PLC-1 × □□□ (PLC Splitter)

Multi-wavelength Planar Lightwave Circuit Splitter

PRODUCT DESCRIPTION

Planar Optical Waveguide Optical Splitter (PLC Splitter) is an integration waveguide optical power distribution device that based on quartz substrate, featured with small size, wide working wavelength range, high reliability and excellent uniformity of optical split, etc. It is especially suitable for connecting local unit with terminal unit in passive optical network (EPON, BPON, GPON, etc.) to achieve optical signal splitting. The main design divide optical signal in optical communication system into multi-way output. The component that we manufactured is with high stability to light source and temperature. And diversified packages can meet customers' different requirements in application. According to the various requirements, our PLC splitter is with various types: bare fiber type, miniature type, fan-out type, module type, tray type, plug-in type , Blade package type, rack-mounted type, etc.

PRODUCT FEATURES

- ▶Low insert loss, high uniformity
- ▶Low polarization loss
- ▶Wide working wavelength range
- ▶Wide working temperature range
- ▶Long time of stability
- ▶Small size, high integration level, can be installed directly in existing various kinds of splice boxes, no need great installation space
- ▶Splitting ratio can be 1:2 to 1:128

MAIN APPLICATION

- ▶Fiber optical access network
- ▶Passive fiber optical network
- ▶Cable TV network
- ▶Digital communication
- ▶Fiber optical sensing system
- ▶Test equipment

TECHNICAL INDEX

1 × □□□ optical splitter index :

Performance		1x002	1x004	1x008	1x016	1x024	1x032	1x064	1x128
Fiber type		G.657.A							
Working wavelength		1260nm~1650nm							
Maximum insertion loss(dB)		≤4.2	≤7.4	≤10.7	≤13.9	≤15.8	≤17.2	≤20.4	≤23.7
Port insertion loss uniformity(dB)		≤0.6	≤0.6	≤0.8	≤1.0	≤1.0	≤1.5	≤1.8	≤2.0
Wavelength insertion loss uniformity(dB)		≤0.8	≤0.8	≤0.8	≤1.0	≤1.0	≤1.0	≤1.0	≤1.2
Return loss(dB)		≥55	≥55	≥55	≥55	≥55	≥55	≥55	≥55
Directivity(dB)		≥55	≥55	≥55	≥55	≥55	≥55	≥55	≥55
Package tyge	Bare fiber type	40×4×4			4×7×50			4×12×60	
	Miniature type	50×4×4			60×7×4			6×12×80	
	Model type	100×80×10			100×80×18			140×120×18	
	Blade package type	130×100×25				-	130×100×100 or 260×100×50	130×100×200	
	Tray type	288×180×25				-	288×180×50	288×180×100	
	Rack-mounted type	483×342×44						483×230×88	

Note 1: The insertion loss with plug optical connector increase less than 0.3dB base on above requirements, other indexes are the same;

Note 2: The insertion loss of optical splitter with adapter (include rack type, Tray type and Blade package type) increase less than 0.2dB base on above requirements, other indexes are the same;

Note 3: The maximum insertion loss in 1260~1300, 1600~1650nm wavelength range increase 0.3dB base on above requirements;

Note 4: Splitting ratio performance index of 128 is tentative;

Note 5: The working wavelength, insertion loss, return loss, directivity test method should according to Chapter Six of YD/T 1117-2001;

Note 6: The test method of Wavelength insertion loss uniformity as below: input end input 1260~1650nm broadband lightl; source, output end switch in spectrum analyzer to measure the insertion loss that corresponding with wavelength, obtain the maximum and minimum of wavelength insertion loss.

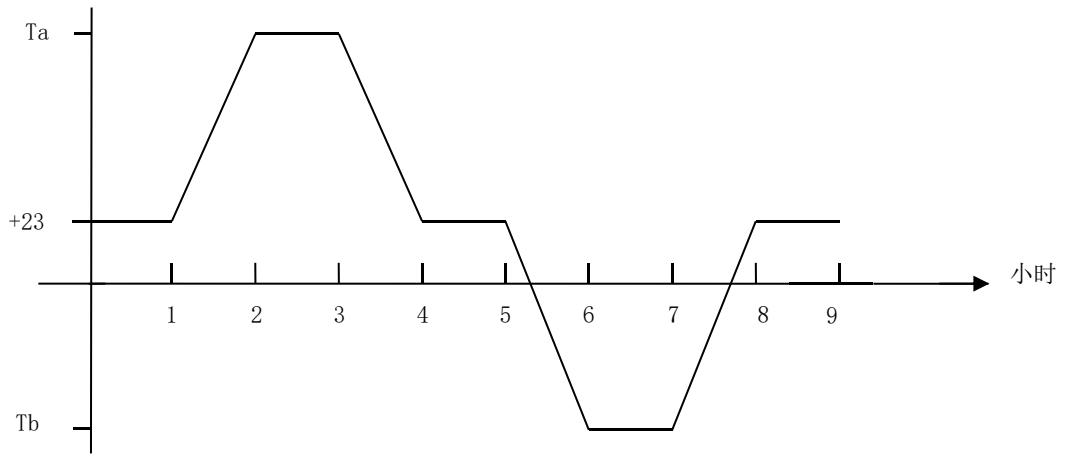
Working environment index

Performance		Min.	Typ.	Max.
Working temperature	(℃)	-40		+85
Wavelength insertion loss	(℃)	-40		+85
Working pressure	(Kpa)	62		106
Relative humidity	(%)	45		75

