GF SD-001

Microduct cable - Standard version Revised: 2

Optical fiber / Loose tube / Gel filled / PE outer jacket / All dielectric

Standards

ITU-T G.652, 657
IEC 60793, 60794-1-2
ISO 9001:2015, 14001:2015
TIA 598-C
GR 20 Core compliant glass

DQS Inc.
GAON CABLE Co., Ltd.
REGISTERED TO ISO 9001:2015
20001098 TLR6

DQS Inc.
GAON CABLE Co., Ltd.
REGISTERED TO ISO 14001:2015
20001098 UM15

Application

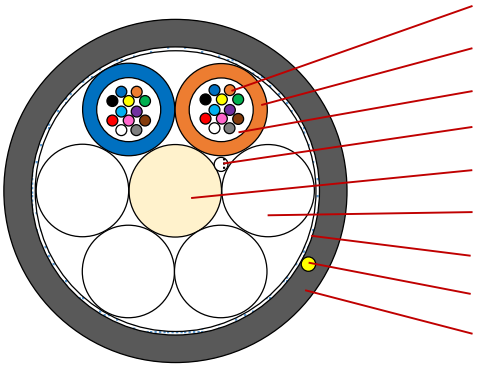
Fiber to the home
Fiber to the cell tower
Small cell and DAS network
Local area network
Long haul communication system

Features

Small outer diameter & lightweight
Water blocking yarn in core
UV-resistant outer jacket
12 fibers per tube

Cable Cross Section

In case of 24C fiber cable



Optical fiber
Loose tube: PBT, Nominal diameter 1.7mm
Filling compound: Jelly compound in tube
Dry block(s): Water blocking yarn in core
Central strength member: FRP (PE coated, if necessary)
Filler: Natural color
Binder(s): Water blocking binder
Ripcord(s): Aramid yarn
Outer jacket: Black color HDPE

Cable Construction

Fiber count	Unit position	Active tube	Fibers per tube	Nominal cable outer diameter		Nominal cable weight	
				inch	mm	lbs/kft	kg/km
12 ~ 72	6	1 ~ 6	12	0.256	6.5	23	35
96	8	8	12	0.303	7.7	35	52
144	12	12	12	0.374	9.5	51	77

Fiber Characteristics for Single Mode Fiber

Fiber type	ITU-T G.652D	ITU-T G.657A1
Mode field diameter (MFD)	9.2 µm ± 0.4 µm @1310 nm	8.9µm ± 0.4 µm @1310 nm
Mode field concentricity error	≤ 0.8 µm	
Cladding diameter	125 µm ± 1 µm	
Cladding non-circularity	≤ 1.0 %	
Coating diameter	245 µm ± 15 µm	
Attenuation	≤ 0.35 dB/km @ 1310 nm ≤ 0.35 dB/km @ 1383 nm ≤ 0.25 dB/km @ 1550 nm	
Chromatic dispersion	≤ 3.5 dB/km @ 1285 ~ 1330 nm ≤ 18 dB/km @ 1550 nm	
Cable cut-off wave length	≤ 1260 nm	
Zero dispersion slope	≤ 0.092 ps/nm^2.km	
Proof test	Nom. 100 kpsi	

Fiber & Tube Identification

Color code	Blue	Orange	Green	Brown	Grey	White	Red	Black	Yellow	Violet	Pink	Aqua

Temperature Range

Installation	14 °F ~ 140 °F (- 10 °C ~ + 60 °C)
Operation, Storage, Transport	- 22 °F ~ 158 °F (- 30 °C ~ + 70 °C)

Cable Bend radius & Marking & Packing

Bend radius		20 X Cable diameter (With load), 10 X Cable diameter (Without load)
Marking	**Sequence**	Customer (Upon request), Production code*, Fiber type, Fiber count, Serial number (4~5 digits), Manufacturer, Manufacture year (YYYY), Length marking (Every 2 feet or 1 mtrs)
	Example	**OJFPP-LT/ABC G652D 24F 00001 GAON CABLE 2021 =00002FT**
Packing	**Length**	Standard 14,100 ft (4,300 m)

*: Fiber type & Fiber counts in production code shall be printed separately.

Mechanical & Environmental Tests (Based on IEC 60794-5-10)

Test items	Test method	Description	Acceptance criteria[1)]
Tensile strength	IEC 794-1-2 E1	≥ 50 m, 40 D[2)], Load: 1 W[3)], 60 min	Reversible, after test
Crush resistance	IEC 794-1-2 E3	500 N / 100 mm plate, 1 min	Δ ≤ 0.15 dB, after test
Impact resistance	IEC 794-1-2 E4	4.9 N.m, 3 different points (interval: ≥ 500 mm)	Δ ≤ 0.15 dB, after test
Repeated bend	IEC 794-1-2 E6	40 D, 50 N, 25 cycles, ± 90°	No damage to sheath and cable elements
Torsion	IEC 794-1-2 E7	2m sample, 50N, 10 cycles, ± 180°	Reversible, after test
Kink	IEC 794-1-2 E10	40 D	No kink
Cable bend	IEC 794-1-2 E11A	40 D, 4 turns, ± 180°	Reversible, after test
Temperature cycling	IEC 794-1-2 F1	≥ 1,000 m sample, soak: 8 h, 2 cycles, + 23 °C, - 15 °C, + 30 °C, + 60°C, + 23 °C	Reversible (Measure during the last cycle)
Water penetration	IEC 794-1-2 F5	3m sample, 1m height, 24 h	No leakage

[1)] It shall be measured at 1550nm for single mode fiber. The acceptance measurement equipment error is 0.02dB.
[2)] Cable diameter
[3)] Cable weight per length (km)

Production code

Description		P1 P2 P3 P4 – P5 / P6 – P7 / 125 X P8 C
Cable type	P1	**O**: Optical fiber cable
Filling material in tube	P2	**JF**: Jelly compound
Tube material	P3	**P**: PBT
Jacket material	P4	**P**: HDPE
Fibers per tube	P5	**LT**: 12 fibers
Cable type in detail	P6	**ABC**: Air blown cable (Microduct cable)
Fiber type	P7	**9E**: G.652D **A1**: G.657A1
Fiber counts	P8	**12 ~ 144**

Example: OJFPP-LT/ABC-9E/125X24C

Revised Record

Revised number	Date	Description
0	02, Mar. 2021	Issue (Based on GF ABC-001, SD type)
1	19, Mar. 2021	Update Crush resistance & Impact resistance