Version-V1.0

Optical Fibre Cable Specification

DUCT Cable

CTC LSZH 1,6KN – 4/8/12/24 x OM2/OM3/OM4

NextraCom Optical Fibre Cable

1. General

This specification covers the design requirements and performance standard for the supply of optical fibre cable in the industry. It also includes NextraCom premium designed cable with optical, mechanical and geometrical characteristics.

Cable type	Application
CTC LSZH 1,6KN 4/8/12/24 x OM2/OM3/OM4	Suitable for duct installation

n represent the number of fibres in the cable.

1.1 Cable Description

NextraCom cable has excellent optical transmission and physical performance, to meet customer requirements.

1.2 Quality

NextraCom ensures a stable quality control system for our cable products through several programs including ISO 9001, ISO 14001 and OHS.

1.3 Reliability

Initial and periodic qualification tests for raw material and cable product are performed to assure the cable's performance and durability in the field environment.

1.4 Reference

IEC 60794-1-1	Optical fibre cables-part 1-1: Generic specification-General
IEC 60794-1-2	Optical fibre cables-part 1-2: Generic specification-Basic optical cable test procedure
IEC 60794-2	Optical fibre cables- part2- Indoor cables-Sectional specification
IEC 60794-3	Optical fibre cables- part3-Sectional specification- Outdoor cables
IEC 60794-3-10	Optical fibre cables- part3-10- Outdoor cables-Family specification for duct and direct buried optical communication cables
IEC 60794-3-11	Optical fibre cables –Part 3-11: Outdoor cables – Detailed specification for duct and directly buriedsingle-mode optical fibre telecommunication cables

Other properties :

Halogen free IEC 60754-1/2
Euro fire class according to EN 13501-6 Eca
Vertical Flame Propagation (for Single Cable) IEC 60332-1-2 / EN 50265-2-1

1.5 Life Time

Optical fibre cables supplied in compliance with this specifications is capable to withstand the typical service condition for a period of thirty (30) years without detriment to the operation characteristics of the cable.

2. Optical Fibre

Optical Fibres supplied in this specification meet the requirements of Multi Mode Fibres

PARAMETERS		SPECIFICATION		
		OM2	OM3	OM4
		50/125μm	**50/125**μm	**50/125**μm
Attenuation(after cable)	850 nm	≤ 3.0 dB/km	≤ 3.0 dB/km	≤ 3.0 dB/km
	1300 nm	≤ 1.0 dB/km	≤ 1.0 dB/km	≤ 1.0 dB/km
Modal Bandwidth(after cable)	850 nm	≥600 MHz.km	≥1500 MHz.km	≥3500 MHz.km
	1300 nm	≥1200 MHz.km	≥500 MHz.km	≥500 MHz.km

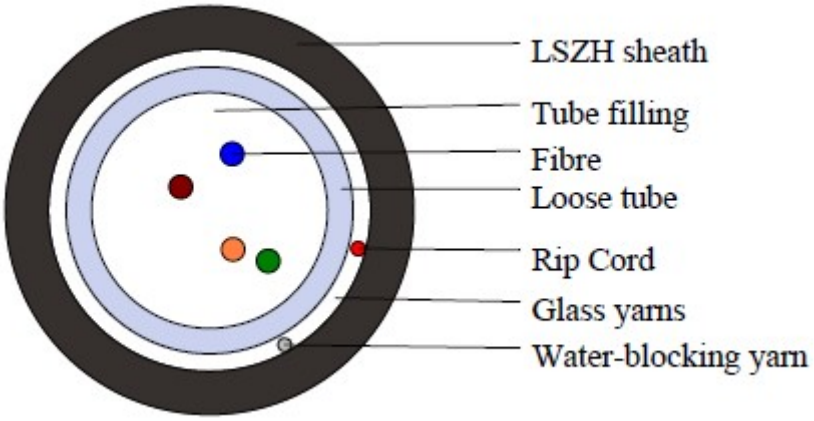
3. Optical Cable

3.1 General Design

- Optical fibers are housed in loose tubes that are made of high-modulus plastic and filled with waterproof compounds.
- Loose tubes is in the central of the cable .
- Glass yarns are applied as peripheral strength element.
- LSZH sheath is applied over the cable core and it does not contain halogen.
- Capacity of rodent protection and UV resistance.