Environmental performance requirements

No.	Test item	Test method	Criterion	
			Insertion loss variation	Appearance change after test
a	High temperature	85 ℃ (±2 ℃),duration time 96h,on-line test	≤0.4	No mechanical damage in appearance, such as deformation, cracks, loose. No fiber fracture, fiber pull-out, fiber endpoint fault and cable seal damage etc.
b	Low temperature	-40 ℃ (±2 ℃),duration time 96h,on-line test	≤0.5	
c	Dampness-heat	75 ℃ (±2 ℃),95%(±5%)RH, duration time 96h,on-line test	≤0.5	
d	Temperature cycling	(- 40 ℃ ~ + 85 ℃),one circulation 8h, 21 times circulation, on-line test	≤0.5	
e	Water soaking	Room temperature, tap-water, duration time 168h	≤0.3	
f	Salt fog	Saline solution: 5% NaCl, 6.5<PH<7.2; Temperature : 35°C duration time : 96 hours	≤0.3	

Note 1: Temperature circulation test will be the conversion curve shown as below, one circulation takes 8h,21 times.



Mechanical performance index

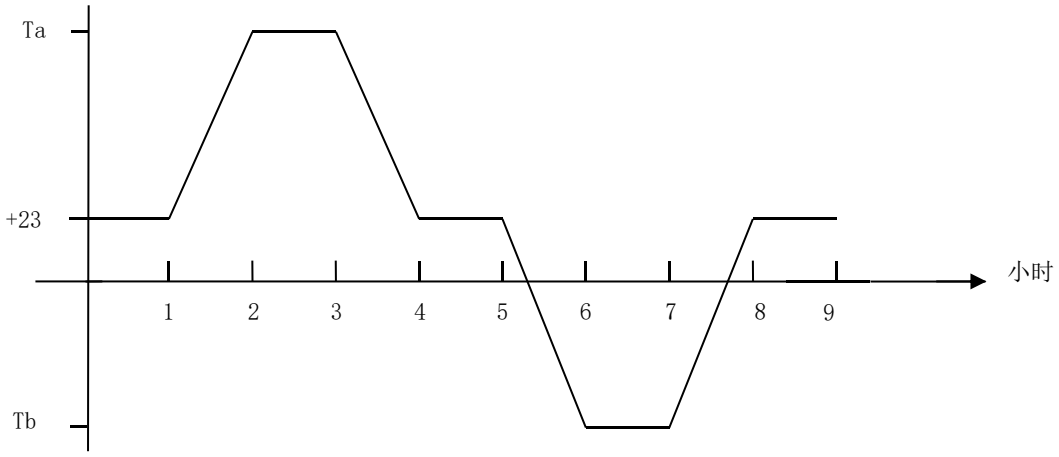
No.	Test item	Test method	Criterion	
			Insertion loss variation	Appearance change after test
a	Drop test	Height:1.8m Times:3 axial direction,each 8 times Circulation:5 times	≤0.4dB	No mechanical damage in appearance, such as deformation, cracks, loose. No fiber fracture, fiber pull-out, fiber endpoint fault and cable seal damage etc.
b	Vibration test	Frequency:10~55Hz Scanning:45 time in a minute Amplitude:0.75mm Time:X, Y, Z direction each last 30min	≤0.5dB	
c	Optical cable Torsion test	Load: Φ2.0mm optical cable: 15N Φ0.9mm optical cable: 4N Φ0.25mm optical cable: 2N Method:load point 22~28cm away from the plug, ±1800 torsion, 10 times/min, 25 times	≤0.4dB	
d	Optical cable tensile test	Load: Φ2.0mm optical cable: 50N Φ0.9mm optical cable: 4N Φ0.25mm optical cable: 2N Method: Plug side : load point 22 ~ 28cm away from the plug,2min; Packaging side: load point 22~28cm away from the packaging point,2min.	≤0.4dB	

Note 1 : Optical cable tensile test include optical cable plug side test and packaging side test .

Environmental lifetime index

No.	Test item	Test method	Criterion	
			Insertion loss variation	Appearance change after test
a	High temperature storage(Dry)	85 ℃ (±2 ℃),or highest storage temperature Humidity<40%RH,duration time 2000h	≤0.5dB	No mechanical damage in appearance, such as deformation , cracks, loose. No fiber fracture, fiber pull-out, fiber endpoint fault and cable seal damage etc.
b	Low temperature cycling	-40 ℃ (±5 ℃),or lowest st orage temperature,duration time 2000h	≤0.5dB	
c	Dampness-heat	75 ℃ (±2 ℃), 90%(±5%)RH, or 85 ℃ (±2 ℃), 85%(±5%)RH,duration time 500h(COa); 2000h(UNCb)	≤0.5dB	
d	Temperature cycling	(- 40 ℃ ~ + 85 ℃),one circulation 8h, 500 times	≤0.5dB	

Note 1: Temperature circulation test will be the conversion curve shown as below, one circulation takes 8h, 500 times.



MODEL EXPLANATION

PLC – 1 × □□□ – □ – □□

Multi-wavelength Planar Optical Waveguide Optical Splitter	Number of input port		Number of output port		Package type		Connector	
	1	1port	002	2ports	A	Bare fiber type	FP	FC/UPC
			004	4ports	B	Miniature type	FA	FC/APC
			008	8ports	C	Module type	SP	SC/UPC
			016	16ports	D	Blade package type	SA	SC/APC
			024	24ports	E	Tray type	LP	LC/UPC
			032	32ports	F	Rack-mounted type	LA	LC/APC
			064	64ports				
			128	128ports				