




规格书

specification

产品名称 Product Name	FBT 耦合器 FBT SPLITTER	产品型号/规格 Product Modle	1X2/FBT
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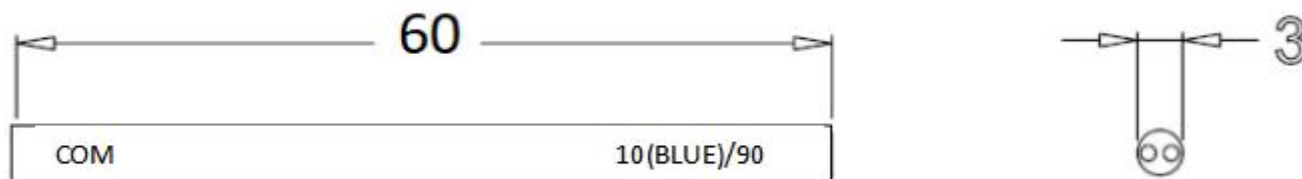
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1 Product Structure (Unit: 3*60MM)



2 Specification

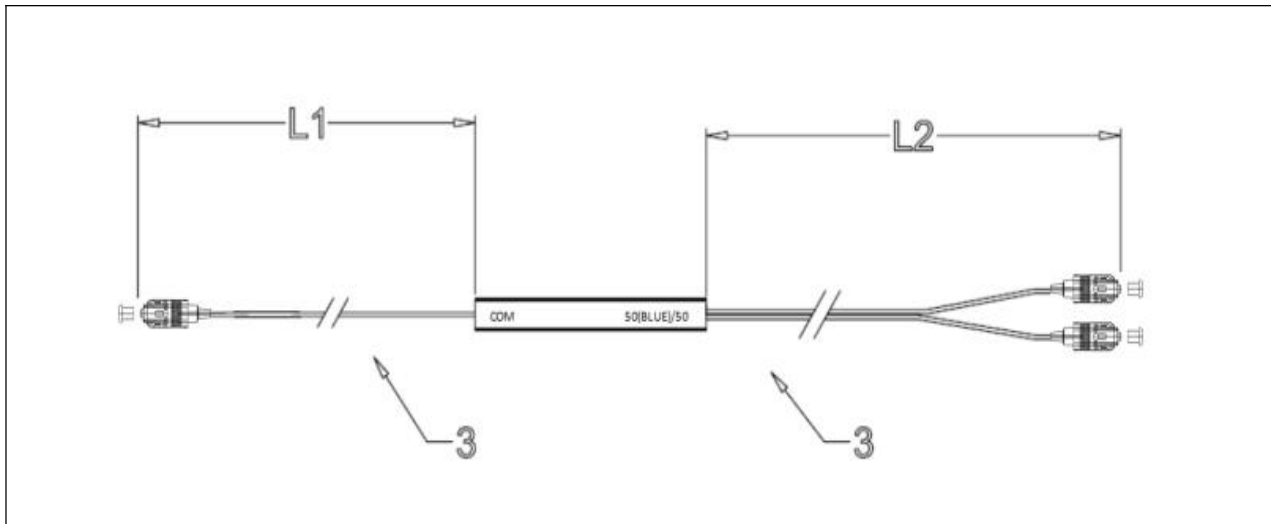
2.1 Optical Characteristics (exclude connector loss)

TYPE	FBT 1*2													
Working Wavelength(nm)	1310. 1490. 1550													
Working Bandwidth(nm)	±40													
Splitting Ratio	1: 99	2: 98	3:97	5:95	10:90	15:85	20; 80	25: 75	30: 70	35: 65	40: 60	45: 55	50: 50	
Insertion Loss(dB)	21.5/0.25	18.5/0.25	16.6/0.3	14.3/0.35	11.0/0.59	9.00/0.90	7.60/1.20	6.60/1.50	5.70/1.80	5.00/2.30	4.40/2.60	3.80/3.00	3.30/3.30	
RL(dB)	≥ 50													
PDL(dB)	≤0.2													
Directivity(dB)	≥55													
Working Temperature(℃)	-40~+85													
Diameter,material and Color	Bare fiber SMF-28e G657A1 (connect: without conector)													
Fiber Length	1.0M													

Note: if with connector, On the basis of the above requirements, the insertion loss will increase by no less than 0.2dB, and other indicators are the same.

