# Q-SHIELD™ Edge-Based PoE LiDAR Sensor

With QORTEX Aware™ Embedded Detection Software

Q-SHIELD™ is an edge-based LiDAR security sensor that combines Quanergy's QORTEX Aware™ detection software with integrated LiDAR sensing to enable real-time intrusion detection and spatial awareness. The system continuously monitors configurable security zones and generates alerts when people or objects enter protected areas, enabling reliable perimeter protection and restricted-area monitoring without the need for external processing systems.

QORTEX Aware™, LiDAR Detection Software

QORTEX Aware™ is Quanergy's proprietary LiDAR detection software designed for security monitoring applications. Running directly on the sensor, it analyzes LiDAR data in real time to detect activity within defined protection zones. Users can configure up to 8 evaluation fields, each supporting up to 128 detection zones, enabling flexible monitoring of protected areas. Alerts are generated through the Ethernet interface when activity occurs within defined zones.
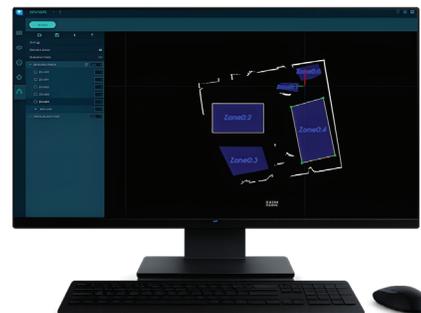
- Integrated hardware and detection software simplifies deployment
- Out-of-the-box solution for quick deployments in a wide variety of applications
- Flexible configuration to support a variety of use cases
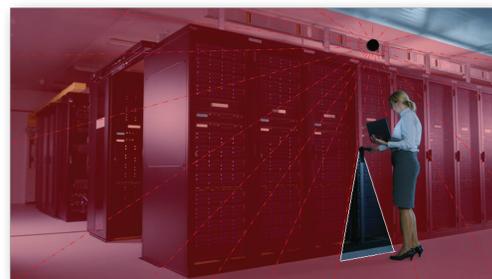
Key Applications

Q-SHIELD™ is designed for security monitoring applications that require reliable detection and real-time alerting when people or objects enter protected areas. Typical deployments include:

- **Perimeter Monitoring**: Detect and alert when people or vehicles cross protected boundaries such as fences, walls, or property lines using configurable LiDAR detection zones.
- **Restricted Area Protection**: Secure sensitive areas such as equipment rooms, secure corridors, loading areas, or restricted facilities by monitoring defined intrusion zones.
- **Access Point Monitoring**: Monitor entry points, gates, corridors, and controlled access zones to detect unauthorized presence or movement within protected areas.
- **Infrastructure Monitoring**: Monitor tunnels, substations, equipment yards, and other sensitive infrastructure zones to detect unauthorized activity and enhance site security.

Product Features

- Reliable object detection
- Edge-based processing with on-sensor configuration
- Up to 8 evaluation fields, dynamically selectable over Ethernet
- Up to 128 configurable detection zones within each evaluation field
- Easy and flexible configuration of alert zones
- Power-over-Ethernet (PoE+) connectivity

QUANERGY
See beyond.

SPECIFICATIONS	Q-SHIELD Core	Q-SHIELD Plus	Q-SHIELD Ultra
Applications	Security, Object detection		
Embedded Software	QORTEX Aware™		
Number of Programmable Evaluation Fields	8		
Number of Detection Zones per Field	128		
Laser Class	Class I (Eye Safe, IEC 60825-1)		
Wavelength	905nm		
Measurement Technique	Time of Flight (ToF)		
Minimum Range	0.6m		
Maximum Range	100m (80% reflectivity) 35m (10% reflectivity)	150m (80% ref.) 53m (10% ref.)	200m (80% ref.) 70m (10% ref.)
Range Accuracy (1σ at 50m)	<3cm		
Frame Rate (Update Frequency)	5-20Hz		
Angular Resolution	0.033°–0.132° dependent on frame rate		
Detection Layers	1		
Field of View (FOV)	Horizontal: 360°		
Data Outputs	Angle, Distance, Intensity, Time Stamp (synchronized to GPS when available)		
Output Connection	RJ45 802.3at (PoE+)		
Returns/Echoes	1 or 3		
Output Rate	54,500 points per second (1 return), 163,500 points per second (3 returns)		
Ambient Light Immunity	80,000 lux		
Nominal/Peak Power	18W/24W @ 24V		
Operating Voltage	42.5-57VDC		
Operating Temperature	−20°C to +60°C (−4°F to +140°F)		
Storage Temperature	−40°C to +105°C (−40°F to +220°F)		
Nominal Weight	1360g		
Dimensions	115mm (D) x 134mm (H)		
Shock & Vibration	ETSI EN 300 019-2-5, IEC Class 5M3		
Environmental Protection	IP67		
Certifications & Compliance	FDA, FCC, CE, RoHS, WEEE, IEC-60079-15, ASTM G154-12A, EN-61326, IEC-61010, ISO 9001:2015,REACH SVHC, Conflict Mineral Rules		
Warranty	1+4 years (CAPEX), duration of the subscription (OPEX)		

*Specifications are subject to change without notice

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