

5MM OPTICAL DROP CABLE WITH PARALLEL FRP STRENGTH MEMBERS



DESCRIPTION

NB Fiber **5mm preconnectorized optical drop cable** is a high-performance, plug-and-play solution designed to meet the demands of modern FTTx and FTTH installations. Engineered for versatility, it is ideally suited for **self-supporting aerial deployments**, but its robust construction also allows it to be used in ducts, conduits, and other installation environments.

Preassembled and rigorously tested in our factory, the cable comes equipped with **high-quality SC/APC connectors** on one or both ends, eliminating the need for specialized tools and significantly reducing installation time. This design ensures seamless integration into optical networks while maintaining performance and reliability.

The cable is an excellent choice for **fiber-to-the-home (FTTH)** deployments, where it facilitates efficient connections between distribution boxes and end subscribers. Its thoughtful design allows for rapid customer activations without the need to reopen termination boxes, streamlining installation workflows and minimizing disruptions.

Key Features

- **Superior Span Capability:** Designed for aerial applications with a maximum span of **80 meters**, ensuring reliability in long-distance deployments.
- **Moisture and UV Protection:** Incorporates a **gel barrier** to protect fibers from moisture and an **HDPE outer jacket** that provides superior UV resistance, safeguarding the cable from solar radiation and adverse weather conditions.
- **Mechanical Durability:** Reinforced with **dielectric strength members** and aramid yarns, the cable effectively absorbs tension, ensuring the optical fibers remain strain-free even in demanding conditions.
- **LSZH Jacket:** Constructed with **low smoke, zero halogen (LSZH)** materials, the cable is safe for indoor and outdoor use, meeting the highest safety standards for thermal and environmental stability.

Applications

NB Fiber 5mm cable is a reliable solution for:

- **FTTx and FTTH Networks:** Connecting distribution boxes to subscriber premises.
- **Aerial Self-Supporting Installations:** Suitable for spans of up to 80 meters.
- **Duct and Conduit Deployments:** Ensures flexibility in diverse environments.

Preconnectorized Termination Boxes (CTO):

Optimized for rapid plug-and-play connections.

The cable complies with **Telcordia GR-326-Core** standards, guaranteeing low insertion loss (≤ 0.30 dB, typical 0.15 dB) and high return loss (≥ 60 dB). These specifications, combined with its robust construction, make it ideal for high-speed optical signal transmission in **harsh environments** and under varied climatic conditions.

PARTS

Connector Side A: Reinforced SC/APC Connector, per IEC 61754-4

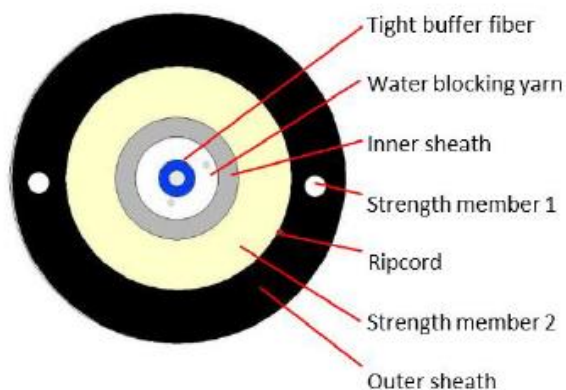
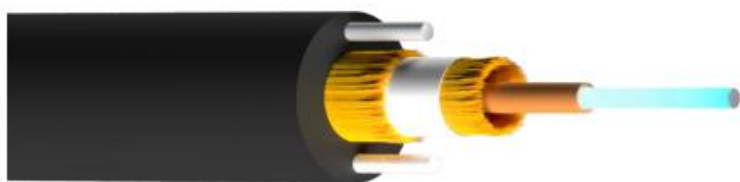
Connector Side B: Open or Reinforced SC/APC Connector, per IEC 61754-4

Cable: 5mm, HDPE, black

GENERAL SPECIFICATIONS

PARAMETER		SPECIFICATIONS
Fiber Optic Type		G.657A2
Tight buffer fiber Color		Blue
Outer sheath Material		HDPE
Inner sheath Material		LSZH
Inner sheath Diameter (mm)		2.8±0.05
Inner sheath Thickness (mm)		0.4±0.03
Strength member 1	Material	Glued FRP
	Quantity	0.5*2
Strength member 2	Material	Aramid yarn + Water blocking glass yarn
Diameter of tension members (mm)		0.50 ± 0.05
Number fiber		1
Outer sheath Color		Black
Outer sheath Diameter (mm)		5.0±0.2
Outer sheath Thickness (mm)		1.1±0.1
Operation Temperature		-25~+70 °C
Storage Temperature		-25~+70 °C
Short-term Tension		1000N
Short-term Crush		1000KN/100mm
Dynamic / Static Bend Radius		20D / 10D
Cable weight		22±3 Kg/km
Traction (axial between cable and connector)		200N
Ripcord		1 (red)

