



CABLE DUCTO
CUBIERTA
SIMPLE SECO
LSZH-OM4-48 FO

AR-1FAZPE-48F OM4

OPTICAL FIBRE CABLE TECHNICAL SPECIFICATION

1. Scope

This Specification covers the design requirements and performance standard for the supply of optical fibre cable in the industry. ARTIC ensures a stable quality control system for our cable products through several programs including ISO 9001, ISO 14001 and ROHS.

Cable type	Application
AR-1FAZPE-48F OM4	Duct installation

1.1 Cable Description

Optical fibres are housed in loose tubes that are made of high-modulus plastic and filled with waterproof compounds, the bending radius of the loose tube shall be ≤ 35 mm.

FRP is applied as central strength member.

Loose tubes are SZ stranded around the central strength member.

The cable core is covered with water blocking tape to prevent from water ingress. Aramid yarns are wrapped around cable core as peripheral strength member. LSZH sheath are applied as outer sheath.

1.2 Reference

The cable offered by ARTIC are designed, manufactured and tested according to the standards as follows:

ITU-T G.651	Characteristics of a multi-mode optical fibre ARTIC.
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 60794-3-10	Optical fibre cables-part 3-10: 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 buried single-mode optical fibre telecommunication cables.
Other standard	IEC 60332-1, IEC 60754-1 / 2

1.3 Life Time

Optical fibre cables supplied in compliance with this specifications is capable to withstand the typical service condition for a period of twenty-five (25) years without detriment to the operation characteristics of the cable.

2. Optical Fibre

Optical Fibres supplied in this specification meet the requirements of ITU-T G651.

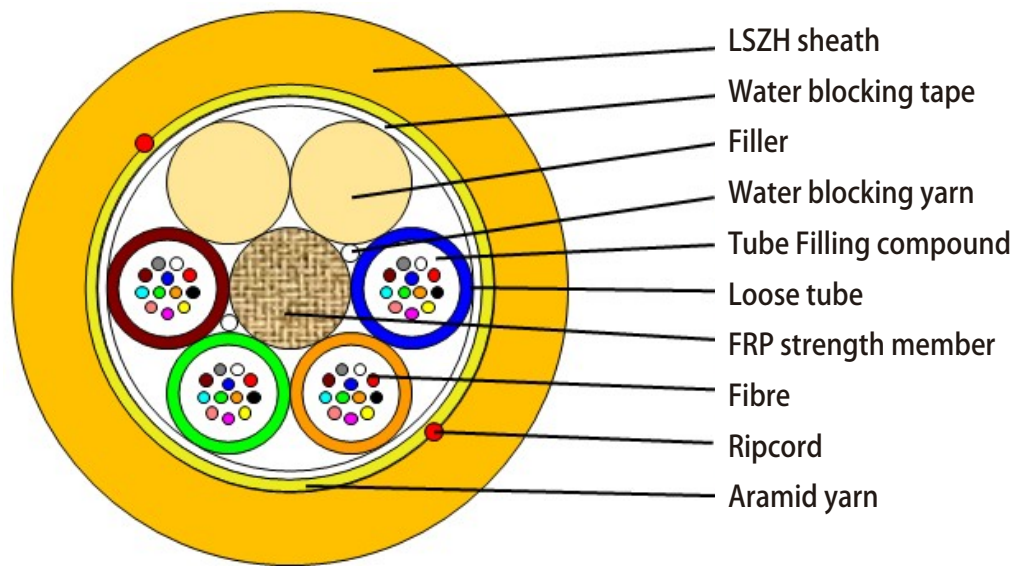
Parameters		Specification				
		OM1	OM2+	OM3	OM4	OM5
		62.5/125um	50/125um	50/125um	50/125um	50/125um
Attenuation after cable (dB/km)	850 nm	≤3.5	≤3.0	≤3.0	≤3.0	≤3.0
	1300 nm	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0
Modal Bandwidth after cabling (MHz.km)	850 nm	≥200	≥700	≥1500	≥3500	≥3500
	1300 nm	≥500	≥500	≥500	≥500	≥500

3. Optical Cable

3.1 Technical Characteristics

- The unique second coating and stranding technology provide the fibres with enough space and bending endurance, which ensure good optical property of the fibres in the cable.
- Accurate process control ensures good mechanical and temperature performance.
- High quality raw material guarantees the long service life of cable.

