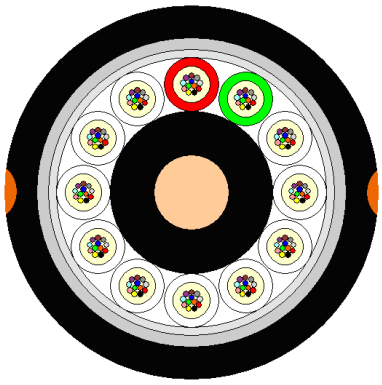
# Optical Fibre Cables for Outdoor Installation (XT type)

## Cable Design

**6PHETOP_1069_00E_v6.2**
**IEC/EN 60794**



- not to scale -

- **Central Strength Member (CSM):** glass fibre reinforced plastic rod (FRP), with plastic oversheathing when needed.
- **Loose Tube:** thermoplastic material, containing 12 or 24 fibres and filled with a suitable water tightness compound.
- **Filler Elements:** thermoplastic rods, where needed.
- **Stranding:** loose tubes (and fillers), SZ stranded around the CSM.
- **Longitudinal Water Tightness:** dry core with water swellable elements.
- **Peripheral Strength Elements and Non Metallic Armour:** glass yarns (glass content 43kTex).
- **2 Ripcords**
- **Outer Sheath:** PE.

## Technical data

| **Cable Type Designation** | | **XT** | | |
|---|---|---|---|---|
| **No. of Fibres** | | **288** | | **432** |
| Design | 1st layer | 12 x 24 | | 6 x 24 |
| Design | 2nd layer | - | | 12 x 24 |
| Outer Sheath Thickness (min.) | mm | 1.5 | | |
| Cable Diameter | mm | 18.5 | | 18.9 |
| Cable Weight | kg / km | 285 | | 290 |
| Minimum Bending Radius | mm | Without Tension<br>15 x Cable-Ø | | Under Maximum Tension<br>20 x Cable-Ø |
| Temperature Range | ºC | Installation<br>-20 to +60 | Transport & Storage<br>-25 to +70 | Operation<br>-20 to +60 |

*Please refer to our General Installation, Safety & Handling recommendations before handling.*

## Main characteristics

| **Test** | **Test Standard** | **Specified Value** | **Acceptance Criteria** |
|---|---|---|---|
| Max. Installation Tension | IEC 60794–1–2-E1 | 6000 N | $\Delta\alpha$ reversible, fibre strain ≤ 0.33% |
| Crush | IEC 60794–1–2-E3 | 3000 N / 100mm, max. 15m | $\Delta\alpha \leq 0.05$ dB, no damage |
| Impact | IEC 60794–1–2-E4 | 10 Nm, 3 impacts, R= 10 mm | $\Delta\alpha \leq 0.05$ dB after the test |
| Torsion | IEC 60794–1–2-E7 | 1m, 100N, +/- 180°, 5 cycles | $\Delta\alpha \leq 0.1$ dB, no damage |
| Repeated Bending | IEC 60794–1–2-E6 | R=15x D, 400N, 100 cycles | no damage |
| Cable Bend | IEC 60794–1–2-E11 | R=15x D, 5 turns, 3 cycles | $\Delta\alpha \leq 0.05$ dB |
| Temperature Cycling | IEC 60794–1–2-F1 | -20°C to +60°C<br>-25°C to +70°C | $\Delta\alpha \leq 0.05$dB/km<br>$\Delta\alpha \leq 0.10$dB/km, reversible |
| Water Penetration | IEC 60794–1–2-F5B | Water column=1m, 14 days | water penetration < 1m |

*All optical measurements at 1550 nm.*

## Optical Characteristics

See the attached cabled optical fibre data sheet.

## Identification

### Fibre Colours

| No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Colour | red | green | yellow | blue | white | violet | orange | black | grey | brown | pink | aqua |

| No. | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Colour | red[1] | green[1] | yellow[1] | blue[1] | white[1] | violet[1] | orange[1] | natural[1] | grey[1] | brown[1] | pink[1] | aqua[1] |

<colour>[1] with black ring marks in 50mm intervals

### Buffer Tube Colours

1st layer

| Tube | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Colour | red | green | white | white | white | white | white | white | white | white | white | white |

2nd layer

| Tube | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Colour | red | green | white | white | white | white | white | white | white | white | white | white |

### Filler Elements Colour:

All filler elements are black.

### Sheath Colour:

The outer sheath colour is black with two diametrically opposite orange stripes.

### Sheath Marking:

The outer sheath is marked in 1 meter intervals as follows:

**SWISSCOM DRAKA <year of manufacture> XT DR 6000N**
**<fabrication no.> <length marking in meter>**

*Example: cable with 432 G.652.D fibres produced in 2015:*

**SWISSCOM DRAKA 2015 XT 432 FS/D DR 6000N 012345 01234M**

## Logistic

### Packing:

Wooden drums with protection.

### Delivery lengths:

Standard delivery lengths are 2.5 km, 4.5 km, 6 km, 8 km with a tolerance of -1% / +3%