
Datasheet

BlueComm™ 200 – Optical Communications System



Description

BlueComm 200 provides subsea wireless optical communications up to 20 Mbps at ranges up to 200 metres.

The system is suitable for use in deep water and night-time operation in shallow water where both ambient light and in-water turbidity are typically low. It is capable of data transmission rates from 1–20 megabits per second (Mbps), enabling a range of application options including wireless telemetry from several concurrent video cameras and tether-free subsea vehicle control.

BlueComm 200 uses an array of high power light emitting diodes (LEDs) that are rapidly modulated to transmit data. Highly sensitive receivers detect the extremely small light signals in order to decode this data and to present it to the user via an Ethernet link.

BlueComm 200 uses time division multiple access (TDMA) methods to provide a bi-directional high speed and low latency link that supports TCP/IP based network protocols. It also supports unidirectional optical communications by using an acoustic modem link for bi-directional command and control. Allocation of bandwidth ratios in each direction is user selectable and fully flexible.

The unidirectional optical mode is ideal for applications where high-speed data transfer is required in only one direction such as for extraction of large data volumes from seafloor instrumentation or sensors.

Integrated acoustic positioning and communications provide methods for locating the device, waking it up and managing the optical link. Once a connection is established, BlueComm 200 will immediately begin transferring buffered data.

Optical data transmission is highly efficient, enabling more than 3 gigabytes of data to be transferred using only the energy contained in a single Lithium D sized battery cell.

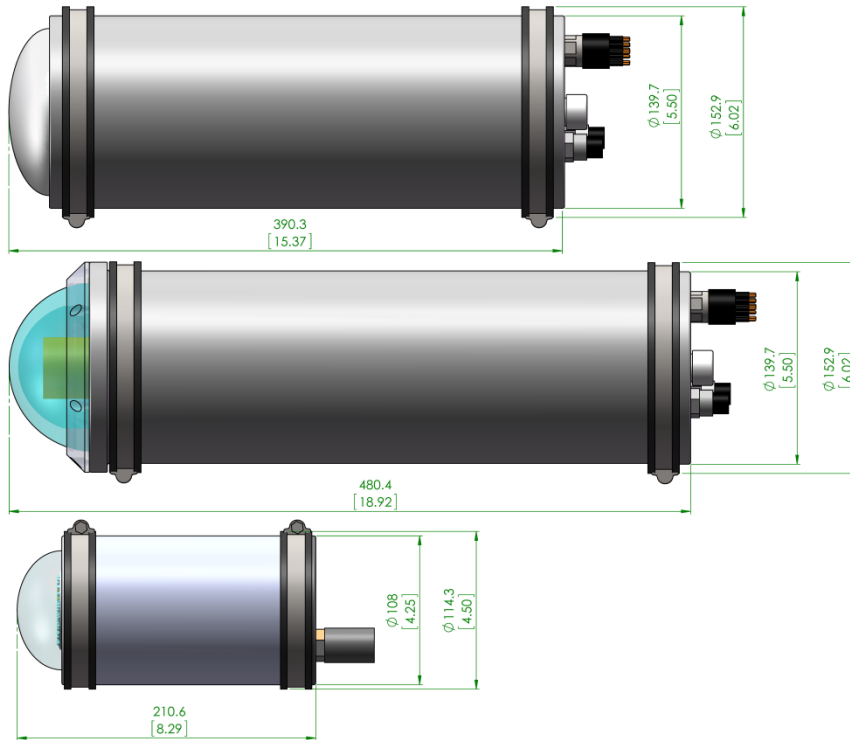
BlueComm 200 is available in both shallow and deep rated housings for up to 6,000 metres water depth operation.

Key Features

- 1 to 20 Mbps at ranges up to 200 metres
 - Suitable for moderate to low turbidity dark water, (>350 m depth or night-time) applications
 - Highly energy efficient communications provides long battery life
 - Data recovery by AUV, ROV or surface deployed dunker system
 - Up to 6,000 m depth operation
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Transmit only optical modem for unidirectional optical link.

Receiver unit of optical modem for either unidirectional optical link or for bi-directional link when paired with emitter (bottom image).

Optical emitter, to be paired with receiver unit (middle image).

Dimensions in mm and [inches]

Features	Specifications
Depth Rating	Housings Available for up to 6,000 Metres Operation
Data Rate	1–20 Megabits Per Second
Optical Communication Range	Up to 200 Metres
Materials	Anodized Aluminium or Titanium
Supply Voltage	24–36 V DC
Communications Interface	10/100 Base-T Ethernet (Static IP Address)
Command Interface	Graphical User Interface or Ethernet UDP Command Set
Transmit Modem (Top Image)	
Optical Transmit Power	6 Watts (Radiated Light)
Optical Wavelength Options	405 nm (Violet), 450 nm (Royal Blue), 470 nm (Blue), 505 nm (Cyan)
Emitter Beam Pattern	Omni-Directional (90°), Focused Beam (15°) and Side Emitting (Toroidal)
Weight in Air (Water)*	8.9 (2.7) kg
Power Consumption	40 Watts
Receiver Unit (Middle Image)	
Receive Wavelength	Broadband or Narrow Band Filters if Required
Receive Angle	90° (Omni)
Receiver Weight in Air (Water)*	10.1 (2.7) kg
Power Consumption	10 Watts
Emitter Unit (Bottom Image)	
Optical Transmit Power	6 Watts (Radiated Light)
Power Consumption	30 Watts
Emitter Weight in Air (Water)*	2.72 (1.0) kg

*Estimated Weights.