

Planar Waveguide Components

NxN AWG MULTIPLEXERS AND DEMULTIPLEXERS ROUTER MODULE (APRTE)



ANDevices' N-by-N arrayed-waveguide grating (AWG) wavelength division multiplexers and demultiplexers are based on our patent-pending CVD process. These silica-on-silicon waveguides exhibit exceptional material uniformity. Complemented with our automated robust packaging, ANDevices' planar lightwave circuits (PLC) are well suited for demanding telecom applications such as DWDM, long-haul, and metro transmission systems. ANDevices' N-by-N arrayed waveguide grating (AWG) can be used in WDM networks with mesh structures. It offers accurate channel alignment, low crosstalk and high channel-to-channel uniformity. In addition, these modules can be used either as multiplexer or as demultiplexer functions. This product family complies with Telcordia GR-1221-CORE requirements.

Features

- Compact and High-Performance WDM Filters
- Low Insertion Loss
- High Uniformity
- High Reliability
- Cost Effective
- Very Low Cross Talk
- Can be Used as MUX or DMEUX

Applications

- Mesh-type DWDM Networks
- Wavelength Routing

Options

- 4, 8, 16 and 32-Channel Capability
- 50 and 200 GHz Channel Spacing Available
- Flat-Top or Broadened Gaussian Available
- Custom Packaging Available
- Choice of Connector and Polish

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Cyclical NxN-Channel C-Band AWG Routers Optical Specifications

Parameters		Symbol	Specifications			Units	Comments
			Min	Typ	Max		
Input Channels			N			-	N: 4, 8, 16, 24, 32
Output Channels			N			-	N: 4, 8, 16, 24, 32
Channel Spacing			100			GHz	
Free Spectral Range		FSR	100*N			GHz	Centered at each ITU frequency
Channel Frequencies (Input at (N/2 + 1) to Outputs 1-N)		f_c	C or L-Bands				
ITU Band			-12.50		+12.50	GHz	Centered at each ITU frequency
Wavelength Accuracy	N=32	$\Delta\lambda_c$	-0.12		+0.12	nm	Offset from ITU grid
	N=24	$\Delta\lambda_c$	-0.10		+0.10	nm	
	N=16	$\Delta\lambda_c$	-0.06		+0.06	nm	
	N=8	$\Delta\lambda_c$	-0.03		+0.03	nm	
	N=4	$\Delta\lambda_c$	-0.02		+0.02	nm	
Insertion Loss	N=32	IL		7.00		dB	Measured at peak transmission. Measured as 1xN and Nx1 (Input (N/2 + 1) to Outputs 1 ~ N And inputs 1 ~ N to output (N/2 + 1))
	N=24	IL		6.50		dB	
	N=16	IL		6.00		dB	
	N=8	IL		5.00		dB	
	N=4	IL		5.00		dB	
Insertion Loss Uniformity	N=32	ΔIL		3.00		dB	Any one input to all outputs
	N=24	ΔIL		2.50		dB	
	N=16	ΔIL		2.50		dB	
	N=8	ΔIL		2.00		dB	
	N=4	ΔIL		2.00		dB	
Polarization Dependent Loss		PDL			0.40	dB	Measured at ITU grid frequency
1dB Passband		$\delta 1dB$	0.20			nm	Measure 1dB down from min IL
3dB Passband		$\delta 1dB$	0.40			nm	Measure 1dB down from min IL
Adjacent Channel Crosstalk		AX			-25.00	dB	At ITU grid frequency
Non-Adjacent Channel Crosstalk		NX			-30.00	dB	At each ITU grid frequency
Total Crosstalk		TX			-22.00	dB	At ITU grid frequency, cumulative sum of all AX and NX
Return Loss		RL	40.00	45.00		dB	

