



Certificate No:
TAE000049A

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Power Cable

with type designation(s)
LI2XCH 2X1X2.5 SW, LI2XCH 1X2X4.0 BK

Issued to

LEONI Special Cables GmbH
Friesoythe, Niedersachsen, Germany

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Rated voltage (kV) 1,8/3

Temp. class (°C) 90

Issued at **Hamburg** on **2021-05-11**

This Certificate is valid until **2026-05-10**.

for **DNV**

DNV local station: **Hamburg – CMC North/East**

Approval Engineer: **Carsten Hunsalz**

Arne Schaarmann
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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 300,000 USD.



Form code: TA 251

Revision: 2021-03

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Product description

UV system cables for water sterilization on ships LI2XCH 2X1X2.5 SW, LI2XCH 1X2X4.0 BK

Construction:

Rated voltage: 1,8/3 kV
Maximum operating conductor temperature: 90° C
Conductor: Stranded copper, class 5
Insulation: XLPE
Screening: Plain or tinned copper wire
Outer sheath: SHF1

No. of cores (pair): Nominal cross section mm²

1 x 2 2,5 or 4

Ampacity: 100 kHz ≤ 12 A
200 kHz ≤ 3 A

Application/Limitation

UV system cables for water sterilization on ships

Temperature window for transport and fixed installation: -40°C to +80°C

Type Approval documentation

Test report: LEONI test report, dated 2021-01-05 and 1/2021 witnessed by DNV

Specification: L45551-G21-B86-EN, L45551-H21-B36-EN, 2021-01-11 F45052-F7300

Tests carried out

Standard	Release	General description	Limitation
IEC 60228	2004-11	Conductors of insulated cables	
UL Style		30091	
IEC 60092-353	2016-09	Electrical installations in ships - Part 353: Power cables for rated voltages 1 kV and 3 kV	partly
IEC 60092-360	2021-01	Electrical installations in ships - Part 360: Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables.	partly
IEC 60332-1-2	2015-07	Tests on electric cables under fire conditions. Test for vertical flame propagation for a single insulated wire or cable.	

Marking of product

"sequential length in meters" LEONI L * LI2XCH 2X1X2.5 SW or LI2XCH 1X2X4.0 BK 1,8/3kV * "internal lot number"

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:



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- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE