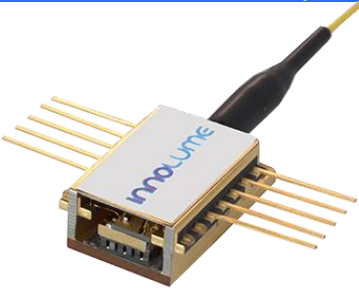


GM-1140-120-YY-130	
Fiber coupled curved stripe gain chip for 1080-1200nm tuning range	
	<p><b>Features:</b></p> <ul style="list-style-type: none"> <li>• Optimized for wavelength locked operation in external cavity system</li> <li>• Broad hopping free tuning range</li> <li>• Orthogonal beam output for easy optics alignment</li> <li>• Fiber output</li> </ul> <p><b>Application:</b></p> <ul style="list-style-type: none"> <li>• External cavity tunable laser</li> </ul>
<b>Specification</b>	DATE: 24 <sup>th</sup> April 2014

RECOMMENDED OPERATING POINT				
Parameter	Min	Typ	Max	Unit
Current		600		mA
Forward voltage		1.7	1.8	V
Heatsink temperature	20	25	30	C

\*No self-lasing up to maximum current

TUNABILITY				
@ CW, recommended operating point, external cavity in Littrow configuration with ≈10% feedback				
Parameters	Min	Typ	Max	Unit
Wavelength of maximum power ( $\lambda_{MP}$ )	1160	1170	1180	nm
Optical output power ex fiber @ $\lambda_{MP}$		130		mW
Central wavelength of tuning range	1130	1140	1150	nm
Tuning range		120		nm

AMPLIFIED SPONTANEOUS EMISSION (ASE)				
Tested for each device @ CW, recommended operating point, without external cavity				
Parameter	Min	Typ	Max	Unit
Optical power ex fiber		0.3		mW
Optical power ex facet		10		mW
Mean wavelength		1125		nm
Bandwidth @ -3dB*		30		nm
Fast axis beam divergence @ -3dB, ex facet		39	43	deg.
Slow axis beam divergence @ -3dB, ex facet	4	6		deg.
Ripples (RMS) <sup>(1)</sup>		0.1	0.3	dB

\* Radiation coupled in single-mode fiber without lens and measured by OSA with 1 nm resolution.

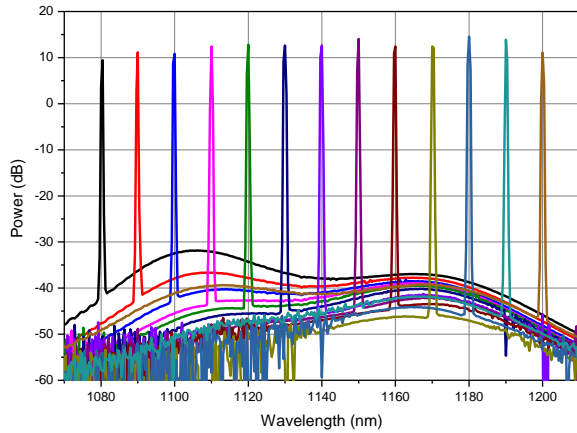
<sup>1</sup> Central wavelength of tuning range, in 1nm range, 10pm resolution

CHIP PARAMETERS				
Parameter	Min	Typ	Max	Unit
Chip length			3	mm
Stripe width			3	um
Back reflectivity of straight stripe facet		10		%
Back reflectivity of tilted stripe facet			0.001	%

