32	557	35.4	30.5	1400	1430	3.6	335	3936	3732
1485	1064	857	1059	10	SAP	26	3	2	2	12038	12447	2	625	572	598.5	2506	20.8	13.5	41	32	557	35.4	30.5	1400	1430	3.6	335	3936	3732
1486	872	590	861	10	SAP	11	3	3	1	12038	12197	4	554	540	547	2742	21.5	11	39.1	32.9	556	33.3	29.5	1539	1528	3.28	337.5	3626	3753
1487	892	603	888	10	SAP	11	3	3	1	12038	12197	4	554	540	547	2742	21.5	11	39.1	32.9	556	33.3	29.5	1539	1528	3.28	337.5	3626	3753
1488	776	676	775	10	SAP	188	3	1	11	80055	12447	4	581	860	720.5	2082	20.3	12	41.7	34.1	558	35.4	31.5	1565	1572	3.22	295	3558	3292
1489	848	758	852	10	SAP	188	3	1	11	80055	12447	4	581	860	720.5	2082	20.3	12	41.7	34.1	558	35.4	31.5	1565	1572	3.22	295	3558	3292
1490	1021	735	1027	10	SAP	206	3	4	21	0	TSO	0	528	620	574	2613	19.3	12	39.4	34	557	33.5	30.5	1506	1516	3.39	322.5	3686	3593
1491	1014	722	1030	10	SAP	206	3	4	21	0	TSO	0	528	620	574	2613	19.3	12	39.4	34	557	33.5	30.5	1506	1516	3.39	322.5	3686	3593
1492	808	677	810	10	SAP	50	3	5	3	12038	80055	2	545	546	545.5	2750	25	14.5	41.9	32.6	556	36	31.7	1549	1595	3.21	302.5	3537	3364
1493	738	630	733	10	SAP	50	3	5	3	12038	80055	2	545	546	545.5	2750	25	14.5	41.9	32.6	556	36	31.7	1549	1595	3.21	302.5	3537	3364
1494	1068	947	1063	10	SAP	204	3	2	21	0	TSO	0	565	570	567.5	2643	20	13.3	39.6	32.6	557	34	30.3	1478	1478	3.45	325	3769	3621
1495	1116	1014	1112	10	SAP	204	3	2	21	0	TSO	0	565	570	567.5	2643	20	13.3	39.6	32.6	557	34	30.3	1478	1478	3.45	325	3769	3621
1496	906	740	894	10	SAP	146	3	1	9	80055	12038	4	627	600	613.5	2445	28.8	15	39.5	28.6	554	34.7	30.2	1448	1447	3.32	327.5	3827	3629
1497	824	355	855	R	SAP	146	3	1	9	80055	12038	4	627	600	613.5	2445	28.8	15	39.5	28.6	554	34.7	30.2	1448	1447	3.32	327.5	3827	3629
1498	746	627	754	10	SAP	267	2	4	46	956	447 A	1	542	539	540.5	2775	21.5	12.5	42.2	34.5	560	35.8	31.3	1570	1539	3.25	307.5	3602	3444
1499	781	646	778	10	SAP	267	2	4	46	956	447 A	1	542	539	540.5	2775	21.5	12.5	42.2	34.5	560	35.8	31.3	1570	1539	3.25	307.5	3602	3444
1500	952	842	955	10	SAP	105	3	4	6	12447	12038	3	571	567	569	2636	21.3	13	40	30.1	540	33.8	30.3	1490	1524	3.16	305	3583	3294
1501	968	834	958	10	SAP	105	3	4	6	12447	12038	3	571	567	569	2636	21.3	13	40	30.1	540	33.8	30.3	1490	1524	3.16	305	3583	3294
1502	949	830	945	10	SAP	104	3	4	6	12447	12038	1	554	565	559.5	2681	21	13	36.3	32.8	558	31.4	29.7	1470	1464	3.37	320	3804	3571
1503	1113	797	1150	10	SAP	104	3	4	6	12447	12038	1	554	565	559.5	2681	21	13	36.3	32.8	558	31.4	29.7	1470	1464	3.37	320	3804	3571
1504	1081	809	1080	10	SAP	42	3	2	3	12038	80055	1	575	592	583.5	2571	23.8	14.5	41.6	30.5	558	34.3	30.3	1454	1450	3.53	330	3843	3683
1506	1018	856	1009	10	SAP	39	3	1	3	12038	80055	3	567	551	559	2683	20.5	10.5	39.8	35	556	33.8	29.8	1383	1400	3.57	337.5	3996	3753
1507	993	871	1012	10	SAP	39	3	1	3	12038	80055	3	567	551	559	2683	20.5	10.5	39.8	35	556	33.8	29.8	1383	1400	3.57	337.5	3996	3753
1508	892	589	861	10	SAP	81	3	3	5	12197	12447	1	662	672	667	2249	23	12	40.3	33.8	558	34.4	29.8	1566	1607	3.19	305	3517	3404
1509	858	693	845	10	SAP	81	3	3	5	12197	12447	1	662	672	667	2249	23	12	40.3	33.8	558	34.4	29.8	1566	1607	3.19	305	3517	3404
1511	1284	848	1319	10	SAP	201	3	6	20	0	PCU	0	575	518	546.5	2745	18	9.8	40.7	30.5	554	34.5	28.9	1434	1463	3.48	322.5	3825	3573
1512	1011	866	1001	10	SAP	62	3	3	4	12197	12038	3	510	550	530	2830	19.5	10.5	38.8	34.9	556	32.9	29.2	1489	1516	3.44	317.5	3700	3531
1517	831	520	853	F4	SAP	127	3	1	8	12447	80055	1	572	600	586	2560	26.5	15.5	51.5	31.9	557	44.6	42	1670	1704	3	277.5	3302	3091
1518	822	724	818	10	SAP	144	3	1	9	80055	12038	1	590	600	595	2521	26	13.5	49.4	33.7	557	43.9	38.1	1606	1585	3.19	297.5	3491	3314

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
		GPax 10 ²			Type								(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
1519	834	591	823	10	SAP	127	3	1	8	12447	80055	1	572	600	586	2560	26.5	15.5	51.5	31.9	557	44.6	42	1670	1704	3	277.5	3302	3091
1520	1156	898	1112	10	SAP	6	3	2	1	12038	12197	4	615	715	665	2256	20.5	12.3	54	34.3	559	45	38.2	1661	1625	3.2	292.5	3402	3270
1521	1009	707	1018	10	SAP	144	3	1	9	80055	12038	1	590	600	595	2521	26.0	13.5	49.4	33.7	557	43.9	38.1	1606	1585	3.19	297.5	3491	3314
1522	1005	735	1013	10	SAP	131	3	2	8	12447	80055	1	600	654	627	2392	25.5	15.0	51.9	31.9	557	44.9	39.7	1714	1698	2.98	272.5	3265	3036
1523	665	482	682	R	SAP	127	3	1	8	12447	80055	1	572	600	586	2560	26.5	15.5	51.5	31.9	557	44.6	42.0	1670	1704	3.00	277.5	3302	3091
1524	609	427	613	R	SAP	102	3	4	6	12447	12038	4	621	544	583	2575	22.5	14.0	31.3	24.0	558	26.2	23.9	1660	1570	3.19	295.0	3455	3292
1525	991	828	982	10	SAP	54	3	6	3	12038	80055	1	547	548	548	2740	20.8	12.3	55.7	36.1	555	47.9	41.0	1603	1556	3.23	292.5	3514	3247
1526	1055	690	1050	10	SAP	144	3	1	9	80055	12038	1	590	600	595	2521	26.0	13.5	49.4	33.7	557	43.9	38.1	1606	1585	3.19	297.5	3491	3314
1527	755	571	747	10	SAP	174	3	3	10	80055	12197	3	640	620	630	2381	24.8	13.5	55.0	34.7	554	47.3	42.2	1609	1581	3.06	290.0	3473	3213
1528	972	716	994	10	SAP	6	3	2	1	12038	12197	4	615	715	665	2256	20.5	12.3	54.0	34.3	559	45.0	38.2	1661	1625	3.20	292.5	3402	3270
1529	810	610	810	10	SAP	174	3	3	10	80055	12197	3	640	620	630	2381	24.8	13.5	55.0	34.7	554	47.3	42.2	1609	1581	3.06	290.0	3473	3213
1530	977	680	984	10	SAP	6	3	2	1	12038	12197	4	615	715	665	2256	20.5	12.3	54.0	34.3	559	45.0	38.2	1661	1625	3.20	292.5	3402	3270
1531	645	524	644	F4	SAP	182	3	5	10	80055	12197	3	550	572	561	2674	24.0	13.8	50.7	35.6	555	43.2	38.8	1590	1607	3.20	295.0	3472	3275
1532	723	483	738	F4	SAP	17	3	6	1	12038	12197	2	590	576	583	2573	20.3	11.5	55.1	31.7	552	48	41.7	1754	1710	2.9	272.5	3187	3008
1533	857	624	858	10	SAP	6	3	2	1	12038	12197	4	615	715	665	2256	20.5	12.3	54	34.3	559	45	38.2	1661	1625	3.2	292.5	3402	3270
1534	862	619	836	10	SAP	182	3	5	10	80055	12197	3	550	572	561	2674	24	13.8	50.7	35.6	555	43.2	38.8	1590	1607	3.2	295	3472	3275
1535	710	634	704	10	SAP	131	3	2	8	12447	80055	1	600	654	627	2392	25.5	15	51.9	31.9	557	44.9	39.7	1714	1698	2.98	272.5	3265	3036
1536	1107	756	1102	10	SAP	6	3	2	1	12038	12197	4	615	715	665	2256	20.5	12.3	54	34.3	559	45	38.2	1661	1625	3.2	292.5	3402	3270
1537	777	557	779	10	SAP	174	3	3	10	80055	12197	3	640	620	630	2381	24.8	13.5	55	34.7	554	47.3	42.2	1609	1581	3.06	290	3473	3213
1538	963	758	945	10	SAP	54	3	6	3	12038	80055	1	547	548	547.5	2740	20.8	12.3	55.7	36.1	555	47.9	41	1603	1556	3.23	292.5	3514	3247
1539	1047	769	1067	10	SAP	131	3	2	8	12447	80055	1	600	654	627	2392	25.5	15	51.9	31.9	557	44.9	39.7	1714	1698	2.98	272.5	3265	3036
1540	764	434	753	R	SAP	252	2	2	45	956	197 A	1	510	498	504	2976	17.8	9	29.1	30.9	560	24.8	20.8	1371	1372	3.67	352.5	4083	3948
1541	947	818	927	10	SAP	174	3	3	10	80055	12197	3	640	620	630	2381	24.8	13.5	55	34.7	554	47.3	42.2	1609	1581	3.06	290	3473	3213
1542	987	753	974	10	SAP	6	3	2	1	12038	12197	4	615	715	665	2256	20.5	12.3	54	34.3	559	45	38.2	1661	1625	3.2	292.5	3402	3270
1543	758	573	758	10	SAP	136	3	4	8	12447	80055	2	650	710	680	2206	28.5	17.3	53.2	31.8	551	46.6	40.7	1678	1773	2.92	277.5	3193	3058
1544	771	551	789	F4	SAP	136	3	4	8	12447	80055	2	650	710	680	2206	28.5	17.3	53.2	31.8	551	46.6	40.7	1678	1773	2.92	277.5	3193	3058
1545	1022	837	1011	10	SAP	174	3	3	10	80055	12197	3	640	620	630	2381	24.8	13.5	55	34.7	554	47.3	42.2	1609	1581	3.06	290	3473	3213
1546	536	320	548	R	SAP	136	3	4	8	12447	80055	2	650	710	680	2206	28.5	17.3	53.2	31.8	551	46.6	40.7	1678	1773	2.92	277.5	3193	3058
1547	676	527	664	F4	SAP	143	3	6	8	12447	80055	1	578	598	588	2551	24.3	14.3	53.8	32.6	554	45.3	41.2	1693	1649	2.96	272.5	3315	3019
1548	724	467	697	R	SAP	319	2	2	101	MY 7	38 A	2	685	684	684.5	2191	24	13	54.6	35.1	556	49.6	42.2	1664	1630	3.05	277.5	3376	3086
1549	926	745	923	10	SAP	127	3	1	8	12447	80055	1	572	600	586	2560	26.5	15.5	51.5	31.9	557	44.6	42	1670	1704	3	277.5	3302	3091
1550	1157	773	1160	10	SAP	6	3	2	1	12038	12197	4	615	715	665	2256	20.5	12.3	54.0	34.3	559	45.0	38.2	1661	1625	3.20	292.5	3402	3270
1551	770	626	774	10	SAP	131	3	2	8	12447	80055	1	600	654	627	2392	25.5	15.0	51.9	31.9	557	44.9	39.7	1714	1698	2.98	272.5	3265	3036
1552	879	622	882	10	SAP	127	3	1	8	12447	80055	1	572	600	586	2560	26.5	15.5	51.5	31.9	557	44.6	42.0	1670	1704	3.00	277.5	3302	3091
1553	762	589	780	10	SAP	174	3	3	10	80055	12197	3	640	620	630	2381	24.8	13.5	55.0	34.7	554	47.3	42.2	1609	1581	3.06	290.0	3473	3213
1554	997	530	975	F4	SAP	144	3	1	9	80055	12038	1	590	600	595	2521	26.0	13.5	49.4	33.7	557	43.9	38.1	1606	1585	3.19	297.5	3491	3314
1555	871	687	883	10	SAP	143	3	6	8	12447	80055	1	578	598	588	2551	24.3	14.3	53.8	32.6	554	45.3	41.2	1693	1649	2.96	272.5	3315	3019
1556	629	398	598	R	SAP	319	2	2	101	MY 7	38 A	2	685	684	685	2191	24.0	13.0	54.6	35.1	556	49.6	42.2	1664	1630	3.05	277.5	3376	3086

Board data						Tree data										Log data													
BoardID	Emean	Emin	Emedian	MGP	Prod	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lgth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
		GPax 10 ²			Type								(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
1557	737	572	736	10	SAP	144	3	1	9	80055	12038	1	590	600	595	2521	26.0	13.5	49.4	33.7	557	43.9	38.1	1606	1585	3.19	297.5	3491	3314
1558	613	535	615	F4	SAP	127	3	1	8	12447	80055	1	572	600	586	2560	26.5	15.5	51.5	31.9	557	44.6	42.0	1670	1704	3.00	277.5	3302	3091
1559	727	617	726	10	SAP	171	3	2	10	80055	12197	4	950	665	808	1858	25.5	14.3	51.5	30.0	553	44.8	40.1	1725	1694	2.96	277.5	3235	3069
1560	999	732	984	10	SAP	54	3	6	3	12038	80055	1	547	548	548	2740	20.8	12.3	55.7	36.1	555	47.9	41.0	1603	1556	3.23	292.5	3514	3247
1561	937	626	925	10	SAP	319	2	2	101	MY 7	38 A	2	685	684	685	2191	24.0	13.0	54.6	35.1	556	49.6	42.2	1664	1630	3.05	277.5	3376	3086
1562	1169	999	1141	10	SAP	54	3	6	3	12038	80055	1	547	548	547.5	2740	20.8	12.3	55.7	36.1	555	47.9	41	1603	1556	3.23	292.5	3514	3247
1563	780	575	794	10	SAP	6	3	2	1	12038	12197	4	615	715	665	2256	20.5	12.3	54	34.3	559	45	38.2	1661	1625	3.2	292.5	3402	3270
1564	892	752	904	10	SAP	54	3	6	3	12038	80055	1	547	548	547.5	2740	20.8	12.3	55.7	36.1	555	47.9	41	1603	1556	3.23	292.5	3514	3247
1567	862	622	828	10	SAP	17	3	6	1	12038	12197	2	590	576	583	2573	20.3	11.5	55.1	31.7	552	48	41.7	1754	1710	2.9	272.5	3187	3008
1568	846	672	811	10	SAP	171	3	2	10	80055	12197	4	950	665	807.5	1858	25.5	14.3	51.5	30	553	44.8	40.1	1725	1694	2.96	277.5	3235	3069
1569	1119	878	1101	10	SAP	316	2	4	59	CR40	994	3	511	485	488	3074	17.5	11	29	30.9	556	24.7	20.8	1350	1370	3.86	347.5	4088	3864
1570	816	675	808	10	SAP	171	3	2	10	80055	12197	4	950	665	807.5	1858	25.5	14.3	51.5	30	553	44.8	40.1	1725	1694	2.96	277.5	3235	3069
1571	781	579	788	10	SAP	174	3	3	10	80055	12197	3	640	620	630	2381	24.8	13.5	55	34.7	554	47.3	42.2	1609	1581	3.06	290	3473	3213
1572	862	629	925	10	SAP	144	3	1	9	80055	12038	1	590	600	595	2521	26	13.5	49.4	33.7	557	43.9	38.1	1606	1585	3.19	297.5	3491	3314
1573	736	658	722	10	SAP	171	3	2	10	80055	12197	4	950	665	807.5	1858	25.5	14.3	51.5	30	553	44.8	40.1	1725	1694	2.96	277.5	3235	3069
1574	778	652	751	10	SAP	17	3	6	1	12038	12197	2	590	576	583	2573	20.3	11.5	55.1	31.7	552	48	41.7	1754	1710	2.9	272.5	3187	3008
1575	836	553	841	10	SAP	319	2	2	101	MY 7	38 A	2	685	684	684.5	2191	24	13	54.6	35.1	556	49.6	42.2	1664	1630	3.05	277.5	3376	3086
1576	720	442	721	R	SAP	319	2	2	101	MY 7	38 A	2	685	684	684.5	2191	24	13	54.6	35.1	556	49.6	42.2	1664	1630	3.05	277.5	3376	3086
1577	950	712	948	10	SAP	17	3	6	1	12038	12197	2	590	576	583	2573	20.3	11.5	55.1	31.7	552	48	41.7	1754	1710	2.9	272.5	3187	3008
1578	978	722	1001	10	SAP	6	3	2	1	12038	12197	4	615	715	665	2256	20.5	12.3	54	34.3	559	45	38.2	1661	1625	3.2	292.5	3402	3270
1579	1089	917	1080	10	SAP	131	3	2	8	12447	80055	1	600	654	627	2392	25.5	15	51.9	31.9	557	44.9	39.7	1714	1698	2.98	272.5	3265	3036
1580	1173	470	1187	R	SAP	15	3	5	1	12038	12197	3	460	460	460	3261	18.8	9.8	32.9	34.2	561	27.6	24.7	1364	1350	3.79	347.5	4134	3899
1581	792	636	812	10	SAP	222	2	1	10	236 A	197 A	3	504	532	518	2896	21.8	13	25.9	23.3	560	22.9	19.4	1450	1443	3.44	317.5	3871	3556
1582	745	511	753	F4	SAP	171	3	2	10	80055	12197	4	950	665	807.5	1858	25.5	14.3	51.5	30	553	44.8	40.1	1725	1694	2.96	277.5	3235	3069
1583	898	412	929	R	SAP	40	3	1	3	12038	80055	1	593	575	584	2568	21.5	12.5	30.9	26.8	558	25.8	20.9	1514	1542	3.24	300	3652	3348
1584	1449	1110	1456	12	SAP	20	3	1	2	12038	12447	3	507	490	498.5	3009	20.5	10	29.2	29.7	559	25.1	22.8	1384	1361	3.77	347.5	4073	3885
1585	682	488	687	F4	SAP	17	3	6	1	12038	12197	2	590	576	583	2573	20.3	11.5	55.1	31.7	552	48	41.7	1754	1710	2.9	272.5	3187	3008
1586	881	785	887	10	SAP	131	3	2	8	12447	80055	1	600	654	627	2392	25.5	15	51.9	31.9	557	44.9	39.7	1714	1698	2.98	272.5	3265	3036
1587	804	669	796	10	SAP	133	3	3	8	12447	80055	1	580	654	617	2431	25.8	15	53.1	38.1	558	45.8	41.2	1780	1664	2.96	277.5	3240	3097
1588	912	798	906	10	SAP	174	3	3	10	80055	12197	3	640	620	630	2381	24.8	13.5	55	34.7	554	47.3	42.2	1609	1581	3.06	290	3473	3213
1589	988	709	983	10	SAP	182	3	5	10	80055	12197	3	550	572	561	2674	24	13.8	50.7	35.6	555	43.2	38.8	1590	1607	3.2	295	3472	3275
1590	1032	724	1039	10	SAP	17	3	6	1	12038	12197	2	590	576	583	2573	20.3	11.5	55.1	31.7	552	48	41.7	1754	1710	2.9	272.5	3187	3008
1591	688	555	681	10	SAP	133	3	3	8	12447	80055	1	580	654	617	2431	25.8	15.0	53.1	38.1	558	45.8	41.2	1780	1664	2.96	277.5	3240	3097
1592	772	556	769	10	SAP	252	2	2	45	956	197 A	1	510	498	504	2976	17.8	9.0	29.1	30.9	560	24.8	20.8	1371	1372	3.67	352.5	4083	3948
1593	1090	830	1112	10	SAP	252	2	2	45	956	197 A	1	510	498	504	2976	17.8	9.0	29.1	30.9	560	24.8	20.8	1371	1372	3.67	352.5	4083	3948
1594	973	887	973	10	SAP	54	3	6	3	12038	80055	1	547	548	548	2740	20.8	12.3	55.7	36.1	555	47.9	41.0	1603	1556	3.23	292.5	3514	3247
1595	816	625	786	10	SAP	182	3	5	10	80055	12197	3	550	572	561	2674	24.0	13.8	50.7	35.6	555	43.2	38.8	1590	1607	3.20	295.0	3472	3275
1596	586	376	589	R	SAP	136	3	4	8	12447	80055	2	650	710	680	2206	28.5	17.3	53.2	31.8	551	46.6	40.7	1678	1773	2.92	277.5	3193	3058

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
		GPa x 10 ⁻²			Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
1597	802	568	814	10	SAP	143	3	6	8	12447	80055	1	578	598	588	2551	24.3	14.3	53.8	32.6	554	45.3	41.2	1693	1649	2.96	272.5	3315	3019
1598	1066	949	1049	10	SAP	262	2	2	46	956	447 A	3	526	478	502	2988	18.8	10.5	31.7	32.7	559	26.8	23.3	1450	1442	3.51	330.0	3866	3689
1599	1217	1052	1189	12	SAP	28	3	3	2	12038	12447	2	524	540	532	2820	20.8	12.3	33.4	33.4	545	28.2	24.5	1382	1396	3.68	352.5	3924	3842
1600	1064	823	1056	10	SAP	271	2	2	47	956	994	1	540	526	533	2814	20.3	10.5	32.1	36.8	561	27.8	25.7	1460	1446	3.42	322.5	3861	3618
1601	870	654	841	10	SAP	251	2	1	45	956	197 A	1	530	564	547	2742	18.3	10.0	34.1	33.3	563	28.7	24.3	1342	1363	3.69	350.0	4163	3941
1602	793	512	765	F4	SAP	333	2	2	103	MY 7	447 A	2	530	528	529	2836	17.3	9.0	27.4	30.6	556	25.3	20.4	1382	1401	3.67	350.0	3996	3892
1603	937	673	944	10	SAP	99	3	3	6	12447	12038	3	553	571	562	2669	21.0	12.0	32.2	33.4	559	27.2	25.3	1470	1480	3.41	327.5	3790	3661
1604	686	505	665	F4	SAP	40	3	1	3	12038	80055	1	593	575	584	2568	21.5	12.5	30.9	26.8	558	25.8	20.9	1514	1542	3.24	300.0	3652	3348
1605	1041	895	1022	10	SAP	223	2	2	10	236 A	197 A	3	520	512	516	2907	17.0	10.5	29.7	33.6	560	26.5	23.1	1480	1501	3.52	330.0	3757	3696
1606	1004	733	988	10	SAP	182	3	5	10	80055	12197	3	550	572	561	2674	24.0	13.8	50.7	35.6	555	43.2	38.8	1590	1607	3.20	295.0	3472	3275
1607	939	713	944	10	SAP	150	3	2	9	80055	12038	4	570	557	564	2662	22.3	14.8	44.2	34.9	555	38.5	35.3	1490	1482	3.43	327.5	3735	3635
1608	1182	857	1207	10	SAP	187							503	467	485	3093	19.5	11	25.7	26	558	21.6	18.7	1391	1377	3.66	350	4032	3906
1609	970	837	977	10	SAP	54	3	6	3	12038	80055	1	547	548	547.5	2740	20.8	12.3	55.7	36.1	555	47.9	41	1603	1556	3.23	292.5	3514	3247
1610	672	477	670	R	SAP	136	3	4	8	12447	80055	2	650	710	680	2206	28.5	17.3	53.2	31.8	551	46.6	40.7	1678	1773	2.92	277.5	3193	3058
1611	629	508	652	F4	SAP	136	3	4	8	12447	80055	2	650	710	680	2206	28.5	17.3	53.2	31.8	551	46.6	40.7	1678	1773	2.92	277.5	3193	3058
1612	954	802	944	10	SAP	319	2	2	101	MY 7	38 A	2	685	684	684.5	2191	24	13	54.6	35.1	556	49.6	42.2	1664	1630	3.05	277.5	3376	3086
1613	838	703	794	10	SAP	136	3	4	8	12447	80055	2	650	710	680	2206	28.5	17.3	53.2	31.8	551	46.6	40.7	1678	1773	2.92	277.5	3193	3058
1614	1201	963	1192	10	SAP	24	3	2	2	12038	12447	3	525	525	525	2857	21.3	10.5	30.9	30.4	557	26.4	25.4	1475	1470	3.52	330	3783	3676
1615	871	753	886	10	SAP	99	3	3	6	12447	12038	3	553	571	562	2669	21	12	32.2	33.4	559	27.2	25.3	1470	1480	3.41	327.5	3790	3661
1616	1317	1076	1309	12	SAP	98	3	3	6	12447	12038	1	537	540	539	2786	20.3	10.0	30.2	31.5	559	26.1	25.2	1446	1456	3.62	340.0	3853	3801
1617	1059	817	1072	10	SAP	121	3	4	7	12447	12197	1					21.0	12.3	27.6	28.9	559	23.8	20.4	1363	1383	3.64	325.0	4071	3634
1618	678	568	682	10	SAP	114	3	1	7	12447	12197	1	537	522	530	2833	20.5	11.3	28.7	30.5	558	23.8	20.6	1392	1383	3.64	365.0	4022	4073
1619	1220	1017	1235	10	SAP	98	3	3	6	12447	12038	1	537	540	539	2786	20.3	10.0	30.2	31.5	559	26.1	25.2	1446	1456	3.62	340.0	3853	3801
1620	1041	806	1047	10	SAP	322	2	4	101	MY 7	38 A	2	534	557	546	2750	20.3	12.0	26.1	20.1	553	22.8	20.3	1498	1485	3.40	312.5	3708	3456
1621	880	646	872	10	SAP	136	3	4	8	12447	80055	2	650	710	680	2206	28.5	17.3	53.2	31.8	551	46.6	40.7	1678	1773	2.92	277.5	3193	3058
1622	1152	889	1160	10	SAP	121	3	4	7	12447	12197	1					21.0	12.3	27.6	28.9	559	23.8	20.4	1363	1383	3.64	325.0	4071	3634
1623	874	683	878	10	SAP	121	3	4	7	12447	12197	1					21.0	12.3	27.6	28.9	559	23.8	20.4	1363	1383	3.64	325.0	4071	3634
1624	804	699	797	10	SAP	67	3	5	4	12197	12038	1	500	489	495	3033	19.8	10.8	25.8	23.9	559	21.4	18.4	1355	1348	3.69	355.0	4136	3969
1625	759	499	757	F4	SAP	271	2	2	47	956	994	1	540	526	533	2814	20.3	10.5	32.1	36.8	561	27.8	25.7	1460	1446	3.42	322.5	3861	3618
1626	987	757	946	10	SAP	67	3	5	4	12197	12038	1	500	489	495	3033	19.8	10.8	25.8	23.9	559	21.4	18.4	1355	1348	3.69	355.0	4136	3969
1627	954	580	944	10	SAP	294	2	2	57	CR40	197 A	3	491	513	502	2988	20.5	11.0	27.3	26.3	556	23.5	19.8	1420	1420	3.59	372.5	3915	4142
1628	733	630	736	10	SAP	262	2	2	46	956	447 A	3	526	478	502	2988	18.8	10.5	31.7	32.7	559	26.8	23.3	1450	1442	3.51	330.0	3866	3689
1629	1234	946	1253	10	SAP	251	2	1	45	956	197 A	1	530	564	547	2742	18.3	10.0	34.1	33.3	563	28.7	24.3	1342	1363	3.69	350.0	4163	3941
1630	1154	712	1087	10	SAP	265	2	4	46	956	447 A	2	492	544	518	2896	17.5	10.8	28.8	31.9	558	24.6	20.6	1352	1350	3.77	352.5	4130	3934
1631	1228	1017	1213	10	SAP	109	3	5	6	12447	12038	3	537	569	553	2712	20	12.3	32.2	32.8	556	27	24.6	1462	1501	3.41	322.5	3753	3586
1632	757	442	756	R	SAP	102	3	4	6	12447	12038	4	621	544	582.5	2575	22.5	14	31.3	24	558	26.2	23.9	1660	1570	3.19	295	3455	3292
1633	839	741	838	10	SAP	114	3	1	7	12447	12197	1	537	522	529.5	2833	20.5	11.3	28.7	30.5	558	23.8	20.6	1392	1383	3.64	365	4022	4073
1634	992	847	973	10	SAP	126	3	6	7	12447	12197	1	524	553	538.5	2786	22.5	12.8	31.6	28	561	27.1	23.8	1485	1529	3.39	305	3723	3422

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
		GPax 10 ²			Type								(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
1635	796	571	815	10	SAP	133	3	3	8	12447	80055	1	580	654	617	2431	25.8	15	53.1	38.1	558	45.8	41.2	1780	1664	2.96	277.5	3240	3097
1636	648	451	654	R	SAP	291	2	1	57	CR40	197 A	1	617	628	623	2410	32.5	15.8	24.4	22.7	557	21.0	17.8	1703	1682	2.95	275.0	3291	3064
1637	848	717	837	10	SAP	296	2	4	57	CR40	197 A	2	535	556	546	2750	25.0	15.0	28.9	31.0	558	25.5	22.7	1570	1599	3.16	300.0	3522	3348
1638	1111	771	1121	10	SAP	114	3	1	7	12447	12197	1	537	522	530	2833	20.5	11.3	28.7	30.5	558	23.8	20.6	1392	1383	3.64	365.0	4022	4073
1639	1267	655	1290	10	SAP	290	2	1	57	CR40	197 A	3	503	487	495	3030	18.5	10.5	29.2	33.9	557	25.6	22.2	1344	1392	3.68	345.0	4072	3843
1640	760	630	748	10	SAP	27	3	3	2	12038	12447	3	535	546	541	2775	20.5	12.8	29.6	28.6	560	25.1	22.3	1412	1404	3.67	337.5	3977	3780
1641	833	636	825	10	SAP	131	3	2	8	12447	80055	1	600	654	627	2392	25.5	15.0	51.9	31.9	557	44.9	39.7	1714	1698	2.98	272.5	3265	3036
1642	963	563	876	10	SAP	194	3	1	20	0	PCU	0	573	544	559	2686	19.3	10.3	31.3	28.4	561	26.7	23.8	1484	1446	3.52	285.0	3829	3198
1643	1482	1289	1460	15	SAP	7	3	2	1	12038	12197	3	543	532	538	2791	17.0	11.8	32.9	31.7	558	28.0	25.3	1379	1400	3.71	350.0	4016	3906
1644	1109	751	1123	10	SAP	92	3	1	6	12447	12038	2	555	576	566	2653	23.3	11.3	28.8	26.9	560	24.6	23.1	1453	1433	3.54	332.5	3881	3724
1645	1095	837	1103	10	SAP	118	3	3	7	12447	12197	1	517	559	538	2788	21.8	11.3	30.0	31.7	555	26.2	22.8	1370	1369	3.62		4053	
1646	826	735	828	10	SAP	24	3	2	2	12038	12447	3	525	525	525	2857	21.3	10.5	30.9	30.4	557	26.4	25.4	1475	1470	3.52	330.0	3783	3676
1647	914	728	894	10	SAP	212	2	1	9	236 A	38 A	3	520	560	540	2778	25.0	13.5	30.8	28.6	557	26.7	24.0	1495	1497	3.50	330.0	3723	3676
1648	1358	915	1377	10	SAP	323	2	1	102	MY 7	197 A	1	535	493	514	2918	19.5	10.8	30.9	28.9	556	26.4	22.8	1351	1344	3.75	347.5	4126	3864
1649	925	735	926	10	SAP	28	3	3	2	12038	12447	2	524	540	532	2820	20.8	12.3	33.4	33.4	545	28.2	24.5	1382	1396	3.68	352.5	3924	3842
1650	1219	1044	1201	12	SAP	27	3	3	2	12038	12447	3	535	546	541	2775	20.5	12.8	29.6	28.6	560	25.1	22.3	1412	1404	3.67	337.5	3977	3780
1651	1078	597	1138	10	SAP	251	2	1	45	956	197 A	1	530	564	547	2742	18.3	10.0	34.1	33.3	563	28.7	24.3	1342	1363	3.69	350.0	4163	3941
1652	828	341	659	R	SAP	194	3	1	20	0	PCU	0	573	544	559	2686	19.3	10.3	31.3	28.4	561	26.7	23.8	1484	1446	3.52	285.0	3829	3198
1653	1080	946	1072	10	SAP	24	3	2	2	12038	12447	3	525	525	525	2857	21.3	10.5	30.9	30.4	557	26.4	25.4	1475	1470	3.52	330.0	3783	3676
1654	872	552	868	10	SAP	63	3	4	4	12197	12038	1	509	558	534	2812	19.0	12.5	33.8	30.2	560	27.9	25.1	1514	1474	3.44	317.5	3748	3556
1655	1024	634	1032	10	SAP	84	3	4	5	12197	12447	4	535	530	533	2817	18.0	10.8	32.8	29.7	545	26.4	23.0	1383	1439	3.58	337.5	3863	3679
1656	793	349	748	R	SAP	266	2	4	46	956	447 A	3	520	520	520	2885	18.8	11.5	36.8	35.6	557	31.5	26.3	1642	1563	3.21	302.5	3476	3370
1657	704	527	692	F4	SAP	63	3	4	4	12197	12038	1	509	558	534	2812	19.0	12.5	33.8	30.2	560	27.9	25.1	1514	1474	3.44	317.5	3748	3556
1658	994	580	934	10	SAP	223	2	2	10	236 A	197 A	3	520	512	516	2907	17.0	10.5	29.7	33.6	560	26.5	23.1	1480	1501	3.52	330.0	3757	3696
1659	1153	808	1177	10	SAP	289	2	1	57	CR40	197 A	2	500	530	515	2913	19.8	10.3	30.8	38.2	559	27.5	24.2	1448	1439	3.54	332.5	3873	3717
1660	1309	1103	1266	12	SAP	220	2	1	10	236 A	197 A	1	482	524	503	2982	16.8	10.5	30.6	33.3	561	25.0	22.6	1365	1337	3.84	347.5	4152	3899
1661	1026	842	1038	10	SAP	243	2	2	44	956	38 A	3	540	570	555	2703	19.3	8.8	31.1	32.4	560	25.5	21.4	1404	1455	3.60	337.5	3917	3780
1662	1005	701	942	10	SAP	324	2	1	102	MY 7	197 A	2	526	532	529	2836	17.5	9.0	29.9	32.5	559	24.6	21.7	1312	1315	3.98	380.0	4256	4248
1663	758	556	768	10	SAP	98	3	3	6	12447	12038	1	537	540	539	2786	20.3	10.0	30.2	31.5	559	26.1	25.2	1446	1456	3.62	340.0	3853	3801
1664	738	582	728	10	SAP	27	3	3	2	12038	12447	3	535	546	541	2775	20.5	12.8	29.6	28.6	560	25.1	22.3	1412	1404	3.67	337.5	3977	3780
1665	1116	660	1109	10	SAP	124	3	5	7	12447	12197	1	591	554	573	2620	24.8	13.5	32.6	33.6	561	28.1	25.8	1532	1594	3.39	320.0	3589	3590
1666	947	722	947	10	SAP	275	2	4	47	956	994	1	547	554	551	2725	21.8	13.5	37.0	32.2	553	30.9	27.1	1633	1564	3.21	315.0	3459	3484
1667	944	783	944	10	SAP	92	3	1	6	12447	12038	2	555	576	566	2653	23.3	11.3	28.8	26.9	560	24.6	23.1	1453	1433	3.54	332.5	3881	3724
1668					SAP	253	2	2	45	956	197 A	3	519	529	524	2863	19.0	10.0	34.2	35.8	558	30.3	26.4	1572	1546	3.30	307.5	3579	3432
1670	1134	917	1120	10	SAP	253	2	2	45	956	197 A	3	519	529	524	2863	19.0	10.0	34.2	35.8	558	30.3	26.4	1572	1546	3.30	307.5	3579	3432
1671	652	516	642	F4	SAP	116	3	2	7	12447	12197	1	578	612	595	2521	25.0	16.0	33.2	22.1	559	29.1	23.8	1661	1701	3.01	270.0	3325	3019
1672	575	425	575	R	SAP	102	3	4	6	12447	12038	4	621	544	583	2575	22.5	14.0	31.3	24.0	558	26.2	23.9	1660	1570	3.19	295.0	3455	3292
1673	697	576	675	10	SAP	84	3	4	5	12197	12447	4	535	530	533	2817	18.0	10.8	32.8	29.7	545	26.4	23.0	1383	1439	3.58	337.5	3863	3679

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lgth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
		GPa x 10 ⁻²			Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
1674	721	470	700	R	SAP	251	2	1	45	956	197 A	1	530	564	547	2742	18.3	10.0	34.1	33.3	563	28.7	24.3	1342	1363	3.69	350.0	4163	3941
1680	1070	741	1081	10	SAP	248	2	4	44	956	38 A	3	489	475	482	3112	17.5	11.3	33.2	35.8	560	29	24.4	1400	1360	3.7	352.5	4058	3948
1681	911	614	960	10	SAP	286	2	3	56	CR40	38 A	1	496	498	497	3018	17	10.3	36.3	31.7	558	30.5	26.7	1446	1465	3.58	337.5	3834	3767
1682	725	523	734	F4	SAP	253	2	2	45	956	197 A	3	519	529	524	2863	19	10	34.2	35.8	558	30.3	26.4	1572	1546	3.3	307.5	3579	3432
1683	1259	1030	1283	10	SAP	84	3	4	5	12197	12447	4	535	530	532.5	2817	18	10.8	32.8	29.7	545	26.4	23	1383	1439	3.58	337.5	3863	3679
1684	976	669	980	10	SAP	106	3	5	6	12447	12038	2	565	504	534.5	2806	20.8	11	32.2	28.8	563	27.6	24.4	1450	1477	3.56	330	3847	3716
1685	1012	848	993	10	SAP	29	3	3	2	12038	12447	1	535	550	542.5	2765	19.5	10.8	33.9	32.4	558	29.3	28	1445	1461	3.56	340	3840	3794
1686	1053	668	1081	10	SAP	124	3	5	7	12447	12197	1	591	554	572.5	2620	24.8	13.5	32.6	33.6	561	28.1	25.8	1532	1594	3.39	320	3589	3590
1687	1316	1077	1294	12	SAP	286	2	3	56	CR40	38 A	1	496	498	497	3018	17	10.3	36.3	31.7	558	30.5	26.7	1446	1465	3.58	337.5	3834	3767
1688	734	596	713	10	SAP	271	2	2	47	956	994	1	540	526	533	2814	20.3	10.5	32.1	36.8	561	27.8	25.7	1460	1446	3.42	322.5	3861	3618
1689	922	431	922	R	SAP	102	3	4	6	12447	12038	4	621	544	583	2575	22.5	14.0	31.3	24.0	558	26.2	23.9	1660	1570	3.19	295.0	3455	3292
1690	617	409	617	R	SAP	88	3	5	5	12197	12447	3	500	510	505	2970	22.8	13.5	33.8	27.8	558	28.8	25.1	1589	1571	3.27	307.5	3532	3432
1691	1064	842	1076	10	SAP	209	3	6	21	0	TSO	0	524	539	532	2822	23.5	13.5	34.1	29.1	558	28.5	25.3	1520	1519	3.40	322.5	3672	3599
1692	1157	941	1145	10	SAP	309	2	1	59	CR40	994	1	530	550	540	2778	21.0	11.0	35.5	34.3	558	30.4	27.0	1503	1501	3.45	322.5	3715	3599
1693	1126	926	1147	10	SAP	289	2	1	57	CR40	197 A	2	500	530	515	2913	19.8	10.3	30.8	38.2	559	27.5	24.2	1448	1439	3.54	332.5	3873	3717
1694	749	526	767	F4	SAP	261	2	2	46	956	447 A	1	543	520	532	2822	21.5	10.5	35.3	28.6	560	29.4	25.0	1532	1565	3.25	312.5	3616	3500
1695	962	693	910	10	SAP	275	2	4	47	956	994	1	547	554	551	2725	21.8	13.5	37.0	32.2	553	30.9	27.1	1633	1564	3.21	315.0	3459	3484
1696	1078	882	1037	10	SAP	248	2	4	44	956	38 A	3	489	475	482	3112	17.5	11.3	33.2	35.8	560	29.0	24.4	1400	1360	3.70	352.5	4058	3948
1697	996	711	967	10	SAP	253	2	2	45	956	197 A	3	519	529	524	2863	19.0	10.0	34.2	35.8	558	30.3	26.4	1572	1546	3.30	307.5	3579	3432
1698	915	744	931	10	SAP	126	3	6	7	12447	12197	1	524	553	539	2786	22.5	12.8	31.6	28.0	561	27.1	23.8	1485	1529	3.39	305.0	3723	3422
1699	1115	864	1124	10	SAP	286	2	3	56	CR40	38 A	1	496	498	497	3018	17	10.3	36.3	31.7	558	30.5	26.7	1446	1465	3.58	337.5	3834	3767
1700	1209	986	1234	10	SAP	231	2	1	11	236 A	447 A	2	550	525	537.5	2791	19.5	12	28.8	28.7	559	26.2	22.1	1378	1377	3.74	350	4058	3913
1701	1102	859	1092	10	SAP	277	2	4	47	956	994	2	464	512	488	3074	18	10	32.7	31.4	558	29.2	25.8	1433	1464	3.74	355	3852	3962
1702	1091	848	1097	10	SAP	35	3	5	2	12038	12447	1	497	519	508	2953	19.8	11.5	33.5	28.5	544	28.7	25.5	1460	1426	3.37	322.5	3770	3509
1703	1403	1064	1386	12	SAP	28	3	3	2	12038	12447	2	524	540	532	2820	20.8	12.3	33.4	33.4	545	28.2	24.5	1382	1396	3.68	352.5	3924	3842
1704	823	621	849	10	SAP	261	2	2	46	956	447 A	1	543	520	531.5	2822	21.5	10.5	35.3	28.6	560	29.4	25	1532	1565	3.25	312.5	3616	3500
1705	657	460	661	R	SAP	123	3	4	7	12447	12197	3	574	555	564.5	2657	24	13.5	38.2	32.9	555	33.9	29.7	1542	1557	3.25	302.5	3582	3358
1706	1099	948	1121	10	SAP	7	3	2	1	12038	12197	3	543	532	537.5	2791	17	11.8	32.9	31.7	558	28	25.3	1379	1400	3.71	350	4016	3906
1707	1214	720	1250	10	SAP	209	3	6	21	0	TSO	0	524	539	531.5	2822	23.5	13.5	34.1	29.1	558	28.5	25.3	1520	1519	3.4	322.5	3672	3599
1708	1036	867	1032	10	SAP	118	3	3	7	12447	12197	1	517	559	538	2788	21.8	11.3	30	31.7	555	26.2	22.8	1370	1369	3.62		4053	
1709	1275	1005	1283	10	SAP	308	2	1	59	CR40	994	3	601	520	560.5	2676	22.5	12	35.9	32.9	557	31.2	27.4	1445	1434	3.66	372.5	3869	4150
1711	1114	599	1130	10	SAP	88	3	5	5	12197	12447	3	500	510	505	2970	22.8	13.5	33.8	27.8	558	28.8	25.1	1589	1571	3.27	307.5	3532	3432
1712	1182	977	1200	10	SAP	277	2	4	47	956	994	2	464	512	488	3074	18	10	32.7	31.4	558	29.2	25.8	1433	1464	3.74	355	3852	3962
1714	863	612	840	10	SAP	266	2	4	46	956	447 A	3	520	520	520	2885	18.8	11.5	36.8	35.6	557	31.5	26.3	1642	1563	3.21	302.5	3476	3370
1716	1223	1051	1239	12	SAP	29	3	3	2	12038	12447	1	535	550	542.5	2765	19.5	10.8	33.9	32.4	558	29.3	28	1445	1461	3.56	340	3840	3794
1717	1234	998	1225	10	SAP	308	2	1	59	CR40	994	3	601	520	560.5	2676	22.5	12	35.9	32.9	557	31.2	27.4	1445	1434	3.66	372.5	3869	4150
1718	1216	982	1220	10	SAP	331	2	1	103	MY 7	447 A	3	560	601	580.5	2584	21.5	12.3	37.5	31.2	557	32.5	27.7	1482	1471	3.52	332.5	3772	3704
1719	1069	942	1061	10	SAP	309	2	1	59	CR40	994	1	530	550	540	2778	21	11	35.5	34.3	558	30.4	27	1503	1501	3.45	322.5	3715	3599

