

40-Channel 100GHz Athermal AWG

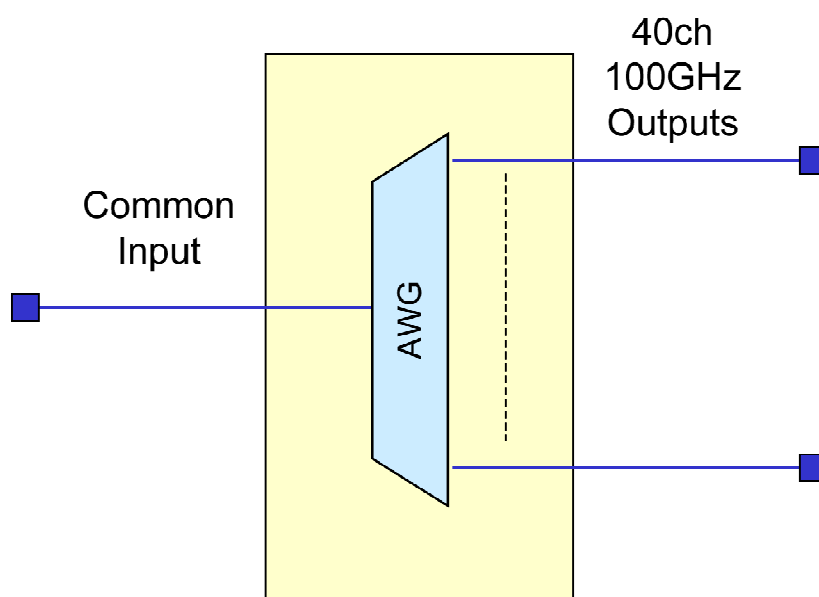


KEY FEATURES:

- 40 Channels x 100GHz Mux/Demux
- 44 Channel Option Available
- Gaussian and Wide Passbands
- Fully Passive Module
- Wide Operating Temperature Range
- Low Insertion Loss and PDL
- Low Crosstalk
- High Uniformity
- No Electronics Required
- Compact Footprint
- Versatile Alternative to TFF Mux
- Telcordia GR-1209/GR-1221 Qualified

The Gemfire Athermal AWG (Arrayed Waveguide Grating) is a high-performance DWDM mux/demux device operating on 100GHz channel spacing without the need for temperature stabilization. The PhotonIC™ planar processed silica-on-silicon chips comprise arrayed channel waveguides to separate or combine multiple wavelengths. Athermal AWGs allow multiplexing and demultiplexing of DWDM signals over a wide operating temperature range, without the need for heater drive and monitoring electronics. These AWGs offer low insertion loss, excellent channel isolation, ease of fiber handling, and long-term reliability in a compact package. Gemfire's athermalization technology simplifies deployment of AWG multiplexers/ demultiplexers by DWDM network providers.

Functional Schematic Diagram



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Optical Specifications

Parameters	Unit	Min	Max	Conditions
Number of Channels			40	
Channel Spacing	GHz		100	
Nominal Center Frequencies	THz	192.00	195.90	C-Band On Grid
Clear Pass Band	nm	-0.1	0.1	
Center Wavelength Accuracy	pm	-50	50	Relative to ITU All SOP
Filter Bandwidth @ -1.0dB	nm	0.2 (Gaussian)		Avg. SOP
		0.36 (Wide Band)		Avg. SOP
Filter Bandwidth @ -3.0dB	nm	0.4 (Gaussian)		Avg. SOP
		0.51 (Wide Band)		Avg. SOP
Adjacent Channel Crosstalk	dB		-25	Over CPB, All SOP
Non-Adjacent Channel Crosstalk	dB		-30	Over CPB, All SOP
Total integrated Crosstalk	dB		-22 (Gaussian)	Over CPB, All SOP
			-21 (Wide Band)	Over CPB, All SOP
Insertion Loss	dB		3.0 ¹ (Gaussian)	At ITU
			4.5 ¹ (Gaussian)	Over CPB, All SOP
			6.0 ² (Wide Band)	Over CPB, All SOP
Insertion Loss Uniformity	dB		1.0	At ITU, Avg. SOP
Insertion Loss Ripple	dB		0.75 (Wide Band)	Over CPB, Avg. SOP
Polarization Dependent Loss	dB		0.6 (Gaussian)	Over CPB
			0.5 (Wide Band)	Over CPB
Directivity	dB	-40		Over CPB, Avg. SOP
Return Loss	dB	-40		Over CPB, Avg. SOP
Chromatic dispersion	ps/nm	-20	20	Over CPB, Avg. SOP

