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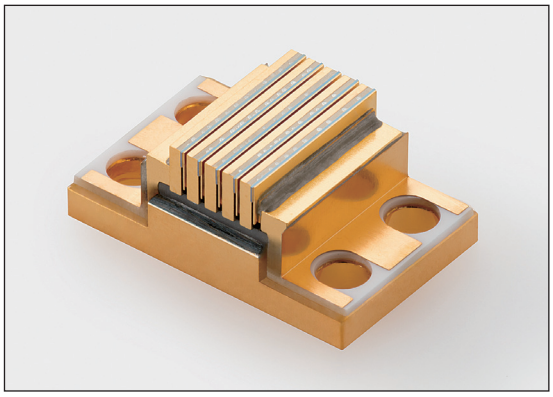
Pulsed Laser Diode Bar Module
L14001-01

Features

- Peak radiant power: 650 W
- Passive cooling
- Compact



Applications

- Pumping of solid state laser
- Laser heating

Outline

This is a compact laser diode (LD) bar module with a peak radiant power of 650 W. By using a passive cooling with thermal conductivity and eliminating the need for chillers, it provides for greater design flexibility when assembling a equipment. It can be used for a variety of applications, such as pumping of solid state laser and laser heating.

Absolute maximum rating

Parameter	Symbol	Value	Unit
Pulse forward current	I_{fp}	145	A
Peak radiant power	Φ_{ep}	700	W
Pulse width	t_w	350	μs
Repitition rate	f_r	110	Hz
Duty ratio	DR	2.5	%
Reverse voltage	V_r	2	V
Operating temperature (case) *1	$T_{op(c)}$	+5 to +35	°C
Storage temperature *1	T_{stg}	-20 to +40	°C
Operation and storage humidity *1	—	60	%

*1 No condensation (When operation at temeprature below dew point, use under dry N_2 environment.)
* Indicating limits that must not be exceeded instantaneously and shall not exceed any one value.
* $T_{op(c)}$ = 25 °C except for temperature parameter

Specification

Parameter		Symbol	Condition	Value			Unit
				Min.	Typ.	Max.	
Operating current		I_{op}	Φ_{ep} = 650 W	—	130	140	A
Center emission wavelength		λ_c		805	808	811	nm
Operating voltage		V_{op}		—	10	11	V
Beam divergence angle	Horizontal	$\theta_{//}$	I_{fp} = 130 A, full width at half maximum	3	5	10	° (degrees)
	Vertical	$\theta_{\perp}$		22	26	30	
Threshold current		I_{th}	—	—	25	30	A

* t_w = 100 μs, fr = 100 Hz, $T_{op(c)}$ = 25 °C

Other

Parameter		Designed value	Unit
Dimensions of light emitting section (width)	Horizontal	10	mm
	Vertical	4.8	

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Figure 1: Radiant power - forward current (example)

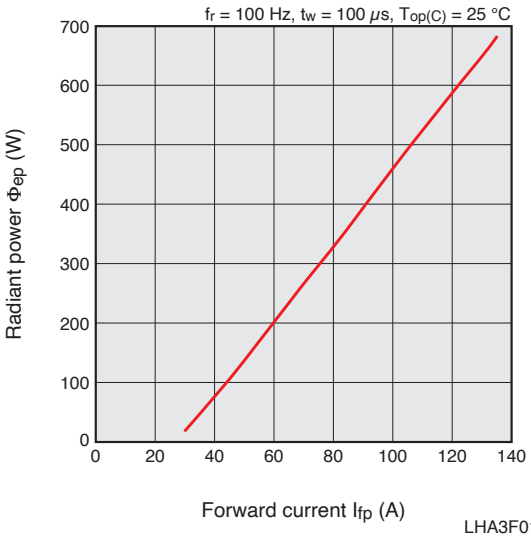

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Figure 2: Typical emission spectrum (example)

