

High Optical Power (CW 5W) from a single emitter

■ FEATURES

- High radiant output power (CW) : 5 W
- High performance Peltier element built-in
- High radiant flux density (Beam area size 200 μm x 1 μm)
- Long life

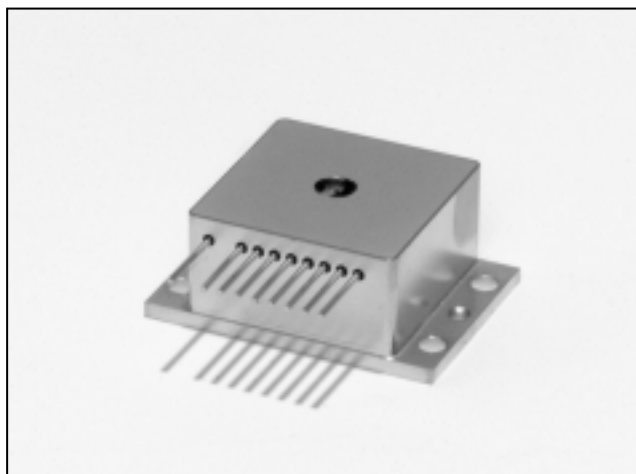
■ APPLICATIONS

- Processing (Welding , Soldering)
- Annealing
- Medical instrument
- Pumping source for solid state lasers

■ OUTLINE

A 5W (CW) output type has joined the series of CW Laser Diode from HAMAMATSU PHOTONICS. It has a built-in Peltier element and is supplied in a HHL package. It has a high output power from small emitting area with high reliability.

Peak emission wavelengths other than 808 nm are available as custom.



■ ABSOLUTE MAXIMUM RATINGS (Except Temperature Item, $T_{th}= 25\text{ }^{\circ}\text{C}$)

Parameter	Symbol	Value	Unit
Radiant Output Power	Φ_e	5.2	W
Reverse Voltage	V_r	2	V
Operating Temperature	T_{sub}	+10~+30	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-40~+80	$^{\circ}\text{C}$
Built-in Peltier Supply Current	I_{pe}	5.6	A
Thermistor Power Dissipation	-	3	mW

■ CHARACTERISTICS ($T_{th}= 25\text{ }^{\circ}\text{C}$)

Parameter		Symbol	Conditions	Value	Unit
LD	Radiant Output Power	Φ_e	$I_f = 5.6\text{ A}$	5.0 (Typ.)	W
	Operating Current	I_{op}	$\Phi_e = 5\text{ W}$	5.6 (Typ.)	A
	Peak Emission Wavelength	λ_p		808 $\pm$ 10	nm
	Spectral Radiation Half Bandwidth	$\Delta\lambda$		2 (Typ.)	nm
	Forward Voltage	V_f		1.9 (Typ.)	V
	Beam Spread Angle	Parallel $\theta_{//}$	$\Phi_e = 5\text{ W}$ FWHM	8	degree
		Vertical $\theta_{\perp}$		32	degree
	Emitting Area Size	-	Value at designing	200 x 1	μm
	Lasing Threshold Current	I_{th}	-	1.0	A
Thermistor	Resistance	R	25 $^{\circ}\text{C}$ (At load 0)	10	k Ω
	B Constant	B	-	3450	k
Built-in Peltier Voltage		V_{pe}	-	9 (max.)	V
Dimensional Outline (Except Projection part)		-	-	44.5 (W) x 31.8 (D) x 18.5 (H)	mm
Weight		-	-	150	g

CW LASER DIODES L9777-02

Figure 1: Radiant Output Power vs. Forward Current (Typ.)

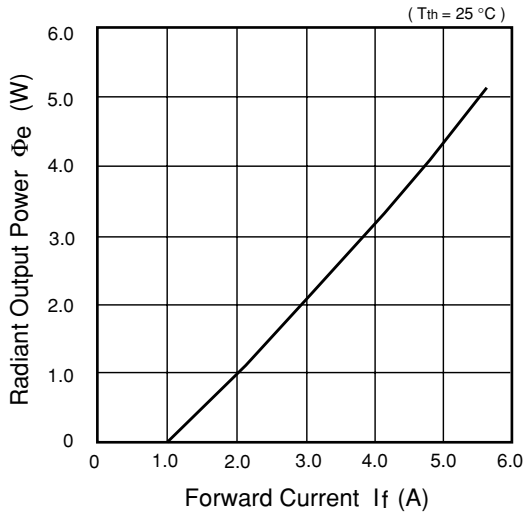


Figure 2: Emission Spectrum (Typ.)

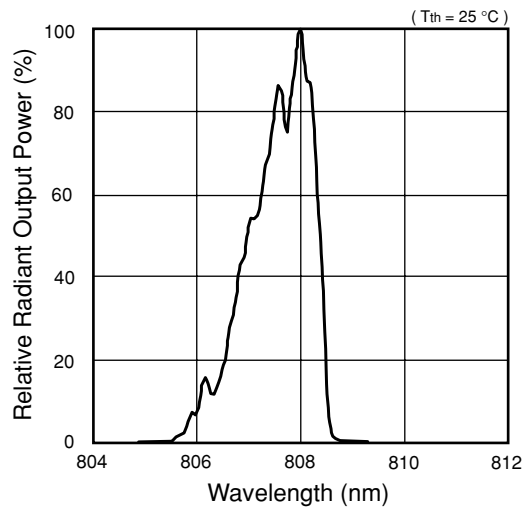


Figure 3: Directivity (Typ.)