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2.2 Optical cable and other requirements



Category		Specification	Remarks
Fiber Cable	Type NO:3	G657A1	
	Outer diameter /MaterialNO:3	Ø0.9/Hytrel	
	Input endface Length:L1	1.0±0.03m -white	
	Output endface Length:L2	1.0±0.03m--Blue	Ratio-1/2/3/5/10/15/20/25/30 /35/40/45/50
		1.0±0.03m--Orange	Ratio-99/98/97/95/90/85/80/7 5/70/65/60/55/50
Connector type	Input endface NO:1	SC APC	
	Output endface NO:2	SC APC	

3 Insertion Loss

- ◆ Test Wavelength:1310-1550 nm
- ◆ Required Value: For details, please see specification.
- ◆ Test can be performed on any channel

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4 Return Loss

- ◆ Test Wavelength: 1310-1550 nm
- ◆ Required Value: >50 dB
- ◆ Test can be performed on any channel

5 Directivity

- ◆ Test wavelength: 1310-1550 nm
- ◆ Required Value: >55 dB
- ◆ Required testing interface QTY= $\log_2(\text{Output interface})$: $\log_2(2)=1$

6 Polarization Dependent Loss-PDL

- ◆ Test Wavelength: 1310-1550 nm
- ◆ Required Value: < 0.2dB
- ◆ Required testing interface QTY= $\log_2(\text{Output interface})$: $\log_2(2)=1$

7 Insert/Pull Test

Loss should be within the following limits in reference to the initial value

- ◆ Variation value of Insertion Loss should be ≤ 0.50 dB in process of testing
- ◆ The difference between Initial Value and final test value should be ≤ 0.30 dB
- ◆ Return loss should be ≥ 55 dB in process of Testing

The test shall be conducted under the following conditions:

- ◆ Pull/Insert: 500 times
- ◆ Record a data every 10 times
- ◆ Data is recorded 50 times in total
- ◆ Clean pins and adapter's elastic sleeve before recording very time
- ◆ Not mechanical damage, such as deformation, loss, corrosion, relaxation and other phenomena
- ◆ Test Wavelength 1310-1550nm
- ◆ Required testing interface QTY= $\log_2(\text{Output interface})$: $\log_2(2)=1$

8 Tensile Test

Loss should be within the following limits in reference to the initial value

- ◆ variation value of Insertion Loss should be ≤ 0.50 dB in process of testing
- ◆ The difference between Initial Value and final test value should be ≤ 0.30 dB
- ◆ Return loss should be ≥ 55 dB in process of Testing

The test shall be conducted under the following conditions:

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- ◆ Load: 5 N
- ◆ Tensile variation in process of testing: 0.5N/s
- ◆ Duration:60s
- ◆ Tensile Point:0.3m distance from fiber cable ends
- ◆ Test Wavelength 1310-1550nm
- ◆ Required testing interface QTY= $\log_2(\text{Output interface})$: $\log_2(2)=1$

9 Torsion Test

Loss should be within the following limits in reference to the initial value

- ◆ variation value of Insertion Loss should be ≤ 0.50 dB in process of testing
- ◆ The difference between Initial Value and final test value should be ≤ 0.30 dB
- ◆ Return loss should be ≥ 55 dB in process of Testing

The test shall be conducted under the following conditions::

- ◆ applied force:15N
- ◆ The distance between the Torsion point and shell underside is 22~28cm
- ◆ Max Torsion Angle: $\pm 180^\circ$
- ◆ number of torsions: 100 times
- ◆ Torsion Speed: 10 Times/min.
- ◆ Test Wavelength 1310-1550nm
- ◆ Required testing interface QTY= $\log_2(\text{Output interface})$: $\log_2(2)=1$

10 High and Low Temperature Cycling Test

Loss should be within the following limits in reference to the initial value

- ◆ variation value of Insertion Loss should be ≤ 0.50 dB in process of testing
- ◆ The difference between Initial Value and final test value should be ≤ 0.30 dB
- ◆ Return loss should be ≥ 50 dB in process of Testing

The test shall be conducted under the following conditions::

- ◆ High Temperature= $+75^\circ\text{C}$, Temperature rate of change: $1^\circ\text{C} / \text{min}$
- ◆ Low Temperature= -25°C , Temperature change rate $1^\circ\text{C} / \text{min}$
- ◆ High and low temperature points to stay four hours separately
- ◆ Duration: 96h
- ◆ Cycles: 12 times
- ◆ 2 hours returned to 25°C
- ◆ Keep 2 hours at 25°C ,then test
- ◆ Insertion value should be tested at least one time per 10 mins. in process of testing.
- ◆ Test Wavelength 1310-1550nm
- ◆ Required testing interface QTY= $\log_2(\text{Output interface})$: $\log_2(2)=1$

