



EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MEDB00006AV
Revision no.:
3

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV SE based on the notification of the Federal Maritime and Hydrographic Agency of Germany.

This is to certify:

that the **Navigation lights**

with type designation(s)

L30001 UNL Universal Navigation Light, L30002 UNL-S Universal Navigation Light (Side-mounted)

issued to

Optonaval GmbH
Hamburg, Germany

is found to comply with the Implementing Regulation (EU) 2024/1975 for
Item no. **MED/6.1 (Row 1 of 1)**

according to the following requirements:

COLREG 72 Annex I/14, IMO Res. A.694(17), IMO Res. MSC.253(83)

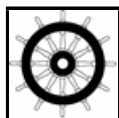
Further details of the equipment and conditions for certification are given overleaf.

Date of issue: **2025-09-03**

Expiry date: **2030-09-02**

DNV local unit:
Hamburg – CMC North/East

Approval Engineer:
Tommi Juhani Rifaat



Notified Body
no.: **0098**



for **DNV SE**

Digitally Signed By:

Christine Mydlak-Röder

Christine Mydlak-Röder
Head of Notified Body

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV SE of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.

Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

Product series: L30001 UNL Universal Navigation Light & L30002 UNL-S Universal Navigation Light (Side-mounted)

The Optonaval Universal Navigation Light represents a modular approach to the wide variety of Navigation Lights, whereby one common hardware and software basis fits all purposes of the different navigation light applications on board of a ship. With its round shape, the light offers the best possible tightness. Different horizontal shaders and LEDColors define the various light functions, which can be combined in a single housing. The UNL comes with a separate

installation base to which the light unit is fixed by a bayonet catch, which allows a near tool-free installation and deinstallation. Most lights are built with fully separate redundant light elements, which switch over automatically in case need.

The UNL carries unique sensor capabilities which measure and record:

- Internal temperature
- Internal humidity (water tightness)
- Brightness of every LED
- Electric flow to every light segment
- Operating hours

Reading these indicators, the light will report an upcoming malfunction long before it occurs and allows for maintenance according to a structured plan rather than emergency repairs.

Please see Appendix: Product Description

Application/Limitation

•Each product is to be supplied with its manual for installation, maintenance, and use.

•Electric LED navigation lights on vessels of 20 and more meter length, applicable for 24V voltages.

•The navigation lights to be installed in accordance with COLREG 72 as amended and maker's instructions.

•The navigation lights of the Optonaval GmbH to be operated with a navigation light controller from Böning Automationstechnologie GmbH & Co. KG or Optonaval GmbH.

•For data transmission of the health status, Optonaval's Data Gathering Unit is required (already integrated in Optonaval's navigation light controller).

•For a correct functionality of the error detection of Böning's navigation light controller, the tripping current needs to be adjusted to a value of 100 mA.

•Navigation lamp LED light sources shall not be removed and replaced. Navigation lamp shall be replaced integrally if needed.

