

## Wood Plank Laser Measurement

**Challenge:** Minimize waste and downtime from imperfect log cuts.

**Solution:** Laser measurement sensor, PLC, presence/absence sensor, tower light.

**Story:** You could argue that anything that is manufactured has the potential for defects. This argument seems obvious on high speed production line creating a custom component for the automotive, aerospace, or medical field. But what about the non-traditional manufacturing environment? Well, they have defects too!

A pallet manufacturer approached the engineers at EMP to solve one of their manufacturing defects that continued to occur. The customer manufactures pallets by first cutting each log into planks. These planks need to be a certain width with straight cuts on each side. If either of these is not achieved, the final wooden planks can not be formed into a pallet and are therefore scrapped.

The EMP engineers came up with a solution to minimize this scrap. After the initial cut, each wooden plank is placed on a conveyor. As plank moves down the conveyor in a guided position, a presence/absence sensor is used to tell the PLC if a 40" or 48" plank is being run. Next, two laser measurement sensors placed on either side of the wooden plank are used to measure the distance from the sensor to the wooden plank. This measurement is sent back to a PLC in the form of voltage. EMP also created a custom program to compute the overall width of the plank. This calculation takes into place and curvation of the plank on either side.



The two laser sensors also take measurements every 2 inches to verify that each side of the plank is straight. All of this data is being captured in the PLC and stored to a file for future reference. This has greatly minimized the customer's scrap and therefore improved their bottom line!

Do you have a reoccurring manufacturing defect? Reach out to the engineers at EMP today!