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11 Low Temperature Test

Loss should be within the following limits in reference to the initial value

- ◆ variation value of Insertion Loss should be ≤ 0.50 dB in process of testing
- ◆ The difference between Initial Value and final test value should be ≤ 0.30 dB
- ◆ Return loss should be ≥ 50 dB in process of Testing

The test shall be conducted under the following conditions::

- ◆ Temperature= -25°C
- ◆ Duration:96H
- ◆ 2 hours returned to 25°C from -25°C
- ◆ Test after Keeping 2 hours at 25°C
- ◆ Insertion value should be tested at least one time per 60 mins. in process of testing.
- ◆ Test Wavelength 1310-1550nm
- ◆ Required testing interface QTY= $\log_2(\text{Output interface}):\log_2(2)=1$

12 Dry Heat Test

Loss should be within the following limits in reference to the initial value

- ◆ variation value of Insertion Loss should be ≤ 0.50 dB in process of testing
- ◆ The difference between Initial Value and final test value should be ≤ 0.30 dB
- ◆ Return loss should be ≥ 50 dB in process of Testing

The test shall be conducted under the following conditions::

- ◆ Temperature= $+75^{\circ}\text{C}$
- ◆ Duration: 96h
- ◆ 2 hours returned to 25°C
- ◆ Test after Keeping 2 hours at 25°C
- ◆ Insertion value should be tested at least one time per 60 mins. in process of testing.
- ◆ Test Wavelength 1310-1550nm
- ◆ Required testing interface QTY= $\log_2(\text{Output interface}):\log_2(2)=1$

13 Salt Spray Test

Loss should be within the following limits in reference to the initial value

- ◆ variation value of Insertion Loss should be ≤ 0.50 dB in process of testing
- ◆ The difference between Initial Value and final test value should be ≤ 0.30 dB
- ◆ Return loss should be ≥ 50 dB in process of Testing

The test shall be conducted under the following conditions::

- ◆ Salt Spray concentration: 5%
- ◆ Condition: 35°C , 48H
- ◆ Test its optical performance at room temperature, and record data

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- ◆ Place in salt spray chamber from the test system, heated to 35 °C, then keep 48H
- ◆ Lower the temperature to room temperature, then remove the samples to place 2H, test the optical performance after wiping
- ◆ No mechanical damage, such as deformation, loss, corrosion, relaxation and other phenomena
- ◆ Test Wavelength 1310-1550nm
- ◆ Required testing interface QTY= $\log_2 22(\text{Output interface}) : \log_2(2) = 1$

14 Vibration Test:

Loss should be within the following limits in reference to the initial value

- ◆ Variation value of Insertion Loss should be ≤ 0.50 dB in process of testing
- ◆ The difference between Initial Value and final test value should be ≤ 0.30 dB
- ◆ Return loss should be ≥ 50 dB in process of testing

The test shall be conducted under the following conditions:

- ◆ Frequency: 10-55 Hz
- ◆ Amplitude: 0.75mm (1.52mm Max)
- ◆ Cycles: 15 times
- ◆ Time: 90 min divided in three perpendicular directions
- ◆ Every 5 seconds to test the attenuation of at least one port
- ◆ Test Wavelength 1310-1550nm
- ◆ Required testing interface QTY= $\log_2 22(\text{Output interface}) : \log_2(2) = 1$

15 Humidity test

Loss should be within the following limits in reference to the initial value

- ◆ Variation value of Insertion Loss should be ≤ 0.50 dB in process of testing
- ◆ The difference between Initial Value and final test value should be ≤ 0.30 dB
- ◆ Return loss should be ≥ 50 dB in process of testing

The test shall be conducted under the following conditions:

- ◆ Temperature = $\pm 40^\circ\text{C}$
- ◆ humidity = 93%
- ◆ Duration: 96 h
- ◆ 25°C 2 hours returned to 25°C
- ◆ Test after Keeping 2 hours at 25°C
- ◆ Insertion value should be tested at least one time per 60 mins. in process of testing.
- ◆ Test Wavelength 1310-1550nm
- ◆ Required testing interface QTY= $\log_2 22(\text{Output interface}) : \log_2(2) = 1$

