



CENTRAL TUBE AERIAL  
DIELECTRIC LSZH  
JACKET -  
INDOOR/OUTDOOR.

AR-21NSU-ADSS-ZH-  
80M-xxF-G652D

## 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-21NSU-ADSS-ZH-80M-xxF-G652D	Duct installation and aerial installation

80 represents the span.

xx represents the fibre count.

### 1.1. CABLE DESCRIPTION

Optical fibres are housed a central tube that is made of high-modulus plastic and filled with waterproof compounds.

Aramid yarns wrap up the central tube and provide a certain rodent resistance. LSZH sheath are applied as outer sheath .

### 1.2. REFERENCE

ITU-T G.652D	Characteristics of a single-mode optical fibre
IEC 60793-2-10	Optical fibres. Part 2-10: Product specifications.
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	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

### 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 G.652.D

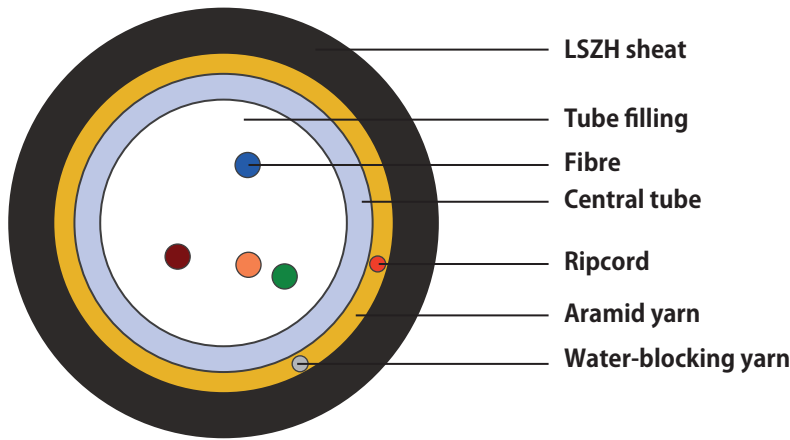
Parameter	Specification
MFD (1310nm)	9.2+/-0.4um
MFD (1550nm)	10.4+/-0.5um
Cladding diameter	125 ± 1.0um
Fiber diameter	245+/-7um, with UV coating, and colored to : 250+/-15um
Core/cladding concentricity error	≤ 0.6um
Coating/cladding concentricity error	≤ 12.0um
Cladding non circularity	≤ 1%
Cut off wavelength	$\lambda_{cc} \leq 1260\text{nm}$
Attenuation coefficient	1310nm: 0.36dB/km 1550nm: 0.22dB/km
Bending-loss performance of optical fiber @1310nm&1550nm	≤0.05dB (100 turns around a mandrel of 50mm diameter)
Polarization mode dispersion link value	≤0.1ps/√km
Zero-dispersion wavelength	1312+/-12nm
Zero-dispersion slope	≤0.091ps/nm <sup>2</sup> ·km

## 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 CABLE



AR-21NSU-ADSS-ZH-80M-xxF-G652D not scale

### 3.3. FIBRE AND LOOSE TUBE IDENTIFICATION

Fiber color code	24 fibers per tube	1	2	3	4	5	6
		Blue	Orange	Green	Brown	Slate	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	Slate 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. DIMENSIONS AND DESCRIPTIONS OF CABLE CONSTRUCTIONS

Parameter	Contents	Value	
		2-12	24
Loose tube diameter(mm)	Diameter (mm)	3.0	3.5
Strength member	Material	Aramid yarns	
Sheath	Material	LSZH	
	Color	Black	
	Thickness(mm)	Nominal: 1.2	
Ripcord	Number	1	
Cable diameter(mm)		Approx.5.9	Approx.6.2
Cable weight(kg/km)		Approx.38	Approx.42

### 3.5. MAIN MECHANICAL AND ENVIRONMENTAL PERFORMANCE

Item	Value 6/12/24
Tensile performance(N)	1000
Crush(N/100mm)	1500
Operation temperature	-10°C~+70°C
Installation temperature	-10°C~+60°C
Storage temperature	-10°C~+70°C

## 4. 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 1550nm.

Items	Test method	Requirements
<b>Tension</b>	<b>IEC 60794-1-2-E1</b> Load:According to 3.2.3 Sample length: Not less than 50m. Duration time: 1min.	Additional attenuation: ≤0.1dB after test No damage to outer jacket and inner elements
<b>Crush</b>	<b>IEC 60794-1-2-E3</b> Load: According to 3.2.3 Duration of load: 1min	Additional attenuation: ≤0.1dB after test No damage to outer jacket and inner elements
<b>Impact</b>	<b>IEC 60794-1-2-E4</b> Radius: 300 mm Impact energy: 4 J Impact number: 1 Impact points: 5	Additional attenuation: ≤0.1dB No damage to outer jacket and inner elements
<b>Repeated Bending</b>	<b>IEC 60794-1-2-E6</b> Bending radius: 20*D Cycles: 25 Load: 150 N	Additional attenuation: ≤0.1dB No damage to outer jacket and inner elements
<b>Bend</b>	<b>IEC 60794-1-2-E11A</b> Mandrel radius: 10*D Turns:4 Cycles:3	Additional attenuation: ≤0.1dB No damage to outer jacket and inner elements
<b>Torsion</b>	<b>IEC 60794-1-2-E7</b> Cycles:10 Length under test: 1m Turns: +/-180° Load: 150N	Additional attenuation: ≤0.1dB No damage to outer jacket and inner elements
<b>Water Penetration</b>	<b>IEC 60794-1-2-F5B</b> Time : 24 hours Sample length : 3m Water height : 1m	No water leakage
<b>Temperature cycling</b>	<b>IEC 60794-1-2-F1</b> Sample length: at least 1000m Temperature range: -20 °C~+70 °C Cycles:2 Temperature cycling test dwell time: 12 hours	The change in attenuation coefficient shall be less than 0.1 dB/km.
<b>Other parameters</b>		According to <b>IEC 60794-1, IEC60332-1-2</b>

## 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:  $1 \pm 1\%$  m

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

### 5.2 REEL LENGHT

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

### 5.3 CABLE DRUM

The cables are packed in fumigated wooden drums.

### 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 is available for testing.