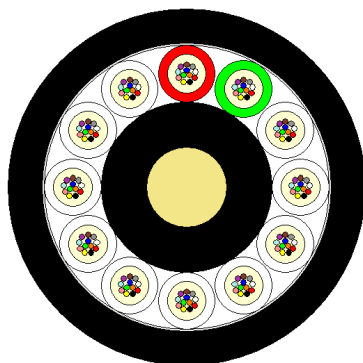


# QXXE O/DT-JM/W

## Cable Design

Acc. to IEC 60794-3-10

**Loose Tube Fiber Optic Cable - Dry Core - Non Armor - Single Sheath**


144 fiber cable (not to scale)

- **Central Strength Member (CSM):** glass fiber reinforced plastic rod (FRP), with plastic oversheathing when needed.
- **Loose Tube:** thermoplastic material, containing optical fibers 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:** aramide yarns (if required).
- **Outer Sheath:** PE, two ripcords beneath.

## Configuration

No. of Fibers		12	24	36	48	72	96	144	192	240	288	312	384	408	432	576
Number of tubes	1 <sup>st</sup> layer	1	2	3	4	6	8	12	8	10	12	6	6	6	6	9
Number of tubes	2 <sup>nd</sup> layer	-										7	10	11	12	15
Number of fillers		4	3	2	1	0	0	0	0	0	0	5	2	1	0	0
Number of fibers / tube		12						24								
Loose Tube / Filler - Ø	mm	2.5						3.0								
CSM - Ø	mm	2.1			2.6		3.0	3.5	3.5	3.5	3.5	3.1			3.5	
CSM-Oversheathing - Ø	mm	-			-		4.2	7.5	5.2	7.2	9.1	-			6.1	
Outer Sheath Thickness	mm	1.5														
Cable Diameter	mm	10.4			10.8		12.2	15.5	14.2	16.2	18.1	18.1			21.1	
Cable Weight	kg / km	80			95		120	190	160	205	255	250			335	

## Application

<b>Temperature Range</b>	Transportation & Storage: - 40 to + 70°C	<b>Minimum Bending Radius</b>	
	Installation: - 30 to + 60°C		Under Maximum Tension: 20 x Cable-Ø
	Operation: - 40 to + 70°C		Without Tension: 10 x Cable-Ø

## Main Mechanical and Environmental Characteristics

Test	Test Standard	Specified Value	Acceptance Criteria
Max. Installation Tension	IEC 60794-1-2-E1	≤ 144f : 1.5 * W [N], min. 2700 N > 144f : 1.0 * W [N], min. 2700 N	Δα reversible, fiber strain ≤ 0.33%
Max. Operation Tension	IEC 60794-1-2-E1	0.5 * W [N], min. 900 N	no fiber strain, Δα ≤ 0.05 dB
Crush	IEC 60794-1-2-E3	3000 N / 100 mm, max. 15 min	Δα ≤ 0.05 dB, no damage
Impact	IEC 60794-1-2-E4	15 Nm, 3 impacts, R= 300 mm	Δα ≤ 0.05 dB after the test
Torsion	IEC 60794-1-2-E7	100N, +/- 180°, 10 cycles	Δα ≤ 0.05 dB, no damage
Repeated Bending	IEC 60794-1-2-E6	R=20x D, 100 N, 35 cycles	no damage
Cable Bend	IEC 60794-1-2-E11	R=20x D, 4 turns, 3 cycles	Δα ≤ 0.05 dB, no damage
Temperature Cycling	IEC 60794-1-2-F1	-40°C to +70°C	Δα ≤ 0.05 dB/km
Water Penetration	IEC 60794-1-2-F5B	sample=3m, water column=1m	no water leakage in 24h

All optical measurements at 1550 nm.

## Identification and Packing

### Fiber Colors

Cables with 12 fibers / tube

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

Cables with 24 fibers / tube

No.	1	2	3	4	5	6	7	8	9	10	11	12
Color	white	red	yellow	green	blue	grey	brown	black	violet	acqua	orange	pink
-----Group binder colour: <b>Red</b> -----												
No.	13	14	15	16	17	18	19	20	21	22	23	24
Color	white	red	yellow	green	blue	grey	brown	black	violet	acqua	orange	pink
-----Group binder colour: <b>Green</b> -----												

### Buffer Tube Colors

1<sup>st</sup> layer

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

2<sup>nd</sup> layer

Tube	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Color	red	green	white	white	white	white	white	white	white	white	white	white	white	white	white

### Filler Elements Colors:

All filler elements are uncolored (natural).

### Sheath Color:

The outer sheath color is black.

### Sheath Marking:

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

**DRAKA**    Part No. <part no.>    <cable type>    PE Optical Cable    <fiber type>  
 Batch no. <producer id> <batch no.>    <year and week of manufacture>    <length marking in meter>

### Packing:

Wooden drums with protection.

### Delivery Lengths:

Standard delivery lengths are 2 km, 4 km, 6 km with a tolerance of - 1% / + 3%