WoodEye

– inspects and optimises timber at full production speed.

Innovativ Vision

So far WoodEye has helped over 200 wood-working industries to maximise their yields and increase their profitability.

Shouldn't it be your turn now?

WoodEye is a scanner that inspects and optimises sawn and planed timber – at full production speed. 20 years of developmental work and experience from over 200 installations throughout the world provide a guarantee of unrivalled quality and functionality.

One system – three basic designs.

The basis of the system, the actual hardware, is WoodEye. To this is added one of our three application software packages:

WoodEye Cross Cut for cross-cut optimisation
WoodEye Sorter for grading and sorting
WoodEye Parquet & Flooring for parquet and flooring inspection

In addition to these three basic designs, there are also a number of customer-specific software packages for special areas of application, such as window, furniture and parquet manufacturers. These software packages can be used to tailor the system to your own unique requirements.

**No two pieces of timber are alike.
No two customers are alike.
We balance the equation.**

Using wood as a raw material to manufacture products means a constant battle against the vagaries of nature – knots, wane, checks and resin pockets. Each deviation in the timber requires a decision as to how the raw material should be optimised or sorted to make best use of it.

High production speeds make it impossible for the human eye to see every defect and keep all options in mind. This could mean needlessly losing material, because at such high speeds it is impossible to decide how the timber could be best used.

Sometimes you might deliver products of a better quality than the customer ordered, because a "feel" for what is the right quality can vary, both over time and from one inspector to another. Perhaps you are getting complaints from customers because of varying quality from one batch to another?

A multitude of problems – one solution.

WoodEye solves these problems and speeds up production flow. The WoodEye system measures and inspects timber products and at the same time optimises crosscutting and sorting based on a large number of established criteria and quality classes – all at full production speed. The result is maximum yield and minimum wastage. Higher and more consistent quality levels also allow optimal pricing for different and varied specifications.
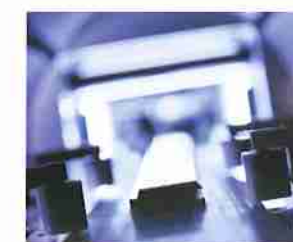
So much more than a timber scanner.

Don't make the mistake of thinking that WoodEye is simply a timber scanner that controls saws and sorting equipment. It is a production tool that gives you an overall picture of the production process, with fantastic opportunities for optimising yield for various purposes. The system allows the production flow to be controlled at an early stage in response to specific customer orders – an option that allows you to make maximum use of your materials – so you can meet your customers' quality requirements and, at the same time, your company's requirements for profitability.

Can you afford to turn down all these benefits?

WoodEye produces increased profitability.

You will be given efficient control of the entire conversion chain. WoodEye optimises the value yield with respect to a large number of parameters simultaneously. This provides the prerequisites for a more consistent quality in every single product range and greater volume, which in turn leads to higher returns. The "right" quality also allows for optimal pricing. The opportunity to control the quality levels also results in a higher yield and less wastage. For a lot of companies, investing in WoodEye also means that rationalisations can be made in staff levels.

MANUAL GRADING   WOODEYE GRADING
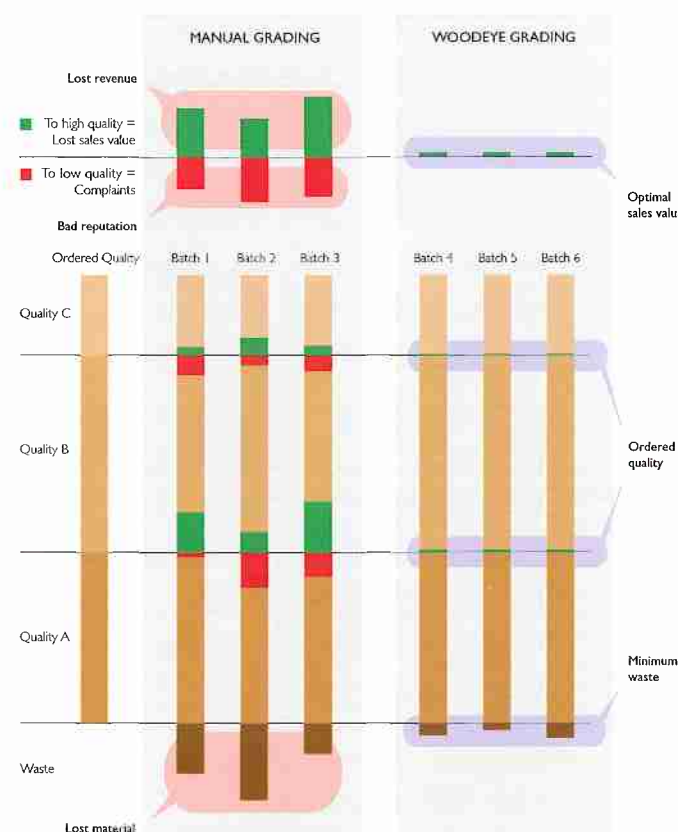
WoodEye also allows for production controlled by customer orders.

The system's ability to handle a large number of complex sorting rules simultaneously means that you can produce customer-specific products earlier in the conversion process – and you make the best use of the materials.

WoodEye produces valuable statistics.

WoodEye continuously collects statistics on production, which can then be linked to many factors such as supplier, customer, work cycle and product. This information then provides versatile basic data for efficient quality control and business development. You can also link the system in to an MPC system in order to create an overall production control system.

WoodEye is a proven product.

As a result of our lengthy collaboration with companies supplying machinery to the woodworking industry, we have developed standardised interfaces for controlling cross-cutting and sorting lines and also trimming mills. Together with sensor systems and computers, they comprise a ready-to-use system.

WoodEye is simple to use.

