

SE/MARK MARINE LANTERN UPS

- 2, 3 or 5 nautical mile marine lantern for marking offshore wind turbines
- Smart photocell, water ingress detection, optical feedback and LED monitoring
- Standard NAI bus interface for power supply and communication
- Bluetooth interface for commissioning and testing
- 96 hours of battery backup integrated with battery management system

The SeaMark marine lantern is designed for specifically for offshore wind turbines, satisfying IALA G1162 recommendations*. The optical head is integrated into the rugged stainless-steel housing. Optional SeaMark brackets make for easy installation on any railing.

The recommended 96 hours of battery backup is integrated directly in the product removing the need for an external battery system.

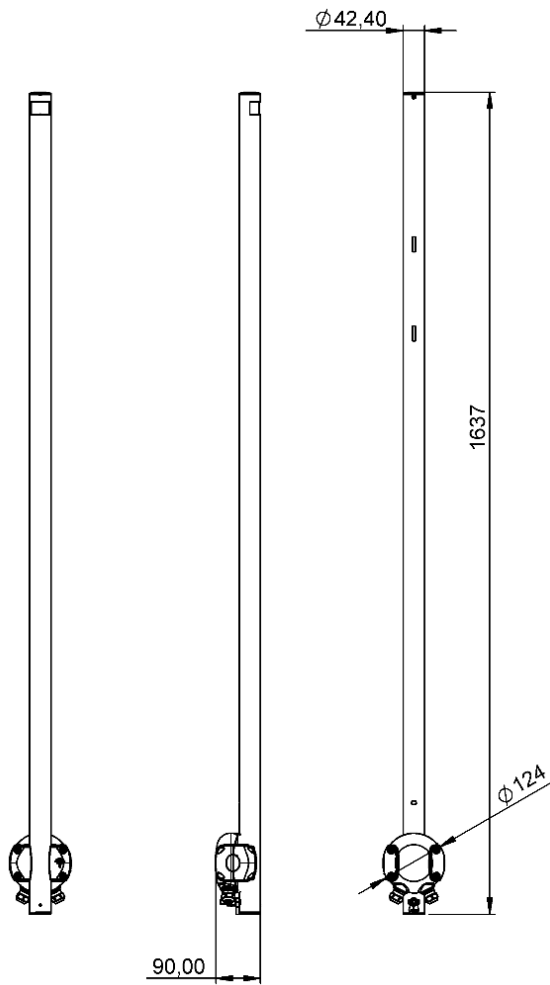
Advanced monitoring technology allows for water ingress detection and LED optical performance feedback in addition to normal monitoring functions.

Available Versions

- ML02-NAI-UPS
- ML03-NAI-UPS
- ML05-NAI-UPS

* IALA G1162, "The marking of man-made offshore structures"

Dimensions & Weight



Diameter of Junction Box	124 mm
Diameter of Stainless-Steel Housing	42 mm
Height	1637 mm
Weight	6.94 kg

