Achieving full sawmill recovery

Sawmills need to make the most of every log. Color vision technology can help.

The unique characteristics of wood have a direct impact on how logs and boards are processed throughout the sawmill. By understanding these unique characteristics, an operator can refine their production processes and extract more value from their raw materials. This means more time is spent on identifying specific characteristics of boards to produce better optimization solutions.

Today's sawmills are concerned with the decline in size and quality of logs that are available for wood manufacturing. Mills are determined to find new ways to maximize the value from each log during the production process. The varying physical characteristics of each log, and the way in which the log is broken down, will affect the quality and value of the boards produced.

The DynaVision™ chroma+scan 3300 sensor from LMI Technologies, Inc. can detect board defects earlier in the production process. It also lets the optimizer improve existing cutting decisions to avoid defects such as splits. The sensor is shown here installed on a Comact EdgeExpert system.

In this respect the wood manufacturing industry seeks new technology to ensure that the highest level of value is extracted from each board produced. In the past, board value was only evaluated in the planner mill. At this point, visual information was used to help increase the value of a board by looking for defects such as, knots, splits, rot, or stain. In the mills today, applying the use of vision to increase the value of a board in the planer mill is not enough.

Identify Board Defects Earlier

Sawmills need to be able to identify board defects earlier in the production process, according to LMI Technologies, Inc. of Vancouver, British Columbia.

This allows the optimizer to control each cutting decision through dimensional and visual information collected through a sensor system, the company said.

Many sawmills have installed LMI Technologies' DynaVision™ chroma+scan 3300 sensor (Figures 1 and 2) to achieve better value recovery. This particular sensor integrates high-density 3D differential profiles and true color vision for defect detection.

Combining these two technologies into a single sensor provides the sawmill with the best technology to increase the value of each cutting decision at the edger and trimmer. This field proven technology provides early detection of wood defects, such as cracks, stains, knots, and pitch pockets from the boards. The value recovery is immediately observed through improved productivity and a higher value end product.

Make better decisions at the edger

Mr. Yvon Hubert, Vice-President of Optimization and Control at Comact Equipment, Inc., a North American leader in the design and manufacturing of sawmill technology and equipment for the lumber industry, explains that "mills can now make better decisions at the edger. Color vision provides a solution for specific problems that have occurred, such as split wood. In this particular case color vision technology helps to locate defects to reduce the problem of cracked wood."

Hubert goes on to explain that he has also seen more applications where mills want to sort their lumber at the trimmer. At this stage, mills want to send clear lumber to a different process so they can quickly compile the low-grade lumber for faster kiln dry schedules. Using top and

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Plug and play classification system

The Comact GradExpert is a plug and play classification solution that encompasses chains, scanners and analysis software all in one. With an accuracy rate of 98 percent, GradExpert uses proven laser and optical detection technologies to reveal both geometric anomalies such as warp, twist and crook as well as surface irregularities such as knots, splits, rot and paint.

High-speed LineScan cameras with 48 in. overlapping scan patterns ensure no visual defect escapes detection. GradExpert can process over three times as many boards per hour. It can classify up to 220 boards per minute with an almost non-existent margin of error. Overall, the system is designed as a complete and unique unit, boasting the industry's fastest and most accurate grading, and integrating easily into any production line.

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Planer optimizer

The new Graderless Planer Optimizer from Autolog is comprised of two sensor modules mounted on each side of a retractable frame controlled with a VFD. Four geometric sensors are located on one side of the frame and four vision sensors are located on the other side.

The new system is supplied with an improved UV code printer/reader with 100 percent reading accuracy, an air knife to keep sensors cleaned, and a board tracking system to memorize the board's last 150,000 data and solutions.

The optimizer and concentrator cabinets are equipped with air conditioning units and UPS.

Existing Autolog planer optimizers can be retrofitted with the new technology.

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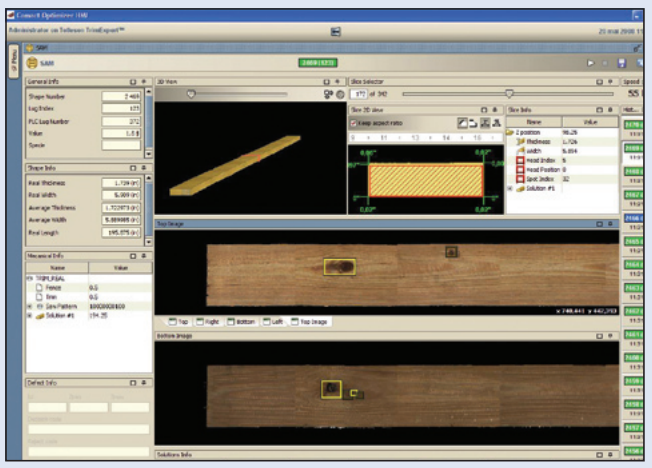
bottom color vision to identify rot, the mill owner can cut right at the mill to avoid drying costs.

DynaVision chroma+scan 3300 Sensor Detailed The DynaVision chroma+scan 3300 sensor from LMI Technologies, Inc. can be used to detect various board defects earlier in the production process. By collecting defect data early in the production process the optimizer can improve their cutting decisions to avoid defects such as splits. Obviously, splits can affect many areas of the production process. Firstly, the value of the board is reduced. Secondly, the mill productivity comes to a halt if a split board happens to break and jam up a machine.



DynaVision chroma+scan 3300 sensor from LMI Technologies, Inc. is used to collect data to identify knots that are displayed on the GUI provided by the Comact Optimizer.

The DynaVision chroma+scan 3300 sensor is field proven, helping to improve value recovery and productivity in several sawmills. Through the combined use of color vision information and 3D profiles, improved cutting decisions are made at the edger and trimmer. Simply put, applying defect detection early in the production process improves the value of each board.

The DynaVision chroma+scan 3300 sensor provides a superior value recovery solution in the sawmill. The profile information combined with the color vision data helps the optimizer to identify various wood properties early in the production process to ensure that the value of each board is maximized.

About LMI Technologies Inc.

LMI Technologies designs and manufactures scalable vision sensor technology for OEMs and system integrators. The wood division offers a complete line of products for different stages of the wood manufacturing process, and has over 10,000 sensors in the wood industry and over 30 years of know-how to create unique vision sensor solutions.

Article provided by LMI Technologies. Photos courtesy of Comact Equipment, Inc. MPN

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