1) Include an additional insertion loss of 0.25dB (Max.) for 1 connector

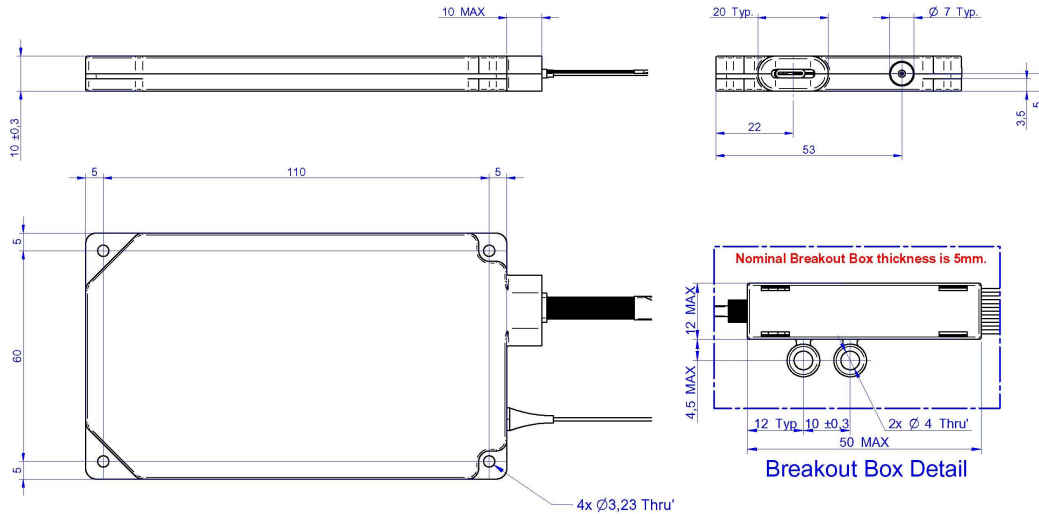
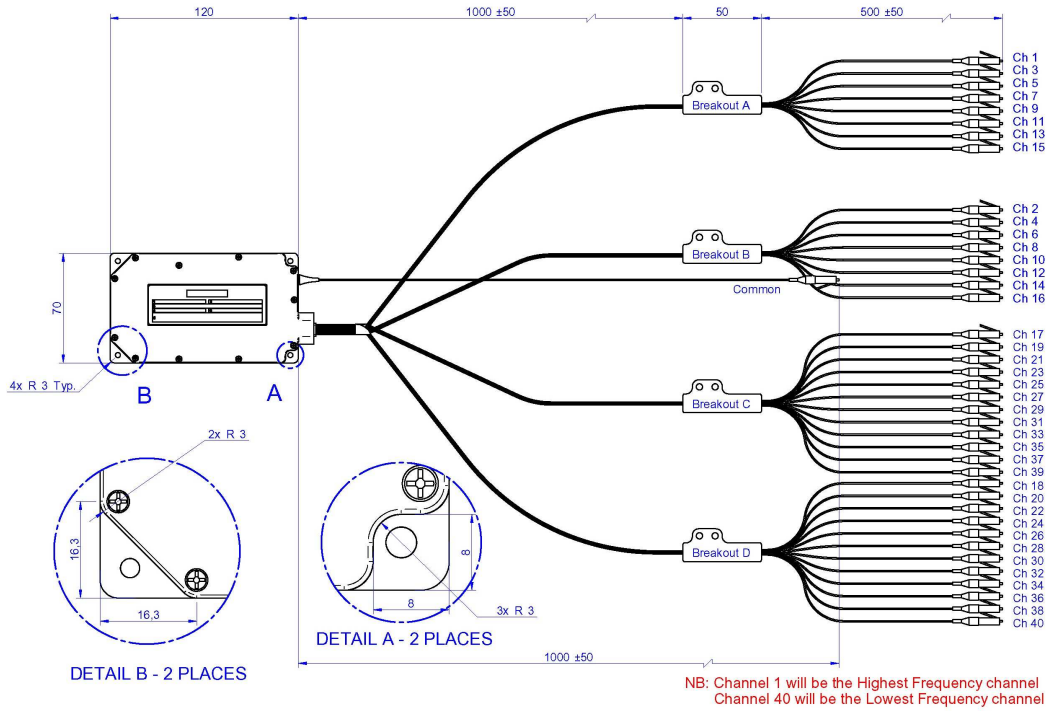
2) Including 1 connector

CPB=Clear Pass Band SOP=States of Polarization

Operating & Storage Conditions

Parameters	Unit	Min	Max
Operating Temperature	°C	-5	65
Operating Humidity	% R.H.	0	90
Storage Temperature	°C	-40	85
Storage Humidity	% R.H.	0	90

Mechanical Drawings



Ordering Information

40Ch 100GHz Athermal AWG Part Numbers

On Grid Gaussian MUX-G40-HH0-002

On Grid Wide Band MUX-W40-HH0-004

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