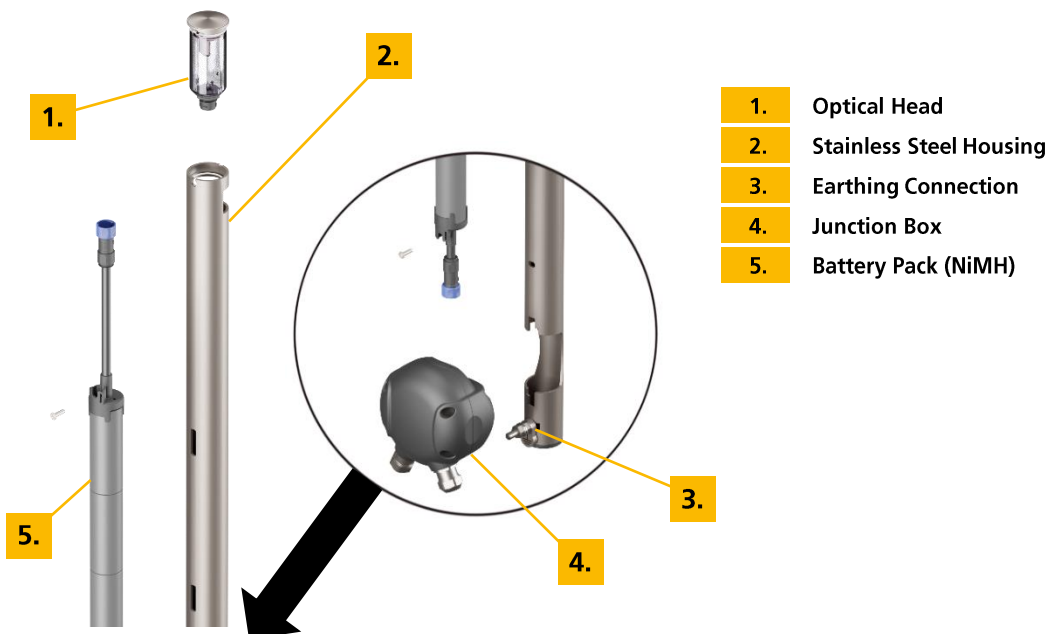
Material

Tube	Stainless Steel 316 L / 1.4404
Housing Junction Box	LEXAN™ Resin EXL5689
Housing Optical Head	LEXAN™ LS2
Gasket	THERMOLAST® K TC3GPZ

Optical System

	ML02-NAI-UPS	ML03-NAI-UPS	ML05-NAI-UPS
Light Colour	Yellow (according to IALA Recommendation R0201 (E-200-1) Marine Signal Lights – Colours)		
Mean Light Intensity (along the optical axis)	12 cd (± 6 %)	30 cd (± 6 %)	149 cd (± 3 %)
Beam Angle (vertical)	5° FWHM		
Beam Angle (horizontal)	182° ±2°		

Components

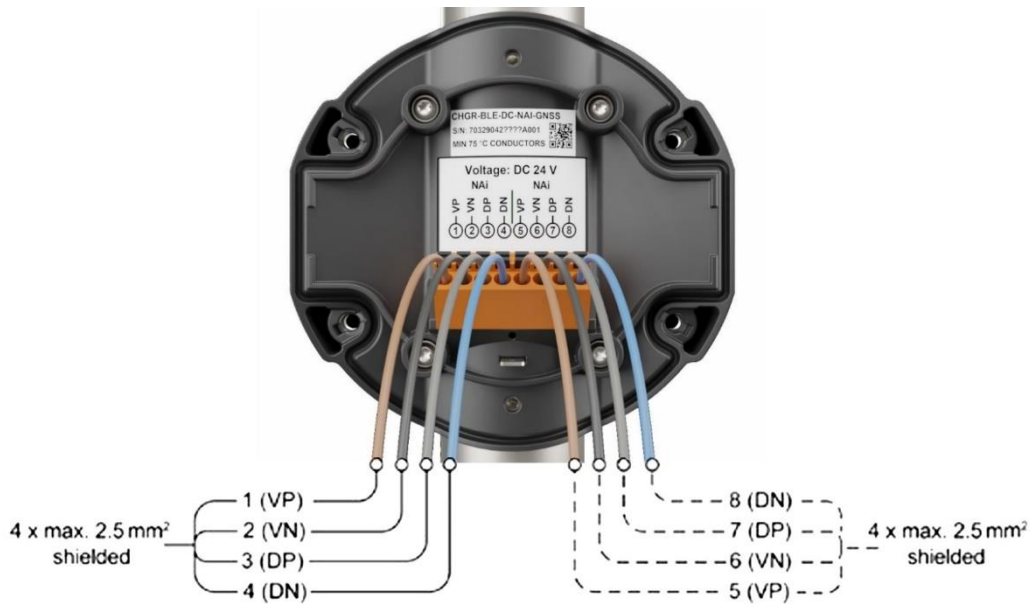


Note: All housing components including the cable glands satisfy the IP67 degree of protection requirements according to IEC 60529. During connection and assembly, ensure that no moisture or dirt penetrates into the open socket.