We have used our knowledge of different types of timber and our experience of various analysis methods to create standardised software packages with very advanced analysis options. Despite this the system is still very easy to use. All the various functions are shown on a well laid-out touch-screen in clear language and with international language options. From here the operator can carry out all necessary com-
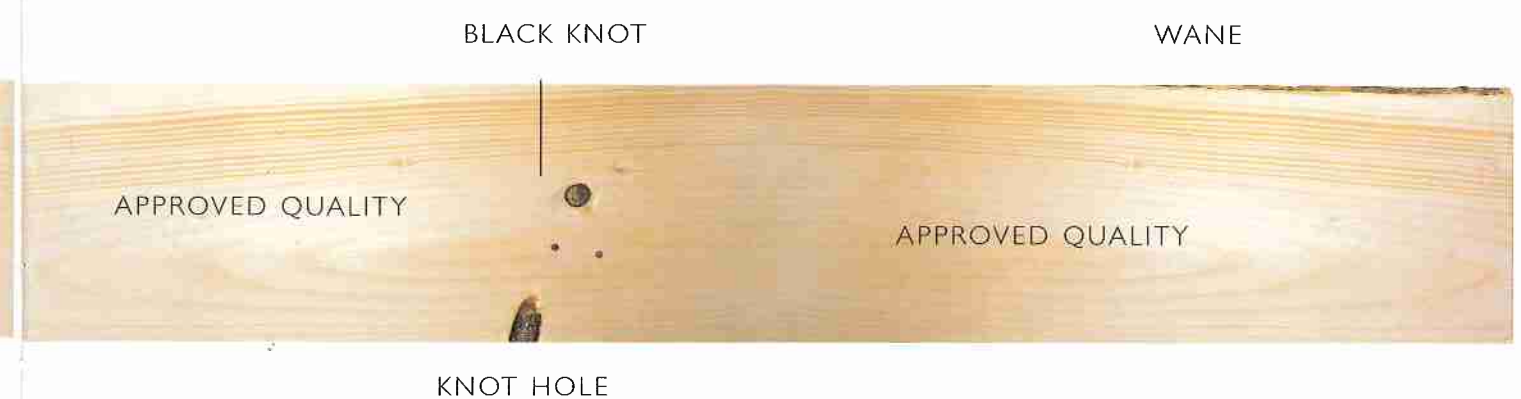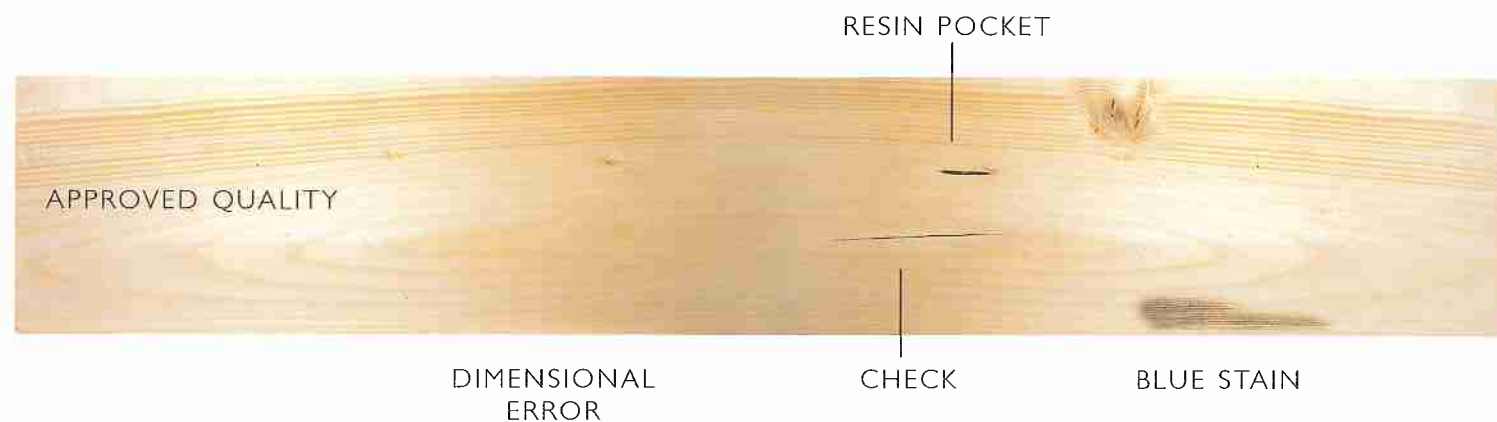

mands and also monitor production. Whenever the product demands are changed, the measuring methods can be easily adapted and the sorting rules adjusted. Clear icons and images on-screen show the measurements being carried out and display the analysis results. Several timber dimensions can be dealt with at the same time.

WoodEye is flexible.

The advanced technology and the advanced computations do not represent a burden for the operator. Instead the main feature of WoodEye is its simplicity and flexibility in all situations: it is simple to introduce into the production line and to put into operation, easy to learn to operate and to use in day-to-day production, easy to reset for different production runs and simple to expand when the circumstances change.

What kinds of defects are detected?

