


## 1. Application / Construction

Identification	OFC-144G.657A1-FGSA-S1 Module 12		
Application	Duct and aerial installation		
Cross Section (not to scale)	144fibers 		
Configuration	<ul style="list-style-type: none"> <li>- Micro module with 12 optical fibers and jelly inside</li> <li>- Easy to strip the micro module</li> <li>- Central tube with glass yarns and water-blocking yarns</li> <li>- Outer sheath: HDPE, with 2 FRP embedded in the sheath symmetrically</li> </ul>		
Temperature Range	Storage and transport -40 to +70°C	Installation -5 to +45°C	Operation -30 to +70°C
Standards	IEC 60793-1, IEC 60793-2, IEC 60794-4-20, EN 50290-2-24		
ZTT Specification	ZTT 20-109344-2-D		
Customer Reference	Common Standard		

## 2. Dimensions

Fiber counts		144
Fibers/Module		12
Module Φ	mm	1.3
Outer diameter (± 0.5)	mm	11.9
Weight	kg	102

Sizes and values without tolerances are nominal values

## 3. Mechanical Properties

Fiber counts	144
MAT	1600N
Crush	2000N/10cm
Static bending radius	10xOD
Impact	5Nm
Torsion	± 180° /m

See Point 6: Test Methods

## 4. Marking

Fiber Colors	1 red	2 green	3 blue	4 yellow	5 white	6 grey	7 brown	8 purple	9 turquoise	10 black	11 orange	12 Pink
Tube Colors	1 red	2 green	3 blue	4 yellow	5 white	6 grey	7 brown	8 purple	9 turquoise	10 black	11 orange	12 Pink

Outer Sheath: black, ink jet print, marking in 1 meter intervals as follows:

ZTT	Aerial Cable	M12	<Fiber Counts>	G657A1	<meter marking >
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## 5. Optical Fiber

Standard	ITU-T G.657A1 UBIF®R10	
Optical	Fibre attenuation (after cabling) .. @ 1310 nm .. @ 1550 nm	≤0.36 dB/km ≤0.23 dB/km
	Refractive index	1.466@1310nm 1.467@1550nm
	Zero Dispersion Wavelength	1300-1324nm
	Zero dispersion slope	≤0.092 ps/nm <sup>2</sup> ·km
	Dispersion coefficient	≤3.5 ps/(nm·km)@1310nm ≤19 ps/(nm·km)@1550nm
	PMD Individual	≤0.2 ps/√ km
	Cable cut-off wavelength	≤1260 nm
	Mode field diameter (MFD)	8.8 ± 0.4 μm@1310 nm
	Macro bending loss (1 turn Ø20 mm)	@1550 nm ≤0.75 dB
Geometric	Cladding diameter	125 ± 0.7 μm
	Core/clad concentricity error	Max individual 1 μm Max. average value: ≤0.5 μm
	Cladding non-circularity	≤ 1.0 %
	Coating diameter (Colored)	250 ± 15 μm
Mechanical	Proof stress	≥ 0.69 Gpa

## 6. Test Methods

Test	Conditions	Acceptance criteria
Tension Loading IEC 60794-1-2 E1	Tensile strength: See point3 Tensioned length: ≥ 25 m, 10min	- Fiber strain≤ 0.33%, by clamps - Δα reversilbe
Impact Resistance IEC 60794-1-2 E4	Radius =300 mm, number of places/tests: 3 Impact energy: 5 J	- Δα reversible - No damage
Static bending IEC 60794-1-2 E11A	R=10xOD, 4 turns, 3 cycles	- Δα reversible
Kink IEC 60794-1-2 E10	Kink radius : 10xOD	- No kink
Torsion/Twist IEC 60794-1-2 E7	Sample length:1m, Test condition: see Point 3, 10cycles	- Δα ≤ 0.1 dB
Crush/Compression IEC 60794-1-2 E3	Crush: see Point 3, 1min Number of tests: 3	- Δα reversible - No damage
Temperature cycling IEC 60794-1-2 F1	-30°C..+70°C t1=12h, 2 cycles	- Δα ≤0.1 dB/km
Water penetration IEC 60794-1-2 F5B	Sample length: 3 m,water column height: 1 m Test duration: 24 h,	- No leakage

All optical measurements at 1550 nm

## 7. Stress-Sag Data Sheet

### Cable Parameters:

SI.	Description	Unit	Parameters
			144F
1	Overall diameter	mm	11.9
2	Sectional area	mm <sup>2</sup>	10.32
3	Nominal weight	Kg/km	102
4	Modulus of elasticity	KN/mm <sup>2</sup>	54.93
5	Coefficient of linear expansion	10 <sup>-6</sup> /°C	16.31

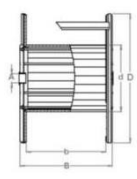
## Sag Sheet [144]:

Span	Installation*		NESC Light	
	Sag	Tension	Sag	Tension
M	%	N	%	N
20	1.3	200	2.00	690
40	1.3	400	2.38	1160
50	1.3	500	2.52	1370
60	1.3	600	2.64	1570

Note:

1. Marked is installation state, ZTT designed the installation temperature 16°C, wind speed 5m/s and no ice coating.
2. ZTT design optical fiber cable would meet tension requirement under the worst weather conditions, and can be kept in good working condition

## 8. Logistics

Cable type	Length (-1%/+3%)	2000m	 D*d*B in cm
OFC-144G.657A1-FGSA-S1 Module 12	Drum type: Wood Dimensions Weight	110*60*75 272kg	

Dimensions including protection. Indicative values, actually delivered drum sizes and weights may deviate. Cable ends sealed with caps