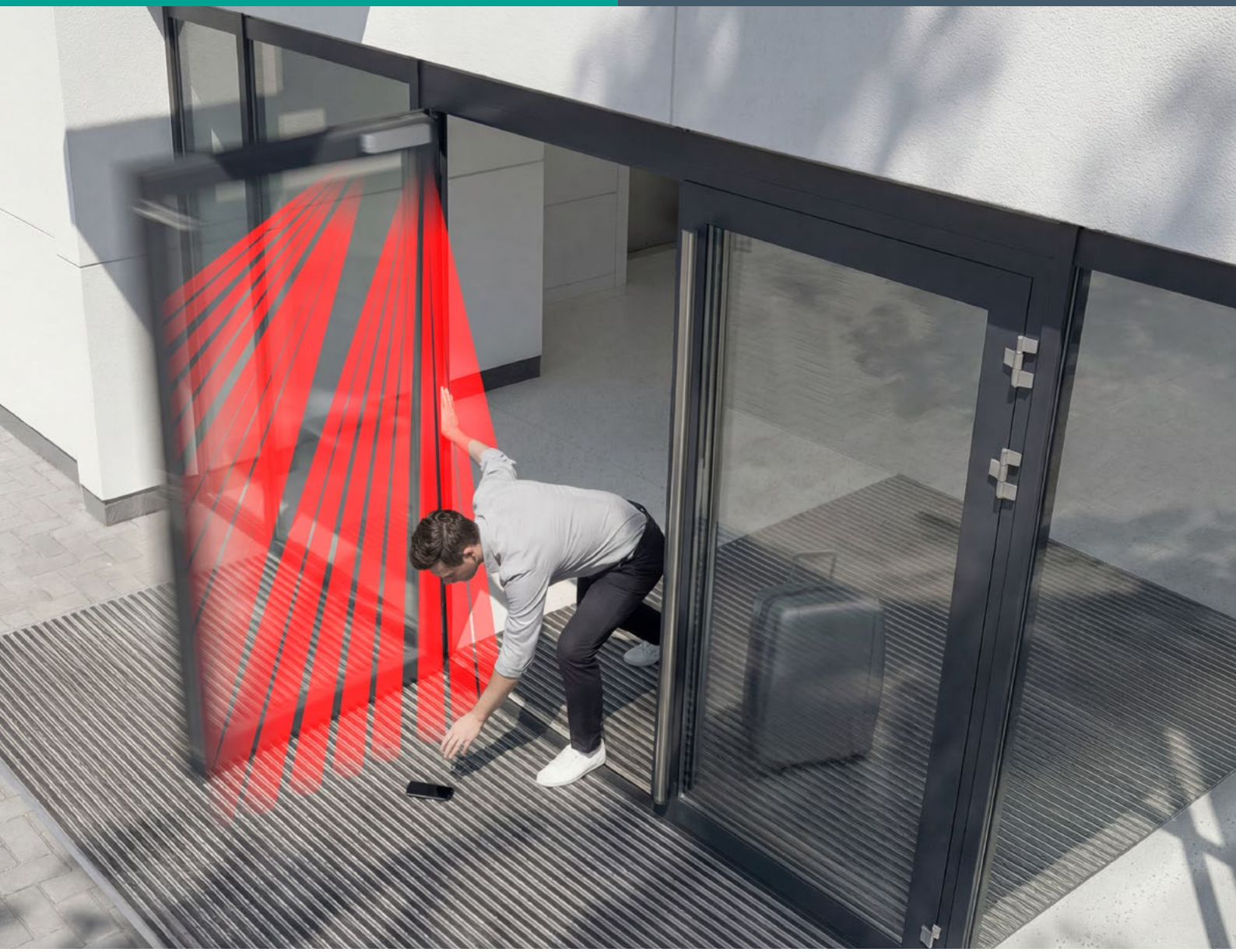
Optimized Safety at the Hinge-Side Pinch Point on Automatic Swing Doors