RESIN POCKET

BLACK KNOT

WANE

APPROVED QUALITY

APPROVED QUALITY

APPROVED QUALITY

DIMENSIONAL ERROR

CHECK

BLUE STAIN

KNOT HOLE

The sensor system registers all the important characteristics that determine how the piece of timber is to be crosscut, sorted or marked.
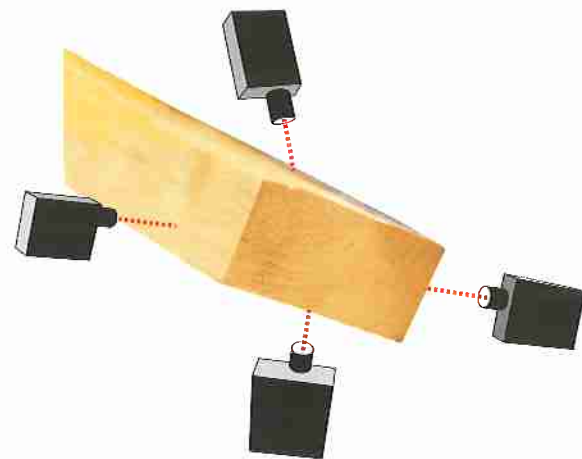
Up to four surfaces can be scanned at the same time at full production speed and the system continuously supplies control information to the other items of equipment in the production line. WoodEye is able to detect most deviations in the timber, both biological and geometric. Light and dark knots can be classified by type, size and position. Rot, blue stains, resin pockets and pith are registered, as well as dimensional defects, mechanical damage, knot holes and wane. When manufacturing flooring and parquet from hardwoods such as oak, beech, etc. the timber can also be sorted by shade and structure. WoodEye works with most softwoods and also most light-coloured hardwoods.
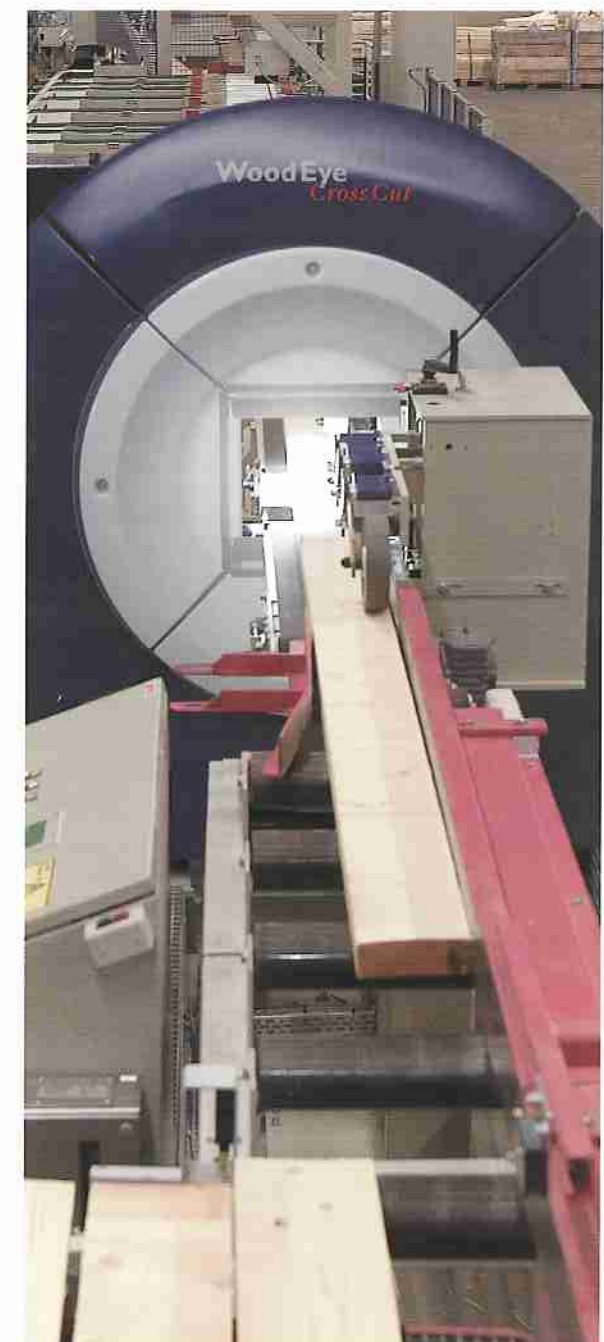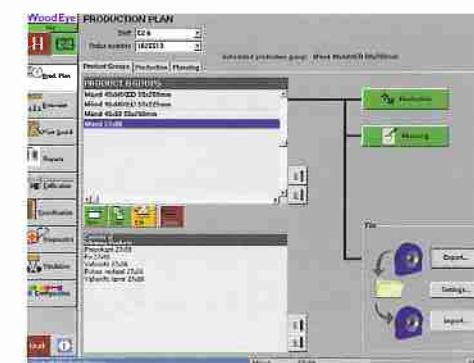

Your best recruitment decision — advanced sensors.

Thanks to advanced imaging sensors the system is able to find and analyse defects at full production speed. The combination of several measuring methods and high-speed computers produces very accurate and reliable inspection results. Depending on the design, WoodEye has the following measurement methods:

● High resolution black/white and colour sensors for measuring the defects' positions, shapes and extent as well as structures, differences in shade, etc. They also measure the most common defects such as resin pockets, knots, checks, blue stains, etc.

● Laser-based detection of wood fibre direction. This is a very efficient way of detecting defects like light knots, blue stains and rot.

● Dimensional measurement, which measures the length and width of the timber on all inspected sides.

● Laser-based profile measurement, which measures the external shape of the timber and detects knotholes, wane and other defects.

● Advanced colour sensors, allow WoodEye to detect differences in shade and small colour defects in a unique way. A sensor that can do more than ever before.

● External sensors can also be added to WoodEye for X-ray imaging, stress grading, measuring moisture content and deformation, etc.
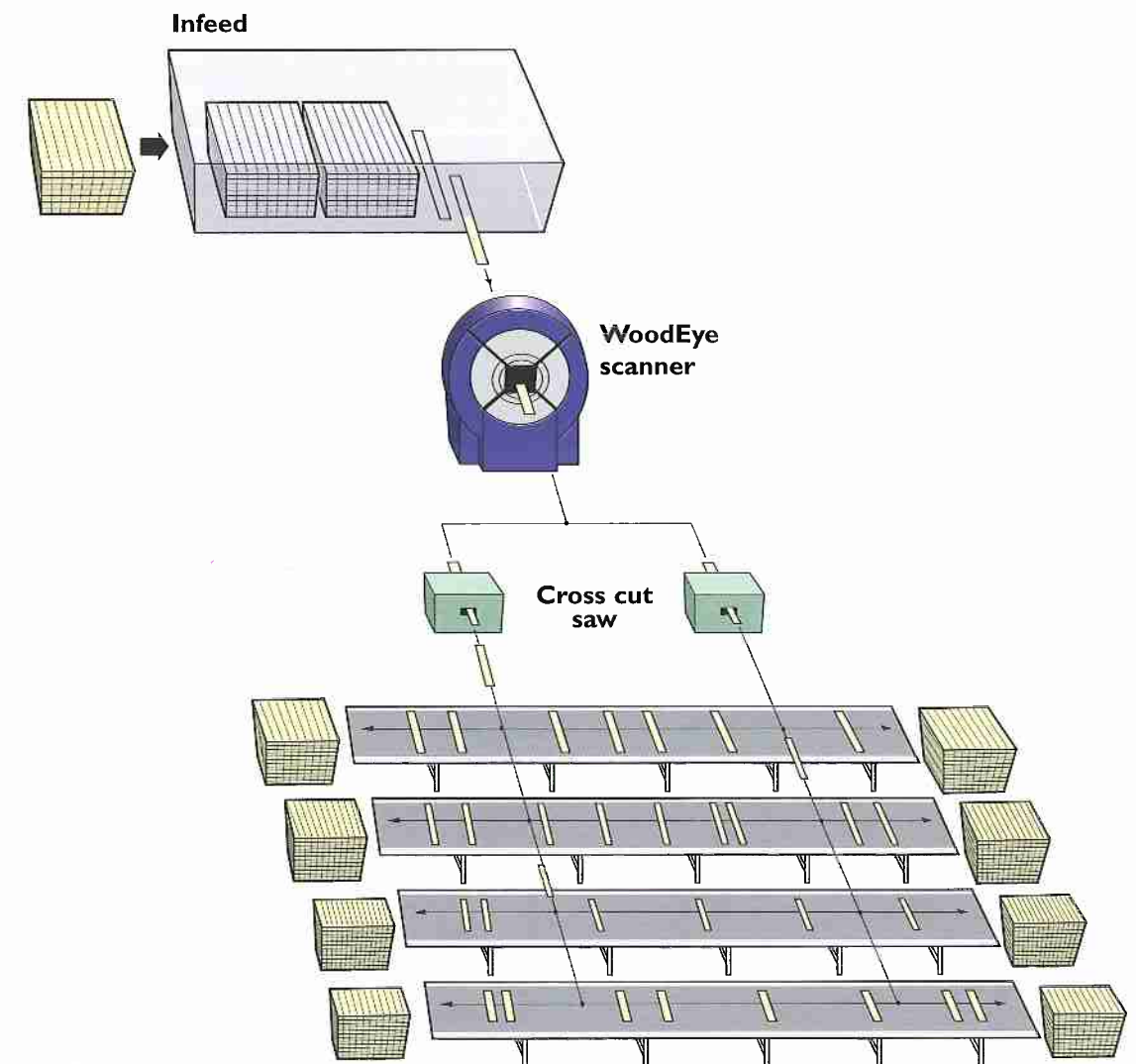
WoodEye
Cross Cut

