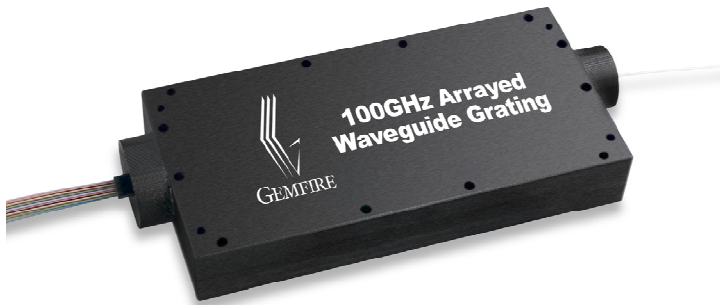


Low-Loss 40-Channel 100GHz Thermal AWG

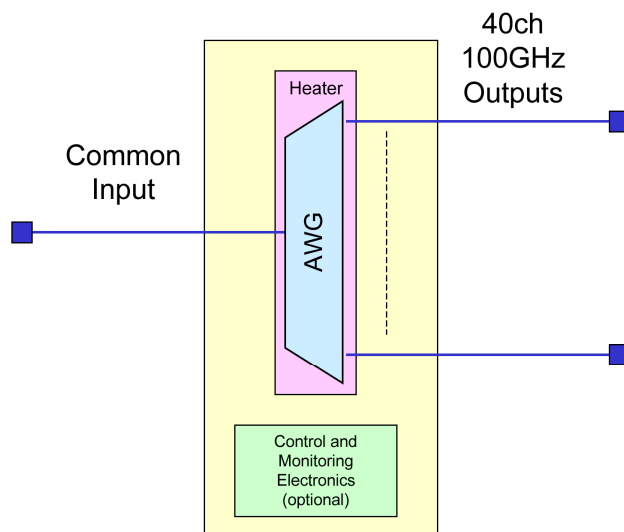


The Gemfire low-loss thermal AWG is a passive de-multiplexing device that spatially separates a stream of optical signals from a single-mode input fiber into different single mode fibers, each corresponding to an individual ITU channel in the specified wavelength band. The device can also be applied in the reverse format for multiplexing applications. Due to the temperature-dependence of center wavelength, the AWG die requires a heater element (and control electronics when needed) that keeps the AWG at a certain temperature within 68~80 °C to maintain the optical performance from 5°C to 65°C of environmental temperature.

KEY FEATURES:

- 40 Channels
- Extremely Low Insertion Loss & PDL
- Low Crosstalk
- Wide Pass Band
- High Uniformity
- Internal Thermal Regulation
- Electronics Option
- Compact Footprint
- MSA-Compliant Option Available
- Telcordia GR-1209/GR-1221 Qualified

Functional Schematic Diagram



Optical Specifications

Parameters	Unit	Min	Max	Conditions
Number of Channels			40	
Channel Spacing	GHz		100	
Nominal Center Frequencies	THz	192.10	196.00	C-Band On Grid
Clear Pass Band	nm	-0.1	0.1	
Center Wavelength Accuracy	pm	-40	40	Relative to ITU All SOP
Filter Bandwidth @ -1.0dB	nm	0.4		Avg. SOP
Filter Bandwidth @ -3.0dB	nm	0.56		Avg. SOP
Filter Bandwidth @ -20dB	nm		1.2	Avg. SOP
Adjacent Channel Crosstalk	dB		-27	Over CPB, All SOP
Non-Adjacent Channel Crosstalk	dB		-30	Over CPB, All SOP
Total integrated Crosstalk	dB		-22	Over CPB, All SOP
Insertion Loss*	dB		3.5	Over CPB, All SOP
Insertion Loss Uniformity	dB		1.0	At ITU, Avg. SOP
Insertion Loss Ripple	dB		0.5	Over CPB, Avg. SOP
Polarization Dependent Loss	dB		0.4	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

* Including connector loss

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

Electrical Characteristics

Parameters	Unit	Min	Max	Notes
Heater Resistance	Ohms			4.75 Typical
Heater Drive Voltage	V		8	
Heater Drive Current	A		1.6	
Heater Power	W		12.5	Max heater power required to reach device set point temperature from -5°C ambient (air flow <1.5m/s warm up time <10mins)
Thermistor Resistance	kOhms			50 Typical (at 25°C)

Electrical Interface

Without Internal Electronics		With Internal Electronics	
Pin #	Function	Pin #	Function
1	Heater +ve	1	GND
2	N/C	2	RX (RS-232)
3	N/C	3	GND
4	Thermistor	4	TX (RS-232)
5	N/C	5	Reset/Enable
6	N/C	6	Error/Alarm
7	Thermistor	7	Ready
8	N/C	8	Control Circuit Supply
9	N/C	9	Heater Supply
10	Heater -ve	10	N/C

Ordering Information

Low-Loss 40Ch 100GHz Thermal AWG Part Numbers

Without electronics MUX-W40-HH2-ULL

With electronics MUX-W40-HH1-ULL

Gemfire Corporation
 2255 D Martin Avenue
 Santa Clara, CA 95050
 408-380-7800 or 1-866-4GEMFIRE
www.gemfire.com

