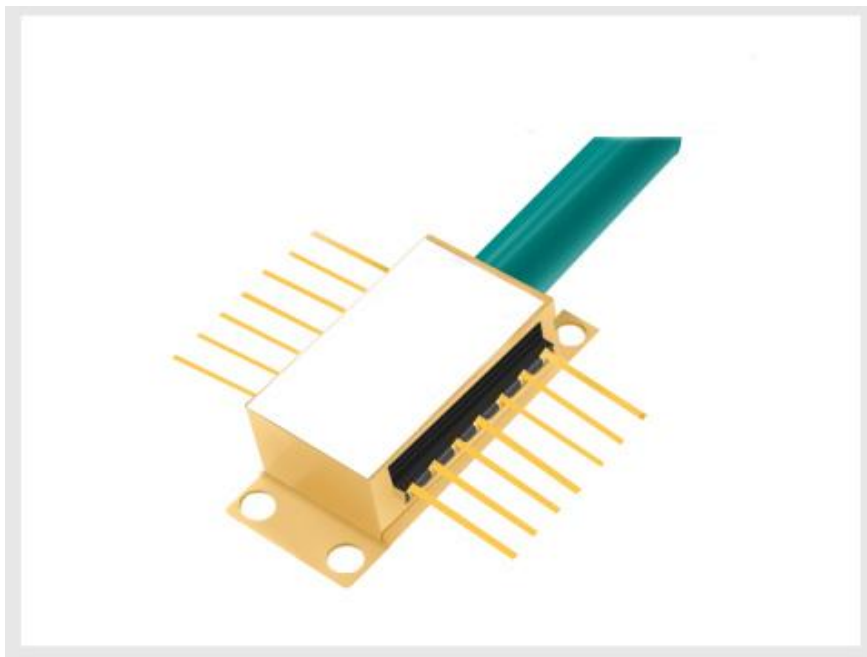


# 795nm 10mW SM Narrow Linewidth Laser

## Diodes



- **Product Description**

Single frequency FBG-stabilized laser diode module designed for optical measurement and communication. The laser is packaged in Butterfly package with monitor photodiode and thermo-electric cooler (TEC). Module is pigtailed with 0.5-0.9 m of single mode or polarization maintaining (optional) fiber and connectorized by FC/APC connector.



## ● Product features

Optical output: 10mW; Narrow linewidth ( $\Delta\nu < 1\text{MHz}$ ); Wavelength: 795nm  
@ 25 °C ; SM or PM Fiber ( $\varnothing 0.9\text{mm}$ ) ; FC-APC connector ; 14-pin butterfly  
package; Internal monitor PD and TEC; Low power consumption

## ● Part Number

MP-NL-795-A-A81-SA

## ● Application area

Coherent Optical Communication | High-Precision Fiber Optic Sensing |  
LiDAR | Optical Metrology & Spectroscopy | Microwave Photonics

## ● Core parameters

Wavelength	Output Power	Fiber Type
795nm	10mW	SM



## ● General Parameters

### Optical Characteristics

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Center Wavelength	$\lambda_c$	TL=15~35°C CW	794	795	796	nm
Peak Optical Output Power	PO	-		10	20	mW
Spectral linewidth	LW	-	-	1	10	MHz
Side-mode Suppression Ratio	SMSR	CW	30	40	-	dB
Optical Isolation	-	-10 < TC < +70 °C	30	-	-	dB
Polarization Extinction Ratio	ER	-	20	-	-	dB
Relative Intensity Noise	RIN	CW, output power 5mW	-	-	-135	dB
Wavelength drift with case (-10 to 70 °C) temperature	$\Delta\lambda$	TL=15~35°C	-	-	±30	pm



## Electrical Characteristics

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Threshold Current	ITH	-	-	25	40	mA
Slope Efficiency	$\eta$	CW output power 30 mW	0.064	0.1	-	mW/mA
Operating current	Iop	CW	-	60	100	mA
TEC set temperature	Ts	-	15	-	35	°C
Laser Forward Voltage	VF	CW output power 30 mW	-	1.3	2.5	V
Monitor Dark Current	ID	-	-	-	0.1	$\mu$ A
Input Impedance	ZIN	-	22	25	28	$\Omega$
Thermistor Current	ITC	-	10	-	100	$\mu$ A
Thermistor Resistance	RTH	TL = 25 °C	9.5	10	10.5	K $\Omega$
TEC Current	ITEC	TL = 25 °C, TC = 70 °C	-	-	1.8	A