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lgth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
		GPax 10 ²			Type								(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
1720	947	747	948	10	SAP	231	2	1	11	236 A	447 A	2	550	525	537.5	2791	19.5	12	28.8	28.7	559	26.2	22.1	1378	1377	3.74	350	4058	3913
1721	1060	769	1076	10	SAP	257	2	4	45	956	197 A	2	490	493	491.5	3052	17.8	11.3	37.3	34.2	559	31.8	28.4	1431	1424	3.54	325	3916	3634
1722	1369	1061	1380	12	SAP	337	2	4	103	MY 7	447 A	3	511	542	526.5	2849	17.3	10	34.2	34.1	559	29.3	25.7	1458	1514	3.56	332.5	3762	3717
1723	1191	966	1195	10	SAP	27	3	3	2	12038	12447	3	535	546	540.5	2775	20.5	12.8	29.6	28.6	560	25.1	22.3	1412	1404	3.67	337.5	3977	3780
1724	1505	1153	1512	12	SAP	47	3	4	3	12038	80055	3	550	510	530	2830	19	11.5	33	32.5	557	29	25.5	1451	1405	3.63	360	3901	4010
1726	1327	1084	1349	12	SAP	36	3	6	2	12038	12447	3	534	543	538.5	2786	18.8	11	38	32.1	560	31.5	29.4	1504	1530	3.41	317.5	3691	3556
1728	1055	811	1027	10	SAP	229	2	4	10	236 A	197 A	3	515	515	515	2913	19.5	11.3	34.8	35.6	559	31.1	26.6	1525	1601	3.43	335	3576	3745
1729	1431	830	1420	10	SAP	257	2	4	45	956	197 A	2	490	493	491.5	3052	17.8	11.3	37.3	34.2	559	31.8	28.4	1431	1424	3.54	325	3916	3634
1732	1115	823	1133	10	SAP	334	2	2	103	MY 7	447 A	2	525	550	537.5	2791	20.3	11.3	35.4	33.1	564	32	26.6	1520	1586	3.49	322.5	3632	3638
1733	1364	1133	1377	12	SAP	45	3	3	3	12038	80055	3	522	550	536	2799	22.8	11.8	34.6	34.5	559	29.8	26.5	1385	1368	3.72	345	4061	3857
1735	1098	830	1065	10	SAP	274	2	3	47	956	994	1	536	579	558	2691	21.0	11.3	34.4	29.5	560	29.4	25.8	1467	1459	3.44	312.5	3828	3500
1737	969	526	968	F4	SAP	88	3	5	5	12197	12447	3	500	510	505	2970	22.8	13.5	33.8	27.8	558	28.8	25.1	1589	1571	3.27	307.5	3532	3432
1739	1246	1024	1255	10	SAP	327	2	3	102	MY 7	197 A	1	532	527	530	2833	21.0	13.0	33.2	31.9	556	28.0	25.1	1362	1353	3.65	347.5	4096	3864
1740	1251	1010	1225	10	SAP	21	3	1	2	12038	12447	1	549	544	547	2745	19.3	10.0	32.5	29.8	559	27.7	26.6	1402	1402	3.62	345.0	3987	3857
1742	850	615	832	10	SAP	169	3	1	10	80055	12197	4	550	545	548	2740	18.5	11.5	32.7	25.9	561	28.5	24.8	1521	1446	3.52	347.5	3782	3899
1743	1422	1101	1431	12	SAP	7	3	2	1	12038	12197	3	543	532	538	2791	17.0	11.8	32.9	31.7	558	28.0	25.3	1379	1400	3.71	350.0	4016	3906
1744	1398	898	1405	10	SAP	263	2	3	46	956	447 A	3	514	516	515	2913	19.8	11.5	36.6	33.8	557	31.3	27.7	1420	1375	3.71	340.0	3986	3788
1745	871	603	806	10	SAP	169	3	1	10	80055	12197	4	550	545	548	2740	18.5	11.5	32.7	25.9	561	28.5	24.8	1521	1446	3.52	347.5	3782	3899
1747	827	490	730	F4	SAP	210	3	6	21	0	TSO	0	660	615	638	2353	23.0	13.8	41.8	26.4	557	35.0	29.2	1753	1743	2.98	282.5	3186	3147
1748	1034	660	1032	10	SAP	278	2	1	56	CR40	38 A	2	595	682	639	2349	22.0	11.3	36.6	12.6	559	30.8	25.9	1487	1574	3.35	330.0	3652	3689
1749	944	671	898	10	SAP	278	2	1	56	CR40	38 A	2	595	682	639	2349	22.0	11.3	36.6	12.6	559	30.8	25.9	1487	1574	3.35	330.0	3652	3689
1750	1126	944	1110	10	SAP	47	3	4	3	12038	80055	3	550	510	530	2830	19.0	11.5	33.0	32.5	557	29.0	25.5	1451	1405	3.63	360.0	3901	4010
1751	695	552	693	10	SAP	235	2	3	11	236 A	447 A	3	538	546	542	2768	17.5	10.0	38.7	36.5	559	31.4	27.1	1603	1534	3.33	305.0	3564	3410
1752	796	668	790	10	SAP	273	2	3	47	956	994	2	551	552	552	2720	23.3	12.5	32.9	27.9	556	28.3	25.0	1614	1614	3.21	300.0	3445	3336
1753	911	605	898	10	SAP	25	3	2	2	12038	12447	1	502	540	521	2879	20.5	13.3	35.2	29.2	558	30.9	26.6	1321	1406	3.69	345.0	4092	3850
1754	1032	797	1035	10	SAP	100	3	3	6	12447	12038	2	833	595	714	2101	24.0	12.5	34.6	35.2	559	30.0	26.7	1433	1440	3.43	320.0	3891	3578
1755	1288	1092	1282	12	SAP	56	3	1	4	12197	12038	2	535	550	543	2765	20.8	10.8	35.2	31.2	559	30.2	27.2	1420	1450	3.62	295.0	3895	3298
1756	1016	806	998	10	SAP	215	2	2	9	236 A	38 A	3	507	523	515	2913	23.8	13.8	36.6	30.8	558	31.0	28.2	1515	1451	3.45	320.0	3763	3571
1757	1084	805	1084	10	SAP	235	2	3	11	236 A	447 A	3	538	546	542	2768	17.5	10.0	38.7	36.5	559	31.4	27.1	1603	1534	3.33	305.0	3564	3410
1758	1114	803	1114	10	SAP	337	2	4	103	MY 7	447 A	3	511	542	527	2849	17.3	10.0	34.2	34.1	559	29.3	25.7	1458	1514	3.56	332.5	3762	3717
1759	1213	861	1204	10	SAP	227	2	4	10	236 A	197 A	2	508	494	501	2994	20.5	11.5	32.8	33.2	558	28.8	25.6	1476	1506	3.43	315.0	3742	3515
1760	867	644	867	10	SAP	109	3	5	6	12447	12038	3	537	569	553	2712	20.0	12.3	32.2	32.8	556	27.0	24.6	1462	1501	3.41	322.5	3753	3586
1761	839	662	835	10	SAP	207	3	5	21	0	TSO	0	559	566	563	2667	24.3	12.0	33.4	30.6	560	29.3	24.7	1626	1714	3.15	292.5	3353	3276
1762	1059	912	1052	10	SAP	327	2	3	102	MY 7	197 A	1	532	527	530	2833	21.0	13.0	33.2	31.9	556	28.0	25.1	1362	1353	3.65	347.5	4096	3864
1763	920	769	884	10	SAP	100	3	3	6	12447	12038	2	833	595	714	2101	24.0	12.5	34.6	35.2	559	30.0	26.7	1433	1440	3.43	320.0	3891	3578
1764					SAP	57	3	1	4	12197	12038	3	524	546	535	2804	20.0	11.5	35.8	32.9	559	30.5	27.6	1466	1466	3.43	320.0	3813	3578
1765	905	590	914	10	SAP	207	3	5	21	0	TSO	0	559	566	563	2667	24.3	12.0	33.4	30.6	560	29.3	24.7	1626	1714	3.15	292.5	3353	3276
1766	1030	647	1019	10	SAP	63	3	4	4	12197	12038	1	509	558	534	2812	19.0	12.5	33.8	30.2	560	27.9	25.1	1514	1474	3.44	317.5	3748	3556

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
					Type								(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
1767	1282	1080	1263	12	SAP	9	3	3	1	12038	12197	3	532	577	555	2705	19.5	10.5	36.8	35.1	561	31.4	28.0	1434	1403	3.58	342.5	3955	3843
1768	678	533	638	F4	SAP	200	3	6	20	0	PCU	0	590	552	571	2627	19.0	10.3	38.3	32.2	556	32.9	28.8	1580	1521	3.28	312.5	3586	3475
1769	1039	681	986	10	SAP	37	3	6	2	12038	12447	1	600	560	580	2586	21.3	12.0	36.5	29.1	561	29.3	22.1	1505	1507	3.31	302.5	3725	3394
1770	1014	746	998	10	SAP	113	3	1	7	12447	12197	2	610	556	583	2573	25.3	13.0	36.4	17.0	558	31.4	27.7	1575	1555	3.19	300.0	3565	3348
1771	1078	734	1092	10	SAP	197	3	6	20	0	PCU	0	822	544	683	2196	19.0	10.3	38.7	26.4	560	33.2	28.5	1443	1453	3.44	327.5	3867	3668
1772	1061	842	1057	10	SAP	312	2	2	59	CR40	994	2	525	510	518	2899	17.5	10.0	37.2	33.3	556	30.5	27.0	1441	1450	3.57	350.0	3846	3892
1773	787	633	772	10	SAP	56	3	1	4	12197	12038	2	535	550	543	2765	20.8	10.8	35.2	31.2	559	30.2	27.2	1420	1450	3.62	295.0	3895	3298
1774	907	724	909	10	SAP	36	3	6	2	12038	12447	3	534	543	539	2786	18.8	11.0	38.0	32.1	560	31.5	29.4	1504	1530	3.41	317.5	3691	3556
1775	906	704	904	10	SAP	32	3	4	2	12038	12447	3	520	542	531	2825	20.0	12.3	35.9	31.7	560	30.5	27.7	1472	1437	3.49	322.5	3850	3612
1776	1394	1176	1406	15	SAP	22	3	1	2	12038	12447	2	518	545	531.5	2822	20.3	10.8	38.6	31.3	559	32.5	28.3	1414	1387	3.62	340	3991	3801
1777	907	728	881	10	SAP	197	3	6	20	0	PCU	0	822	544	683	2196	19	10.3	38.7	26.4	560	33.2	28.5	1443	1453	3.44	327.5	3867	3668
1778	753	497	765	F4	SAP	257	2	4	45	956	197 A	2	490	493	491.5	3052	17.8	11.3	37.3	34.2	559	31.8	28.4	1431	1424	3.54	325	3916	3634
1779					SAP	268	2	1	47	956	994	1	542	500	521	2879	19.8	11.5	36.4	31.5	557	30.9	26.6	1578	1604	3.29	315	3501	3509
1780	960	665	1005	10	SAP	113	3	1	7	12447	12197	2	610	556	583	2573	25.3	13	36.4	17	558	31.4	27.7	1575	1555	3.19	300	3565	3348
1781	1312	1043	1295	12	SAP	268	2	1	47	956	994	1	542	500	521	2879	19.8	11.5	36.4	31.5	557	30.9	26.6	1578	1604	3.29	315	3501	3509
1782	832	720	823	10	SAP	215	2	2	9	236 A	38 A	3	507	523	515	2913	23.8	13.8	36.6	30.8	558	31	28.2	1515	1451	3.45	320	3763	3571
1783	728	458	742	R	SAP	37	3	6	2	12038	12447	1	600	560	580	2586	21.3	12	36.5	29.1	561	29.3	22.1	1505	1507	3.31	302.5	3725	3394
1784	1087	562	1032	10	SAP	22	3	1	2	12038	12447	2	518	545	531.5	2822	20.3	10.8	38.6	31.3	559	32.5	28.3	1414	1387	3.62	340	3991	3801
1785	1329	1088	1318	12	SAP	279	2	1	56	CR40	38 A	1	567	541	554	2708	21	11.8	36.2	29.7	558	32	36.9	1460	1426	3.56	335	3867	3739
1786	1215	896	1192	10	SAP	22	3	1	2	12038	12447	2	518	545	532	2822	20.3	10.8	38.6	31.3	559	32.5	28.3	1414	1387	3.62	340.0	3991	3801
1787	834	598	804	10	SAP	200	3	6	20	0	PCU	0	590	552	571	2627	19.0	10.3	38.3	32.2	556	32.9	28.8	1580	1521	3.28	312.5	3586	3475
1788	1143	975	1126	10	SAP	32	3	4	2	12038	12447	3	520	542	531	2825	20.0	12.3	35.9	31.7	560	30.5	27.7	1472	1437	3.49	322.5	3850	3612
1789	757	555	755	10	SAP	113	3	1	7	12447	12197	2	610	556	583	2573	25.3	13.0	36.4	17.0	558	31.4	27.7	1575	1555	3.19	300.0	3565	3348
1790	1169	745	1189	10	SAP	299	2	1	58	CR40	447 A	1	572	553	563	2667	20.3	12.3	36.7	34.7	558	33.0	28.0	1466	1471	3.45	325.0	3800	3627
1791	693	589	694	10	SAP	334	2	2	103	MY 7	447 A	2	525	550	538	2791	20.3	11.3	35.4	33.1	564	32.0	26.6	1520	1586	3.49	322.5	3632	3638
1792	1153	842	1157	10	SAP	37	3	6	2	12038	12447	1	600	560	580	2586	21.3	12.0	36.5	29.1	561	29.3	22.1	1505	1507	3.31	302.5	3725	3394
1793	1180	960	1154	10	SAP	245	2	3	44	956	38 A	1	528	520	524	2863	19.0	12.3	38.5	36.3	560	32.0	27.7	1407	1418	3.60	327.5	3965	3668
1794	1091	837	1075	10	SAP	59	3	2	4	12197	12038	3	529	540	535	2806	18.5	10.5	37.4	33.9	558	31.4	28.6	1490	1484	3.50	345.0	3753	3850
1795	995	740	1006	10	SAP	331	2	1	103	MY 7	447 A	3	560	601	581	2584	21.5	12.3	37.5	31.2	557	32.5	27.7	1482	1471	3.52	332.5	3772	3704
1796	858	560	890	10	SAP	268	2	1	47	956	994	1	542	500	521	2879	19.8	11.5	36.4	31.5	557	30.9	26.6	1578	1604	3.29	315.0	3501	3509
1806	984	706	985	10	SAP	246	2	3	44	956	38 A	3	520	486	503	2982	21	11	34.8	33.3	559	29.4	26.2	1423	1465	3.64	335	3871	3745
1807	941	696	926	10	SAP	321	2	3	101	MY 7	38 A	1	500	496	498	3012	21.8	13.5	35.2	31	559	30.8	27.9	1510	1513	3.41	320	3698	3578
1808	1196	919	1186	10	SAP	176	3	3	10	80055	12197	2	563	552	557.5	2691	23	12.8	36	33.5	558	31.3	28.2	1539	1481	3.35	312.5	3695	3488
1809	1051	757	1057	10	SAP	299	2	1	58	CR40	447 A	1	572	553	563	2667	20.3	12.3	36.7	34.7	558	33.0	28.0	1466	1471	3.45	325.0	3800	3627
1810	1098	855	1090	10	SAP	274	2	3	47	956	994	1	536	579	558	2691	21.0	11.3	34.4	29.5	560	29.4	25.8	1467	1459	3.44	312.5	3828	3500
1812	1263	880	1254	10	SAP	214	2	2	9	236 A	38 A	2	508	478	493	3043	21.8	11.5	26.2	35.6	559	31.8	27.1	1336	1343	3.9	360	4173	4025
1813	877	715	872	10	SAP	245	2	3	44	956	38 A	1	528	520	524	2863	19	12.3	38.5	36.3	560	32	27.7	1407	1418	3.6	327.5	3965	3668
1814	731	582	705	10	SAP	245	2	3	44	956	38 A	1	528	520	524	2863	19	12.3	38.5	36.3	560	32	27.7	1407	1418	3.6	327.5	3965	3668

Board data					Tree data										Log data														
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
					Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
1816	1445	1135	1435	12	SAP	25	3	2	2	12038	12447	1	502	540	521	2879	20.5	13.3	35.2	29.2	558	30.9	26.6	1321	1406	369	345	4092	3850
1817	928	505	862	F4	SAP	55	3	1	4	12197	12038	1	594	590	592	2534	20	11.8	37.1	33.8	561	30.6	27.5	1515	1427	337	322.5	3814	3618
1818	1237	946	1223	10	SAP	247	2	3	44	956	38 A	2	510	491	500.5	2997	19	11.5	37.7	28.7	559	32.3	27.7	1463	1477	359	320	3803	3578
1819	915	627	929	10	SAP	247	2	3	44	956	38 A	2	510	491	500.5	2997	19	11.5	37.7	28.7	559	32.3	27.7	1463	1477	359	320	3803	3578
1820	1213	660	1254	10	SAP	255	2	3	45	956	197 A	1	515	490	502.5	2985	18.5	11.3	37.6	32.4	560	32.2	27.5	1513	1501	341	330	3716	3696
1821	839	724	845	10	SAP	168	3	1	10	80055	12197	1	590	560	575	2609	20.3	11.5	41.5	31.9	559	35.7	30	1540	1542	333	307.5	3628	3438
1822	869	735	857	10	SAP	168	3	1	10	80055	12197	1	590	560	575	2609	20.3	11.5	41.5	31.9	559	35.7	30	1540	1542	333	307.5	3628	3438
1823	1056	847	1036	10	SAP	68	3	6	4	12197	12038	1	560	527	543.5	2760	20	11.8	37.7	28.1	557	31	27.3	1499	1530	326	315	3678	3509
1824	758	619	773	10	SAP	36	3	6	2	12038	12447	3	534	543	538.5	2786	18.8	11	38	32.1	560	31.5	29.4	1504	1530	341	317.5	3691	3556
1825	1126	948	1125	10	SAP	59	3	2	4	12197	12038	3	529	540	534.5	2806	18.5	10.5	37.4	33.9	558	31.4	28.6	1490	1484	35	345	3753	3850
1826	793	414	808	R	SAP	141	3	6	8	12447	80055	2	605	636	620.5	2417	27.5	15.8	36.6	28.1	553	31.5	27.3	1681	1653	306	300	3317	3318
1827	828	660	849	10	SAP	72	3	1	5	12197	12447	3	600	588	594	2525	24.5	14.3	37.4	27.2	558	32.6	29.2	1543	1554	322	300	3603	3348
1828	1261	963	1273	10	SAP	93	3	1	6	12447	12038	1	540	570	555	2703	19	12.3	33.8	34.6	557	29.4	27.2	1464	1507	347	315	3750	3509
1829	1374	1075	1390	12	SAP	56	3	1	4	12197	12038	2	535	550	542.5	2765	20.8	10.8	35.2	31.2	559	30.2	27.2	1420	1450	362	295	3895	3298
1830	1104	953	1091	10	SAP	321	2	3	101	MY 7	38 A	1	500	496	498	3012	21.8	13.5	35.2	31	559	30.8	27.9	1510	1513	341	320	3698	3578
1831	1176	911	1173	10	SAP	214	2	2	9	236 A	38 A	2	508	478	493	3043	21.8	11.5	26.2	35.6	559	31.8	27.1	1336	1343	39	360	4173	4025
1832	936	690	951	10	SAP	206	3	4	21	0	TSO	0	528	620	574	2613	19.3	12	39.4	34	557	33.5	30.5	1506	1516	339	322.5	3686	3593
1833	1316	863	1169	10	SAP	263	2	3	46	956	447 A	3	514	516	515	2913	19.8	11.5	36.6	33.8	557	31.3	27.7	1420	1375	371	340	3986	3788
1834	1143	772	1205	10	SAP	94	3	2	6	12447	12038	1	560	572	566	2650	18.5	10	26.1	34.1	557	31.3	27.7	1501	1495	345	320	3718	3565
1835	859	715	855	10	SAP	68	3	6	4	12197	12038	1	560	527	543.5	2760	20	11.8	37.7	28.1	557	31	27.3	1499	1530	326	315	3678	3509
1836	776	520	762	F4	SAP	123	3	4	7	12447	12197	3	574	555	564.5	2657	24	13.5	38.2	32.9	555	33.9	29.7	1542	1557	325	302.5	3582	3358
1837	1094	768	1116	10	SAP	60	3	3	4	12197	12038	2	530	541	535.5	2801	20.3	12	36.8	36.4	555	31.4	27.9	1399	1498	367	345	3832	3830
1838	757	583	742	10	SAP	200	3	6	20	0	PCU	0	590	552	571	2627	19	10.3	38.3	32.2	556	32.9	28.8	1580	1521	328	312.5	3586	3475
1839	1276	1017	1239	10	SAP	123	3	4	7	12447	12197	3	574	555	564.5	2657	24	13.5	38.2	32.9	555	33.9	29.7	1542	1557	325	302.5	3582	3358
1840	660	433	658	R	SAP	312	2	2	59	CR40	994	2	525	510	517.5	2899	17.5	10	37.2	33.3	556	30.5	27	1441	1450	357	350	3846	3892
1841	807	685	805	10	SAP	317	2	4	59	CR40	994	2	552	571	561.5	2671	18	12	37.2	34.4	556	31.5	28	1582	1546	328	310	3555	3447
1842	769	621	769	10	SAP	317	2	4	59	CR40	994	2	552	571	561.5	2671	18	12	37.2	34.4	556	31.5	28	1582	1546	328	310	3555	3447
1843	805	551	783	F4	SAP	61	3	3	4	12197	12038	1	556	630	593	2530	21	10.3	37.8	32.6	560	31.3	28.6	1461	1433	352	307.5	3870	3444
1844	803	626	802	10	SAP	61	3	3	4	12197	12038	1	556	630	593	2530	21	10.3	37.8	32.6	560	31.3	28.6	1461	1433	352	307.5	3870	3444
1847	879	554	863	10	SAP	72	3	1	5	12197	12447	3	600	588	594	2525	24.5	14.3	37.4	27.2	558	32.6	29.2	1543	1554	322	300	3603	3348
1848	1030	605	968	10	SAP	57	3	1	4	12197	12038	3	524	546	535	2804	20	11.5	35.8	32.9	559	30.5	27.6	1466	1466	343	320	3813	3578
1849	1370	1074	1272	12	SAP	258	2	4	45	956	197 A	1	522	543	532.5	2817	19.8	10.3	36.5	31.1	556	31.5	27.6	1523	1520	344	310	3654	3447
1850				R	SAP	328	2	3	102	MY 7	197 A	2	515	522	518.5	2893	20.3	12.3	35.6	31.8	561	30.8	27.5	1338	1312	387	357.5	4234	4011
1851	921	456	847	R	SAP	259	2	1	46	956	447 A	1	630	650	640	2344	18.8	10.3	40	33.8	558	31.3	28.2	1550	1618	335	322.5	3523	3599
1852	989	836	958	10	SAP	61	3	3	4	12197	12038	1	556	630	593	2530	21	10.3	37.8	32.6	560	31.3	28.6	1461	1433	352	307.5	3870	3444
1855	547	268	571	R	SAP	141	3	6	8	12447	80055	2	605	636	621	2417	27.5	15.8	36.6	28.1	553	31.5	27.3	1681	1653	306	300.0	3317	3318
1856	1149	828	1129	10	SAP	93	3	1	6	12447	12038	1	540	570	555	2703	19.0	12.3	33.8	34.6	557	29.4	27.2	1464	1507	347	315.0	3750	3509
1857	1006	859	994	10	SAP	36	3	6	2	12038	12447	3	534	543	539	2786	18.8	11.0	38.0	32.1	560	31.5	29.4	1504	1530	341	317.5	3691	3556

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Repl	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
		GP a × 10 ²			Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
1858	763	575	764	10	SAP	258	2	4	45	956	197 A	1	522	543	533	2817	19.8	10.3	36.5	31.1	556	31.5	27.6	1523	1520	3.44	310.0	3654	3447
1859	811	664	819	10	SAP	123	3	4	7	12447	12197	3	574	555	565	2657	24.0	13.5	38.2	32.9	555	33.9	29.7	1542	1557	3.25	302.5	3582	3358
1860	736	437	718	R	SAP	299	2	1	58	CR40	447 A	1	572	553	563	2667	20.3	12.3	36.7	34.7	558	33.0	28.0	1466	1471	3.45	325.0	3800	3627
1863					SAP	255	2	3	45	956	197 A	1	515	490	503	2985	18.5	11.3	37.6	32.4	560	32.2	27.5	1513	1501	3.41	330.0	3716	3696
1865	493	369	475	R	HI	133	3	3	8	12447	80055	1	580	654	617	2431	25.8	15.0	53.1	38.1	558	45.8	41.2	1780	1664	2.96	277.5	3240	3097
1866	528	442	534	R	HI	133	3	3	8	12447	80055	1	580	654	617	2431	25.8	15.0	53.1	38.1	558	45.8	41.2	1780	1664	2.96	277.5	3240	3097
1877	532	463	524	R	HI	143	3	6	8	12447	80055	1	578	598	588	2551	24.3	14.3	53.8	32.6	554	45.3	41.2	1693	1649	2.96	272.5	3315	3019
1878	564	384	569	R	HI	144	3	1	9	80055	12038	1	590	600	595	2521	26.0	13.5	49.4	33.7	557	43.9	38.1	1606	1585	3.19	297.5	3491	3314
1880	484	373	474	R	HI	17	3	6	1	12038	12197	2	590	576	583	2573	20.3	11.5	55.1	31.7	552	48.0	41.7	1754	1710	2.90	272.5	3187	3008
1881	507	370	508	R	HI	136	3	4	8	12447	80055	2	650	710	680	2206	28.5	17.3	53.2	31.8	551	46.6	40.7	1678	1773	2.92	277.5	3193	3058
1882	552	470	547	R	HI	54	3	6	3	12038	80055	1	547	548	548	2740	20.8	12.3	55.7	36.1	555	47.9	41.0	1603	1556	3.23	292.5	3514	3247
1883	590	451	595	R	HI	174	3	3	10	80055	12197	3	640	620	630	2381	24.8	13.5	55.0	34.7	554	47.3	42.2	1609	1581	3.06	290.0	3473	3213
1884	593	456	577	R	HI	127	3	1	8	12447	80055	1	572	600	586	2560	26.5	15.5	51.5	31.9	557	44.6	42.0	1670	1704	3.00	277.5	3302	3091
1885	471	391	462	R	HI	127	3	1	8	12447	80055	1	572	600	586	2560	26.5	15.5	51.5	31.9	557	44.6	42.0	1670	1704	3.00	277.5	3302	3091
1886	512	410	513	R	HI	174	3	3	10	80055	12197	3	640	620	630	2381	24.8	13.5	55.0	34.7	554	47.3	42.2	1609	1581	3.06	290.0	3473	3213
1887	585	485	581	F4	HI	131	3	2	8	12447	80055	1	600	654	627	2392	25.5	15.0	51.9	31.9	557	44.9	39.7	1714	1698	2.98	272.5	3265	3036
1888	644	466	619	R	HI	131	3	2	8	12447	80055	1	600	654	627	2392	25.5	15.0	51.9	31.9	557	44.9	39.7	1714	1698	2.98	272.5	3265	3036
1889	507	422	499	R	HI	133	3	3	8	12447	80055	1	580	654	617	2431	25.8	15.0	53.1	38.1	558	45.8	41.2	1780	1664	2.96	277.5	3240	3097
1890	732	666	734	10	HI	131	3	2	8	12447	80055	1	600	654	627	2392	25.5	15.0	51.9	31.9	557	44.9	39.7	1714	1698	2.98	272.5	3265	3036
1891	608	478	601	R	HI	342	2	3	104	MY 7	994	2	468	492	480	3125	18.5	11.0	25.2	27.3	560	21.5	18.4	1357	1342	3.86	355.0	4150	3976
1892	497	424	497	R	HI	320	2	3	101	MY 7	38 A	3	558	554	556	2698	18.0	9.5	30.8	28.8	560	24.7	21.3	1360	1372	3.60	347.5	4100	3892
1893	422	337	414	R	HI	171	3	2	10	80055	12197	4	950	665	808	1858	25.5	14.3	51.5	30.0	553	44.8	40.1	1725	1694	2.96	277.5	3235	3069
1898	559	472	561	R	HI	54	3	6	3	12038	80055	1	547	548	547.5	2740	20.8	12.3	55.7	36.1	555	47.9	41	1603	1556	3.23	292.5	3514	3247
1899	573	372	586	R	HI	313	2	3	59	CR40	994	3	600	533	566.5	2648	23.5	14.3	27.9	27	560	24	19.4	1371	1394	3.62	342	4051	3830
1900	562	481	540	R	HI	143	3	6	8	12447	80055	1	578	598	588	2551	24.3	14.3	53.8	32.6	554	45.3	41.2	1693	1649	2.96	272.5	3315	3019
1901	615	507	614	F4	HI	127	3	1	8	12447	80055	1	572	600	586	2560	26.5	15.5	51.5	31.9	557	44.6	42	1670	1704	3	277.5	3302	3091
1902	443	325	432	R	HI	136	3	4	8	12447	80055	2	650	710	680	2206	28.5	17.3	53.2	31.8	551	46.6	40.7	1678	1773	2.92	277.5	3193	3058
1904	512	418	498	R	HI	143	3	6	8	12447	80055	1	578	598	588	2551	24.3	14.3	53.8	32.6	554	45.3	41.2	1693	1649	2.96	272.5	3315	3019
1905	517	407	520	R	HI	182	3	5	10	80055	12197	3	550	572	561	2674	24.0	13.8	50.7	35.6	555	43.2	38.8	1590	1607	3.20	295.0	3472	3275
1907	547	378	567	R	HI	144	3	1	9	80055	12038	1	590	600	595	2521	26.0	13.5	49.4	33.7	557	43.9	38.1	1606	1585	3.19	297.5	3491	3314
1908	736	513	685	F4	HI	79	3	3	5	12197	12447	3	538	630	584	2568	21.8	11.5	26.6	30.0	557	23.3	18.9	1410	1456	3.52	330.0	3887	3676
1909	577	402	578	R	HI	284	2	3	56	CR40	38 A	2	642	619	631	2379	20.0	12.3	28.3	32.0	558	23.0	18.9	1498	1476	3.45	315.0	3753	3515
1910	797	574	792	10	HI	233	2	2	11	236 A	447 A	2	540	510	525	2857	18.8	11.3	28.3	30.0	560	24.7	21.4	1422	1462	3.60	335.0	3883	3752
1911	522	426	526	R	HI	234	2	3	11	236 A	447 A	2	524	483	504	2979	19.3	10.0	23.7	26.7	561	21.7	18.1	1344	1367	3.94	360.0	4139	4039
1912	715	456	724	R	HI	313	2	3	59	CR40	994	3	600	533	567	2648	23.5	14.3	27.9	27.0	560	24.0	19.4	1371	1394	3.62	342.0	4051	3830
1913	655	539	641	F4	HI	270	2	1	47	956	994	3	490	471	481	3122	18.8	10.8	25.2	27.6	556	23.7	19.0	1422	1397	3.60	347.5	3945	3864
1914	622	496	592	F4	HI	133	3	3	8	12447	80055	1	580	654	617	2431	25.8	15.0	53.1	38.1	558	45.8	41.2	1780	1664	2.96	277.5	3240	3097
1915	646	543	655	F4	HI	339	2	1	104	MY 7	994	2	494	502	498	3012	17.5	10	26.1	29.5	558	21.1	18.5	1360	1322	3.87	362.5	4161	4046

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lgth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
		GPax 10 ²			Type								(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
1916	733	626	734	10	HI	230	2	1	11	236 A	447 A	3	500	488	494	3036	18.5	10.8	25.9	24.7	559	21.5	18.4	1370	1372	3.75	345	4077	3857
1917	588	490	600	F4	HI	326	2	2	102	MY 7	197 A	3	469	468	468.5	3202	18.3	10.5	22.3	26.9	557	20.5	18.2	1325	1330	3.8	357.5	4196	3983
1918	801	709	801	10	HI	54	3	6	3	12038	80055	1	547	548	547.5	2740	20.8	12.3	55.7	36.1	555	47.9	41	1603	1556	3.23	292.5	3514	3247
1919	569	509	568	F4	HI	269	2	1	47	956	994	2	466	470	468	3205	16	7.5	22.2	27.3	556	20	16.7	1324	1323	3.86	362.5	4201	4031
1920	501	406	502	R	HI	296	2	4	57	CR40	197 A	2	535	556	545.5	2750	25	15	28.9	31	558	25.5	22.7	1570	1599	3.16	300	3522	3348
1921	617	545	616	F4	HI	276	2	4	47	956	994	3	474	459	466.5	3215	17.5	10.3	23.6	32.1	559	20	17.4	1350	1357	3.77	360	4130	4025
1922	750	353	784	R	HI	342	2	3	104	MY 7	994	2	468	492	480	3125	18.5	11	25.2	27.3	560	21.5	18.4	1357	1342	3.86	355	4150	3976
1924	618	519	610	F4	HI	143	3	6	8	12447	80055	1	578	598	588	2551	24.3	14.3	53.8	32.6	554	45.3	41.2	1693	1649	2.96	272.5	3315	3019
1925	504	421	504	R	HI	338	2	4	103	MY 7	447 A	2	545	564	554.5	2705	20.3	12.3	27.3	26.2	562	24.2	20.5	1521	1518	3.37	320	3699	3597
1927	708	527	724	F4	HI	15	3	5	1	12038	12197	3	460	460	460	3261	18.8	9.8	32.9	34.2	561	27.6	24.7	1364	1350	3.79	347.5	4134	3899
1928	449	352	453	R	HI	134	3	3	8	12447	80055	2	680	669	675	2224	30.5	16.8	30.0	29.0	560	26.1	20.2	1581	1556	3.18	297.5	3570	3332
1929	658	420	652	R	HI	296	2	4	57	CR40	197 A	2	535	556	546	2750	25.0	15.0	28.9	31.0	558	25.5	22.7	1570	1599	3.16	300.0	3522	3348
1930	584	428	597	R	HI	79	3	3	5	12197	12447	3	538	630	584	2568	21.8	11.5	26.6	30.0	557	23.3	18.9	1410	1456	3.52	330.0	3887	3676
1931	581	425	576	R	HI	324	2	1	102	MY 7	197 A	2	526	532	529	2836	17.5	9.0	29.9	32.5	559	24.6	21.7	1312	1315	3.98	380.0	4256	4248
1932	480	383	481	R	HI	284	2	3	56	CR40	38 A	2	642	619	631	2379	20.0	12.3	28.3	32.0	558	23.0	18.9	1498	1476	3.45	315.0	3753	3515
1933	890	611	898	10	HI	234	2	3	11	236 A	447 A	2	524	483	504	2979	19.3	10.0	23.7	26.7	561	21.7	18.1	1344	1367	3.94	360.0	4139	4039
1934	722	506	701	F4	HI	325	2	2	102	MY 7	197 A	2	562	492	527	2846	22.8	12.5	23.5	24.4	558	20.6	17.1	1404	1387	3.74	347.0	3999	3873
1935	629	454	626	R	HI	222	2	1	10	236 A	197 A	3	504	532	518	2896	21.8	13.0	25.9	23.3	560	22.9	19.4	1450	1443	3.44	317.5	3871	3556
1936	508	357	519	R	HI	291	2	1	57	CR40	197 A	1	617	628	623	2410	32.5	15.8	24.4	22.7	557	21.0	17.8	1703	1682	2.95	275.0	3291	3064
1937	509	431	495	R	HI	338	2	4	103	MY 7	447 A	2	545	564	555	2705	20.3	12.3	27.3	26.2	562	24.2	20.5	1521	1518	3.37	320.0	3699	3597
1938	601	488	593	F4	HI	230	2	1	11	236 A	447 A	3	500	488	494	3036	18.5	10.8	25.9	24.7	559	21.5	18.4	1370	1372	3.75	345.0	4077	3857
1939	622	503	608	F4	HI	322	2	4	101	MY 7	38 A	2	534	557	546	2750	20.3	12.0	26.1	20.1	553	22.8	20.3	1498	1485	3.40	312.5	3708	3456
1940	555	418	529	R	HI	333	2	2	103	MY 7	447 A	2	530	528	529	2836	17.3	9.0	27.4	30.6	556	25.3	20.4	1382	1401	3.67	350.0	3996	3892
1941	891	738	872	10	HI	276	2	4	47	956	994	3	474	459	467	3215	17.5	10.3	23.6	32.1	559	20.0	17.4	1350	1357	3.77	360.0	4130	4025
1944	1230	876	1258	10	HI	311	2	2	59	CR40	994	3	511	540	525.5	2854	17.5	10.8	26.5	31.6	556	23.9	20.4	1317	1317	3.93	377.5	4222	4198
1945	563	452	557	R	HI	243	2	2	44	956	38 A	3	540	570	555	2703	19.3	8.8	31.1	32.4	560	25.5	21.4	1404	1455	3.6	337.5	3917	3780
1946	515	265	534	R	HI	40	3	1	3	12038	80055	1	593	575	584	2568	21.5	12.5	30.9	26.8	558	25.8	20.9	1514	1542	3.24	300	3652	3348
1947	593	441	582	R	HI	320	2	3	101	MY 7	38 A	3	558	554	556	2698	18	9.5	30.8	28.8	560	24.7	21.3	1360	1372	3.6	347.5	4100	3892
1948	804	586	819	10	HI	137	3	4	8	12447	80055	3	525	590	557.5	2691	18.5	10.5	29.1	28	560	24.8	21.5	1433	1444	3.46	320	3893	3584
1950	638	511	652	F4	HI	294	2	2	57	CR40	197 A	3	491	513	502	2988	20.5	11	27.3	26.3	556	23.5	19.8	1420	1420	3.59	372.5	3915	4142
1951	723	594	728	10	HI	187							503	467	485	3093	19.5	11	25.7	26	558	21.6	18.7	1391	1377	3.66	350	4032	3906
1952	790	581	795	10	HI	345	2	4	104	MY 7	994	2	472	506	489	3067	21.8	12.5	25.6	27	560	22.7	20.6	1393	1393	3.65	352.5	4020	3948
1953	618	569	606	10	HI	311	2	2	59	CR40	994	3	511	540	525.5	2854	17.5	10.8	26.5	31.6	556	23.9	20.4	1317	1317	3.93	377.5	4222	4198
1954	855	658	816	10	HI	231	2	1	11	236 A	447 A	2	550	525	537.5	2791	19.5	12	28.8	28.7	559	26.2	22.1	1378	1377	3.74	350	4058	3913
1955	547	442	561	R	HI	325	2	2	102	MY 7	197 A	2	562	492	527	2846	22.8	12.5	23.5	24.4	558	20.6	17.1	1404	1387	3.74	347	3999	3873
1956	695	482	690	R	HI	324	2	1	102	MY 7	197 A	2	526	532	529	2836	17.5	9	29.9	32.5	559	24.6	21.7	1312	1315	3.98	380	4256	4248
1957	722	471	689	R	HI	345	2	4	104	MY 7	994	2	472	506	489	3067	21.8	12.5	25.6	27	560	22.7	20.6	1393	1393	3.65	352.5	4020	3948
1959	821	662	807	10	HI	28	3	3	2	12038	12447	2	524	540	532	2820	20.8	12.3	33.4	33.4	545	28.2	24.5	1382	1396	3.68	352.5	3924	3842

