Built to Last.

Compact, durable, and efficient.
Exceptional performance
package in 360°.

R2400 2-D LiDAR Sensor



Your automation, our passion.

PEPPERL+FUCHS

R2400 2-D LiDAR Sensor

Engineered for Durable Automation

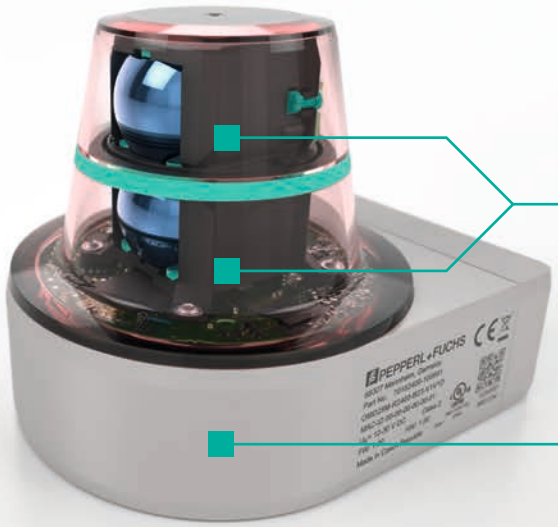
The R2400 combines 360° environmental detection with robust mechanical construction and easy integration. With its compact design, standardized data communication, and stable operation even under demanding conditions, it is suitable for cost-effective automation applications in logistics and mobile robotics.

Performance:
Best-in-class precision and accuracy

Extended temperature range:
-30 °C ... +50 °C

Lightweight:
0.55 kg ≈ 1.21 lbs

Easy integration:
HTTP & UDP/IP



High speed:
72,000 measurements per second

Optical separation:
Transmitter and receiver

Rugged:
IP67 aluminum and metal thread inserts



Highlights

- 360° field of view (FoV): Mounting flexibility, no specific orientation – enables an all-around view for navigation applications.
- Truly flat scan plane – eliminates wavy scan profiles which reduces false detections and simplifies sensor alignment.
- Small laser spot: Recognition of small structures – remains small even at range, preserving accuracy over longer distances.
- Quick system integration via a unified LiDAR communication protocol and ROS driver.
- Reliable small object detection ensured by high angular resolution, precise angular accuracy, and optimized light spot geometry.
- Optical separation of transmitter and receiver for consistent performance in challenging environments—with minimal maintenance.
- Received signal strength feedback: Supports reliable navigation and localization through clear differentiation of natural and reflector targets.

Setting New Benchmarks

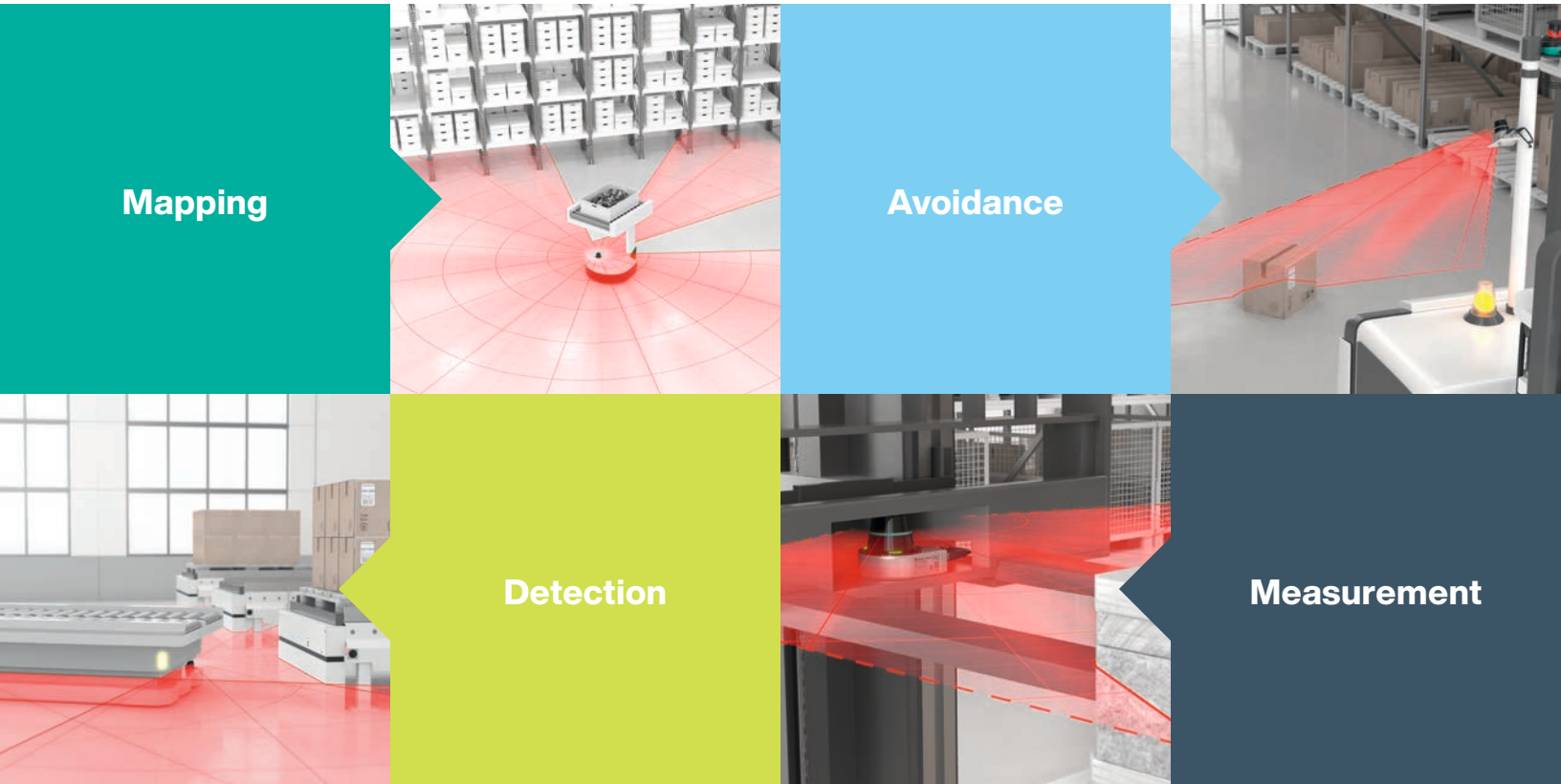
R2400 Technical Data		Compared to the Competition
Measurement range	25 m at 90%	Better than Most
	10 m at 10%	
	40 m with reflector	
Scanning angle	360°	Best in Class
Scan rate	10–20 Hz	
Angular resolution	0.05° ... 0.1°	Best In Class
Distance measurement noise	20 mm (1 Sigma)	Better than Most
Distance measurement accuracy	+/-30 mm	Better than Most
Height	80 mm	Best In Class

– VS –

Technical Data: Leading Competitors	
Measurement range	10 m / 25 m at 90%
	8–10 m at 10%
	25 m with reflector
Scanning angle	270° ... 290°
Scan rate	10–25 Hz
Angular resolution	0.33°
Distance measurement noise	16–20 mm (1 Sigma)
Distance measurement accuracy	+/- 30 to 60 mm
Height	86 ... mm

Solving Common Challenges Typically Handled by High-End LiDAR Sensors:

- Navigation and guidance
- Environmental perception
- Parking/docking systems
- Empty box detection
- Level/filling profile
- Area monitoring
- Object recognition
- Overhang and profile control
- Pick-to-light
- Shelf control
- Volume and flow control
- Light grid replacement



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- Industrial Sensors
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