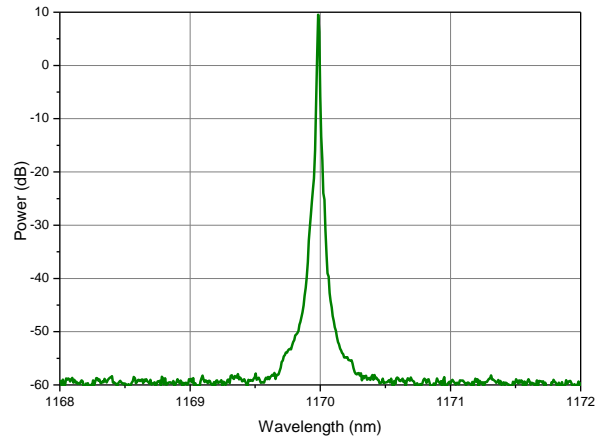
## TYPICAL PERFORMANCE IN EXTERNAL CAVITY (EC)

@ CW, 25°C heatsink temperature, Littrow configuration with ≈50% feedback

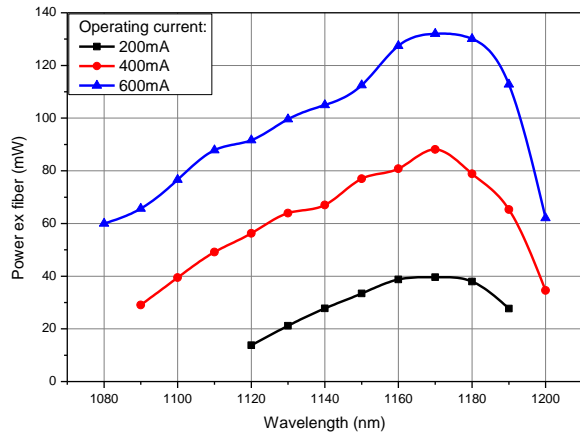
**Optical spectra @ 600mA (res. 0.1 nm)**



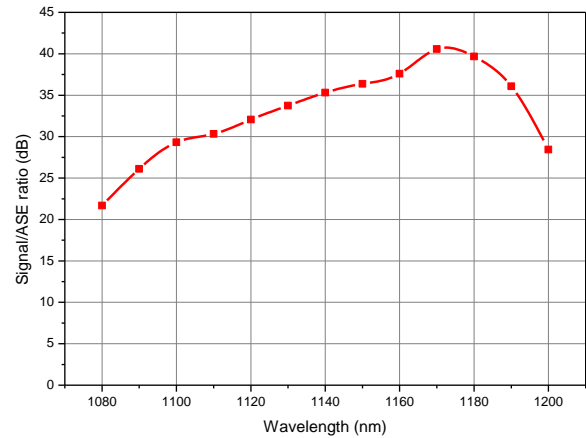
**Optical spectrum @ 600mA (res. 10 pm)**



