



## DATASHEET

# SEAMARK ML02-NAI-UPS

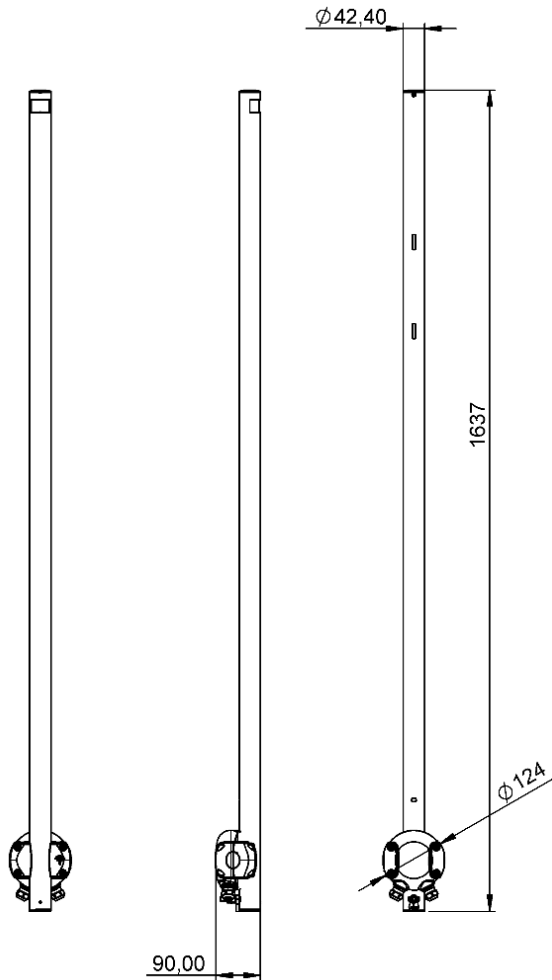
- 2 nautical mile marine lantern for marking offshore wind turbines
- 96 hours of battery backup integrated with battery management system
- Smart photocell, levelling sensor, water ingress detection, optical feedback and LED monitoring
- Standard NAI bus interface for power supply and communication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

The SeaMark marine lantern is designed for signaling a yellow, special mark characteristic on offshore wind turbines to satisfy IALA recommendation O-139<sup>A</sup>. The ruggedized stainless steel design integrates the optical head, mechanical support with 96 hours of battery backup into a single device.

A smart photocell ensures accurate day to night switching by distinguishing between the light produced by the lantern and ambient light. An autonomous fall back solution is implemented so that in the case of interrupted bus communication, the light is switched on when the ambient light level falls below a minimum, pre-set, configurable level. An integrated GNSS (GPS primary, GLONASS secondary) unit ensures synchronized flash patterns independently from the network and day/night switching by calendar. A levelling sensor assures accurate installation whilst water ingress detection, optical feedback and LED monitoring allow for detailed monitoring and optimized maintenance.

<sup>A</sup> IALA Recommendations O-139, "The marking of man-made offshore structures"

## Dimensions & Weight



Parameter	Standard UPS
Diameter of junction Box	124 mm
Diameter of stainless-steel enclosure	42 mm
Height	1637 mm
Weight	6.94 kg



