Blickfeld QbBasic

Compact, software-defined 3D LiDAR sensor for tailored flexibility and seamless integration

QbBasic is Blickfelds software-defined 3D LiDAR sensor engineered for use in OEM and technology integrator solutions. It offers flexible configuration options, delivers detailed point cloud data for accurate 3D perception and integrates smoothly into diverse hardware and software environments. The user-friendly web interface of QbBasic allows for individual adjustment of parameters, giving system integrators and OEMs the flexibility to precisely adapt the sensor to their application needs. With its compact form factor, and standardized communication interfaces, QbBasic can be easily integrated into a variety of existing platforms.

TECHNICAL DATA

PERFORMANCE	
Technology	3-dimensional laser ranging (LiDAR)
Maximum field-of-view a	90° x 50° (horizontal x vertical)
Typ. application range b	1 - 100 m
Typical range precision (1 sigma)	< +-2 cm
Frame rate	1 – 50 Hz depending on configured scan pattern
Number of returns	3
Vertical resolution c	2 - 400 scan lines per frame (user-configurable)
Horizontal resolution	0.25°, 0.5°, 0.75° (user-configurable)

LASER	
Laser class	Class 1, eye-safe (IEC 60825-1:2014)
Laser wavelength	Infrared, 905 nm
Laser beam divergence	0.25° x 0.25°

DATA PROCESSING AND OUTPUT DATA	
Integrated web interface	Interactive 3D point cloud visualization, device configuration, output specification
Integrated inertial measurement unit (IMU)	TDK IvenSense ICM-20600
LiDAR data	Cartesian coordinates and intensity per return, timestamp per acquisition
IMU data	3 axis acceleration data
API	TLS-secured gRPC network protocol, ROS2 driver, Raw protobuf files and client libraries for Python and C++ available d

OPERATIONAL	
Dimensions (H x W x D) e	Ca. 75 mm x 111 mm x 83 mm
Weight e	Ca. 535 g
Power supply	Power over Ethernet (PoE), IEEE 802.3af / 802.3at Type 1 Typ. 10 W, max. 12.95 W
Ingress protection f	IP67 (IEC 60529)
Operating ambient temperature g	-30 °C ... +60 °C
Storage temperature	-40 °C ... +60 °C
Conformity marks / compliance	CE, UKCA, REACH, FDA, FCC, SRRC TAA-compliant product variants available upon request

Blickfeld
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INTERFACES	
LAN connection	Ethernet 1000 Base-T (1 Gbit/s)
WiFi connectivity	2.4 GHz: IEEE 802.11b/g/n, antenna included
Ethernet connector	M12x1 Industrial Ethernet connector, 8-pole, X-coded (EN 61076-2-109), IP67 h
Security	User & API-key authentication (multiple access levels, read-only access), 802.1X & WPA2 (EAP)
Protocols	ARP, ICMP, DHCP, DNS, TLS, 802.1X, UDP, NTP, IPv4, IPv6, TCP/IP, HTTP, HTTPS, gRPC

ACCESSORIES	
Antenna	Matching WiFi antenna (included). WiFi operation only permitted with Blickfeld-authorized antenna.
Cable	Matching Ethernet cable, length: 3 / 7 / 10 m. M12x1 Industrial Ethernet connector to RJ45, straight, Cat. 6a, X-coded, 8-pole, UV-resistant, halogen-free, PUR jacket
Mounting	Pan-tilt mounting bracket
Add-on	Weather protection roof

a Non-rectangular field-of-view

b Range performance depends on many factors including but not limited to object reflectivity, orientation, surface texture, ambient light level, and ambient temperature. Reduced accuracy and resolution in small areas of the field of view in close distance to the sensor.

c Less than 35 scan lines requires reduced field-of-view

d Online documentation available at https://docs.blickfeld.com/qb2

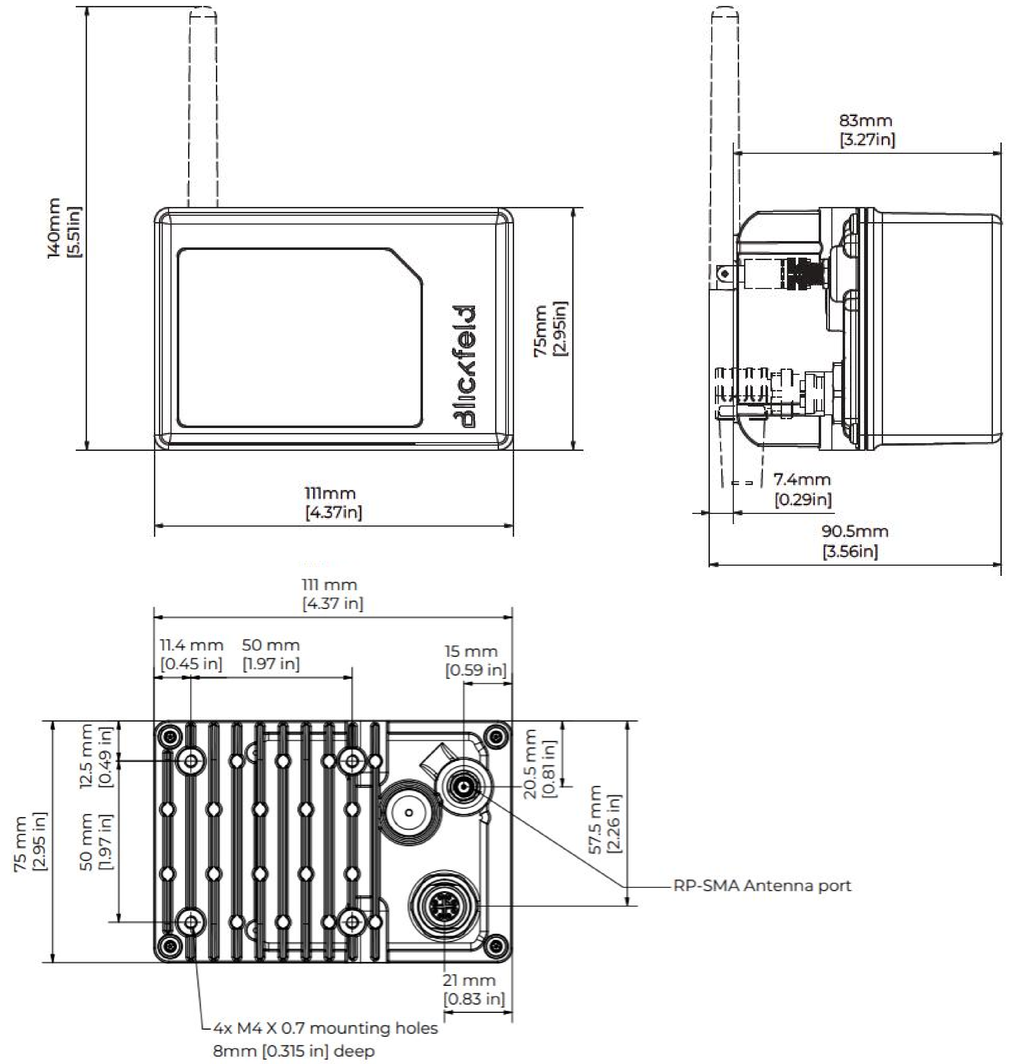
e Without antenna or Ethernet cable attached, without connectors

f With antenna and Ethernet cable attached or with protective caps attached

g Continuous operation between -37°C and 60°C. Increased start-up time (max. 30 min) for temperatures below -30°C

h IP67 with Ethernet cable and protective cap attached

DIMENSIONS



values in brackets are calculated and may contain round-off errors

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