Type Examination documentation

Please see Appendix: Type Examination Documentation

Tests carried out

EN 14744 :2005 incl. AC :2006,

EN 60945 :2002 incl. IEC 60945 Corr. 1 : 2008

Marking of product

According to EN 14744



Certificate no.: **MEDB00006AV**
Revision no.: **3**

APPENDIX

Type Examination documentation

Certificate no.:
MEDB00006AV
Revision no.:
3

Document No.	Rev.	Title
MED_Doc_Prüfplan	1.4	Prüfplan für L30001 UNL & L30002 UNL-S
MED_Doc_Prüfspezifikation_2	1	Prüfspezifikation für L30001 UNL & L30002 UNL-S
MED_Doc_Prüfspezifikation	1.7	Prüfspezifikation für L30001 UNL & L30002 UNL-S
MED_Doc_Prüfspezifikation	1.8	Prüfspezifikation für L30001 UNL & L30002 UNL-S
MED_Doc_Prüfspezifikation_2	1.0	Prüfspezifikation für L30001 UNL & L30002 UNL-S
01_MED_Doc_8D-2022-02_Risikoanalyse	0.6	Risikoanalyse 8D Reports 8D-2022-02
0800S3-454.NL/Optionaval UNL/4	2020-05-28	BSH EN 14744-5.2 L30002-00-002 UNL Double Sidelight Port-112.5°
0800S3-454.NL/Optionaval UNL/4-4	2020-05-28	BSH EN 14744-5.2 L30001-00-030 UNL Towing light & double stern light & Suez stop light - 135°
0800S3-454.NL/Optionaval UNL/4-2	2020-05-28	BSH EN 14744-5.2 L30001-00-007 UNL Double Sidelight starboard - 112.5°
0800S3-454.NL/Optionaval UNL/4-3	2020-05-28	BSH EN 14744-5.2 L30001-00-020 UNL Half All-round light - 180°
0800S3-454.NL/Optionaval UNL/4-1	2020-05-28	BSH EN 14744-5.2 L30001-00-003 UNL Double anchor & double masthead light – 360° & 225°
0800S3-454.NL/Optionaval UNL/5	2020-11-04	BSH EN 14744–5.2 L30001-00-030 UNL Double towing light & White half All-round light 180°& Red half All-round light - 180°
0800S3-454.NL/Optionaval UNL/5.2	2021-01-08	BSH EN 14744–5.2 L30001-00-047 UNL Double towing light & White half All-round light 180°& Red half All-round light - 180°
MED_Doc_Berichtskommentar_half-all-round-light	1.0	Berichtskommentar horizontale Lichtstärkeverteilung EN 14744; 4.2.1 & 5.2.2.2.9
MED_Doc_Berichtskommentar_DryHeatOperational	1.0	Berichtskommentar Trockene Wärme EN 14744:2005-08; 5.3.3 089-20_V1U.pdf
MED_Doc_Berichtskommentar_IPX7	1.0	Berichtskommentar IPX7-Prüfung DIN EN 60529: 2014-09 075-20_V2U IPX7.pdf
MED_Doc_Berichtskommentar_RainAndSpray	1.0	Berichtskommentar Regen und Sprühnebel EN 14744:2005-08; 5.3.6 089-20_V1U.pdf
MED_Doc_Berichtskommentar_SolarRadiation	1.0	Berichtskommentar Sonneneinstrahlung EN 14744:2005-08; 5.3.7 089-20_V1U.pdf

MED_Doc_Äquivalenzbetrachtung_EUT	1.0	Äquivalenzbetrachtung der UNL(-S) Prüflinge L30001 UNL & L30002 UNL-Sv
TR-089-20	1	TREO EN 14744:2005-08 L30001-00-003; L30001-00-020 & L30001-00-002 Commented
TR-075-20	2	TREO IPX7 L30001-00-003; L30001-00-020 & L30001-00-002 Commented
MED_Doc_Testprotokoll_FC	1.5	Testprotokoll - Funktionscheck für L30001 UNL & L30002 UNL-S
MED_Doc_Testprotokoll_FP	1.4	Testprotokoll – Funktionsprüfung für L30001 UNL & L30002 UNL-S
MED_Doc_Äquivalenzbetrachtung_EUT	1.1	Testprotokoll – Spannungsbereichsprüfung für L30001 UNL & L30002 UNL-S
MED_Doc_Testprotokoll_Sichtprüfung	1.1	Testprotokoll – Sichtprüfung für L30001 UNL & L30002 UNL-S
TR-145-20	1	TREO 60945:2003-07 Corr:2010-01 EMV UNL L30001-00-002
TR-144-20	1	TREO 60945:2003-07 Corr:2010-01 EMV UNL L30001-00-020
TR-143-20	1	TREO 60945:2003-07 Corr:2010-01 EMV UNL L30001-00-003
MED_Doc_LED-Alterungsnachweis_L30001-00-007	1.2	LED-Alterungsnachweis für L30001-00-007 UNL
MED_Doc_LED-Alterungsnachweis_L30001-00-020	1.2	LED-Alterungsnachweis für L30001-00-020 UNL
MED_Doc_LED-Alterungsnachweis_L30001-00-030	1.2	LED-Alterungsnachweis für L30001-00-030 UNL
MED_Doc_LED-Alterungsnachweis_L30002-00-002	1.2	LED-Alterungsnachweis für L30002-00-002 UNL
MED_Doc_LED-Alterungsnachweis_L30001-00-003	1.2	LED-Alterungsnachweis für L30001-00-003 UNL
MED_Dok_NRC&S UEZ_Risikoanalyse	0.3	Risikoanalyse für eine neue kombinierte UNL Variante

APPENDIX

Product Description

Certificate no.:
MEDB00006AV
Revision no.:
3

Compass Safe Distance	standard compass	Steering compass
L30001-00-003	33 cm	14 cm
L30001-00-020	27 cm	15 cm
L30001-00-002	32 cm	19 cm