3.2 Construction

3.2.1 Cross Section of Cable



CTC LSZH 1,6KN 4xOM2
Structure of other fibre counts refer to 3.2.2

3.2.2 Dimensions and Descriptions of Cable Constructions

Item	contents	Value	
		1~12	13~24
Loose tube diameter(mm)	Material	PBT	
	Diameter(mm)	3.0	3.2
Strength member	Material	Glass yarns	
Water blocking	Material	Water blocking yarn	
Ripcord	Number	1	
Outer sheath	Material	LSZH	
	Color	BLACK	
	Thickness(mm)	1.2	
Cable diameter(mm) Approx.		6.4±0.2	6.6±0.2
Cable weight(kg/km) Approx.		55±5	57±5

3.2.3 Mechanical Performance of Cable

Tensile performance(N)		Crush(N/100mm)		Bending Radius(mm)	
Short term	Long term	Short term	Long term	Static	Dynamic
1600	500	1000	300	10D	20D

Transportation and storage temperature: -40°C ～+70°C
Installation temperature:-5°C ～+60°C
Operation temperature: -40°C ～+70°C

3.2.4 Color Code of the Fibreand the Loose tube

Each fibre can be identifiable throughout the length of the cable in accordance with the following color sequence. Fibre color starts from No. 1 Blue. The color of the loose tube is natural .

Fiber color code	24 fibers per tube	1	2	3	4	5	6
		Blue	Orange	Green	Brown	Grey	White
		7	8	9	10	11	12
		Red	Black	Yellow	Purple	Pink	Aqua
		13	14	15	16	17	18
		Blue with black ring	Orange with black ring	Green with black ring	Brown with black ring	Grey with black ring	White with black ring
		19	20	21	22	23	24
		Red with black ring	Nature	Yellow with black ring	Purple with black ring	Pink with black ring	Aqua with black ring

3.3 Mechanical, Electrical and Environmental Test Characteristics

The mechanical and environmental performance of the cable are in accordance with the following table. Unless otherwise specified, all attenuation measurements required in this section shall be performed at 1300nm.

Items	Test Method	Requirements
Tension	**IEC 60794-1-2-E1** Load:According to 3.2.3 Sample length: Not less than 50m. Duration time: 1min.	Additional attenuation: ≤0.3dB after test No damage to outer jacket and inner elements
Crush	**IEC 60794-1-2-E3** Load:According to 3.2.3 Duration of load: 1min	Additional attenuation: ≤0.3dB after test No damage to outer jacket and inner elements
Impact	**IEC 60794-1-2-E4** Radius: 300 mm Impact energy: 3J Impact number: 1 Impact points: 3	Additional attenuation: ≤0.3dB No damage to outer jacket and inner elements
Bend	**IEC 60794-1-2-E11A** Mandrel radius: 10*D Turns:4 Cycles:3	Additional attenuation: ≤0.3dB No damage to outer jacket and inner elements
Repeated bending	**IEC 60794-1-2-E6** Bending radius: 20*D Cycles: 25 Load: 20N	Additional attenuation: ≤0.3dB No damage to outer jacket and inner elements
Water Penetration	**IEC 60794-1-2-F5B** Time : 24 hours Sample length : 3m Water height : 1m	No water leakage.
Temperature cycling	**IEC 60794-1-2-F1** Sample length: at least 1000m Temperature range: -40℃~+70℃ Cycles:2 Temperature cycling test dwell time: 12 hours	The change in attenuation coefficient shall beless than 0.3 dB/km.
Other parameters	According to **IEC 60794-1**	

4. Packaging and Drum

4.1 Cable Sheath Marking

Unless otherwise specified, the cable sheath marking shall be as follows:

- Contents: NEXTRA OPTICAL CABLE, the type of cable, the year of manufacture, length marking
- Interval: 1±0.2% m

Outer sheath marking legend can be changed according to user's requests.

4.2 Reel Length

Standard reel length: 4km/reel or 2km/reel, other length is also available.

4.3 Cable Drum

The cables are packed in fumigated wooden drums.

4.4 Cable Packing

Both ends of the cable will be sealed with suitable plastic caps to prevent the entry of moisture during shipping, handling and storage. The inner end is available for testing.