HAMAMATSU

PHOTON IS OUR BUSINESS

Laser Heating System
L16480-112/-344

■Features

- ●Energy and space saving
- ●No individual difference
- ●Ideal for mass production process
- ●Processing point temperature monitoring function

L16480-112

L16480-344

■Applications

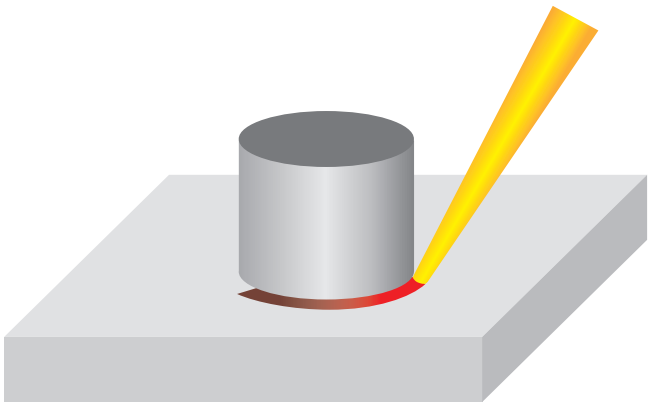
- ●Dissimilar bonding
  - – Plastics, metals & glass

■Outline

This is a laser heating system, which consist of SPOLD® LD irradiation light source, fiber and lenses, best suited for adhesive curing. It has a built-in process monitor that monitors the rise and fall of processing point temperature, making it an ideal system for mass production process at manufacturing sites that realizes "visualization" of laser processing in real time. The use of laser diode (LD) with high electro-optical conversion efficiency contributes to energy saving. In addition, heating the junction directly or indirectly with a laser enables a high degree of freedom in product design and reduction of the number of processes.

■Application image

Figure 1: Thermal curing of adhesive



Laser Heating System L16480-112/344

■General ratings

Parameter	Specification		Unit
	L16480-112	L16480-344	
Operating temperature *1	+10 to +30		°C
Storage temperature *2	-20 to +50	0 to +50	°C
Storage and operating humidity *1	≤60		%
Place of use	Indoor at an altitude of ≤2000 m		—

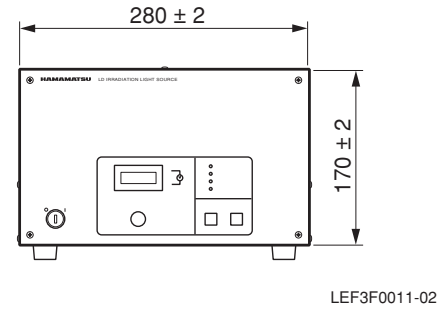
*1 No condensation
*2 No freezing

■Specifications

Parameter		Specification		Unit
		L16480-112	L16480-344	
Main laser light (at maximum current setting)	Radiant power	9 (min.)	≥70	W
	Oscillation type	CW		—
	Peak emission wavelength	915 ± 20	940 ± 20	nm
Red guide light (at maximum current setting)	Radiant power	<0.001		W
	Oscillation type	CW		—
	Peak emission wavelength	650 ± 50		nm

Figure 2: Dimensions (unit: mm)

●L16480-112



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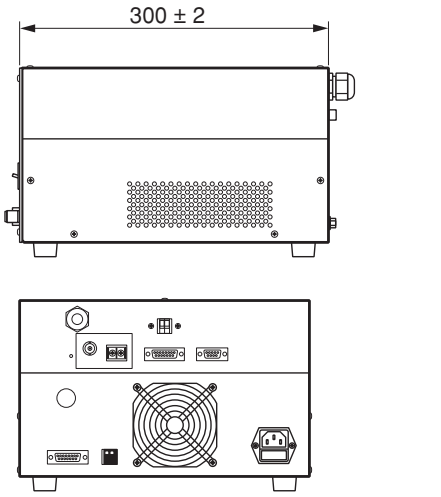

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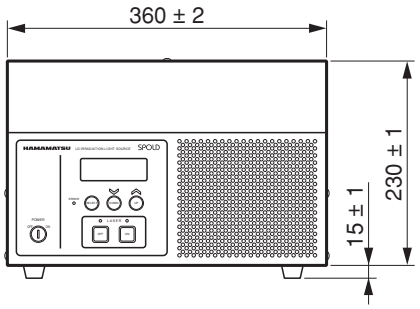
●L16480-344



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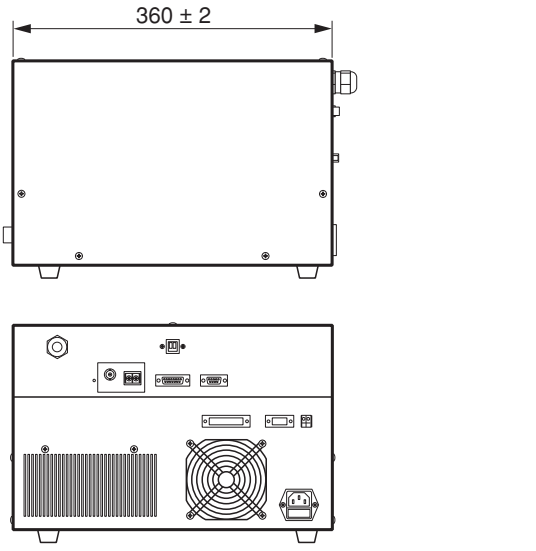

