

Technical Specification

Nx9/125µ SM G.652.D MLT DC CSA DJ Outdoor FO Cable with inner LS0H jacket

Part Number: U94-xxx56-xx7

Revision 14/23 Date: 16 July 2023



Color coded G.652.D Single mode optical fibers buffered in gel-filled loose tubes, cabled around a dielectric strength member, wrapped with water swellable tape and glass yarn strength member and jacketed with inner LS0H jacket. A corrugated bonded steel tape and an additional heavy-duty, black PE jacket render the cable suitable for outdoor installations in harsh environment. The cable is design to be used in ducts or as direct burial for local and long distance telecommunication networks and offers a very good protection against rodents.

Fiber geometric characteristics

Optical fibers	9/125µm Single mode conforming to ITU-T G.652.D
Core diameter (MFD)	9.2±0.4 µm @ 1310nm
Clad diameter	125±1.0 µm
Core concentricity error	≤0.6 µm
Cladding non-circularity	≤1.0%
Cutoff wavelength for cable (λ _{cc})	≤ 1260 nm
Cutoff wavelength for fiber (λ _c)	1180 nm ~ 1330 nm
Primary coating diameter (not including color layer)	245±10 µm
Coating/Cladding concentricity error	≤12.5 µm
Fiber curl radius	≥4m

Fiber transmission characteristics

Attenuation @ 1310nm: ≤0.36 dB/km	Attenuation @ 1550nm: ≤0.22 dB/km
Macro bending loss	≤ 0.1 dB (Φ=60mm, 100turns @ 1550nm)
Chromatic dispersion	≤3.5ps/nm.km (Within 1288~1339nm), ≤18ps/nm.km @ 1550 nm
Zero dispersion wavelength	1300~1324nm
Zero dispersion slope	≤0.092ps/nm ² .km

Cable Construction

Central strength element	Dielectric FRP
Buffer coating	PBT Loose tube filled with Thixotropic gel
Core construction	Loose tubes are cabled around the central strength member with fillers and wrapped with swellable tapes
Tubes color code up to 144F	Blue, Orange, Green, Brown, Gray, White, Red, Black, Yellow, Violet, Pink, Turquoise
Tubes color code for 288F	Blue, Orange, Green, Brown, Gray, White, Red, Black, Yellow, Violet, Pink, Turquoise, Blue with Black tracer, Orange with Black tracer, Green with Black tracer, Brown with Black tracer, Gray with Black tracer, White with Black tracer, Red with Black tracer, Black with White tracer, Yellow with Black tracer, Violet with Black tracer, Pink with Black tracer, Turquoise with Black tracer
Fibers color code	Blue, Orange, Green, Brown, Grey, White, Red, Black, Yellow, Violet, Pink, Aqua
Core filling	Water blocking yarn
Strength members	Swellable glass yarn
Core wrap	Water blocking tape
Rip-cords	Two Polyester cords laid in 180° orientation for easy armor & jacket removal. Red, DTX2000
Inner jacket material	Halogen-free, flame retardant LS0H compound conforming to IEC 60332-1 (Fire), IEC 60754 (Gas), IEC 61034 (Smoke)
Inner jacket thickness	0.7 mm nom, 0.6 mm min.
Inner jacket color	Black, RAL 9005
Rip-cords	Two Polyester cords laid in 180° orientation for easy armor & jacket removal. Red, DTX6000
Armor	150 micron corrugated steel tape laid longitudinally, bonded to the outer jacket
Outer jacket material	UV resistant HDPE
Outer jacket thickness	1.5 mm nom., 1.3 mm min.
Outer jacket color	Black, RAL 9005
Surface marking	HCS U94-xxx56 MLT Nx9/125µ ITU-T G.652.D SM FO CABLE CSA DJ DC CE 2011/65/EU (RoHS-2) [Month, Year] [Batch No.] [Meter Mark] METER
Surface marking - example	HCS U94-07256 MLT 72x9/125µ ITU-T G.652.D SM FO CABLE CSA DJ DC CE 2011/65/EU (RoHS-2) 10/2020 GB1234 0001 METER

Note: The surface marking on the cables jacket shall be made with hot-foil stamping and not with inkjet printing

Optional Constructions

P/N	Tubes	Fillers	Fibers per Tube	Tube ID/OD mm	Cable nom. OD mm	Weight kg/km
U94-00656	1	5	6	1.5/2.1	13.2	171
U94-01256	2	4	6	1.5/2.1	13.2	172
U94-02456	4	2	6	1.5/2.1	13.2	172
U94-04856	4	2	12	1.5/2.1	13.3	176
U94-07256	6	0	12	1.5/2.1	13.3	176
U94-09656	8	0	12	1.5/2.1	14.7	209
U94-14456	12	0	12	1.5/2.1	17.5	283
U94-28856	24	0	12	1.5/2.1	20.5	350

Performance

Test	Value	Specification	Test method
Tensile strength	Short-term load: 3000N ,Time: 1 minute Long-term load:1800N ,Time: 1 minute	Loss change after test 0.05 dB@1550 nm ,Fiber strain ≤ 0.60 % ,No sheath damage Loss change after test 0.05 dB@1550 nm ,Fiber strain ≤ 0.20 % ,No sheath damage	IEC 60794-1-21-E1
Crush resistance	Load: 4400 N /100mm ,Time: 1 minute, Length: 100 mm	No fiber break ,No sheath damage	IEC 60794-1-21-E3
Impact resistance	Impact height: 1m ,Impact weight:2kg ,Points of impact: 3 ,Times of per point: 1	No fiber break ,No sheath damage	IEC 60794-1-21-E4
Repeated bending	Bending radius.: 25 × D, Load: 150N ,Flexing rate: 2sec/cycle ,No. of cycle: 25	Loss change after test 0.05 dB@1550 nm, No sheath damage	IEC 60794-1-21-E6
Water penetration	Height of water: 1m, Sample length: 3 m ,Time: 24 hr	No drip through the cable core assembly	IEC 60794-1-22-F5
Temperature Cycling	Temperature step: +20oC→-40oC→+70oC→+20oC, Number of cycle: 2 turns, Time per each step: 12 hrs	Loss change after test 0.15 dB/km@1550 nm, No sheath damage	IEC 60794-1-22-F1

Physical Properties

Storage temperature range	Value -40 to +80C
Installation temperature range	-30 to +60C
Operating temperature range	-40 to +80C
Bend radius during installation	20xD min. per IEC 60794-1-21 E11
Bend radius during operation	10xD min. per IEC 60794-1-21 E11
Rodent resistant	Yes

This cable fully conforms to EU Directive 2011/65/EU (RoHS-2)