WoodEye Cross Cut takes into consideration all the inspected surfaces and all orientation options to optimise the crosscut. The crosscutting is based on information about the value, number, quality and length of the components according to the customer's own production plan. Crosscutting can also be controlled so that each component has defect-free ends for finger jointing. WoodEye Cross Cut compares the scanned product's characteristics with the criteria set up for the production in question and sends control information to saws and marking equipment.
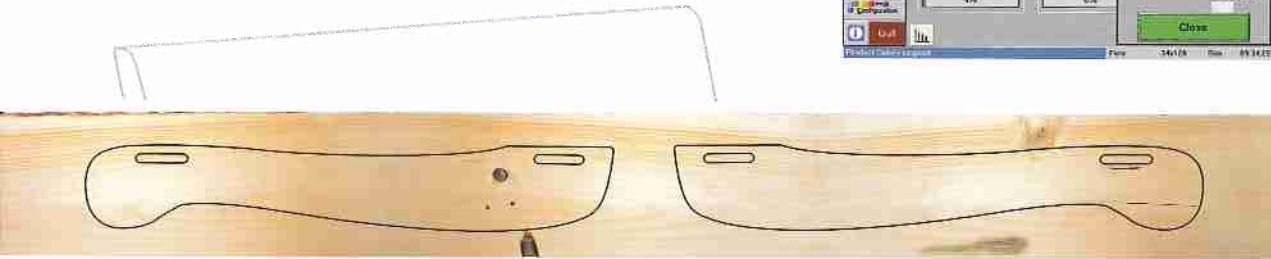
WoodEye for component manufacture

A lot of our customers manufacture different types of components, and in this case a WoodEye Cross Cut in its basic version is the right choice. If there is a need for further specialisation of components, we are able to offer our customer-specific software.

WoodEye for cross cut optimising

Infeed

WoodEye scanner

Cross cut saw

WoodEye for furniture manufacture

WoodEye Cross Cut can be optimised for the manufacture of furniture by using the customer-specific software for furniture. The software is unique to furniture makers and it allows the shape of the furniture component to be imported from a CAD system, which is then overlaid on the surface of the crosscut blanks. WoodEye "sneaks" the finished shape in between the defects in the crosscut blanks.

WoodEye for window manufacture

Nowdays most frame parts are laminated and consist of three components that are glued together. There will be different quality requirements for each of these components, depending on where they are to be used and whether or not they are visible in the finished product. WoodEye Cross Cut with software for the manufacture of windows can handle both the complex sorting rules and fixed lengths that are common in window production. We supplied our first window system as long ago as 1986 and so we have a lot of experience in this field.
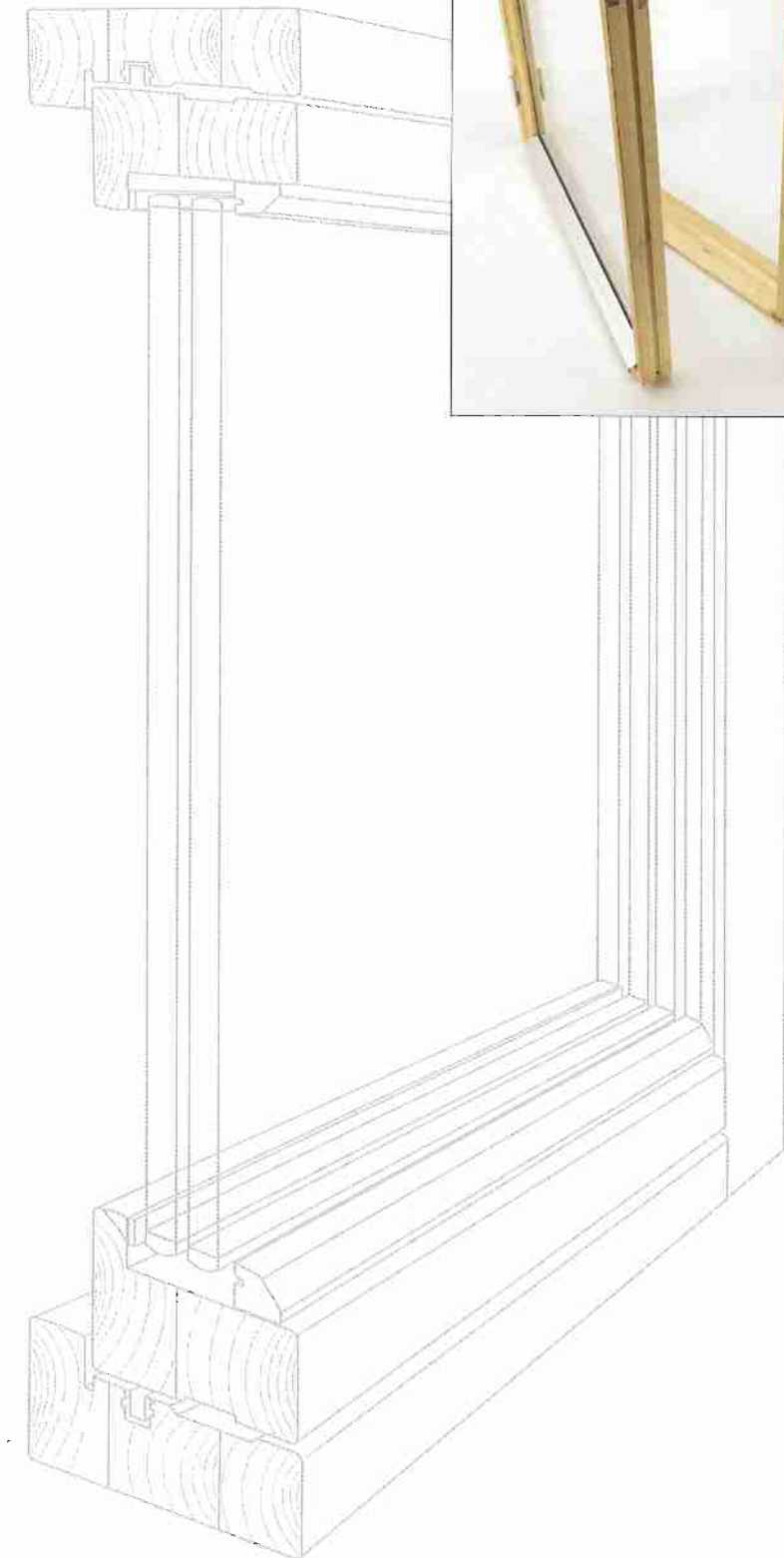
WoodEye for construction wood and laminated beam manufacture