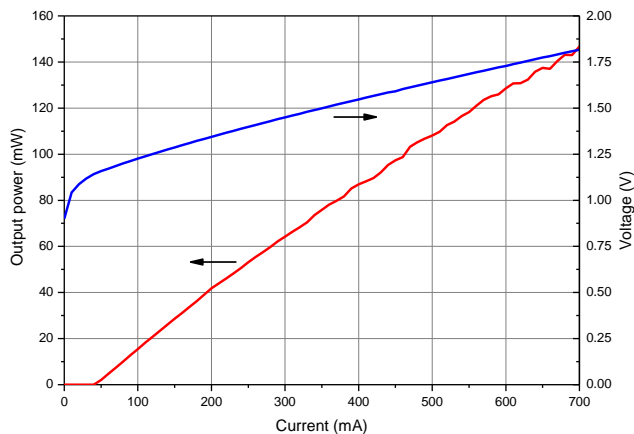
**Power spectra**



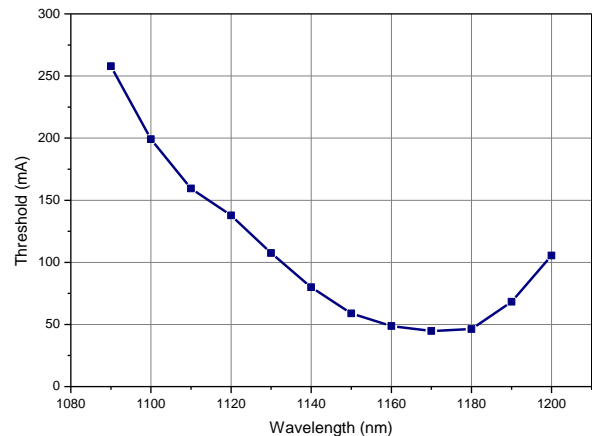
**Signal/ASE ratio @ 600mA**



**Power ex fiber @ 1170nm**

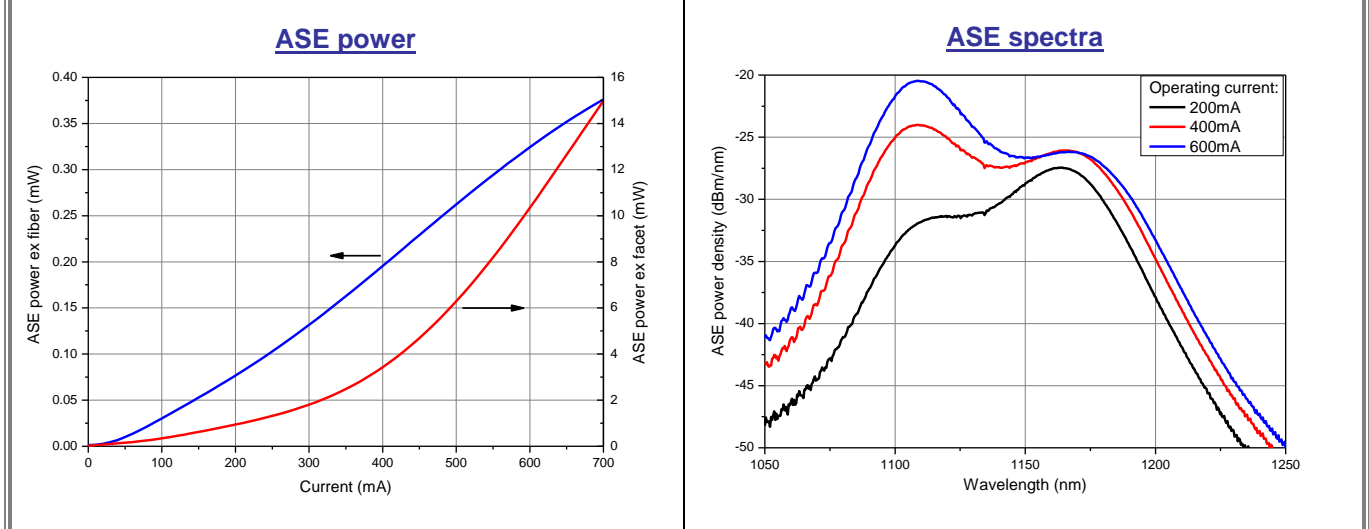


