



## 40-Channel, 100GHz Integrated Variable Multiplexer *(V-Mux)*

The **KAIAM** Variable Multiplexer (V-Mux) offers best in class performance by uniting Variable Optical Attenuator arrays with our well-established silica Arrayed Waveguide Grating technology. The result is a device that offers convenient digital control with low power consumption, fast response time, and outstanding optical performance. Electrical interfaces and controls are integrated into the module to enable accurate power level control of any optical channel. The V-Mux is available in configuration of 40 channels with an attenuation range of 15dB, and is offered in wide-band version.

### KEY FEATURES

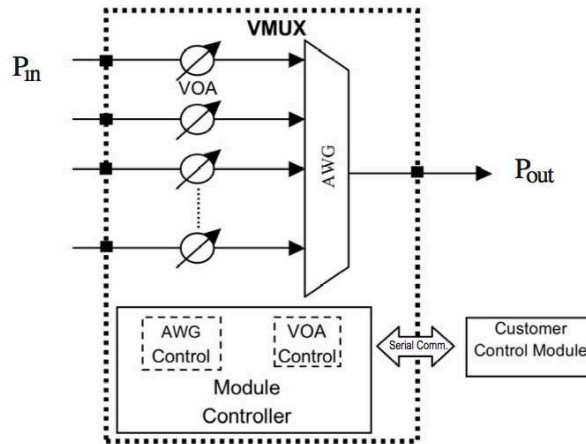
- 40 Channel Wide-Band
- Low Power Consumption
- Wide Attenuation Range
- Compact Footprint
- Very Low PDL at All Attenuation Levels
- Integrated AWG Temperature Control

### TYPICAL APPLICATIONS

- Pre-Emphasis at Transmitters
- Dynamic Channel Balancing at MUX Location
- Dynamic Channel Leveling at Add/Drop Sites
- Receiver Overload Control
- Optical Channel Blocking



## FUNCTIONAL SCHEMATIC DIAGRAM



## 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: 26-WAY (2 X 13) CONNECTOR

FUNCTION	PIN #		FUNCTION
+ 5V Return (Ground)	1	2	+ 5V Return (Ground)
+ 5V Return (Ground)	3	4	+ 5V Return (Ground)
+ 5V	5	6	+ 5V
+ 5V	7	8	+ 5V
+ 15V Return (Ground)	9	10	+ 15V Return (Ground)
+ 15V Return (Ground)	11	12	+ 15V Return (Ground)
+ 15V	13	14	+ 15V
+ 15V	15	16	+ 15V
Reserved	17	18	Ready
TX (5V Logic)	19	20	RX (5V Logic)
Ground	21	22	RS232 Sel (Active Low)
RS232 – TX	23	24	RS232 – RX
Reset (Active Low)	25	26	Soft Reset (Active Low)

