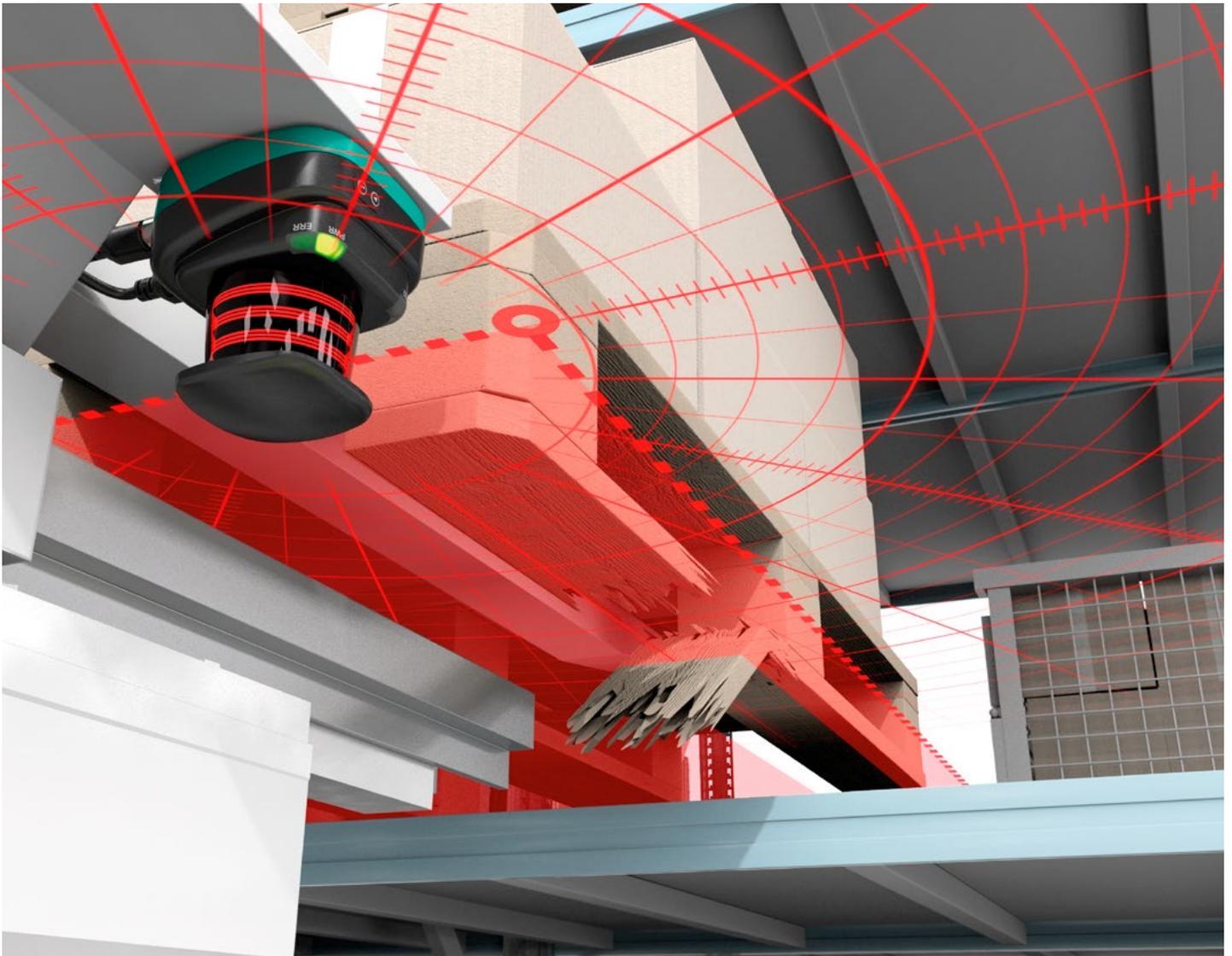


Precise Broken Pallet Detection in High Bay Warehouses

R2000 Detection 2-D LiDAR Sensor Detects Even the Slightest Damage to Pallets

The Application

Reliable storage and conveying technology is essential for an efficient and smooth flow of materials in logistics centers, warehouses, and airports. Goods must be transported quickly and reliably to their destination. In high bay warehouses, goods are transported on pallets via stacker cranes. Damage may occur during the storage and retrieval of pallets. If a pallet breaks, the broken parts can get caught, or the entire pallet can fall. To ensure a smooth process, all pallet damage must be reliably detected.





The Goal

When a pallet is removed from the rack, the fork of the stacker crane moves under the pallet. If the pallet is broken, protruding pieces can lead to a collision. The pallet can tip, and parts may fall off. Reliable detection of all defects is essential in order to avoid further damage.

The Solution

An R2000 Detection 2-D LiDAR sensor is mounted under the fork of the stacker crane. It scans the area just below the base of the pallet. If the sensor detects an object, this information is passed on to the PLC, the process can be interrupted, and the damaged pallet can be replaced. This prevents further material damage or personal injury.

The Benefits

A stable scanning axis and an angular resolution of up to 0.071 degrees enable the R2000 to detect objects as small as 1 mm. The resulting monitoring field begins right below the pallet base, allowing it to detect even the smallest objects reliably. And setup is simple. With user-friendly PACTware software, the four user-configurable detection fields can be set in a matter of minutes.

At a Glance

- A stable scanning axis ensures precise monitoring of the scan surface
- Highest angular resolution of any digital I/O scanner on the market—0.071°—enables detection of extremely small objects
- 360° measurement for all-round visibility
- Easy operation—four user-configurable detection fields can be linked to the outputs in a few steps
- Infrared laser version offers a range of up to 30 m