**Threshold current**



## TYPICAL PERFORMANCE WITHOUT FEEDBACK

@ CW, 25°C heatsink temperature

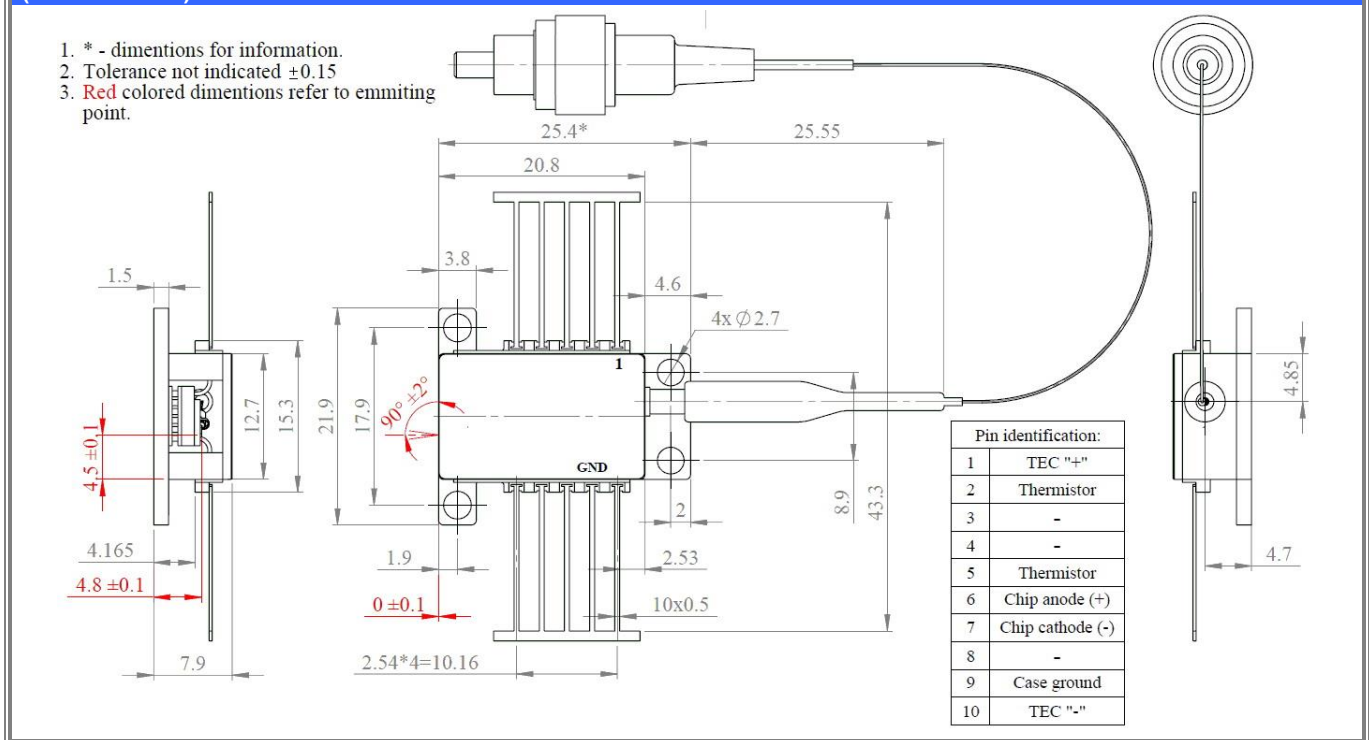


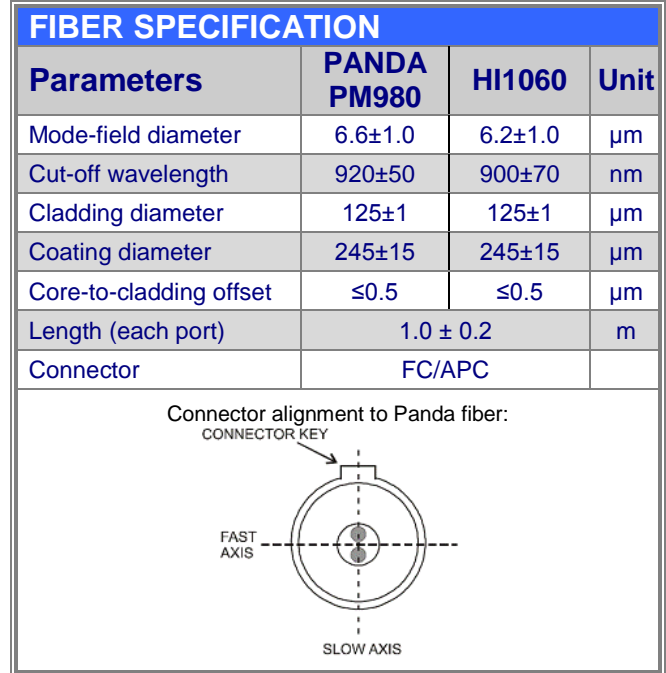
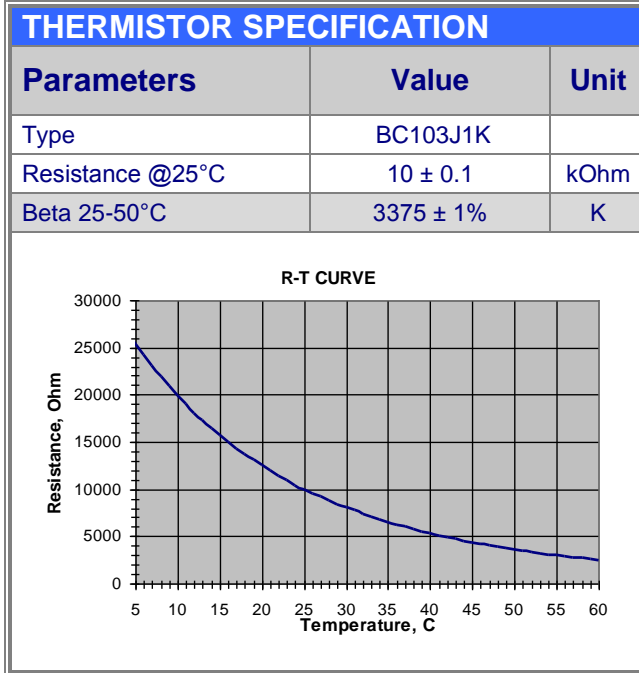
### ABSOLUTE MAXIMUM RATINGS