CABLE STRUCTURE



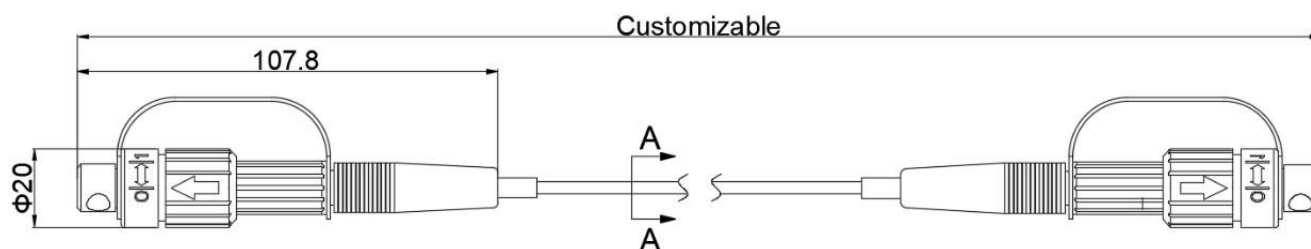
1. LSZH SHEATH
2. STRENGTH MEMBER (WATER BLOCKING YARN)
3. WATER BLOCKING GLASS YARN & ARAMID YARN
4. SEMI-TIGHT BUFFERED FIBER
5. PBT TUBE
6. RIPCORD
7. 900μM TIGHT BUFFER
8. FIBER OPTIC

CABLE MECHANICAL AND ENVIRONMENTAL REQUIREMENTS

TEST	SPECIFICATIONS	ACCEPTANCE CRITERIA
Tensile test	Tensile force: 1000N Diameter: 40d* Load time: 1 min	IEC 60794-1-21 E1; the fiber is not broken and the jacket is not damaged; The additional cable attenuation is $\leq 0.20\text{db}$.
Crush test	Load force: 1000N Length: 100 mm Load time: 10 min	IEC 60794-1-2 E3; the fiber is not broken and the jacket is not damaged; The additional cable attenuation is $\leq 0.10\text{db}$.
Impact test	Pendulum weight: 5n Impact height: 150 mm Impact number of times: 15 times (once per point)	IEC 60794-1-2 E4; the fiber is not broken and the jacket is not damaged; The additional cable attenuation is $\leq 0.10\text{db}$.
Repeated bending test	Temperature: $-20\text{ }^{\circ}\text{c} \sim +60\text{ }^{\circ}\text{c}$ Number of times: 2 times Retention time: 8 h	IEC 60794-1-2 F1; the fiber is not broken and the jacket is not damaged; The additional cable attenuation is $\leq 0.20\text{db}$.

REINFORCED CONNECTOR SPECIFICATIONS

PARAMETER	VALUE
Connector Type	Reinforced connector type HW or J
Material	PC+ABS
Waterproof Grade	IP68
Insertion Loss (dB)	≤ 0.30 (Typical: 0.15)
Return Loss (dB)	≥ 60
Repeatability (dB)	≤ 0.2
Durability (dB)	$\Delta I \leq 0.2$, 500 times
Cable Diameter	Round cable of 5.0 mm
Cable Length (m)	50m, 100m, 150m, 250m, or 350m
Repeatability (dB)	≤ 0.1
Operating Temperature (°C)	-40 ~ +85
Ferrule	Ceramic
Connection cycles	500



OPTICAL FIBER

All characteristics of the cable fiber (fiber of finished cable) shall be, at least, in accordance with the ITU-T recommendation G.657A2 and shall be as follows.