## OPTICAL SPECIFICATIONS

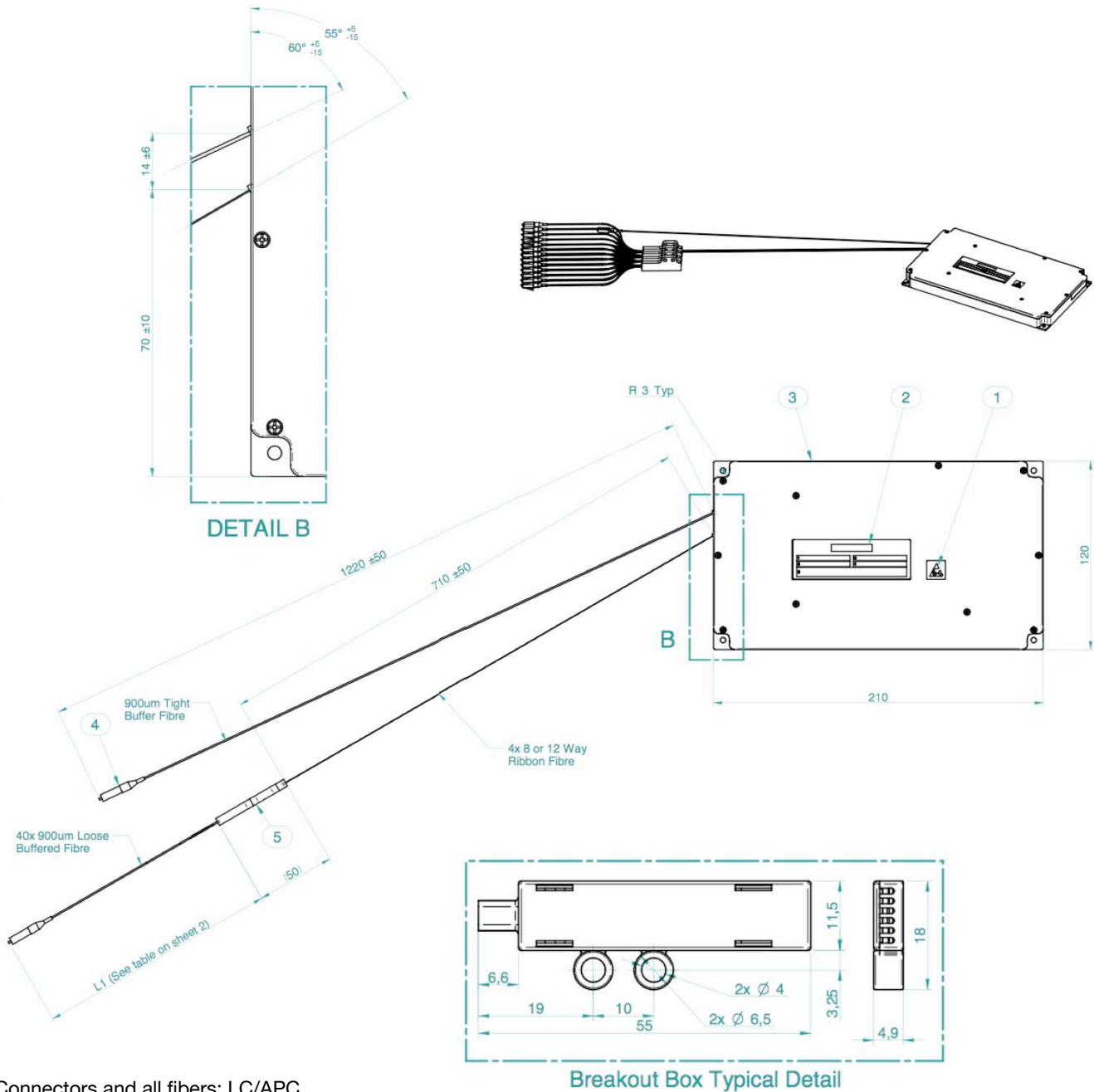
PARAMETERS	UNIT	MIN	MAX	CONDITIONS
Channel Frequency Arrangement	THz	192.100 (Ch 40)	196.000 (Ch 1)	C-Band On Grid
	THz	192.150 (Ch 40)	196.050 (Ch 1)	C-Band Off Grid
Channel Spacing	GHz	100		
Clear Pass Band	nm	ITU <sup>1</sup> ±0.100		
Wavelength Accuracy	pm	-40	40	3dB center-wavelength vs. ITU
Bandwidth @ -0.5dB	nm	0.2		Average SOP <sup>2</sup>
Bandwidth @ -1.0dB	nm	0.4		Average SOP <sup>2</sup>
Bandwidth @ -3.0dB	nm	0.6		Average SOP <sup>2</sup>
Insertion Loss	dB		7.3	@ 0dB attenuation including connectors. Worst case SOP @ITU
Insertion Loss when Power Off	dB	40		Insertion loss will remain >40dB until VMux is ready
Ripple	dB		0.75	Over CPB, Average SOP
Insertion Loss Uniformity	dB		1.2	
Return Loss	dB	40		
Attenuation Range	dB	0	15	
Attenuation Resolution	dB	0.1		
Attenuation Accuracy (Average SOP)	dB		±0.5	0 < Attenuation ≤ 10
	dB		±0.8	10 < Attenuation ≤ 15
PDL (@ITU)	dB		0.6	0 < Attenuation ≤ 5
			0.8	5 < Attenuation ≤ 10
			0.9	10 < Attenuation ≤ 15
Isolation Adjacent Channel	dB	25		Worst case SOP @ITU
Isolation Non-Adjacent Channel	dB	30		Worst case SOP @ITU
Isolation Total Integrated	dB	22		Worst case SOP @ITU

1) ITU = Channel center, per channel plan

2) SOP = State of polarization

# 40-Channel, 100GHz Integrated Variable Multiplexer (V-Mux)

## MECHANICAL SPECIFICATIONS



Connectors and all fibers: LC/APC  
 1 common + 5 fanouts (8 channels each)  
 all dimensions stated in mm unless otherwise indicated.

## ORDERING INFORMATION

### 40CH 100GHZ INTEGRATED V-MUX PART NUMBERS

On Grid	VMX-W40-GG1-001
Off Grid (-50GHz)	VMX-W40-GG1-002

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