

# 602 Series SM Broadband Dual Window Coupler

## Splitters and Couplers

### Overview

ARIA's singlemode broadband dual window couplers are bi-directional passive devices that split or combine different optical signals.

Splitting ratios between 1%:99% and 50%/50% are available.

They have exceptional stability and excellent uniformity between ports.

They are designed for demanding telecommunications systems, sensors and CATV.



### Features

- For both 1310 and 1550nm
- Variety of coupling ratios
- Low insertion loss
- Polarization insensitive
- High directivity
- Environmentally stable and reliable

### Applications

- Telecommunications
- CATV
- Subscriber loop
- Fiber-to-the-home
- Taps for single monitoring
- Test equipment
- Optical fiber sensors

### Specifications (50/50 Coupling Ratio)

Parameter	Value (Premium)	Value (High)	Value (Average)
<b>Operation Wavelength (nm)</b>	1310 or 1550 ( $\pm 40$ )	1310 or 1550 ( $\pm 40$ )	1310 or 1550 ( $\pm 40$ )
<b>Insertion Loss (dB) (Max)</b>	3.4	3.9	4.5
<b>Excess Loss (dB) (Typ.)</b>	0.1	0.3	0.5
<b>Uniformity (dB) (Max)</b>	0.8	1.2	1.8
<b>Polarization Dependant Loss (dB) (Max)</b>	0.15	0.2	0.25
<b>Temperature Coef(dB/C)</b>	0.002 Max	0.002 Max	0.002 Max
<b>Directivity (dB) (Min)</b>	50	50	50
<b>Operating Temperature (<math>^{\circ}</math>C)</b>	- 40 to + 85*	- 40 to + 85*	- 40 to + 85*
<b>Storage Temperature (<math>^{\circ}</math>C)</b>	- 40 to + 85	- 40 to + 85	- 40 to + 85

\*-20 to +70 $^{\circ}$ C for 3mm cable package

### Packaging Option

PTB1B 3.0 $\varnothing$  x 54mm (tube)

PKC1A 101 x 12 x 10mm (Case)

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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

### Coupling Ratio/Insertion Loss

Split Ratio	Insertion Loss (Premium)	Insertion Loss (High)	Insertion Loss (Average)
<b>50/50</b>	3.6	3.9	4.5
<b>40/60</b>	4.7 / 2.5	5.0 / 2.9	5.8 / 3.6
<b>30/70</b>	5.8 / 1.9	6.3 / 2.1	7.4 / 2.7
<b>20/80</b>	7.4 / 1.2	8.4 / 1.5	9.8 / 2.0
<b>10/90</b>	11.3 / 0.6	12.0 / 0.8	15.8 / 4.0
<b>5/95</b>	15.2 / 0.4	18.9 / 0.5	20.9 / 0.9
<b>1/99</b>	23.5 / 0.3	24.0 / 0.4	24.0 / 0.6

### Part Number

602-  
1 1 2 2 3 4 5 5 6 6 7 7

**1** Wavelength  
35 = 1310/1550

**4** Grade  
P = Premium  
H = High  
A = Average

**6** Tail Length  
05 = .05m  
10 = 1.0m  
15 = 1.5m  
20 = 2.0m

**2** Port Number  
12 = 1x2  
22 = 2x2

**5** Ratio  
50 = 50/50  
40 = 40/60  
30 = 30/70  
20 = 20/80  
10 = 10/90

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

**3** Fiber & Package  
01 = 250µm bare fiber, stainless steel tube  
02 = 900µm loose tube fiber, stainless steel tube  
03 = 3mm cabled fiber, ruggedized case  
04 = 250µm bare fiber, ruggedized case  
05 = 900µm loose tube fiber, ruggedized case

Example: 2x2 50/50 premium grade SM broadband dual window coupler for 1310/1550 nm light, 250u bare fiber packaged in stainless steel tube and terminated with SC connectors, tail length 1 meter.

Part Number: 602-35-22-01-P-50-10-SC/SC