Item	Specification
Fiber type	Single mode
Fiber material	Doped silica
Attenuation coefficient	$\leq 0.36 \text{ dB}/\text{km}$
@ 1310 nm	$\leq 0.36 \text{ dB}/\text{km}$
@ 1383nm	$\leq 0.25 \text{ dB}/\text{km}$
@ 1490nm	$\leq 0.22 \text{ dB}/\text{km}$
@ 1550 nm	$\leq 0.25 \text{ dB}/\text{km}$
@ 1625nm	$\leq 0.36 \text{ dB}/\text{km}$
After cable formation	$\leq 0.22 \text{ dB}/\text{km}$
@ 1310 nm	
@ 1550 nm	
Cable cut-off wavelength	1260 nm
Zero-dispersion wavelength	1300 ~ 1324 nm
Zero-dispersion slope	$\leq .092 \text{ ps}/(\text{nm}^2 \cdot \text{km})$
PMD @ 1550 nm	$\leq 0.1 \text{ ps}/\text{km}^{1/2}$
Chromatic dispersion	$\leq 3 \text{ ps}/(\text{nm} \cdot \text{km})$
@ 1285 ~ 1330 nm	$\leq 5.3 \text{ ps}/(\text{nm} \cdot \text{km})$
@ 1271 ~ 1360 nm	$\leq 18.0 \text{ ps}/(\text{nm} \cdot \text{km})$
@ 1550 nm @ 1625 nm	$\leq 22 \text{ ps}/(\text{nm} \cdot \text{km})$
Mode field diameter @ 1310 nm	8.5-9.3um
Core / Clad concentricity error	$\leq 0.5 \text{ }\mu\text{m}$
Cladding diameter	125.0 \pm 70.7 um
Cladding non-circularity	$\leq 5\%$
Primary coating diameter	242 \pm 7 um
Concentricity Primary Coating / Coating	$\leq 10 \text{ }\mu\text{m}$
Coating non-circularity	$\leq 0.7\%$
Attenuation with Cable bending Loss	1550nm $\leq \Delta 0.10 \text{ dB}/\text{km}$
1 turn 1 Mandrel 7.5mm	1550nm $\leq \Delta 0.03 \text{ dB}/\text{km}$
10 turns 1 Mandrel 15mm	

ORDERING INFORMATION:

Name	FAB-PTPD=Pre-terminated Patchcord drop
Cable Type	5mm-B= Round cable 5mm, double jacket (outer HDPE jacket and Inner LSZH jacket), 2pcs. FRP strength members, ripcord.
MAT	8= 800N 10=1000N 12=1200N
Fiber Type	A1=SM G.657.A1 A2=SM G.657.A2 B3=SM G.657.B3
Connector 1 at Box Side	PASHW=Pre-terminated SC/APC, type HW PASJHW=Pre-terminated SC/APC, type J (HW) PASJCO= Pre-terminated SC/APC, type J (CO) PASJFU=Pre-terminated SC/APC, type J (FU) PASJFI=Pre-terminated SC/APC, type J (FI) PASHIB= Pre-terminated SC/APC, type J (all options) SC=SC/UPC AS=SC/APC
Connector 2 at Subscriber Side	PASHW=Pre-terminated SC/APC, type E PASJHW=Pre-terminated SC/APC, type J (HW) PASJCO= Pre-terminated SC/APC, type J (CO) PASJFU=Pre-terminated SC/APC, type J (FU) PASJFI=Pre-terminated SC/APC, type J (FI) PASHIB= Pre-terminated SC/APC, type J (all options) AS=SC/APC WC: Without connector
Length	1=1m, 2=2m, 400=400m

Example: FAB-PTPD-5MM-A-8-A2- PASHW- WC-250

Length (m)	Tolerances (mm)
L≤10	+300/0
L≤30	+150/0
L>100	+1000/0

FINAL CONSIDERATIONS

The information contained in this document is derived from prior work and lab testing conducted in our facilities or by third parties. The data presented herein is the result of the dedicated efforts of NB Fiber specialized professionals who are committed to the analysis, testing, and defining of our product's technical specifications and descriptions.

Given the fast-paced advances in technology and its various applications, we strongly recommend that potential clients consult with NB Fiber technical team to clarify any doubts regarding compatibility with specific system configurations and requirements before making a purchase.

NB Fiber reserves the right to implement changes without prior notice as part of our commitment to continuous product development, improvement, and associated cost management. To access the most accurate and up-to-date information, we encourage our clients to directly engage our technical support team.

Please note that our company will not be held responsible for any loss, damage, or patent infringement that may result from the use of our products at your site. We urge all clients to strictly comply with the relevant laws and regulations regarding patent rights and the use of fiber optic technology specific to their country.

At NB Fiber, we remain dedicated to ensuring that our clients derive maximum value from our products. Therefore, we encourage you to reach out to us for further information or clarification. As a leading company in the fiber optic materials manufacturing industry, we commit ourselves to provide the best products and services to our clients globally.