Board data						Tree data										Log data													
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
		GPa x 10 ²			Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
1960	655	583	652	10	HI	212	2	1	9	236 A	38 A	3	520	560	540	2778	25.0	13.5	30.8	28.6	557	26.7	24.0	1495	1497	3.50	330.0	3723	3676
1961	530	396	530	R	HI	238	2	1	12	236 A	994	3	602	629	616	2437	25.3	13.3	32.5	26.0	559	27.0	21.2	1520	1499	3.33	325.0	3703	3634
1962	788	613	775	10	HI	326	2	2	102	MY 7	197 A	3	469	468	469	3202	18.3	10.5	22.3	26.9	557	20.5	18.2	1325	1330	3.80	357.5	4196	3983
1963	603	470	571	R	HI	223	2	2	10	236 A	197 A	3	520	512	516	2907	17.0	10.5	29.7	33.6	560	26.5	23.1	1480	1501	3.52	330.0	3757	3696
1964	644	560	653	10	HI	316	2	4	59	CR40	994	3	511	465	488	3074	17.5	11.0	29.0	30.9	556	24.7	20.8	1350	1370	3.86	347.5	4088	3864
1965	599	492	597	F4	HI	137	3	4	8	12447	80055	3	525	590	558	2691	18.5	10.5	29.1	28.0	560	24.8	21.5	1433	1444	3.46	320.0	3893	3584
1966	762	649	754	10	HI	322	2	4	101	MY 7	38 A	2	534	557	546	2750	20.3	12.0	26.1	20.1	553	22.8	20.3	1498	1485	3.40	312.5	3708	3456
1967	574	472	563	R	HI	296	2	4	57	CR40	197 A	2	535	556	546	2750	25.0	15.0	28.9	31.0	558	25.5	22.7	1570	1599	3.16	300.0	3522	3348
1968	564	412	520	R	HI	223	2	2	10	236 A	197 A	3	520	512	516	2907	17.0	10.5	29.7	33.6	560	26.5	23.1	1480	1501	3.52	330.0	3757	3696
1969	949	755	924	10	HI	280	2	1	56	CR40	38 A	3	520	515	518	2899	19.0	11.3	33.8	32.9	560	29.7	24.9	1461	1447	3.65	332.5	3851	3724
1970	585	498	570	F4	HI	99	3	3	6	12447	12038	3	553	571	562	2669	21.0	12.0	32.2	33.4	559	27.2	25.3	1470	1480	3.41	327.5	3790	3661
1971	481	377	462	R	HI	226	2	3	10	236 A	197 A	1	550	630	590	2542	19.8	12.3	29.9	27	556	25.2	20.6	1448	1443	3.31	325	3846	3614
1972	732	535	761	F4	HI	311	2	2	59	CR40	994	3	511	540	525.5	2854	17.5	10.8	26.5	31.6	556	23.9	20.4	1317	1317	3.93	377.5	4222	4198
1973	562	415	554	R	HI	345	2	4	104	MY 7	994	2	472	506	489	3067	21.8	12.5	25.6	27	560	22.7	20.6	1393	1393	3.65	352.5	4020	3948
1974	726	543	753	F4	HI	238	2	1	12	236 A	994	3	602	629	615.5	2437	25.3	13.3	32.5	26	559	27	21.2	1520	1499	3.33	325	3703	3634
1975	558	432	563	R	HI	232	2	2	11	236 A	447 A	1	510	465	487.5	3077	20.5	11	30.2	34.8	560	26.9	21.4	1385	1377	3.75	355	4055	3976
1976	703	407	637	R	HI	265	2	4	46	956	447 A	2	492	544	518	2896	17.5	10.8	28.8	31.9	558	24.6	20.6	1352	1350	3.77	352.5	4130	3934
1977	591	461	591	R	HI	243	2	2	44	956	38 A	3	540	570	555	2703	19.3	8.8	31.1	32.4	560	25.5	21.4	1404	1455	3.6	337.5	3917	3780
1978	595	429	608	R	HI	106	3	5	6	12447	12038	2	565	504	534.5	2806	20.8	11	32.2	28.8	563	27.6	24.4	1450	1477	3.56	330	3847	3716
1979	517	432	512	R	HI	271	2	2	47	956	994	1	540	526	533	2814	20.3	10.5	32.1	36.8	561	27.8	25.7	1460	1446	3.42	322.5	3861	3618
1980	744	524	749	F4	HI	20	3	1	2	12038	12447	3	507	490	498.5	3009	20.5	10	29.2	29.7	559	25.1	22.8	1384	1361	3.77	347.5	4073	3885
1981	767	512	784	F4	HI	323	2	1	102	MY 7	197 A	1	535	493	514	2918	19.5	10.8	30.9	28.9	556	26.4	22.8	1351	1344	3.75	347.5	4126	3864
1982	693	556	679	10	HI	106	3	5	6	12447	12038	2	565	504	535	2806	20.8	11.0	32.2	28.8	563	27.6	24.4	1450	1477	3.56	330.0	3847	3716
1983	503	433	498	R	HI	249	2	4	44	956	38 A	2	533	515	524	2863	25	13.5	32.3	26.6	559	28.7	23.1	1551	1616	3.2	295.5	3530	3304
1984	581	484	581	F4	HI	24	3	2	2	12038	12447	3	525	525	525	2857	21.3	10.5	30.9	30.4	557	26.4	25.4	1475	1470	3.52	330	3783	3676
1985	558	399	557	R	HI	262	2	2	46	956	447 A	3	526	478	502	2988	18.8	10.5	31.7	32.7	559	26.8	23.3	1450	1442	3.51	330	3866	3689
1986	513	374	517	R	HI	233	2	2	11	236 A	447 A	2	540	510	525	2857	18.8	11.3	28.3	30	560	24.7	21.4	1422	1462	3.6	335	3883	3752
1987	526	410	519	R	HI	330	2	4	102	MY 7	197 A	3	501	534	517.5	2899	20	11	31.8	31.8	559	27.2	24.8	1475	1493	3.59	337.5	3767	3773
1988	611	507	607	F4	HI	249	2	4	44	956	38 A	2	533	515	524	2863	25	13.5	32.3	26.6	559	28.7	23.1	1551	1616	3.2	295.5	3530	3304
1989	677	352	681	R	HI	232	2	2	11	236 A	447 A	1	510	465	487.5	3077	20.5	11	30.2	34.8	560	26.9	21.4	1385	1377	3.75	355	4055	3976
1990	493	310	472	R	HI	194	3	1	20	0	PCU	0	573	544	558.5	2686	19.3	10.3	31.3	28.4	561	26.7	23.8	1484	1446	3.52	285	3829	3198
1991	573	415	572	R	HI	323	2	1	102	MY 7	197 A	1	535	493	514	2918	19.5	10.8	30.9	28.9	556	26.4	22.8	1351	1344	3.75	347.5	4126	3864
1992	953	799	943	10	HI	106	3	5	6	12447	12038	2	565	504	534.5	2806	20.8	11	32.2	28.8	563	27.6	24.4	1450	1477	3.56	330	3847	3716
1993	895	639	854	10	HI	297	2	4	57	CR40	197 A	3	480	472	476	3151	15.3	10.5	29	35.1	559	26	23	1394	1385	3.67	350	4023	3913
1994	723	423	718	R	HI	290	2	1	57	CR40	197 A	3	503	487	495	3030	18.5	10.5	29.2	33.9	557	25.6	22.2	1344	1392	3.68	345.0	4072	3843
1995	659	560	657	10	HI	265	2	4	46	956	447 A	2	492	544	518	2896	17.5	10.8	28.8	31.9	558	24.6	20.6	1352	1350	3.77	352.5	4130	3934
1996	590	469	582	R	HI	98	3	3	6	12447	12038	1	537	540	539	2786	20.3	10.0	30.2	31.5	559	26.1	25.2	1446	1456	3.62	340.0	3853	3801
1997	524	438	526	R	HI	99	3	3	6	12447	12038	3	553	571	562	2669	21.0	12.0	32.2	33.4	559	27.2	25.3	1470	1480	3.41	327.5	3790	3661

Board data										Tree data										Log data										
BoardID	Emean	Emin	Emedian	MGP	Prod	Type	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lgth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
														(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
1998	594	466	611	R	HI	HI	294	2	2	57	CR40	197 A	3	491	513	502	2988	20.5	11.0	27.3	26.3	556	23.5	19.8	1420	1420	359	372.5	3915	4142
1999	624	528	639	F4	HI	HI	270	2	1	47	956	994	3	490	471	481	3122	18.8	10.8	25.2	27.6	556	23.7	19.0	1422	1397	360	347.5	3945	3864
2000	659	543	629	F4	HI	HI	338	2	4	103	MY 7	447 A	2	545	564	555	2705	20.3	12.3	27.3	26.2	562	24.2	20.5	1521	1518	337	320.0	3699	3597
2001	616	527	621	F4	HI	HI	231	2	1	11	236 A	447 A	2	550	525	538	2791	19.5	12.0	28.8	28.7	559	26.2	22.1	1378	1377	374	350.0	4058	3913
2002	605	315	569	R	HI	HI	226	2	3	10	236 A	197 A	1	550	630	590	2542	19.8	12.3	29.9	27.0	556	25.2	20.6	1448	1443	331	325.0	3846	3614
2003	850	579	846	10	HI	HI	269	2	1	47	956	994	2	466	470	468	3205	16.0	7.5	22.2	27.3	556	20.0	16.7	1324	1323	386	362.5	4201	4031
2004	929	788	934	10	HI	HI	250	2	1	45	956	197 A	2	525	490	508	2956	15.8	9.0	27.0	28.4	560	22.0	19.8	1310	1335	391	365.0	4234	4088
2006	579	462	565	R	HI	HI	343	2	4	104	MY 7	994	1	450	475	462.5	3243	16	9.5	24.5	29	559	21.3	18.2	1302	1322	396	362.5	4261	4053
2007	543	393	484	R	HI	HI	226	2	3	10	236 A	197 A	1	550	630	590	2542	19.8	12.3	29.9	27	556	25.2	20.6	1448	1443	331	325	3846	3614
2008	559	395	549	R	HI	HI	330	2	4	102	MY 7	197 A	3	501	534	517.5	2899	20	11	31.8	31.8	559	27.2	24.8	1475	1493	359	337.5	3767	3773
2009	467	337	475	R	HI	HI	261	2	2	46	956	447 A	1	543	520	531.5	2822	21.5	10.5	35.3	28.6	560	29.4	25	1532	1565	325	312.5	3616	3500
2010	885	568	882	10	HI	HI	280	2	1	56	CR40	38 A	3	520	515	517.5	2899	19	11.3	33.8	32.9	560	29.7	24.9	1461	1447	365	332.5	3851	3724
2011	743	635	754	10	HI	HI	282	2	2	56	CR40	38 A	1	537	516	526.5	2849	24.8	13.5	29.6	28.7	561	26	22.2	1435	1390	358	342.5	3972	3843
2012	548	453	547	R	HI	HI	92	3	1	6	12447	12038	2	555	576	565.5	2653	23.3	11.3	28.8	26.9	560	24.6	23.1	1453	1433	354	332.5	3881	3724
2013	829	632	819	10	HI	HI	228	2	4	10	236 A	197 A	1	486	549	517.5	2899	18.8	11.8	33.2	36.4	564	28	25.3	1397	1466	362	325	3940	3666
2014	555	454	560	R	HI	HI	212	2	1	9	236 A	38 A	3	520	560	540	2778	25	13.5	30.8	28.6	557	26.7	24	1495	1497	35	330	3723	3676
2015	816	710	786	10	HI	HI	323	2	1	102	MY 7	197 A	1	535	493	514	2918	19.5	10.8	30.9	28.9	556	26.4	22.8	1351	1344	375	347.5	4126	3864
2016	614	466	606	R	HI	HI	290	2	1	57	CR40	197 A	3	503	487	495	3030	18.5	10.5	29.2	33.9	557	25.6	22.2	1344	1392	368	345	4072	3843
2017	463	321	455	R	HI	HI	194	3	1	20	0	PCU	0	573	544	558.5	2686	19.3	10.3	31.3	28.4	561	26.7	23.8	1484	1446	352	285	3829	3198
2019	596	392	593	R	HI	HI	297	2	4	57	CR40	197 A	3	480	472	476	3151	15.3	10.5	29	35.1	559	26	23	1394	1385	367	350	4023	3913
2020	643	474	633	R	HI	HI	92	3	1	6	12447	12038	2	555	576	565.5	2653	23.3	11.3	28.8	26.9	560	24.6	23.1	1453	1433	354	332.5	3881	3724
2021	484	375	480	R	HI	HI	116	3	2	7	12447	12197	1	578	612	595	2521	25.0	16.0	33.2	22.1	559	29.1	23.8	1661	1701	301	270.0	3325	3019
2022	655	372	659	R	HI	HI	333	2	2	103	MY 7	447 A	2	530	528	529	2836	17.3	9.0	27.4	30.6	556	25.3	20.4	1382	1401	367	350.0	3996	3892
2023	850	484	877	F4	HI	HI	297	2	4	57	CR40	197 A	3	480	472	476	3151	15.3	10.5	29.0	35.1	559	26.0	23.0	1394	1385	367	350.0	4023	3913
2024	539	393	547	R	HI	HI	297	2	4	57	CR40	197 A	3	480	472	476	3151	15.3	10.5	29.0	35.1	559	26.0	23.0	1394	1385	367	350.0	4023	3913
2025	798	525	825	F4	HI	HI	330	2	4	102	MY 7	197 A	3	501	534	518	2899	20.0	11.0	31.8	31.8	559	27.2	24.8	1475	1493	359	337.5	3767	3773
2026	493	340	503	R	HI	HI	303	2	3	58	CR40	447 A	2	612	544	578	2595	26.0	16.0	31.4	30.4	555	27.1	23.6	1558	1530	320	310.0	3595	3441
2027	545	459	543	R	HI	HI	277	2	4	47	956	994	2	464	512	488	3074	18.0	10.0	32.7	31.4	558	29.2	25.8	1433	1464	374	355.0	3852	3962
2028	672	428	666	R	HI	HI	289	2	1	57	CR40	197 A	2	500	530	515	2913	19.8	10.3	30.8	38.2	559	27.5	24.2	1448	1439	354	332.5	3873	3717
2029	548	460	556	R	HI	HI	109	3	5	6	12447	12038	3	537	569	553	2712	20.0	12.3	32.2	32.8	556	27.0	24.6	1462	1501	341	322.5	3753	3586
2030	600	429	556	R	HI	HI	233	2	2	11	236 A	447 A	2	540	510	525	2857	18.8	11.3	28.3	30	560	24.7	21.4	1422	1462	36	335	3883	3752
2031	790	642	767	10	HI	HI	212	2	1	9	236 A	38 A	3	520	560	540	2778	25	13.5	30.8	28.6	557	26.7	24	1495	1497	35	330	3723	3676
2032	542	345	553	R	HI	HI	280	2	1	56	CR40	38 A	3	520	515	517.5	2899	19	11.3	33.8	32.9	560	29.7	24.9	1461	1447	365	332.5	3851	3724
2033	529	365	555	R	HI	HI	169	3	1	10	80055	12197	4	550	545	547.5	2740	18.5	11.5	32.7	25.9	561	28.5	24.8	1521	1446	352	347.5	3782	3899
2035	459	338	459	R	HI	HI	303	2	3	58	CR40	447 A	2	612	544	578	2595	26	16	31.4	30.4	555	27.1	23.6	1558	1530	32	310	3595	3441
2036	558	448	557	R	HI	HI	126	3	6	7	12447	12197	1	524	553	538.5	2786	22.5	12.8	31.6	28	561	27.1	23.8	1485	1529	339	305	3723	3422
2037	957	661	913	10	HI	HI	290	2	1	57	CR40	197 A	3	503	487	495	3030	18.5	10.5	29.2	33.9	557	25.6	22.2	1344	1392	368	345	4072	3843
2038	580	445	572	R	HI	HI	209	3	6	21	0	TSO	0	524	539	531.5	2822	23.5	13.5	34.1	29.1	558	28.5	25.3	1520	1519	34	322.5	3672	3599

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lgth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
		GPa x 10 ²			Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
2039	595	521	589	F4	HI	277	2	4	47	956	994	2	464	512	488	3074	18	10	32.7	31.4	558	29.2	25.8	1433	1464	3.74	355	3852	3962
2040	579	431	591	R	HI	118	3	3	7	12447	12197	1	517	559	538	2788	21.8	11.3	30	31.7	555	26.2	22.8	1370	1369	3.62		4053	
2041	680	558	686	10	HI	109	3	5	6	12447	12038	3	537	569	553	2712	20	12.3	32.2	32.8	556	27	24.6	1462	1501	3.41	322.5	3753	3586
2042	976	609	991	10	HI	232	2	2	11	236 A	447 A	1	510	465	487.5	3077	20.5	11	30.2	34.8	560	26.9	21.4	1385	1377	3.75	355	4055	3976
2043	813	444	843	R	HI	242	2	4	12	236 A	994	2	494	507	500.5	2997	21.8	13.3	35.3	39.1	558	31.5	26.8	1513	1465	3.56	332.5	3747	3711
2044	688	532	682	F4	HI	21	3	1	2	12038	12447	1	549	544	546.5	2745	19.3	10	32.5	29.8	559	27.7	26.6	1402	1402	3.62	345	3987	3857
2045	618	365	608	R	HI	289	2	1	57	CR40	197 A	2	500	530	515	2913	19.8	10.3	30.8	38.2	559	27.5	24.2	1448	1439	3.54	332.5	3873	3717
2046	541	361	522	R	HI	35	3	5	2	12038	12447	1	497	519	508	2953	19.8	11.5	33.5	28.5	544	28.7	25.5	1460	1426	3.37	322.5	3770	3509
2047	589	505	582	F4	HI	327	2	3	102	MY 7	197 A	1	532	527	529.5	2833	21	13	33.2	31.9	556	28	25.1	1362	1353	3.65	347.5	4096	3864
2049	607	415	616	R	HI	220	2	1	10	236 A	197 A	1	482	524	503	2982	16.8	10.5	30.6	33.3	561	25	22.6	1365	1337	3.84	347.5	4152	3899
2051	528	348	522	R	HI	242	2	4	12	236 A	994	2	494	507	500.5	2997	21.8	13.3	35.3	39.1	558	31.5	26.8	1513	1465	3.56	332.5	3747	3711
2052	502	401	520	R	HI	278	2	1	56	CR40	38 A	2	595	682	639	2349	22.0	11.3	36.6	12.6	559	30.8	25.9	1487	1574	3.35	330.0	3652	3689
2053	986	660	951	10	HI	220	2	1	10	236 A	197 A	1	482	524	503	2982	16.8	10.5	30.6	33.3	561	25.0	22.6	1365	1337	3.84	347.5	4152	3899
2054	653	442	646	R	HI	280	2	1	56	CR40	38 A	3	520	515	518	2899	19.0	11.3	33.8	32.9	560	29.7	24.9	1461	1447	3.65	332.5	3851	3724
2055	1024	863	1016	10	HI	20	3	1	2	12038	12447	3	507	490	499	3009	20.5	10.0	29.2	29.7	559	25.1	22.8	1384	1361	3.77	347.5	4073	3885
2056	522	414	515	R	HI	266	2	4	46	956	447 A	3	520	520	520	2885	18.8	11.5	36.8	35.6	557	31.5	26.3	1642	1563	3.21	302.5	3476	3370
2057	539	437	517	R	HI	242	2	4	12	236 A	994	2	494	507	501	2997	21.8	13.3	35.3	39.1	558	31.5	26.8	1513	1465	3.56	332.5	3747	3711
2058	624	526	628	F4	HI	21	3	1	2	12038	12447	1	549	544	547	2745	19.3	10.0	32.5	29.8	559	27.7	26.6	1402	1402	3.62	345.0	3987	3857
2059	652	474	653	R	HI	228	2	4	10	236 A	197 A	1	486	549	518	2899	18.8	11.8	33.2	36.4	564	28.0	25.3	1397	1466	3.62	325.0	3940	3666
2060	443	392	441	R	HI	207	3	5	21	0	TSO	0	559	566	563	2667	24.3	12.0	33.4	30.6	560	29.3	24.7	1626	1714	3.15	292.5	3353	3276
2061	674	574	677	10	HI	20	3	1	2	12038	12447	3	507	490	499	3009	20.5	10.0	29.2	29.7	559	25.1	22.8	1384	1361	3.77	347.5	4073	3885
2062	619	502	626	F4	HI	229	2	4	10	236 A	197 A	3	515	515	515	2913	19.5	11.3	34.8	35.6	559	31.1	26.6	1525	1601	3.43	335.0	3576	3745
2064	584	499	581	F4	HI	245	2	3	44	956	38 A	1	528	520	524	2863	19	12.3	38.5	36.3	560	32	27.7	1407	1418	3.6	327.5	3965	3668
2065	554	493	555	F4	HI	29	3	3	2	12038	12447	1	535	550	542.5	2765	19.5	10.8	33.9	32.4	558	29.3	28	1445	1461	3.56	340	3840	3794
2066	626	462	627	R	HI	118	3	3	7	12447	12197	1	517	559	538	2788	21.8	11.3	30	31.7	555	26.2	22.8	1370	1369	3.62		4053	
2067	877	777	876	10	HI	308	2	1	59	CR40	994	3	601	520	560.5	2676	22.5	12	35.9	32.9	557	31.2	27.4	1445	1434	3.66	372.5	3869	4150
2068	750	616	733	10	HI	220	2	1	10	236 A	197 A	1	482	524	503	2982	16.8	10.5	30.6	33.3	561	25	22.6	1365	1337	3.84	347.5	4152	3899
2069	519	353	527	R	HI	116	3	2	7	12447	12197	1	578	612	595	2521	25	16	33.2	22.1	559	29.1	23.8	1661	1701	3.01	270	3325	3019
2070	554	462	547	R	HI	215	2	2	9	236 A	38 A	3	507	523	515	2913	23.8	13.8	36.6	30.8	558	31	28.2	1515	1451	3.45	320	3763	3571
2071	601	471	589	R	HI	248	2	4	44	956	38 A	3	489	475	482	3112	17.5	11.3	33.2	35.8	560	29	24.4	1400	1360	3.7	352.5	4058	3948
2072	957	700	943	10	HI	25	3	2	2	12038	12447	1	502	540	521	2879	20.5	13.3	35.2	29.2	558	30.9	26.6	1321	1406	3.69	345	4092	3850
2073	609	436	575	R	HI	263	2	3	46	956	447 A	3	514	516	515	2913	19.8	11.5	36.6	33.8	557	31.3	27.7	1420	1375	3.71	340	3986	3788
2074	600	461	605	R	HI	303	2	3	58	CR40	447 A	2	612	544	578	2595	26	16	31.4	30.4	555	27.1	23.6	1558	1530	3.2	310	3595	3441
2075	1055	650	1027	10	HI	328	2	3	102	MY 7	197 A	2	515	522	518.5	2893	20.3	12.3	35.6	31.8	561	30.8	27.5	1338	1312	3.87	357.5	4234	4011
2076	521	414	516	R	HI	176	3	3	10	80055	12197	2	563	552	557.5	2691	23	12.8	36	33.5	558	31.3	28.2	1539	1481	3.35	312.5	3695	3488
2077	521	422	516	R	HI	36	3	6	2	12038	12447	3	534	543	538.5	2786	18.8	11	38	32.1	560	31.5	29.4	1504	1530	3.41	317.5	3691	3556
2078	690	491	700	F4	HI	7	3	2	1	12038	12197	3	543	532	537.5	2791	17	11.8	32.9	31.7	558	28	25.3	1379	1400	3.71	350	4016	3906
2079	593	432	610	R	HI	278	2	1	56	CR40	38 A	2	595	682	638.5	2349	22	11.3	36.6	12.6	559	30.8	25.9	1487	1574	3.35	330	3652	3689

Board data						Tree data										Log data													
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
		GPa x 10 ⁻²			Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
2080	595	309	613	R	HI	227	2	4	10	236 A	197 A	2	508	494	501	2994	20.5	11.5	32.8	33.2	558	28.8	25.6	1476	1506	3.43	315	3742	3515
2081	408	313	412	R	HI	210	3	6	21	0	TSO	0	660	615	638	2353	23.0	13.8	41.8	26.4	557	35.0	29.2	1753	1743	2.98	282.5	3186	3147
2082	637	510	628	F4	HI	113	3	1	7	12447	12197	2	610	556	583	2573	25.3	13.0	36.4	17.0	558	31.4	27.7	1575	1555	3.19	300.0	3565	3348
2083	459	322	465	R	HI	275	2	4	47	956	994	1	547	554	551	2725	21.8	13.5	37.0	32.2	553	30.9	27.1	1633	1564	3.21	315.0	3459	3484
2084	621	485	619	F4	HI	308	2	1	59	CR40	994	3	601	520	561	2676	22.5	12.0	35.9	32.9	557	31.2	27.4	1445	1434	3.66	372.5	3869	4150
2085	741	617	744	10	HI	214	2	2	9	236 A	38 A	2	508	478	493	3043	21.8	11.5	26.2	35.6	559	31.8	27.1	1336	1343	3.90	360.0	4173	4025
2086	651	548	636	F4	HI	309	2	1	59	CR40	994	1	530	550	540	2778	21.0	11.0	35.5	34.3	558	30.4	27.0	1503	1501	3.45	322.5	3715	3599
2087	503	309	464	R	HI	266	2	4	46	956	447 A	3	520	520	520	2885	18.8	11.5	36.8	35.6	557	31.5	26.3	1642	1563	3.21	302.5	3476	3370
2088	737	625	742	10	HI	45	3	3	3	12038	80055	3	522	550	536	2799	22.8	11.8	34.6	34.5	559	29.8	26.5	1385	1368	3.72	345.0	4061	3857
2089	622	382	622	R	HI	88	3	5	5	12197	12447	3	500	510	505	2970	22.8	13.5	33.8	27.8	558	28.8	25.1	1589	1571	3.27	307.5	3532	3432
2091	522	409	511	R	HI	273	2	3	47	956	994	2	551	552	551.5	2720	23.3	12.5	32.9	27.9	556	28.3	25	1614	1614	3.21	300	3445	3336
2092	564	477	544	R	HI	228	2	4	10	236 A	197 A	1	486	549	517.5	2899	18.8	11.8	33.2	36.4	564	28	25.3	1397	1466	3.62	325	3940	3666
2093	661	496	666	F4	HI	282	2	2	56	CR40	38 A	1	537	516	526.5	2849	24.8	13.5	29.6	28.7	561	26	22.2	1435	1390	3.58	342.5	3972	3843
2094	690	511	676	F4	HI	25	3	2	2	12038	12447	1	502	540	521	2879	20.5	13.3	35.2	29.2	558	30.9	26.6	1321	1406	3.69	345	4092	3850
2095	504	326	511	R	HI	257	2	4	45	956	197 A	2	490	493	491.5	3052	17.8	11.3	37.3	34.2	559	31.8	28.4	1431	1424	3.54	325	3916	3634
2096	580	449	602	R	HI	197	3	6	20	0	PCU	0	822	544	683	2196	19	10.3	38.7	26.4	560	33.2	28.5	1443	1453	3.44	327.5	3867	3668
2097	650	531	647	F4	HI	22	3	1	2	12038	12447	2	518	545	531.5	2822	20.3	10.8	38.6	31.3	559	32.5	28.3	1414	1387	3.62	340	3991	3801
2098	517	426	527	R	HI	274	2	3	47	956	994	1	536	579	557.5	2691	21	11.3	34.4	29.5	560	29.4	25.8	1467	1459	3.44	312.5	3828	3500
2099	574	427	570	R	HI	45	3	3	3	12038	80055	3	522	550	536	2799	22.8	11.8	34.6	34.5	559	29.8	26.5	1385	1368	3.72	345	4061	3857
2100	525	443	502	R	HI	215	2	2	9	236 A	38 A	3	507	523	515	2913	23.8	13.8	36.6	30.8	558	31	28.2	1515	1451	3.45	320	3763	3571
2101	617	557	621	10	HI	100	3	3	6	12447	12038	2	833	595	714	2101	24	12.5	34.6	35.2	559	30	26.7	1433	1440	3.43	320	3891	3578
2102	427	354	446	R	HI	274	2	3	47	956	994	1	536	579	557.5	2691	21	11.3	34.4	29.5	560	29.4	25.8	1467	1459	3.44	312.5	3828	3500
2103	488	343	482	R	HI	246	2	3	44	956	38 A	3	520	486	503	2982	21	11	34.8	33.3	559	29.4	26.2	1423	1465	3.64	335	3871	3745
2104	595	485	582	F4	HI	229	2	4	10	236 A	197 A	3	515	515	515	2913	19.5	11.3	34.8	35.6	559	31.1	26.6	1525	1601	3.43	335	3576	3745
2716	1068	843	1078	10	SAP																								
2732	882	630	893	10	SAP	221	2	1	10	236 A	197 A	2	553	543	548	2737	23.3	13.3	38.5	33.4	558	35	28.9	1481	1504	3.01	320	3739	3571
2733	889	608	923	10	SAP	221	2	1	10	236 A	197 A	2	553	543	548	2737	23.3	13.3	38.5	33.4	558	35	28.9	1481	1504	3.01	320	3739	3571
2734	1029	894	1027	10	SAP	46	3	3	3	12038	80055	1	530	545	537.5	2791	22	11.8	44.8	35.3	561	37.8	33.1	1532	1495	3.47	322.5	3707	3618
2736	854	672	863	10	SAP	224	2	2	10	236 A	197 A	2	590	610	600	2500	22.3	12	43.2	37.1	558	36.8	31.8	1556	1690	3.27	292.5	3438	3264
2737	840	605	849	10	SAP	224	2	2	10	236 A	197 A	2	590	610	600	2500	22.3	12	43.2	37.1	558	36.8	31.8	1556	1690	3.27	292.5	3438	3264
2738	944	574	943	10	SAP	224	2	2	10	236 A	197 A	2	590	610	600	2500	22.3	12	43.2	37.1	558	36.8	31.8	1556	1690	3.27	292.5	3438	3264
2739	1027	700	1065	10	SAP	224	2	2	10	236 A	197 A	2	590	610	600	2500	22.3	12	43.2	37.1	558	36.8	31.8	1556	1690	3.27	292.5	3438	3264
2740	995	873	999	10	SAP	46	3	3	3	12038	80055	1	530	545	537.5	2791	22	11.8	44.8	35.3	561	37.8	33.1	1532	1495	3.47	322.5	3707	3618
2741	1002	739	1016	10	SAP	46	3	3	3	12038	80055	1	530	545	537.5	2791	22	11.8	44.8	35.3	561	37.8	33.1	1532	1495	3.47	322.5	3707	3618
2742	818	655	821	10	SAP	110	3	6	6	12447	12038	1	660	625	642.5	2335	22.5	14	40.7	28.9	555	35	31.5	1668	1675	3.1	287.5	3320	3191
2743	775	637	787	10	SAP	110	3	6	6	12447	12038	1	660	625	642.5	2335	22.5	14	40.7	28.9	555	35	31.5	1668	1675	3.1	287.5	3320	3191
2744	856	717	844	10	SAP	145	3	1	9	80055	12038	3	591	567	579	2591	22.5	12.3	42.2	34.5	556	36	30.7	1472	1463	3.39	322.5	3789	3586
2745	924	810	901	10	SAP	145	3	1	9	80055	12038	3	591	567	579	2591	22.5	12.3	42.2	34.5	556	36	30.7	1472	1463	3.39	322.5	3789	3586

Board data						Tree data										Log data													
BoardID	Emean	Emin	Emedian	MGP	Prod	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
		GPax 10 ²			Type								(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
2746	805	587	815	10	SAP	310	2	2	59	CR40	994	1	540	528	534	2809	22.3	12.3	39.7	35	556	36.7	31	1561	1660	3.28	307.5	3452	3419
2747	758	582	750	10	SAP	310	2	2	59	CR40	994	1	540	528	534	2809	22.3	12.3	39.7	35	556	36.7	31	1561	1660	3.28	307.5	3452	3419
2748	925	753	939	10	SAP	95	3	2	6	12447	12038	2	607	590	598.5	2506	19	12	36.3	31.1	558	30.9	28.8	1471	1491	3.45	315	3768	3515
2749	951	819	958	10	SAP	95	3	2	6	12447	12038	2	607	590	598.5	2506	19	12	36.3	31.1	558	30.9	28.8	1471	1491	3.45	315	3768	3515
2750	835	719	844	10	SAP	150	3	2	9	80055	12038	4	570	557	563.5	2662	22.3	14.8	44.2	34.9	555	38.5	35.3	1490	1482	3.43	327.5	3735	3635
2751	772	649	763	10	SAP	150	3	2	9	80055	12038	4	570	557	563.5	2662	22.3	14.8	44.2	34.9	555	38.5	35.3	1490	1482	3.43	327.5	3735	3635
2752	810	567	802	10	SAP	81	3	3	5	12197	12447	1	662	672	667	2249	23	12	40.3	33.8	558	34.4	29.8	1566	1607	3.19	305	3517	3404
2753	944	793	946	10	SAP	81	3	3	5	12197	12447	1	662	672	667	2249	23	12	40.3	33.8	558	34.4	29.8	1566	1607	3.19	305	3517	3404
2754	1070	906	1075	10	SAP	298	2	1	58	CR40	447 A	3	626	620	623	2408	22.5	12	38	29.6	549	32.7	29.2	1482	1465	3.37	320	3726	3514
2755	1132	957	1126	10	SAP	298	2	1	58	CR40	447 A	3	626	620	623	2408	22.5	12	38	29.6	549	32.7	29.2	1482	1465	3.37	320	3726	3514
2756	970	811	969	10	SAP	104	3	4	6	12447	12038	1	554	565	559.5	2681	21	13	36.3	32.8	558	31.4	29.7	1470	1464	3.37	320	3804	3571
2757	1029	832	1020	10	SAP	104	3	4	6	12447	12038	1	554	565	559.5	2681	21	13	36.3	32.8	558	31.4	29.7	1470	1464	3.37	320	3804	3571
2758	770	483	793	F4	SAP	315	2	4	59	CR40	994	1	564	530	547	2742	22.3	12.8	29.2	35.3	557	34.6	29.5	1475	1522	3.22	310	3717	3453
2759	691	481	668	R	SAP	315	2	4	59	CR40	994	1	564	530	547	2742	22.3	12.8	29.2	35.3	557	34.6	29.5	1475	1522	3.22	310	3717	3453
2760	1093	896	1115	10	SAP	318	2	1	101	MY 7	38 A	2	538	511	524.5	2860	20.8	11.5	40	35.8	555	35.3	30.4	1441	1443	3.54	337.5	3849	3746
2762	911	780	905	10	SAP	188	3	1	11	80055	12447	4	581	860	720.5	2082	20.3	12	41.7	34.1	558	35.4	31.5	1565	1572	3.22	295	3558	3292
2763	914	756	913	10	SAP	188	3	1	11	80055	12447	4	581	860	720.5	2082	20.3	12	41.7	34.1	558	35.4	31.5	1565	1572	3.22	295	3558	3292
2764	842	649	860	10	SAP	202	3	1	21	0	TSO	0	876	607	741.5	2023	23	10.5	39.6	29.4	545	34.9	31	1507	1508	3.22	307.5	3615	3352
2765	834	621	853	10	SAP	202	3	1	21	0	TSO	0	876	607	741.5	2023	23	10.5	39.6	29.4	545	34.9	31	1507	1508	3.22	307.5	3615	3352
2766	1017	811	1007	10	SAP	2	3	1	1	12038	12197	1	570	530	550	2727	20.3	12.5	43.7	33.8	558	34.2	31.3	1520	1522	3.37	312.5	3669	3488
2767	1007	765	1021	10	SAP	2	3	1	1	12038	12197	1	570	530	550	2727	20.3	12.5	43.7	33.8	558	34.2	31.3	1520	1522	3.37	312.5	3669	3488
2769	1024	785	1022	10	SAP	19	3	1	2	12038	12447	4	570	585	577.5	2597	21.5	12.3	38.7	31.1	556	33	28.8	1472	1492	3.47	315	3752	3503
2770	844	762	828	10	SAP	50	3	5	3	12038	80055	2	545	546	545.5	2750	25	14.5	41.9	32.6	556	36	31.7	1549	1595	3.21	302.5	3537	3364
2771	872	688	904	10	SAP	50	3	5	3	12038	80055	2	545	546	545.5	2750	25	14.5	41.9	32.6	556	36	31.7	1549	1595	3.21	302.5	3537	3364
2772	850	628	841	10	SAP	38	3	6	2	12038	12447	2	580	591	585.5	2562	26	12.3	41.1	31.4	561	35	29.6	1581	1534	2.96	325	3602	3647
2773	841	668	821	10	SAP	38	3	6	2	12038	12447	2	580	591	585.5	2562	26	12.3	41.1	31.4	561	35	29.6	1581	1534	2.96	325	3602	3647
2774	696	436	705	R	SAP	295	2	3	57	CR40	197 A	1	574	622	598	2508	21	12.3	38	34.1	556	33.6	30	1689	1606	3.15	300	3375	3336
2775	718	470	702	R	SAP	295	2	3	57	CR40	197 A	1	574	622	598	2508	21	12.3	38	34.1	556	33.6	30	1689	1606	3.15	300	3375	3336
2776	801	659	794	10	SAP	310	2	2	59	CR40	994	1	540	528	534	2809	22.3	12.3	39.7	35	556	36.7	31	1561	1660	3.28	307.5	3452	3419
2777	850	682	830	10	SAP	310	2	2	59	CR40	994	1	540	528	534	2809	22.3	12.3	39.7	35	556	36.7	31	1561	1660	3.28	307.5	3452	3419
2778	906	773	894	10	SAP	267	2	4	46	956	447 A	1	542	539	540.5	2775	21.5	12.5	42.2	34.5	560	35.8	31.3	1570	1539	3.25	307.5	3602	3444
2779	797	734	795	10	SAP	267	2	4	46	956	447 A	1	542	539	540.5	2775	21.5	12.5	42.2	34.5	560	35.8	31.3	1570	1539	3.25	307.5	3602	3444
2780	906	740	901	10	SAP	305	2	4	58	CR40	447 A	3	504	522	513	2924	22.5	13.5	40.8	35.2	555	36.3	31.8	1540	1603	3.3	292.5	3532	3247
2781	831	659	835	10	SAP	305	2	4	58	CR40	447 A	3	504	522	513	2924	22.5	13.5	40.8	35.2	555	36.3	31.8	1540	1603	3.3	292.5	3532	3247
2782	870	684	877	10	SAP	293	2	2	57	CR40	197 A	1	575	541	558	2688	23	13.5	39	29.7	557	35.4	30.7	1570	1578	3.19	295	3539	3286
2783	842	619	842	10	SAP	293	2	2	57	CR40	197 A	1	575	541	558	2688	23	13.5	39	29.7	557	35.4	30.7	1570	1578	3.19	295	3539	3286
2784	1009	793	1013	10	SAP	112	3	6	6	12447	12038	4	592	530	561	2674	22.8	13.5	39.5	29	562	33.5	29.6	1533	1472	3.35	307.5	3740	3456
2785	950	616	947	10	SAP	112	3	6	6	12447	12038	4	592	530	561	2674	22.8	13.5	39.5	29	562	33.5	29.6	1533	1472	3.35	307.5	3740	3456

Board data						Tree data										Log data													
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
		GPax 10 ⁻²			Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
2787	832	626	834	10	SAP	300	2	2	58	CR40	447 A	1	625	590	607.5	2469	23.8	13.8	38	35	556	33.3	28.9	1514	1520	3.28	305	3665	3392
2788	1152	821	1156	10	SAP	225							546	551	548.5	2735	20	14.5	40.5	30.3	558	37	30.2	1491	1462	3.4	312.5	3779	3488
2789	1143	795	1162	10	SAP	225							546	551	548.5	2735	20	14.5	40.5	30.3	558	37	30.2	1491	1462	3.4	312.5	3779	3488
2790	841	752	834	10	SAP	34	3	5	2	12038	12447	4	555	534	544.5	2755	22.5	13.3	44.2	34.4	550	37	31.8	1508	1493	3.3	312.5	3665	3438
2791	838	709	839	10	SAP	34	3	5	2	12038	12447	4	555	534	544.5	2755	22.5	13.3	44.2	34.4	550	37	31.8	1508	1493	3.3	312.5	3665	3438
2792	792	451	819	R	SAP	110	3	6	6	12447	12038	1	660	625	642.5	2335	22.5	14	40.7	28.9	555	35	31.5	1668	1675	3.1	287.5	3320	3191
2793	723	609	726	10	SAP	110	3	6	6	12447	12038	1	660	625	642.5	2335	22.5	14	40.7	28.9	555	35	31.5	1668	1675	3.1	287.5	3320	3191
2794	791	574	736	10	SAP	96	3	2	6	12447	12038	3	558	613	585.5	2562	21	14	38.5	32.3	561	32.2	29	1608	1614	3.21	305	3482	3422
2795	812	730	817	10	SAP	96	3	2	6	12447	12038	3	558	613	585.5	2562	21	14	38.5	32.3	561	32.2	29	1608	1614	3.21	305	3482	3422
2796	1096	736	1126	10	SAP	217	2	3	9	236 A	38 A	2	540	554	547	2742	21.5	11.5	36.8	29.6	553	32	29.3	1354	1394	3.58	340	4025	3760
2797	1066	728	1114	10	SAP	217	2	3	9	236 A	38 A	2	540	554	547	2742	21.5	11.5	36.8	29.6	553	32	29.3	1354	1394	3.58	340	4025	3760
2798	973	873	963	10	SAP	95	3	2	6	12447	12038	2	607	590	598.5	2506	19	12	36.3	31.1	558	30.9	28.8	1471	1491	3.45	315	3768	3515
2799	984	852	972	10	SAP	95	3	2	6	12447	12038	2	607	590	598.5	2506	19	12	36.3	31.1	558	30.9	28.8	1471	1491	3.45	315	3768	3515
2800	982	858	975	10	SAP	30	3	4	2	12038	12447	2	549	600	574.5	2611	19.5	11	41.9	34.6	555	35.5	30.3	1410	1382	3.49	340	3976	3774
2801	1126	957	1113	10	SAP	30	3	4	2	12038	12447	2	549	600	574.5	2611	19.5	11	41.9	34.6	555	35.5	30.3	1410	1382	3.49	340	3976	3774
2802	982	802	985	10	SAP	112	3	6	6	12447	12038	4	592	530	561	2674	22.8	13.5	39.5	29	562	33.5	29.6	1533	1472	3.35	307.5	3740	3456
2803	1117	903	1119	10	SAP	112	3	6	6	12447	12038	4	592	530	561	2674	22.8	13.5	39.5	29	562	33.5	29.6	1533	1472	3.35	307.5	3740	3456
2804	938	803	927	10	SAP	336	2	3	103	MY 7	447 A	1	504	498	501	2994	17.8	12.8	38.2	33.6	559	32.8	30.2	1399	1341	3.62	340	4080	3801
2805	1035	830	1060	10	SAP	336	2	3	103	MY 7	447 A	1	504	498	501	2994	17.8	12.8	38.2	33.6	559	32.8	30.2	1399	1341	3.62	340	4080	3801
2806	998	768	1006	10	SAP	11	3	3	1	12038	12197	4	554	540	547	2742	21.5	11	39.1	32.9	556	33.3	29.5	1539	1528	3.28	337.5	3626	3753
2807	988	710	984	10	SAP	11	3	3	1	12038	12197	4	554	540	547	2742	21.5	11	39.1	32.9	556	33.3	29.5	1539	1528	3.28	337.5	3626	3753
2808	783	668	762	10	SAP	315	2	4	59	CR40	994	1	564	530	547	2742	22.3	12.8	29.2	35.3	557	34.6	29.5	1475	1522	3.22	310	3717	3453
2809	806	673	775	10	SAP	315	2	4	59	CR40	994	1	564	530	547	2742	22.3	12.8	29.2	35.3	557	34.6	29.5	1475	1522	3.22	310	3717	3453
2810	775	662	767	10	SAP	161	3	5	9	80055	12038	1	564	572	568	2641	26.3	13.8	42.8	16.9	558	36.5	32.5	1705	1647	3.22	305	3329	3404
2811	867	622	892	10	SAP	161	3	5	9	80055	12038	1	564	572	568	2641	26.3	13.8	42.8	16.9	558	36.5	32.5	1705	1647	3.22	305	3329	3404
2812	760	648	766	10	SAP	135	3	3	8	12447	80055	3	607	608	607.5	2469	24	13.5	41.3	35.2	556	36.5	31.7	1516	1558	3.36	307.5	3617	3419
2813	838	694	834	10	SAP	135	3	3	8	12447	80055	3	607	608	607.5	2469	24	13.5	41.3	35.2	556	36.5	31.7	1516	1558	3.36	307.5	3617	3419
2814	809	704	815	10	SAP	293	2	2	57	CR40	197 A	1	575	541	558	2688	23	13.5	39	29.7	557	35.4	30.7	1570	1578	3.19	295	3539	3286
2815	807	646	828	10	SAP	293	2	2	57	CR40	197 A	1	575	541	558	2688	23	13.5	39	29.7	557	35.4	30.7	1570	1578	3.19	295	3539	3286
2816	953	758	957	10	SAP	13	3	4	1	12038	12197	1	566	535	550.5	2725	19	12.5	51.9	33	556	34.9	30.3	1576	1500	3.34	307.5	3615	3419
2817	937	746	929	10	SAP	13	3	4	1	12038	12197	1	566	535	550.5	2725	19	12.5	51.9	33	556	34.9	30.3	1576	1500	3.34	307.5	3615	3419
2818	1027	750	1023	10	SAP	62	3	3	4	12197	12038	3	510	550	530	2830	19.5	10.5	38.8	34.9	556	32.9	29.2	1489	1516	3.44	317.5	3700	3531
2819	962	666	933	10	SAP	62	3	3	4	12197	12038	3	510	550	530	2830	19.5	10.5	38.8	34.9	556	32.9	29.2	1489	1516	3.44	317.5	3700	3531
2820	956	738	960	10	SAP	287	2	4	56	CR40	38 A	1	496	504	500	3000	22.3	14	37.9	34.2	559	33	30.3	1442	1483	3.49	322.5	3822	3606
2821	859	626	842	10	SAP	287	2	4	56	CR40	38 A	1	496	504	500	3000	22.3	14	37.9	34.2	559	33	30.3	1442	1483	3.49	322.5	3822	3606
2822	731	441	768	R	SAP	302	2	3	58	CR40	447 A	1	572	600	586	2560	23.8	14.5	38.6	31.4	557	34.4	29.3	1537	1539	3.37	312.5	3622	3481
2823	808	661	805	10	SAP	302	2	3	58	CR40	447 A	1	572	600	586	2560	23.8	14.5	38.6	31.4	557	34.4	29.3	1537	1539	3.37	312.5	3622	3481
2824	875	650	896	10	SAP	302	2	3	58	CR40	447 A	1	572	600	586	2560	23.8	14.5	38.6	31.4	557	34.4	29.3	1537	1539	3.37	312.5	3622	3481