16 Water Immersion Test

Loss should be within the following limits in reference to the initial value

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- ◆ Variation value of Insertion Loss should be ≤ 0.50 dB in process of testing
- ◆ The difference between Initial Value and final test value should be ≤ 0.30 dB
- ◆ Return loss should be ≥ 50 dB in process of testing

The test shall be conducted under the following conditions:

- ◆ elevation of water:15mm
- ◆ Temperature: 43°C
- ◆ Soaking time:168 h
- ◆ Insertion value should be tested at least one time per 10 mins. in process of testing.
- ◆ Test Wavelength 1310-1550nm
- ◆ Required testing interface QTY= $\log_2(\text{Output interface})$: $\log_2(2)=1$

17 Flame Retardant Requirements

Test standard

- ◆ HB: UL94 standard anti-flame retardant is the lowest grade.
- ◆ Ask for 3 to 13 mm thick samples, the burning rate of less than 40 mm per minute
- ◆ Samples less than 3 mm thick, the burning rate per minute less than 70 mm or 100 mm sign is extinguished
- ◆ V-2: After samples twice fire test for 10 seconds the flame extinguished within 60 seconds and Blazers fall.
- ◆ V-1: After samples twice fire test for 10 seconds the flame extinguished within 60 seconds and No Blazers fall
- ◆ V-0: After samples twice fire test for 10 seconds the flame extinguished within 30 seconds. No Blazers fall
- ◆ Optical splitter, Optical cable and ABS housings should comply with the above flame retardant V0



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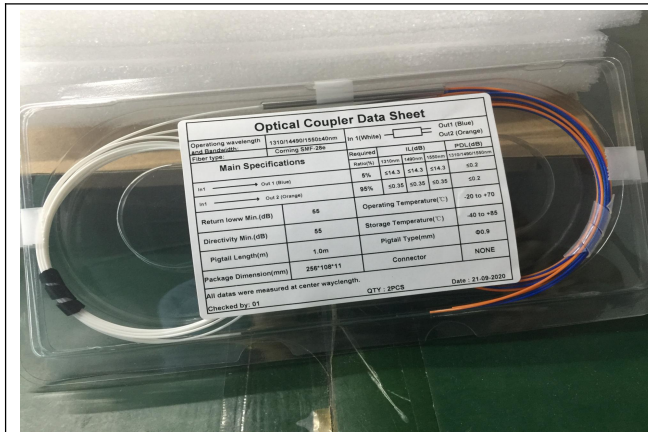
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18 Product Packaging Information

18.1 Inner packing (MM)



Size (MM)	165×145×75
N.W.(KG/2PCS)	0.02
QTY (PCS/Box)	2
G.W. (KG/Box)	0.05

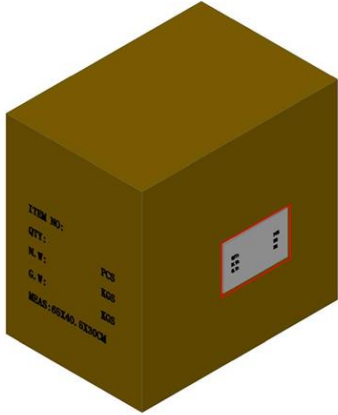
18.2 Test report

Optical Coupler Data Sheet				
Operating wavelength and Bandwidth:	1310/14490/1550±40nm	In 1(White)	Out1 (Blue) Out2 (Orange)	
Fiber type:	Corning SMF-28e			
Main Specifications		Required	IL(dB)	PDL(dB)
In1 → Out1 (Blue)		Ratio(%)	1310nm 1490nm 1550nm	1310/1490/1550nm
		8%	≤14.3	≤14.3
In1 → Out2 (Orange)		95%	≤0.35	≤0.35
Return loss Min.(dB)	55	Operating Temperature(°C)	-20 to +70	
Directivity Min.(dB)	55	Storage Temperature(°C)	-40 to +85	
Pigtail Length(m)	1.0m	Pigtail Type(mm)	Φ0.9	
Package Dimension(mm)	256*108*11	Connector	NONE	
All datas were measured at center waylength.				
Checked by: 01				
QTY : 2PCS				
Date : 21-09-2020				



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18.3 Outer packing

	Size (MM)	460×320×480
	QTY (PCS/Box)	600
	N.W.(KG/Box)	7.0
	G.W. (KG/Box)	8.5