

CL-SERIES

Underwater LED Lights



underwater **vision** specialists

Features

- 100lux@1 Metre
- Long Life
- 17-28Vdc or 100-250Vac
- Shock & Vibration Resistant
- 300 Metre Rated Stainless Steel Housing
- High Intensity
- 180° Wide Angle Beam



Description

The Bowtech Products CL-SERIES of underwater LED lights have been developed in close collaboration with major submarine manufacturers, specifically for military submarine applications and incorporate proven technology, from our commercial off the shelf (COTS) product range.

The CL-SERIES lights have been through rigorous testing - pressure, both hydrostatic and hyperbaric, thermal, shock, vibration and EMC.

The light operates continuously in air and water to a depth of 300 metres and can be configured to provide a wide range of lighting level, dependent upon the location on the submarine. A variety of colour options are also available.

The LED light engine has an MMTBF of 50,000 hours and maintains 70% lumen efficiency at 50,000 hours, reducing its Through Life Support costs to a minimum.

Benefits of LED Lighting

No Fragile Filaments

Rugged Construction

Highly Shock and
Vibration Resistant

Average Lifetime
Greater than 50,000 hours

Enormous "In-service"
Cost Saving Over Incandescent Bulbs

Available in Various Colour Temperatures



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Last updated 8th May 2013
Revision: 0

Specification – CL-SERIES

ELECTRICAL

Input Power Requirement: 17 to 28Vdc or 100 to 250Vac
EMC: To DEFSTAN 59-411

OPTICAL

Typical Luminous Flux: 680 Lumens (max)
Typical Luminous Intensity @ 1m: 100 Lux (max)
Typical Colour Temperature: 6,000 Kelvin
Lumen Maintenance: 50,000 hrs
MTBF: 50,000 hrs

ENVIRONMENTAL

Operating Depth: 300m (984ft)
Operating Temperature: -10 to +40°C
Storage Temperature: -30 to +70°C
Housing Material: 316 Stainless Steel
Shock: Full 180° Hemisphere
Vibration: 30g Peak, 6ms Half-sine Pulse
Operating Environment: Continuous Air/Water

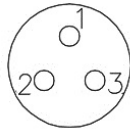
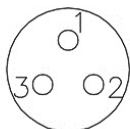
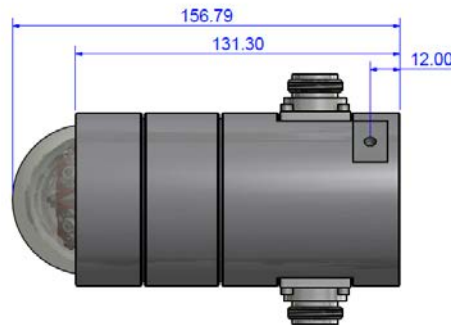
MECHANICAL

Envelope: High Strength Optical Acrylic
Weight in Air: 2kg (single connector)
Weight in Water: 1.5kg (single connector)
Beam Angle: 10g, 20-150Hz (3 axis operating)
Standard Connector: MIN-G-3-FCRL or VMIN-G-3-FCRL
Other Options are Available

Ordering Information

Part numbers are created in the format below, dependent upon customer requirements:

Part number	Colour: White (CLW) or Red (CLR)	Brightness (lumens)	Power requirement: 115 VAC or 24 VDC	Connectors: Single (S) or Double (D)
CLW-680-115-S	White	680	115 VAC	Single
CLW-680-115-D	White	680	115 VAC	Double
CLW-480-24-S	White	480	24 VDC	Single
CLW-480-24-D	White	480	24 VDC	Double
CLW-250-115-S	White	250	115 VAC	Single
CLR-100-115-S	Red	100	115 VAC	Single
CLR-100-115-D	Red	100	115 VAC	Double



MIN-G-3-FCRL VMIN-G-3-FCRL

(connector face patterns not to scale)



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