The ShieldScan Door Safety Sensor Provides Reliable Protection

At a Glance

- Reliable protection of the hinge-side pinch point on automatic swing doors
- Dependable finger protection, even when the door is gripped from the side
- Best-in-class solid-state time-of-flight technology with no rotating parts for maintenance-free operation
- Compact design for elegant integration



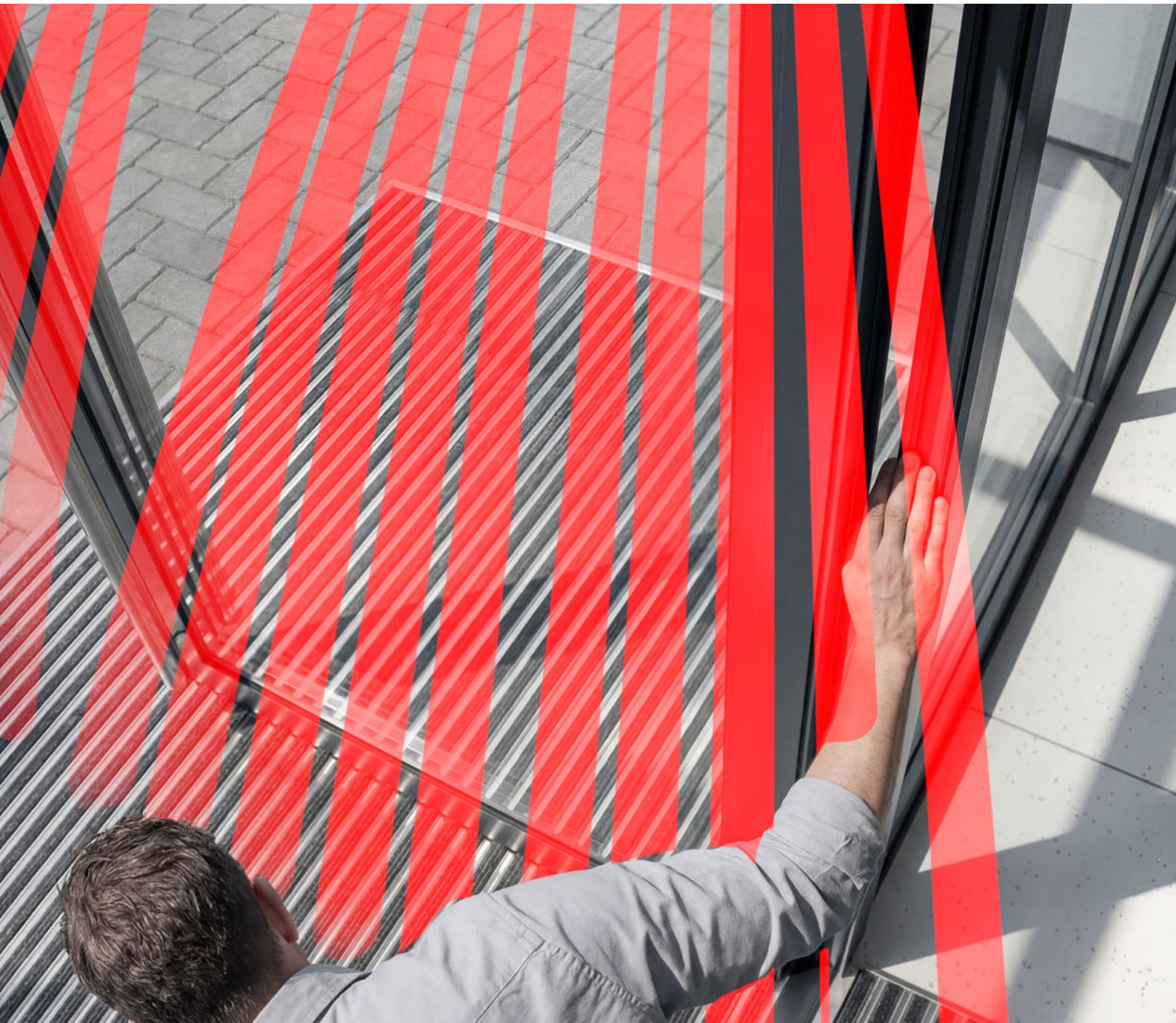
The Application

Automatic swing doors require reliable protection throughout the entire door movement. The hinge-side pinch point remains one of the most difficult areas to protect. Conventional sensing technology often leaves this critical area insufficiently protected.

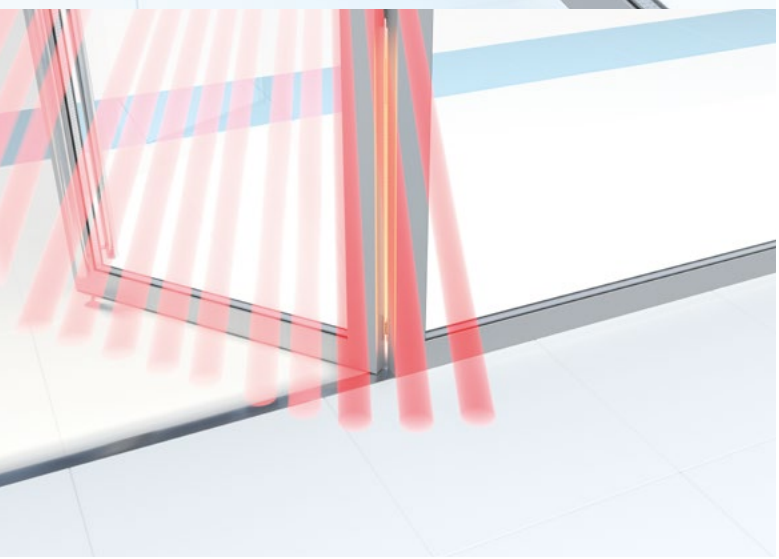
The Goal

A customer was already using LiDAR-based door safety sensors, but these sensors had one weakness: they could not optimally safeguard the hinge-side pinch point.

LiDAR sensors create a straight detection field aligned primarily with the leading edge. This plane follows the door leaf and does not detect the hinge area, leaving a persistent gap between the door leaf and frame (jamb). As a result, there is always a gap outside the scan field. The hinge area remains a persistent blind spot where fingers can become trapped.







The Solution

