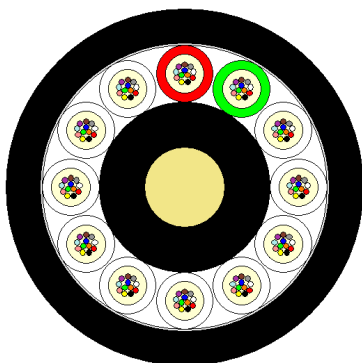


QXXE O/DT-JM/W

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 st layer	1	2	3	4	6	8	12	8	10	12	6	6	6	6	9
Number of tubes	2 nd 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

Temperature Range	Transportation & Storage: - 40 to + 70°C	Minimum Bending Radius	
	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: Red -----												
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: Green -----												

Buffer Tube Colors

1st 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

2nd 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%