

Cube Range 1

Long-range detection and high accuracy

The Cube Range 1 is made for extra-long-distance detection and offers high-precision 3D measurements. It features an adaptable field-of-view, a unique scan pattern for versatile usage in various industries, and small dimensions and light weight. No additional adapter boxes are required for operation and the point cloud interface ensures easy handling and configuration. The associated recognition software makes the Cube Range 1 a smart solution for numerous applications.



DISTINCTIVE FEATURES



Long-range Detection



Easy Installation and Setup



High Resolution



Small Size and Light Weight



Configurable Scan Pattern



Low Power Consumption

SPECIFICATIONS

OPTICAL PERFORMANCE ^a

Typical application range	5 – 150 m
Maximum detection range	250 m (> 50m for 10 % reflectivity target, pixel-filling, 100 klux, 90% detection rate, false positive rate < 0.2%, 0.36° horizontal resolution ^b)
Range resolution	< 1 cm
Maximum field-of-view (horizontal x vertical)	18° x 12°
Vertical resolution	5 – 200 scan lines per frame ^c (user-configurable)
Horizontal resolution	0.24° – 0.4° (user-configurable)
Scan rate	> 500 scan lines per second
Frame rate	2.5 – 50 Hz (dependent on configured scan lines and vertical field-of-view) Examples: 18° x 12°; 200 scan lines; min 2.5 Hz. 18° x 12°; 32 scan lines; min 15 Hz. 18° x 8°, 16 scan lines, min. 30 Hz.
Number of returns	3

^a Measured at 25°C, 60% humidity, single return.

^b The effective detection range drops at the edges of the field-of-view.

^c For less than 18 scan lines a reduced vertical field-of-view must be configured (see frame rate).

LASER

Laser class	Class 1, eye-safe (IEC 60825-1:2014, Ed. 3)
Wavelength	905 nm
Beam divergence	0.24° Examples: 10 m: 0.04 m x 0.04 m 100 m: 0.38 m x 0.38 m

OUTPUT

Connection	TCP/IP over Gigabit Ethernet
LiDAR output	Distance, intensity, and Cartesian coordinates per echo; Azimuth angle, elevation angle, and timestamp in ns per acquisition
On-device data processing	Smart background subtraction, and pose correction transformation; Filters: Distance, Noise, Intensity, Neighbor
IMU output	> 1 kHz sampling rate; 3 axis accelerometer, 3 axis gyroscope

CONTROL INTERFACE

Configuration interface	Cross-platform graphical web interface with interactive 3D point cloud visualization and recording feature
Control & stream interface	TCP connection with Blickfeld protocol; C++ library and Python package as client software interface; ROS drivers available on request
Time synchronization	NTPv4 and PTPv2 (IEEE 1588)

MECHANICAL / ELECTRICAL

Power consumption	Typ. 8.5 W (max. 15 W)
Operating voltage	Recommended: 12 V Absolute maximum ratings: Min.: 10 V / Max.: 26 V
Dimensions (H x W x D)	60 mm x 82 mm x 86 mm
Weight	ca. 385 g
Data connector	Ethernet, RJ45
Power connector	Phoenix Contact 1817615 Compatible power supply connector: Phoenix Contact 1845219

OPERATIONAL

Operating air temperature (angle mount attached)	-30 °C – 60 °C
Storage temperature	-30 °C – 60 °C
Humidity	85 % at 30 °C, non-condensing

DIMENSIONS

