



深圳市华百年电子有限公司

SHENZHEN HBY ELECTRONICS CO.,LTD.

规格书

specification

产品名称 Product Name	PLC 光分路器 PLC SPLITTER	产品型号/规格 Product Modle	1xN/IN PLC Splitter
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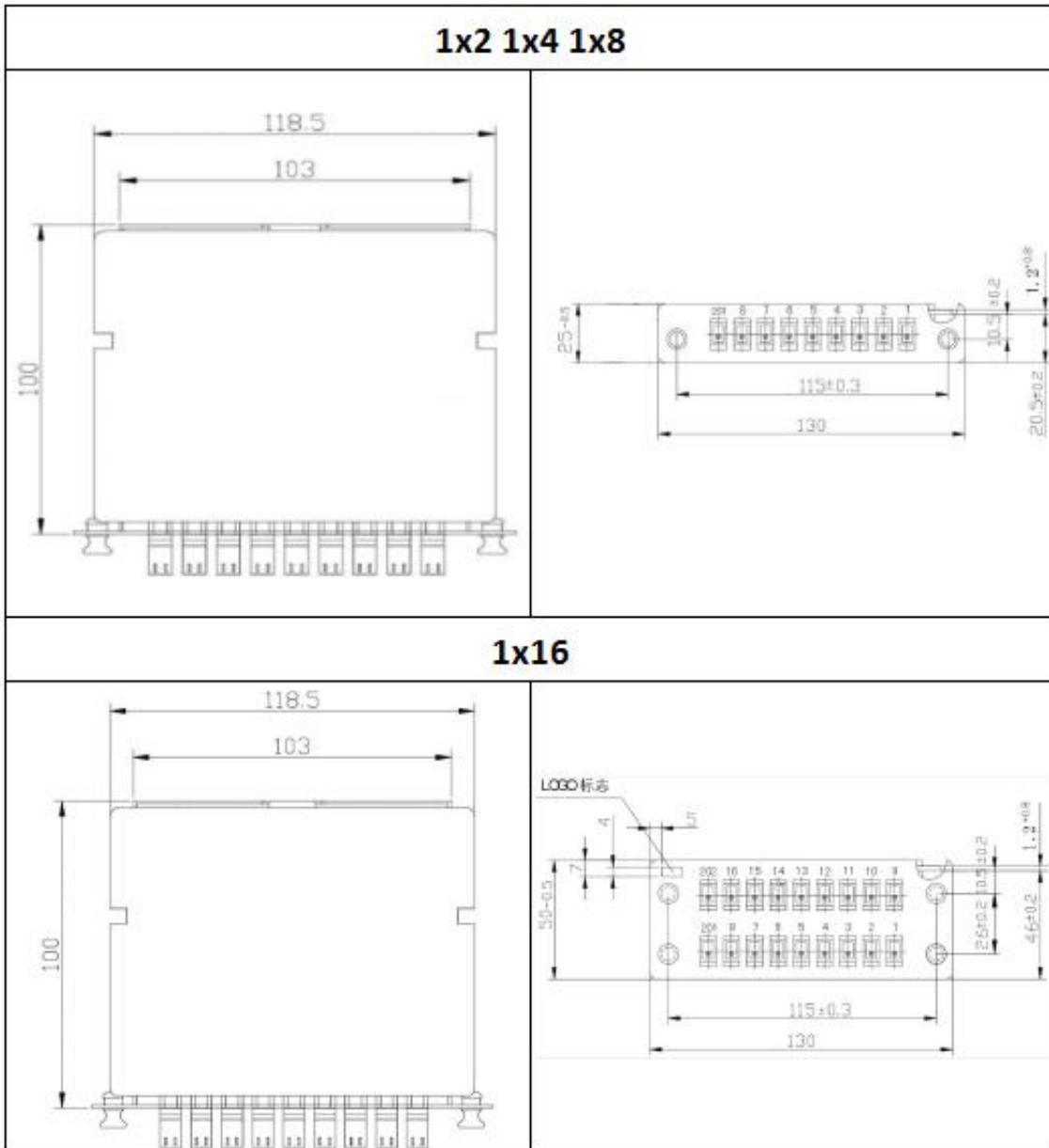


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1 Product Structure (Unit: MM)





2 Specification

2.1 Optical Characteristics (exclude connector loss)

Category	Specification						Remarks
Test Wavelength		nm	1310~1550				
1xN PLC Splitter		~	1x2	1x4	1x8	1x16	
Insertion Loss	MAX	dB	4	7.4	10.7	13.9	
Channel Uniformity	MAX	dB	0.5	0.8	1.0	1.3	
Polarization Dependent Loss -PDL	MAX	dB	0.25	0.25	0.25	0.3	
Directivity	MIN	dB	55				
Return Loss	MIN	dB	50				
Connector Insertion Loss	MAX	dB	0.1 each				
Adapter Insertion Loss	MAX	dB	N/A				
Working Wavelength		nm	1260.....1650				
Storage Temperature		℃	-40.....+85				
Operating Temperature		℃	-40.....+85				

