

# 612 Series SM Broadband Dual Window Tree Coupler

## Splitters and Couplers

### Overview

ARIA's singlemode broadband dual-window tree and star fiber optic couplers are bi-directional high-port count devices which split or combine different optical signals with exceptional performance over a wide bandwidth at two operating wavelengths.

They are fused biconic tapered (FBT) couplers cascaded in series to achieve the desired port configuration.

These couplers have excellent uniformity and low excess loss which are ideal for fiber distribution, telecommunications systems and CATV applications.

Various types of connectors terminals are available.



### Features

- For both 1310nm and 1550nm
- Low insertion loss
- Polarization insensitive
- Excellent uniformity
- High directivity
- Bi-directional
- Environmentally stable and reliable

### Applications

- Telecommunications
- CATV
- Subscriber loop
- Fiber-to-the-home
- Local Area Network (LAN)
- Test equipment
- Optical fiber sensors

### Specifications

Parameter	Value (Nx3/N=1,3)		Value (Nx4/N=1,2,4)		Value (Nx6/N=1,2)		Value (Nx8/N=1,2)		Value (Nx16/N=1,2)	
	P	A	P	A	P	A	P	A	P	A
<b>Operation Wavelength (nm)</b>	1310/1550		1310/1550		1310/1550		1310/1550		1310/1550	
<b>Grade</b>	P	A	P	A	P	A	P	A	P	A
<b>Insertion Loss (dB) (Max)</b>	5.5	6.0	7.2	7.6	9.0	9.6	10.7	11.7	12.6	13.6
<b>Excess Loss (dB) (Typ.)</b>	0.4	0.6	0.4	0.6	0.6	0.9	0.6	0.9	0.8	1.2
<b>Uniformity (dB) (Max)</b>	1.0	1.4	1.0	1.4	1.4	2.4	1.6	3.2	2.0	1.2
<b>PDL (dB) (Max)</b>	0.2		0.2		0.3		0.3		0.4	
<b>Directivity (dB) (Min)</b>	55		55		55		55		55	
<b>Return Loss (dB)</b>	50		50		50		50		50	
<b>Temperature Stability (dB/°C)</b>	0.003		0.003		0.004		0.004		0.006	
<b>Operating Temperature (°C)</b>	-40 to +85*		-40 to +85*		-40 to +85*		-40 to +85*		-40 to +85*	
<b>Storage Temperature (°C)</b>	-40 to +85		-40 to +85		-40 to +85		-40 to +85		-40 to +85	
<b>Package (mm)</b>	100x80x10		100x80x10		100x80x10		100x80x10		120x40x10	

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### Environmental Reliability Tests

- Complies with Telcordia requirement TR-NWT-001221 & TR-NWT-001209. Tests Optical characteristics, Thermal Cycling, Vibration Test, Salt Spray Erosion, Thermal Aging, and Humidity Resistance.
- High Temperature Storage Test: 85°C for 5000 hours
- Low Temperature Storage Test: -40°C for 5000 hours
- Thermal Cycling Test: -40°C/75°C for 500 cycles
- Fiber Pulling Test: 0.23 Kg
- Water Immersion Test: 43°C, pH=5.5, 340 hours
- Vibration Test: 10~2000 Hz random , 20g, 3 axes
- Impact Test: 8 drops, 1.8 meters high
- Thermal Shock Test: 100°C

### Part Number

612-  
1 1 2 2 2 3 3 4 5 6 6 7 7

#### 1 Wavelength

35 = 1310/1550  
XX = Other

#### 3 Fiber & Package

03 = 3mm cabled fiber, ruggedized case  
04 = 250µm bare fiber, ruggedized case  
05 = 900µm loose tube fiber, ruggedized case

#### 6 Tail Length

05 = .05m  
10 = 1.0m  
15 = 1.5m  
20 = 2.0m

#### 2 Port Number

14 = 1x4  
24 = 2x4  
44 = 4x4  
16 = 1x6  
26 = 2x6  
18 = 1x8  
28 = 2x8  
88 = 8x8  
116 = 1x16  
216 = 2x16

#### 4 Grade

P = Premium  
H = High  
A = Average

#### 5 Band

N = Narrow(±10nm)  
W = Wide(±40nm)

#### 7 Connectors

LC = LC/UPC  
SC = SC/UPC  
FA = FC/APC  
SA = SC/APC  
ST = ST/UPC  
0 = None  
XX = Other

Example: 1x4 premium grade SM dual window tree coupler for 1310/1550nm light, 3mm cable terminated with FC connectors, tail length 1 meter. Part Number: 612-35-14-03-P-10-FC/FC