LED Navigation Lights Series UNL & UNL-S		
1	L30001-00-003	UNL - DOUBLE ANCHOR & DOUBLE MASTHEAD LIGHT 360°&225° - 3NM&6NM - WH - CBL BTM
2	L30001-00-004	UNL - DOUBLE ANCHOR & DOUBLE MASTHEAD LIGHT 360°&225° - 3NM&6NM - WH - CBL AFT
3	L30001-00-005	UNL - DOUBLE MASTHEAD LIGHT AFT 225° - 6NM - WH - CBL BTM
4	L30001-00-006	UNL - DOUBLE MASTHEAD LIGHT AFT 225° - 6NM - WH - CBL AFT
5	L30001-00-007	UNL - DOUBLE SIDELIGHT 112.5° - 3NM - GN - CBL BTM
6	L30001-00-008	UNL - DOUBLE SIDELIGHT 112.5° - 3NM - GN - CBL AFT
7	L30001-00-009	UNL - DOUBLE SIDELIGHT 112.5° - 3NM - RD - CBL BTM
8	L30001-00-010	UNL - DOUBLE SIDELIGHT 112.5° - 3NM - RD - CBL AFT
9	L30001-00-011	UNL - STOP LIGHT 135° - 3NM - RD - CBL BTM
10	L30001-00-012	UNL - STOP LIGHT 135° - 3NM - RD - CBL AFT
11	L30001-00-013	UNL - DOUBLE ANCHOR & DOUBLE STERN LIGHT 360°&135° - 3NM - WH - CBL BTM
12	L30001-00-014	UNL - DOUBLE ANCHOR & DOUBLE STERN LIGHT 360°&135° - 3NM - WH - CBL AFT
13	L30001-00-015	UNL - DOUBLE NUC/RAM/CBD LOWER 180° - 3NM - RD - CBL BTM
14	L30001-00-016	UNL - DOUBLE NUC/RAM/CBD LOWER 180° - 3NM - RD - CBL AFT
15	L30001-00-017	UNL - DOUBLE RAM & DOUBLE CBD MIDDLE 180° - 3NM - WH&RD - CBL BTM
16	L30001-00-018	UNL - DOUBLE RAM & DOUBLE CBD MIDDLE 180° - 3NM - WH&RD - CBL AFT
17	L30001-00-019	UNL - SUEZ UPPER&LOWER 180° - 3NM - RD&WH - CBL BTM
18	L30001-00-020	UNL - SUEZ UPPER&LOWER 180° - 3NM - RD&WH - CBL AFT
19	L30001-00-021	UNL - SUEZ MIDDLE 180° - 3NM - GN&WH&RD - CBL BTM
20	L30001-00-022	UNL - SUEZ MIDDLE 180° - 3NM - GN&WH&RD - CBL AFT
21	L30001-00-023	UNL - DOUBLE STERN LIGHT & SUEZ STOP LIGHT 135° - 3NM - WH&RD - CBL BTM
22	L30001-00-024	UNL - DOUBLE STERN LIGHT & SUEZ STOP LIGHT 135° - 3NM - WH&RD - CBL AFT
23	L30001-00-025	UNL - DOUBLE ANCHOR 360° - 3NM - WH - CBL BTM
24	L30001-00-026	UNL - DOUBLE ANCHOR 360° - 3NM - WH - CBL AFT
25	L30001-00-027	UNL - DOUBLE STERN LIGHT 135° - 3NM - WH - CBL BTM
26	L30001-00-028	UNL - DOUBLE STERN LIGHT 135° - 3NM - WH - CBL AFT
27	L30001-00-029	UNL - TOW LIGHT & DOUBLE STERN LIGHT & SUEZ STOP LIGHT 35° - 3NM - YE&WH&RD - CBL BTM
28	L30001-00-030	UNL - TOW LIGHT & DOUBLE STERN LIGHT & SUEZ STOP LIGHT 135° - 3NM - YE&WH&RD - CBL AFT
29	L30001-00-031	UNL - DOUBLE TOW LIGHT 135° - 3NM - YE - CBL BTM
30	L30001-00-032	UNL - DOUBLE TOW LIGHT 135° - 3NM - YE - CBL AFT
31	L30001-00-033	UNL - DOUBLE NUC/RAM/CBD 360° - 3NM - RD - CBL BTM
32	L30001-00-034	UNL - DOUBLE NUC/RAM/CBD 360° - 3NM - RD - CBL AFT
33	L30001-00-035	UNL - DOUBLE RAM/CBD 360° - 3NM - WH&RD - CBL BTM
34	L30001-00-036	UNL - DOUBLE RAM/CBD 360° - 3NM - WH&RD - CBL AFT
35	L30001-00-037	UNL - SUEZ UPPER&LOWER 360° - 3NM - RD&WH - CBL BTM

