

## Narrow Linewidth Laser Module

Innovation in lasers creating a brighter future



### Narrow Linewidth Laser Module

Narrow Linewidth Laser Diodes Module : NLLM

**Product Description:** This narrow linewidth laser module integrates cooled external cavity diode laser and thermally-tuned FP filters to achieve single-mode operation at selectable wavelength. Narrow linewidth Laser Module has excellent optical performance in terms of high output power stability, high side-mode-suppression ratio (SMSR), ultra-narrow laser linewidth, low relative intensity noise (RIN), and high stable wavelength accuracy. We have options of SM fibers and PM fibers. The products are Telcordia GR-468 qualified, and in compliance with RoHS requirement.

#### Applications

- Interferometric fiber optic sensing
- Brillouin Distributed Temperature and Strain Sensors (DTSS)
- LIDAR
- Optical Test and Instrumentation

#### Features

- High output power(10~20mW)
- Center wavelength: C/L-band, ITU-T DWDM 100 GHz
- Very narrow linewidth and low RIN
- Wavelength tunability and Direct power modulation
- High stability, compact planar mechanical design

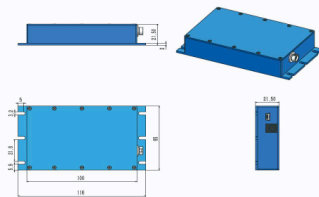
#### Product Photo



#### Optical and Electric Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit
Center Wavelength	$\lambda_c$	ITU grid, C/L-Band DWDM 100 GHz			nm
Optical Output Power	$P_o$	10	-	-	mW
Static Linewidth	LW	25	50	75	kHz
Power Stability over case temperature range(-10~60°C)	$dP_{out}$	-	-	1	%
Wavelength stability over case temperature range(-10~60°C)	$d\lambda$	-	-	10	pm
Relative Intensity Noise	RIN	-	-	-155	dB/Hz
Side-mode Suppression Ratio	SMSR	40	55	-	dB
Optical Isolation	ISO	35	-	-	dB
Polarization Extinction Ratio	PER	20	-	-	dB
Voltage Supply	Vcc	4.75	5	5.25	V
Operating Temperature Range	-	10	25	60	°C
Storage Temperature	$T_{stg}$	-40	-	85	°C
Dimension	WxLxH	65 x 116 x 21.5			mm

#### Mechanical Dimensions



#### Interface connector

No.	Type
1	FC/APC connector or adaptor
2	SMA RF Modulation
3	Mini USB
4	Power supply:+5V/3A

Fiber Pigtail Specifications	
Parameters	Description
Fiber Type	SM fiber or PM fiber
Jacket Type	900 $\mu$ m loose tube
Pigtail Length	0.5m or Customized

#### Ordering Information

NLLM-	□ □ □ □	□ □	□	□	□	□
	Wavelength	Power	Fiber type	Connector	Pigtail length	Connector
NLLM-	8480:1622.25nm	10:10mW	0: SMF-28e	1: Connector	0: 0cm	0: None
	.....	20:20mW	1:PMF-1310	2: Adaptor	1: 50cm	1: FC/UPC
	9340: 1550.12nm	CC: Customized	2:PMF-1550		2: 100cm	2: FC/APC
	.....		C: Customized		3: 150cm	3: SC/UPC
					4: 200cm	4: SC/APC
					C: Customized	5: LC/UPC
						6: LC/APC
						C: Customized
<b>Example of Ordering Form: NLLM-9340100202-01</b>						
NLLM-	9340	10	0	2	0	2
	1550.12nm	10mW	SMF-28e	Adaptor	0cm	FC/APC Adaptor

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