



KEY FEATURES

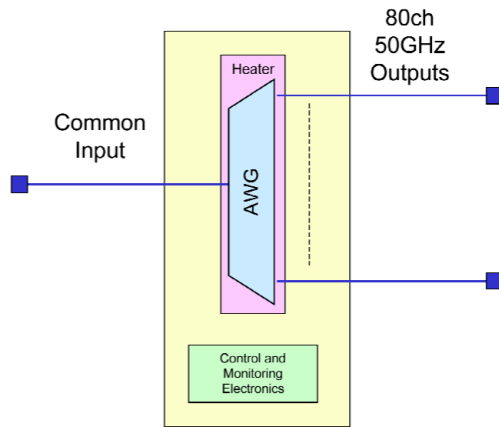
- 80 Channels
- Low Insertion Loss & PDL
- Low Crosstalk
- Wide-Band
- High Uniformity
- Internal Thermal Regulation
- Compact Footprint
- MSA-Compliant Option Available
- Telcordia GR-1209/GR-1221 Qualified

80-Channel 50GHz Wide Band Thermal AWG

The **KAIAM** 80 channel Arrayed Waveguide Grating (AWG) is a cost effective, high-performance DWDM mux/demux device operating on 50GHz channel spacing in the C Band. The planar processed, silica-on-silicon chips use arrayed channel waveguides to separate or combine multiple wavelengths. **KAIAM** AWGs provide low insertion loss, excellent channel isolation, ease of fiber handling, and long-term reliability in a compact package. Due to the temperature dependence of center wavelength, the AWG has an integral heater element plus control and monitoring electronics to maintain the optical performance over the operating temperature range.



FUNCTIONAL SCHEMATIC DIAGRAM



OPTICAL SPECIFICATIONS

PARAMETERS	UNIT	MIN	MAX	CONDITIONS
Channel Spacing	GHz		50	
Reference Pass Band	nm	-0.05	0.05	Relative to ITU Grid
ITU Frequency	THz	192.10	196.05	
Center Wavelength Accuracy	nm	-0.024	0.024	Maximum of the absolute deviation of 3dB centre wavelength from ITU grid over all channels
Filter Bandwidth @ -1.0dB	nm	0.18		1dB from minimum insertion loss, full width, average SOP
Filter Bandwidth @ -3.0dB	nm	0.28		3dB from minimum insertion loss, full width, average SOP
Filter Bandwidth @ -20dB	nm	0.62		20dB from minimum insertion loss, full width, average SOP
Insertion Loss	dB		7.0	Maximum of the insertion loss across the ITU pass band over all channels including connector loss, average SOP
Ripple	dB		0.6	Maximum of the loss variance across the ITU pass band over all channels, average SOP
Insertion Loss Uniformity	dB		1.5	Max. insertion loss variance across all channels
Return Loss	dB	40		
Adjacent Channel Isolation	dB	23		Ratio of peak transmission to the transmission over adjacent passbands
Non-Adjacent Channel Isolation	dB	28		Ratio of peak transmission in channel pass bands to maximum transmission over all non-adjacent pass bands
Total Crosstalk	dB	20		Ratio of power in channel to power in all other pass bands at ITU
Polarization Dependent Loss	dB		0.5	Maximum ratio of transmissions over all polarization states, over the ITU pass band
Polarization Mode Dispersion	ps		1.0	In reference pass band over all channels
Chromatic Dispersion	ps/nm	-30	30	In reference pass band over all channels

OPERATING & STORAGE CONDITIONS

PARAMETERS	UNIT	MIN	MAX
Operating Temperature	°C	-5	65
Operating Humidity	% R.H.	5	95
Storage Temperature	°C	-40	85
Storage Humidity	% R.H.	5	95

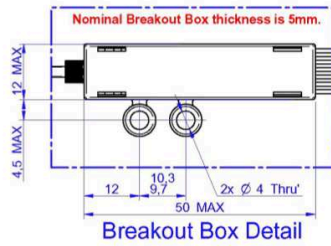
ELECTRICAL INTERFACE

PIN #	SIGNAL	TYPE	DESCRIPTION
1	+5V	Power	Supply to heater circuit
2	+5V	Power	Supply to heater circuit
3	+5V	Power	Supply to control circuit
4	Ready	TTL	Set HIGH when the internal temperature is at set-point temperature Set LOW when the internal temperature is not at set-point temperature (higher than the Upper Temperature Threshold or lower than the Under Temperature Value)
5	Alarm	TTL	Set HIGH when the internal temperature is higher than the set-point temperature Set LOW when the internal temperature is not higher than the set-point temperature Pin 4 and Pin 5 should be used to check the temperature's status
6	Enable	TTL	If set high, the heater circuit is activated
7	TX	TTL	RS232 transmit signal
8	GND	Power	
9	RX	TTL	RS232 transmit signal
10	GND	Power	Ground