This software for use with WoodEye Cross Cut can handle groups of defects such as knot area per unit length/surface – of considerable importance for the quality of the piece and for calculating its strength. The manufacturing process often involves finger joints and so we have made it possible to ensure that the ends are free of knots. The system can also be supplied with equipment for stress grading, such as X-ray imaging.
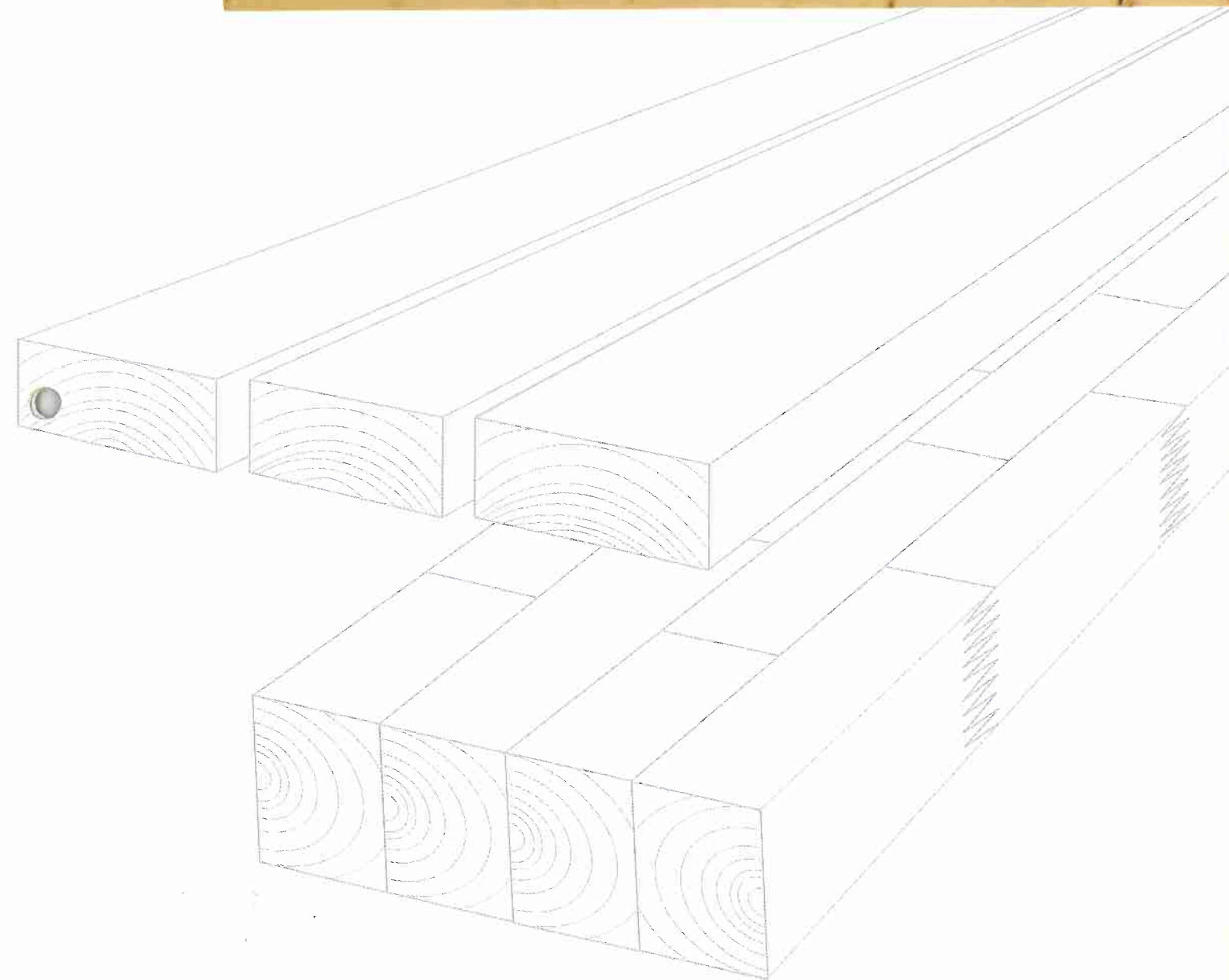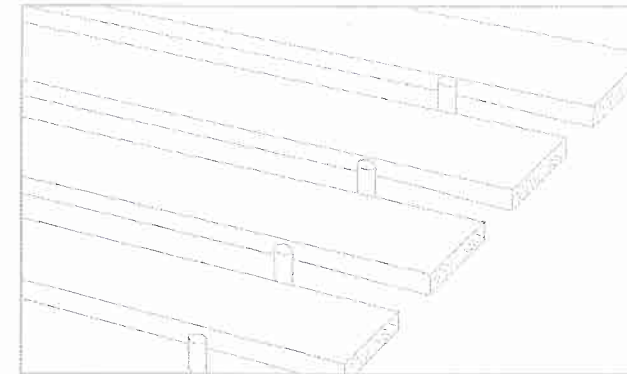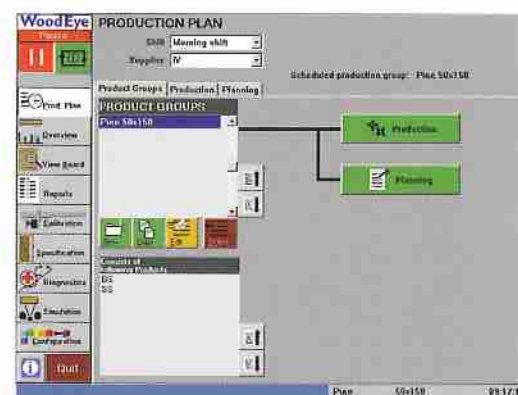
WoodEye *Sorter*

WoodEye Sorter is used in trimming mills, planing mills or in other further refinement processes for sorting whole boards or components of various kinds. The system sorts the materials into the correct quality class according to criteria for permissible defects, dimensions, profiles, etc. WoodEye provides you with a powerful and cost-effective tool that controls the entire process efficiently.