The Pepperl+Fuchs ShieldScan door protection sensor uses precisely aligned individual beams and innovative time-of-flight technology. Unlike LiDAR-based systems with a fixed scanning plane, ShieldScan uses three precisely curved detection beams to continuously monitor the hinge-side pinch point. This optimized beam geometry provides reliable finger detection while simultaneously protecting the door leaf, approach side, and safety side of the entrance.

The Benefits

With ShieldScan, customers benefit from maximum safety at the critical areas of the swing door. The optimized beam geometry ensures complete monitoring and pinch point protection. The reliable solid-state technology (no rotating parts) is maintenance-free and immune to ambient light, moisture, and varying floor conditions. The compact design allows for integrated mounting on virtually any door, while intuitive gesture control and plug-and-play mounting ensure quick commissioning. A single sensor type covers all standard door sizes, which significantly simplifies planning and inventory management.

Technical Features

- Solid-state scanner with static time-of-flight technology (no rotating parts)
- Optimized beam geometry for the door leaf, approach side, and safety side
- Degree of protection (IP65, NEMA 4)
- Ambient temperature –30 ... +60 °C (–22 °F ... +140 °F)
- Signal outputs: SSR, NPN, PNP
- Safety integrity level (SIL) 2, performance level PL d



For more information, visit: **pepperl-fuchs.com/px-ShieldScan**