Board data						Tree data										Log data													
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
		GPa x 10 ⁻²			Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
2825	860	640	879	10	SAP	302	2	3	58	CR40	447 A	1	572	600	586	2560	23.8	14.5	38.6	31.4	557	34.4	29.3	1537	1539	3.37	312.5	3622	3481
2826	1084	961	1076	10	SAP	26	3	2	2	12038	12447	2	625	572	598.5	2506	20.8	13.5	41	32	557	35.4	30.5	1400	1430	3.6	335	3936	3732
2827	1022	777	1023	10	SAP	26	3	2	2	12038	12447	2	625	572	598.5	2506	20.8	13.5	41	32	557	35.4	30.5	1400	1430	3.6	335	3936	3732
2829	1081	873	1104	10	SAP	177	3	3	10	80055	12197	1	568	614	591	2538	18.5	12	44.4	34.1	557	38.6	32.6	1625	1658	3.29	307.5	3393	3426
2830	893	636	912	10	SAP	287	2	4	56	CR40	38 A	1	496	504	500	3000	22.3	14	37.9	34.2	559	33	30.3	1442	1483	3.49	322.5	3822	3606
2831	878	614	910	10	SAP	287	2	4	56	CR40	38 A	1	496	504	500	3000	22.3	14	37.9	34.2	559	33	30.3	1442	1483	3.49	322.5	3822	3606
2832	1010	666	1012	10	SAP	19	3	1	2	12038	12447	4	570	585	577.5	2597	21.5	12.3	38.7	31.1	556	33	28.8	1472	1492	3.47	315	3752	3503
2833	884	617	905	10	SAP	19	3	1	2	12038	12447	4	570	585	577.5	2597	21.5	12.3	38.7	31.1	556	33	28.8	1472	1492	3.47	315	3752	3503
2834	842	542	858	F4	SAP	202	3	1	21	0	TSO	0	876	607	741.5	2023	23	10.5	39.6	29.4	545	34.9	31	1507	1508	3.22	307.5	3615	3352
2835	617	425	629	R	SAP	202	3	1	21	0	TSO	0	876	607	741.5	2023	23	10.5	39.6	29.4	545	34.9	31	1507	1508	3.22	307.5	3615	3352
2836	893	710	881	10	SAP	108	3	5	6	12447	12038	1	550	550	550	2727	23.3	13	39.7	35.6	557	33.8	30.2	1515	1515	3.39	315	3677	3509
2837	1021	722	1009	10	SAP	108	3	5	6	12447	12038	1	550	550	550	2727	23.3	13	39.7	35.6	557	33.8	30.2	1515	1515	3.39	315	3677	3509
2838	935	752	927	10	SAP	108	3	5	6	12447	12038	1	550	550	550	2727	23.3	13	39.7	35.6	557	33.8	30.2	1515	1515	3.39	315	3677	3509
2839	857	754	843	10	SAP	108	3	5	6	12447	12038	1	550	550	550	2727	23.3	13	39.7	35.6	557	33.8	30.2	1515	1515	3.39	315	3677	3509
2840	833	713	819	10	SAP	183	3	5	10	80055	12197	2	524	544	534	2809	24.5	13.3	40	34.7	554	34.4	31.2	1540	1553	3.3	310	3582	3435
2841	759	611	761	10	SAP	183	3	5	10	80055	12197	2	524	544	534	2809	24.5	13.3	40	34.7	554	34.4	31.2	1540	1553	3.3	310	3582	3435
2842	1042	910	1019	10	SAP	225							546	551	548.5	2735	20	14.5	40.5	30.3	558	37	30.2	1491	1462	3.4	312.5	3779	3488
2843	970	685	1001	10	SAP	225							546	551	548.5	2735	20	14.5	40.5	30.3	558	37	30.2	1491	1462	3.4	312.5	3779	3488
2844	888	659	873	10	SAP	256	2	3	45	956	197 A	3	550	555	552.5	2715	20.8	12.5	39.4	30.8	558	35.2	30.5	1455	1452	3.45	330	3839	3683
2845	987	764	982	10	SAP	256	2	3	45	956	197 A	3	550	555	552.5	2715	20.8	12.5	39.4	30.8	558	35.2	30.5	1455	1452	3.45	330	3839	3683
2846	827	629	840	10	SAP	201	3	6	20	0	PCU	0	575	518	546.5	2745	18	9.8	40.7	30.5	554	34.5	28.9	1434	1463	3.48	322.5	3825	3573
2847	925	798	931	10	SAP	161	3	5	9	80055	12038	1	564	572	568	2641	26.3	13.8	42.8	16.9	558	36.5	32.5	1705	1647	3.22	305	3329	3404
2848	824	750	816	10	SAP	161	3	5	9	80055	12038	1	564	572	568	2641	26.3	13.8	42.8	16.9	558	36.5	32.5	1705	1647	3.22	305	3329	3404
2849	958	773	939	10	SAP	107	3	5	6	12447	12038	4	580	554	567	2646	21.5	11.5	41.4	35.8	561	34.7	31.1	1517	1529	3	317.5	3684	3562
2850	1081	905	1037	10	SAP	107	3	5	6	12447	12038	4	580	554	567	2646	21.5	11.5	41.4	35.8	561	34.7	31.1	1517	1529	3	317.5	3684	3562
2851	847	744	829	10	SAP	183	3	5	10	80055	12197	2	524	544	534	2809	24.5	13.3	40	34.7	554	34.4	31.2	1540	1553	3.3	310	3582	3435
2852	934	842	930	10	SAP	183	3	5	10	80055	12197	2	524	544	534	2809	24.5	13.3	40	34.7	554	34.4	31.2	1540	1553	3.3	310	3582	3435
2853	871	619	867	10	SAP	4	3	1	1	12038	12197	3	550	526	538	2788	19.5	10	34.9	33.1	495	29.9	29.1	1313	1293		360	3799	3564
2854	989	776	947	10	SAP	4	3	1	1	12038	12197	3	550	526	538	2788	19.5	10	34.9	33.1	495	29.9	29.1	1313	1293		360	3799	3564
2855	1112	905	1104	10	SAP	292	2	2	57	CR40	197 A	2	535	564	549.5	2730	21	11.3	41.2	37.5	557	36.4	33	1556	1557	3.24	317.5	3579	3537
2856	946	694	929	10	SAP	292	2	2	57	CR40	197 A	2	535	564	549.5	2730	21	11.3	41.2	37.5	557	36.4	33	1556	1557	3.24	317.5	3579	3537
2857	1043	818	1058	10	SAP	101	3	3	6	12447	12038	4	583	575	579	2591	21	13	44.9	35	560	36.8	32.1	1530	1557	3.28	305	3628	3416
2858	1110	892	1117	10	SAP	101	3	3	6	12447	12038	4	583	575	579	2591	21	13	44.9	35	560	36.8	32.1	1530	1557	3.28	305	3628	3416
2859	964	862	945	10	SAP	49	3	4	3	12038	80055	2	576	568	572	2622	22.8	12.3	40.9	33.9	559	35.7	31.3	1510	1515	3.41	325	3696	3634
2860	984	873	989	10	SAP	49	3	4	3	12038	80055	2	576	568	572	2622	22.8	12.3	40.9	33.9	559	35.7	31.3	1510	1515	3.41	325	3696	3634
2861	873	762	841	10	SAP	177	3	3	10	80055	12197	1	568	614	591	2538	18.5	12	44.4	34.1	557	38.6	32.6	1625	1658	3.29	307.5	3393	3426
2862	1085	945	1081	10	SAP	177	3	3	10	80055	12197	1	568	614	591	2538	18.5	12	44.4	34.1	557	38.6	32.6	1625	1658	3.29	307.5	3393	3426
2863	835	674	829	10	SAP	34	3	5	2	12038	12447	4	555	534	544.5	2755	22.5	13.3	44.2	34.4	550	37	31.8	1508	1493	3.3	312.5	3665	3438

Board data						Tree data										Log data													
BoardID	Emean	Emin	Emedian	MGP	Prod	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lqth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
					Type								(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
2864	888	674	921	10	SAP	34	3	5	2	12038	12447	4	555	534	544.5	2755	22.5	13.3	44.2	34.4	550	37	31.8	1508	1493	3.3	312.5	3665	3438
2865	982	823	966	10	SAP	305	2	4	58	CR40	447 A	3	504	522	513	2924	22.5	13.5	40.8	35.2	555	36.3	31.8	1540	1603	3.3	292.5	3532	3247
2866	1031	876	1016	10	SAP	305	2	4	58	CR40	447 A	3	504	522	513	2924	22.5	13.5	40.8	35.2	555	36.3	31.8	1540	1603	3.3	292.5	3532	3247
2867	1141	875	1161	10	SAP	204	3	2	21	0	TSO	0	565	570	567.5	2643	20	13.3	39.6	32.6	557	34	30.3	1478	1478	3.45	325	3769	3621
2868	1100	916	1084	10	SAP	204	3	2	21	0	TSO	0	565	570	567.5	2643	20	13.3	39.6	32.6	557	34	30.3	1478	1478	3.45	325	3769	3621
2869	1019	802	1000	10	SAP	23	3	2	2	12038	12447	4	693	899	796	1884	22.3	14	45.8	32.7	560	38.8	34.2	1507	1508	3.36	312.5	3715	3500
2870	1145	938	1150	10	SAP	23	3	2	2	12038	12447	4	693	899	796	1884	22.3	14	45.8	32.7	560	38.8	34.2	1507	1508	3.36	312.5	3715	3500
2871	682	432	663	R	SAP	208	3	6	21	0	TSO	0	586	560	573	2618	22.5	12.5	43.6	29.5	535	37	32.8	1575	1594	3.06	305	3376	3264
2872	646	463	654	R	SAP	208	3	6	21	0	TSO	0	586	560	573	2618	22.5	12.5	43.6	29.5	535	37	32.8	1575	1594	3.06	305	3376	3264
2873	849	689	869	10	SAP	175	3	3	10	80055	12197	4	570	618	594	2525	23.3	14.3	43.8	36.7	557	37	33.1	1552	1558	3.34	307.5	3582	3426
2874	879	681	888	10	SAP	175	3	3	10	80055	12197	4	570	618	594	2525	23.3	14.3	43.8	36.7	557	37	33.1	1552	1558	3.34	307.5	3582	3426
2875	1148	894	1174	10	SAP	4	3	1	1	12038	12197	3	550	526	538	2788	19.5	10	34.9	33.1	495	29.9	29.1	1313	1293		360	3799	3564
2876	1120	464	1238	R	SAP	4	3	1	1	12038	12197	3	550	526	538	2788	19.5	10	34.9	33.1	495	29.9	29.1	1313	1293		360	3799	3564
2877	787	538	785	F4	SAP	295	2	3	57	CR40	197 A	1	574	622	598	2508	21	12.3	38	34.1	556	33.6	30	1689	1606	3.15	300	3375	3336
2878	873	606	894	10	SAP	295	2	3	57	CR40	197 A	1	574	622	598	2508	21	12.3	38	34.1	556	33.6	30	1689	1606	3.15	300	3375	3336
2879	764	594	754	10	SAP	73	3	1	5	12197	12447	1	583	595	589	2547	21	12	41.9	30.9	559	36	32.6	1553	1644	3.2	300	3497	3354
2880	821	679	800	10	SAP	73	3	1	5	12197	12447	1	583	595	589	2547	21	12	41.9	30.9	559	36	32.6	1553	1644	3.2	300	3497	3354
2881	910	791	914	10	SAP	128	3	1	8	12447	80055	2	572	588	580	2586	26	12.8	40	32.6	558	35.1	30.9	1509	1570	3.35	330	3625	3683
2882	838	631	837	10	SAP	128	3	1	8	12447	80055	2	572	588	580	2586	26	12.8	40	32.6	558	35.1	30.9	1509	1570	3.35	330	3625	3683
2883	950	758	954	10	SAP	115	3	1	7	12447	12197	3	573	586	579.5	2588	22.5	12	39.6	30.1	557	34.1	31	1552	1536	3.26	307.5	3608	3426
2884	910	783	891	10	SAP	115	3	1	7	12447	12197	3	573	586	579.5	2588	22.5	12	39.6	30.1	557	34.1	31	1552	1536	3.26	307.5	3608	3426
2885	875	602	861	10	SAP	13	3	4	1	12038	12197	1	566	535	550.5	2725	19	12.5	51.9	33	556	34.9	30.3	1576	1500	3.34	307.5	3615	3419
2886	928	682	931	10	SAP	13	3	4	1	12038	12197	1	566	535	550.5	2725	19	12.5	51.9	33	556	34.9	30.3	1576	1500	3.34	307.5	3615	3419
2887	1128	848	1121	10	SAP	33	3	5	2	12038	12447	2	556	525	540.5	2775	21	11.3	43.2	35.9	560	35.7	31.5	1502	1572	3.46	317.5	3643	3556
2888	938	772	929	10	SAP	33	3	5	2	12038	12447	2	556	525	540.5	2775	21	11.3	43.2	35.9	560	35.7	31.5	1502	1572	3.46	317.5	3643	3556
2889	856	666	853	10	SAP	107	3	5	6	12447	12038	4	580	554	567	2646	21.5	11.5	41.4	35.8	561	34.7	31.1	1517	1529	3	317.5	3684	3562
2890	905	748	881	10	SAP	107	3	5	6	12447	12038	4	580	554	567	2646	21.5	11.5	41.4	35.8	561	34.7	31.1	1517	1529	3	317.5	3684	3562
2891	1023	855	1036	10	SAP	150	3	2	9	80055	12038	4	570	557	563.5	2662	22.3	14.8	44.2	34.9	555	38.5	35.3	1490	1482	3.43	327.5	3735	3635
2892	1052	927	1058	10	SAP	150	3	2	9	80055	12038	4	570	557	563.5	2662	22.3	14.8	44.2	34.9	555	38.5	35.3	1490	1482	3.43	327.5	3735	3635
2893	922	804	901	10	SAP	49	3	4	3	12038	80055	2	576	568	572	2622	22.8	12.3	40.9	33.9	559	35.7	31.3	1510	1515	3.41	325	3696	3634
2894	994	834	1001	10	SAP	49	3	4	3	12038	80055	2	576	568	572	2622	22.8	12.3	40.9	33.9	559	35.7	31.3	1510	1515	3.41	325	3696	3634
2895	1045	924	1043	10	SAP	336	2	3	103	MY 7	447 A	1	504	498	501	2994	17.8	12.8	38.2	33.6	559	32.8	30.2	1399	1341	3.62	340	4080	3801
2896	1114	921	1091	10	SAP	336	2	3	103	MY 7	447 A	1	504	498	501	2994	17.8	12.8	38.2	33.6	559	32.8	30.2	1399	1341	3.62	340	4080	3801
2897	823	709	826	10	SAP	135	3	3	8	12447	80055	3	607	608	607.5	2469	24	13.5	41.3	35.2	556	36.5	31.7	1516	1558	3.36	307.5	3617	3419
2898	854	699	882	10	SAP	135	3	3	8	12447	80055	3	607	608	607.5	2469	24	13.5	41.3	35.2	556	36.5	31.7	1516	1558	3.36	307.5	3617	3419
2901	815	306	842	R	SAP	16	3	6	1	12038	12197	4	582	609	595.5	2519	21.5	13.3	51.1	33	555	43.5	36.5	1619	1623	2.99	280	3424	3108
2902	881	562	894	10	SAP	16	3	6	1	12038	12197	4	582	609	595.5	2519	21.5	13.3	51.1	33	555	43.5	36.5	1619	1623	2.99	280	3424	3108
2903	727	597	730	10	SAP	178	3	4	10	80055	12197	2	620	541	580.5	2584	24	14.8	46.1	32.9	558	40.1	36.8	1612	1560	3.24	307.5	3518	3432

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lgth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
		GP a × 10 ²			Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
2904	759	663	768	10	SAP	178	3	4	10	80055	12197	2	620	541	580.5	2584	24	14.8	46.1	32.9	558	40.1	36.8	1612	1560	3.24	307.5	3518	3432
2905	775	640	776	10	SAP	151	3	2	9	80055	12038	2	623	600	611.5	2453	25.3	15.3	46.6	31.9	557	41	36.6	1561	1543	3.24	305	3589	3398
2906	788	702	805	10	SAP	151	3	2	9	80055	12038	2	623	600	611.5	2453	25.3	15.3	46.6	31.9	557	41	36.6	1561	1543	3.24	305	3589	3398
2907	991	893	984	10	SAP	138	3	4	8	12447	80055	1	645	548	596.5	2515	24.5	14.5	46.7	33.2	554	40	36.1	1586	1620	3.01	290	3456	3213
2908	992	881	995	10	SAP	138	3	4	8	12447	80055	1	645	548	596.5	2515	24.5	14.5	46.7	33.2	554	40	36.1	1586	1620	3.01	290	3456	3213
2909	866	761	862	10	SAP	140	3	5	8	12447	80055	1	570	620	595	2521	26.5	14	46.2	35.4	559	39	36.5	1583	1591	3.14	297.5	3522	3326
2910	910	843	894	10	SAP	140	3	5	8	12447	80055	1	570	620	595	2521	26.5	14	46.2	35.4	559	39	36.5	1583	1591	3.14	297.5	3522	3326
2911	819	617	800	10	SAP	14	3	5	1	12038	12197	4	579	614	596.5	2515	21.8	12.8	52.8	35.5	555	45.9	39.8	1543	1554	3.25	307.5	3584	3413
2912	914	704	916	10	SAP	14	3	5	1	12038	12197	4	579	614	596.5	2515	21.8	12.8	52.8	35.5	555	45.9	39.8	1543	1554	3.25	307.5	3584	3413
2913	793	662	791	10	SAP	160	3	5	9	80055	12038	2	565	615	590	2542	27.8	14	49.1	38	558	43.2	37	1668	1629	3.19	292.5	3385	3264
2914	784	676	792	10	SAP	160	3	5	9	80055	12038	2	565	615	590	2542	27.8	14	49.1	38	558	43.2	37	1668	1629	3.19	292.5	3385	3264
2915	662	494	662	F4	SAP	83	3	4	5	12197	12447	2	642	640	641	2340	21.8	12.3	49	21.6	555	42.4	37.5	1760	1812	2.89	267.5	3108	2969
2916	692	509	701	F4	SAP	83	3	4	5	12197	12447	2	642	640	641	2340	21.8	12.3	49	21.6	555	42.4	37.5	1760	1812	2.89	267.5	3108	2969
2917	1031	896	1019	10	SAP	170	3	2	10	80055	12197	1	915	615	765	1961	22.5	12	47.9	30.2	556	42	36.2	1602	1570	3.15	287.5	3506	3197
2918	925	847	937	10	SAP	170	3	2	10	80055	12197	1	915	615	765	1961	22.5	12	47.9	30.2	556	42	36.2	1602	1570	3.15	287.5	3506	3197
2919	783	666	789	10	SAP	138	3	4	8	12447	80055	1	645	548	596.5	2515	24.5	14.5	46.7	33.2	554	40	36.1	1586	1620	3.01	290	3456	3213
2920	788	571	791	10	SAP	138	3	4	8	12447	80055	1	645	548	596.5	2515	24.5	14.5	46.7	33.2	554	40	36.1	1586	1620	3.01	290	3456	3213
2921	802	606	798	10	SAP	138	3	4	8	12447	80055	1	645	548	596.5	2515	24.5	14.5	46.7	33.2	554	40	36.1	1586	1620	3.01	290	3456	3213
2922	765	681	758	10	SAP	138	3	4	8	12447	80055	1	645	548	596.5	2515	24.5	14.5	46.7	33.2	554	40	36.1	1586	1620	3.01	290	3456	3213
2923	721	470	714	R	SAP	16	3	6	1	12038	12197	4	582	609	595.5	2519	21.5	13.3	51.1	33	555	43.5	36.5	1619	1623	2.99	280	3424	3108
2924	682	463	691	R	SAP	16	3	6	1	12038	12197	4	582	609	595.5	2519	21.5	13.3	51.1	33	555	43.5	36.5	1619	1623	2.99	280	3424	3108
2925	699	589	708	10	SAP	140	3	5	8	12447	80055	1	570	620	595	2521	26.5	14	46.2	35.4	559	39	36.5	1583	1591	3.14	297.5	3522	3326
2926	693	621	684	10	SAP	140	3	5	8	12447	80055	1	570	620	595	2521	26.5	14	46.2	35.4	559	39	36.5	1583	1591	3.14	297.5	3522	3326
2927	840	689	825	10	SAP	86	3	5	5	12197	12447	4	580	620	600	2500	21	11.5	52.4	32.4	555	43.4	37.7	1639	1666	3.02	285	3359	3164
2928	831	591	843	10	SAP	86	3	5	5	12197	12447	4	580	620	600	2500	21	11.5	52.4	32.4	555	43.4	37.7	1639	1666	3.02	285	3359	3164
2929	1033	957	1032	10	SAP	151	3	2	9	80055	12038	2	623	600	611.5	2453	25.3	15.3	46.6	31.9	557	41	36.6	1561	1543	3.24	305	3589	3398
2930	1107	960	1110	10	SAP	151	3	2	9	80055	12038	2	623	600	611.5	2453	25.3	15.3	46.6	31.9	557	41	36.6	1561	1543	3.24	305	3589	3398
2931	815	683	816	10	SAP	122	3	4	7	12447	12197	2	592	590	591	2538	23.3	15	46.7	31.1	556	40.2	35.6	1680	1687	2.92		3303	
2932	840	650	861	10	SAP	122	3	4	7	12447	12197	2	592	590	591	2538	23.3	15	46.7	31.1	556	40.2	35.6	1680	1687	2.92		3303	
2933	570	443	581	R	SAP	83	3	4	5	12197	12447	2	642	640	641	2340	21.8	12.3	49	21.6	555	42.4	37.5	1760	1812	2.89	267.5	3108	2969
2934	612	537	596	F4	SAP	83	3	4	5	12197	12447	2	642	640	641	2340	21.8	12.3	49	21.6	555	42.4	37.5	1760	1812	2.89	267.5	3108	2969
2935	743	609	739	10	SAP	18	3	6	1	12038	12197	1	570	551	560.5	2676	21	12	50.5	36.9	555	41.5	37.7	1505	1530	3.23	295	3657	3275
2936	831	614	822	10	SAP	18	3	6	1	12038	12197	1	570	551	560.5	2676	21	12	50.5	36.9	555	41.5	37.7	1505	1530	3.23	295	3657	3275
2937	724	524	673	F4	SAP	160	3	5	9	80055	12038	2	565	615	590	2542	27.8	14	49.1	38	558	43.2	37	1668	1629	3.19	292.5	3385	3264
2938	635	463	629	R	SAP	160	3	5	9	80055	12038	2	565	615	590	2542	27.8	14	49.1	38	558	43.2	37	1668	1629	3.19	292.5	3385	3264
2939	824	701	817	10	SAP	170	3	2	10	80055	12197	1	915	615	765	1961	22.5	12	47.9	30.2	556	42	36.2	1602	1570	3.15	287.5	3506	3197
2940	911	786	914	10	SAP	170	3	2	10	80055	12197	1	915	615	765	1961	22.5	12	47.9	30.2	556	42	36.2	1602	1570	3.15	287.5	3506	3197
2941	787	580	776	10	SAP	237	2	4	11	236 A	447 A	1	592	575	583.5	2571	21.5	13.8	51.3	33.8	560	45.3	38.3	1482	1566	3.49	332.5	3675	3724

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lgth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
					Type								(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
2942	689	454	660	R	SAP	237	2	4	11	236 A	447 A	1	592	575	583.5	2571	21.5	13.8	51.3	33.8	560	45.3	38.3	1482	1566	3.49	332.5	3675	3724
2943	919	689	935	10	SAP	178	3	4	10	80055	12197	2	620	541	580.5	2584	24	14.8	46.1	32.9	558	40.1	36.8	1612	1560	3.24	307.5	3518	3432
2944	892	673	915	10	SAP	178	3	4	10	80055	12197	2	620	541	580.5	2584	24	14.8	46.1	32.9	558	40.1	36.8	1612	1560	3.24	307.5	3518	3432
2945	1119	980	1115	10	SAP	167	3	6	9	80055	12038	3	584	550	567	2646	23.8	14	49.1	34	560	42.7	36	1557	1547	3.2	302.5	3608	3388
2946	1004	892	990	10	SAP	167	3	6	9	80055	12038	3	584	550	567	2646	23.8	14	49.1	34	560	42.7	36	1557	1547	3.2	302.5	3608	3388
2947	1193	555	1233	10	SAP	219	2	4	9	236 A	38 A	2	475	505	490	3061	22.5	12.5	41.7	33.8	556	37.6	34.7	1366	1438	3.73	335	3966	3725
2948	1108	791	1134	10	SAP	219	2	4	9	236 A	38 A	2	475	505	490	3061	22.5	12.5	41.7	33.8	556	37.6	34.7	1366	1438	3.73	335	3966	3725
2949	770	556	776	10	SAP	86	3	5	5	12197	12447	4	580	620	600	2500	21	11.5	52.4	32.4	555	43.4	37.7	1639	1666	3.02	285	3359	3164
2951	851	646	819	10	SAP	160	3	5	9	80055	12038	2	565	615	590	2542	27.8	14	49.1	38	558	43.2	37	1668	1629	3.19	292.5	3385	3264
2952	905	656	874	10	SAP	160	3	5	9	80055	12038	2	565	615	590	2542	27.8	14	49.1	38	558	43.2	37	1668	1629	3.19	292.5	3385	3264
2953	1121	832	1106	10	SAP	219	2	4	9	236 A	38 A	2	475	505	490	3061	22.5	12.5	41.7	33.8	556	37.6	34.7	1366	1438	3.73	335	3966	3725
2955	829	730	828	10	SAP	165	3	6	9	80055	12038	2	580	591	585.5	2562	23.8	13.8	50.8	37.6	556	44.2	39.4	1633	1633	3.1	285	3405	3169
2956	700	546	709	F4	SAP	165	3	6	9	80055	12038	2	580	591	585.5	2562	23.8	13.8	50.8	37.6	556	44.2	39.4	1633	1633	3.1	285	3405	3169
2957	958	717	949	10	SAP	219	2	4	9	236 A	38 A	2	475	505	490	3061	22.5	12.5	41.7	33.8	556	37.6	34.7	1366	1438	3.73	335	3966	3725
2958	871	513	896	F4	SAP	219	2	4	9	236 A	38 A	2	475	505	490	3061	22.5	12.5	41.7	33.8	556	37.6	34.7	1366	1438	3.73	335	3966	3725
2959	949	772	971	10	SAP	283	2	2	56	CR40	38 A	2	617	582	599.5	2502	21.5	12.5	49.3	37.2	558	43	37	1582	1643	3.16	315	3460	3515
2960	1104	605	1113	10	SAP	283	2	2	56	CR40	38 A	2	617	582	599.5	2502	21.5	12.5	49.3	37.2	558	43	37	1582	1643	3.16	315	3460	3515
2961	774	633	768	10	SAP	83	3	4	5	12197	12447	2	642	640	641	2340	21.8	12.3	49	21.6	555	42.4	37.5	1760	1812	2.89	267.5	3108	2969
2962	820	708	806	10	SAP	83	3	4	5	12197	12447	2	642	640	641	2340	21.8	12.3	49	21.6	555	42.4	37.5	1760	1812	2.89	267.5	3108	2969
2963	1019	790	1036	10	SAP	170	3	2	10	80055	12197	1	915	615	765	1961	22.5	12	47.9	30.2	556	42	36.2	1602	1570	3.15	287.5	3506	3197
2964	1197	1040	1206	12	SAP	170	3	2	10	80055	12197	1	915	615	765	1961	22.5	12	47.9	30.2	556	42	36.2	1602	1570	3.15	287.5	3506	3197
2965	801	416	824	R	SAP	14	3	5	1	12038	12197	4	579	614	596.5	2515	21.8	12.8	52.8	35.5	555	45.9	39.8	1543	1554	3.25	307.5	3584	3413
2966	805	437	809	R	SAP	14	3	5	1	12038	12197	4	579	614	596.5	2515	21.8	12.8	52.8	35.5	555	45.9	39.8	1543	1554	3.25	307.5	3584	3413
2967	865	733	863	10	SAP	163	3	5	9	80055	12038	4	545	527	536	2799	20.5	11.3	46.5	35.5	555	40.3	35.9	1459	1468	3.38	320	3792	3552
2968	884	705	893	10	SAP	163	3	5	9	80055	12038	4	545	527	536	2799	20.5	11.3	46.5	35.5	555	40.3	35.9	1459	1468	3.38	320	3792	3552
2969	767	503	810	F4	SAP	97	3	2	6	12447	12038	4	583	675	629	2385	20.8	12.8	48.8	31.3	558	40.3	37.3	1589	1610	3.19	292.5	3489	3264
2970	888	614	883	10	SAP	97	3	2	6	12447	12038	4	583	675	629	2385	20.8	12.8	48.8	31.3	558	40.3	37.3	1589	1610	3.19	292.5	3489	3264
2973	1239	830	1265	10	SAP	97	3	2	6	12447	12038	4	583	675	629	2385	20.8	12.8	48.8	31.3	558	40.3	37.3	1589	1610	3.19	292.5	3489	3264
2974	1198	761	1176	10	SAP	97	3	2	6	12447	12038	4	583	675	629	2385	20.8	12.8	48.8	31.3	558	40.3	37.3	1589	1610	3.19	292.5	3489	3264
2975	800	582	802	10	SAP	304	2	3	58	CR40	447 A	3	524	540	532	2820	20	12.5	47.7	32.1	557	41.8	35.6	1630	1617	3.19	292.5	3431	3258
2976	647	432	664	R	SAP	304	2	3	58	CR40	447 A	3	524	540	532	2820	20	12.5	47.7	32.1	557	41.8	35.6	1630	1617	3.19	292.5	3431	3258
2977	730	586	720	10	SAP	83	3	4	5	12197	12447	2	642	640	641	2340	21.8	12.3	49	21.6	555	42.4	37.5	1760	1812	2.89	267.5	3108	2969
2978	792	579	798	10	SAP	83	3	4	5	12197	12447	2	642	640	641	2340	21.8	12.3	49	21.6	555	42.4	37.5	1760	1812	2.89	267.5	3108	2969
2979	756	667	740	10	SAP	53	3	6	3	12038	80055	2	627	580	603.5	2486	22.3	14.3	49.9	35.7	552	43.5	39.6	1582	1509	3.21	295	3572	3257
2980	727	586	739	10	SAP	53	3	6	3	12038	80055	2	627	580	603.5	2486	22.3	14.3	49.9	35.7	552	43.5	39.6	1582	1509	3.21	295	3572	3257
2981	701	466	707	R	SAP	86	3	5	5	12197	12447	4	580	620	600	2500	21	11.5	52.4	32.4	555	43.4	37.7	1639	1666	3.02	285	3359	3164
2982	702	536	687	F4	SAP	86	3	5	5	12197	12447	4	580	620	600	2500	21	11.5	52.4	32.4	555	43.4	37.7	1639	1666	3.02	285	3359	3164
2983	853	608	875	10	SAP	283	2	2	56	CR40	38 A	2	617	582	599.5	2502	21.5	12.5	49.3	37.2	558	43	37	1582	1643	3.16	315	3460	3515

Board data										Tree data										Log data													
BoardID	E	mean	E	min	E	median	MGP	Prod	Type	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lgth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
																	(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
2984	633	478	651				R	SAP	283	2	2	56	CR40	38 A	2	617	582	599.5	2502	21.5	12.5	49.3	37.2	558	43	37	1582	1643	316	315	3460	3515	
2985	987	766	1032				10	SAP	18	3	6	1	12038	12197	1	570	551	560.5	2676	21	12	50.5	36.9	555	41.5	37.7	1505	1530	323	295	3657	3275	
2986	1018	770	1049				10	SAP	18	3	6	1	12038	12197	1	570	551	560.5	2676	21	12	50.5	36.9	555	41.5	37.7	1505	1530	323	295	3657	3275	
2987	1125	966	1130				10	SAP	163	3	5	9	80055	12038	4	545	527	536	2799	20.5	11.3	46.5	35.5	555	40.3	35.9	1459	1468	338	320	3792	3552	
2988	1168	912	1149				10	SAP	163	3	5	9	80055	12038	4	545	527	536	2799	20.5	11.3	46.5	35.5	555	40.3	35.9	1459	1468	338	320	3792	3552	
2989	895	728	879				10	SAP	151	3	2	9	80055	12038	2	623	600	611.5	2453	25.3	15.3	46.6	31.9	557	41	36.6	1561	1543	324	305	3589	3398	
2990	827	690	826				10	SAP	151	3	2	9	80055	12038	2	623	600	611.5	2453	25.3	15.3	46.6	31.9	557	41	36.6	1561	1543	324	305	3589	3398	
2991	885	709	872				10	SAP	140	3	5	8	12447	80055	1	570	620	595	2521	26.5	14	46.2	35.4	559	39	36.5	1583	1591	314	297.5	3522	3326	
2992	881	763	881				10	SAP	140	3	5	8	12447	80055	1	570	620	595	2521	26.5	14	46.2	35.4	559	39	36.5	1583	1591	314	297.5	3522	3326	
2993	952	776	946				10	SAP	69	3	6	4	12197	12038	2	570	528	549	2732	20.8	12.5	48.4	34.7	559	41.1	37.4	1509	1503	338	305	3712	3410	
2994	932	807	922				10	SAP	69	3	6	4	12197	12038	2	570	528	549	2732	20.8	12.5	48.4	34.7	559	41.1	37.4	1509	1503	338	305	3712	3410	
2995	900	780	886				10	SAP	86	3	5	5	12197	12447	4	580	620	600	2500	21	11.5	52.4	32.4	555	43.4	37.7	1639	1666	302	285	3359	3164	
2996	936	796	945				10	SAP	86	3	5	5	12197	12447	4	580	620	600	2500	21	11.5	52.4	32.4	555	43.4	37.7	1639	1666	302	285	3359	3164	
2997	932	766	928				10	SAP	155	3	3	9	80055	12038	1	603	651	627	2392	26	13.3	46.7	30.1	557	41.2	35.7	1535	1513	332	307.5	3655	3426	
2998	890	762	876				10	SAP	155	3	3	9	80055	12038	1	603	651	627	2392	26	13.3	46.7	30.1	557	41.2	35.7	1535	1513	332	307.5	3655	3426	
2999	722	645	726				10	SAP	140	3	5	8	12447	80055	1	570	620	595	2521	26.5	14	46.2	35.4	559	39	36.5	1583	1591	314	297.5	3522	3326	
3000	717	624	721				10	SAP	140	3	5	8	12447	80055	1	570	620	595	2521	26.5	14	46.2	35.4	559	39	36.5	1583	1591	314	297.5	3522	3326	
3001	989	862	982				10	SAP	48	3	4	3	12038	80055	1	660	615	637.5	2353	20	12.3	48.1	32.8	556	40.8	36	1527	1552	336	317.5	3612	3531	
3002	1004	635	1038				10	SAP	48	3	4	3	12038	80055	1	660	615	637.5	2353	20	12.3	48.1	32.8	556	40.8	36	1527	1552	336	317.5	3612	3531	
3003	667	471	672				R	SAP	71	3	1	5	12197	12447	4	598	633	615.5	2437	22.3	12.8	46.3	33.4	555	38	34.2	1615	1613	312	287.5	3439	3191	
3004	712	471	715				R	SAP	71	3	1	5	12197	12447	4	598	633	615.5	2437	22.3	12.8	46.3	33.4	555	38	34.2	1615	1613	312	287.5	3439	3191	
3005	722	616	713				10	SAP	170	3	2	10	80055	12197	1	915	615	765	1961	22.5	12	47.9	30.2	556	42	36.2	1602	1570	315	287.5	3506	3197	
3006	915	733	929				10	SAP	170	3	2	10	80055	12197	1	915	615	765	1961	22.5	12	47.9	30.2	556	42	36.2	1602	1570	315	287.5	3506	3197	
3007	765	670	747				10	SAP	43	3	2	3	12038	80055	3	550	554	552	2717	20	12.8	44.3	34.4	552	38.7	35.9	1442	1467	336	312.5	3795	3450	
3008	816	665	822				10	SAP	43	3	2	3	12038	80055	3	550	554	552	2717	20	12.8	44.3	34.4	552	38.7	35.9	1442	1467	336	312.5	3795	3450	
3009	741	610	750				10	SAP	178	3	4	10	80055	12197	2	620	541	580.5	2584	24	14.8	46.1	32.9	558	40.1	36.8	1612	1560	324	307.5	3518	3432	
3010	689	576	691				10	SAP	178	3	4	10	80055	12197	2	620	541	580.5	2584	24	14.8	46.1	32.9	558	40.1	36.8	1612	1560	324	307.5	3518	3432	
3011	832	631	817				10	SAP	18	3	6	1	12038	12197	1	570	551	560.5	2676	21	12	50.5	36.9	555	41.5	37.7	1505	1530	295	295	3657	3275	
3012	902	781	896				10	SAP	18	3	6	1	12038	12197	1	570	551	560.5	2676	21	12	50.5	36.9	555	41.5	37.7	1505	1530	295	295	3657	3275	
3013	1087	821	1074				10	SAP	218	2	4	9	236 A	38 A	1	572	569	570.5	2629	26.8	16	46.8	40.6	554	41	35.6	1472	1615	33	305	3589	3379	
3014	1156	977	1130				10	SAP	218	2	4	9	236 A	38 A	1	572	569	570.5	2629	26.8	16	46.8	40.6	554	41	35.6	1472	1615	33	305	3589	3379	
3015	727	650	705				10	SAP	156	3	4	9	80055	12038	2	624	620	622	2412	24.3	14.5	49.1	33.4	562	43.2	37.9	1543	1571	324	300	3610	3372	
3016	834	734	838				10	SAP	156	3	4	9	80055	12038	2	624	620	622	2412	24.3	14.5	49.1	33.4	562	43.2	37.9	1543	1571	324	300	3610	3372	
3017	796	686	792				10	SAP	48	3	4	3	12038	80055	1	660	615	637.5	2353	20	12.3	48.1	32.8	556	40.8	36	1527	1552	336	317.5	3612	3531	
3018	818	505	840	F4			SAP	48	3	4	3	12038	80055	1	660	615	637.5	2353	20	12.3	48.1	32.8	556	40.8	36	1527	1552	336	317.5	3612	3531		
3019	726	610	724				10	SAP	149	3	2	9	80055	12038	3	620	675	647.5	2317	21.3	11.5	46	33.5	553	39.6	35.2	1503	1490	332	305	3695	3373	
3020	849	730	839				10	SAP	149	3	2	9	80055	12038	3	620	675	647.5	2317	21.3	11.5	46	33.5	553	39.6	35.2	1503	1490	332	305	3695	3373	
3021	831	690	824				10	SAP	165	3	6	9	80055	12038	2	580	591	585.5	2562	23.8	13.8	50.8	37.6	556	44.2	39.4	1633	1633	31	285	3405	3169	

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lgth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
		GPax10 ²			Type								(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
3023	894	535	938	F4	SAP	71	3	1	5	12197	12447	4	598	633	615.5	2437	22.3	12.8	46.3	33.4	555	38	34.2	1615	1613	3.12	287.5	3439	3191
3024	885	569	928	10	SAP	71	3	1	5	12197	12447	4	598	633	615.5	2437	22.3	12.8	46.3	33.4	555	38	34.2	1615	1613	3.12	287.5	3439	3191
3025	1065	853	1046	10	SAP	165	3	6	9	80055	12038	2	580	591	585.5	2562	23.8	13.8	50.8	37.6	556	44.2	39.4	1633	1633	3.1	285	3405	3169
3026	1003	812	997	10	SAP	165	3	6	9	80055	12038	2	580	591	585.5	2562	23.8	13.8	50.8	37.6	556	44.2	39.4	1633	1633	3.1	285	3405	3169
3027	927	739	944	10	SAP	149	3	2	9	80055	12038	3	620	675	647.5	2317	21.3	11.5	46	33.5	553	39.6	35.2	1503	1490	3.32	305	3695	3373
3028	977	768	975	10	SAP	149	3	2	9	80055	12038	3	620	675	647.5	2317	21.3	11.5	46	33.5	553	39.6	35.2	1503	1490	3.32	305	3695	3373
3029	743	598	746	10	SAP	69	3	6	4	12197	12038	2	570	528	549	2732	20.8	12.5	48.4	34.7	559	41.1	37.4	1509	1503	3.38	305	3712	3410
3030	750	666	762	10	SAP	69	3	6	4	12197	12038	2	570	528	549	2732	20.8	12.5	48.4	34.7	559	41.1	37.4	1509	1503	3.38	305	3712	3410
3031	968	815	963	10	SAP	151	3	2	9	80055	12038	2	623	600	611.5	2453	25.3	15.3	46.6	31.9	557	41	36.6	1561	1543	3.24	305	3589	3398
3032	1011	807	1014	10	SAP	151	3	2	9	80055	12038	2	623	600	611.5	2453	25.3	15.3	46.6	31.9	557	41	36.6	1561	1543	3.24	305	3589	3398
3033	1326	861	1320	10	SAP	219	2	4	9	236 A	38 A	2	475	505	490	3061	22.5	12.5	41.7	33.8	556	37.6	34.7	1366	1438	3.73	335	3966	3725
3034	1365	1024	1361	10	SAP	219	2	4	9	236 A	38 A	2	475	505	490	3061	22.5	12.5	41.7	33.8	556	37.6	34.7	1366	1438	3.73	335	3966	3725
3035	1026	828	1000	10	SAP	138	3	4	8	12447	80055	1	645	548	596.5	2515	24.5	14.5	46.7	33.2	554	40	36.1	1586	1620	3.01	290	3456	3213
3036	987	851	968	10	SAP	138	3	4	8	12447	80055	1	645	548	596.5	2515	24.5	14.5	46.7	33.2	554	40	36.1	1586	1620	3.01	290	3456	3213
3037	1033	641	1037	10	SAP	14	3	5	1	12038	12197	4	579	614	596.5	2515	21.8	12.8	52.8	35.5	555	45.9	39.8	1543	1554	3.25	307.5	3584	3413
3038	953	177	1068	R	SAP	14	3	5	1	12038	12197	4	579	614	596.5	2515	21.8	12.8	52.8	35.5	555	45.9	39.8	1543	1554	3.25	307.5	3584	3413
3039	812	590	808	10	SAP	218	2	4	9	236 A	38 A	1	572	569	570.5	2629	26.8	16	46.8	40.6	554	41	35.6	1472	1615	3.3	305	3589	3379
3040	751	473	758	R	SAP	218	2	4	9	236 A	38 A	1	572	569	570.5	2629	26.8	16	46.8	40.6	554	41	35.6	1472	1615	3.3	305	3589	3379
3041	1060	929	1035	10	SAP	69	3	6	4	12197	12038	2	570	528	549	2732	20.8	12.5	48.4	34.7	559	41.1	37.4	1509	1503	3.38	305	3712	3410
3042	1063	804	1023	10	SAP	69	3	6	4	12197	12038	2	570	528	549	2732	20.8	12.5	48.4	34.7	559	41.1	37.4	1509	1503	3.38	305	3712	3410
3043	836	742	832	10	SAP	189	3	2	11	80055	12447	4	622	630	626	2396	20.8	13.3	48.6	31.3	557	41.4	38.7	1612	1619	3.13	285	3448	3175
3044	825	669	830	10	SAP	189	3	2	11	80055	12447	4	622	630	626	2396	20.8	13.3	48.6	31.3	557	41.4	38.7	1612	1619	3.13	285	3448	3175
3046	986	834	995	10	SAP	48	3	4	3	12038	80055	1	660	615	637.5	2353	20	12.3	48.1	32.8	556	40.8	36	1527	1552	3.36	317.5	3612	3531
3047	953	812	962	10	SAP	43	3	2	3	12038	80055	3	550	554	552	2717	20	12.8	44.3	34.4	552	38.7	35.9	1442	1467	3.36	312.5	3795	3450
3048	1011	866	1014	10	SAP	43	3	2	3	12038	80055	3	550	554	552	2717	20	12.8	44.3	34.4	552	38.7	35.9	1442	1467	3.36	312.5	3795	3450
3049	896	777	899	10	SAP	53	3	6	3	12038	80055	2	627	580	603.5	2486	22.3	14.3	49.9	35.7	552	43.5	39.6	1582	1509	3.21	295	3572	3257
3050	853	735	838	10	SAP	53	3	6	3	12038	80055	2	627	580	603.5	2486	22.3	14.3	49.9	35.7	552	43.5	39.6	1582	1509	3.21	295	3572	3257
3051	950	694	981	10	SAP	71	3	1	5	12197	12447	4	598	633	615.5	2437	22.3	12.8	46.3	33.4	555	38	34.2	1615	1613	3.12	287.5	3439	3191
3052	1072	832	1082	10	SAP	71	3	1	5	12197	12447	4	598	633	615.5	2437	22.3	12.8	46.3	33.4	555	38	34.2	1615	1613	3.12	287.5	3439	3191
3053	904	798	906	10	SAP	159	3	4	9	80055	12038	1	548	568	558	2688	26.8	16	43.9	32.4	555	37	36.2	1539	1537	3.28	310	3609	3441
3054	958	766	973	10	SAP	159	3	4	9	80055	12038	1	548	568	558	2688	26.8	16	43.9	32.4	555	37	36.2	1539	1537	3.28	310	3609	3441
3055	947	788	939	10	SAP	43	3	2	3	12038	80055	3	550	554	552	2717	20	12.8	44.3	34.4	552	38.7	35.9	1442	1467	3.36	312.5	3795	3450
3056	1002	743	1025	10	SAP	43	3	2	3	12038	80055	3	550	554	552	2717	20	12.8	44.3	34.4	552	38.7	35.9	1442	1467	3.36	312.5	3795	3450
3057	865	741	853	10	SAP	155	3	3	9	80055	12038	1	603	651	627	2392	26	13.3	46.7	30.1	557	41.2	35.7	1535	1513	3.32	307.5	3655	3426
3058	902	763	891	10	SAP	155	3	3	9	80055	12038	1	603	651	627	2392	26	13.3	46.7	30.1	557	41.2	35.7	1535	1513	3.32	307.5	3655	3426
3059	1074	915	1061	10	SAP	18	3	6	1	12038	12197	1	570	551	560.5	2676	21	12	50.5	36.9	555	41.5	37.7	1505	1530	3.23	295	3657	3275
3060	1051	832	1039	10	SAP	18	3	6	1	12038	12197	1	570	551	560.5	2676	21	12	50.5	36.9	555	41.5	37.7	1505	1530	3.23	295	3657	3275
3061	648	482	650	R	SAP	132	3	2	8	12447	80055	3	633	623	628	2389	23.5	13	45.2	29.8	551	38.6	35	1488	1489	3.25	297.5	3702	3278