ELECTRICAL CHARACTERISTICS

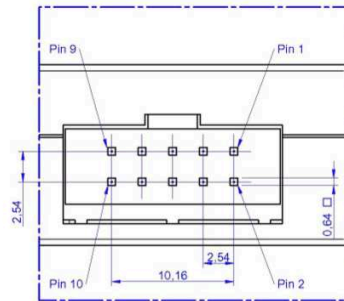
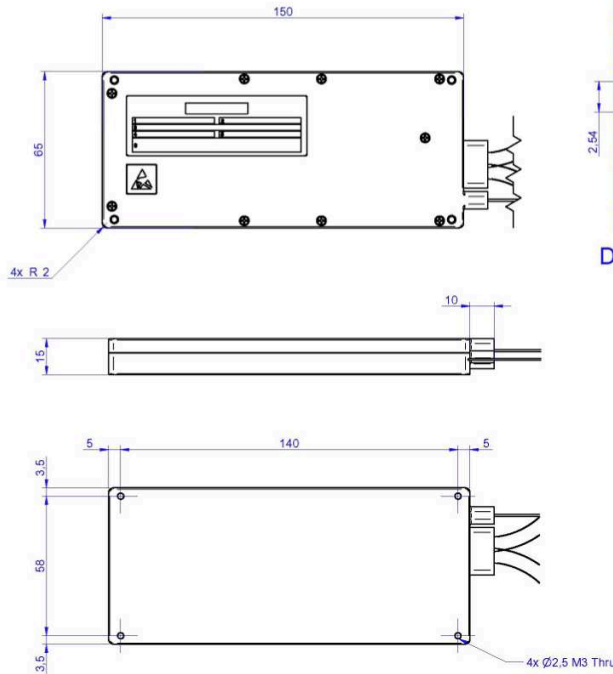
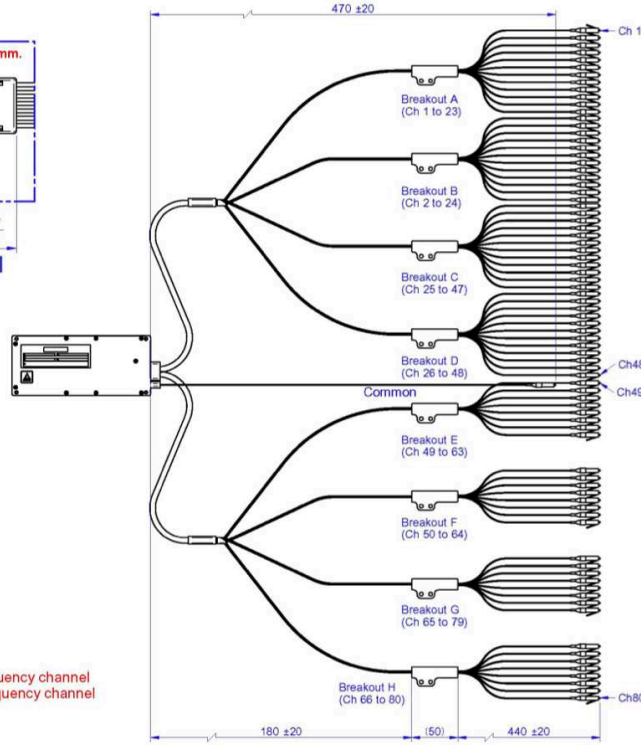
PARAMETERS	UNIT	MIN	MAX	NOTES
Set-Point Temperature Of Component	°C	65	85	Optimum Operating Temperature
Set-Point Temperature Stability	°C		±0.2	Over The Entire Operating Temperature Range
Heater Drive Voltage	V	5		
Heater Drive Current	A		2.5	
Heater Drive Dissipation	W	12.5	12.5	Typical
AWG Temperature Settling Time	Min		15	AWG Warm-Up Time from Cold Start (-15°C Ambient Temperature)

MECHANICAL DRAWINGS

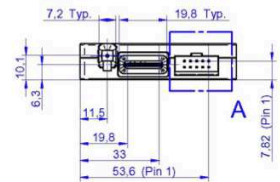


Colour	Channel Number
Blue	1 2 25 26 49 50 65 66
Orange	3 4 27 28 51 52 67 68
Green	5 6 29 30 53 54 69 70
Brown	7 8 31 32 55 56 71 72
Gray	9 10 33 34 57 58 73 74
White	11 12 35 36 59 60 75 76
Red	13 14 37 38 61 62 77 78
Black	15 16 39 40 63 64 79 80
Yellow	17 18 41 42
Violet	19 20 43 44
Rose	21 22 45 46
Aqua	23 24 47 48
Ribbon	1 2 3 4 5 6 7 8
Breakout	A B C D E F G H

NB: Channel 1 will be the Highest Frequency channel
Channel 80 will be the Lowest Frequency channel



DETAIL A - Electrical Connector
5:1



Pin #	Name	Function
1	+5V	Heater Supply
2	+5V	Heater Supply
3	+5V	Control Circuit Supply
4	Ready	Output
5	Error / Alarm	Output
6	Reset / Enable	Input
7	TX	RS232 Transmit
8	GND	Ground
9	RX	RS232 Receive
10	GND	Ground

80CH 50GHZ WIDE BAND THERMAL AWG PART NUMBERS

On Grid

DMX-W80-HH1-002

Note: all connectors LC/UPC

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For more information please visit www.kaiamcorp.com or call 1-510-344-2231.