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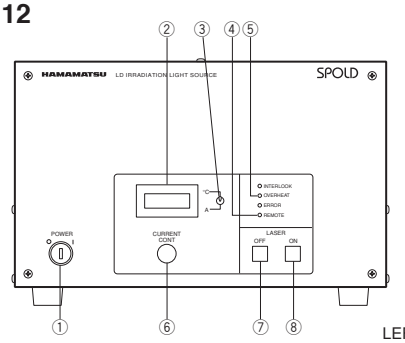
Laser Heating System L16480-112/344

Figure 3: Name and Function

●L16480-112



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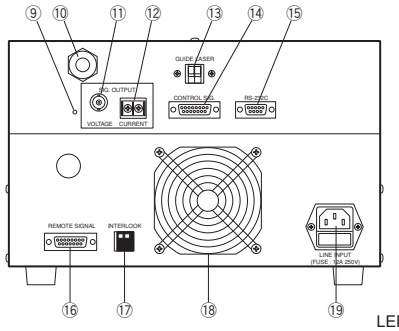

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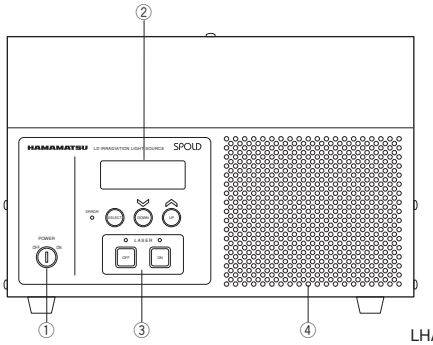
No.	Name	Functions and applications
①	Power switch (key switch)	Switching ON/OFF the power of whole system
②	Display panel	Displays LD current or LD installation part's temperature
③	Display selector	Switch the display on the display panel. When it is on the upper side, LD current is displayed When it is on the lower side, temperature is displayed
④	Alarm indicators	Laser irradiation stops and lights when an error occurs in this system
⑤	Remoto mode indicator	Lights when this light source is in remote mode (controllable externally)
⑥	LD current adjustment knob	Turn this knob to adjust LD current during local mode
⑦	Laser OFF switch	When this system is in local mode (operation from front panel), stop the laser irradiation, lights when laser irradiation is stopped
⑧	Laser ON switch	When the system is in local mode, irradiates laser, lights during the laser irradiation
⑨	POWER ON indicator LED	Lights when power is ON
⑩	Laser transmission optical fiber outlet	Laser transmission optical fiber fixing port Do not touch
⑪	Analog voltage output terminal (SIG. OUTPUT VOLTAGE)	Voltage output for thermal information BNC connector (receptacle)
⑫	Analog current output terminals (SIG. OUTPUT CURRENT)	Current output for thermal information Terminal block for M3 screw
⑬	Guide laser input terminals (GUIDE LASER)	Guide laser turns on when terminals are shorted. No-voltage contact input (Contact capacity to be connected should be 5 V, 30 mA or more)
⑭	Process monitor control signal input terminal (CONTROL SIG.)	Signal input connector for process monitor
⑮	Serial communication terminal (RS-232C)	Not used, for maintenance
⑯	Laser remote control signal I/O terminal (REMOTE SIGNAL)	Terminal used to control this system by remote signal
⑰	Interlock terminal (INTERLOCK)	Laser irradiation stops when these terminals are opened
⑱	Cooling fan	Air outlet for the cooling fan
⑲	AC inlet (Isolation device)	Power cable connection, built-in fuse (GND should be securely connected)

●L16480-344



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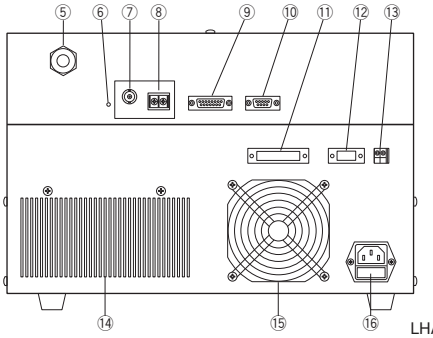

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No.	Name	Functions and applications
①	Power switch (key switch)	Switching ON/OFF the power of whole system
②	Display panel	Indicates the status of this light source
③	ON/OFF switch & indicator lamp	Control and display laser irradiation
④	Air inlet	Air inlet for LD cooling
⑤	Laser transmission optical fiber outlet	Laser transmission optical fiber fixing port
⑥	LED for power on indication	Light when power on
⑦	Analog voltage output terminal	BNC connector receptacle
⑧	Analog current output terminal	Terminal block for M3 screw
⑨	Process monitor control signal input terminal	Signal input connector for process monitor
⑩	Connector for maintenance	Not used, for maintenance
⑪	Laser remote control signal I/O terminal	Terminal used to control this laser system by remote signal
⑫	Serial communication terminal	Not used
⑬	Interlock terminal	Laser irradiation stops when these terminals are opened
⑭	Cooling fan for LD	Air outlet for LD cooling
⑮	Cooling fan	Air outlet for cooling fan
⑯	AC inlet (open device)	Power cable inlet, built-in fuse (GND should be securely connected)

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

●SPOLD is registered trademark of Hamamatsu Photonics K.K..

●Information described in this material current as of May 2022. Specifications are subject to change without notice.

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