PROFILE MEASURING LASERS

TRACHID MEASURING SENSORS
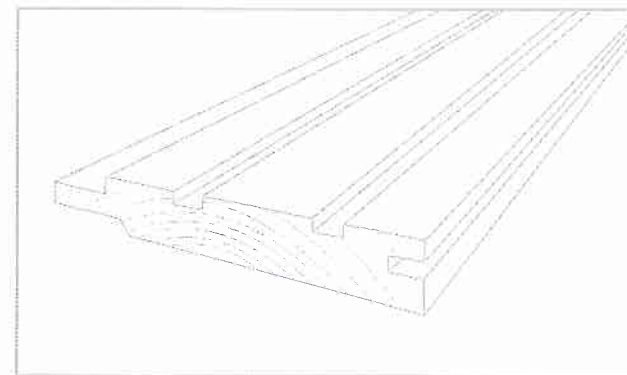
HIGH RESOLUTION AND MULTISENSOR CAMERAS
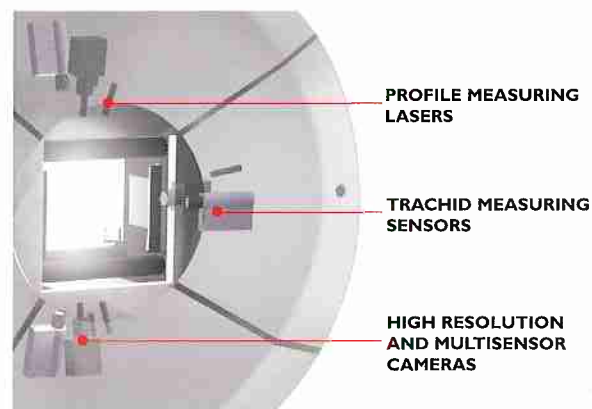
It allows you to sort planed or unplaned timber into a large number of quality classes. Unique sorting rules are defined for different areas of application and saved in the system. Existing qualities and products can be modified at any time to meet the customer's needs. New profiles can also be easily created.
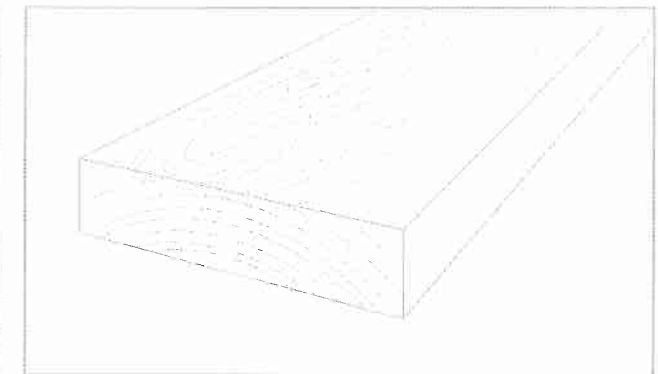
WoodEye for trimming mill sorting

Customer order-controlled automated sorting is the key word for modern saw milling. Now for the first time you can work to the customer's order as early as in the trimming mill. WoodEye Sorter in its trimming design has the unique feature that it can continue with the sawmill's normal sorting operation in parallel with customer-specific products. This produces a number of benefits, such as the ability to offer fully optimised products. With a varied customer base, sawmills can use every "last fibre" of the timber.

WoodEye for planer

The growth in the DIY market has led to an ever-increasing demand for products including dimensioned and surface-finished product. The latest planers, and the WoodEye Sorter with planer software, can work at extremely high speeds. The system focuses on dimension measuring and detecting wane and planer hit-and-miss, but it does of course also detect defects such as knots, resin pockets, etc.
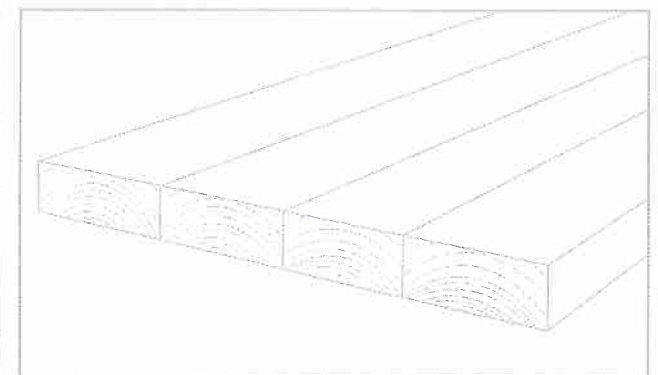
WoodEye for moulder

WoodEye Sorter with moulder software is for anyone wanting to produce profiled material such as panels and mouldings. In addition to the standard functions, its features also include basic profile measuring and software for detecting small holes. WoodEye Sorter for moulders can also be combined with our external sensor, Shape, for warp measuring.

WoodEye for manufacturing edge glued panels

WoodEye Sorter with software for edge glued panels includes special functions such as the detection of various types of knots and small checks. The system distinguishes between different types of knots, such as bark-ringed knots, black-ringed knots, loose knots and rotten knots – important for appearance and stability. The hit-and-miss plane function, i.e. the function that detects unplaned parts of the material, can be included with this version.