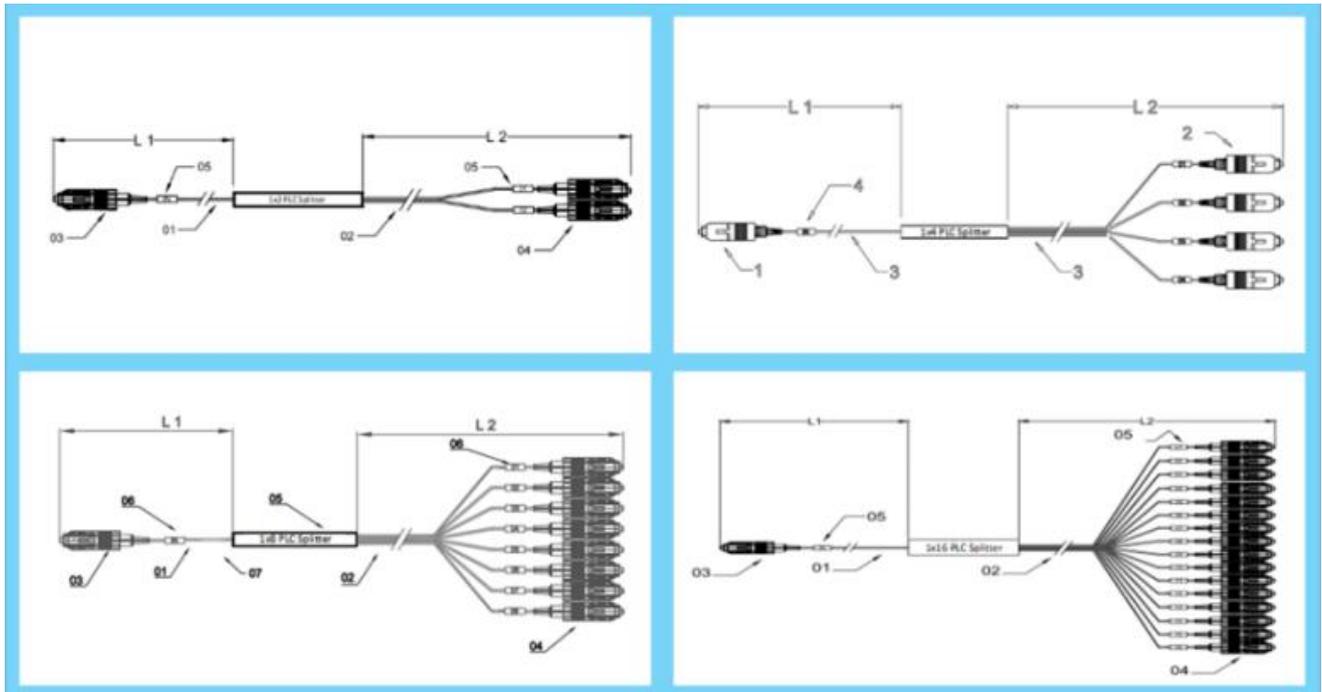
Note:if without connector,

insertion loss will have reduction of no less than 0.2dB on the basis of the above requirements, other indicators are the same.

NORLAND PRODUCTS INC.(CONNECT-CHEK®6000) remarks column:3D TEST APC>93% 3D TEST UPC>95%



2.2 Optical cable and other requirements



Category		Specification	Remarks
Fiber Cable	Input type/material/color/diameter :01	G657A1/Ø0.9/Hytrel/ white	
	Output type/material/color/diameter :02	G657A1/Ø0.9/Hytrel/ white	
	Input endface Length:L1	0.5±0.05m	
	Output endface Length:L2	0.5±0.05m	
Connector type	Input endface	SC/APC Green	
	Output endface	SC/APC Green	
Number tube NO:05		IN/Input No./Output	



3 Insertion Loss

- ◆ Test Wavelength: 1310-1550 nm
- ◆ Required Value: Unit-dB

1x2	1x4	1x8	1x16
4	7.4	10.7	13.9

- ◆ Test can be performed on any channel

4 Return Loss

- ◆ Test Wavelength: 1310-1550 nm
- ◆ Required Value: Unit-dB

1x2	1x4	1x8	1x16
55	55	55	55

- ◆ Test can be performed on any channel

5 Directivity

- ◆ Test wavelength: 1310-1550 nm
- ◆ Required Value: Unit- dB

1x2	1x4	1x8	1x16
55	55	55	55

- ◆ Required testing interface QTY= $\log_2(\text{Output interface}) \cdot \log_2(*) = *$

6 Polarization Dependent Loss-PDL

- ◆ Test Wavelength: 1310-1550 nm
- ◆ Required Value: Unit-dB

1x2	1x4	1x8	1x16
0.25	0.25	0.25	0.3

- ◆ Required testing interface QTY= $\log_2(\text{Output interface}) \cdot \log_2(*) = *$

