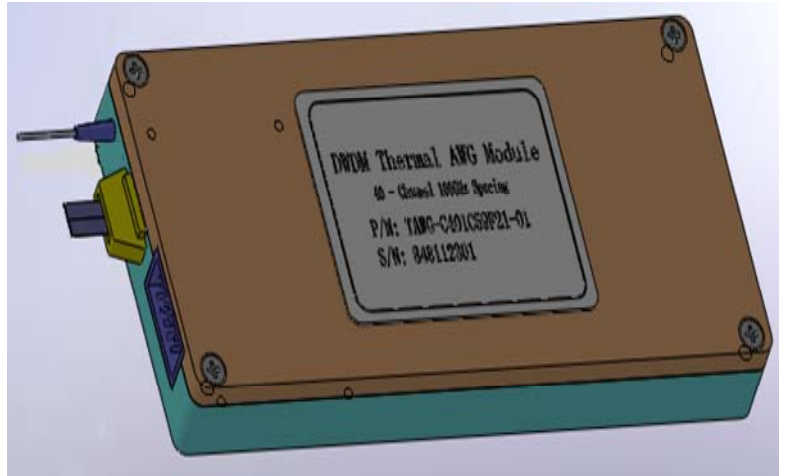




DWDM Thermal Arrayed Waveguide Grating Module

DK Photonics Thermal AWG DWDM (Arrayed Waveguide Grating Dense Wavelength Division Mux/Demultiplexer) Modules are designed for use within the C- or L-band re-lease of DWDM system. To decrease the power dissipation of the devices in different environmental conditions, the AWG package is special designed with selection of reliable thermal plastic with low thermal conduction, and the AWG operating temperature is controlled by using foil resist heater or Peltier TEC with thermistor temperature sensor. Different input and output fibers, such as SM fibers, MM fibers and PM fiber can be selected to meet different applications. Custom frequency grids, fiber types and connec-torisation options are also available.



We can offer different package for different products, including compact box package and 19" 1U rack mount.

Features

- ◆ 100GHz ITU channel spacing
- ◆ Low insertion loss
- ◆ Multi-channel number
- ◆ High channel isolation
- ◆ High stability and reliability

Applications

- ◆ WDM transmission
- ◆ WDM based ADM
- ◆ Metro and long haul net works
- ◆ Wavelength selective routing
- ◆ Optical signal processing
- ◆

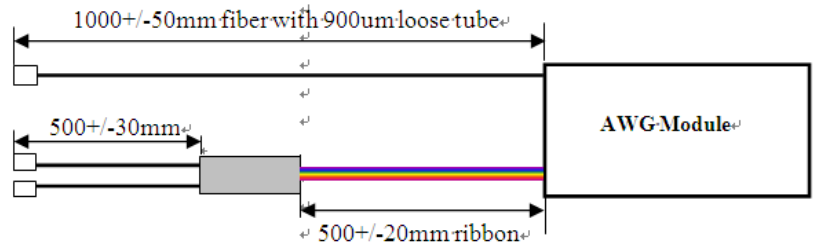
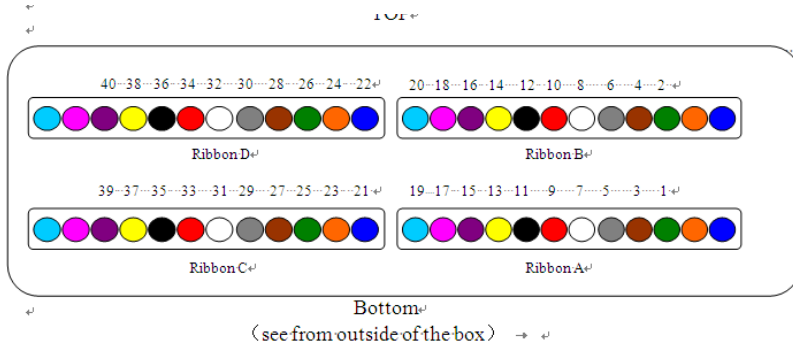
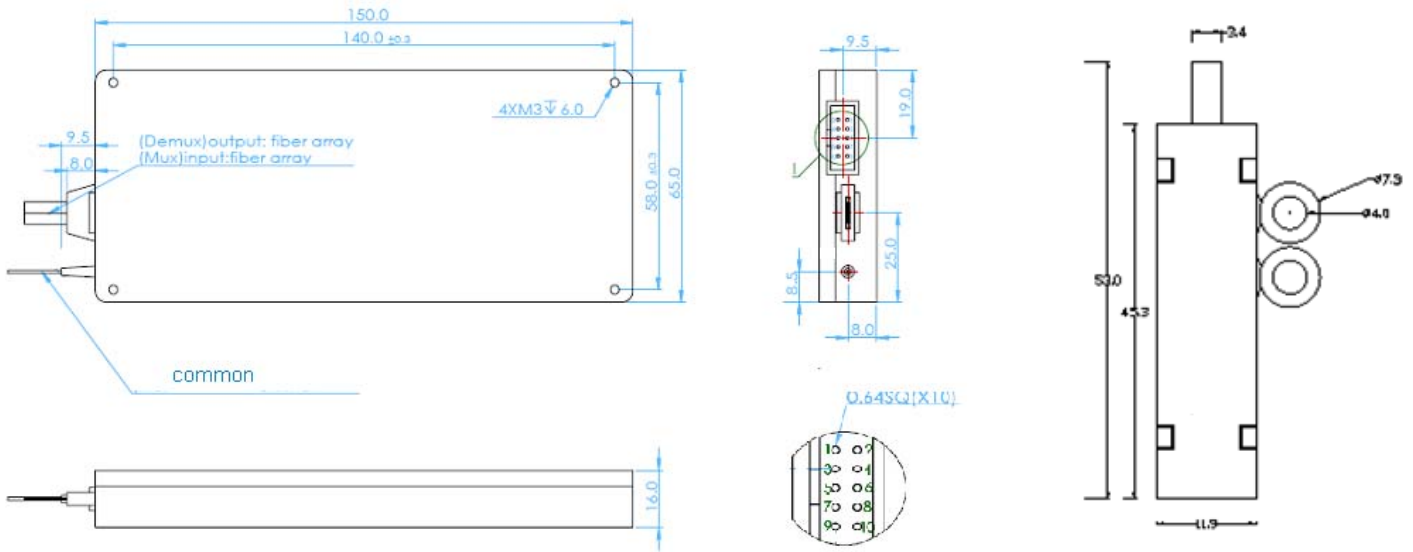
Performance Specifications