Parameters	Min.	Max.	Unit
Laser Diode reverse voltage		2	V
Laser Diode CW forward current		700	mA
Thermo Electric Cooler (TEC) current		3	A
TEC voltage		4	V
Thermistor temperature	10	50	°C
Case operating temperature range	10	50	°C

### DIMENSIONS (subject to change)

(All sizes in mm)





### PART NUMBER IDENTIFICATION

GM-1140-120-YY-120  
**YY:** Optical fiber type  
 PM – PM980 Panda fiber  
 HI – HI1060  
 Example: GM-1140-120-PM-120


### SAFETY AND OPERATING INSTRUCTIONS

The laser light emitted from this device is invisible and can be dangerous to the human eye. Avoid looking directly into the fiber output or into the collimated beam along its optical axis when the device is in operation. Proper laser safety eyewear must be worn during operation.

Absolute Maximum Ratings may be applied to the device for short period of time only. Exposure to maximum ratings for extended period of time or exposure above one or more max ratings may cause damage or affect the reliability of the device. Operating the product outside of its maximum ratings may cause device failure or a safety hazard. Power supplies used with the device must be employed such that the maximum peak optical power cannot be exceeded. A proper heatsink for the device on thermal radiator is required, sufficient heat dissipation and thermal conductance to the heatsink must be ensured.

The device is an open-heatsink laser diode; it may be operated in cleanroom atmosphere or dust-protected housing only. Operating temperature and relative humidity must be controlled to avoid water condensation on the laser facets. Any contamination or contact of the laser facet must be avoided.

ESD PROTECTION – Electrostatic discharge is the primary cause of unexpected product failure. Take extreme precaution to prevent ESD. Use wrist straps, grounded work surfaces and rigorous antistatic techniques when handling the product.



LASER RADIATION  
 AVOID EYE OR SKIN EXPOSURE TO  
 DIRECT OR SCATTERED RADIATION  
 CLASS 4 LASER PRODUCT

**CAUTION**  
 STATIC SENSITIVE DEVICE  
 OBSERVE PRECAUTIONS

**DANGER**  
 VISIBLE AND/OR INVISIBLE LASER RADIATION  
 AVOID EYE OR SKIN EXPOSURE TO  
 DIRECT OR SCATTERED RADIATION  
 DIODE LASER  
 MAX POWER 0.5W  
 WAVELENGTH 1000 - 1400 nm  
 CLASS IIIb LASER PRODUCT

**NOTE:** Innolume product specifications are subject to change without notice.