Board data										Tree data										Log data														
BoardID	E	mean	E	min	E	median	MGP	Prod	Type	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lgth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
																	(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
3062	694	444	691	R	SAP	132	3	2	8	12447	80055	3	633	623	628	2389	23.5	13	45.2	29.8	23.5	13	45.2	29.8	551	38.6	35	1488	1489	3.25	297.5	3702	3278	
3063	712	530	727	F4	SAP	119	3	3	7	12447	12197	2	594	630	612	2451	24.3	14.3	46.5	36.7	24.3	14.3	46.5	36.7	554	40	35.7	1659	1654	3.04	287.5	3344	3186	
3064	684	563	689	10	SAP	119	3	3	7	12447	12197	2	594	630	612	2451	24.3	14.3	46.5	36.7	24.3	14.3	46.5	36.7	554	40	35.7	1659	1654	3.04	287.5	3344	3186	
3065	940	838	930	10	SAP	152	3	3	9	80055	12038	2	580	590	585	2564	23.5	14.5	44.7	34.4	23.5	14.5	44.7	34.4	558	39.2	34	1610	1555	3.3	297.5	3526	3320	
3066	1090	882	1110	10	SAP	152	3	3	9	80055	12038	2	580	590	585	2564	23.5	14.5	44.7	34.4	23.5	14.5	44.7	34.4	558	39.2	34	1610	1555	3.3	297.5	3526	3320	
3067	997	856	984	10	SAP	218	2	4	9	236 A	38 A	1	572	569	570.5	2629	26.8	16	46.8	40.6	26.8	16	46.8	40.6	554	41	35.6	1472	1615	3.3	305	3589	3379	
3068	948	656	960	10	SAP	218	2	4	9	236 A	38 A	1	572	569	570.5	2629	26.8	16	46.8	40.6	26.8	16	46.8	40.6	554	41	35.6	1472	1615	3.3	305	3589	3379	
3069	936	769	908	10	SAP	180	3	4	10	80055	12197	3	575	548	561.5	2671	22.8	13.5	46	32.6	22.8	13.5	46	32.6	573	39.3	34.7	1596	1661	3.28	287.5	3519	3295	
3070	1037	820	1045	10	SAP	180	3	4	10	80055	12197	3	575	548	561.5	2671	22.8	13.5	46	32.6	22.8	13.5	46	32.6	573	39.3	34.7	1596	1661	3.28	287.5	3519	3295	
3071	706	566	691	10	SAP	122	3	4	7	12447	12197	2	592	590	591	2538	23.3	15	46.7	31.1	23.3	15	46.7	31.1	556	40.2	35.6	1680	1687	2.92		3303		
3072	787	596	766	10	SAP	122	3	4	7	12447	12197	2	592	590	591	2538	23.3	15	46.7	31.1	23.3	15	46.7	31.1	556	40.2	35.6	1680	1687	2.92		3303		
3073	814	594	821	10	SAP	189	3	2	11	80055	12447	4	622	630	626	2396	20.8	13.3	48.6	31.3	20.8	13.3	48.6	31.3	557	41.4	38.7	1612	1619	3.13	285	3448	3175	
3074	833	616	820	10	SAP	189	3	2	11	80055	12447	4	622	630	626	2396	20.8	13.3	48.6	31.3	20.8	13.3	48.6	31.3	557	41.4	38.7	1612	1619	3.13	285	3448	3175	
3075	1024	744	1007	10	SAP	163	3	5	9	80055	12038	4	545	527	536	2799	20.5	11.3	46.5	35.5	20.5	11.3	46.5	35.5	555	40.3	35.9	1459	1468	3.38	320	3792	3552	
3076	968	783	918	10	SAP	163	3	5	9	80055	12038	4	545	527	536	2799	20.5	11.3	46.5	35.5	20.5	11.3	46.5	35.5	555	40.3	35.9	1459	1468	3.38	320	3792	3552	
3077	706	573	698	10	SAP	184	3	5	10	80055	12197	4	554	594	574	2613	21.3	12.8	47.1	35.2	21.3	12.8	47.1	35.2	552	40.9	35.4	1544	1606	3.18	300	3505	3312	
3078	646	468	668	R	SAP	184	3	5	10	80055	12197	4	554	594	574	2613	21.3	12.8	47.1	35.2	21.3	12.8	47.1	35.2	552	40.9	35.4	1544	1606	3.18	300	3505	3312	
3079	712	539	716	F4	SAP	80	3	3	5	12197	12447	2	667	662	664.5	2257	23.8	12.5	46.4	32.7	23.8	12.5	46.4	32.7	552	39.1	35.2	1659	1688	2.95	272.5	3298	3008	
3080	745	582	762	10	SAP	80	3	3	5	12197	12447	2	667	662	664.5	2257	23.8	12.5	46.4	32.7	23.8	12.5	46.4	32.7	552	39.1	35.2	1659	1688	2.95	272.5	3298	3008	
3082	648	465	648	R	SAP	122	3	4	7	12447	12197	2	592	590	591	2538	23.3	15	46.7	31.1	23.3	15	46.7	31.1	556	40.2	35.6	1680	1687	2.92		3303		
3083	696	470	696	R	SAP	185	3	5	10	80055	12197	1	570	584	577	2600	20.5	12.8	50.8	33	20.5	12.8	50.8	33	558	42.9	36.9	1605	1614	3.19	295	3467	3292	
3084	701	434	708	R	SAP	185	3	5	10	80055	12197	1	570	584	577	2600	20.5	12.8	50.8	33	20.5	12.8	50.8	33	558	42.9	36.9	1605	1614	3.19	295	3467	3292	
3085	802	617	807	10	SAP	119	3	3	7	12447	12197	2	594	630	612	2451	24.3	14.3	46.5	36.7	24.3	14.3	46.5	36.7	554	40	35.7	1659	1654	3.04	287.5	3344	3186	
3086	871	682	883	10	SAP	119	3	3	7	12447	12197	2	594	630	612	2451	24.3	14.3	46.5	36.7	24.3	14.3	46.5	36.7	554	40	35.7	1659	1654	3.04	287.5	3344	3186	
3087	910	740	913	10	SAP	53	3	6	3	12038	80055	2	627	580	603.5	2486	22.3	14.3	49.9	35.7	22.3	14.3	49.9	35.7	552	43.5	39.6	1582	1509	3.21	295	3572	3257	
3088	973	786	975	10	SAP	53	3	6	3	12038	80055	2	627	580	603.5	2486	22.3	14.3	49.9	35.7	22.3	14.3	49.9	35.7	552	43.5	39.6	1582	1509	3.21	295	3572	3257	
3089	1064	689	1082	10	SAP	185	3	5	10	80055	12197	1	570	584	577	2600	20.5	12.8	50.8	33	20.5	12.8	50.8	33	558	42.9	36.9	1605	1614	3.19	295	3467	3292	
3090	914	612	917	10	SAP	185	3	5	10	80055	12197	1	570	584	577	2600	20.5	12.8	50.8	33	20.5	12.8	50.8	33	558	42.9	36.9	1605	1614	3.19	295	3467	3292	
3091	1060	857	1053	10	SAP	58	3	2	4	12197	12038	2	615	631	623	2408	20.5	11.8	45.2	33.8	20.5	11.8	45.2	33.8	552	38.2	34.4	1484	1460	3.42	312.5	3750	3450	
3092	1098	887	1109	10	SAP	58	3	2	4	12197	12038	2	615	631	623	2408	20.5	11.8	45.2	33.8	20.5	11.8	45.2	33.8	552	38.2	34.4	1484	1460	3.42	312.5	3750	3450	
3093	740	514	737	F4	SAP	3	3	1	1	12038	12197	4	632	642	637	2355	21.5	12	47.1	31.2	23.55	12	47.1	31.2	552	39.7	35.8	1552	1525	3.21	305	3588	3367	
3094	877	622	856	10	SAP	3	3	1	1	12038	12197	4	632	642	637	2355	21.5	12	47.1	31.2	23.55	12	47.1	31.2	552	39.7	35.8	1552	1525	3.21	305	3588	3367	
3095	777	446	801	R	SAP	119	3	3	7	12447	12197	2	594	630	612	2451	24.3	14.3	46.5	36.7	24.51	24.3	46.5	36.7	554	40	35.7	1659	1654	3.04	287.5	3344	3186	
3096	820	640	847	10	SAP	119	3	3	7	12447	12197	2	594	630	612	2451	24.3	14.3	46.5	36.7	24.51	24.3	46.5	36.7	554	40	35.7	1659	1654	3.04	287.5	3344	3186	
3097	930	748	909	10	SAP	78	3	3	5	12197	12447	4	584	620	602	2492	22.5	12.8	46.9	35.6	24.92	22.5	12.8	46.9	35.6	556	40.2	37.4	1554	1536	3.26	302.5	3599	3364
3098	926	724	922	10	SAP	78	3	3	5	12197	12447	4	584	620	602	2492	22.5	12.8	46.9	35.6	24.92	22.5	12.8	46.9	35.6	556	40.2	37.4	1554	1536	3.26	302.5	3599	3364
3099	1022	908	1016	10	SAP	52	3	5	3	12038	80055	1	587	569	578	2595	23	12.5	45.8	34.1	25.95	23	12.5	45.8	34.1	557	38.8	34.4	1587	1487	3.32	310	3624	3453
3100	952	847	954	10	SAP	52	3	5	3	12038	80055	1	587	569	578	2595	23	12.5	45.8	34.1	25.95	23	12.5	45.8	34.1	557	38.8	34.4	1587	1487	3.32	310	3624	3453

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
		GPa x 10 ²			Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
3101	873	673	893	10	SAP	240	2	1	12	236 A	994	2	527	582	554.5	2705	22.5	13.5	44.9	36.2	556	39.7	35.2	1475	1479	3.44	325	3764	3614
3102	933	726	941	10	SAP	240	2	1	12	236 A	994	2	527	582	554.5	2705	22.5	13.5	44.9	36.2	556	39.7	35.2	1475	1479	3.44	325	3764	3614
3103	830	633	814	10	SAP	132	3	2	8	12447	80055	3	633	623	628	2389	23.5	13	45.2	29.8	551	38.6	35	1488	1489	3.25	297.5	3702	3278
3104	903	741	904	10	SAP	132	3	2	8	12447	80055	3	633	623	628	2389	23.5	13	45.2	29.8	551	38.6	35	1488	1489	3.25	297.5	3702	3278
3105	839	674	841	10	SAP	132	3	2	8	12447	80055	3	633	623	628	2389	23.5	13	45.2	29.8	551	38.6	35	1488	1489	3.25	297.5	3702	3278
3106	870	491	875	F4	SAP	132	3	2	8	12447	80055	3	633	623	628	2389	23.5	13	45.2	29.8	551	38.6	35	1488	1489	3.25	297.5	3702	3278
3107	765	604	747	10	SAP	91	3	6	5	12197	12447	2	607	553	580	2586	21.5	12.3	46.5	31.9	554	39.1	35.8	1693	1704	2.88	270	3262	2992
3108	759	626	752	10	SAP	91	3	6	5	12197	12447	2	607	553	580	2586	21.5	12.3	46.5	31.9	554	39.1	35.8	1693	1704	2.88	270	3262	2992
3109	1119	846	1137	10	SAP	240	2	1	12	236 A	994	2	527	582	554.5	2705	22.5	13.5	44.9	36.2	556	39.7	35.2	1475	1479	3.44	325	3764	3614
3110	1098	807	1083	10	SAP	240	2	1	12	236 A	994	2	527	582	554.5	2705	22.5	13.5	44.9	36.2	556	39.7	35.2	1475	1479	3.44	325	3764	3614
3111	869	606	885	10	SAP	180	3	4	10	80055	12197	3	575	548	561.5	2671	22.8	13.5	46	32.6	573	39.3	34.7	1596	1661	3.28	287.5	3519	3295
3112	938	742	943	10	SAP	180	3	4	10	80055	12197	3	575	548	561.5	2671	22.8	13.5	46	32.6	573	39.3	34.7	1596	1661	3.28	287.5	3519	3295
3113	1011	855	1020	10	SAP	58	3	2	4	12197	12038	2	615	631	623	2408	20.5	11.8	45.2	33.8	552	38.2	34.4	1484	1460	3.42	312.5	3750	3450
3114	1049	904	1038	10	SAP	58	3	2	4	12197	12038	2	615	631	623	2408	20.5	11.8	45.2	33.8	552	38.2	34.4	1484	1460	3.42	312.5	3750	3450
3115	636	567	623	10	SAP	91	3	6	5	12197	12447	2	607	553	580	2586	21.5	12.3	46.5	31.9	554	39.1	35.8	1693	1704	2.88	270	3262	2992
3116	647	520	649	F4	SAP	91	3	6	5	12197	12447	2	607	553	580	2586	21.5	12.3	46.5	31.9	554	39.1	35.8	1693	1704	2.88	270	3262	2992
3118	856	702	856	10	SAP	52	3	5	3	12038	80055	1	587	569	578	2595	23	12.5	45.8	34.1	557	38.8	34.4	1587	1487	3.32	310	3624	3453
3119	920	597	936	10	SAP	185	3	5	10	80055	12197	1	570	584	577	2600	20.5	12.8	50.8	33	558	42.9	36.9	1605	1614	3.19	295	3467	3292
3120	1044	757	1065	10	SAP	185	3	5	10	80055	12197	1	570	584	577	2600	20.5	12.8	50.8	33	558	42.9	36.9	1605	1614	3.19	295	3467	3292
3121	1038	917	1040	10	SAP	52	3	5	3	12038	80055	1	587	569	578	2595	23	12.5	45.8	34.1	557	38.8	34.4	1587	1487	3.32	310	3624	3453
3122	1019	778	1006	10	SAP	52	3	5	3	12038	80055	1	587	569	578	2595	23	12.5	45.8	34.1	557	38.8	34.4	1587	1487	3.32	310	3624	3453
3123	951	782	950	10	SAP	78	3	3	5	12197	12447	4	584	620	602	2492	22.5	12.8	46.9	35.6	556	40.2	37.4	1554	1536	3.26	302.5	3599	3364
3124	1119	929	1120	10	SAP	78	3	3	5	12197	12447	4	584	620	602	2492	22.5	12.8	46.9	35.6	556	40.2	37.4	1554	1536	3.26	302.5	3599	3364
3125	738	619	740	10	SAP	78	3	3	5	12197	12447	4	584	620	602	2492	22.5	12.8	46.9	35.6	556	40.2	37.4	1554	1536	3.26	302.5	3599	3364
3126	820	676	818	10	SAP	78	3	3	5	12197	12447	4	584	620	602	2492	22.5	12.8	46.9	35.6	556	40.2	37.4	1554	1536	3.26	302.5	3599	3364
3127	848	694	839	10	SAP	304	2	3	58	CR40	447 A	3	524	540	532	2820	20	12.5	47.7	32.1	557	41.8	35.6	1630	1617	3.19	292.5	3431	3258
3128	867	740	859	10	SAP	304	2	3	58	CR40	447 A	3	524	540	532	2820	20	12.5	47.7	32.1	557	41.8	35.6	1630	1617	3.19	292.5	3431	3258
3129	974	802	931	10	SAP	152	3	3	9	80055	12038	2	580	590	585	2564	23.5	14.5	44.7	34.4	558	39.2	34	1610	1555	3.3	297.5	3526	3320
3131	840	630	791	10	SAP	240	2	1	12	236 A	994	2	527	582	554.5	2705	22.5	13.5	44.9	36.2	556	39.7	35.2	1475	1479	3.44	325	3764	3614
3132	861	601	876	10	SAP	240	2	1	12	236 A	994	2	527	582	554.5	2705	22.5	13.5	44.9	36.2	556	39.7	35.2	1475	1479	3.44	325	3764	3614
3133	1100	865	1095	10	SAP	159	3	4	9	80055	12038	1	548	568	558	2688	26.8	16	43.9	32.4	555	37	36.2	1539	1537	3.28	310	3609	3441
3134	1042	875	1042	10	SAP	159	3	4	9	80055	12038	1	548	568	558	2688	26.8	16	43.9	32.4	555	37	36.2	1539	1537	3.28	310	3609	3441
3135	932	839	929	10	SAP	180	3	4	10	80055	12197	3	575	548	561.5	2671	22.8	13.5	46	32.6	573	39.3	34.7	1596	1661	3.28	287.5	3519	3295
3136	800	596	809	10	SAP	180	3	4	10	80055	12197	3	575	548	561.5	2671	22.8	13.5	46	32.6	573	39.3	34.7	1596	1661	3.28	287.5	3519	3295
3137	847	735	862	10	SAP	152	3	3	9	80055	12038	2	580	590	585	2564	23.5	14.5	44.7	34.4	558	39.2	34	1610	1555	3.3	297.5	3526	3320
3138	907	621	946	10	SAP	152	3	3	9	80055	12038	2	580	590	585	2564	23.5	14.5	44.7	34.4	558	39.2	34	1610	1555	3.3	297.5	3526	3320
3139	824	618	804	10	SAP	304	2	3	58	CR40	447 A	3	524	540	532	2820	20	12.5	47.7	32.1	557	41.8	35.6	1630	1617	3.19	292.5	3431	3258
3140	851	749	838	10	SAP	304	2	3	58	CR40	447 A	3	524	540	532	2820	20	12.5	47.7	32.1	557	41.8	35.6	1630	1617	3.19	292.5	3431	3258

Board data										Tree data										Log data													
BoardID	E	mean	E	min	E	median	MGP	Prod	Type	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
				GPa x 10 ⁻²													(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
3141	801	657	797	10	SAP	184	3	5	10	80055	12197	4	554	594	574	2613	21.3	12.8	47.1	35.2	552	40.9	35.4	1544	1606	3.18	300	3505	3312				
3142	857	636	870	10	SAP	184	3	5	10	80055	12197	4	554	594	574	2613	21.3	12.8	47.1	35.2	552	40.9	35.4	1544	1606	3.18	300	3505	3312				
3143	904	771	909	10	SAP	165	3	6	9	80055	12038	2	580	591	585.5	2562	23.8	13.8	50.8	37.6	556	44.2	39.4	1633	1633	3.1	285	3405	3169				
3144	751	592	740	10	SAP	165	3	6	9	80055	12038	2	580	591	585.5	2562	23.8	13.8	50.8	37.6	556	44.2	39.4	1633	1633	3.1	285	3405	3169				
3145	752	660	745	10	SAP	159	3	4	9	80055	12038	1	548	568	558	2688	26.8	16	43.9	32.4	555	37	36.2	1539	1537	3.28	310	3609	3441				
3146	739	501	742	F4	SAP	159	3	4	9	80055	12038	1	548	568	558	2688	26.8	16	43.9	32.4	555	37	36.2	1539	1537	3.28	310	3609	3441				
3147	773	696	767	10	SAP	155	3	3	9	80055	12038	1	603	651	627	2392	26	13.3	46.7	30.1	557	41.2	35.7	1535	1513	3.32	307.5	3655	3426				
3148	695	572	700	10	SAP	155	3	3	9	80055	12038	1	603	651	627	2392	26	13.3	46.7	30.1	557	41.2	35.7	1535	1513	3.32	307.5	3655	3426				
3149	915	404	928	R	SAP	3	3	1	1	12038	12197	4	632	642	637	2355	21.5	12	47.1	31.2	552	39.7	35.8	1552	1525	3.21	305	3588	3367				
3150	932	560	938	10	SAP	3	3	1	1	12038	12197	4	632	642	637	2355	21.5	12	47.1	31.2	552	39.7	35.8	1552	1525	3.21	305	3588	3367				
3151	717	639	713	10	SAP	189	3	2	11	80055	12447	4	622	630	626	2396	20.8	13.3	48.6	31.3	557	41.4	38.7	1612	1619	3.13	285	3448	3175				
3152	726	546	707	F4	SAP	189	3	2	11	80055	12447	4	622	630	626	2396	20.8	13.3	48.6	31.3	557	41.4	38.7	1612	1619	3.13	285	3448	3175				
3153	765	648	774	10	SAP	80	3	3	5	12197	12447	2	667	662	664.5	2257	23.8	12.5	46.4	32.7	552	39.1	35.2	1659	1688	2.95	272.5	3298	3008				
3154	848	675	852	10	SAP	80	3	3	5	12197	12447	2	667	662	664.5	2257	23.8	12.5	46.4	32.7	552	39.1	35.2	1659	1688	2.95	272.5	3298	3008				
3155	917	663	935	10	SAP	184	3	5	10	80055	12197	4	554	594	574	2613	21.3	12.8	47.1	35.2	552	40.9	35.4	1544	1606	3.18	300	3505	3312				
3156	996	759	1009	10	SAP	184	3	5	10	80055	12197	4	554	594	574	2613	21.3	12.8	47.1	35.2	552	40.9	35.4	1544	1606	3.18	300	3505	3312				
3157	1104	886	1109	10	SAP	3	3	1	1	12038	12197	4	632	642	637	2355	21.5	12	47.1	31.2	552	39.7	35.8	1552	1525	3.21	305	3588	3367				
3158	1013	625	1019	10	SAP	3	3	1	1	12038	12197	4	632	642	637	2355	21.5	12	47.1	31.2	552	39.7	35.8	1552	1525	3.21	305	3588	3367				
3159	880	759	870	10	SAP	58	3	2	4	12197	12038	2	615	631	623	2408	20.5	11.8	45.2	33.8	552	38.2	34.4	1484	1460	3.42	312.5	3750	3450				
3160	799	713	786	10	SAP	58	3	2	4	12197	12038	2	615	631	623	2408	20.5	11.8	45.2	33.8	552	38.2	34.4	1484	1460	3.42	312.5	3750	3450				
3161	982	819	959	10	SAP	149	3	2	9	80055	12038	3	620	675	647.5	2317	21.3	11.5	46	33.5	553	39.6	35.2	1503	1490	3.32	305	3695	3373				
3162	951	881	943	10	SAP	149	3	2	9	80055	12038	3	620	675	647.5	2317	21.3	11.5	46	33.5	553	39.6	35.2	1503	1490	3.32	305	3695	3373				
3163	809	713	807	10	SAP	91	3	6	5	12197	12447	2	607	553	580	2586	21.5	12.3	46.5	31.9	554	39.1	35.8	1693	1704	2.88	270	3262	2992				
3164	748	585	756	10	SAP	91	3	6	5	12197	12447	2	607	553	580	2586	21.5	12.3	46.5	31.9	554	39.1	35.8	1693	1704	2.88	270	3262	2992				
4509	605	483	619	F4	HI	286	2	3	56	CR40	38 A	1	496	498	497	3018	17	10.3	36.3	31.7	558	30.5	26.7	1446	1465	3.58	337.5	3834	3767				
4510	779	514	796	F4	HI	22	3	1	2	12038	12447	2	518	545	531.5	2822	20.3	10.8	38.6	31.3	559	32.5	28.3	1414	1387	3.62	340	3991	3801				
4511	458	294	469	R	HI	273	2	3	47	956	994	2	551	552	551.5	2720	23.3	12.5	32.9	27.9	556	28.3	25	1614	1614	3.21	300	3445	3336				
4512	760	680	755	10	HI	56	3	1	4	12197	12038	2	535	550	543	2765	20.8	10.8	35.2	31.2	559	30.2	27.2	1420	1450	3.62	295.0	3895	3298				
4513	526	320	518	R	HI	210	3	6	21	0	TSO	0	660	615	638	2353	23.0	13.8	41.8	26.4	557	35.0	29.2	1753	1743	2.98	282.5	3186	3147				
4514	488	287	495	R	HI	334	2	2	103	MY 7	447 A	2	525	550	538	2791	20.3	11.3	35.4	33.1	564	32.0	26.6	1520	1586	3.49	322.5	3632	3638				
4516	567	488	566	F4	HI	126	3	6	7	12447	12197	1	524	553	539	2786	22.5	12.8	31.6	28.0	561	27.1	23.8	1485	1529	3.39	305.0	3723	3422				
4517	608	400	602	R	HI	331	2	1	103	MY 7	447 A	3	560	601	581	2584	21.5	12.3	37.5	31.2	557	32.5	27.7	1482	1471	3.52	332.5	3772	3704				
4519	554	480	549	R	HI	309	2	1	59	CR40	994	1	530	550	540	2778	21.0	11.0	35.5	34.3	558	30.4	27.0	1503	1501	3.45	322.5	3715	3599				
4520	683	543	672	F4	HI	56	3	1	4	12197	12038	2	535	550	543	2765	20.8	10.8	35.2	31.2	559	30.2	27.2	1420	1450	3.62	295.0	3895	3298				
4521	533	443	532	R	HI	207	3	5	21	0	TSO	0	559	566	563	2667	24.3	12.0	33.4	30.6	560	29.3	24.7	1626	1714	3.15	292.5	3353	3276				
4522	532	427	511	R	HI	331	2	1	103	MY 7	447 A	3	560	601	581	2584	21.5	12.3	37.5	31.2	557	32.5	27.7	1482	1471	3.52	332.5	3772	3704				
4523	646	543	622	F4	HI	176	3	3	10	80055	12197	2	563	552	558	2691	23.0	12.8	36.0	33.5	558	31.3	28.2	1539	1481	3.35	312.5	3695	3488				
4524	525	411	535	R	HI	268	2	1	47	956	994	1	542	500	521	2879	19.8	11.5	36.4	31.5	557	30.9	26.6	1578	1604	3.29	315.0	3501	3509				

Board data						Tree data										Log data													
BoardID	E _{mean}	E _{min}	E _{median}	MGP	Prod	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lgth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
			GP a × 10 ⁻²		Type								(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
4525	539	386	541	R	HI	214	2	2	9	236 A	38 A	2	508	478	493	3043	21.8	11.5	26.2	35.6	559	31.8	27.1	1336	1343	3.90	360.0	4173	4025
4526	545	432	545	R	HI	124	3	5	7	12447	12197	1	591	554	573	2620	24.8	13.5	32.6	33.6	561	28.1	25.8	1532	1594	3.39	320.0	3589	3590
4527	718	550	707	F4	HI	246	2	3	44	956	38 A	3	520	486	503	2982	21.0	11.0	34.8	33.3	559	29.4	26.2	1423	1465	3.64	335.0	3871	3745
4528	807	535	827	F4	HI	174	3	3	10	80055	12197	3	640	620	630	2381	24.8	13.5	55.0	34.7	554	47.3	42.2	1609	1581	3.06	290.0	3473	3213
4529	767	421	709	R	HI	144	3	1	9	80055	12038	1	590	600	595	2521	26.0	13.5	49.4	33.7	557	43.9	38.1	1606	1585	3.19	297.5	3491	3314
4530	539	446	543	R	HI	327	2	3	102	MY 7	197 A	1	532	527	530	2833	21.0	13.0	33.2	31.9	556	28.0	25.1	1362	1353	3.65	347.5	4096	3864
4531	537	365	548	R	HI	337	2	4	103	MY 7	447 A	3	511	542	526.5	2849	17.3	10	34.2	34.1	559	29.3	25.7	1458	1514	3.56	332.5	3762	3717
4532	547	379	562	R	HI	113	3	1	7	12447	12197	2	610	556	583	2573	25.3	13	36.4	17	558	31.4	27.7	1575	1555	3.19	300	3565	3348
4533	528	399	535	R	HI	235	2	3	11	236 A	447 A	3	538	546	542	2768	17.5	10.0	38.7	36.5	559	31.4	27.1	1603	1534	3.33	305.0	3564	3410
4534	716	472	722	R	HI	25	3	2	2	12038	12447	1	502	540	521	2879	20.5	13.3	35.2	29.2	558	30.9	26.6	1321	1406	3.69	345.0	4092	3850
4535	643	538	647	F4	HI	334	2	2	103	MY 7	447 A	2	525	550	538	2791	20.3	11.3	35.4	33.1	564	32.0	26.6	1520	1586	3.49	322.5	3632	3638
4536	676	547	694	F4	HI	197	3	6	20	0	PCU	0	822	544	683	2196	19.0	10.3	38.7	26.4	560	33.2	28.5	1443	1453	3.44	327.5	3867	3668
4537	822	502	776	F4	HI	328	2	3	102	MY 7	197 A	2	515	522	519	2893	20.3	12.3	35.6	31.8	561	30.8	27.5	1338	1312	3.87	357.5	4234	4011
4538	961	689	1000	10	HI	47	3	4	3	12038	80055	3	550	510	530	2830	19.0	11.5	33.0	32.5	557	29.0	25.5	1451	1405	3.63	360.0	3901	4010
4539	608	374	607	R	HI	227	2	4	10	236 A	197 A	2	508	494	501	2994	20.5	11.5	32.8	33.2	558	28.8	25.6	1476	1506	3.43	315.0	3742	3515
4541	562	360	573	R	HI	47	3	4	3	12038	80055	3	550	510	530	2830	19	11.5	33	32.5	557	29	25.5	1451	1405	3.63	360	3901	4010
4542	637	440	638	R	HI	55	3	1	4	12197	12038	1	594	590	592	2534	20	11.8	37.1	33.8	561	30.6	27.5	1515	1427	3.37	322.5	3814	3618
4543	709	459	730	R	HI	214	2	2	9	236 A	38 A	2	508	478	493	3043	21.8	11.5	26.2	35.6	559	31.8	27.1	1336	1343	3.9	360	4173	4025
4544	483	281	496	R	HI	263	2	3	46	956	447 A	3	514	516	515	2913	19.8	11.5	36.6	33.8	557	31.3	27.7	1420	1375	3.71	340	3986	3788
4548	944	734	929	10	SAP	60	3	3	4	12197	12038	2	530	541	536	2801	20.3	12.0	36.8	36.4	555	31.4	27.9	1399	1498	3.67	345.0	3832	3830
4549	971	826	978	10	SAP	68	3	6	4	12197	12038	1	560	527	544	2760	20.0	11.8	37.7	28.1	557	31.0	27.3	1499	1530	3.26	315.0	3678	3509
4550	707	614	701	10	SAP	59	3	2	4	12197	12038	3	529	540	535	2806	18.5	10.5	37.4	33.9	558	31.4	28.6	1490	1484	3.50	345.0	3753	3850
4551	768	687	760	10	SAP	196	3	5	20	0	PCU	0	514	520	517	2901	22.5	12.5	37.2	32.5	558	32.3	28.5	1426	1515	3.40	325.0	3795	3627
4552	989	780	1003	10	SAP	279	2	1	56	CR40	38 A	1	567	541	554	2708	21.0	11.8	36.2	29.7	558	32.0	36.9	1460	1426	3.56	335.0	3867	3739
4553	699	500	713	F4	SAP	19	3	1	2	12038	12447	4	570	585	578	2597	21.5	12.3	38.7	31.1	556	33.0	28.8	1472	1492	3.47	315.0	3752	3503
4554	744	548	711	F4	SAP	213	2	1	9	236 A	38 A	1	530	550	540	2778	21.0	11.5	38.7	31.5	558	32.1	28.3	1485	1522	3.53	330.0	3711	3683
4555	793	633	792	10	SAP	31	3	4	2	12038	12447	4	607	566	587	2558	21.5	12.5	41.8	30.5	562	34.4	30.5	1554	1596	3.29	295.0	3568	3316
4556	618	443	629	R	SAP	259	2	1	46	956	447 A	1	630	650	640	2344	18.8	10.3	40.0	33.8	558	31.3	28.2	1550	1618	3.35	322.5	3523	3599
4557	1085	851	1079	10	SAP	255	2	3	45	956	197 A	1	515	490	503	2985	18.5	11.3	37.6	32.4	560	32.2	27.5	1513	1501	3.41	330.0	3716	3696
4558	899	629	881	10	SAP	247	2	3	44	956	38 A	2	510	491	501	2997	19.0	11.5	37.7	28.7	559	32.3	27.7	1463	1477	3.59	320.0	3803	3578
4559	986	772	971	10	SAP	196	3	5	20	0	PCU	0	514	520	517	2901	22.5	12.5	37.2	32.5	558	32.3	28.5	1426	1515	3.40	325.0	3795	3627
4561	1195	894	1215	10	HI	236	2	4	11	236 A	447 A	2	510	494	502	2988	20.8	12	35.3	34.5	560	30.8	27.3	1445	1446	3.54	327.5	3874	3668
4562	643	463	644	R	SAP	2	3	1	1	12038	12197	1	570	530	550	2727	20.3	12.5	43.7	33.8	558	34.2	31.3	1520	1522	3.37	312.5	3669	3488
4563	830	681	834	10	SAP	30	3	4	2	12038	12447	2	549	600	574.5	2611	19.5	11	41.9	34.6	555	35.5	30.3	1410	1382	3.49	340	3976	3774
4564	589	419	596	R	SAP	258	2	4	45	956	197 A	1	522	543	532.5	2817	19.8	10.3	36.5	31.1	556	31.5	27.6	1523	1520	3.44	310	3654	3447
4565	683	524	671	F4	SAP	65	3	4	4	12197	12038	3	514	614	564	2660	18	11.3	39.2	33.1	557	32.9	29.2	1388	1442	3.47	320	3936	3565
4566	746	599	735	10	SAP	30	3	4	2	12038	12447	2	549	600	574.5	2611	19.5	11	41.9	34.6	555	35.5	30.3	1410	1382	3.49	340	3976	3774
4567	1134	714	1183	10	SAP	57	3	1	4	12197	12038	3	524	546	535	2804	20	11.5	35.8	32.9	559	30.5	27.6	1466	1466	3.43	320	3813	3578

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
		GPa x 10 ²			Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
4568	658	445	670	R	SAP	65	3	4	4	12197	12038	3	514	614	564	2660	18	11.3	39.2	33.1	557	32.9	29.2	1388	1442	347	320	3936	3565
4569	617	507	620	F4	SAP	256	2	3	45	956	197 A	3	550	555	552.5	2715	20.8	12.5	39.4	30.8	558	35.2	30.5	1455	1452	345	330	3839	3683
4570	846	647	851	10	SAP	221	2	1	10	236 A	197 A	2	553	543	548	2737	23.3	13.3	38.5	33.4	558	35.0	28.9	1481	1504	301	320.0	3739	3571
4571	697	605	656	10	SAP	213	2	1	9	236 A	38 A	1	530	550	540	2778	21.0	11.5	38.7	31.5	558	32.1	28.3	1485	1522	353	330.0	3711	3683
4572	762	688	757	10	SAP	181	3	4	10	80055	12197	1	570	575	573	2620	21.0	13.0	38.8	29.4	558	33.7	28.3	1475	1447	345	332.5	3819	3711
4573	978	775	1005	10	SAP	9	3	3	1	12038	12197	3	532	577	555	2705	19.5	10.5	36.8	35.1	561	31.4	28.0	1434	1403	358	342.5	3955	3843
4574	930	664	888	10	SAP	259	2	1	46	956	447 A	1	630	650	640	2344	18.8	10.3	40.0	33.8	558	31.3	28.2	1550	1618	335	322.5	3523	3599
4575	960	778	947	10	SAP	65	3	4	4	12197	12038	3	514	614	564	2660	18.0	11.3	39.2	33.1	557	32.9	29.2	1388	1442	347	320.0	3936	3565
4576	798	507	790	F4	SAP	57	3	1	4	12197	12038	3	524	546	535	2804	20.0	11.5	35.8	32.9	559	30.5	27.6	1466	1466	343	320.0	3813	3578
4577	944	595	929	10	SAP	94	3	2	6	12447	12038	1	560	572	566	2650	18.5	10.0	26.1	34.1	557	31.3	27.7	1501	1495	345	320.0	3718	3565
4578	1201	872	1182	10	SAP	213	2	1	9	236 A	38 A	1	530	550	540	2778	21.0	11.5	38.7	31.5	558	32.1	28.3	1485	1522	353	330.0	3711	3683
4579	989	832	978	10	SAP	318	2	1	101	MY 7	38 A	2	538	511	525	2860	20.8	11.5	40.0	35.8	555	35.3	30.4	1441	1443	354	337.5	3849	3746
4580	763	412	804	R	SAP	42	3	2	3	12038	80055	1	575	592	584	2571	23.8	14.5	41.6	30.5	558	34.3	30.3	1454	1450	353	330.0	3843	3683
4581	554	400	513	R	SAP	188	3	1	11	80055	12447	4	581	860	720.5	2082	20.3	12	41.7	34.1	558	35.4	31.5	1565	1572	322	295	3558	3292
4582	823	553	823	10	SAP	258	2	4	45	956	197 A	1	522	543	532.5	2817	19.8	10.3	36.5	31.1	556	31.5	27.6	1523	1520	344	310	3654	3447
4583	808	684	820	10	SAP	104	3	4	6	12447	12038	1	554	565	559.5	2681	21	13	36.3	32.8	558	31.4	29.7	1470	1464	337	320	3804	3571
4584	770	493	779	F4	SAP	62	3	3	4	12197	12038	3	510	550	530	2830	19.5	10.5	38.8	34.9	556	32.9	29.2	1489	1516	344	317.5	3700	3531
4586	742	611	749	10	SAP	104	3	4	6	12447	12038	1	554	565	559.5	2681	21	13	36.3	32.8	558	31.4	29.7	1470	1464	337	320	3804	3571
4587	621	519	619	F4	SAP	2	3	1	1	12038	12197	1	570	530	550	2727	20.3	12.5	43.7	33.8	558	34.2	31.3	1520	1522	337	312.5	3669	3488
4588	943	743	942	10	SAP	181	3	4	10	80055	12197	1	570	575	572.5	2620	21	13	38.8	29.4	558	33.7	28.3	1475	1447	345	332.5	3819	3711
4589	535	364	543	R	SAP	193	3	6	11	80055	12447	4	600	601	600.5	2498	23.5	12.8	41.6	29.8	559	35.5	29.5	1709	1655	307	285	3323	3186
4590	780	587	786	10	SAP	298	2	1	58	CR40	447 A	3	626	620	623	2408	22.5	12	38	29.6	549	32.7	29.2	1482	1465	337	320	3726	3514
4591	726	646	733	10	SAP	115	3	1	7	12447	12197	3	573	586	579.5	2588	22.5	12	39.6	30.1	557	34.1	31	1552	1536	326	307.5	3608	3426
4592	914	635	941	10	SAP	26	3	2	2	12038	12447	2	625	572	599	2506	20.8	13.5	41.0	32.0	557	35.4	30.5	1400	1430	360	335.0	3936	3732
4593	548	341	556	R	SAP	105	3	4	6	12447	12038	3	571	567	569	2636	21.3	13	40	30.1	540	33.8	30.3	1490	1524	316	305	3583	3294
4594	758	380	756	R	SAP	146	3	1	9	80055	12038	4	627	600	613.5	2445	28.8	15	39.5	28.6	554	34.7	30.2	1448	1447	332	327.5	3827	3629
4595	1328	1150	1315	12	SAP	60	3	3	4	12197	12038	2	530	541	535.5	2801	20.3	12	36.8	36.4	555	31.4	27.9	1399	1498	367	345	3832	3830
4596	605	454	599	R	SAP	193	3	6	11	80055	12447	4	600	601	600.5	2498	23.5	12.8	41.6	29.8	559	35.5	29.5	1709	1655	307	285	3323	3186
4597	685	448	703	R	SAP	62	3	3	4	12197	12038	3	510	550	530	2830	19.5	10.5	38.8	34.9	556	32.9	29.2	1489	1516	344	317.5	3700	3531
4598	584	505	574	F4	SAP	177	3	3	10	80055	12197	1	568	614	591	2538	18.5	12	44.4	34.1	557	38.6	32.6	1625	1658	329	307.5	3393	3426
4599	1030	749	1061	10	SAP	201	3	6	20	0	PCU	0	575	518	546.5	2745	18	9.8	40.7	30.5	554	34.5	28.9	1434	1463	348	322.5	3825	3573
4600	666	455	668	R	HI	217	2	3	9	236 A	38 A	2	540	554	547	2742	21.5	11.5	36.8	29.6	553	32	29.3	1354	1394	358	340	4025	3760
4601	541	424	556	R	HI	221	2	1	10	236 A	197 A	2	553	543	548	2737	23.3	13.3	38.5	33.4	558	35	28.9	1481	1504	301	320	3739	3571
4602	482	369	484	R	HI	96	3	2	6	12447	12038	3	558	613	585.5	2562	21	14	38.5	32.3	561	32.2	29	1608	1614	321	305	3482	3422
4603	595	415	574	R	HI	224	2	2	10	236 A	197 A	2	590	610	600	2500	22.3	12	43.2	37.1	558	36.8	31.8	1556	1690	327	292.5	3438	3264
4604	858	652	875	10	HI	42	3	2	3	12038	80055	1	575	592	583.5	2571	23.8	14.5	41.6	30.5	558	34.3	30.3	1454	1450	353	330	3843	3683
4605	558	371	571	R	HI	105	3	4	6	12447	12038	3	571	567	569	2636	21.3	13.0	40.0	30.1	540	33.8	30.3	1490	1524	316	305.0	3583	3294
4606	656	529	644	F4	HI	300	2	2	58	CR40	447 A	1	625	590	608	2469	23.8	13.8	38.0	35.0	556	33.3	28.9	1514	1520	328	305.0	3665	3392

