



COMACT

Innovative 360° wood inspection and quality optimization systems help sawmills grade wood with the accuracy and speed that boosts profits.

Sawmills face a lot of work and expense to get each bundle of wood that might go into a new deck, fence or building properly prepared for sale. For example, planks have to be measured, cut precisely, grouped by color and accurately graded in appearance from 0-3 based on a complex series of rules taking into account such factors as size of knots, grub holes and cracks. The grading process can be a drain on both human and financial resources, and many of today's sawmills might be missing out on opportunities for optimizing their throughput and profitability.

According to Patrick Farley, Hardware Development Leader at COMACT, a Quebec-based manufacturer of wood inspection and optimization equipment, improper grading — that is, not accurately following the stringent wood appearance guidelines of an industry scale based on "perfect" 0 for upscale applications, #1 for strength or highly visible areas like decks and fences, #2 for use within walls and #3 for economy functions — can have serious implications for sawmills from both the regulatory and customer service standpoints. For example, he says, in addition to customer dissatisfaction, a sawmill that grades more than 5% #2 grade planks as the superior, cleaner #1 grade faces the risk of losing their license or their right to sell a particular grade. And, adding to the challenge is the fact that human graders may have mere seconds to examine both sides of a 24 foot plank and make a determination.

"It's not unusual for sawmills to err on the side of caution and rate many higher quality #1 planks as #2 grade just to be on the safe side," he explained. "This is costing them money every day."

From manual to automatic

Fortunately this situation has gotten a little less common with the availability of innovations such as COMACT's wood inspection system. The company's custom-built equipment gives sawmills the ability to perform 360° inspections of 24 foot planks at speeds of up to 4-5 per second — about 300 per minute — an order of magnitude beyond what any human inspector could attain, allowing significant increases in throughput. Further, it identifies imperfections



» COMACT's custom-built wood inspection system.



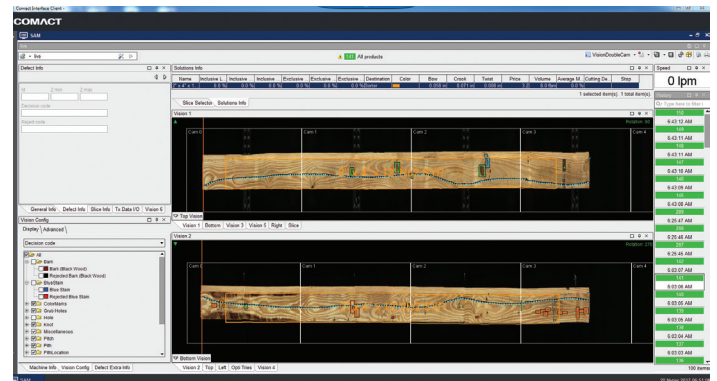
» (Above and right) COMACT's custom software interface allows lumber mills to grade planks to an international standard.

to within 10/100,000 of an inch or 10 mils and, it does it with accuracy rates in the high 90s using COMACT's proprietary software algorithms.

"The machines do 100% of the inspection and can operate pretty much unmanned, which is how the vast majority of our customers use them," noted Farley. "Unlike human operators, the machine never gets tired and is consistently accurate plank after plank, letting sawmills redeploy their human resources to higher value tasks while increasing their grading accuracy and profitability."

However, as valuable as this capability might be, perhaps potentially even more profitable for sawmills is COMACT's automated optimization capabilities. Sawmills can, for example, take #2 graded planks, and using the company's machines and proprietary algorithms, calculate how much grade #1 material they could reclaim from cutting the most profitable combination of different sized planks.

"Customers are taking a closer look at their own production, and even buying #2 graded bundles on the open market and optimizing and reselling them, driving substantial profits," explained Farley. "The machine can easily pay for itself in 6-12 months."



Valuable support from Teledyne DALSA

In addition to COMACT's strong core competencies in software and product development, Farley notes that a key to the power of the company's machines has been the capabilities of the cameras that industry partner Teledyne DALSA has been providing them for more than 15 years. The images, he notes, are of outstanding quality and the camera speed capabilities even exceed the ultra-fast mechanical conveyers of the equipment.

"It's easier to do great image processing when you have nice clean images, and that's what Teledyne DALSA cameras give us," he said. "The cameras reduce the computational power needed and help optimize the throughput gains we are able to deliver to our customers."

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Speaking of image quality, Farley notes that Teledyne DALSA cameras provide far superior color fidelity, helping COMACT's machines match plank colors more accurately — vitally important in many markets.

"There can actually be a wide range of variations in shades of pink, and the closer the color match among planks in a bundle of wood, the better — it can make a real difference in the aesthetics of an application like decking where users want uniform color across planks positioned side-by-side," Farley explained.

In fact, to allow COMACT to deliver industry leading color matching capability to its customers, Farley notes that he personally "road tested" every camera brand that he could get his hands on — and the new Teledyne DALSA Linea™ line scan camera was the clear choice.

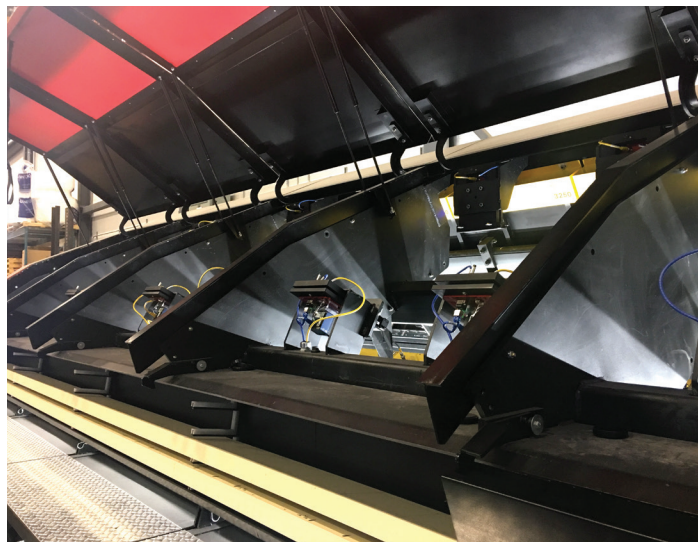
"That camera really exceeded the performance of everything else we tried," he said. "It wasn't even in full production yet at the time, but we jumped on it anyway — I think we were the first buyer!"

Farley also likes Teledyne DALSA's value-added customer service capabilities, which, surprisingly, go beyond the equipment that they actually sell to him.

"Any camera supplier can hopefully help troubleshoot camera issues — although Teledyne DALSA does that very well for us," he said. "But beyond that, with their core expertise in related systems around optics, illumination and image capture, they often provide much more comprehensive support, which can be very valuable, and help us to stretch our sometimes limited resources."

Long term partners in innovation

Farley notes that his confidence in Teledyne DALSA products and service has turned the company into a highly trusted technology supplier — one that he calls early and often as COMACT makes plans for developing innovative new products. For example, based on customer needs that COMACT has identified, superior wood-disease identifying solutions and simpler measurement techniques are on their product development short-list, both of which, he notes, dovetail well into new products about to be released by Teledyne DALSA.



» COMACT wood inspection system can inspect 24 foot planks at up to 4-5 per second or ~300 per minute.

"We're working hard to keep delivering superior solutions to our customers, and as we incorporate even greater intelligence into our machines, we'll probably be the first in line for these — and future — Teledyne DALSA products as well," said Farley. 🦋

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