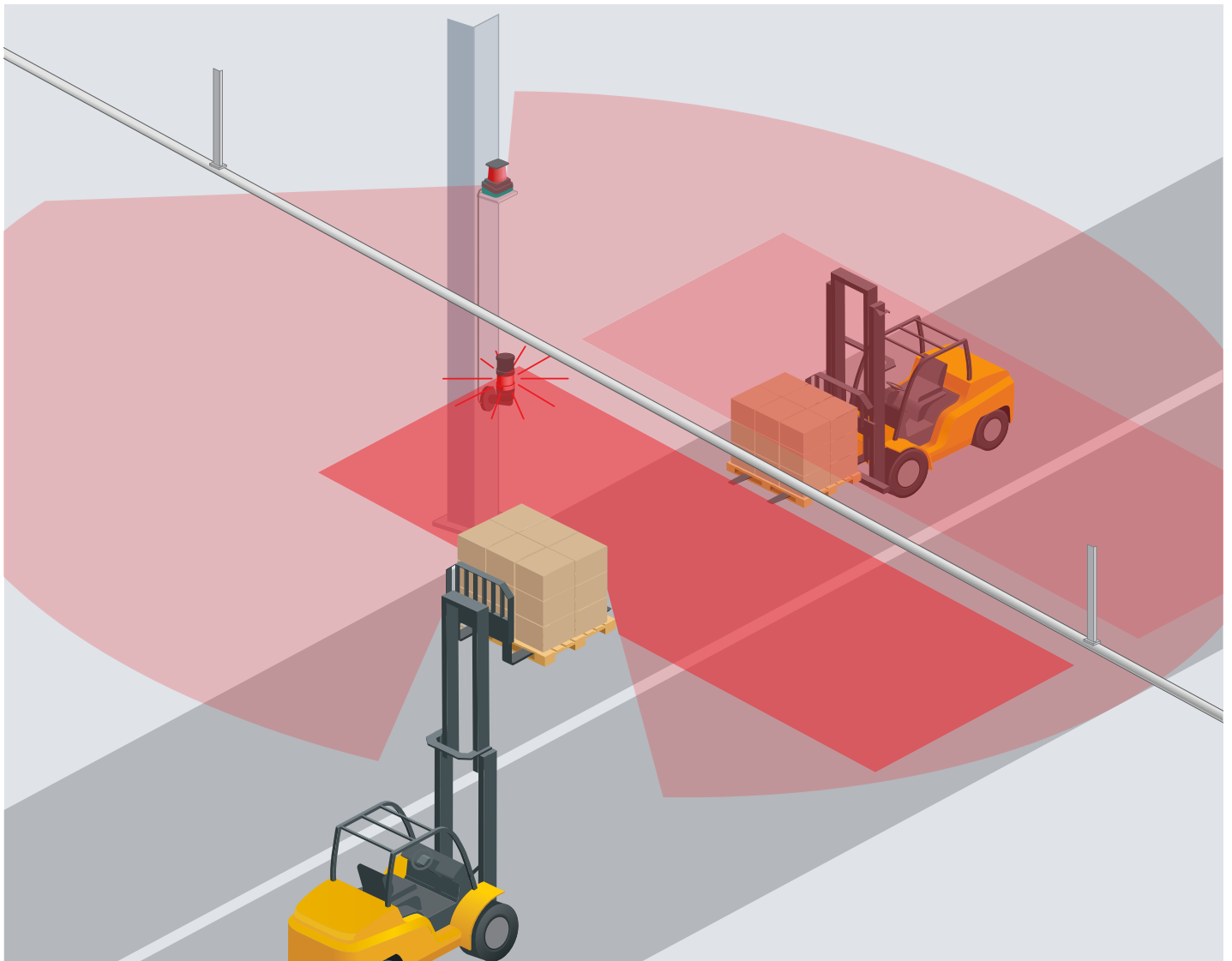# Preventing Collisions from Every Direction

360° Collision Avoidance with R2000 Detection LiDAR Sensor

The Application

Forklifts carry parts through a major automotive supplier's busy production and warehouse facility. Loads that are too high could collide with overhead gas, water, and electrical lines, endangering workers and interrupting production. Plant managers need a precise and reliable way to alert forklift operators if a load needs to be lowered.

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The Goal

Pipes and cables have to be protected from traffic moving in any direction. An alarm should be triggered when a load is too high, alerting forklift operators to stop in time and adjust load height. The solution should be easy to use, cost-effective, and provide long-range monitoring that gives operators enough time to stop. The sensing technology should also be precise enough to detect small objects and prevent false triggers.

The Solution

One R2000 Detection LiDAR sensor provides monitoring in each direction of forklift traffic. Mounted on a support column just below the level of pipes and cables, the sensor provides 360° detection. As soon as any part of an object enters a defined zone, a buzzer and flashing light are triggered.

The R2000 is easy to mount with a standard "L" bracket and connects directly to the light and buzzer with no control system needed. Using PACTware, a free software configuration tool, plant engineers then define detection zones—one on each side of a cable tray or pipe—based on required stopping distances. Detection zones also allow the R2000 to ignore non-relevant activity in the area and prevent unwanted triggers that are common with other solutions.

The Benefits

R2000 Detection provides precise, cost-effective collision monitoring that is easy to set up and use. Unlike a light curtain solution, which requires multiple sensors and high installation effort, only one R2000 is required. With a range of up to 30 m, a 360° detection field, and extremely high accuracy, the R2000 ensures reliable detection of any object within range of a possible collision. PACTware configuration software makes setup easy, allowing engineers to define detection zones depending on the specific requirements.

At a Glance

- Monitor forklift traffic in each direction with one sensor

- 360° detection for all-round visibility

- High accuracy—detects objects as small as 1 mm

- Easy to install, set up, and operate

- Up to four detection zones can be configured for flexible and versatile detection

For more information, visit
www.pepperl-fuchs.com/r2000