WoodEye
Parquet & Flooring

It is not easy to tell a machine what is "good-looking", but with the WoodEye Parquet for parquet manufacture and the WoodEye Flooring for flooring manufacture we have probably got as close to ae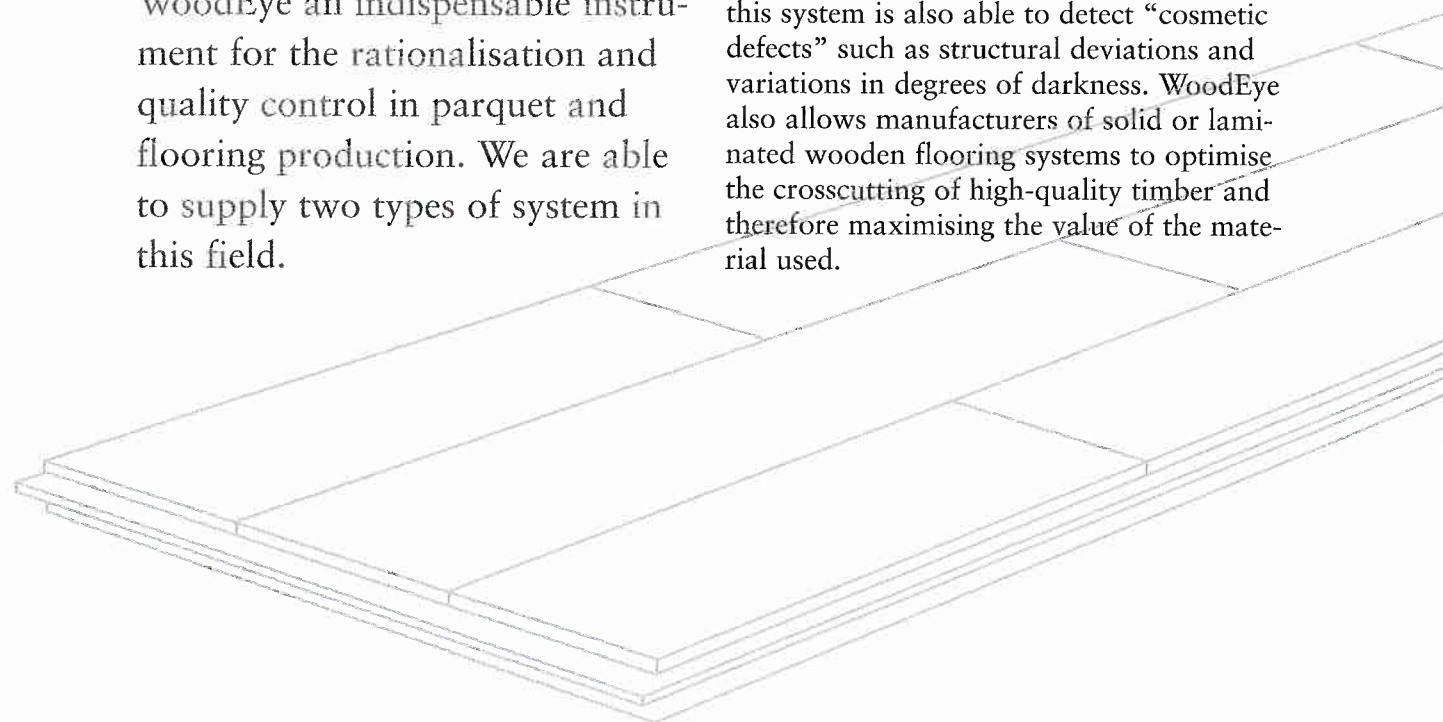sthetic sorting as is possible. Functions such as structure measuring, darkness measuring and colour measuring make WoodEye an indispensable instrument for the rationalisation and quality control in parquet and flooring production. We are able to supply two types of system in this field.

WoodEye Parquet for manufacturing parquet

One of the most important measurements for parquet sorting is colour detection. Our unique colour sensor provides entirely new opportunities for detecting differences in shade and colour defects – even at high feed speeds.

WoodEye Flooring for manufacturing solid flooring

In addition to detecting knots and checks, this system is also able to detect "cosmetic defects" such as structural deviations and variations in degrees of darkness. WoodEye also allows manufacturers of solid or laminated wooden flooring systems to optimise the crosscutting of high-quality timber and therefore maximising the value of the material used.

Want to expand your system? No problem.

In addition to the systems described in this brochure, other sensors, measuring methods, performance levels and software are also available. You can find further information on upgrades in our separate sheet "options/upgrades".

Service, support and training always available.

In order to ensure the value of your WoodEye-system we have created System Service & Support – a complete concept for technical support, maintenance, service and training.
Here you will find a wide range of products and services, available individually or as value-for-money packages. We recommend that you sign a service agreement to ensure the best possible support and service.
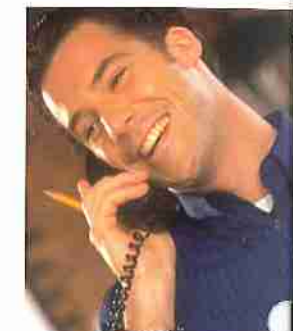
SUPPORT – Fast help by telephone and modem

SERVICE – Preventive and trouble-shooting service on site

UPDATING – Continuous software updates ensures that you always have the fastest performance available

SPARE PARTS – Keeping the right part in stock keeps expensive downtime to a minimum

TRAINING – Money invested in knowledge is always money well spent

UPGRADING – Allow WoodEye to grow with your orders

WoodEye develops your business.

A strong competitive edge is based largely on an ability to change the operation and the production lines quickly to meet the new demands from the market. WoodEye has been designed to contribute to the development of the operation, in part as a tool for efficient production control and in part by the opportunities for expansion with sensors, new software and new inspecting options.

Reliability of service and safety are already built in.

WoodEye is based on tried and tested technology and standard components, all of which represents a guarantee of a high level of reliability and the definite availability of spare parts. WoodEye continuously monitors the various parts of the system during operation, so that any malfunction can be detected immediately. The in-built modem allows our service technicians to make contact with the system in order to solve any problems quickly or provide technical support.