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lqth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
					Type								(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
4607	595	526	575	F4	HI	298	2	1	58	CR40	447 A	3	626	620	623	2408	22.5	12.0	38.0	29.6	549	32.7	29.2	1482	1465	3.37	320.0	3726	3514
4608	742	565	751	10	HI	105	3	4	6	12447	12038	3	571	567	569	2636	21.3	13.0	40.0	30.1	540	33.8	30.3	1490	1524	3.16	305.0	3583	3294
4609	498	419	498	R	HI	267	2	4	46	956	447 A	1	542	539	541	2775	21.5	12.5	42.2	34.5	560	35.8	31.3	1570	1539	3.25	307.5	3602	3444
4610	908	732	911	10	HI	145	3	1	9	80055	12038	3	591	567	579	2591	22.5	12.3	42.2	34.5	556	36.0	30.7	1472	1463	3.39	322.5	3789	3586
4611	829	650	830	10	HI	188	3	1	11	80055	12447	4	581	860	721	2082	20.3	12.0	41.7	34.1	558	35.4	31.5	1565	1572	3.22	295.0	3558	3292
4612	709	612	706	10	HI	145	3	1	9	80055	12038	3	591	567	579	2591	22.5	12.3	42.2	34.5	556	36.0	30.7	1472	1463	3.39	322.5	3789	3586
4613	799	503	787	F4	HI	13	3	4	1	12038	12197	1	566	535	551	2725	19.0	12.5	51.9	33.0	556	34.9	30.3	1576	1500	3.34	307.5	3615	3419
4614	792	480	806	R	HI	287	2	4	56	CR40	38 A	1	496	504	500	3000	22.3	14.0	37.9	34.2	559	33.0	30.3	1442	1483	3.49	322.5	3822	3606
4615	604	373	609	R	HI	11	3	3	1	12038	12197	4	554	540	547	2742	21.5	11.0	39.1	32.9	556	33.3	29.5	1539	1528	3.28	337.5	3626	3753
4616	717	540	707	F4	HI	104	3	4	6	12447	12038	1	554	565	560	2681	21.0	13.0	36.3	32.8	558	31.4	29.7	1470	1464	3.37	320.0	3804	3571
4617	701	617	706	10	HI	298	2	1	58	CR40	447 A	3	626	620	623	2408	22.5	12.0	38.0	29.6	549	32.7	29.2	1482	1465	3.37	320.0	3726	3514
4618	654	378	686	R	HI	112	3	6	6	12447	12038	4	592	530	561	2674	22.8	13.5	39.5	29	562	33.5	29.6	1533	1472	3.35	307.5	3740	3456
4619	596	499	597	F4	HI	38	3	6	2	12038	12447	2	580	591	585.5	2562	26	12.3	41.1	31.4	561	35	29.6	1581	1534	2.96	325	3602	3647
4620	540	483	531	F4	HI	50	3	5	3	12038	80055	2	545	546	545.5	2750	25	14.5	41.9	32.6	556	36	31.7	1549	1595	3.21	302.5	3537	3364
4621	540	361	570	R	HI	202	3	1	21	0	TSO	0	876	607	741.5	2023	23	10.5	39.6	29.4	545	34.9	31	1507	1508	3.22	307.5	3615	3352
4622	504	398	510	R	HI	4	3	1	1	12038	12197	3	550	526	538	2788	19.5	10	34.9	33.1	495	29.9	29.1	1313	1293	360	3799	3564	
4623	378	261	385	R	HI	193	3	6	11	80055	12447	4	600	601	600.5	2498	23.5	12.8	41.6	29.8	559	35.5	29.5	1709	1655	3.07	285	3323	3186
4624	665	464	667	R	HI	19	3	1	2	12038	12447	4	570	585	577.5	2597	21.5	12.3	38.7	31.1	556	33	28.8	1472	1492	3.47	315	3752	3503
4625	760	630	764	10	HI	2	3	1	1	12038	12197	1	570	530	550	2727	20.3	12.5	43.7	33.8	558	34.2	31.3	1520	1522	3.37	312.5	3669	3488
4626	665	513	671	F4	HI	11	3	3	1	12038	12197	4	554	540	547	2742	21.5	11	39.1	32.9	556	33.3	29.5	1539	1528	3.28	337.5	3626	3753
4627	797	528	839	F4	HI	96	3	2	6	12447	12038	3	558	613	585.5	2562	21	14	38.5	32.3	561	32.2	29	1608	1614	3.21	305	3482	3422
4628	760	533	758	F4	HI	38	3	6	2	12038	12447	2	580	591	585.5	2562	26	12.3	41.1	31.4	561	35	29.6	1581	1534	2.96	325	3602	3647
4629	886	790	895	10	HI	150	3	2	9	80055	12038	4	570	557	564	2662	22.3	14.8	44.2	34.9	555	38.5	35.3	1490	1482	3.43	327.5	3735	3635
4630	735	613	732	10	HI	177	3	3	10	80055	12197	1	568	614	591	2538	18.5	12	44.4	34.1	557	38.6	32.6	1625	1658	3.29	307.5	3393	3426
4631	764	670	758	10	HI	95	3	2	6	12447	12038	2	607	590	598.5	2506	19	12	36.3	31.1	558	30.9	28.8	1471	1491	3.45	315	3768	3515
4632	584	473	559	R	HI	120	3	3	7	12447	12197	3	555	591	573	2618	23.3	12.8	38.8	32.8	562	34.5	30.6	1512	1503	3.37	302.5	3728	3400
4633	611	426	578	R	HI	4	3	1	1	12038	12197	3	550	526	538	2788	19.5	10	34.9	33.1	495	29.9	29.1	1313	1293	360	3799	3564	
4634	706	486	708	F4	HI	256	2	3	45	956	197 A	3	550	555	552.5	2715	20.8	12.5	39.4	30.8	558	35.2	30.5	1455	1452	3.45	330	3839	3683
4635	474	416	462	R	HI	202	3	1	21	0	TSO	0	876	607	741.5	2023	23	10.5	39.6	29.4	545	34.9	31	1507	1508	3.22	307.5	3615	3352
4636	671	564	667	10	HI	302	2	3	58	CR40	447 A	1	572	600	586	2560	23.8	14.5	38.6	31.4	557	34.4	29.3	1537	1539	3.37	312.5	3622	3481
4637	716	614	717	10	HI	315	2	4	59	CR40	994	1	564	530	547	2742	22.3	12.8	29.2	35.3	557	34.6	29.5	1475	1522	3.22	310	3717	3453
4638	691	330	767	R	HI	201	3	6	20	0	PCU	0	575	518	546.5	2745	18	9.8	40.7	30.5	554	34.5	28.9	1434	1463	3.48	322.5	3825	3573
4639	556	453	550	R	HI	224	2	2	10	236 A	197 A	2	590	610	600	2500	22.3	12	43.2	37.1	558	36.8	31.8	1556	1690	3.27	292.5	3438	3264
4640	509	451	504	R	HI	81	3	3	5	12197	12447	1	662	672	667	2249	23	12	40.3	33.8	558	34.4	29.8	1566	1607	3.19	305	3517	3404
4641	515	426	517	R	HI	96	3	2	6	12447	12038	3	558	613	586	2562	21.0	14.0	38.5	32.3	561	32.2	29.0	1608	1614	3.21	305.0	3482	3422
4642	709	599	708	10	HI	150	3	2	9	80055	12038	4	570	557	564	2662	22.3	14.8	44.2	34.9	555	38.5	35.3	1490	1482	3.43	327.5	3735	3635
4643	768	517	699	F4	HI	33	3	5	2	12038	12447	2	556	525	541	2775	21.0	11.3	43.2	35.9	560	35.7	31.5	1502	1572	3.46	317.5	3643	3556
4644	779	474	753	R	HI	112	3	6	6	12447	12038	4	592	530	561	2674	22.8	13.5	39.5	29.0	562	33.5	29.6	1533	1472	3.35	307.5	3740	3456

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
		GPa x 10 ²			Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
4645	881	608	876	10	HI	217	2	3	9	236 A	38 A	2	540	554	547	2742	21.5	11.5	36.8	29.6	553	32.0	29.3	1354	1394	3.58	340.0	4025	3760
4646	633	431	651	R	HI	201	3	6	20	0	PCU	0	575	518	547	2745	18.0	9.8	40.7	30.5	554	34.5	28.9	1434	1463	3.48	322.5	3825	3573
4647	830	572	861	10	HI	201	3	6	20	0	PCU	0	575	518	547	2745	18.0	9.8	40.7	30.5	554	34.5	28.9	1434	1463	3.48	322.5	3825	3573
4648	606	367	553	R	HI	81	3	3	5	12197	12447	1	662	672	667	2249	23.0	12.0	40.3	33.8	558	34.4	29.8	1566	1607	3.19	305.0	3517	3404
4649	593	374	609	R	HI	306	2	4	58	CR40	447 A	1	552	526	539	2783	20.8	12.5	41.0	34.8	556	36.1	32.5	1523	1545	3.31	317.5	3625	3531
4650	569	453	567	R	HI	293	2	2	57	CR40	197 A	1	575	541	558	2688	23.0	13.5	39.0	29.7	557	35.4	30.7	1570	1578	3.19	295.0	3539	3286
4651	728	617	723	10	HI	225							546	551	549	2735	20.0	14.5	40.5	30.3	558	37.0	30.2	1491	1462	3.40	312.5	3779	3488
4652	588	495	563	F4	HI	107	3	5	6	12447	12038	4	580	554	567	2646	21.5	11.5	41.4	35.8	561	34.7	31.1	1517	1529	3.00	317.5	3684	3562
4653	519	383	533	R	HI	10	3	3	1	12038	12197	2	798	631	715	2099	20.3	12.0	42.0	34.8	551	37.0	33.0	1467	1495	3.31	310.0	3720	3416
4654	582	437	600	R	HI	267	2	4	46	956	447 A	1	542	539	540.5	2775	21.5	12.5	42.2	34.5	560	35.8	31.3	1570	1539	3.25	307.5	3602	3444
4655	417	324	410	R	HI	90	3	6	5	12197	12447	1	569	574	571.5	2625	25.5	13.3	42.7	33.9	555	36.5	32.7	1659	1659	3.02	282.5	3345	3136
4657	518	428	532	R	HI	130	3	2	8	12447	80055	2	562	590	576	2604	27.5	17.5	42.9	32.7	557	37.5	32.5	1560	1590	3.21	300.0	3537	3342
4658	688	582	673	10	HI	177	3	3	10	80055	12197	1	568	614	591	2538	18.5	12.0	44.4	34.1	557	38.6	32.6	1625	1658	3.29	307.5	3393	3426
4659	788	662	784	10	HI	204	3	2	21	0	TSO	0	565	570	568	2643	20.0	13.3	39.6	32.6	557	34.0	30.3	1478	1478	3.45	325.0	3769	3621
4660	648	463	655	R	HI	110	3	6	6	12447	12038	1	660	625	643	2335	22.5	14.0	40.7	28.9	555	35.0	31.5	1668	1675	3.10	287.5	3320	3191
4661	635	493	617	F4	HI	120	3	3	7	12447	12197	3	555	591	573	2618	23.3	12.8	38.8	32.8	562	34.5	30.6	1512	1503	3.37	302.5	3728	3400
4662	819	720	803	10	HI	128	3	1	8	12447	80055	2	572	588	580	2586	26.0	12.8	40.0	32.6	558	35.1	30.9	1509	1570	3.35	330.0	3625	3683
4663	741	611	726	10	HI	153	3	3	9	80055	12038	3	564	610	587	2555	26.0	12.8	44.5	36.7	556	37.0	33.8	1630	1550	3.28	307.5	3497	3419
4664	666	579	649	10	HI	13	3	4	1	12038	12197	1	566	535	551	2725	19.0	12.5	51.9	33.0	556	34.9	30.3	1576	1500	3.34	307.5	3615	3419
4665	565	439	570	R	HI	101	3	3	6	12447	12038	4	583	575	579	2591	21.0	13.0	44.9	35.0	560	36.8	32.1	1530	1557	3.28	305.0	3628	3416
4666	496	392	496	R	HI	267	2	4	46	956	447 A	1	542	539	541	2775	21.5	12.5	42.2	34.5	560	35.8	31.3	1570	1539	3.25	307.5	3602	3444
4667	648	547	639	F4	HI	34	3	5	2	12038	12447	4	555	534	545	2755	22.5	13.3	44.2	34.4	550	37.0	31.8	1508	1493	3.30	312.5	3665	3438
4668	678	500	700	F4	HI	108	3	5	6	12447	12038	1	550	550	550	2727	23.3	13.0	39.7	35.6	557	33.8	30.2	1515	1515	3.39	315.0	3677	3509
4669	528	446	534	R	HI	115	3	1	7	12447	12197	3	573	586	580	2588	22.5	12.0	39.6	30.1	557	34.1	31.0	1552	1536	3.26	307.5	3608	3426
4670	526	407	542	R	HI	295	2	3	57	CR40	197 A	1	574	622	598	2508	21.0	12.3	38.0	34.1	556	33.6	30.0	1689	1606	3.15	300.0	3375	3336
4671	604	470	592	R	HI	108	3	5	6	12447	12038	1	550	550	550	2727	23.3	13.0	39.7	35.6	557	33.8	30.2	1515	1515	3.39	315.0	3677	3509
4672	714	601	691	10	HI	183	3	5	10	80055	12197	2	524	544	534	2809	24.5	13.3	40.0	34.7	554	34.4	31.2	1540	1553	3.30	310.0	3582	3435
4675	543	234	564	R	HI	112	3	6	6	12447	12038	4	592	530	561	2674	22.8	13.5	39.5	29	562	33.5	29.6	1533	1472	3.35	307.5	3740	3456
4676	575	454	569	R	HI	50	3	5	3	12038	80055	2	545	546	545.5	2750	25	14.5	41.9	32.6	556	36	31.7	1549	1595	3.21	302.5	3537	3364
4677	636	509	645	F4	HI	161	3	5	9	80055	12038	1	564	572	568	2641	26.3	13.8	42.8	16.9	558	36.5	32.5	1705	1647	3.22	305	3329	3404
4678	650	537	643	F4	HI	292	2	2	57	CR40	197 A	2	535	564	549.5	2730	21	11.3	41.2	37.5	557	36.4	33	1556	1557	3.24	317.5	3579	3537
4679	627	517	609	F4	HI	82	3	4	5	12197	12447	1	620	600	610	2459	19.5	12.5	44.6	34.1	555	38.4	33.1	1567	1599	3.15	290	3506	3219
4681	739	641	695	10	HI	191	3	4	11	80055	12447	4	562	585	573.5	2616	19.5	11.5	40.9	33.3	555	34.8	32.2	1525	1513	3.28	305	3654	3386
4682	801	625	784	10	HI	305	2	4	58	CR40	447 A	3	504	522	513	2924	22.5	13.5	40.8	35.2	555	36.3	31.8	1540	1603	3.3	292.5	3532	3247
4683	628	492	621	F4	HI	157	3	4	9	80055	12038	4	572	568	570	2632	21.5	14.3	46.0	35.5	556	39.8	35.8	1505	1513	3.34	310.0	3685	3447
4684	669	575	664	10	HI	310	2	2	59	CR40	994	1	540	528	534	2809	22.3	12.3	39.7	35.0	556	36.7	31.0	1561	1660	3.28	307.5	3452	3419
4685	526	385	525	R	HI	199	3	6	20	0	PCU	0	549	616	583	2575	22.5	11.5	46.5	31.6	556	39.1	32.8	1565	1620	3.15	285.0	3491	3169
4686	711	563	718	10	HI	12	3	4	1	12038	12197	3	597	575	586	2560	16.8	9.5	43.6	34.9	554	37.0	33.1	1440	1493	3.48	332.5	3778	3684

Board data										Tree data										Log data										
BoardID	Emean	Emin	Emedian	MGP	Prod	Type	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lqth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
														(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
4687	802	676	821	10	HI	HI	336	2	3	103	MY 7	447 A	1	504	498	501	2994	17.8	12.8	38.2	33.6	559	32.8	30.2	1399	1341	3.62	340.0	4080	3801
4688	847	685	863	10	HI	HI	46	3	3	3	12038	80055	1	530	545	538	2791	22.0	11.8	44.8	35.3	561	37.8	33.1	1532	1495	3.47	322.5	3707	3618
4689	779	542	812	F4	HI	HI	175	3	3	10	80055	12197	4	570	618	594	2525	23.3	14.3	43.8	36.7	557	37.0	33.1	1552	1558	3.34	307.5	3582	3426
4690	677	557	678	10	HI	HI	190	3	3	11	80055	12447	4	614	604	609	2463	22.5	13.0	46.2	34.1	554	38.8	33.6	1545	1558	3.19	297.5	3571	3296
4691	681	419	706	R	HI	HI	4	3	1	1	12038	12197	3	550	526	538	2788	19.5	10.0	34.9	33.1	495	29.9	29.1	1313	1293		360.0	3799	3564
4692	625	400	619	R	HI	HI	208	3	6	21	0	TSO	0	586	560	573	2618	22.5	12.5	43.6	29.5	535	37.0	32.8	1575	1594	3.06	305.0	3376	3264
4693	545	424	549	R	HI	HI	90	3	6	5	12197	12447	1	569	574	572	2625	25.5	13.3	42.7	33.9	555	36.5	32.7	1659	1659	3.02	282.5	3345	3136
4694	828	668	829	10	HI	HI	108	3	5	6	12447	12038	1	550	550	550	2727	23.3	13.0	39.7	35.6	557	33.8	30.2	1515	1515	3.39	315.0	3677	3509
4695	814	667	821	10	HI	HI	23	3	2	2	12038	12447	4	693	899	796	1884	22.3	14.0	45.8	32.7	560	38.8	34.2	1507	1508	3.36	312.5	3715	3500
4696	486	373	465	R	HI	HI	73	3	1	5	12197	12447	1	583	595	589	2547	21.0	12.0	41.9	30.9	559	36.0	32.6	1553	1644	3.20	300.0	3497	3354
4697	729	535	691	F4	HI	HI	295	2	3	57	CR40	197 A	1	574	622	598	2508	21	12.3	38	34.1	556	33.6	30	1689	1606	3.15	300	3375	3336
4698	583	387	564	R	HI	HI	191	3	4	11	80055	12447	4	562	585	573.5	2616	19.5	11.5	40.9	33.3	555	34.8	32.2	1525	1513	3.28	305	3654	3386
4699	578	412	561	R	HI	HI	211	3	6	21	0	TSO	0	541	533	537	2793	22.3	12	47.3	31.4	557	38.8	35.7	1659	1634	3.08	295	3383	3286
4700	575	417	572	R	HI	HI	341	2	2	104	MY 7	994	3	524	545	534.5	2806	19	9.8	41.9	33.7	556	35.5	33	1562	1560	3.28	307.5	3562	3419
4702	635	538	650	F4	HI	HI	49	3	4	3	12038	80055	2	576	568	572	2622	22.8	12.3	40.9	33.9	559	35.7	31.3	1510	1515	3.41	325	3696	3634
4703	520	374	523	R	HI	HI	190	3	3	11	80055	12447	4	614	604	609	2463	22.5	13	46.2	34.1	554	38.8	33.6	1545	1558	3.19	297.5	3571	3296
4704	847	674	835	10	HI	HI	225							546	551	548.5	2735	20	14.5	40.5	30.3	558	37	30.2	1491	1462	3.4	312.5	3779	3488
4705	667	542	674	F4	HI	HI	64	3	4	4	12197	12038	2	562	560	561	2674	19.3	12.0	45.6	31.6	553	38.8	34.1	1488	1552	3.42	320.0	3638	3539
4706	529	414	531	R	HI	HI	225							546	551	549	2735	20.0	14.5	40.5	30.3	558	37.0	30.2	1491	1462	3.40	312.5	3779	3488
4707	670	435	679	R	HI	HI	10	3	3	1	12038	12197	2	798	631	715	2099	20.3	12.0	42.0	34.8	551	37.0	33.0	1467	1495	3.31	310.0	3720	3416
4708	555	416	548	R	HI	HI	179	3	4	10	80055	12197	4	552	595	574	2616	22.0	13.8	43.1	33.2	556	36.4	32.3	1494	1562	3.28	305.0	3639	3392
4709	637	490	640	F4	HI	HI	8	3	3	1	12038	12197	1	528	561	545	2755	20.8	11.3	44.4	33.3	558	37.0	32.5	1526	1600	3.30	302.5	3570	3376
4710	905	685	924	10	HI	HI	204	3	2	21	0	TSO	0	565	570	568	2643	20.0	13.3	39.6	32.6	557	34.0	30.3	1478	1478	3.45	325.0	3769	3621
4711	660	572	652	10	HI	HI	305	2	4	58	CR40	447 A	3	504	522	513	2924	22.5	13.5	40.8	35.2	555	36.3	31.8	1540	1603	3.30	292.5	3532	3247
4712	549	414	548	R	HI	HI	179	3	4	10	80055	12197	4	552	595	574	2616	22.0	13.8	43.1	33.2	556	36.4	32.3	1494	1562	3.28	305.0	3639	3392
4713	587	444	575	R	HI	HI	208	3	6	21	0	TSO	0	586	560	573	2618	22.5	12.5	43.6	29.5	535	37.0	32.8	1575	1594	3.06	305.0	3376	3264
4714	763	499	803	F4	HI	HI	179	3	4	10	80055	12197	4	552	595	574	2616	22.0	13.8	43.1	33.2	556	36.4	32.3	1494	1562	3.28	305.0	3639	3392
4715	783	646	771	10	HI	HI	8	3	3	1	12038	12197	1	528	561	545	2755	20.8	11.3	44.4	33.3	558	37.0	32.5	1526	1600	3.30	302.5	3570	3376
4716	765	592	742	10	HI	HI	244	2	2	44	956	38 A	2	494	522	508	2953	20.8	10.3	41.7	34.1	554	36.0	32.4	1454	1432	3.58	347.5	3839	3850
4717	590	298	611	R	HI	HI	129	3	1	8	12447	80055	3	585	604	595	2523	22.8	13.0	42.4	32.9	556	37.4	33.2	1604	1560	3.26	310.0	3515	3447
4718	665	520	668	F4	HI	HI	101	3	3	6	12447	12038	4	583	575	579	2591	21.0	13.0	44.9	35.0	560	36.8	32.1	1530	1557	3.28	305.0	3628	3416
4719	598	467	601	R	HI	HI	110	3	6	6	12447	12038	1	660	625	643	2335	22.5	14.0	40.7	28.9	555	35.0	31.5	1668	1675	3.10	287.5	3320	3191
4720	494	425	501	R	HI	HI	10	3	3	1	12038	12197	2	798	631	714.5	2099	20.3	12	42	34.8	551	37	33	1467	1495	3.31	310	3720	3416
4726	667	519	672	F4	HI	HI	66	3	5	4	12197	12038	2	563	527	545	2752	21.3	12.8	44.6	35.1	552	38.5	34	1503	1492	3.39	320	3686	3533
4727	535	446	523	R	HI	HI	73	3	1	5	12197	12447	1	583	595	589	2547	21	12	41.9	30.9	559	36	32.6	1553	1644	3.2	300	3497	3354
4728	516	343	512	R	HI	HI	205	3	3	21	0	TSO	0	640	652	646	2322	25.3	14.5	45.1	36.7	555	38.5	34.4	1653	1664	3.12	295	3346	3275
4729	657	479	650	R	HI	HI	292	2	2	57	CR40	197 A	2	535	564	549.5	2730	21	11.3	41.2	37.5	557	36.4	33	1556	1557	3.24	317.5	3579	3537
4730	558	361	556	R	HI	HI	295	2	3	57	CR40	197 A	1	574	622	598	2508	21	12.3	38	34.1	556	33.6	30	1689	1606	3.15	300	3375	3336

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
	GPa x 10 ²				Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
4731	596	488	609	F4	HI	167	3	6	9	80055	12038	3	584	550	567	2646	23.8	14.0	49.1	34.0	560	42.7	36.0	1557	1547	3.20	302.5	3608	3388
4732	542	452	536	R	HI	329	2	3	102	MY 7	197 A	3	535	526	531	2828	18.5	11.8	42.2	32.0	556	36.3	33.2	1531	1620	3.36	302.5	3529	3364
4733	534	451	528	R	HI	74	3	2	5	12197	12447	1	587	630	609	2465	20.3	11.5	42.0	32.8	557	36.3	32.2	1525	1530	3.24	302.5	3646	3370
4734	588	463	582	R	HI	165	3	6	9	80055	12038	2	580	591	586	2562	23.8	13.8	50.8	37.6	556	44.2	39.4	1633	1633	3.10	285.0	3405	3169
4735	771	664	770	10	HI	74	3	2	5	12197	12447	1	587	630	609	2465	20.3	11.5	42.0	32.8	557	36.3	32.2	1525	1530	3.24	302.5	3646	3370
4736	539	434	542	R	HI	241	2	3	12	236 A	994	1	641	621	631	2377	18.0	11.5	43.5	34.4	558	36.5	33.5	1535	1544	3.32	297.5	3625	3320
4737	614	488	610	F4	HI	130	3	2	8	12447	80055	2	562	590	576	2604	27.5	17.5	42.9	32.7	557	37.5	32.5	1560	1590	3.21	300.0	3537	3342
4738	689	432	695	R	HI	241	2	3	12	236 A	994	1	641	621	631	2377	18.0	11.5	43.5	34.4	558	36.5	33.5	1535	1544	3.32	297.5	3625	3320
4739	722	619	711	10	HI	64	3	4	4	12197	12038	2	562	560	561	2674	19.3	12.0	45.6	31.6	553	38.8	34.1	1488	1552	3.42	320.0	3638	3539
4740	725	584	715	10	HI	173	3	2	10	80055	12197	3	582	564	573	2618	22.0	14.3	44.9	33.1	557	38.3	34.8	1510	1552	3.13	302.5	3638	3370
4741	607	459	624	R	HI	341	2	2	104	MY 7	994	3	524	545	535	2806	19.0	9.8	41.9	33.7	556	35.5	33.0	1562	1560	3.28	307.5	3562	3419
4742	553	448	552	R	HI	147	3	1	9	80055	12038	2	622	588	605	2479	26.5	14.3	43.3	31.4	557	39.7	34.6	1556	1565	3.21	290.0	3569	3231
4743	1005	884	984	10	HI	244	2	2	44	956	38 A	2	494	522	508	2953	20.8	10.3	41.7	34.1	554	36.0	32.4	1454	1432	3.58	347.5	3839	3850
4744	698	528	671	F4	HI	216	2	3	9	236 A	38 A	3	534	537	535.5	2801	24.8	14.5	41.5	38.2	556	34.9	31.8	1505	1539	3.34	315	3653	3503
4750	694	500	729	F4	HI	158	3	4	9	80055	12038	3	552	562	557	2693	21.3	12.8	44.1	33	558	37.8	32.7	1492	1532	3.32	307.5	3690	3432
4751	455	405	452	R	HI	74	3	2	5	12197	12447	1	587	630	608.5	2465	20.3	11.5	42	32.8	557	36.3	32.2	1525	1530	3.24	302.5	3646	3370
4752	483	335	506	R	HI	1	3	1	1	12038	12197	2	584	602	593	2530	19.8	10.5	43.5	31.8	559	37.7	33.2	1510	1513	3.35	305	3698	3410
4753	635	477	634	R	HI	166	3	6	9	80055	12038	4	575	562	568.5	2639	24.3	15.5	44.6	33.3	556	39.3	34.3	1648	1640	3.13	297.5	3392	3308
4754	599	374	601	R	HI	211	3	6	21	0	TSO	0	541	533	537	2793	22.3	12.0	47.3	31.4	557	38.8	35.7	1659	1634	3.08	295.0	3383	3286
4755	468	392	472	R	HI	87	3	5	5	12197	12447	1	820	594	707	2122	22.0	13.5	46.3	34.3	559	39.5	35.1	1701	1703	3.09	290.0	3284	3242
4756	659	560	651	10	HI	158	3	4	9	80055	12038	3	552	562	557	2693	21.3	12.8	44.1	33.0	558	37.8	32.7	1492	1532	3.32	307.5	3690	3432
4757	765	663	747	10	HI	170	3	2	10	80055	12197	1	915	615	765	1961	22.5	12.0	47.9	30.2	556	42.0	36.2	1602	1570	3.15	287.5	3506	3197
4758	786	690	788	10	HI	329	2	3	102	MY 7	197 A	3	535	526	531	2828	18.5	11.8	42.2	32.0	556	36.3	33.2	1531	1620	3.36	302.5	3529	3364
4759	611	475	597	R	HI	87	3	5	5	12197	12447	1	820	594	707	2122	22.0	13.5	46.3	34.3	559	39.5	35.1	1701	1703	3.09	290.0	3284	3242
4760	599	383	600	R	HI	211	3	6	21	0	TSO	0	541	533	537	2793	22.3	12.0	47.3	31.4	557	38.8	35.7	1659	1634	3.08	295.0	3383	3286
4761	623	487	638	F4	HI	162	3	5	9	80055	12038	3	620	562	591	2538	24.5	11.3	45.5	16.0	558	39.4	33.0	1652	1683	3.14	292.5	3346	3264
4762	505	400	511	R	HI	241	2	3	12	236 A	994	1	641	621	631	2377	18.0	11.5	43.5	34.4	558	36.5	33.5	1535	1544	3.32	297.5	3625	3320
4763	906	787	884	10	HI	154	3	3	9	80055	12038	4	570	590	580	2586	27.0	14.5	44.5	35.5	561	38.8	33.8	1520	1517	3.44	312.5	3694	3506
4764	621	509	614	F4	HI	160	3	5	9	80055	12038	2	565	615	590	2542	27.8	14.0	49.1	38.0	558	43.2	37.0	1668	1629	3.19	292.5	3385	3264
4765	564	464	563	R	HI	166	3	6	9	80055	12038	4	575	562	569	2639	24.3	15.5	44.6	33.3	556	39.3	34.3	1648	1640	3.13	297.5	3382	3308
4766	733	587	713	10	HI	12	3	4	1	12038	12197	3	597	575	586	2560	16.8	9.5	43.6	34.9	554	37.0	33.1	1440	1493	3.48	332.5	3778	3684
4767	544	407	559	R	HI	58	3	2	4	12197	12038	2	615	631	623	2408	20.5	11.8	45.2	33.8	552	38.2	34.4	1484	1460	3.42	312.5	3750	3450
4768	629	508	630	F4	HI	1	3	1	1	12038	12197	2	584	602	593	2530	19.8	10.5	43.5	31.8	559	37.7	33.2	1510	1513	3.35	305.0	3698	3410
4769	437	390	433	R	HI	178	3	4	10	80055	12197	2	620	541	580.5	2584	24	14.8	46.1	32.9	558	40.1	36.8	1612	1560	3.24	307.5	3518	3432
4770	599	226	616	R	HI	82	3	4	5	12197	12447	1	620	600	610	2459	19.5	12.5	44.6	34.1	555	38.4	33.1	1567	1599	3.15	290	3506	3219
4771	472	321	501	R	HI	129	3	1	8	12447	80055	3	585	604	594.5	2523	22.8	13	42.4	32.9	556	37.4	33.2	1604	1560	3.26	310	3515	3447
4772	700	602	697	10	HI	41	3	1	3	12038	80055	2	600	570	585	2564	24.5	13.5	42.3	33.4	555	37.6	33.2	1483	1503	3.41	320	3717	3552
4773	603	505	606	F4	HI	163	3	5	9	80055	12038	4	545	527	536	2799	20.5	11.3	46.5	35.5	555	40.3	35.9	1459	1468	3.38	320	3792	3552

Board data										Tree data										Log data										
BoardID	Emean	Emin	Emedian	MGP	Prod	Type	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
			GPa x 10 ²											(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
4774	592	329	583	R	HI	HI	73	3	1	5	12197	12447	1	583	595	589	2547	21	12	41.9	30.9	559	36	32.6	1553	1644	3.2	300	3497	3354
4775	615	449	615	R	HI	HI	10	3	3	1	12038	12197	2	798	631	714.5	2099	20.3	12	42	34.8	551	37	33	1467	1495	3.31	310	3720	3416
4776	624	533	637	F4	HI	HI	69	3	6	4	12197	12038	2	570	528	549	2732	20.8	12.5	48.4	34.7	559	41.1	37.4	1509	1503	3.38	305	3712	3410
4777	489	373	485	R	HI	HI	166	3	6	9	80055	12038	4	575	562	568.5	2639	24.3	15.5	44.6	33.3	556	39.3	34.3	1648	1640	3.13	297.5	3382	3308
4778	626	505	631	F4	HI	HI	301	2	2	58	CR40	447 A	3	582	557	569.5	2634	23.5	12.5	45.5	13.2	557	40.6	35	1642	1612	3.16	295	3423	3286
4779	700	536	700	F4	HI	HI	142	3	6	8	12447	80055	3	552	577	564.5	2657	22.3	11.8	42.9	33.3	556	36.8	33	1587	1550	3.23	297.5	3545	3308
4780	512	428	513	R	HI	HI	48	3	4	3	12038	80055	1	660	615	638	2353	20.0	12.3	48.1	32.8	556	40.8	36.0	1527	1552	3.36	317.5	3612	3531
4781	546	439	556	R	HI	HI	97	3	2	6	12447	12038	4	583	675	629	2385	20.8	12.8	48.8	31.3	558	40.3	37.3	1589	1610	3.19	292.5	3489	3264
4782	588	437	594	R	HI	HI	159	3	4	9	80055	12038	1	548	568	558	2688	26.8	16.0	43.9	32.4	555	37.0	36.2	1539	1537	3.28	310.0	3609	3441
4783	561	355	563	R	HI	HI	16	3	6	1	12038	12197	4	582	609	596	2519	21.5	13.3	51.1	33.0	555	43.5	36.5	1619	1623	2.99	280.0	3424	3108
4784	666	529	665	F4	HI	HI	237	2	4	11	236 A	447 A	1	592	575	584	2571	21.5	13.8	51.3	33.8	560	45.3	38.3	1482	1566	3.49	332.5	3675	3724
4785	471	356	482	R	HI	HI	83	3	4	5	12197	12447	2	642	640	641	2340	21.8	12.3	49.0	21.6	555	42.4	37.5	1760	1812	2.89	267.5	3108	2969
4786	592	412	603	R	HI	HI	138	3	4	8	12447	80055	1	645	548	597	2515	24.5	14.5	46.7	33.2	554	40.0	36.1	1586	1620	3.01	290.0	3456	3213
4787	604	408	638	R	HI	HI	283	2	2	56	CR40	38 A	2	617	582	600	2502	21.5	12.5	49.3	37.2	558	43.0	37.0	1582	1643	3.16	315.0	3460	3515
4788	550	452	543	R	HI	HI	140	3	5	8	12447	80055	1	570	620	595	2521	26.5	14.0	46.2	35.4	559	39.0	36.5	1583	1591	3.14	297.5	3522	3326
4789	547	349	570	R	HI	HI	71	3	1	5	12197	12447	4	598	633	616	2437	22.3	12.8	46.3	33.4	555	38.0	34.2	1615	1613	3.12	287.5	3439	3191
4790	523	420	529	R	HI	HI	205	3	3	21	0	TSO	0	640	652	646	2322	25.3	14.5	45.1	36.7	555	38.5	34.4	1653	1664	3.12	295.0	3346	3275
4791	634	434	611	R	HI	HI	199	3	6	20	0	PCU	0	549	616	583	2575	22.5	11.5	46.5	31.6	556	39.1	32.8	1565	1620	3.15	285.0	3491	3169
4792	634	482	643	R	HI	HI	151	3	2	9	80055	12038	2	623	600	612	2453	25.3	15.3	46.6	31.9	557	41.0	36.6	1561	1543	3.24	305.0	3589	3398
4793	683	547	696	F4	HI	HI	53	3	6	3	12038	80055	2	627	580	604	2486	22.3	14.3	49.9	35.7	552	43.5	39.6	1582	1509	3.21	295.0	3572	3257
4794	455	396	446	R	HI	HI	83	3	4	5	12197	12447	2	642	640	641	2340	21.8	12.3	49	21.6	555	42.4	37.5	1760	1812	2.89	267.5	3108	2969
4795	635	325	640	R	HI	HI	1	3	1	1	12038	12197	2	584	602	593	2530	19.8	10.5	43.5	31.8	559	37.7	33.2	1510	1513	3.35	305	3698	3410
4796	652	412	669	R	HI	HI	142	3	6	8	12447	80055	3	552	577	564.5	2657	22.3	11.8	42.9	33.3	556	36.8	33	1587	1550	3.23	297.5	3545	3308
4797	517	417	510	R	HI	HI	80	3	3	5	12197	12447	2	667	662	664.5	2257	23.8	12.5	46.4	32.7	552	39.1	35.2	1659	1688	2.95	272.5	3298	3008
4798	697	507	675	F4	HI	HI	163	3	5	9	80055	12038	4	545	527	536	2799	20.5	11.3	46.5	35.5	555	40.3	35.9	1459	1468	3.38	320	3792	3552
4799	713	592	707	10	HI	HI	180	3	4	10	80055	12197	3	575	548	561.5	2671	22.8	13.5	46	32.6	573	39.3	34.7	1596	1661	3.28	287.5	3519	3295
4800	668	527	675	F4	HI	HI	78	3	3	5	12197	12447	4	584	620	602	2492	22.5	12.8	46.9	35.6	556	40.2	37.4	1554	1536	3.26	302.5	3599	3364
4801	495	394	491	R	HI	HI	155	3	3	9	80055	12038	1	603	651	627	2392	26	13.3	46.7	30.1	557	41.2	35.7	1535	1513	3.32	307.5	3655	3426
4802	668	554	661	10	HI	HI	156	3	4	9	80055	12038	2	624	620	622	2412	24.3	14.5	49.1	33.4	562	43.2	37.9	1543	1571	3.24	300	3610	3372
4803	562	445	558	R	HI	HI	14	3	5	1	12038	12197	4	579	614	596.5	2515	21.8	12.8	52.8	35.5	555	45.9	39.8	1543	1554	3.25	307.5	3584	3413
4804	464	349	469	R	HI	HI	86	3	5	5	12197	12447	4	580	620	600	2500	21	11.5	52.4	32.4	555	43.4	37.7	1639	1666	3.02	285	3359	3164
4805	736	526	747	F4	HI	HI	71	3	1	5	12197	12447	4	598	633	616	2437	22.3	12.8	46.3	33.4	555	38.0	34.2	1615	1613	3.12	287.5	3439	3191
4806	598	512	560	F4	HI	HI	240	2	1	12	236 A	994	2	527	582	555	2705	22.5	13.5	44.9	36.2	556	39.7	35.2	1475	1479	3.44	325.0	3764	3614
4807	615	357	609	R	HI	HI	14	3	5	1	12038	12197	4	579	614	597	2515	21.8	12.8	52.8	35.5	555	45.9	39.8	1543	1554	3.25	307.5	3584	3413
4808	443	309	436	R	HI	HI	122	3	4	7	12447	12197	2	592	590	591	2538	23.3	15.0	46.7	31.1	556	40.2	35.6	1680	1687	2.92		3303	
4809	658	562	662	10	HI	HI	184	3	5	10	80055	12197	4	554	594	574	2613	21.3	12.8	47.1	35.2	552	40.9	35.4	1544	1606	3.18	300.0	3505	3312
4810	633	532	612	F4	HI	HI	138	3	4	8	12447	80055	1	645	548	597	2515	24.5	14.5	46.7	33.2	554	40.0	36.1	1586	1620	3.01	290.0	3456	3213
4811	719	490	742	F4	HI	HI	97	3	2	6	12447	12038	4	583	675	629	2385	20.8	12.8	48.8	31.3	558	40.3	37.3	1589	1610	3.19	292.5	3489	3264

