

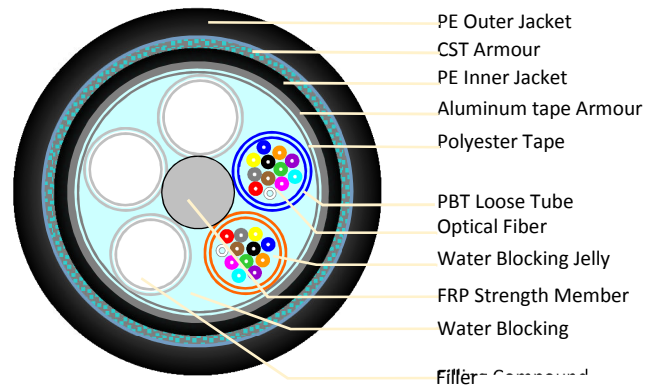


## Outdoor Double Jacket Double Armoured Fiber Optic Cable

### DDF Series

#### Description

The fibers, either single mode or multimode type, are positioned in a loose tube made of a high modulus plastic. The tubes are filled with a water-resistant jelly. A FRP strength member locates in the center of the core. Tubes (including fillers and water blocking filling compound) are stranded (SZ) around the strength member into a compact and circular cable core. A clear polyester tape is wrapped around to ensure consistent round shape covered layer of aluminium tape armour which also blocks out water. A inner Polyethylene (PE) sheath is applied to the overall bundle. It is further enhance by a layer of corrugated steel tape armour, longitudinally applied over the inner sheath. The cable is completed with a smooth Polyethylene (PE) sheath.



#### Application

This cable is suitable for Outdoor Direct Burial, Tunnel and Duct installation in harsh environment. The armoring provides rodent and termite protection and the PE Sheath provides UV and Chemical/Oil resistance.

#### Standards

ISO/IEC 11801, ANSI/TIA/EIA 568.2: 2002, ITU G652.D

#### Characteristics

- Accurate fiber excess length ensures good mechanical and temperature performance
- High strength loose tube that is hydrolysis resistant and special tube filling jelly ensure a critical protection of fiber
- Specially designed compact structure is good at preventing loose tube from shrinking
- High crush and tensile resistance
- Double armour (Aluminium Tape + Corrugated steel tape) enhances the cable crush resistance, impact resistance and moisture proof
- Loose tubes are filled with filling compound to ensure tubes are watertight.
- 100% cable core filling ensures cable is watertight
- Temperature Range of -40°C to 70°C

Part Number #	Description
306-STA7xx-D000-DDF0	
306-STA724-D000-DDF0	24core 9/125 Single mode Outdoor Double Jacket Double Armoured Fiber Optic Cable
306-STA748-D000-DDF0	48core 9/125 Single mode Outdoor Double Jacket Double Armoured Fiber Optic Cable
306-STA796-D000-DDF0	96core 9/125 Single mode Outdoor Double Jacket Double Armoured Fiber Optic Cable

