

PLC Optical divider specification

Overview

This specification mainly defines the PLC optical shunt 1xN series optical performance indicators, product packaging size, working and storage conditions, packaging.

Optical properties

1×N PLC Splitter with connector

Parameters	1×2	1×4	1×8	1×16	1×32	1×64
Operation Wavelength (nm)	1260~1650					
Optical fiber type	G657A1 or customer specified					
Insertion Loss (dB (P Grade))	≤ 4.3	≤7.6	≤10.8	≤14.0	≤17.3	≤20.6
Uniformity (dB)	≤0.4	≤0.6	≤0.8	≤1.2	≤1.5	≤2.0
Polarization dependent loss (dB)	≤0.2	≤0.2	≤0.2	≤0.3	≤0.3	≤0.35
Return loss (dB)	≥45 (PC) ; ≥50 (UPC) ; ≥55 (APC)					
Directivity (dB))	≥55					
Temperature stability (40 ~ 85 ℃) (dB)	≤0.5					
Operation Temperature	-40~80					
Storage Temperature	-40~85					

2×N PLC Splitter with connector

Parameters	2×2	2×4	2×8	2×16	2×32	2×64
Operation Wavelength (nm)	1260~1650					
Optical fiber type	G657A1 or customer specified					
Insertion Loss (dB (PGrade))	≤4.5	≤7.8	≤11	≤14.3	≤17.5	≤21
Uniformity (dB)	≤1	≤1.5	≤1.5	≤2	≤2	≤2.5
Polarization dependent loss (dB)	≤0.3	≤0.3	≤0.3	≤0.3	≤0.3	≤0.5
Return loss (dB)	≥45 (PC) ; ≥50 (UPC) ; ≥55 (APC)					
Directivity (dB))	≥55					
Temperature stability (40 ~ 85 ℃) (dB)	≤0.5					
Operation Temperature	-40~80					
Storage Temperature	-40~85					

Packaging dimensions

1×N PLC Splitter

Parameters	1×2	1×4	1×8	1×16	1×32	1×64
Mini Module (250um bare fiber) (L*W*H ,mm)	40*4*4			60*7*4	60*7*4	60*12*4
Mini Module (900um Loose Tube) (L*W*H ,mm)	60*7*4			60*12*4	80*20*6	100*40*6
ABS BOX (L*W*H ,mm)	100*80*10			120*100*18	120*100*18	140*115*18
Plug Optical Splitter (L*W*H ,mm)	130*100*25			130*100*50	130*100*102	130*100*200
Tray type (L*W*H ,mm)	302*180*25			302*180*25	302*180*50	302*180*100
Rack (L*W*H ,mm)	430*199*44			430*199*44	430*199*44	430*199*87

2×N PLC Splitter

Parameters	2×2	2×4	2×8	2×16	2×32	2×64
Mini Module（250um bare fiber） (L*W*H ,mm)	40*4*4	50*4*4		60*7*4	60*7*4	60*12*4
Mini Module(900um Loose Tube)(L*W*H ,mm)	60*7*4			60*12*4	80*20*6	100*40*6
ABS BOX (L*W*H ,mm)	100*80*10			120*100*18	120*100*18	140*115*18
Plug Optical Splitter (L*W*H ,mm)	130*100*25			130*100*50	130*100*102	130*100*200
Tray type (L*W*H ,mm)	302*180*25			302*180*25	302*180*50	302*180*100
Rack (L*W*H ,mm)	430*199*44			430*199*44	430*199*44	430*199*87

Mechanical performance requirements

No.	Test name	test method	Criterion	
			Insertion loss change	Shape change after test
a	Drop test	Height: Box, miniature: 1.8 meters Rack, tray and inserts: 0.5 meters Number of times: 3 axes, 8 times each axis : Cycle: 5 times	≤0.5	No mechanical damage to the appearance, such as deformation, cracks, laxity and so on. No
b	vibration test	Sweep frequency: 45 times per minute Amplitude: 0.75mm	≤0.5	

		Time: X, Y, Z direction each 30min		breakage of optical fiber, cable pull-out, failure at the ends of optical fiber and seal damage of optical cable.
c	Cable twist	Load: 2.0mm fiber cable: 15N 0.9mm fiber cable: 4N 2N / 0.25mm fiber: 2N Methods: the load from plug 22 to 28cm + 1800, torsion, 10 /min, 25	≤0.5	
d	Cable tensile test	Direct pull, load: Φ2.0mm fiber cable: 50N Φ0.9mm fiber cable: 10N Φ0.25mm fiber: 10N Method: The plug side load from plug 22 ~ 28cm, 2min; Package: package from the side load of 22 ~ 28cm, 2min; 90 degree side pull: Φ2.0mm fiber cable: 5N Φ0.9mm fiber cable: 5N Φ0.25mm: 2.5N - diameter of fiber Package: package from the side load of 22 ~ 28cm, at least 10s;	≤0.5	
Note 1: the cable tensile test includes the cable plug side test and the package side test.				
Note 2: optical splitters with adapters (including rack, tray and insert) are not required for test C and D.				

Environmental protection requirements

When the content of toxic and harmful substances is required, all products should meet the requirements of SJ/T11363-2006 (EIP- class a) toxic and hazardous substances.

No.	Restricted substance	Limit ratio (Max)
1	Lead (Pb)	1,000 ppm
2	Mercury (Hg)	1,000 ppm
3	Cadmium (Cd)	100 ppm
4	Hexavalent Chromium (Cr6+)	1,000 ppm
5	Polybrominated Biphenyls (PBB)	1,000 ppm
6	Polybrominated Diphenyl Ethers (PBDE)	1,000 ppm