Board data						Tree data										Log data													
BoardID	E	m	E	m	Prod	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
					Type								(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
4812	561	390	588	R	HI	189	3	2	11	80055	12447	4	622	630	626	2396	20.8	13.3	48.6	31.3	557	41.4	38.7	1612	1619	3.13	285.0	3448	3175
4813	665	524	658	F4	HI	44	3	3	3	12038	80055	2	578	584	581	2582	25	14.8	44.9	34.4	555	37.3	33.8	1492	1510	3.41	322.5	3698	3580
4814	936	744	948	10	HI	219	2	4	9	236 A	38 A	2	475	505	490	3061	22.5	12.5	41.7	33.8	556	37.6	34.7	1366	1438	3.73	335	3966	3725
4815	540	446	526	R	HI	125	3	5	7	12447	12197	3	587	609	598	2508	26.3	14.5	44.3	35.7	556	39.2	34.2	1580	1631	3.15	292.5	3463	3253
4816	498	427	497	R	HI	189	3	2	11	80055	12447	4	622	630	626	2396	20.8	13.3	48.6	31.3	557	41.4	38.7	1612	1619	3.13	285	3448	3175
4817	642	555	638	10	HI	53	3	6	3	12038	80055	2	627	580	603.5	2486	22.3	14.3	49.9	35.7	552	43.5	39.6	1582	1509	3.21	295	3572	3257
4818	506	325	532	R	HI	184	3	5	10	80055	12197	4	554	594	574	2613	21.3	12.8	47.1	35.2	552	40.9	35.4	1544	1606	3.18	300	3505	3312
4819	508	411	489	R	HI	149	3	2	9	80055	12038	3	620	675	647.5	2317	21.3	11.5	46	33.5	553	39.6	35.2	1503	1490	3.32	305	3695	3373
4820	431	296	436	R	HI	122	3	4	7	12447	12197	2	592	590	591	2538	23.3	15	46.7	31.1	556	40.2	35.6	1680	1687	2.92		3303	
4822	494	409	491	R	HI	204	3	2	21	0	TSO	0	565	570	568	2643	20.0	13.3	39.6	32.6	557	34.0	30.3	1478	1478	3.45	325.0	3769	3621
4823	531	393	523	R	HI	3	3	1	1	12038	12197	4	632	642	637	2355	21.5	12.0	47.1	31.2	552	39.7	35.8	1552	1525	3.21	305.0	3588	3367
4824	550	394	562	R	HI	80	3	3	5	12197	12447	2	667	662	665	2257	23.8	12.5	46.4	32.7	552	39.1	35.2	1659	1688	2.95	272.5	3298	3008
4825	604	437	608	R	HI	189	3	2	11	80055	12447	4	622	630	626	2396	20.8	13.3	48.6	31.3	557	41.4	38.7	1612	1619	3.13	285.0	3448	3175
4826	564	333	577	R	HI	185	3	5	10	80055	12197	1	570	584	577	2600	20.5	12.8	50.8	33.0	558	42.9	36.9	1605	1614	3.19	295.0	3467	3292
4827	610	486	615	F4	HI	170	3	2	10	80055	12197	1	915	615	765	1961	22.5	12.0	47.9	30.2	556	42.0	36.2	1602	1570	3.15	287.5	3506	3197
4828	566	454	564	R	HI	86	3	5	5	12197	12447	4	580	620	600	2500	21.0	11.5	52.4	32.4	555	43.4	37.7	1639	1666	3.02	285.0	3359	3164
4830	625	522	629	F4	HI	189	3	2	11	80055	12447	4	622	630	626	2396	20.8	13.3	48.6	31.3	557	41.4	38.7	1612	1619	3.13	285.0	3448	3175
4831	642	507	654	F4	HI	58	3	2	4	12197	12038	2	615	631	623	2408	20.5	11.8	45.2	33.8	552	38.2	34.4	1484	1460	3.42	312.5	3750	3450
4832	491	367	493	R	HI	185	3	5	10	80055	12197	1	570	584	577	2600	20.5	12.8	50.8	33	558	42.9	36.9	1605	1614	3.19	295	3467	3292
4834	529	224	527	R	HI	119	3	3	7	12447	12197	2	594	630	612	2451	24.3	14.3	46.5	36.7	554	40	35.7	1659	1654	3.04	287.5	3344	3186
4835	514	431	507	R	HI	132	3	2	8	12447	80055	3	633	623	628	2389	23.5	13	45.2	29.8	551	38.6	35	1488	1489	3.25	297.5	3702	3278
4836	563	424	551	R	HI	185	3	5	10	80055	12197	1	570	584	577	2600	20.5	12.8	50.8	33	558	42.9	36.9	1605	1614	3.19	295	3467	3292
4837	430	290	439	R	HI	184	3	5	10	80055	12197	4	554	594	574	2613	21.3	12.8	47.1	35.2	552	40.9	35.4	1544	1606	3.18	300	3505	3312
4838	656	549	653	F4	HI	66	3	5	4	12197	12038	2	563	527	545	2752	21.3	12.8	44.6	35.1	552	38.5	34	1503	1492	3.39	320	3686	3533
4839	471	300	471	R	HI	71	3	1	5	12197	12447	4	598	633	615.5	2437	22.3	12.8	46.3	33.4	555	38	34.2	1615	1613	3.12	287.5	3439	3191
4840	578	388	572	R	HI	304	2	3	58	CR40	447 A	3	524	540	532	2820	20.0	12.5	47.7	32.1	557	41.8	35.6	1630	1617	3.19	292.5	3431	3258
4841	419	347	404	R	HI	132	3	2	8	12447	80055	3	633	623	628	2389	23.5	13.0	45.2	29.8	551	38.6	35.0	1488	1489	3.25	297.5	3702	3278
4842	682	574	690	10	HI	159	3	4	9	80055	12038	1	548	568	558	2688	26.8	16.0	43.9	32.4	555	37.0	36.2	1539	1537	3.28	310.0	3609	3441
4843	657	533	656	F4	HI	149	3	2	9	80055	12038	3	620	675	648	2317	21.3	11.5	46.0	33.5	553	39.6	35.2	1503	1490	3.32	305.0	3695	3373
4844	646	504	656	F4	HI	147	3	1	9	80055	12038	2	622	588	605	2479	26.5	14.3	43.3	31.4	557	39.7	34.6	1556	1565	3.21	290.0	3569	3231
4845	535	357	543	R	HI	149	3	2	9	80055	12038	3	620	675	647.5	2317	21.3	11.5	46	33.5	553	39.6	35.2	1503	1490	3.32	305	3695	3373
4846	892	758	876	10	HI	48	3	4	3	12038	80055	1	660	615	637.5	2353	20	12.3	48.1	32.8	556	40.8	36	1527	1552	3.36	317.5	3612	3531
4847	614	419	621	R	HI	152	3	3	9	80055	12038	2	580	590	585	2564	23.5	14.5	44.7	34.4	558	39.2	34	1610	1555	3.3	297.5	3526	3320
4848	756	492	763	F4	HI	3	3	1	1	12038	12197	4	632	642	637	2355	21.5	12	47.1	31.2	552	39.7	35.8	1552	1525	3.21	305	3588	3367
4849	551	453	548	R	HI	78	3	3	5	12197	12447	4	584	620	602	2492	22.5	12.8	46.9	35.6	556	40.2	37.4	1554	1536	3.26	302.5	3599	3364
4850	635	357	656	R	HI	52	3	5	3	12038	80055	1	587	569	578	2595	23	12.5	45.8	34.1	557	38.8	34.4	1587	1487	3.32	310	3624	3453
4851	462	278	466	R	HI	80	3	3	5	12197	12447	2	667	662	664.5	2257	23.8	12.5	46.4	32.7	552	39.1	35.2	1659	1688	2.95	272.5	3298	3008
4852	639	540	624	F4	HI	155	3	3	9	80055	12038	1	603	651	627	2392	26	13.3	46.7	30.1	557	41.2	35.7	1535	1513	3.32	307.5	3655	3426

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lgth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
					Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
4853	460	360	457	R	HI	91	3	6	5	12197	12447	2	607	553	580	2586	21.5	12.3	46.5	31.9	554	39.1	35.8	1693	1704	2.88	270	3262	2992
4854	600	429	629	R	HI	155	3	3	9	80055	12038	1	603	651	627	2392	26.0	13.3	46.7	30.1	557	41.2	35.7	1535	1513	3.32	307.5	3655	3426
4855	791	577	802	10	HI	152	3	3	9	80055	12038	2	580	590	585	2564	23.5	14.5	44.7	34.4	558	39.2	34.0	1610	1555	3.30	297.5	3526	3320
4856	603	526	602	F4	HI	218	2	4	9	236 A	38 A	1	572	569	571	2629	26.8	16.0	46.8	40.6	554	41.0	35.6	1472	1615	3.30	305.0	3589	3379
4857	566	456	568	R	HI	122	3	4	7	12447	12197	2	592	590	591	2538	23.3	15.0	46.7	31.1	556	40.2	35.6	1680	1687	2.92		3303	
4858	478	313	482	R	HI	3	3	1	1	12038	12197	4	632	642	637	2355	21.5	12.0	47.1	31.2	552	39.7	35.8	1552	1525	3.21	305.0	3588	3367
4859	528	412	530	R	HI	180	3	4	10	80055	12197	3	575	548	562	2671	22.8	13.5	46.0	32.6	573	39.3	34.7	1596	1661	3.28	287.5	3519	3295
4860	601	519	587	F4	HI	155	3	3	9	80055	12038	1	603	651	627	2392	26.0	13.3	46.7	30.1	557	41.2	35.7	1535	1513	3.32	307.5	3655	3426
4861	518	337	526	R	HI	185	3	5	10	80055	12197	1	570	584	577	2600	20.5	12.8	50.8	33.0	558	42.9	36.9	1605	1614	3.19	295.0	3467	3292
4862	853	647	865	10	HI	58	3	2	4	12197	12038	2	615	631	623	2408	20.5	11.8	45.2	33.8	552	38.2	34.4	1484	1460	3.42	312.5	3750	3450
4863	672	547	661	F4	HI	180	3	4	10	80055	12197	3	575	548	562	2671	22.8	13.5	46.0	32.6	573	39.3	34.7	1596	1661	3.28	287.5	3519	3295
4864	497	393	497	R	HI	91	3	6	5	12197	12447	2	607	553	580	2586	21.5	12.3	46.5	31.9	554	39.1	35.8	1693	1704	2.88	270.0	3262	2992
4865	840	688	852	10	HI	52	3	5	3	12038	80055	1	587	569	578	2595	23.0	12.5	45.8	34.1	557	38.8	34.4	1587	1487	3.32	310.0	3624	3453
4866	470	383	468	R	HI	149	3	2	9	80055	12038	3	620	675	648	2317	21.3	11.5	46.0	33.5	553	39.6	35.2	1503	1490	3.32	305.0	3695	3373
4867	582	393	574	R	HI	71	3	1	5	12197	12447	4	598	633	616	2437	22.3	12.8	46.3	33.4	555	38.0	34.2	1615	1613	3.12	287.5	3439	3191
4868	470	381	468	R	HI	240	2	1	12	236 A	994	2	527	582	555	2705	22.5	13.5	44.9	36.2	556	39.7	35.2	1475	1479	3.44	325.0	3764	3614
4869	658	463	676	R	HI	18	3	6	1	12038	12197	1	570	551	561	2676	21.0	12.0	50.5	36.9	555	41.5	37.7	1505	1530	3.23	295.0	3657	3275
4870	495	358	485	R	HI	240	2	1	12	236 A	994	2	527	582	555	2705	22.5	13.5	44.9	36.2	556	39.7	35.2	1475	1479	3.44	325.0	3764	3614
4871	685	538	689	F4	HI	58	3	2	4	12197	12038	2	615	631	623	2408	20.5	11.8	45.2	33.8	552	38.2	34.4	1484	1460	3.42	312.5	3750	3450
4872	640	428	639	R	HI	170	3	2	10	80055	12197	1	915	615	765	1961	22.5	12	47.9	30.2	556	42	36.2	1602	1570	3.15	287.5	3506	3197
4873	729	573	720	10	HI	69	3	6	4	12197	12038	2	570	528	549	2732	20.8	12.5	48.4	34.7	559	41.1	37.4	1509	1503	3.38	305	3712	3410
4875	587	435	590	R	HI	52	3	5	3	12038	80055	1	587	569	578	2595	23	12.5	45.8	34.1	557	38.8	34.4	1587	1487	3.32	310	3624	3453
4876	651	515	640	F4	HI	152	3	3	9	80055	12038	2	580	590	585	2564	23.5	14.5	44.7	34.4	558	39.2	34	1610	1555	3.3	297.5	3526	3320
4877	627	514	616	F4	HI	91	3	6	5	12197	12447	2	607	553	580	2586	21.5	12.3	46.5	31.9	554	39.1	35.8	1693	1704	2.88	270	3262	2992
4878	616	521	609	F4	HI	180	3	4	10	80055	12197	3	575	548	561.5	2671	22.8	13.5	46	32.6	573	39.3	34.7	1596	1661	3.28	287.5	3519	3295
4879	839	533	854	F4	HI	159	3	4	9	80055	12038	1	548	568	558	2688	26.8	16	43.9	32.4	555	37	36.2	1539	1537	3.28	310	3609	3441
4880	449	244	454	R	HI	80	3	3	5	12197	12447	2	667	662	664.5	2257	23.8	12.5	46.4	32.7	552	39.1	35.2	1659	1688	2.95	272.5	3298	3008
4881	463	401	475	R	HI	218	2	4	9	236 A	38 A	1	572	569	570.5	2629	26.8	16	46.8	40.6	554	41	35.6	1472	1615	3.3	305	3589	3379
4882	541	326	563	R	HI	122	3	4	7	12447	12197	2	592	590	591	2538	23.3	15	46.7	31.1	556	40.2	35.6	1680	1687	2.92		3303	
4883	711	582	688	10	HI	132	3	2	8	12447	80055	3	633	623	628	2389	23.5	13.0	45.2	29.8	551	38.6	35.0	1488	1489	3.25	297.5	3702	3278
4884	583	443	565	R	HI	184	3	5	10	80055	12197	4	554	594	574	2613	21.3	12.8	47.1	35.2	552	40.9	35.4	1544	1606	3.18	300.0	3505	3312
4885	427	344	424	R	HI	91	3	6	5	12197	12447	2	607	553	580	2586	21.5	12.3	46.5	31.9	554	39.1	35.8	1693	1704	2.88	270.0	3262	2992
4886	471	352	476	R	HI	132	3	2	8	12447	80055	3	633	623	628	2389	23.5	13.0	45.2	29.8	551	38.6	35.0	1488	1489	3.25	297.5	3702	3278
4887	502	393	508	R	HI	119	3	3	7	12447	12197	2	594	630	612	2451	24.3	14.3	46.5	36.7	554	40.0	35.7	1659	1654	3.04	287.5	3344	3186
4888	553	408	560	R	HI	78	3	3	5	12197	12447	4	584	620	602	2492	22.5	12.8	46.9	35.6	556	40.2	37.4	1554	1536	3.26	302.5	3599	3364
4889	679	550	633	F4	HI	18	3	6	1	12038	12197	1	570	551	561	2676	21.0	12.0	50.5	36.9	555	41.5	37.7	1505	1530	3.23	295.0	3657	3275
4890	824	616	853	10	HI	52	3	5	3	12038	80055	1	587	569	578	2595	23.0	12.5	45.8	34.1	557	38.8	34.4	1587	1487	3.32	310.0	3624	3453
4891	777	666	764	10	HI	43	3	2	3	12038	80055	3	550	554	552	2717	20.0	12.8	44.3	34.4	552	38.7	35.9	1442	1467	3.36	312.5	3795	3450

Board data										Tree data										Log data										
BoardID	E	m	E	m	E	Prod	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
						Type								(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
4892	552	434	559	R	HI	119	3	3	3	7	12447	12197	2	594	630	612	2451	24.3	14.3	46.5	36.7	554	40.0	35.7	1659	1654	3.04	287.5	3344	3186
4893	816	575	837	10	HI	240	2	1	12	236 A	994	2	527	582	555	2705	22.5	13.5	44.9	36.2	556	39.7	35.2	1475	1479	3.44	325.0	3764	3614	
4896	540	416	529	R	HI	236	2	4	11	236 A	447 A	2	510	494	502	2988	20.8	12.0	35.3	34.5	560	30.8	27.3	1445	1446	3.54	327.5	3874	3668	
4897	765	575	768	10	HI	176	3	3	10	80055	12197	2	563	552	558	2691	23.0	12.8	36.0	33.5	558	31.3	28.2	1539	1481	3.35	312.5	3695	3488	
4898	812	580	814	10	HI	9	3	3	1	12038	12197	3	532	577	555	2705	19.5	10.5	36.8	35.1	561	31.4	28.0	1434	1403	3.58	342.5	3955	3843	
4899	605	490	604	F4	HI	25	3	2	2	12038	12447	1	502	540	521	2879	20.5	13.3	35.2	29.2	558	30.9	26.6	1321	1406	3.69	345.0	4092	3850	
4900	653	503	647	F4	HI	331	2	1	103	MY 7	447 A	3	560	601	581	2584	21.5	12.3	37.5	31.2	557	32.5	27.7	1482	1471	3.52	332.5	3772	3704	
4901	528	438	517	R	HI	236	2	4	11	236 A	447 A	2	510	494	502	2988	20.8	12.0	35.3	34.5	560	30.8	27.3	1445	1446	3.54	327.5	3874	3668	
4902	624	541	609	F4	HI	317	2	4	59	CR40	994	2	552	571	562	2671	18.0	12.0	37.2	34.4	556	31.5	28.0	1582	1546	3.28	310.0	3555	3447	
4903	569	349	585	R	HI	299	2	1	58	CR40	447 A	1	572	553	563	2667	20.3	12.3	36.7	34.7	558	33.0	28.0	1466	1471	3.45	325.0	3800	3627	
4904	615	417	636	R	HI	72	3	1	5	12197	12447	3	600	588	594	2525	24.5	14.3	37.4	27.2	558	32.6	29.2	1543	1554	3.22	300.0	3603	3348	
4905	690	461	678	R	HI	37	3	6	2	12038	12447	1	600	560	580	2586	21.3	12.0	36.5	29.1	561	29.3	22.1	1505	1507	3.31	302.5	3725	3394	
4906	622	503	619	F4	HI	168	3	1	10	80055	12197	1	590	560	575	2609	20.3	11.5	41.5	31.9	559	35.7	30.0	1540	1542	3.33	307.5	3628	3438	
4907	627	459	619	R	HI	93	3	1	6	12447	12038	1	540	570	555	2703	19.0	12.3	33.8	34.6	557	29.4	27.2	1464	1507	3.47	315.0	3750	3509	
4908	627	467	617	R	HI	321	2	3	101	MY 7	38 A	1	500	496	498	3012	21.8	13.5	35.2	31.0	559	30.8	27.9	1510	1513	3.41	320.0	3698	3578	
4909	615	467	635	R	HI	61	3	3	4	12197	12038	1	556	630	593	2530	21.0	10.3	37.8	32.6	560	31.3	28.6	1461	1433	3.52	307.5	3870	3444	
4910	794	477	821	R	HI	263	2	3	4	956	447 A	3	514	516	515	2913	19.8	11.5	36.6	33.8	557	31.3	27.7	1420	1375	3.71	340.0	3986	3788	
4911	447	295	462	R	HI	193	3	6	11	80055	12447	4	600	601	601	2498	23.5	12.8	41.6	29.8	559	35.5	29.5	1709	1655	3.07	285.0	3323	3186	
4912	591	329	628	R	HI	57	3	1	4	12197	12038	3	524	546	535	2804	20.0	11.5	35.8	32.9	559	30.5	27.6	1466	1466	3.43	320.0	3813	3578	
4913	792	632	779	10	HI	279	2	1	56	CR40	38 A	1	567	541	554	2708	21.0	11.8	36.2	29.7	558	32.0	36.9	1460	1426	3.56	335.0	3867	3739	
4914	554	382	544	R	HI	258	2	4	45	956	197 A	1	522	543	533	2817	19.8	10.3	36.5	31.1	556	31.5	27.6	1523	1520	3.44	310.0	3654	3447	
4915	830	677	810	10	HI	236	2	4	11	236 A	447 A	2	510	494	502	2988	20.8	12.0	35.3	34.5	560	30.8	27.3	1445	1446	3.54	327.5	3874	3668	
4916	541	448	532	R	HI	279	2	1	56	CR40	38 A	1	567	541	554	2708	21.0	11.8	36.2	29.7	558	32.0	36.9	1460	1426	3.56	335.0	3867	3739	
4917	581	485	584	F4	HI	68	3	6	4	12197	12038	1	560	527	544	2760	20.0	11.8	37.7	28.1	557	31.0	27.3	1499	1530	3.26	315.0	3678	3509	
4918	814	717	811	10	HI	60	3	3	4	12197	12038	2	530	541	536	2801	20.3	12.0	36.8	36.4	555	31.4	27.9	1399	1498	3.67	345.0	3832	3830	
4919	500	408	491	R	HI	259	2	1	46	956	447 A	1	630	650	640	2344	18.8	10.3	40.0	33.8	558	31.3	28.2	1550	1618	3.35	322.5	3523	3599	
4920	697	492	690	F4	HI	59	3	2	4	12197	12038	3	529	540	535	2806	18.5	10.5	37.4	33.9	558	31.4	28.6	1490	1484	3.50	345.0	3753	3850	
4921	622	447	574	R	HI	259	2	1	46	956	447 A	1	630	650	640	2344	18.8	10.3	40.0	33.8	558	31.3	28.2	1550	1618	3.35	322.5	3523	3599	
4922	595	408	593	R	HI	94	3	2	6	12447	12038	1	560	572	566	2650	18.5	10.0	26.1	34.1	557	31.3	27.7	1501	1495	3.45	320.0	3718	3565	
4923	598	517	596	F4	HI	59	3	2	4	12197	12038	3	529	540	535	2806	18.5	10.5	37.4	33.9	558	31.4	28.6	1490	1484	3.50	345.0	3753	3850	
4924	713	514	703	F4	HI	247	2	3	44	956	38 A	2	510	491	501	2997	19.0	11.5	37.7	28.7	559	32.3	27.7	1463	1477	3.59	320.0	3803	3578	
4925	584	430	556	R	HI	255	2	3	45	956	197 A	1	515	490	503	2985	18.5	11.3	37.6	32.4	560	32.2	27.5	1513	1501	3.41	330.0	3716	3696	
4926	696	517	707	F4	HI	312	2	2	59	CR40	994	2	525	510	518	2899	17.5	10.0	37.2	33.3	556	30.5	27.0	1441	1450	3.57	350.0	3846	3892	
4927	561	406	533	R	HI	37	3	6	2	12038	12447	1	600	560	580	2586	21.3	12.0	36.5	29.1	561	29.3	22.1	1505	1507	3.31	302.5	3725	3394	
4928	534	336	530	R	HI	31	3	4	2	12038	12447	4	607	566	587	2558	21.5	12.5	41.8	30.5	562	34.4	30.5	1554	1596	3.29	295.0	3568	3316	
4929	426	349	415	R	HI	31	3	4	2	12038	12447	4	607	566	587	2558	21.5	12.5	41.8	30.5	562	34.4	30.5	1554	1596	3.29	295.0	3568	3316	
4941	514	386	501	R	HI	221	2	1	10	236 A	197 A	2	553	543	548	2737	23.3	13.3	38.5	33.4	558	35	28.9	1481	1504	3.01	320	3739	3571	
4942	557	427	563	R	HI	196	3	5	20	0	PCU	0	514	520	517	2901	22.5	12.5	37.2	32.5	558	32.3	28.5	1426	1515	3.4	325	3795	3627	

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lgth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
	GPa x 10 ²				Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
4943	583	474	591	R	HI	247	2	3	44	956	38 A	2	510	491	500.5	2997	19	11.5	37.7	28.7	559	32.3	27.7	1463	1477	3.59	320	3803	3578
4944	672	540	654	F4	HI	93	3	1	6	12447	12038	1	540	570	555	2703	19	12.3	33.8	34.6	557	29.4	27.2	1464	1507	3.47	315	3750	3509
4945	632	538	641	F4	HI	30	3	4	2	12038	12447	2	549	600	574.5	2611	19.5	11	41.9	34.6	555	35.5	30.3	1410	1382	3.49	340	3976	3774
4946	595	392	603	R	HI	318	2	1	101	MY 7	38 A	2	538	511	524.5	2860	20.8	11.5	40	35.8	555	35.3	30.4	1441	1443	3.54	337.5	3849	3746
4955	676	502	676	F4	HI	33	3	5	2	12038	12447	2	556	525	540.5	2775	21	11.3	43.2	35.9	560	35.7	31.5	1502	1572	3.46	317.5	3643	3556
4956	800	565	807	10	HI	236	2	4	11	236 A	447 A	2	510	494	502	2988	20.8	12	35.3	34.5	560	30.8	27.3	1445	1446	3.54	327.5	3874	3668
4957	508	373	526	R	HI	105	3	4	6	12447	12038	3	571	567	569	2636	21.3	13	40	30.1	540	33.8	30.3	1490	1524	3.16	305	3583	3294
4958	732	597	740	10	HI	312	2	2	59	CR40	994	2	525	510	518	2899	17.5	10.0	37.2	33.3	556	30.5	27.0	1441	1450	3.57	350.0	3846	3892
4959	620	400	603	R	HI	221	2	1	10	236 A	197 A	2	553	543	548	2737	23.3	13.3	38.5	33.4	558	35	28.9	1481	1504	3.01	320	3739	3571
4960	754	628	739	10	HI	9	3	3	1	12038	12197	3	532	577	555	2705	19.5	10.5	36.8	35.1	561	31.4	28.0	1434	1403	3.58	342.5	3955	3843
4961	671	497	641	F4	HI	299	2	1	58	CR40	447 A	1	572	553	563	2667	20.3	12.3	36.7	34.7	558	33.0	28.0	1466	1471	3.45	325.0	3800	3627
4962	608	511	609	F4	HI	50	3	5	3	12038	80055	2	545	546	546	2750	25.0	14.5	41.9	32.6	556	36.0	31.7	1549	1595	3.21	302.5	3537	3364
4963	659	525	658	F4	HI	26	3	2	2	12038	12447	2	625	572	599	2506	20.8	13.5	41.0	32.0	557	35.4	30.5	1400	1430	3.60	335.0	3936	3732
4964	540	333	540	R	HI	188	3	1	11	80055	12447	4	581	860	721	2082	20.3	12.0	41.7	34.1	558	35.4	31.5	1565	1572	3.22	295.0	3558	3292
4965	551	437	557	R	HI	145	3	1	9	80055	12038	3	591	567	579	2591	22.5	12.3	42.2	34.5	556	36.0	30.7	1472	1463	3.39	322.5	3789	3586
4966	569	504	571	F4	HI	38	3	6	2	12038	12447	2	580	591	586	2562	26.0	12.3	41.1	31.4	561	35.0	29.6	1581	1534	2.96	325.0	3602	3647
4967	601	443	609	R	HI	112	3	6	6	12447	12038	4	592	530	561	2674	22.8	13.5	39.5	29.0	562	33.5	29.6	1533	1472	3.35	307.5	3740	3456
4968	628	453	614	R	HI	217	2	3	9	236 A	38 A	2	540	554	547	2742	21.5	11.5	36.8	29.6	553	32.0	29.3	1354	1394	3.58	340.0	4025	3760
4969	708	606	707	10	HI	146	3	1	9	80055	12038	4	627	600	614	2445	28.8	15.0	39.5	28.6	554	34.7	30.2	1448	1447	3.32	327.5	3827	3629
4970	701	439	677	R	HI	26	3	2	2	12038	12447	2	625	572	599	2506	20.8	13.5	41.0	32.0	557	35.4	30.5	1400	1430	3.60	335.0	3936	3732
4971	587	481	596	R	HI	2	3	1	1	12038	12197	1	570	530	550	2727	20.3	12.5	43.7	33.8	558	34.2	31.3	1520	1522	3.37	312.5	3669	3488
4972	722	472	637	R	HI	104	3	4	6	12447	12038	1	554	565	560	2681	21.0	13.0	36.3	32.8	558	31.4	29.7	1470	1464	3.37	320.0	3804	3571
4979	629	397	641	R	HI	42	3	2	3	12038	80055	1	575	592	583.5	2571	23.8	14.5	41.6	30.5	558	34.3	30.3	1454	1450	3.53	330	3843	3683
4980	585	365	589	R	HI	256	2	3	45	956	197 A	3	550	555	552.5	2715	20.8	12.5	39.4	30.8	558	35.2	30.5	1455	1452	3.45	330	3839	3683
4981	563	452	560	R	HI	11	3	3	1	12038	12197	4	554	540	547	2742	21.5	11	39.1	32.9	556	33.3	29.5	1539	1528	3.28	337.5	3626	3753
4982	484	366	496	R	HI	315	2	4	59	CR40	994	1	564	530	547	2742	22.3	12.8	29.2	35.3	557	34.6	29.5	1475	1522	3.22	310	3717	3453
4983	514	419	502	R	HI	202	3	1	21	0	TSO	0	876	607	742	2023	23.0	10.5	39.6	29.4	545	34.9	31.0	1507	1508	3.22	307.5	3615	3352
4984	624	512	612	F4	HI	161	3	5	9	80055	12038	1	564	572	568	2641	26.3	13.8	42.8	16.9	558	36.5	32.5	1705	1647	3.22	305.0	3329	3404
4985	553	392	526	R	HI	120	3	3	7	12447	12197	3	555	591	573	2618	23.3	12.8	38.8	32.8	562	34.5	30.6	1512	1503	3.37	302.5	3728	3400
4986	824	676	825	10	HI	95	3	2	6	12447	12038	2	607	590	599	2506	19.0	12.0	36.3	31.1	558	30.9	28.8	1471	1491	3.45	315.0	3768	3515
4987	552	441	550	R	HI	287	2	4	56	CR40	38 A	1	496	504	500	3000	22.3	14.0	37.9	34.2	559	33.0	30.3	1442	1483	3.49	322.5	3822	3606
4988	508	415	516	R	HI	161	3	5	9	80055	12038	1	564	572	568	2641	26.3	13.8	42.8	16.9	558	36.5	32.5	1705	1647	3.22	305.0	3329	3404
4989	681	549	659	F4	HI	38	3	6	2	12038	12447	2	580	591	586	2562	26.0	12.3	41.1	31.4	561	35.0	29.6	1581	1534	2.96	325.0	3602	3647
4990	584	408	602	R	HI	300	2	2	58	CR40	447 A	1	625	590	608	2469	23.8	13.8	38.0	35.0	556	33.3	28.9	1514	1520	3.28	305.0	3665	3392
4991	658	563	657	10	HI	95	3	2	6	12447	12038	2	607	590	599	2506	19.0	12.0	36.3	31.1	558	30.9	28.8	1471	1491	3.45	315.0	3768	3515
4992	662	470	664	R	HI	298	2	1	58	CR40	447 A	3	626	620	623	2408	22.5	12.0	38.0	29.6	549	32.7	29.2	1482	1465	3.37	320.0	3726	3514
4993	507	422	513	R	HI	202	3	1	21	0	TSO	0	876	607	742	2023	23.0	10.5	39.6	29.4	545	34.9	31.0	1507	1508	3.22	307.5	3615	3352
4994	573	446	549	R	HI	300	2	2	58	CR40	447 A	1	625	590	608	2469	23.8	13.8	38.0	35.0	556	33.3	28.9	1514	1520	3.28	305.0	3665	3392

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
		GP a × 10 ²			Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
4995	605	396	603	R	HI	11	3	3	1	12038	12197	4	554	540	547	2742	21.5	11.0	39.1	32.9	556	33.3	29.5	1539	1528	3.28	337.5	3626	3753
4996	543	442	532	R	HI	293	2	2	57	CR40	197 A	1	575	541	558	2688	23.0	13.5	39.0	29.7	557	35.4	30.7	1570	1578	3.19	295.0	3539	3286
4997	501	419	503	R	HI	34	3	5	2	12038	12447	4	555	534	545	2755	22.5	13.3	44.2	34.4	550	37.0	31.8	1508	1493	3.30	312.5	3665	3438
4998	447	247	454	R	HI	318	2	1	101	MY 7	38 A	2	538	511	524.5	2860	20.8	11.5	40	35.8	555	35.3	30.4	1441	1443	3.54	337.5	3849	3746
4999	601	457	596	R	HI	34	3	5	2	12038	12447	4	555	534	544.5	2755	22.5	13.3	44.2	34.4	550	37	31.8	1508	1493	3.3	312.5	3665	3438
5000	582	498	588	F4	HI	315	2	4	59	CR40	994	1	564	530	547	2742	22.3	12.8	29.2	35.3	557	34.6	29.5	1475	1522	3.22	310	3717	3453
5003	559	372	573	R	HI	302	2	3	58	CR40	447 A	1	572	600	586	2560	23.8	14.5	38.6	31.4	557	34.4	29.3	1537	1539	3.37	312.5	3622	3481
5004	644	577	646	10	HI	150	3	2	9	80055	12038	4	570	557	563.5	2662	22.3	14.8	44.2	34.9	555	38.5	35.3	1490	1482	3.43	327.5	3735	3635
5005	685	583	656	10	HI	30	3	4	2	12038	12447	2	549	600	574.5	2611	19.5	11	41.9	34.6	555	35.5	30.3	1410	1382	3.49	340	3976	3774
5006	592	393	592	R	HI	315	2	4	59	CR40	994	1	564	530	547	2742	22.3	12.8	29.2	35.3	557	34.6	29.5	1475	1522	3.22	310	3717	3453
5007	485	336	483	R	HI	96	3	2	6	12447	12038	3	558	613	585.5	2562	21	14	38.5	32.3	561	32.2	29	1608	1614	3.21	305	3482	3422
5008	695	443	662	R	HI	33	3	5	2	12038	12447	2	556	525	540.5	2775	21	11.3	43.2	35.9	560	35.7	31.5	1502	1572	3.46	317.5	3643	3556
5009	522	343	511	R	HI	95	3	2	6	12447	12038	2	607	590	598.5	2506	19	12	36.3	31.1	558	30.9	28.8	1471	1491	3.45	315	3768	3515
5010	716	621	720	10	HI	150	3	2	9	80055	12038	4	570	557	563.5	2662	22.3	14.8	44.2	34.9	555	38.5	35.3	1490	1482	3.43	327.5	3735	3635
5011	608	438	624	R	HI	65	3	4	4	12197	12038	3	514	614	564	2660	18	11.3	39.2	33.1	557	32.9	29.2	1388	1442	3.47	320	3936	3565
5013	632	500	610	F4	HI	110	3	6	6	12447	12038	1	660	625	643	2335	22.5	14.0	40.7	28.9	555	35.0	31.5	1668	1675	3.10	287.5	3320	3191
5014	635	484	632	F4	HI	318	2	1	101	MY 7	38 A	2	538	511	525	2860	20.8	11.5	40.0	35.8	555	35.3	30.4	1441	1443	3.54	337.5	3849	3746
5015	604	503	604	F4	HI	34	3	5	2	12038	12447	4	555	534	545	2755	22.5	13.3	44.2	34.4	550	37.0	31.8	1508	1493	3.30	312.5	3665	3438
5016	681	552	684	10	HI	204	3	2	21	0	TSO	0	565	570	568	2643	20.0	13.3	39.6	32.6	557	34.0	30.3	1478	1478	3.45	325.0	3769	3621
5017	567	457	556	R	HI	256	2	3	45	956	197 A	3	550	555	553	2715	20.8	12.5	39.4	30.8	558	35.2	30.5	1455	1452	3.45	330.0	3839	3683
5018	906	810	902	10	HI	39	3	1	3	12038	80055	3	567	551	559	2683	20.5	10.5	39.8	35.0	556	33.8	29.8	1383	1400	3.57	337.5	3996	3753
5019	681	535	671	F4	HI	42	3	2	3	12038	80055	1	575	592	584	2571	23.8	14.5	41.6	30.5	558	34.3	30.3	1454	1450	3.53	330.0	3843	3683
5020	518	437	524	R	HI	50	3	5	3	12038	80055	2	545	546	546	2750	25.0	14.5	41.9	32.6	556	36.0	31.7	1549	1595	3.21	302.5	3537	3364
5021	702	591	707	10	HI	183	3	5	10	80055	12197	2	524	544	534	2809	24.5	13.3	40.0	34.7	554	34.4	31.2	1540	1553	3.30	310.0	3582	3435
5022	559	456	559	R	HI	293	2	2	57	CR40	197 A	1	575	541	558	2688	23.0	13.5	39.0	29.7	557	35.4	30.7	1570	1578	3.19	295.0	3539	3286
5023	517	414	514	R	HI	336	2	3	103	MY 7	447 A	1	504	498	501	2994	17.8	12.8	38.2	33.6	559	32.8	30.2	1399	1341	3.62	340.0	4080	3801
5024	464	422	457	R	HI	287	2	4	56	CR40	38 A	1	496	504	500	3000	22.3	14.0	37.9	34.2	559	33.0	30.3	1442	1483	3.49	322.5	3822	3606
5025	571	458	565	R	HI	224	2	2	10	236 A	197 A	2	590	610	600	2500	22.3	12.0	43.2	37.1	558	36.8	31.8	1556	1690	3.27	292.5	3438	3264
5026	569	450	576	R	HI	224	2	2	10	236 A	197 A	2	590	610	600	2500	22.3	12.0	43.2	37.1	558	36.8	31.8	1556	1690	3.27	292.5	3438	3264
5027	524	469	529	R	HI	115	3	1	7	12447	12197	3	573	586	579.5	2588	22.5	12	39.6	30.1	557	34.1	31	1552	1536	3.26	307.5	3608	3426
5028	604	466	611	R	HI	177	3	3	10	80055	12197	1	568	614	591	2538	18.5	12	44.4	34.1	557	38.6	32.6	1625	1658	3.29	307.5	3393	3426
5029	605	437	607	R	HI	287	2	4	56	CR40	38 A	1	496	504	500	3000	22.3	14	37.9	34.2	559	33	30.3	1442	1483	3.49	322.5	3822	3606
5030	536	445	541	R	HI	103	3	4	6	12447	12038	2	580	600	590	2542	22	13	41	30	555	34.5	31.7	1573	1537	3.28	307.5	3569	3413
5031	494	392	482	R	HI	310	2	2	59	CR40	994	1	540	528	534	2809	22.3	12.3	39.7	35	556	36.7	31	1561	1660	3.28	307.5	3452	3419
5032	578	440	560	R	HI	23	3	2	2	12038	12447	4	693	899	796	1884	22.3	14	45.8	32.7	560	38.8	34.2	1507	1508	3.36	312.5	3715	3500
5033	523	419	535	R	HI	190	3	3	11	80055	12447	4	614	604	609	2463	22.5	13	46.2	34.1	554	38.8	33.6	1545	1558	3.19	297.5	3571	3296
5034	665	431	639	R	HI	204	3	2	21	0	TSO	0	565	570	567.5	2643	20	13.3	39.6	32.6	557	34	30.3	1478	1478	3.45	325	3769	3621
5035	605	499	606	F4	HI	183	3	5	10	80055	12197	2	524	544	534	2809	24.5	13.3	40	34.7	554	34.4	31.2	1540	1553	3.3	310	3582	3435

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
		GP a × 10 ²			Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
5036	610	449	629	R	HI	62	3	3	4	12197	12038	3	510	550	530	2830	19.5	10.5	38.8	34.9	556	32.9	29.2	1489	1516	3.44	317.5	3700	3531
5037	639	523	626	F4	HI	115	3	1	7	12447	12197	3	573	586	580	2588	22.5	12.0	39.6	30.1	557	34.1	31.0	1552	1536	3.26	307.5	3608	3426
5038	595	414	586	R	HI	110	3	6	6	12447	12038	1	660	625	643	2335	22.5	14.0	40.7	28.9	555	35.0	31.5	1668	1675	3.10	287.5	3320	3191
5039	532	400	517	R	HI	295	2	3	57	CR40	197 A	1	574	622	598	2508	21.0	12.3	38.0	34.1	556	33.6	30.0	1689	1606	3.15	300.0	3375	3336
5046	463	349	466	R	HI	267	2	4	46	956	447 A	1	542	539	540.5	2775	21.5	12.5	42.2	34.5	560	35.8	31.3	1570	1539	3.25	307.5	3602	3444
5047	508	439	507	R	HI	205	3	3	21	0	TSO	0	640	652	646	2322	25.3	14.5	45.1	36.7	555	38.5	34.4	1653	1664	3.12	295	3346	3275
5048	649	533	648	F4	HI	64	3	4	4	12197	12038	2	562	560	561	2674	19.3	12	45.6	31.6	553	38.8	34.1	1488	1552	3.42	320	3638	3539
5049	566	465	550	R	HI	135	3	3	8	12447	80055	3	607	608	607.5	2469	24	13.5	41.3	35.2	556	36.5	31.7	1516	1558	3.36	307.5	3617	3419
5050	496	438	491	R	HI	153	3	3	9	80055	12038	3	564	610	587	2555	26	12.8	44.5	36.7	556	37	33.8	1630	1550	3.28	307.5	3497	3419
5051	580	463	582	R	HI	49	3	4	3	12038	80055	2	576	568	572	2622	22.8	12.3	40.9	33.9	559	35.7	31.3	1510	1515	3.41	325.0	3696	3634
5052	592	487	598	F4	HI	292	2	2	57	CR40	197 A	2	535	564	550	2730	21.0	11.3	41.2	37.5	557	36.4	33.0	1556	1557	3.24	317.5	3579	3537
5053	648	534	627	F4	HI	173	3	2	10	80055	12197	3	582	564	573	2618	22.0	14.3	44.9	33.1	557	38.3	34.8	1510	1552	3.13	302.5	3638	3370
5054	631	527	630	F4	HI	244	2	2	44	956	38 A	2	494	522	508	2953	20.8	10.3	41.7	34.1	554	36.0	32.4	1454	1432	3.58	347.5	3839	3850
5055	546	372	551	R	HI	179	3	4	10	80055	12197	4	552	595	574	2616	22.0	13.8	43.1	33.2	556	36.4	32.3	1494	1562	3.28	305.0	3639	3392
5057	612	489	609	F4	HI	13	3	4	1	12038	12197	1	566	535	551	2725	19.0	12.5	51.9	33.0	556	34.9	30.3	1576	1500	3.34	307.5	3615	3419
5058	569	483	571	F4	HI	305	2	4	58	CR40	447 A	3	504	522	513	2924	22.5	13.5	40.8	35.2	555	36.3	31.8	1540	1603	3.30	292.5	3532	3247
5059	530	424	524	R	HI	107	3	5	6	12447	12038	4	580	554	567	2646	21.5	11.5	41.4	35.8	561	34.7	31.1	1517	1529	3.00	317.5	3684	3562
5060	544	350	557	R	HI	19	3	1	2	12038	12447	4	570	585	578	2597	21.5	12.3	38.7	31.1	556	33.0	28.8	1472	1492	3.47	315.0	3752	3503
5061	600	460	604	R	HI	49	3	4	3	12038	80055	2	576	568	572	2622	22.8	12.3	40.9	33.9	559	35.7	31.3	1510	1515	3.41	325.0	3696	3634
5062	541	470	547	R	HI	183	3	5	10	80055	12197	2	524	544	534	2809	24.5	13.3	40.0	34.7	554	34.4	31.2	1540	1553	3.30	310.0	3582	3435
5063	598	509	585	F4	HI	292	2	2	57	CR40	197 A	2	535	564	550	2730	21.0	11.3	41.2	37.5	557	36.4	33.0	1556	1557	3.24	317.5	3579	3537
5064	562	426	577	R	HI	217	2	3	9	236 A	38 A	2	540	554	547	2742	21.5	11.5	36.8	29.6	553	32.0	29.3	1354	1394	3.58	340.0	4025	3760
5065	608	516	603	F4	HI	64	3	4	4	12197	12038	2	562	560	561	2674	19.3	12.0	45.6	31.6	553	38.8	34.1	1488	1552	3.42	320.0	3638	3539
5071	508	406	522	R	HI	341	2	2	104	MY 7	994	3	524	545	534.5	2806	19	9.8	41.9	33.7	556	35.5	33	1562	1560	3.28	307.5	3562	3419
5072	582	445	580	R	HI	23	3	2	2	12038	12447	4	693	899	796	1884	22.3	14	45.8	32.7	560	38.8	34.2	1507	1508	3.36	312.5	3715	3500
5073	462	350	460	R	HI	162	3	5	9	80055	12038	3	620	562	591	2538	24.5	11.3	45.5	16	558	39.4	33	1652	1683	3.14	292.5	3346	3264
5074	475	312	460	R	HI	167	3	6	9	80055	12038	3	584	550	567	2646	23.8	14	49.1	34	560	42.7	36	1557	1547	3.2	302.5	3608	3388
5075	588	505	578	F4	HI	153	3	3	9	80055	12038	3	564	610	587	2555	26	12.8	44.5	36.7	556	37	33.8	1630	1550	3.28	307.5	3497	3419
5076	547	431	560	R	HI	107	3	5	6	12447	12038	4	580	554	567	2646	21.5	11.5	41.4	35.8	561	34.7	31.1	1517	1529	3.00	317.5	3684	3562
5077	471	359	495	R	HI	208	3	6	21	0	TSO	0	586	560	573	2618	22.5	12.5	43.6	29.5	535	37.0	32.8	1575	1594	3.06	305.0	3376	3264
5078	536	416	544	R	HI	51	3	5	3	12038	80055	3	514	514	514	2918	23.3	12.5	42.9	32.4	556	36.8	33.7	1488	1502	3.29	310.0	3719	3447
5079	640	451	656	R	HI	8	3	3	1	12038	12197	1	528	561	545	2755	20.8	11.3	44.4	33.3	558	37.0	32.5	1526	1600	3.30	302.5	3570	3376
5080	492	409	492	R	HI	128	3	1	8	12447	80055	2	572	588	580	2586	26.0	12.8	40.0	32.6	558	35.1	30.9	1509	1570	3.35	330.0	3625	3683
5081	540	428	514	R	HI	73	3	1	5	12197	12447	1	583	595	589	2547	21.0	12.0	41.9	30.9	559	36.0	32.6	1553	1644	3.20	300.0	3497	3354
5082	564	437	564	R	HI	172	3	2	10	80055	12197	2	612	667	640	2346	22.3	13.0	44.3	33.8	555	38.7	34.0	1565	1560	3.23	307.5	3552	3413
5083	514	401	520	R	HI	190	3	3	11	80055	12447	4	614	604	609	2463	22.5	13.0	46.2	34.1	554	38.8	33.6	1545	1558	3.19	297.5	3571	3296
5084	576	428	581	R	HI	12	3	4	1	12038	12197	3	597	575	586	2560	16.8	9.5	43.6	34.9	554	37.0	33.1	1440	1493	3.48	332.5	3778	3684
5085	551	443	551	R	HI	51	3	5	3	12038	80055	3	514	514	514	2918	23.3	12.5	42.9	32.4	556	36.8	33.7	1488	1502	3.29	310.0	3719	3447