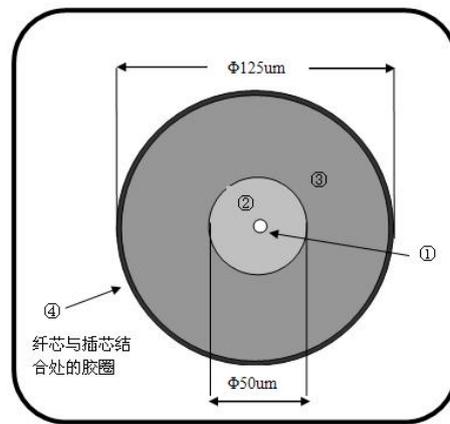
7 Endface Test

- ◆ Inspection method: wear finger cots according to dust-proof requirements
- ◆ Place the connector in the front jack the detector, rotate adjustment ring until the image in the monitor is clearest.
- ◆ Then, observe in accordance with the criteria (see table below):



Area	Class A standard (excellent)			Class b standard (Good)			Class C standard(Qualified)		
	Scratches	Dirty spots	Crack	Scratches	Dirty spots	Crack	Scratches	Dirty spots	Crack
①Area: Mode field of light parts	No	No	No	No	No	No	No	No	No
②Area: within $\Phi 50\mu\text{m}$	No	No	No	No	No	No	No	No	No
③Area: between $\Phi 50\mu\text{m} \sim \Phi 125\mu\text{m}$	No	No	No	Allow 1pc/ 1um	Allow 1pc/ 1um	Allow 1pc/ 1um	Allow 1pc/ 1um	Allow 2pc/ 2um	Allow 2pc/ 2um
④Area: rubber gasket	No	No	No	Allow 1pc/ 1um	Allow 1pc/ 1um	Allow 1pc/ 1um	Allow 1pc/ 1um	Allow 2pc/ 2um	Allow 2pc/ 2um

- ◆ If quarantine is stained and the gun with nitrogen purge, then observed, repeat 1~2 times, qualifying into circulation box
- ◆ Not meeting the standard, put the insertion core in the clean paper to wipe in one direction 3~5 times, then observe and put the passed items into circulation box
- ◆ if scratches and dirt do not meet the requirements and cannot be erased, the device is identified into circulation box in the nonconforming areas and corresponding records are made in the record. (In accordance with the "test-clean-check" steps)
- ◆ All the endface are required to meet class a standard
- ◆ Endface sketch



8 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 ≥ 50 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=log₂(Output interface):log₂(*)=*

9 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::

- ◆ Load: 4 N
- ◆ Tensile variation in process of testing: 1N/s
- ◆ Duration:60s
- ◆ Tensile Point:0.22-0.28m distance from fiber cable ends
- ◆ Test Wavelength 1310-1550nm
- ◆ Required testing interface QTY=log₂(Output interface):log₂(*)=*

10 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 ≥50 dB in process of Testing

The test shall be conducted under the following conditions::

- ◆ applied force:7.4N
- ◆ The distance between the Torsion point and shell underside is 0.2cm
- ◆ Max Torsion Angle: ±180°
- ◆ number of torsions: 100 times
- ◆ Torsion Speed: 10 Times/min.
- ◆ Test Wavelength 1310-1550nm
- ◆ Required testing interface QTY=log₂(Output interface):log₂(*)=*

11 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℃, Temperature rate of change:1℃ / min



- ◆ Low Temperature=-25℃, Temperature change rate 1℃ / min
- ◆ High and low temperature points to stay four hours separately
- ◆ Duration: 96h
- ◆ Cycles: 12 times
- ◆ 2 hours returned to 25℃
- ◆ Keep 2 hours at 25℃, 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=log₂(Output interface):log₂(*)=*

12 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℃
- ◆ Duration:96H
- ◆ 2 hours returned to 25℃ from -25℃
- ◆ Test after Keeping 2 hours at 25℃
- ◆ Insertion value should be tested at least one time per 60 mins. in process of testing.
- ◆ Test Wavelength 1310-1550nm
- ◆ Required testing interface QTY=log₂(Output interface):log₂(*)=*

13 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℃
- ◆ Duration: 96h
- ◆ 2 hours returned to 25℃
- ◆ Test after Keeping 2 hours at 25℃
- ◆ Insertion value should be tested at least one time per 60 mins. in process of testing.
- ◆ Test Wavelength 1310-1550nm
- ◆ Required testing interface QTY=log₂(Output interface):log₂(*)=*

14 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
- ◆ 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= $\log_2(\text{Output interface}):\log_2(*)=*$

15 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= $\log_2(\text{Output interface}):\log_2(*)=*$

16 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 = $+40^{\circ}\text{C}$
- ◆ 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= $\log_2(\text{Output interface}):\log_2(*)=*$



17 Water Immersion 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:

- ◆ 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= $\log_2(\text{Output interface})$: $\log_2(*)=*$

18 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



19 Product Packaging Information MINIMUM PACKAGE

Specification	Measurement(CM)	MINIMUM PACKAGE	G.W(KG)	QUANTIDADE TOTAL
1x2	55.5*37.5*29	1pcs/PE bag	12.32	120
1x4	55.5*37.5*29	1pcs/PE bag	14.75	120
1x8	55.5*37.5*29	1pcs/PE bag	15.7	120
1x16	55.5*37.5*29	1pcs/PE bag	14.8	60