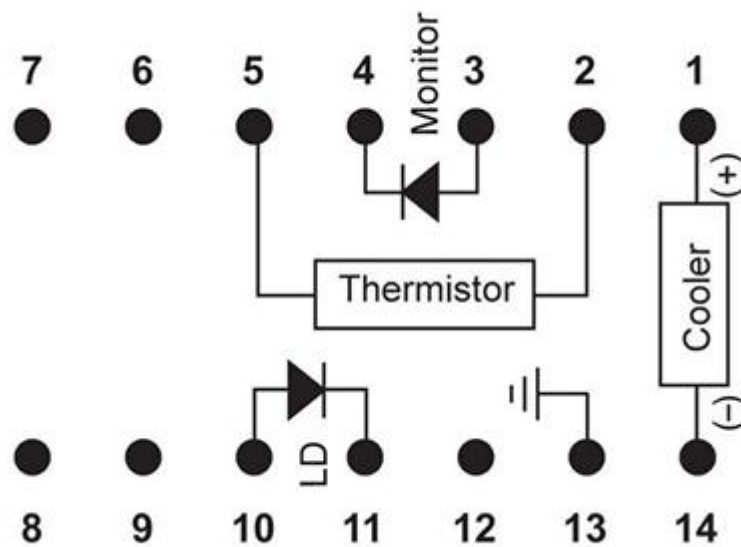


TEC Voltage	VTEC	TL = 25 °C, TC = 70 °C	-	-	3.5	V
TEC capacity	$\Delta T$	Tc = 70°C	-	-	50	°C
Thermistor temperature	-	-	-	-	100	°C

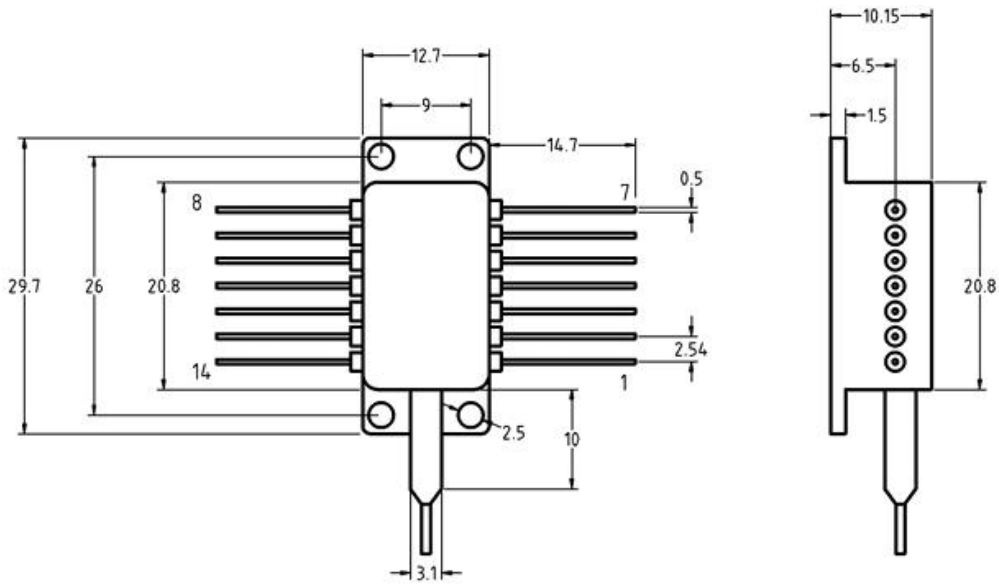
### Absolute maximum ratings:

Parameter	Symbol	Rating	Unit
Forward Current	$I_f$	170	mA
Reverse Voltage	$V_r$	1.8	V
PD Reserve Voltage	$V_{rd}$	7	V
Minimum Operation Case Temperature	$T_{ol}$	-40	°C
Maximum Operation Case Temperature	$T_{oh}$	70	°C
Minimum Storage Temperature	$T_{st}$	-40	°C
Maximum Storage Temperature	$T_{sh}$	70	°C
TEC Current	$I_t$	1.5	A