36	L30001-00-038	UNL - SUEZ UPPER&LOWER 360° - 3NM - RD&WH - CBL AFT
37	L30001-00-039	UNL - SUEZ MIDDLE 360° - 3NM - GN&WH&RD - CBL BTM
38	L30001-00-040	UNL - SUEZ MIDDLE 360° - 3NM - GN&WH&RD - CBL AFT
39	L30001-00-041	UNL - PANAMA TOP LIGHT 135° - 2NM - BU - CBL BTM
40	L30001-00-042	UNL - PANAMA TOP LIGHT 135° - 2NM - BU - CBL AFT
41	L30001-00-043	UNL - DOUBLE NOK LIGHT 360° - 2NM - GN - CBL BTM
42	L30001-00-044	UNL - DOUBLE NOK LIGHT 360° - 2NM - GN - CBL AFT
43	L30001-00-045	UNL - DOUBLE MASTHEAD SIGNAL LIGHT 360° - 5NM - WH - CBL BTM
44	L30001-00-046	UNL - DOUBLE MASTHEAD SIGNAL LIGHT 360° - 5NM - WH - CBL AFT
45	L30001-00-047	UNL - RAM/CBD & DOUBLE TOW LIGHT 180°&135° - 5NM - WH&RD&YE - CBL AFT
46	L30001-00-051	UNL - DOUBLE TOW LIGHT FORE 225° - 3NM - WH - CBL BTM
47	L30001-00-052	UNL - DOUBLE TOW LIGHT FORE 225° - 3NM - WH - CBL AFT
48	L30001-00-053	UNL - DOUBLE UNDERWATER OPERATING LIGHT 360° - 3NM - GN - CBL BTM
49	L30001-00-054	UNL - DOUBLE UNDERWATER OPERATING LIGHT 360° - 3NM - GN - CBL AFT
50	L30001-00-055	UNL - MASTHEAD SIGNAL LIGHT & NUC/RAM/CBD 360° - 5NM&3NM - WH&RD - CBL BTM
51	L30001-00-056	UNL - MASTHEAD SIGNAL LIGHT & NUC/RAM/CBD 360° - 5NM&3NM - WH&RD - CBL AFT
52	L30001-00-057	UNL - RAM/CBD 360° - 3NM - WH&RD - CBL BTM
53	L30001-00-058	UNL - RAM/CBD 360° - 3NM - WH&RD - CBL AFT
54	L30001-00-059	UNL - DOUBLE ANCHOR & DOUBLE MASTHEAD LIGHT 360°&225° - 3NM&6NM - WH - CBL BTM - Shader
55	L30001-00-060	UNL - DOUBLE ANCHOR & DOUBLE MASTHEAD LIGHT 360°&225° - 3NM&6NM - WH - CBL AFT - Shader
56	L30001-00-061	UNL - DOUBLE NUC/RAM/CBD 180° - 3NM - UP/LOW RD - SUEZ UP/LOW WH/RD BTM
57	L30001-00-062	UNL - DOUBLE NUC/RAM/CBD 180° - 3NM - UP/LOW RD - SUEZ UP/LOW WH/RD AFT
58	L30002-00-001	UNL-S - DOUBLE SIDELIGHT 112.5° - 3NM - GN
59	L30002-00-002	UNL-S - DOUBLE SIDELIGHT 112.5° - 3NM - RD
60	L30002-00-004	UNL-S - DOUBLE NUC/RAM/CBD LOWER 180° - 3NM - RD
61	L30002-00-006	UNL-S - SUEZ UPPER&LOWER 180° - 3NM - RD&WH
62	L30002-00-011	UNL-S - DOUBLE SIDELIGHT 112.5° - 3NM - GN (for DEEP BLUE)
63	L30002-00-012	UNL-S - DOUBLE SIDELIGHT 112.5° - 3NM - RD (for DEEP BLUE)