WoodEye
Parquet & Flooring

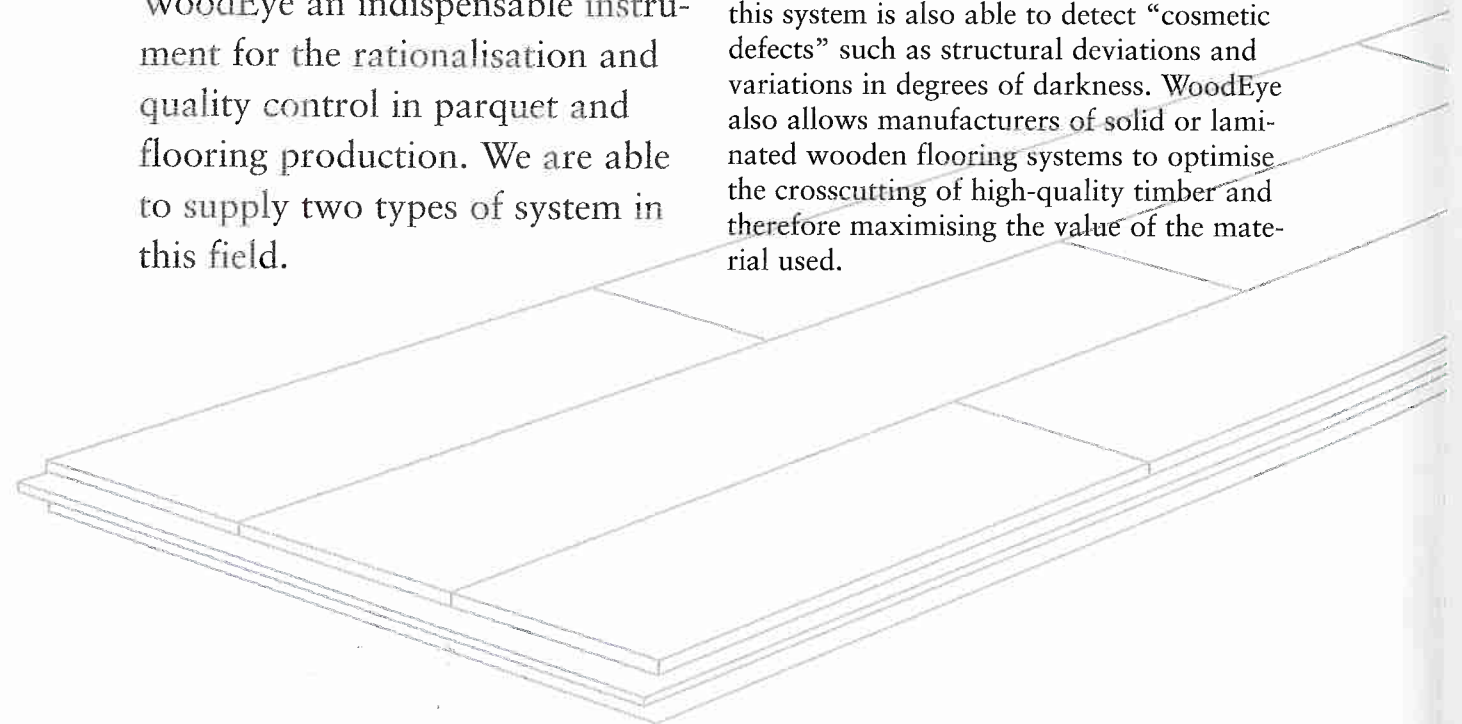## WoodEye for parquet and flooring manufacture

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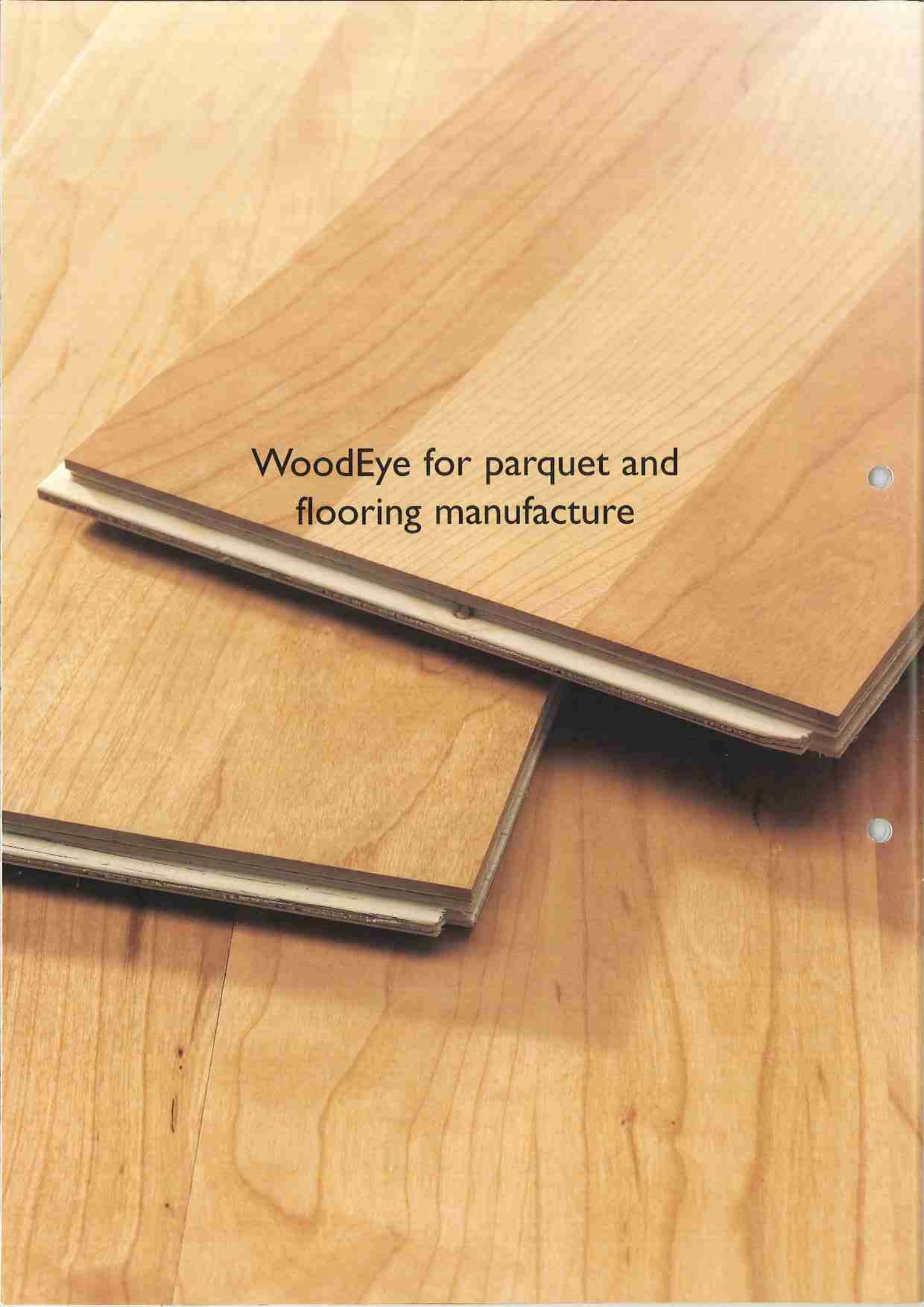
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WoodEye for parquet and flooring manufacture

20 years of experience means that we speak your language

Innovativ Vision AB is the company behind WoodEye. We are a world-leading supplier of quality control systems in the woodworking industry. The company has its roots in the internationally successful research carried out since the 1970s into computerised image processing at Linköping University. The current system is based on 20 years of development work and unique experiences from over 200 plants in Scandinavia, Central Europe, North and South America, Asia, Oceania and the Baltic States. You will find us to be a partner who understands the way you work and who talks your "language".

You will be given access to an advanced and highly developed system that passed the developmental stage and any teething problems a long time ago.

Innovativ Vision AB