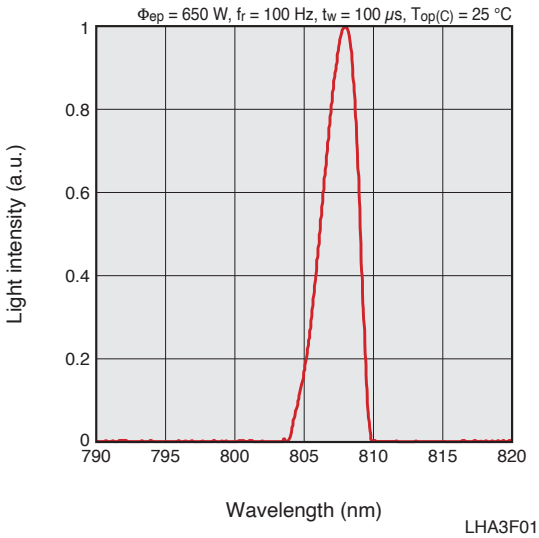

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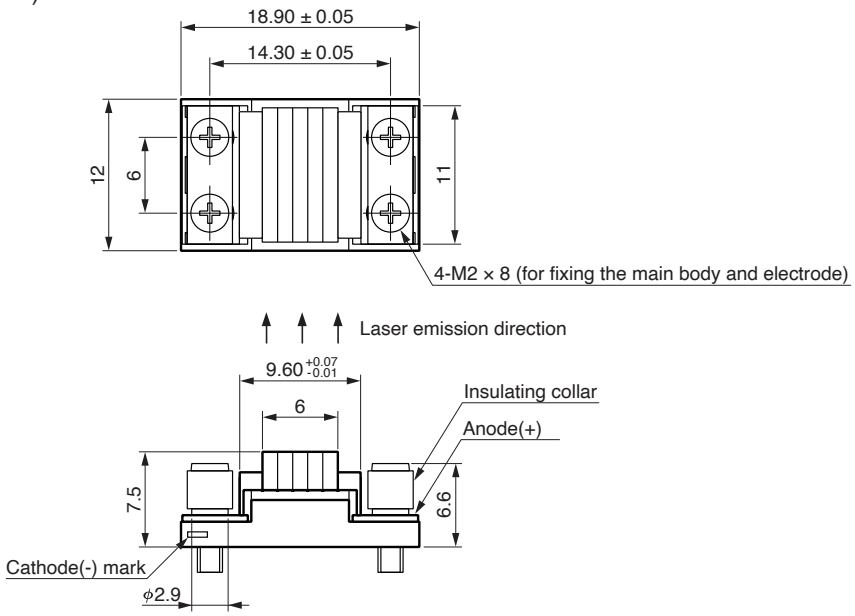
Figure 3: Dimensions (unit: mm)



* Tolerances without indication are ±0.2 mm.

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Danger (Class 4 Laser)

Invisible laser radiation: Avoid eye or skin exposure to direct or scattered radiation

●Laser beam emitted from this product is an invisible laser beam that cannot be seen by the naked eye.
This product is a IEC 60825-1 classification of laser products. It corresponds to "Class 4 Laser".
To use this product safely, follow IEC 60825-1 regulations, etc.

Examples of labels

Class 4 laser product

Warning label Explanatory label

●Information described in this material current as of January 2021. Specifications are subject to change without notice.

HAMAMATSU PHOTONICS K.K. www.hamamatsu.com

Laser Division, Business Promotion G.
314-5, Shimokanzo, Iwata City, Shizuoka Pref., 438-0193, Japan, Telephone: (81)539-62-5248, Fax: (81)539-62-2205

U.S.A.: HAMAMATSU CORPORATION: 360 Foothill Road, Bridgewater, NJ 08807, U.S.A., Telephone: (1)908-231-0960, Fax: (1)908-231-1218
Germany: HAMAMATSU PHOTONICS DEUTSCHLAND GMBH.: Arzbergerstr. 10, 82211 Herrsching am Ammersee, Germany, Telephone: (49)8152-375-0, Fax: (49)8152-265-8 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, UK, Telephone: (44)1707-294888, Fax: (44)1707-325777 E-mail: info@hamamatsu.co.uk
North Europe: HAMAMATSU PHOTONICS NORDEN AB: Torshamnsgatan 35, 16440 Kista, 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 int. 6 20044 Arese (Milano), Italy, Telephone: (39)02-93 58 17 33, Fax: (39)02-93 58 17 41 E-mail: info@hamamatsu.it
China: HAMAMATSU PHOTONICS (CHINA) CO., LTD.: 1201, Tower B, Jiaming Center, 27 Dongsanhuan Beilu, Chaoyang District, 100020 Beijing, P.R. China, Telephone: (86)10-6586-6006, Fax: (86)10-6586-2866 E-mail: hpc@hamamatsu.com.cn
Taiwan: HAMAMATSU PHOTONICS TAIWAN CO., LTD.: 13F-1, No.101, Section 2, Gongdao 5th Road, East Dist., Hsinchu City, 300046, Taiwan(R.O.C) Telephone: (886)3-659-0080, Fax: (886)3-659-0081 E-mail: info@hamamatsu.com.tw

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