



fiber optic cable series

OPPC

Optical Phase Conductor (OPPC) Overhead Power Transmission

Overhead HV/MV phase conductor with laser-welded 316L stainless-steel FIMT optical core



IEC 60794-4-20 OPPC

10-220 kV Phase Line

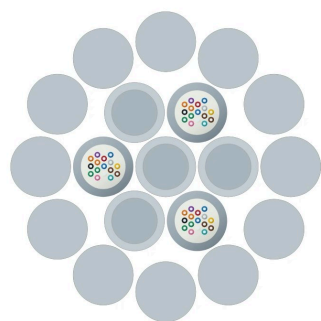
Laser-Welded FIMT

Application

OPPC Optical Phase Conductor Overhead Power Transmission Composite Fibre Cable per IEC 60794-4-20 combining an ACSR/AAAC phase conductor with a hermetically laser-welded stainless-steel optical unit (12-96 G.652.D fibres) for 10 kV.

Typical uses: 10-66 kV Rural & Renewable Collector Lines, 110-220 kV Sub-Transmission Without Earth Wire, Wind & Solar Farm Grid Interconnects, Distribution Automation & Fault Location, Conductor Temperature & Ice-Load DTS/DSS

Construction



Cross-section, not to scale

- 1 Single-mode optical fibres + high-temp gel

≤ 0.35 dB/km @ 1310 nm ·
 ≤ 0.21 dB/km @ 1550 nm

- 2 Laser-welded 316L stainless-steel FIMT

- 3 Inner Aluminum-Clad Steel (ACS) strength core

- 4 Outer EC Aluminum / AAAC phase conductor wires

Technical data

Typical values

Continuous current (ampacity)	245 A (OPPC-70) to 840 A (OPPC-400) per IEC 61597
Short-circuit capacity (I ² t)	25 to 260 kA ² s (0.5 s to +200 °C)
Short-circuit peak temp.	Up to +200 °C (0.5 s fault duration)
Rated Tensile Strength (RTS)	42 kN to 138 kN
Crush resistance	≥ 10,000 N / 100 mm
Fibre specification	ITU-T G.652.D / G.655 (high-temp +125 °C coating opt)
Excess fibre length (EFL)	0.25 % to 0.40 % inside 316L FIMT
Aeolian vibration	10 ⁸ cycles at 20 % RTS without wire or fibre break
Standards	IEC 60794-4-20 Aerial Optical Phase Conductors

DC resistance @ 20 °C	0.072 to 0.410 Ω/km
Continuous operating temp.	-40 °C to +90 °C (continuous phase current)
Linear expansion coeff.	17.8 to 19.6 × 10 ⁻⁶ /K (ACSR-matched)
Modulus of elasticity	68 to 88 GPa (matched to companion phases)
Min. bend radius	20 × OD (static) · 30 × OD (stringing sheave)
Attenuation @ 1310 / 1550 nm	≤ 0.35 dB/km / ≤ 0.21 dB/km
Hermeticity & moisture	100 % eddy-current tested 316L welded FIMT
HV isolation at joints	Porcelain/silicone composite HV optical insulator boxes

Sizes

6 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

Order designation	Matched ACSR & fibres	Outer Ø mm	Weight ≈ kg/km	RTS kN	DC R @ 20 °C Ω/km	Ampacity A
10–66 kV Medium-Voltage OPPC (70–150 mm ²) 3 sizes						
☐ OPPC-24B1-70/10	ACSR 70/10 · 24F G.652.D	11.4	275	26	0.410	245
☐ OPPC-24B1-120/20	ACSR 120/20 · 24F G.652.D	15.2	495	46	0.238	365
☐ OPPC-48B1-150/25	ACSR 150/25 · 48F G.652.D	17.1	610	56	0.192	425
66–220 kV High-Voltage OPPC (185–400 mm ²) 3 sizes						
☐ OPPC-48B1-185/30	ACSR 185/30 · 48F G.652.D	19.0	745	68	0.154	495
☐ OPPC-48B1-240/40	ACSR 240/40 · 48F G.652.D	21.6	965	86	0.119	590
☐ OPPC-96B1-400/50	ACSR 400/50 · 96F G.652.D	27.6	1,510	132	0.072	840

– Continuous ampacity calculated at +80 °C conductor, +35 °C ambient, 0.6 m/s wind and 1000 W/m² solar radiation per IEC 61597.

Standards and approvals

- ✓ IEC 60794-4-20 OPPC Standard
- ✓ IEC 61089 & IEEE 1138
- ✓ RoHS 2 & REACH Compliant

Certifications



Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone

+86 185 9591 3361

Email

info@tebaoflex.com

Web

tebaoflex.com/cables/optical-phase-conductor-oppc-overhead-power-transmission-composite-fibre-cable



Typical values for this cable type, based on IEC 60794-4-20 / IEEE 1138 / IEC 61089. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.