3.2 Cross Section of Cable



3.3 Fibre and Loose Tube Identification

The color code of fibres and loose tube will be identification in accordance with the following color sequence, other sequence also is available.

	1	2	3	4	5	6
Color code	● Blue	● Orange	● Green	● Brown	● Grey	○ White
	7	8	9	10	11	12
	● Red	● Black	● Yellow	● Violet	● Pink	● Aqua

The color of the fillers will be natural.

3.4 Dimensions and Descriptions

The standard structure of AR-1FAZPE-48F OM4 cable is shown in the following table, other structure and fibre count are also available according to customer requirements.

Item	contents	Value
		48
Loose tube	Number	4
Filler	Number	2

Item	contents	Value
		48
Max. fiber counts per tube	OM4	12
Central strength member	Material	FRP
Water Blocking Material	Material	Water blocking yarn and tape
Additional strength member	Material	Aramid yarn
Outer sheath	Material	LSZHPE
	Color	Yellow (RAL 1028)
	Thickness(mm)	Nominal: 1.6 Minimum: 1.5
Ripcord	Number	2
	Color	Red
Cable diameter(mm) Approx.		11.4
Cable weight(kg/km) Approx.		135

3.5 Main Mechanical and Environmental Performance

Item	Value
	48
Tensile performance(N)	2700
Crush(N/100mm)	2200
Operation temperature:	-40°C~+70°C
Installation temperature	-10°C~+70°C
Storage temperature	-40°C~+70°C
Bending radius (operation/installation)	10D/20D

4. Main Mechanical, Physical 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 1550 nm.

Item	Test Method	Requirements
Tension	IEC 60794-1-2-E1 Load: According to 3.5. Sample length: Not less than 50m. Duration time: 1h	Additional attenuation: ≤ 0.20 dB after test. No damage to outer jacket and inner elements.
Crush	IEC 60794-1-2-E3 Load: According to 3.5. Duration of load: 15 min.	Additional attenuation: ≤ 0.20 dB/km after test. No damage to outer jacket and inner element.
Impact	IEC 60794-1-2-E4 Radius: 300 mm. Impact energy: 10 J. Impact number: 1. Impact points: 3	Additional attenuation: ≤ 0.20 dB/km No damage to outer jacket and inner elements.
Repeated bending	IEC 60794-1-2-E6 Bending radius: $20 \times D$. Cycles: 25. Load: 150N.	Additional attenuation: ≤ 0.20 dB/km No damage to outer jacket and inner elements.
Torsion	IEC 60794-1-2-E7 Cycles: 10. Length under test: 1m. Turns: $\pm 180^\circ$. Load: 150N.	Additional attenuation: ≤ 0.20 dB/km 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: $-40 \sim +70^\circ\text{C}$. Cycles: 2. Temperature cycling test. dwell time: 12 hours.	The change in attenuation coefficient shall be less than 0.20 dB/km.
Other parameters	IEC 60794-1	

5. Packaging and Drum

5.1 Cable Sheath Marking

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

- Color: white.
- Contents: ARTIC, the year of manufacture, the type of cable, cable number, length marking.
- Interval: 1 m.

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

5.2 Reel Length

Standard reel length: 4060 m/reel, other length is also available.

5.3 Cable Drum

The cables are packed in fumigated wooden drums. It can be changed according to user's requests.

5.4 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 has 5.0 ± 0.5 meters of accessible length to perform reception tests in the cables.