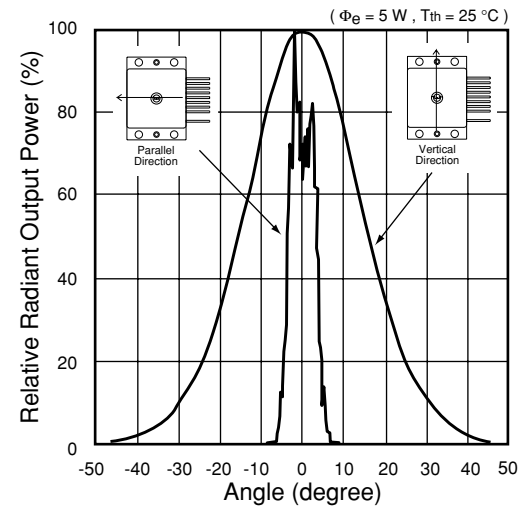
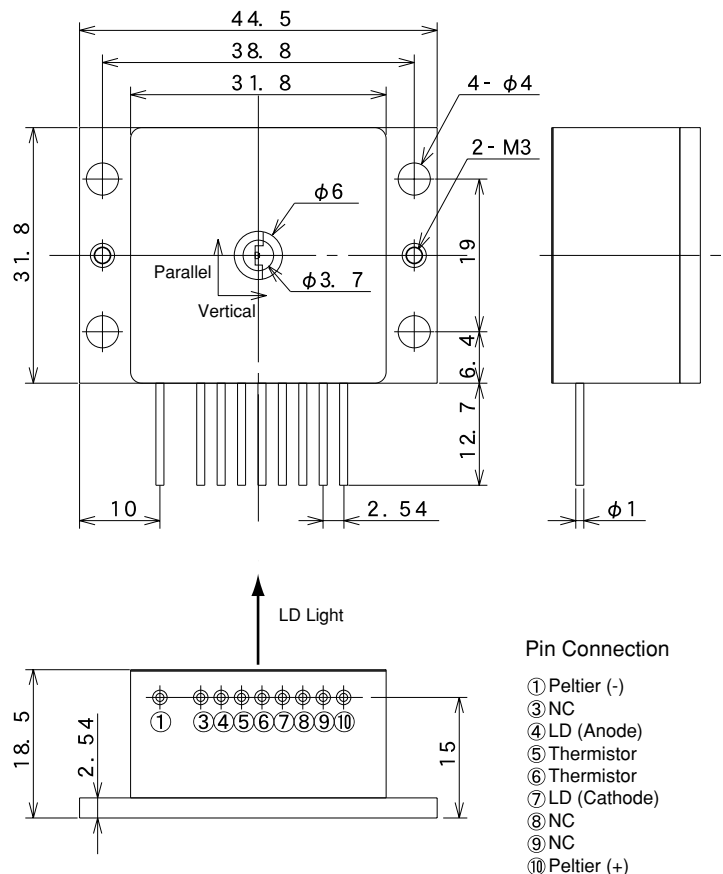


Figure 4: Dimensional Outline (Unit : mm)



HAMAMATSU

<http://jp.hamamatsu.com>

HAMAMATSU PHOTONICS K.K., Laser Group, Sales Dept.

5000, Hirakuchi, Hamamatsu City, Shizuoka, 434-8601, Japan, Telephone: (81)53-584-0227, Fax: (81)53-584-0228, E-mail: laser-g@lsr.hpk.co.jp

U.S.A.: Hamamatsu Corporation, 360 Foothill Road, P.O. BOX 6910, Bridgewater, N.J. 08807-0910, U.S.A. Telephone: (1)908-231-0960, Fax: (1)908-231-1218 E-mail: usa@hamamatsu.com

Germany: Hamamatsu Photonics Deutschland GmbH, Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49)8152-375-0, Fax: (49)8152-2658, E-mail: info@hamamatsu.de

France: Hamamatsu Photonics France S.A.R.L., 19, Rue du Saule Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: 33(1) 69 53 71 00, Fax: 33(1) 69 53 71 10, E-mail: infos@hamamatsu.fr

United Kingdom: Hamamatsu Photonics UK Limited, 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire AL7 1BW, United Kingdom, Telephone: (44)1707-294888, Fax: (44)1707-325777, E-mail: info@hamamatsu.co.uk

North Europe: Hamamatsu Photonics Norden AB, Smidesv gen 12, SE-171-41 Solna, Sweden, Telephone: (46)8-509-031-00, Fax: (46)8-509-031-01, E-mail: info@hamamatsu.se

Italy: Hamamatsu Photonics Italia S.R.L., Strada della Moia, 1/E, 20020 Arese, (Milano), Italy, Telephone: (39)02-935 81 733, Fax: (39)02-935 81 741, E-mail: info@hamamatsu.it

Cat. No. LLD1021E01
MAR. 2006