

Customer Requirement:

Integrate analog sensors into existing carriage control system to accurately detect and calculate the length of logs

Banner Solution:

An array of L-GAGE[®] LT3 sensors modified for enhanced optical power and increased reliability

Why Banner?

Customization—Banner was one of the few companies able to take an existing product and modify it to meet the lumber mill's demanding application and challenging environment

Customer Benefits:

- **Accuracy**—the LT3s give an accurate reading of uneven and spotty log surfaces from the required long-distance range
- **Successful retrofit**—by choosing the LT3s, the mill was able to operate their existing carriage system and avoid redesign costs



L-GAGE LT3 Special Features:

- Model Number: LT3BDQ-76844
- Lower threshold and modified lens for improved signal strength at longer distances

More on bannerengineering.com:

- [Standard L-GAGE LT3 Series Overview](#)
- [Product Literature](#)

Modified LT3 sensor improves lumber carriage control system



LT3 array

The automated lumber carriage system picks a log, clamps it and brings it to the saw for milling. An array of LT3s above the carriage are used to detect and measure various points along the log.

Background

Lumber mills try to maximize their resources and cut each log to its potential. To this end, carriage control systems work in conjunction with lumber saws to get the most usable board feet per log. The automated system scans the logs during the milling process—sensing when a log is present and how long it is.

Challenge

When an Idaho-based integrator was asked to repair the optical portion of a mill's carriage system, they discovered that the OEM no longer made or supported the type of sensors used in the existing design. The integrator needed to find an analog sensing option that would not only fit into the current framework, but could withstand the rugged and demanding milling environment. A lumber mill is dirty and a log's surface is uneven and inconsistent—the sensors may not see dark spots on the log and, as a result, give an inaccurate output. The solution needed to be mounted safely away from the saw and debris yet reliably detect the logs.

Solution

Banner customized the LT3 sensor to retrofit the mill's existing system, essentially creating one of the largest diffuse light curtains in use. The LT3 is designed to provide precise, long-distance gauging by measuring how quickly light travels to an object and back again. With additional lens and threshold modifications, the LT3 array effectively detects logs from above the carriage—regardless of color and size variations—and sends high-speed readings to PLCs for measurement. With the LT3, Banner provided a fast, accurate and well-designed solution that saved the mill significant costs.