Physical Dimensions and Mechanical Specifications

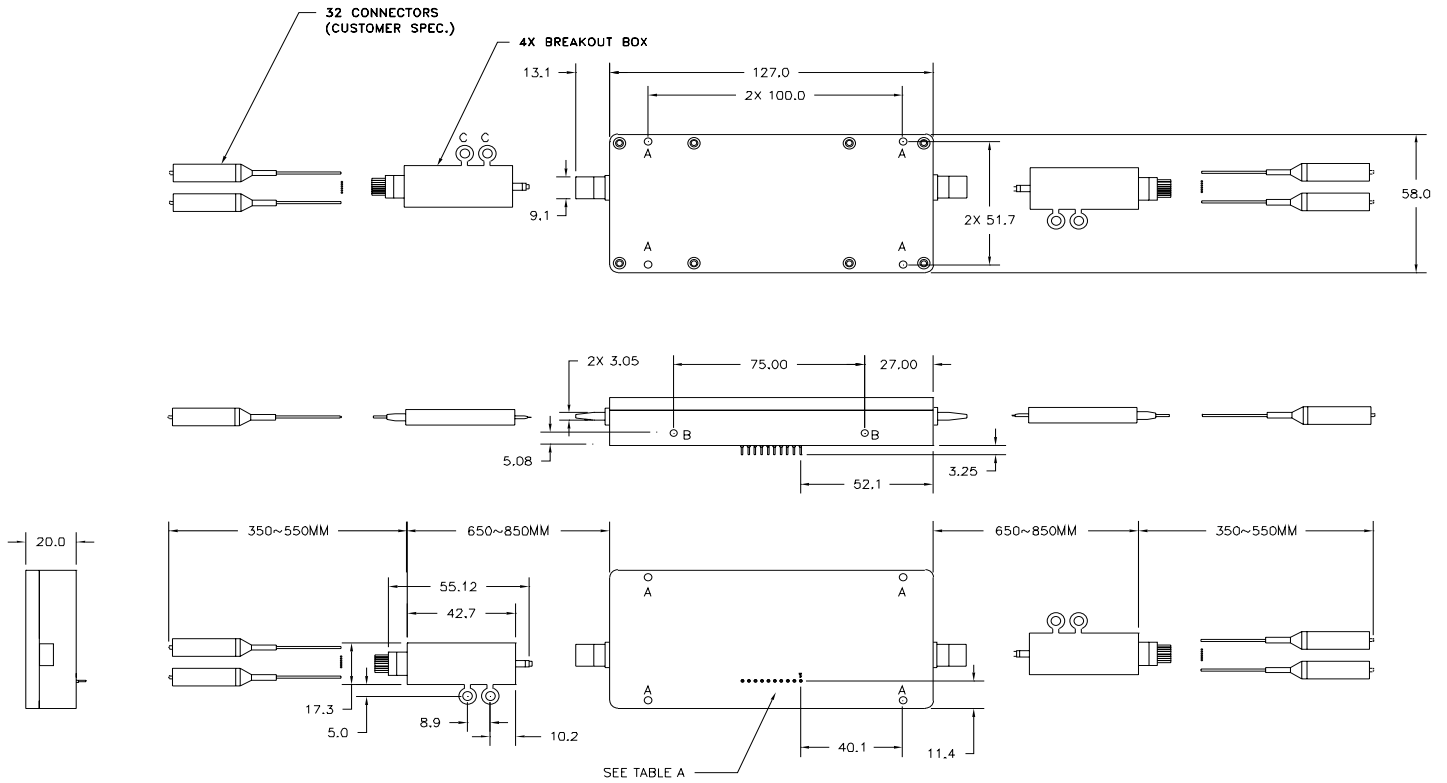


Table A: AWG Pin-Outs Options

Pin	RTD	Thermistor	ITC
1	Heater +	Heater +	N.C.
2	Heater -	Heater -	+5V
3	RTD1 B1	N.C.	+5V
4	RTD1 B2	Thermistor1	Ready
5	RTD 1 A	Thermistor1	Error / Alarm
6	N.C.	N.C.	Reset / Enable
7	RTD2 A	Thermistor2	TX
8	RTD2 B1	Thermistor2	GND
9	RTD2 B2	N.C.	RX
10	N.C.	N.C.	GND

Ordering Information

For more information on this product or other products now available from ANDevices, please contact us at sales@andevices.com