Parameter		Gaussian	Flat-Top
Channel Wavelength (nm)		ITU 100 GHz Grid	
Number of channels		16,32,40,48 or other	
Wavelength Accuracy (nm)		± 0.05	
Insertion Loss (dB)		< 3.5	< 5.5
Channel Passband (@-1dB bandwidth) (nm)		> 0.2	> 0.2
Channel Passband (@-3dB bandwidth) (nm)		> 0.4	> 0.6
Total Crosstalk(dB)		> 23	> 23
Channel Ripple (dB)		< 1.0	
Isolation(dB)	Adjacent	> 25	
	Non-adjacent	> 30	
Insertion Loss Temperature Sensitivity (dB/°C)		<0.005	
Wavelength Temperature Shifting (nm/ °C)		<0.002	
Uniformity (dB)		< 1.5	
Polarization Dependent Loss (dB)		< 0.8	
Polarization Mode Dispersion (ps)		< 0.5	
Directivity (dB)		> 50	
Return Loss (dB)		> 45	
Maximum Power Handling (Mw)		300	
Drive voltage(Heater)(V)		5.0	
Drive current(Heater)(V)		2.0	
Fiber type		SMF-28e or other	
Operating Temperature (°C)		-5 ~+70	
Storage Temperature (°C)		-40 ~+85	
Dimension (mm)		L135 x W65 x H20	

**Specifications may change without notice.



Mechanical Schematic and Dimensions



Electrical Specifications (Only for the thermal AWG module which has an internal temperature control circuit.)

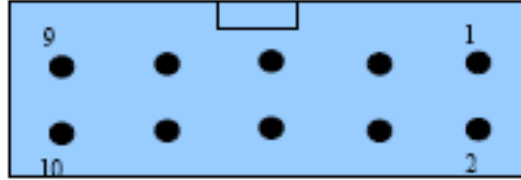
NO.	Parameters	Notes	Specifications			Units
			Min	Typ	Max	
2.23	Set-Point temperature of component	Optimum operating temperature section for thermal AWG The commands could only set current temperature and threshold in this range.	65		90	°C
2.24	Set-Point temperature stability	Over entire operating temperature range for thermal AWG			±0.5	°C
2.25	Heater Drive Voltage			+5		V
2.26	Heater Drive Current				2.5	A
2.27	Heater Power Dissipation (maximum, stable)				12.5	W
2.28	Heater Power Dissipation (stable state)	25°C ambient temperature			6	W
2.29	AWG Temperature Settling Time	AWG warm up time from a cold start(25°C ambient temperature) to set point for thermal AWG			7	min
2.30	AWG Temperature Settling Time	AWG warm up time from a cold start(-5°C ambient temperature) to set point for thermal AWG			15	min



Electric interface

Connector type: 10 pin FRC box type (2.54mm pitch) male connector.

Pin definition is as below:



NO.	pin#	Signal Name	Type	Direction	Descriptions
2.31	1	+5V	Power	----	supply for Heater circuit
2.32	2	+5V	Power	----	supply for Heater circuit
2.33	3	+5V	Power	----	supply for control circuit
2.34	4	Ready	TTL	Output	Set HIGH when the internal temperature is at a set-point temperature. Set LOW when the internal temperature is not at a set-point temperature (higher than the Upper Temperature Threshold or lower than the Under Temperature Threshold). This signal should be 3.3V TTL level.
2.35	5	Alarm	TTL	Output	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. Pin4 and pin5 could be used to check the temperature's status. This signal should be 3.3V TTL level.
2.36	6	Enable	TTL	Input	If set HIGH, the heater circuit is activated. If set LOW, the heater circuit is disabled. This signal should be 3.3V TTL level.
2.37	7*	TX	TTL	Output	RS232 transmit signal This signal should be 3.3V TTL level.
2.38	8	GND	Power	----	Ground
2.39	9*	Rx	TTL	Input	RS232 receive signal This signal should be 3.3V TTL level.
2.40	10	GND	Power	----	Ground

Order information

TAWG-10-①①-②-③③③-④④-⑤⑤-⑥⑥

10	①①	②	③③③	④④	⑤⑤	⑥⑥
Channel Spacing	Channel	Code Filter Shape	1st Channel	Fiber Diameter	Fiber Length	Connector
05:50GHz 10:100G Hz 20:200G Hz	16:16 Channel 32:32 Channel 40:40 Channel 48:48 Channel 80:80 Channel	G: Gaussian B:Broad Gaussian F:Flat-Top	C60:C60 H59:H59 C59:C59 H58:H58	25:250um 90:900um XX: Others	05:0.5m 10:1.0m 15:1.5m XX:Others	00:None FP: FC/PC FA: FC/APC SP: SC/PC SA: SC/APC ST: ST/PC LP: LC/PC LA: LC/APC XX: Others