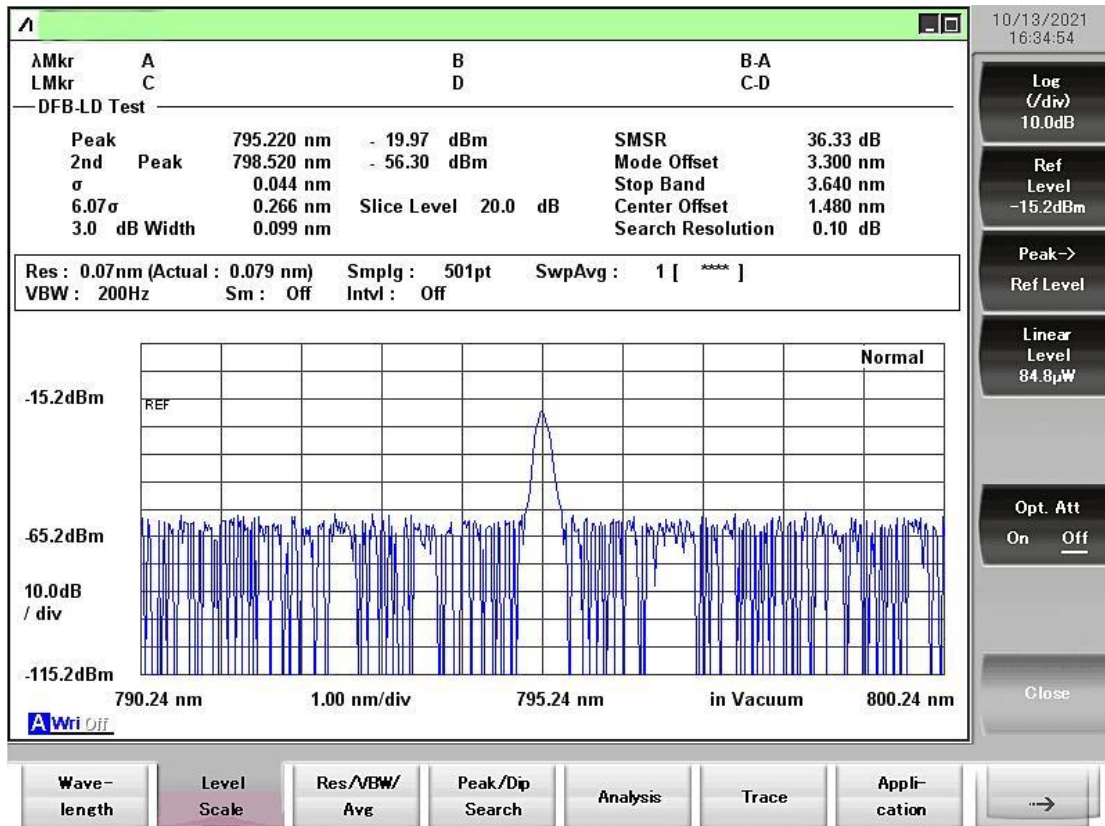
## Pin definition



None PZT Built inside			
NO	Parameter	NO	Parameter
1	Cooler anode+	8	NC
2	Thermistor	9	NC
3	PD anode-	10	LD anode+
4	PD cathode+	11	LD cathode-
5	Thermistor	12	NC
6	NC	13	Case
7	NC	14	Cooler cathode-

