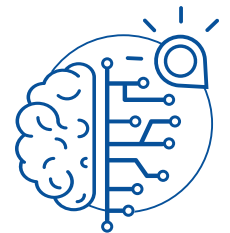# M1™ Edge LiDAR Sensor
With QORTEX Aware™

M1 Edge is a complete, out-of-the-box solution that combines smart object detection software with Quanergy's M-Series LiDAR sensors to enable smart awareness for applications that require simple object detection and alerting capabilities. With M1 Edge, customers can quickly and easily set up a LiDAR sensor, collect, and make use of the LiDAR point cloud data without additional development effort required.

QORTEX Aware™, Object Detection Software

QORTEX Aware™ is a core proprietary detection software from Quanergy which enables quick and flexible deployment of LiDAR technology in a wide variety of uses cases and markets. With QORTEX Aware integrated on-board, the M1 Edge can monitor user-defined detection zones and triggers an alarm on the sensor's digital output if there is any activity within the zones. Users can create up to 8 pre-configured evaluation fields, each with up to three detection zones, where the evaluation field is selected via the sensor's digital input.

- Complete hardware and software integration saves development costs
- 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

M1 Edge is ideal for stationary and dynamic applications that require simple alerting when an object enters a monitored area. Key markets for M1 Edge include:

- **Industrial:** QORTEX Aware™ is an ideal solution for level and height sensing applications, including tank level monitoring, object stacking, fill level detection, and more
- **Automated Guided Vehicles (AGV) and Autonomous Mobile Robots (AMR):** In mobile equipment applications, M1 Edge enables reliable collision avoidance for safer, smarter navigation. When mounted on an AGV or AMR, the sensor monitors the surrounding area, flagging any potential dangers and obstacles in the vehicle's path. To maximize flexibility, the detection zones being monitored can dynamically change based on the AGV or AMR movement
- **Safety/Security:** Easily monitor restricted areas with Quanergy's M1 Edge solution. Intruders entering protected areas are flagged, triggering an alarm alerting security personnel about the breach.

Product Features

- Accurate object detection
- Three digital inputs and three digital outputs which support:
    – Up to eight evaluation fields, dynamically selectable
    – Up to three configurable detection zones within each evaluation field
- Easy and flexible setup and configurations of alert zones

SPECIFICATIONS

SPECIFICATIONS	ME1-100AW	ME1-150AW	ME1-200AW
Applications	Object detection in robotics, industrial automation and safety/security		
Embedded Software	QORTEX Aware™		
Number of Programmable Evaluation Fields	8		
Number of Detection Zones per Field	3		
Laser Class	Class I (Eye Safe, IEC 60825-1)		
Wavelength	905nm		
Measurement Technique	Time of Flight (TOF)		
Minimum Range	0.6m (80% reflectivity)		
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	2xM12 Connectors (Ethernet, Power, GPS, 3 digital inputs [NPN], 3 digital outputs [NPN])		
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	15W/22W @ 24V		
Operating Voltage	9-30VDC		
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	900g		
Dimensions	103mm (D) x 98mm (H)		
Shock & Vibration	ETSI EN 300 019-2-5, IEC Class 5M3		
Environmental Protection	IP67		
Certifications and 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	2 Years		

*Specifications are subject to change without notice