Note: Substitute xx : Number of fiber core

\*-D000, D = production code, subjected to change upon shipping



### Cable Properties

Item		Description			
		12 Fiber	24 Fiber	48 Fiber	96 Fiber
<b>Cable Diameter</b>		13.0mm ±0.2mm	13.0mm ±0.2mm	13.0mm ±0.2mm	16.0mm ±0.2mm
<b>Cable Weight</b>			KG /KM		
<b>Central Strength member</b>	Material	FRP	FRP	FRP	FRP
	Diameter	1.5mm	1.5mm	1.5mm	
<b>Loose Tube</b>	Material	PBT (polybutelene terathylate)	PBT (polybutelene terathylate)	PBT (polybutelene terathylate)	PBT (polybutelene terathylate)
	Outer diameter	1.8mm ±0.1mm			
	Thickness	0.3mm	0.3mm	0.3mm	0.3mm
	Type of filling compound	Jelly	Jelly	Jelly	Jelly
	No. of Fiber in tube	12	12	12	12
	No. of Tubes	1	2	4	8
	No. of Fillers	4	3	1	0
<b>Filler</b>	Material	PP	PP	PP	No filler
	Outer diameter	1.8mm	1.8mm	1.8mm	No filler
<b>Tube Assembly</b>	Tube Layout	1+5	1+5	1+5	1+8
	Stranding type	SZ	SZ	SZ	SZ
<b>Water-blocking system</b>		Filling Compound	Filling Compound	Filling Compound	Filling Compound
<b>Core wrap</b>	Material	polyester tape	polyester tape	polyester tape	polyester tape
<b>Aluminum Tape</b>	Material	Aluminum	Aluminum	Aluminum	Aluminum
	Thickness	0.15mm ±0.2mm	0.15mm ±0.2mm	0.15mm ±0.2mm	0.15mm
<b>Inner Sheath</b>	Material	PE	PE	PE	PE
	Thickness	1.0mm ±0.2mm	1.0mm ±0.2mm	1.0mm ±0.2mm	1.0mm
<b>Armour</b>	Material	Steel Tape	Steel Tape	Steel Tape	Steel Tape
	Thickness	0.25mm ±0.02mm	0.25mm ±0.02mm	0.25mm ±0.02mm	0.25mm
	Coating material	Plastic	Plastic	Plastic	Plastic
	Coating thickness	0.1mm	0.1mm	0.1mm	0.1mm
<b>Outer Sheath</b>	Material	PE	PE	PE	PE
	Thickness	1.8mm ±0.2mm	1.8mm ±0.2mm	1.8mm ±0.2mm	1.8mm
<b>Sheath marking</b>	Type of marking	Laser printing	Laser printing	Laser printing	Laser printing



### Fibers Colour

Fiber No.	1	2	3	4	5	6	7	8	9	10	11	12
Colour	Blue	Orange	Green	Brown	Grey	Natural	Red	Black	Yellow	Violet	Pink	Aqua

### Loose Tubes Colour

Fiber No.	1	2	3	4	5	6	7	8	9	10	11	12
Colour	Blue	Orange	Green	Brown	Grey	Natural	Red	Black	Yellow	Violet	Pink	Aqua

### Optical Properties

Technical parameter of ITU-T G.652D Single-mode Optical Fiber			
Characteristics	Conditions	Specified Values	Units
<b>Optical Characteristics</b>			
Mode field diameter (MFD)	1310nm	9.20 ±0.4	µm
	1550nm	10.40 ±0.5	µm
Attenuation coefficient	1310nm	≤ 0.34	dB/km
	1383nm	≤ 0.31	dB/km
	1550nm	≤ 0.20	dB/km
	1625nm	≤ 0.34	dB/km
Attenuation with Bending	1turn, Ø30mm, 1550nm	≤ 0.40	dB
	100turn, Ø60mm, 1310nm	≤ 0.04	
	100turn, Ø60mm, 1550nm	≤ 0.04	
	100turn, Ø60mm, 1625nm	≤ 0.04	
Cut-off wavelength (λ <sub>ccf</sub> )		≤ 1250	nm
Chromatic Dispersion	1288~1339nm	≤ 3.5	Ps/(nm.km)
	1271~1360nm	≤ 5.3	Ps/(nm.km)
	1550nm	≤ 18.0	Ps/(nm.km)
	1625nm	≤ 22.0	Ps/(nm.km)
Zero dispersion wavelength		1300~1324	nm
Max Zero Dispersion Slope		≤ 0.092	Ps/(nm <sup>2</sup> .km)
Polarization Mode Dispersion	IEC 60794 –3, Ed 3 (Q=0.01%)	≤ 0.1	(psv/km)
Effective group index	1310nm	1.467	
	1550nm	1.468	
	1625nm	1.468	
<b>Geometric characteristic</b>			
Cladding diameter		125.0 ±1.0	µm
Core/cladding concentricity error		≤ 0.5	µm
Cladding non-circularity		≤ 0.8	%
Coating diameter		245.0 ±7.0	µm
Cladding/coating concentricity error		≤ 10.0	µm
<b>Mechanical characteristic</b>			
Proof stress		≥ 0.96	Gpa
Coating strip force	Peak value	1.3 - 8.9	N
Breaking Strength	Probability 50%	≥ 3.8	Gpa
	Probability 15%	≥ 3.14	Gpa
Dynamic fatigue, unaged and aged* Static fatigue, aged*	*Aging: • 0°C and 45°C • 30 days at 85°C and 85% RH • 14 days water immersion at 23°C • Wasp spray exposure (Telcordia)	≥ 20	n <sub>d</sub>