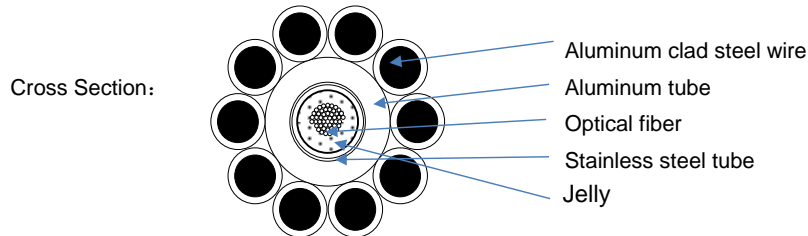


# 1. Complete OPGW

Type: OPGW-48B1-80[75;43]



Structure Details	Center	Named	No.	Diameter
		Aluminum Tube	1	6.30 mm
	Layer 1	SUS-Tube	1	3.60 mm
		20.3%AS wire	10	2.73 mm

Technical Data	According to these standards		
	General Tests	IEC 60794-1-2/IEEE 1138:2009/IEC 60794-4	
	Construction	IEEE 1138:2009	
	ACS wires	IEC 61232	
	Optical Fiber standard	IEC 60793-2	
	Optical Fiber Color coding	ANSI/TIA/EIA 598-A	
	Short circuit current(1kA2-s) evaluatic	IEC 60865-1	
	Alunminium pipe	ASTM B483	
	Stainless steel pipe	ASTM A240,ASTM A632	
	Quality Management	ISO 9001	
	Stranding direction of outer layer is "Right-hand"		
	Fiber No. & Type	48 G.652D	
	Overhead line voltage range	110 kV	
	Standard Diameter	11.76	mm
	Supporting Cross Section	78.37	mm <sup>2</sup>
		Section of AS wire	58.53 mm <sup>2</sup>
		Section of Optical unit	19.83 mm <sup>2</sup>
	Approximate mass	470.6	kg/km
	Rated Tensile Strength	74.5	kN
	Long-term Allowable Tension(40%RTS)	29.8	kN
	Everyday Stress(20%RTS)	14.9	kN
	Strain Margin Stress(60%RTS)	44.7	kN
	Modulus of Elasticity	135.2	GPa
	Thermal Elongation Coefficient	14.0	×10 <sup>-6</sup> /℃
	Calculated D.C. Resistance at 20℃	0.724	Ω/km
	Short-Circuit Current (1 sec, 20~180℃)	6.6	kA
	Short-Circuit Current Capacity (20~180℃)	43.0	kA <sup>2</sup> ·s
	Minimum Bending Radius	235	mm
	Ratio between Pull and Weight	16.15	km
Temperature Range:	Installation	-10℃~+50℃	
	Transportation and Operation	-40℃~+80℃	

Remarks: All Sizes and Values are Nominal Values

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## 2. Fiber parameters

Item		G.652D
Max. attenuation* (Completed OPGW)	(1310nm)	$\leq 0.35\text{dB/km}$
	(1550nm)	$\leq 0.21\text{dB/km}$
Mode field diameter	(1310nm)	$9.2\pm 0.4\mu\text{m}$
	(1550nm)	$10.4\pm 0.5\mu\text{m}$
Cable cut-off wavelength		$\leq 1260\text{nm}$
Cladding diameter		$125\pm 1\mu\text{m}$
Core-Cladding concentricity Error		$\leq 0.6\mu\text{m}$
Cladding non-circularity		$\leq 1\%$
Coating diameter		$242\pm 7\mu\text{m}$
Cladding-Coating concentricity error		$\leq 12\mu\text{m}$
Polarization Mode Dispersion ( PMD )		$\leq 0.2\text{ps}/(\text{km})^{0.5}$
Zero dispersion wavelength		1300~1324nm
Zero dispersion slope		$\leq 0.092\text{ps}/\text{nm}^2\text{km}$
Dispersion @ 1288nm~1339nm		$\leq 3.5\text{ps}/(\text{nm.km})$
Dispersion @ 1271nm~1360nm		$\leq 5.3\text{ps}/(\text{nm.km})$
Dispersion @ 1550nm		$\leq 18\text{ps}/(\text{nm.km})$
Proof Test Level		$\geq 0.69\text{GPa}$

## 3. Fiber identification

Fiber No.	1	2	3	4	5	6
Colour	Blue	Orange	Green	Brown	Gray	White
Fiber No.	7	8	9	10	11	12
Colour	Red	Clear	Yellow	Purple	Pink	Aqua

Remarks: Fibres 1-12 – plain,  
Fibres 13 – 24 - single 100mm mark,  
Fibres 25 – 36 - double 150mm mark,  
Fibres 37 – 48 - single 150mm mark,

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#### 4. Test item

The factory acceptance tests for finished cable shall be carried out as this specification and relevant standard , shall meet the requirements. The detailed test items are as below:

##### Test item list

No.	Test Items
1	<b>Test on fibers</b>
1.1	Attenuation
1.2	Water ingress test
2	<b>Test on wires</b>
2.1	Diameter
2.2	Tensile strength
2.3	Stress at 1% extension(For ACS wire)* <sup>1</sup>
2.4	Elongation in 250mm
2.5	Torsion test(For ACS wire)
2.6	Conductivity
2.7	Thickness of AL clad(For ACS wire)
2.8	Wrapping test(For AAL wire)
3	<b>Completed OPGW</b>
3.1	Surface condition
3.2	Overall diameter
3.3	Lay ratio and direction of lay
3.4	DC resistance at 20℃
3.5	Mass per unit length
3.6	Breaking strength* <sup>2</sup>

Note:1.Stress at 1% extension is only for center ACS wire, other than the centre wire are unreliable.

2.The FAT sample ratio is 10 percent of the Lot except for breaking strength test, the breaking strength is 1 sample per lot.

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