Certificate no.:
TAE0000538

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Electric Power Cable

with type designation(s)
CEPJ/NC, CEPF/NC

issued to

Guangzhou OUSSEA Photoelectric Transmission Technology Inc., Ltd.

Guangzhou, Guangdong Province, **China**

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)	**0,6/1**
Temp. class (°C)	**90**

Issued at **Hamburg** on **2025-10-09**

This Certificate is valid until **2030-10-08**.

for **DNV**

DNV local unit: **China South NB**

Approval Engineer: **Carsten Hunsalz**

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 USD 300 000.

Product description

Type: CEPJ/NC, CEPF/NC

Conductor: Tinned, stranded copper class 2 or class 5
Insulation: Mica tape + EPR
Outer sheath: PF - (SHF1) or PJ - (SHF2)

CEPJ/NC, CEPF/NC 0,6/1kV

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
1x1	6,0
1x1,5	6,2
1x2,5	6,7
1x4	7,2
1x6	7,8
1x10	8,9
1x16	10,0
1x25	11,9
1x35	13,1
1x50	15,0
1x70	17,0
1x95	19,5
1x120	21,1
1x150	23,2
1x185	25,7
1x240	28,9
1x300	32,0
2x1	9,9
2x1,5	10,4
2x2,5	11,6
2x4	12,6
2x6	13,7
2x10	15,8
2x16	18,1
2x25	21,7
2x35	24,4
2x50	28,1
2x70	31,9
2x95	36,9
2x120	40,3
2x150	44,6
2x185	49,6
3(2+E)x1	10,5
3(2+E)x1,5	11,3
3(2+E)x2,5	12,3
3(2+E)x4	13,4
3(2+E)x6	14,8
3(2+E)x10	17,0
3(2+E)x16	19,5

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
3(2+E)x25	23,4
3(2+E)x35	26,3
3(2+E)x50	30,2
3(2+E)x70	34,3
3(2+E)x95	39,7
3(2+E)x120	43,4
3(2+E)x150	48,0
3(2+E)x185	53,3
3(2+E)x240	60,4
4(3+E)x1	11,6
4(3+E)x1,5	12,3
4(3+E)x2,5	13,5
4(3+E)x4	14,9
4(3+E)x6	16,3
4(3+E)x10	18,7
4(3+E)x16	21,5
4(3+E)x25	26,0
4(3+E)x35	29,2
4(3+E)x50	33,6
4(3+E)x70	38,4
4(3+E)x95	44,3
4(3+E)x120	48,4
4(3+E)x150	53,5
4(3+E)x185	59,5
5(4+E)x1	12,7
5(4+E)x1,5	13,4
5(4+E)x2,5	14,9
5(4+E)x4	16,3
5(4+E)x6	18,0
5(4+E)x10	20,7
5(4+E)x16	23,8
5(4+E)x25	28,8
5(4+E)x35	32,3
5(4+E)x50	37,2
5(4+E)x70	42,4
5(4+E)x95	49,3
5(4+E)x120	53,8
5(4+E)x150	59,4
5(4+E)x185	66,2

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
6x1	13,1
7x1	14,0
10x1	17,9
12x1	18,5
14x1	19,6
16x1	20,7
19x1	21,8
24x1	25,9
27x1	26,5
30x1	27,6
33x1	28,7
37x1	29,8
6x1,5	14,0
7x1,5	14,8
10x1,5	19,0
12x1,5	19,8
14x1,5	20,8
16x1,5	22,2
19x1,5	23,4
24x1,5	27,7
27x1,5	28,3
30x1,5	29,4
33x1,5	30,7
37x1,5	31,9
6x2,5	15,4
7x2,5	16,2
10x2,5	21,1
12x2,5	21,8
14x2,5	23,1
16x2,5	24,4
19x2,5	26,0
24x2,5	30,8
27x2,5	31,5
30x2,5	32,9
33x2,5	34,1
37x2,5	35,7

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
6x4	17,0
7x4	18,0
10x4	23,3
12x4	24,1
14x4	25,6
16x4	27,0
19x4	28,7
24x4	34,1
27x4	34,8
30x4	36,3
33x4	37,8
37x4	39,5

Application/Limitation

General power and lighting. Control.

This type of cable is fire resistant in accordance with IEC Publication 60331.

The requirements of SOLAS Amendments Chapter II-1, Part D, Reg. 45, 5.2 (provision to be taken to limit Fire Propagation along Bunches of Cables or Wires) are fulfilled without any additional measures.

Fire resistant. Flame retardant Cat. A. Halogen free. Low smoke.

Type Approval documentation

Tests carried out

Standard	Release	General description	Limitation
DNV-CP-0399	2021-08	Class Programme Electric cables	
IEC 60092-350	2020-01	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-353	2024-06	Electrical installations in ships - Part 353: Power cables for rated voltages 1 kV and 3 kV	
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.	
IEC 60332-1-2	2015-07	Tests on eletric cables under fire conditions. Test for vertical flame propagation for a single insulated wire or cable.	
IEC 60332-3-22	2018-07	Tests on electric and optical fibre cables under fire conditions – Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cables – Category A	Charred portion of sample does not exceed 2,5m above bottom edge of burner.
IEC 60331-1	2018-03	Fire resistance / Circuit integrity – Test for method for fire with shock at temperature of at least 830ºC for cables rated up to and including 0,6/1 kV with an overall diameter exceeding 20 mm	For cables with an overall diameter exceeding 20 mm, 120 min.
IEC 60331-2	2018-03	Fire resistance / Circuit integrity – Test for method for fire with shock at temperature of at least 830ºC for cables rated up to and including 0,6/1 kV with an overall diameter not exceeding 20mm	For cables with an overall diameter not exceeding 20 mm, 120 min.
IEC 60754-1	2019-11	Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content	Low Halogen: <0,5% Halogen
IEC 60754-2	2019-11	Test on gases evolved during combustion of materials from cables - Part 2: Determination of acidity (by pH measurement) and conductivity	Halogen free: pH > 4,3 Conductivity < 10µS/mm
IEC 60684-2	2011-08	Clause 45.2 Methods of determination of low levels of fluorine	HF max 0,1%
IEC 61034-1/2	2019-11	Measurement of smoke density of cables burning under defined conditions – Test apparatus, procedure and requirements	Low smoke Light transmittance >60%

Marking of product

Example:

Guangzhou OUSSEA Photoelectric Transmission Technology Inc., Ltd. - CEPJ/NC – 0,6/1kV - size -
IEC 60332-3-22 – IEC 60331-1/2 - Lot no.

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:

- 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