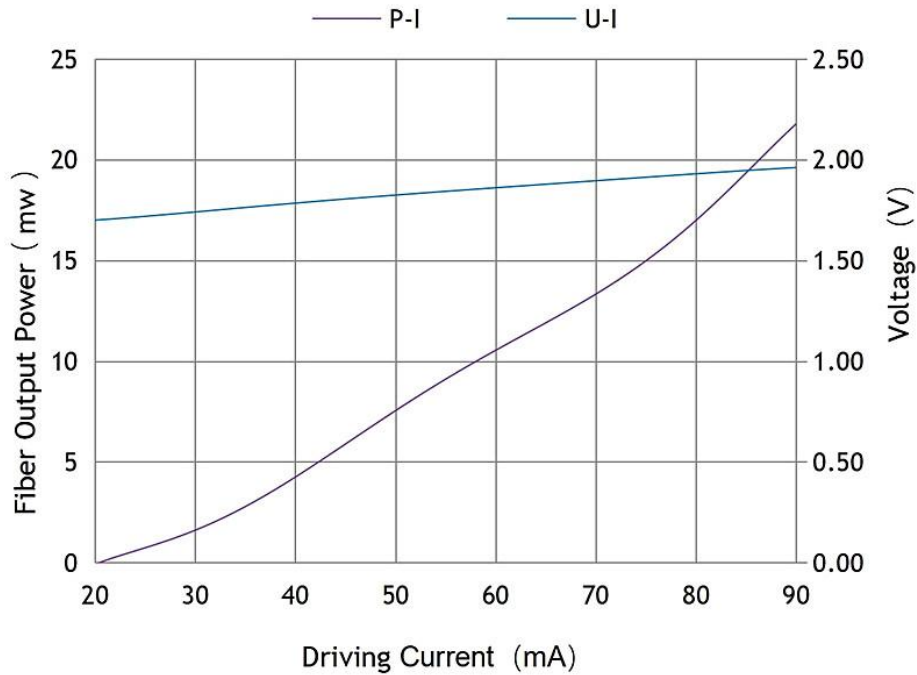


## Spectrum

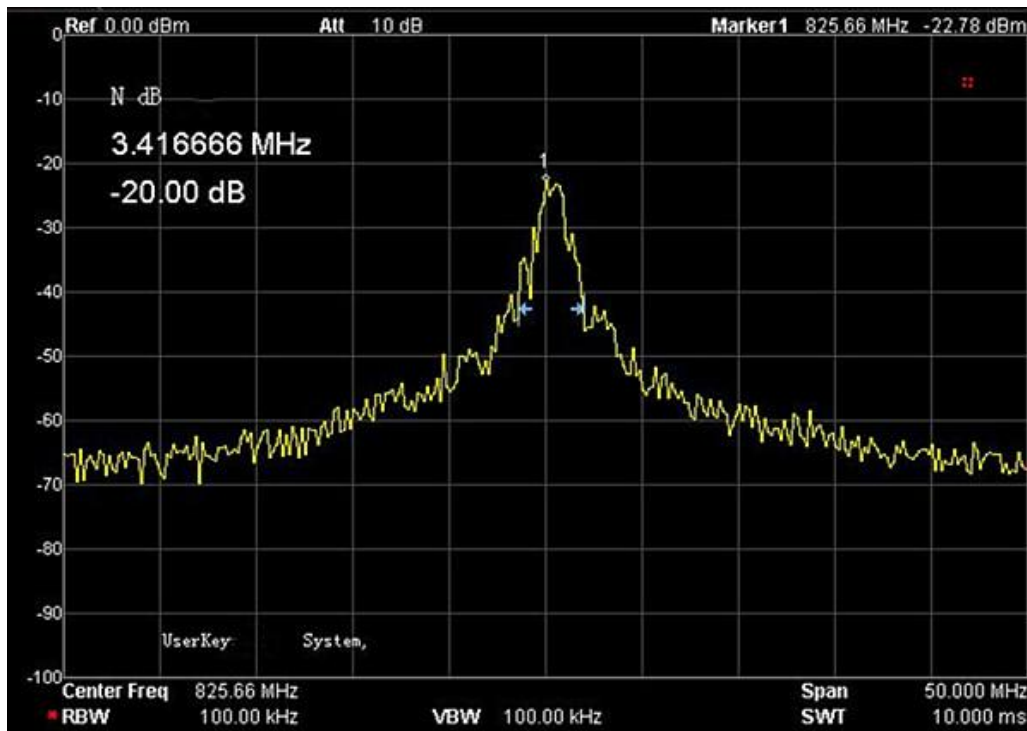




## L-I-V Curve

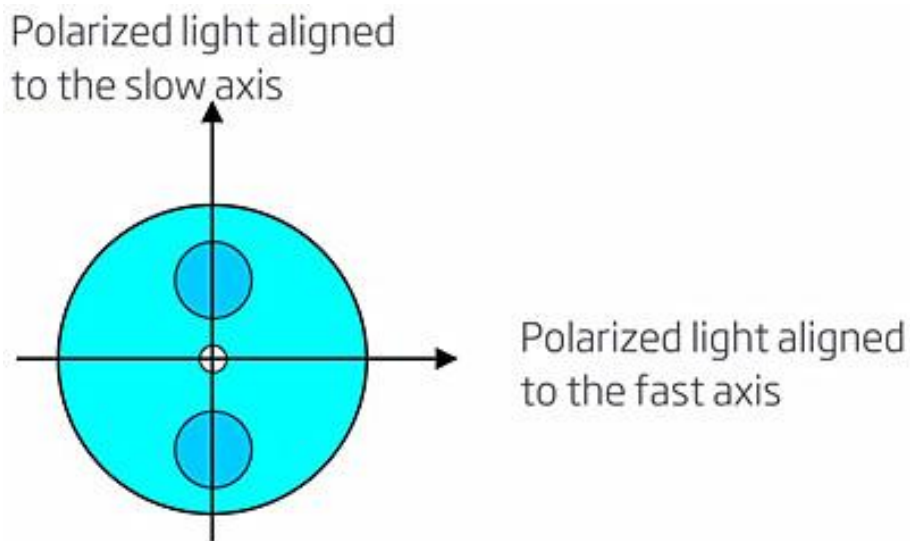


## Linewidth Test Result



## Fiber Pigtail Specifications

Parameters	Description
Fiber Type	SMfiber
Jacket Type	900μm loose tube
Pigtail Length	1.0±0.1m
Connector Type	FC/APC
PM fiber Connector Orientation	Please see the right figure



**Note:** The PM fiber and the connector key are aligned to the slow axis, fast axis is blocked