

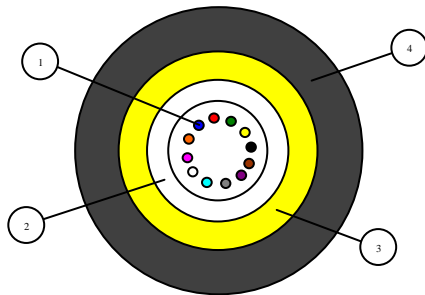
## MICRODUCT, DIELECTRIC CENTRAL LOOSE TUBE FO CABLE A-DQ(ZN)2Y 24 E9/125 G657A1

IEC 60794-3 / IEC 60794-5

### CABLE DESCRIPTION – APPLICATIONS

Loose tube, outdoor, fully dielectric FO cable with **very small outer diameter** suitable for air-blown installation in microduct systems. The layer of the reinforcing aramide yarns provides safer installation and operation conditions making them suitable also for indoor installation by drawing.

### CABLE DESIGN



Note: drawing is not to scale

1. **Optical fiber:** Coloured glass fiber.
2. **Loose tube:** Polymer tube, filled with jelly compound.
3. **Reinforcing elements:** Aramide yarns.
4. **Outer jacket:** Black PE

No. of fibers	24
No. of loose tubes	1
No. of fibers / tube	24
Outer sheath thickness (nominal) (mm)	0.5
Cable overall diameter (nominal) (mm)	3.8
Cable weight (nominal) (kg/km)	12

### CABLE MECHANICAL & ENVIRONMENTAL CHARACTERISTICS

Parameter	Tested according	Specified value	Acceptance criteria
<b>Tensile strength (short term – installation)</b>	IEC 60794-1-2E1	120 N	$\Delta\alpha$ reversible, fiber strain < 0.33 %
<b>Crush resistance (short term)</b>	IEC 60794-1-2E3	300 N/10cm	$\Delta\alpha$ reversible, no damage
<b>Impact resistance</b>	IEC 60794-1-2E4	0.2 N. m, 3 impacts spaced, R= 300 mm	$\Delta\alpha$ reversible, no damage
<b>Torsion</b>	IEC 60794-1-2E7	$\pm 180^\circ$ , 3 cycles, 20 N	$\Delta\alpha$ reversible, no damage
<b>Bending (static)</b>	IEC 60794-1-2E11	R= 15 x D, 6 turns, 3 cycles	$\Delta\alpha$ reversible, no damage
<b>Repeated bending (dynamic)</b>	IEC 60794-1-2E6	R= 20 x D, 20 N, 25 cycles	$\Delta\alpha$ reversible, no damage
<b>Temperature cycling</b>	IEC 60794-1-2F1	-30°C to +70°C	$\Delta\alpha < 0.05$ dB/km

Note: all optical power measurements are at 1550nm.

### IDENTIFICATION COLOUR CODING

Fiber colours per tube (13<sup>th</sup> to 24<sup>th</sup> with a black ring)

1	2	3	4	5	6	7	8	9	10	11	12
Red	Green	Blue	Yellow	White	Grey	Brown	Violet	Turquoise	Black	Orange	Pink
13	14	15	16	17	18	19	20	21	22	23	24
Red	Green	Blue	Yellow	White	Grey	Brown	Violet	Turquoise	Natural	Orange	Pink

Note: Other fiber and / or tube colour coding can be provided if requested.

YS	TMK	DATE	DETAILED	APPROVED	
1322/17	291/17	10/08/2017	E. CHATZISTAMOU	A. BETKAS	
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**MICRODUCT, DIELECTRIC CENTRAL LOOSE TUBE FO CABLE  
A-DQ(ZN)2Y 24 E9/125 G657A1**

**IEC 60794-3 / IEC 60794-5**

**SHEATH MARKING**

The following information is printed (ink injection method) in contrasting colour, on outer jacket, every one (1) meter:

**“CABLEL – 2017 – A-DQ(ZN)2Y 24 E9/125 G.657A1 – length marking m”**

Other or additional data can be printed on outer jacket if requested.

**PACKING**

The cables are delivered in non-returnable plywood reels or wooden drums suitable for safe transportation, storage and installation. Both cable ends are accessible for testing and tightly sealed with shrink-dawn end caps to prevent ingress of moisture. Cable type, customer, drum no, cable length, net and gross weight etc. are tagged on both drum flanges according to customer requirements.

**Cable length per drum: 4000m, 6000m ± 5%.**

Any particular requirements about packing, drum marking, cable length per drum can be provided if requested.

**QUALITY CONTROL**

All cables are quality tested in every stage of manufacturing procedure (raw materials receive, fiber colouring, fiber buffering, stranding, final cable, packing) to ensure a product of the highest quality level.

Detailed routine test reports (OTDR - attenuation in dB/km) can be delivered for all fibers, for all drums ordered.


Especially, for this cable category (small diameter duct FO cables) a strict measuring procedure is adopted to ensure that the cable overall diameter complies with the specified limit all over across the length of the cable.

**BASIC CHARACTERISTICS OF OPTICAL FIBERS**

**SINGLE-MODE OPTICAL FIBERS E9/125 ITU-T G657A1**

Parameter	Values
Cladding diameter	125.0 ± 0.7 μm
Coating diameter (non-colored)	245 ± 5 μm
Core-Cladding concentricity error	≤ 0.5 μm
Cladding non-circularity	≤ 0.7 %
Coating-Cladding concentricity error	≤ 12 μm
Mode field diameter at 1310 nm	9.2 ± 0.4 μm
Mode field diameter at 1550 nm	10.4 ± 0.5 μm
Attenuation coefficient at 1310 nm	≤ 0.36* dB/km
Attenuation coefficient at 1383 nm	≤ 0.33* dB/km
Attenuation coefficient at 1550 nm	≤ 0.23* dB/km
Attenuation coefficient at 1625 nm	≤ 0.25* dB/km
Attenuation discontinuity at 1310nm & 1550 nm	≤ 0.05 dB
Cable cut-off wavelength λ <sub>cc</sub>	λ <sub>cc</sub> ≤ 1260 nm
Chromatic dispersion coefficient at 1285-1330 nm	≤ 3.0 ps/(nm·km)
Chromatic dispersion coefficient at 1550 nm	≤ 18 ps/(nm·km)
Chromatic dispersion coefficient at 1625nm	≤ 22 ps/(nm·km)
Zero-dispersion wavelength λ <sub>0</sub>	1304 < λ <sub>0</sub> < 1324 nm
Zero-dispersion slope S <sub>0</sub>	≤ 0.092 ps/(nm <sup>2</sup> ·km)
Link design value PMD <sub>Q</sub>	≤ 0.04 ps/√km
Proof test	≥ 1% (100 kpsi or 0.7 GPa)

\*: cabled values

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