	Size	For Cable Diameter	Key Width
EMC Cable Gland	M20 x 1.5	8.0 – 15.0 mm	24 mm

Electrical Connection

	ML02-NAI-UPS	ML03-NAI-UPS	ML05-NAI-UPS
Electrical Connection	Spring terminal block, max. 2.5 mm ²		
Operating Voltage V _{IN}	DC 24.0 V (-25 % / +25 %)		
Power Consumption (Peak, V _{IN} = DC 24 V, without charging)	1.6 W	1.8 W	2.0 W
Power Consumption (Peak, V _{IN} = DC 24 V, charging)	14.8 W	14.8 W	14.8 W



1	VPI	Power Supply Input (Positive)
2	VN	Power Supply Input (Negative)
3	DP	NAi Data (Positive)
4	DN	NAi Data (Negative)
5	VPO	Power Supply Output (Positive – to next device)
6	VN'	Power Supply Output (Negative – to next device)
7	DP'	NAi Data (Positive – to next device)
8	DN'	NAi Data (Negative – to next device)

Environmental Conditions

Ambient Temperature (operation)	-25 °C to 55 °C
Ambient Temperature (storage / transport)	-40 °C to 70 °C
Humidity (operation / storage / transport)	95 % r.h. up to 45 °C 70 % r.h. for T > 45 °C
Atmospheric Pressure (operation / storage / transport)	80 kPa to 108 kPa
Degree of Protection (acc. to IEC 60529)	IP67
Luminaire Classification (acc. to EN 60598-1:2018)	Rough Service Luminaire
Impact Protection (acc. to IEC 62262-1:2018)	IK08
Lightning Protection Zone (acc. to IEC 62305-4:2010)	LPZ0 _B

Electrical Safety and Health

Protection Class	Class III
Overvoltage Protection	Class III
Pollution Degree	3

Reliability

IALA Category	1** (assumed MTTR of 96 h)
MTBF Electronics	337 000 h
Minimum LED Lifetime	100 000 h

** IALA Recommendation O-130-Categorisation and Availability Objectives for Short Range AtoN

Compliance

Electromagnetic Compatibility	EN 60945:2002, category "exposed" EN 61547:2009 EN 61000-6-2:2005 EN 61000-6-4:2007 + A1:2011 EN 55015:2013 ETSI EN 303 446-2 V1.2.0 (2019-03) ETSI EN 301 489-1 V2.1.1 FCC Part 15 B Bluetooth ETSI EN 301 489-17 V3.1.1 ETSI EN 300 328 V2.1.1 ETSI EN 300 330 V2.1.1 GNSS module ETSI EN 301 489-19 V2.1.0 ETSI EN 303 413 V1.1.1
Environmental	EN 60945:2002, category "exposed" IEC 61892-1:2019 EN 60598-1:2015 + A1:2008
Product Safety	EN 60598-1:2015 + A1:2018
Health	EN 62471:2008
Mechanical	EN 60945:2002, category "exposed" EN 60598-1:2015 + A1:2018 IEC 61892-1:2019 IEC 61892-3:2019

Ordering Information

Item Number	Product ID	Variant	Details
30293500	ML02-NAI-UPS		96 hours battery backup at end of life, 120 Wh (10 x NiMH F-cell), expected 15-year service life. For duty cycles up to 62%
30295500	ML03-NAI-UPS		96 hours battery backup at end of life, 120 Wh (10 x NiMH F-cell), expected 15-year service life. For duty cycles up to 62%
30293400	ML05-NAI-UPS	S (Standard)	96 hours battery backup at end of life, 120 Wh (10 x NiMH F-cell), expected 15-year service life. For duty cycles up to 62%