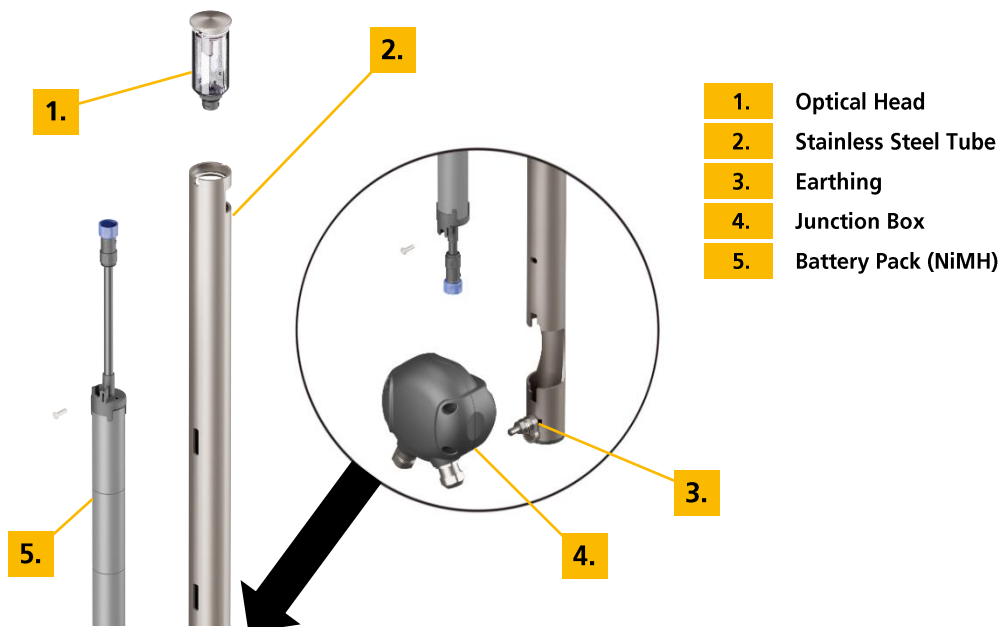
## Material

Tube	Stainless Steel 316 L / 1.4404
Housing Junction Box	LEXAN™ Resin EXL5689
Housing Optical Head	Makrolon® AL2647
Gasket	THERMOLAST® K TC3GPZ

## Optical System

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 %)
Beam angle (vertical)	5° FWHM
Beam angle (horizontal)	182° ±2° (can be reduced by sector hood)

## Components

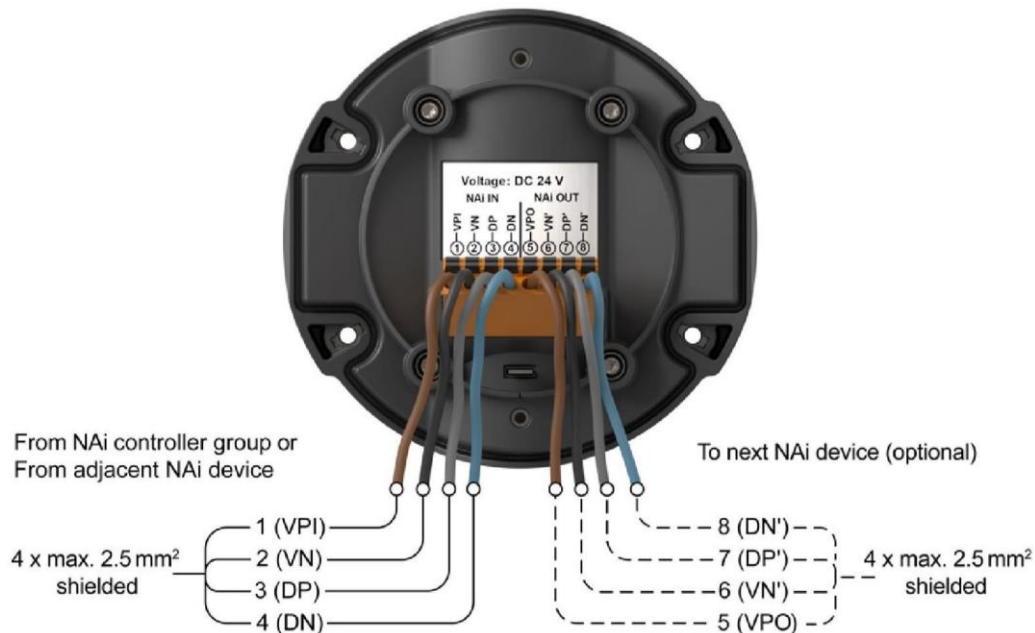


Note: All housing components including the cable glands satisfy the IP67 degree of protection requirements according to IEC 60529. During connection and assembly, ensure that no moisture or dirt penetrates into the open socket.

	Size	For cable diameter	Key width
EMC Cable Gland	M20 x 1.5	8.0 – 15.0 mm	24 mm

## Electrical Connection

Electrical connection	Spring terminal block, max. 2.5 mm <sup>2</sup>
Operating voltage $V_{IN}$	DC 24.0 V (-15 % / +25 %)
Power consumption (Peak, $V_{IN}$ = DC 24 V, without charging)	1.6 W
Power consumption (Peak, $V_{IN}$ = DC 24 V, charging)	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 <sub>B</sub>

## Electrical Safety and Health

Protection class	Class III
Overvoltage protection	Class III
Pollution degree	3

## Reliability

IALA Category	1 <sup>B</sup> (assumed MTTR of 96 h)
Minimum LED lifetime	100 000 h

<sup>B</sup> 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 EN 62479:2011 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 EN 60598-2-5:2015 IEC 61892-1:2019 IEC 61892-3:2019

## Ordering Information

Item Number	Product ID	Option Name	UPS Details
30 29 35 00	ML02-NAI-UPS S	SeaMark Marine Lantern with Standard UPS	96 hours battery backup at end of life, 120 Wh (10 x NiMH F-cell), 15-year service life. For duty cycles up to 62%