Board data										Tree data										Log data									
BoardID	Emean	Emin	Emedian	MGP	Prod	TreeExp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lght	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel	
		GPa x 10 ⁻²			Type							(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)	
5086	600	399	588	R	HI	13	3	4	1	12038	12197	1	566	535	551	2725	19.0	12.5	51.9	33.0	556	34.9	30.3	1576	1500	3.34	307.5	3615	3419
5087	565	418	562	R	HI	191	3	4	11	80055	12447	4	562	585	574	2616	19.5	11.5	40.9	33.3	555	34.8	32.2	1525	1513	3.28	305.0	3654	3386
5089	479	430	469	R	HI	241	2	3	12	236 A	994	1	641	621	631	2377	18	11.5	43.5	34.4	558	36.5	33.5	1535	1544	3.32	297.5	3625	3320
5090	546	405	559	R	HI	173	3	2	10	80055	12197	3	582	564	573	2618	22	14.3	44.9	33.1	557	38.3	34.8	1510	1552	3.13	302.5	3638	3370
5099	474	340	458	R	HI	129	3	1	8	12447	80055	3	585	604	594.5	2523	22.8	13	42.4	32.9	556	37.4	33.2	1604	1560	3.26	310	3515	3447
5100	447	306	440	R	HI	162	3	5	9	80055	12038	3	620	562	591	2538	24.5	11.3	45.5	16	558	39.4	33	1652	1683	3.14	292.5	3346	3264
5103	597	421	610	R	HI	216	2	3	9	236 A	38 A	3	534	537	535.5	2801	24.8	14.5	41.5	38.2	556	34.9	31.8	1505	1539	3.34	315	3653	3503
5105	472	361	475	R	HI	97	3	2	6	12447	12038	4	583	675	629	2385	20.8	12.8	48.8	31.3	558	40.3	37.3	1589	1610	3.19	292.5	3489	3264
5106	505	427	509	R	HI	314	2	3	59	CR40	994	2	550	526	538	2788	17.8	11.0	43.3	33.1	550	38.2	32.3	1475	1497	3.33	315.0	3701	3465
5107	598	489	590	F4	HI	41	3	1	3	12038	80055	2	600	570	585	2564	24.5	13.5	42.3	33.4	555	37.6	33.2	1483	1503	3.41	320.0	3717	3552
5108	490	419	496	R	HI	82	3	4	5	12197	12447	1	620	600	610	2459	19.5	12.5	44.6	34.1	555	38.4	33.1	1567	1599	3.15	290.0	3506	3219
5109	670	542	672	F4	HI	175	3	3	10	80055	12197	4	570	618	594	2525	23.3	14.3	43.8	36.7	557	37.0	33.1	1552	1558	3.34	307.5	3582	3426
5110	526	415	525	R	HI	101	3	3	6	12447	12038	4	583	575	579	2591	21.0	13.0	44.9	35.0	560	36.8	32.1	1530	1557	3.28	305.0	3628	3416
5111	538	367	541	R	HI	306	2	4	58	CR40	447 A	1	552	526	539	2783	20.8	12.5	41.0	34.8	556	36.1	32.5	1523	1545	3.31	317.5	3625	3531
5112	621	434	633	R	HI	175	3	3	10	80055	12197	4	570	618	594	2525	23.3	14.3	43.8	36.7	557	37.0	33.1	1552	1558	3.34	307.5	3582	3426
5113	483	376	489	R	HI	23	3	2	2	12038	12447	4	693	899	796	1884	22.3	14.0	45.8	32.7	560	38.8	34.2	1507	1508	3.36	312.5	3715	3500
5114	682	505	697	F4	HI	158	3	4	9	80055	12038	3	552	562	557	2693	21.3	12.8	44.1	33.0	558	37.8	32.7	1492	1532	3.32	307.5	3690	3432
5115	626	504	614	F4	HI	139	3	5	8	12447	80055	3	525	534	530	2833	22.0	13.5	43.8	32.8	558	37.8	33.4	1503	1505	3.30	302.5	3710	3376
5116	562	514	557	F4	HI	151	3	2	9	80055	12038	2	623	600	611.5	2453	25.3	15.3	46.6	31.9	557	41	36.6	1561	1543	3.24	305	3589	3398
5117	624	488	626	F4	HI	139	3	5	8	12447	80055	3	525	534	529.5	2833	22	13.5	43.8	32.8	558	37.8	33.4	1503	1505	3.3	302.5	3710	3376
5118	476	282	483	R	HI	16	3	6	1	12038	12197	4	582	609	595.5	2519	21.5	13.3	51.1	33	555	43.5	36.5	1619	1623	2.99	280	3424	3108
5119	496	406	495	R	HI	216	2	3	9	236 A	38 A	3	534	537	535.5	2801	24.8	14.5	41.5	38.2	556	34.9	31.8	1505	1539	3.34	315	3653	3503
5120	449	401	452	R	HI	139	3	5	8	12447	80055	3	525	534	529.5	2833	22	13.5	43.8	32.8	558	37.8	33.4	1503	1505	3.3	302.5	3710	3376
5121	532	455	538	R	HI	142	3	6	8	12447	80055	3	552	577	564.5	2657	22.3	11.8	42.9	33.3	556	36.8	33	1587	1550	3.23	297.5	3545	3308
5122	469	421	474	R	HI	87	3	5	5	12197	12447	1	820	594	707	2122	22	13.5	46.3	34.3	559	39.5	35.1	1701	1703	3.09	290	3284	3242
5123	598	515	586	F4	HI	314	2	3	59	CR40	994	2	550	526	538	2788	17.8	11	43.3	33.1	550	38.2	32.3	1475	1497	3.33	315	3701	3465
5124	529	456	533	R	HI	41	3	1	3	12038	80055	2	600	570	585	2564	24.5	13.5	42.3	33.4	555	37.6	33.2	1483	1503	3.41	320	3717	3552
5125	570	432	564	R	HI	216	2	3	9	236 A	38 A	3	534	537	535.5	2801	24.8	14.5	41.5	38.2	556	34.9	31.8	1505	1539	3.34	315	3653	3503
5126	453	396	447	R	HI	130	3	2	8	12447	80055	2	562	590	576	2604	27.5	17.5	42.9	32.7	557	37.5	32.5	1560	1590	3.21	300	3537	3342
5127	465	418	464	R	HI	87	3	5	5	12197	12447	1	820	594	707	2122	22	13.5	46.3	34.3	559	39.5	35.1	1701	1703	3.09	290	3284	3242
5128	798	686	797	10	HI	51	3	5	3	12038	80055	3	514	514	514	2918	23.3	12.5	42.9	32.4	556	36.8	33.7	1488	1502	3.29	310	3719	3447
5129	517	372	537	R	HI	147	3	1	9	80055	12038	2	622	588	605	2479	26.5	14.3	43.3	31.4	557	39.7	34.6	1556	1565	3.21	290	3569	3231
5130	604	480	600	R	HI	341	2	2	104	MY 7	994	3	524	545	534.5	2806	19	9.8	41.9	33.7	556	35.5	33	1562	1560	3.28	307.5	3562	3419
5131	478	325	482	R	HI	142	3	6	8	12447	80055	3	552	577	564.5	2657	22.3	11.8	42.9	33.3	556	36.8	33	1587	1550	3.23	297.5	3545	3308
5132	583	537	577	F4	HI	178	3	4	10	80055	12197	2	620	541	580.5	2584	24	14.8	46.1	32.9	558	40.1	36.8	1612	1560	3.24	307.5	3518	3432
5133	469	379	470	R	HI	156	3	4	9	80055	12038	2	624	620	622	2412	24.3	14.5	49.1	33.4	562	43.2	37.9	1543	1571	3.24	300	3610	3372
5134	713	637	708	10	HI	178	3	4	10	80055	12197	2	620	541	580.5	2584	24	14.8	46.1	32.9	558	40.1	36.8	1612	1560	3.24	307.5	3518	3432
5135	782	653	770	10	HI	41	3	1	3	12038	80055	2	600	570	585	2564	24.5	13.5	42.3	33.4	555	37.6	33.2	1483	1503	3.41	320	3717	3552

Board data						Tree data										Log data													
BoardID	Emean	Emin	Emedian	MGP	Prod	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lgth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
					Type								(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
5136	648	509	642	F4	HI	244	2	2	44	956	38 A	2	494	522	508	2953	20.8	10.3	41.7	34.1	554	36	32.4	1454	1432	3.58	347.5	3839	3850
5137	581	436	568	R	HI	237	2	4	11	236 A	447 A	1	592	575	583.5	2571	21.5	13.8	51.3	33.8	560	45.3	38.3	1482	1566	3.49	332.5	3675	3724
5138	542	505	543	F4	HI	44	3	3	3	12038	80055	2	578	584	581	2582	25	14.8	44.9	34.4	555	37.3	33.8	1492	1510	3.41	322.5	3698	3580
5139	481	166	491	R	HI	178	3	4	10	80055	12197	2	620	541	581	2584	24.0	14.8	46.1	32.9	558	40.1	36.8	1612	1560	3.24	307.5	3518	3432
5140	599	463	594	R	HI	154	3	3	9	80055	12038	4	570	590	580	2586	27.0	14.5	44.5	35.5	561	38.8	33.8	1520	1517	3.44	312.5	3694	3506
5141	513	394	506	R	HI	125	3	5	7	12447	12197	3	587	609	598	2508	26.3	14.5	44.3	35.7	556	39.2	34.2	1580	1631	3.15	292.5	3463	3253
5142	667	478	661	R	HI	66	3	5	4	12197	12038	2	563	527	545	2752	21.3	12.8	44.6	35.1	552	38.5	34	1503	1492	3.39	320	3686	3533
5143	482	394	484	R	HI	329	2	3	102	MY 7	197 A	3	535	526	530.5	2828	18.5	11.8	42.2	32	556	36.3	33.2	1531	1620	3.36	302.5	3529	3364
5144	535	404	534	R	HI	211	3	6	21	0	TSO	0	541	533	537	2793	22.3	12	47.3	31.4	557	38.8	35.7	1659	1634	3.08	295	3383	3286
5145	494	375	498	R	HI	151	3	2	9	80055	12038	2	623	600	611.5	2453	25.3	15.3	46.6	31.9	557	41	36.6	1561	1543	3.24	305	3589	3398
5146	599	512	592	F4	HI	158	3	4	9	80055	12038	3	552	562	557	2693	21.3	12.8	44.1	33	558	37.8	32.7	1492	1532	3.32	307.5	3690	3432
5147	506	401	501	R	HI	301	2	2	58	CR40	447 A	3	582	557	569.5	2634	23.5	12.5	45.5	13.2	557	40.6	35	1642	1612	3.16	295	3423	3286
5148	582	480	573	R	HI	140	3	5	8	12447	80055	1	570	620	595	2521	26.5	14.0	46.2	35.4	559	39.0	36.5	1583	1591	3.14	297.5	3522	3326
5149	538	444	544	R	HI	219	2	4	9	236 A	38 A	2	475	505	490	3061	22.5	12.5	41.7	33.8	556	37.6	34.7	1366	1438	3.73	335	3966	3725
5150	462	275	482	R	HI	157	3	4	9	80055	12038	4	572	568	570	2632	21.5	14.3	46	35.5	556	39.8	35.8	1505	1513	3.34	310	3685	3447
5151	773	562	748	10	HI	219	2	4	9	236 A	38 A	2	475	505	490	3061	22.5	12.5	41.7	33.8	556	37.6	34.7	1366	1438	3.73	335	3966	3725
5153	428	310	427	R	HI	83	3	4	5	12197	12447	2	642	640	641	2340	21.8	12.3	49	21.6	555	42.4	37.5	1760	1812	2.89	267.5	3108	2969
5154	667	576	661	10	HI	43	3	2	3	12038	80055	3	550	554	552	2717	20.0	12.8	44.3	34.4	552	38.7	35.9	1442	1467	3.36	312.5	3795	3450
5155	490	400	476	R	HI	304	2	3	58	CR40	447 A	3	524	540	532	2820	20.0	12.5	47.7	32.1	557	41.8	35.6	1630	1617	3.19	292.5	3431	3258
5156	560	455	562	R	HI	283	2	2	56	CR40	38 A	2	617	582	600	2502	21.5	12.5	49.3	37.2	558	43.0	37.0	1582	1643	3.16	315.0	3460	3515
5157	449	382	445	R	HI	283	2	2	56	CR40	38 A	2	617	582	600	2502	21.5	12.5	49.3	37.2	558	43.0	37.0	1582	1643	3.16	315.0	3460	3515
5158	600	419	612	R	HI	160	3	5	9	80055	12038	2	565	615	590	2542	27.8	14.0	49.1	38.0	558	43.2	37.0	1668	1629	3.19	292.5	3385	3264
5159	507	335	489	R	HI	16	3	6	1	12038	12197	4	582	609	596	2519	21.5	13.3	51.1	33.0	555	43.5	36.5	1619	1623	2.99	280.0	3424	3108
5160	628	463	638	R	HI	165	3	6	9	80055	12038	2	580	591	586	2562	23.8	13.8	50.8	37.6	556	44.2	39.4	1633	1633	3.10	285.0	3405	3169
5161	747	512	765	F4	HI	157	3	4	9	80055	12038	4	572	568	570	2632	21.5	14.3	46.0	35.5	556	39.8	35.8	1505	1513	3.34	310.0	3685	3447
5162	508	443	492	R	HI	74	3	2	5	12197	12447	1	587	630	609	2465	20.3	11.5	42.0	32.8	557	36.3	32.2	1525	1530	3.24	302.5	3646	3370
5163	736	564	717	10	HI	44	3	3	3	12038	80055	2	578	584	581	2582	25.0	14.8	44.9	34.4	555	37.3	33.8	1492	1510	3.41	322.5	3698	3580
5164	578	474	559	R	HI	18	3	6	1	12038	12197	1	570	551	561	2676	21.0	12.0	50.5	36.9	555	41.5	37.7	1505	1530	3.23	295.0	3657	3275
5170	805	585	816	10	HI	218	2	4	9	236 A	38 A	1	572	569	571	2629	26.8	16.0	46.8	40.6	554	41.0	35.6	1472	1615	3.30	305.0	3589	3379
5171	552	391	561	R	HI	283	2	2	56	CR40	38 A	2	617	582	600	2502	21.5	12.5	49.3	37.2	558	43.0	37.0	1582	1643	3.16	315.0	3460	3515
5172	541	434	537	R	HI	138	3	4	8	12447	80055	1	645	548	597	2515	24.5	14.5	46.7	33.2	554	40.0	36.1	1586	1620	3.01	290.0	3456	3213
5173	638	556	633	10	HI	69	3	6	4	12197	12038	2	570	528	549	2732	20.8	12.5	48.4	34.7	559	41.1	37.4	1509	1503	3.38	305.0	3712	3410
5177	584	494	580	F4	HI	156	3	4	9	80055	12038	2	624	620	622	2412	24.3	14.5	49.1	33.4	562	43.2	37.9	1543	1571	3.24	300	3610	3372
5178	621	438	600	R	HI	163	3	5	9	80055	12038	4	545	527	536	2799	20.5	11.3	46.5	35.5	555	40.3	35.9	1459	1468	3.38	320	3792	3552
5179	642	511	626	F4	HI	160	3	5	9	80055	12038	2	565	615	590	2542	27.8	14	49.1	38	558	43.2	37	1668	1629	3.19	292.5	3385	3264
5181	557	454	555	R	HI	53	3	6	3	12038	80055	2	627	580	603.5	2486	22.3	14.3	49.9	35.7	552	43.5	39.6	1582	1509	3.21	295	3572	3257
5182	735	499	742	F4	HI	172	3	2	10	80055	12197	2	612	667	639.5	2346	22.3	13	44.3	33.8	555	38.7	34	1565	1560	3.23	307.5	3552	3413
5184	517	396	520	R	HI	14	3	5	1	12038	12197	4	579	614	597	2515	21.8	12.8	52.8	35.5	555	45.9	39.8	1543	1554	3.25	307.5	3584	3413

Board data						Tree data										Log data													
BoardID	Emean	Emin	Emedian	MGP	Prod	Tree	Exp	Rep	Trt	FEM	MALE	Cut	TFAK1	TFAK2	FakAve	TreeFak	P12J	P6J	DBHOB	TotHt	Lgth	LED	SED	FAK1	FAK2	Hitman	Jugo	LogFak	JugoVel
					Type								(msec)	(msec)	(msec)	(m/s)	(mm)	(mm)	(cm)	(m)	(cm)	(cm)	(cm)	(msec)	(msec)	(km/s)	(Hz)	(m/s)	(m/s)
5185	468	387	473	R	HI	237	2	4	11	236 A	447 A	1	592	575	584	2571	21.5	13.8	51.3	33.8	560	45.3	38.3	1482	1566	3.49	332.5	3675	3724
5186	533	418	512	R	HI	14	3	5	1	12038	12197	4	579	614	597	2515	21.8	12.8	52.8	35.5	555	45.9	39.8	1543	1554	3.25	307.5	3584	3413
5187	581	438	597	R	HI	172	3	2	10	80055	12197	2	612	667	640	2346	22.3	13.0	44.3	33.8	555	38.7	34.0	1565	1560	3.23	307.5	3552	3413
5188	556	383	556	R	HI	82	3	4	5	12197	12447	1	620	600	610	2459	19.5	12.5	44.6	34.1	555	38.4	33.1	1567	1599	3.15	290.0	3506	3219
5189	573	437	575	R	HI	147	3	1	9	80055	12038	2	622	588	605	2479	26.5	14.3	43.3	31.4	557	39.7	34.6	1556	1565	3.21	290.0	3569	3231
5190	549	454	547	R	HI	18	3	6	1	12038	12197	1	570	551	561	2676	21.0	12.0	50.5	36.9	555	41.5	37.7	1505	1530	3.23	295.0	3657	3275
5191	591	482	605	R	HI	66	3	5	4	12197	12038	2	563	527	545	2752	21.3	12.8	44.6	35.1	552	38.5	34.0	1503	1492	3.39	320.0	3686	3533
5192	491	355	493	R	HI	165	3	6	9	80055	12038	2	580	591	586	2562	23.8	13.8	50.8	37.6	556	44.2	39.4	1633	1633	3.10	285.0	3405	3169
5193	545	461	552	R	HI	44	3	3	3	12038	80055	2	578	584	581	2582	25.0	14.8	44.9	34.4	555	37.3	33.8	1492	1510	3.41	322.5	3698	3580
5194	551	406	538	R	HI	130	3	2	8	12447	80055	2	562	590	576	2604	27.5	17.5	42.9	32.7	557	37.5	32.5	1560	1590	3.21	300.0	3537	3342
5195	715	594	701	10	HI	154	3	3	9	80055	12038	4	570	590	580	2586	27.0	14.5	44.5	35.5	561	38.8	33.8	1520	1517	3.44	312.5	3694	3506
5196	490	383	485	R	HI	86	3	5	5	12197	12447	4	580	620	600	2500	21.0	11.5	52.4	32.4	555	43.4	37.7	1639	1666	3.02	285.0	3359	3164
5199	564	458	565	R	HI	304	2	3	58	CR40	447 A	3	524	540	532	2820	20	12.5	47.7	32.1	557	41.8	35.6	1630	1617	3.19	292.5	3431	3258
5200	607	474	604	R	HI	162	3	5	9	80055	12038	3	620	562	591	2538	24.5	11.3	45.5	16	558	39.4	33	1652	1683	3.14	292.5	3346	3264
5201	546	405	533	R	HI	237	2	4	11	236 A	447 A	1	592	575	583.5	2571	21.5	13.8	51.3	33.8	560	45.3	38.3	1482	1566	3.49	332.5	3675	3724
5202	549	434	541	R	HI	156	3	4	9	80055	12038	2	624	620	622	2412	24.3	14.5	49.1	33.4	562	43.2	37.9	1543	1571	3.24	300	3610	3372
5203	626	531	621	F4	HI	48	3	4	3	12038	80055	1	660	615	637.5	2353	20	12.3	48.1	32.8	556	40.8	36	1527	1552	3.36	317.5	3612	3531
5204	601	460	606	R	HI	219	2	4	9	236 A	38 A	2	475	505	490	3061	22.5	12.5	41.7	33.8	556	37.6	34.7	1366	1438	3.73	335	3966	3725
5205	592	460	606	R	HI	86	3	5	5	12197	12447	4	580	620	600	2500	21	11.5	52.4	32.4	555	43.4	37.7	1639	1666	3.02	285	3359	3164
5206	564	437	559	R	HI	151	3	2	9	80055	12038	2	623	600	611.5	2453	25.3	15.3	46.6	31.9	557	41	36.6	1561	1543	3.24	305	3589	3398
5207	470	387	468	R	HI	125	3	5	7	12447	12197	3	587	609	598	2508	26.3	14.5	44.3	35.7	556	39.2	34.2	1580	1631	3.15	292.5	3463	3253
5208	649	432	629	R	HI	314	2	3	59	CR40	994	2	550	526	538	2788	17.8	11.0	43.3	33.1	550	38.2	32.3	1475	1497	3.33	315.0	3701	3465
5209	625	473	625	R	HI	53	3	6	3	12038	80055	2	627	580	603.5	2486	22.3	14.3	49.9	35.7	552	43.5	39.6	1582	1509	3.21	295	3572	3257

Appendix C Sawing patterns used in the study

Sort 4

18-Apr-00

Pattern 4

		DIAMETER RANGE :		200	TO	210	OPEN	
				FEED SPEED		CHIP MM	FACE MM	
RBS	57.00	27.0	100	41.0	43.00	-2	26	99
	81.50	0	159.0	0	81.50	-2	41	121

UKIAH SWEEP SETTING:

1

2

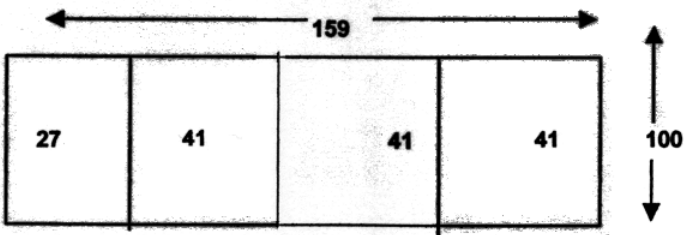
3

ON

4

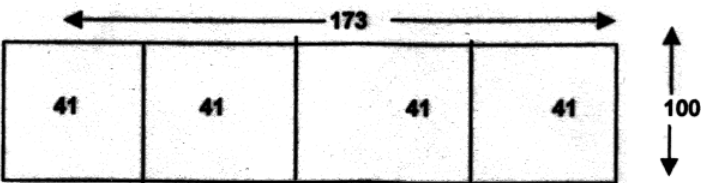
Sort 4

Pattern 4
TWIN



* cut chain mark into 41mm board

UKIAH



COMMENTS

RBS/TWIN	
SWEEP (MM)	REC%
0	
20	
30	
40	

RBS/UKIAH	
SWEEP (MM)	REC%
0	
20	
30	
40	

Sort 6

18-Apr-00

Pattern 8

		DIAMETER RANGE		220	TO	230			OPEN
						FEED SPEED	CHIP MM	FACE MM	
RBS	50.00	41.0	100	41.0	50.00	-2	32	114	
	88.50	0.0	173	0.0	88.50	-1	47	136	

UKIAH SWEEP SETTING:

1

2

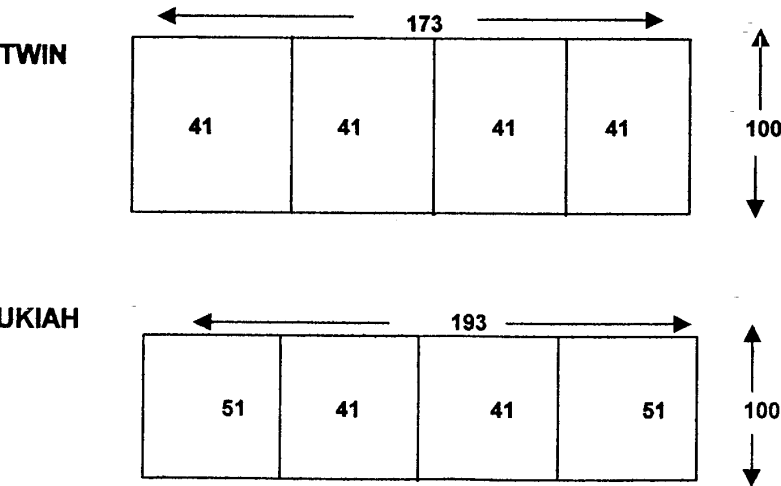
3

ON

4

Sort 6

Pattern 8



COMMENTS

RBS/TWIN		RBS/UKIAH	
SWEEP (MM)	REC%	SWEEP (MM)	REC%
0		0	
20		20	
30		30	
40		40	

Sort 8

18-Apr-00

Pattern 5

DIAMETER RANGE		240	TO	250	OPEN			
					FEED SPEED	CHIP MM	FACE MM	
RBS	50.00	51.0	100	51.0	50.00	-1	32	
	103.50	0	203	0	103.50	-1	37	

UKIAH SWEEP SETTING:

1

2

3

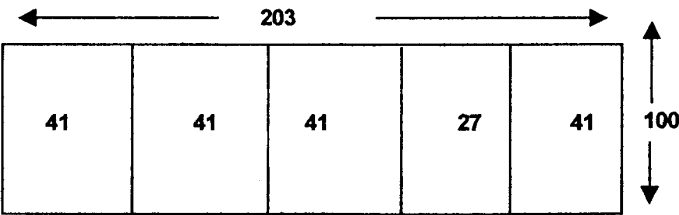
ON

4

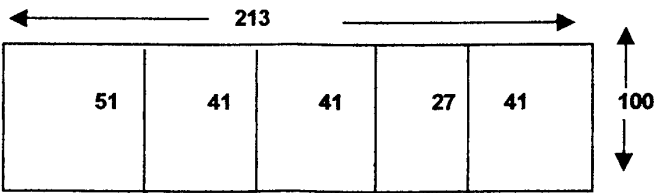
Sort 8

Pattern 5

TWIN



UKIAH



COMMENTS

RBS/TWIN		RBS/UKIAH	
SWEEP (MM)	REC%	SWEEP (MM)	REC%
0		0	
20		20	
30		30	
40		40	

Sort 10

13-Apr-00

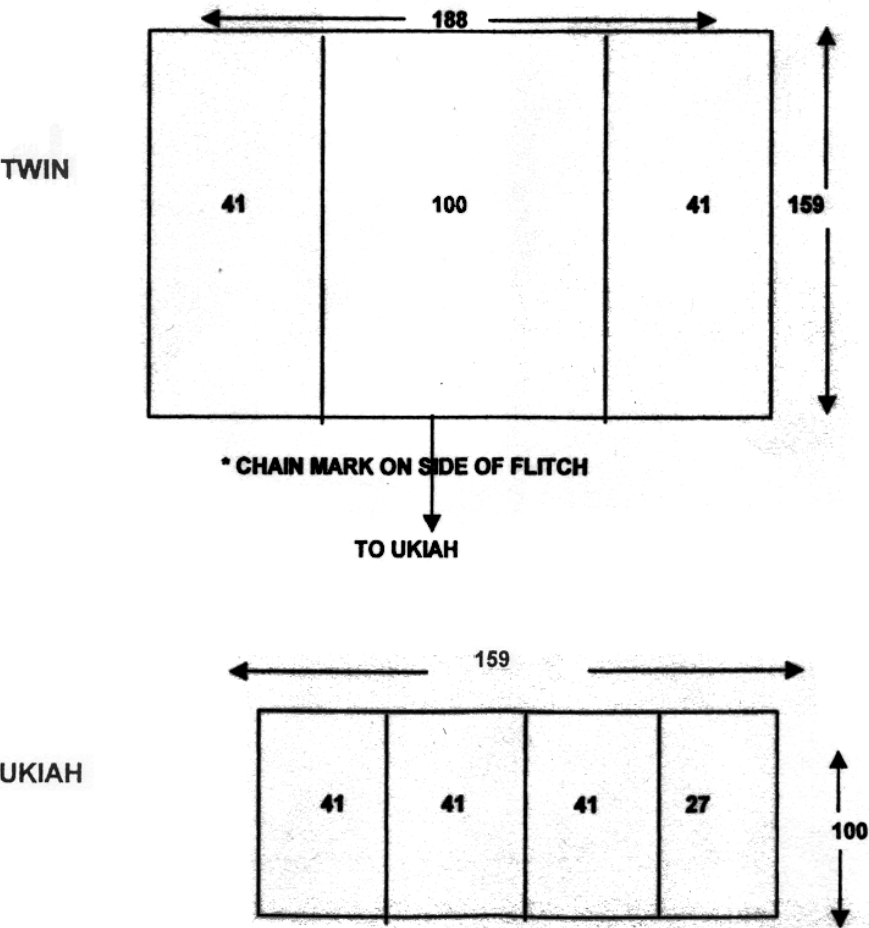
Pattern 5

DIAMETER RANGE 260 TO 270

					FEED SPEED	CHIP	
RBS	94.00	27	188	27.0	94.00	-1	12
	86.50	27.0	159	41.0	72.50	-1	27

Sort 10

Pattern 5



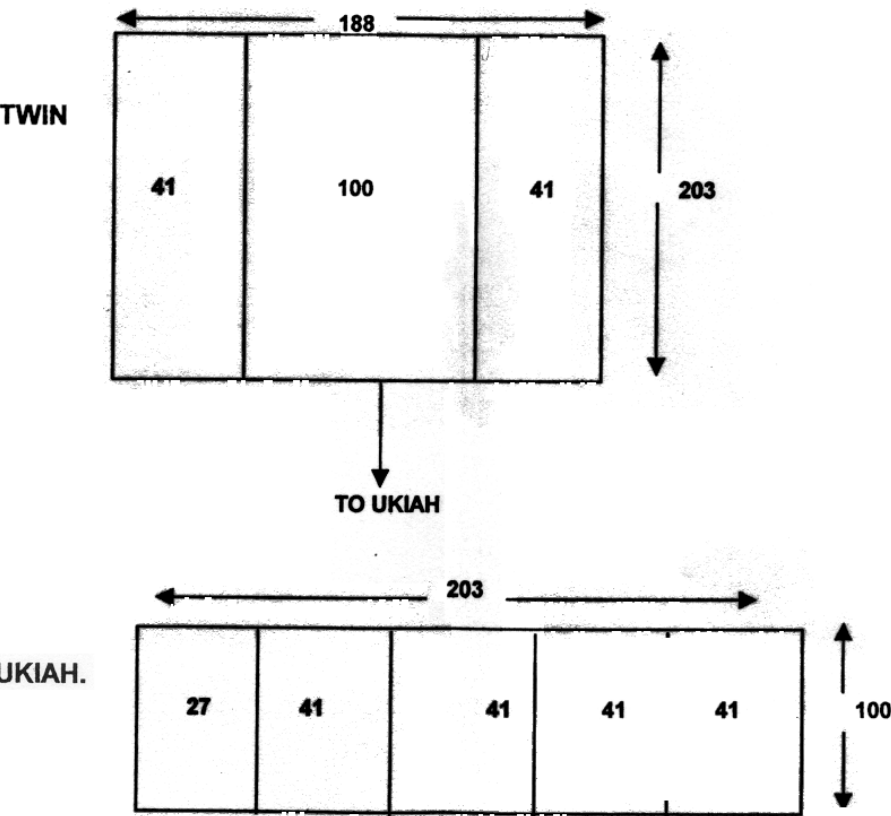
COMMENTS

Sort 12

18-Apr-00

Pattern 15 S.E LOG DIAMETER 280

					FEED SPEED	CHIP MM	FACE MM
RBS	101.50	27	203	27	101.50	-1	17
	94.00	27	188	27	94.00	-1	32



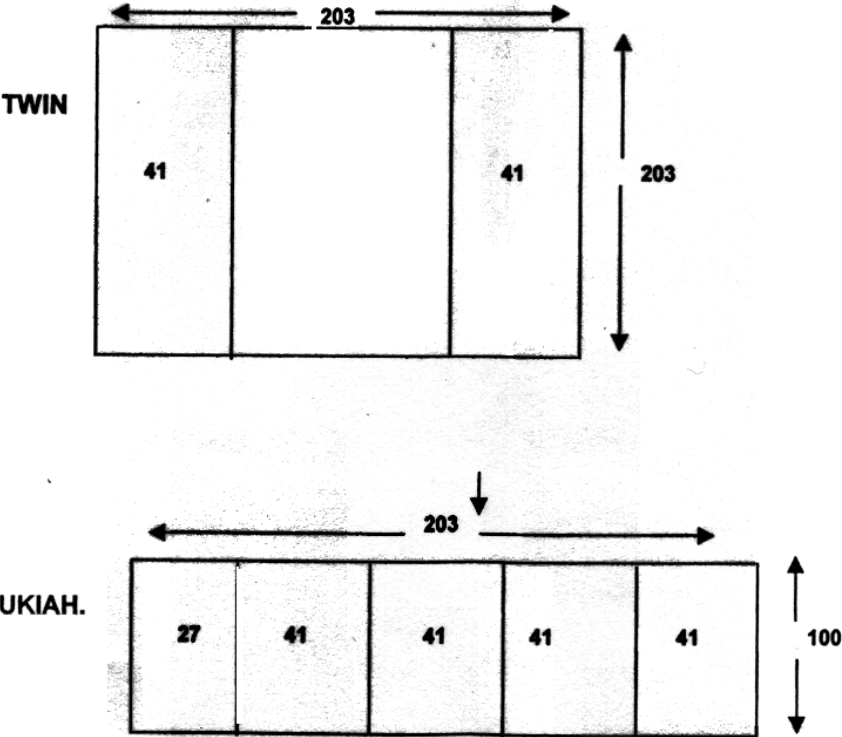
Sort 14

18-Apr-00

Pattern 12 S.E LOG DIAMETER 300

					FEED SPEED	CHIP MM	OPEN FACE MM
RBS	111.00	41.0	208	41.0	97.00	-1	4
	108.50	27.0	203	41.0	94.50	-1	23
							115

Sort 14



COMMENTS

Sort 16

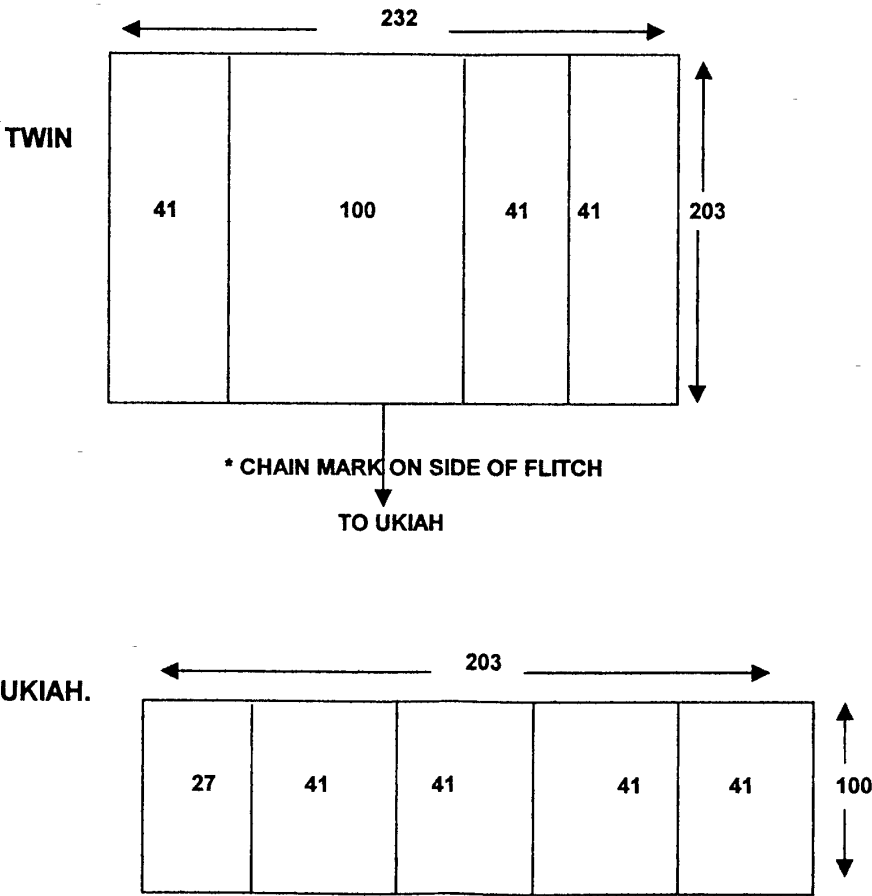
18-Apr-00

Pattern 2

		DIAMETER RANGE :		320	TO	330		OPEN
					FEED SPEED	CHIP MM		FACE MM
RBS	123.00	27.0	232.0	41.0	109.00	-1	14	94
	101.50	41.0	203	41.0	101.50	-1	29	133

Sort 16

Pattern 2



COMMENTS

Sort 18

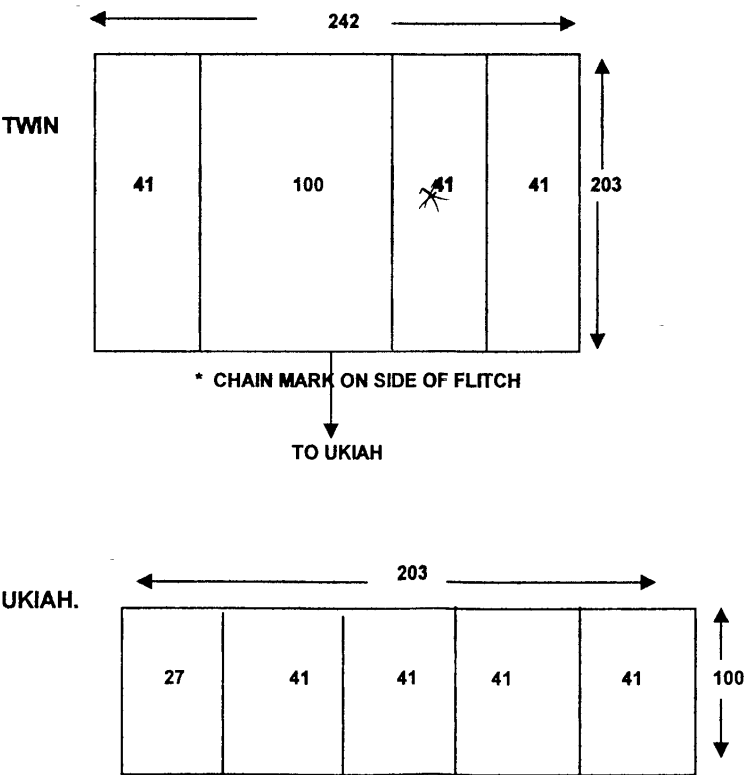
18-Apr-00

Pattern 9

		DIAMETER RANGE :		340	TO	350	OPEN	
				FEED SPEED		CHIP MM	FACE MM	
RBS	116.00	41.0	232.0	51.0	116.00	-1	10	82
	101.50	51.0	203	51.0	101.50	-1	29	137

Sort 18

Pattern 9



COMMENTS

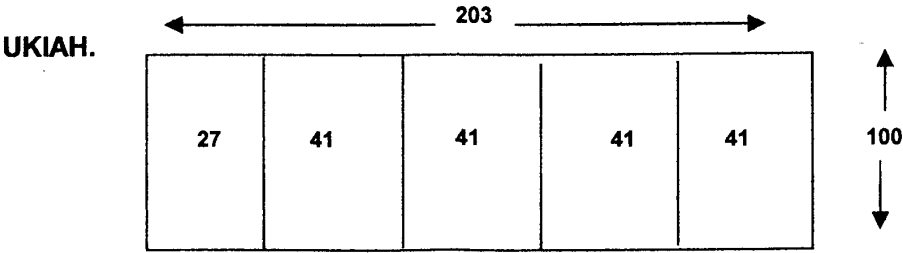
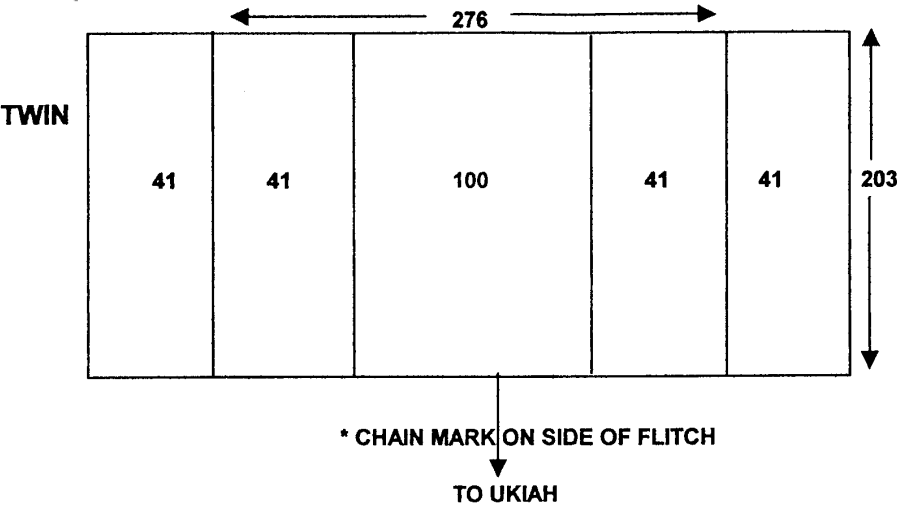
Sort 20

18-Apr-00

Pattern 23

S.E LOG DIAMETER 360

					FEED SPEED	CHIP MM	OPEN FACE MM
RBS	138.00	27.0	276	27.0	138.00	-1	24
	101.50	51.0	203	51.0	101.50	-1	49



COMMENTS

Sort 22

18-Apr-00

Pattern 1

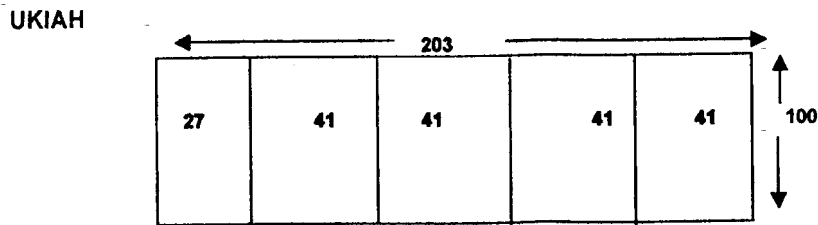
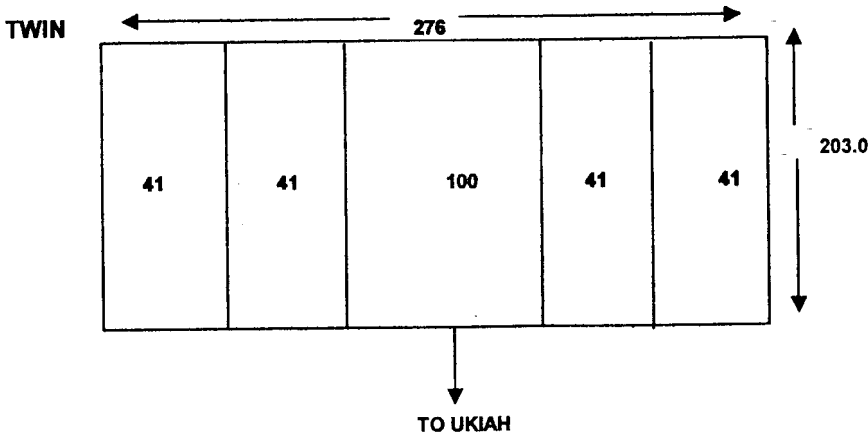
DIAMETER RANGE : **380** TO **390**

							OPEN
					FEED SPEED	CHIP MM	FACE MM
RBS	149.00	27.0	298	27.0	149.00	-1	22
	138.00	41.0	276	41.0	138.00	-1	16
	101.50	41.0	203.0	41.0	101.50	-1	

*CHAIN MARK ON SIDE OF FLITCH ON 3RD PASS

Sort 22

Pattern 1



COMMENTS

SWEEP (MM)	REC%
0	52.55%
20	50.70%
40	42.24%