

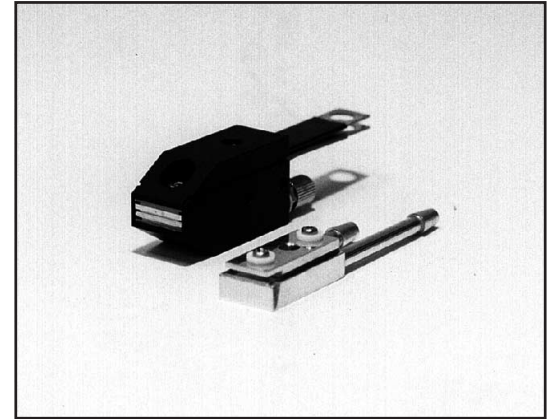
Peltier-cooling Type, Water-cooling type, and Funryu-cooling type are available

■ FEATURES

- High optical power : 20 to 30W/bar
- High stability
- Long life
- High cost performance
- Compact

■ APPLICATIONS

- Pumping source for solid state lasers
- Materials processing
- Welding
- Soldering
- Medical systems



▲ Front : L8412(Water-cooling Type), Back : L8410(Funryu-cooling Type)

Our high power laser diodes, L8410 and L8412, feature several advantages such as high stability with long life and high cost performance with compact structure. They can be applied as light source to pump solid state lasers, for material processing like welding or soldering, and for medical systems. The lasing areas consist of small laser emitters arranged in line and are thus called "Bar" structure. A high CW output power as high as about 200W was achieved by stacking seven Bars. Cooling methods can be selected from Peltier-cooling, Water-cooling and Funryu-cooling (patent pending : Japan 8-139479, WO 00/11717). A high power laser module with a focusing lens is optionally available. A power supply to operate them in quasi-CW mode is also available.

■ ABSOLUTE MAXIMUM RATINGS (Each bar)

Parameter	Symbol	L8410	L8412	Unit
Cooling Type		Funryu-cooling Type	Water-cooling Type	-
Radiant Output Power / bar	ϕ_e	32	22	W
Reverse Voltage	V_R	2		V
Operating Temperature	T_{op}	+5 to +35		°C
Storage Temperature	T_{stg}	-20 to +40		°C

■ CHARACTERISTICS (Each bar, $T_a=20^\circ\text{C}$)

Parameter	Symbol	L8410		L8412		Unit
		Conditions	Value	Conditions	Value	
Radiant Output Power / bar	ϕ_e		30		20	W
Forward Current	I_F	$\phi_e=30\text{W}$	37	$\phi_e=20\text{W}$	28	A
Peak Emission Wavelength	λ_p	$\phi_e=30\text{W}$	808	$\phi_e=20\text{W}$	808	nm
Spectral Radiation Half Bandwidth	$\Delta\lambda$	$\phi_e=30\text{W}$	4	$\phi_e=20\text{W}$	4	nm
Forward Voltage	V_F	$\phi_e=30\text{W}$	1.9	$\phi_e=20\text{W}$	1.85	V
Beam Spread Angle : Parallel	$\theta_{//}$	FWHM	10	FWHM	10	° (degree)
: Vertical	θ_{\perp}		35		35	° (degree)
Lasing Threshold Current	I_{th}		12		10	A
Array Length	-		10		10	mm
Maximum Number of Stacks	-		7		-	stack

*Contact sales staff for emitting wave-length and radiant output power (ϕ_e) other than above.

