subsea umbilical, ROV tether & oceanographic tow cable

10kVDC Observatory Trunk

10 kV DC 24–48F G.654E / G.652D Laser-Welded SS & Copper-Tube Subsea O

ITU-T G.972 / 10 kV DC Subsea · 10 kV DC · Subsea umbilical, rov tether &



ITU-T G.972 / 10 kV DC Subsea | **10 kV DC (-20 to +70 °C)** | **Double Galvanized Steel Armour & PP**

Application

10 kV DC 24–48F G.654E / G.652D Laser-Welded SS & Copper-Tube Subsea Observatory Trunk Cable (ITU-T G.972 / 10 kV DC Subsea) engineered for 10 kV DC service across -20 to +70 °C (min. bend radius 20 × OD).

Typical uses: Oceanographic CTD, ADCP & Deep-Tow Surveys, Work-Class & Observation ROV / AUV Systems, Side-Scan Sonar, SAS & Towed Hydrophone Arrays, Marine 2D/3D/UHR Seismic Streamers & OBC

Construction





Cross-section, not to scale

1. Laser-Welded SS Tube (24–48×G.654E/G.652
2. Steel Pressure Vault & Copper Conductor
3. 10kV DC High-Purity MDPE / HDPE Insulati
4. Double Galvanized Steel Armour & PP Serv

Technical data

Typical values

Rated voltage / transmission duty	10 kV DC (ITU-T G.972 / G.654E 10 kV DC Cabled Subsea Observatory Electro-Optical Trunk Specification)	**Core / conductor construction**	Laser-Welded SS Tube (24–48×G.654E/G.652D) — Hermetic stainless-steel tube housing ultra-low-loss single-mode fibers
Primary dielectric / buffering	Steel Pressure Vault & Copper Conductor Tube — High-strength steel vault + continuous copper tube for 10 kV DC feed	**Continuous operating temperature**	−20…+70 °C (subsea & offshore duty)
Hydrostatic & thermal stability	Verified thermal and hydrostatic stability per ITU-T G.972 / G.654E 10 kV DC Cabled Subsea Observatory Electro-Optical Trunk Specification	**Storage & transport temperature**	−40…+80 °C on export wooden/steel winch reel
Outer protection / armouring	Double Galvanized Steel Armour & PP Serving — LWISAIDA galvanized steel wire armour + polypropylene outer serving	**Minimum bending radius**	20 × OD
Armour, strength member & mechanical duty	10kV DC High-Purity MDPE / HDPE Insulation — High-voltage direct-current polyethylene dielectric	**Seawater, hydrostatic & hydrolysis resistance**	Engineered for continuous seawater immersion, pressure cycling and hydrolysis resistance per ITU-T G.972 / G.654E 10 kV DC Cabled Subsea Observatory Electro-Optical Trunk Specification
Oil, drilling mud & abrasion resistance	Resistant to marine hydraulic oils, salt mist, winch sheave wear and seabed abrasion per ITU-T G.972 / G.654E 10 kV DC Cabled Subsea Observatory Electro-Optical Trunk Specification	**RoHS & REACH compliance**	RoHS 2 (2011/65/EU + 2015/863) & REACH SVHC compliant
Standards	ITU-T G.972 / G.654E 10 kV DC Cabled Subsea Observatory Electro-Optical Trunk Specification		

Sizes

3 standard constructions

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

Order designation	Configuration	Core / stranding	Outer Ø ≈ mm	Net weight ≈ kg/km	Breaking / tensile kN ≈	Min. bend R mm
10kVDC Observatory Trunk Construction Schedule (−20…+70 °C) 3 sizes						
☐ **10kVDC Observatory Trunk Config A**	**3×25–50 mm² (or 3P+FO Composite)**	**Compacted / Class 5 Cu/SnCu + FO**	**32.0**	**1,850**	**85.0**	**380**
☐ **10kVDC Observatory Trunk Config B**	**3×95–150 mm² (or Heavy EOM)**	**Compacted / Class 5 Cu/SnCu + FO**	**48.5**	**4,280**	**130.0**	**580**
☐ **10kVDC Observatory Trunk Config C**	**3×240–400 mm² (or Trunk HV/MV)**	**Compacted Cu + Lead/Armour + FO**	**78.0**	**9,650**	**210.0**	**950**

– Custom core cross-sections, pair/fibre counts, armour breaking loads and continuous winch/seabed lengths available per ITU-T G.972 / G.654E 10 kV DC Cabled Subsea Observatory Electro-Optical Trunk Specification.

Electrical, optical & thermal parameters

3 sizes

Configuration	Max. DC R_{20} / Atten. Ω/km or dB/km	Rating / Impedance	Operating temp.
3×25–50 mm² (or 3P+FO Composite)	**0.49**	**10 kV DC (Subsea/MV)**	**−20…+70 °C**
3×95–150 mm² (or Heavy EOM)	**0.19**	**10 kV DC (Subsea/MV)**	**−20…+70 °C**
3×240–400 mm² (or Trunk HV/MV)	**0.07**	**10 kV DC (Trunk/HV)**	**−20…+70 °C**

– Every production length undergoes routine conductor DC resistance, high-voltage dielectric or OTDR continuity and dimensional verification.

Standards and approvals

- ITU-T G.972 / 10 kV DC Subsea Compliant
- EN 10204 3.1 Factory Test Certificate
- CE, RoHS 2 (2011/65/EU) & REACH

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/10kvdc-subsea-observatory-trunk-cable

Typical values for this cable type, based on ITU-T G.972 / G.654E 10 kV DC Cabled Subsea Observatory Electro-Optical Trunk Specification. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.