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

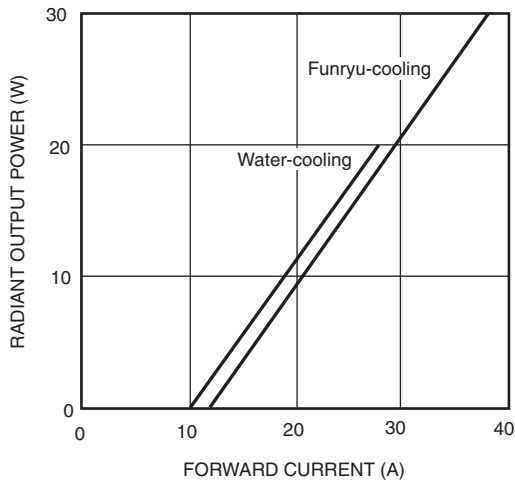


Figure 2: Typical Emission Spectrum

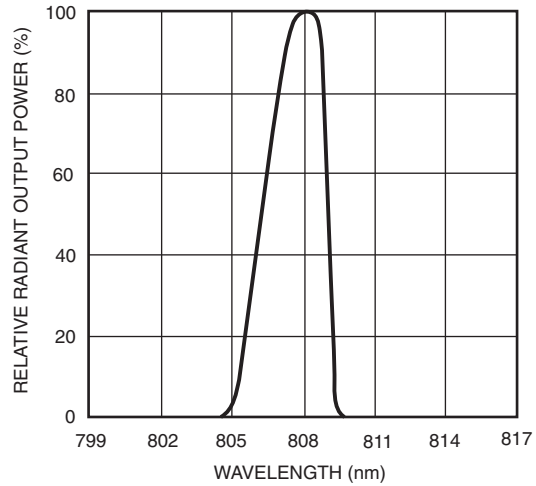


Figure 3: Cooling Characteristics

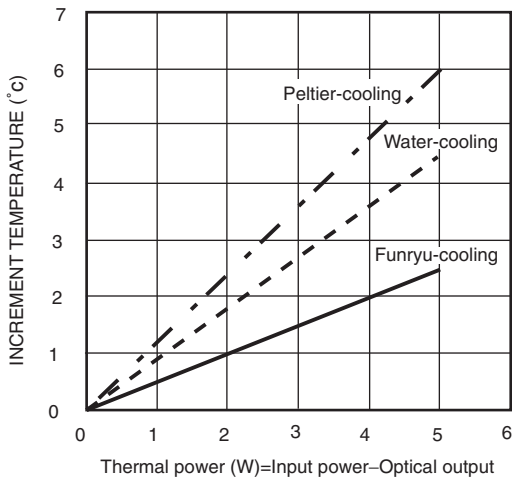
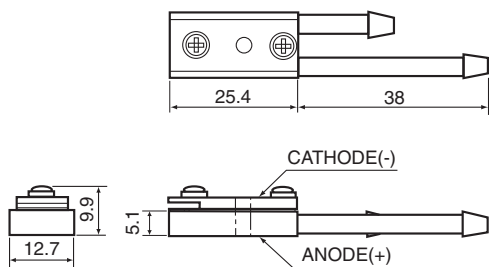
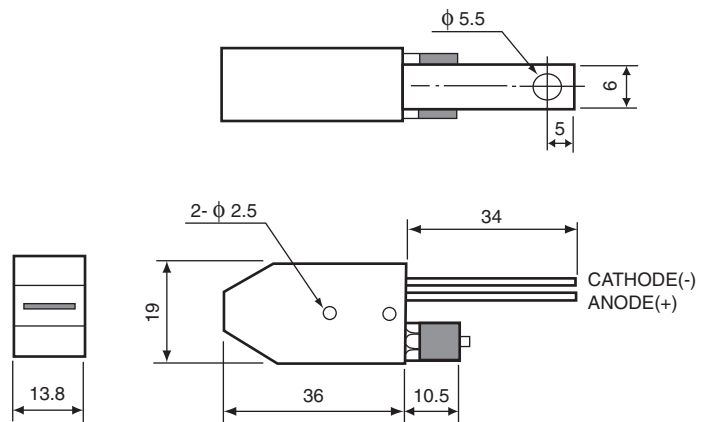


Figure 4: Dimensional Outline (Unit : mm)

L8412 (Water-cooling Type)



L8410 (Funryu-cooling Type)



HAMAMATSU

<http://www.hamamatsu.com>

HAMAMATSU PHOTONICS K.K., International Sales Division

325-6, Sunayama-cho, Hamamatsu City, 430-8587, Japan, Telephone: (81)53-452-2141, Fax: (81)53-456-7889

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.: 8, 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: france@hamamatsu.com

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: Smidesvägen 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. LLD1009E01
OCT. 2000 SI
Printed in Japan (200)