

## ■Features

- Energy saving
- Compact, lightweight
- Specialized for embedded applications

## ■Applications

- Plastic welding
- Soldering
- Dissimilar materials bonding
- Glass seal
- Sintering of metal nanoinks



## ■Outline

This laser irradiation light source compactly combines a fiber output type laser diode (LD) bar module and a drive circuit. The desired beam diameter and beam profile can be irradiated by selecting the irradiation unit.

## ■General ratings

Parameter	Value	Unit
Operating temperature *1	+10 to +30	°C
Storage temperature *1*2	0 to +50	°C
Storage and Operating Humidity *1	60 or less	%
Place of use	Indoor at an altitude of ≤ 2000 m	—

\*1 No condensation

\*2 No freezing

## ■Specifications

Parameter		Specification						Unit
		L13920-411	L13920-421	L13920-511	L13920-521	L13920-611	L13920-711	
Radiant power (with maximum current setting)		30 (min.)		75 (min.)	60 (min.)	200 (min.)	360 (min.)	W
Oscillation type		CW						—
Peak emission wavelength		940 ± 20	808 ± 20	940 ± 20	808 ± 20	940 ± 20		nm
Cooling method		Air cooling				Distilled water cooling		—
Red guide light		Available						—
Control unit	Safety function	Interlock						—
	External control	External control terminal (D-Sub 25 pin)						—
Dimensions (W × H × D)		360 × 150 × 360 (excluding protrusions)					480 × 250 × 500 (excluding protrusions)	mm
Weight		Approx. 13				Approx. 12	Approx. 28	kg
Laser transmission optical fiber	Type no.	A11612 series						—
	Fiber length	Approx. 5						m
Irradiation unit	Type no.	A12803 series					A15558 series	—
	Condensing diameter	φ0.4 to φ6.4				φ0.6 to φ6.4	φ3.2 to φ6.4	mm
	Working distance	Approx. 45 to 200				Approx. 100 to 200		mm

\* This product is sold as a single unit with the LD irradiation light source main unit, so each item can not be removed.

# SPOLD® LD Irradiation Light Source L13920 series

## ■Built-in process monitor type



"Visualization" of thermal process was realized by built-in monitoring function.

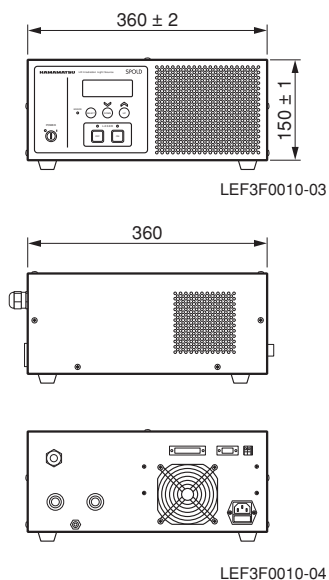
Reliable acquisition of the thermal information at the laser processing point improves the quality control of laser processing.

## ■Specifications

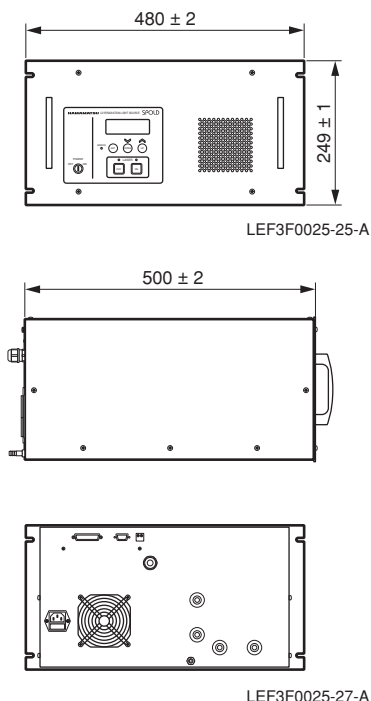
Parameter		Specification		Unit
		L13920-411M	L13920-511M	
Radiant power (with maximum current setting)		30 (min.)	70 (min.)	W
Oscillation type		CW		—
Peak emission wavelength		$940 \pm 20$		nm
Cooling method		Air cooling		—
Red guide light		Available		—
Measurement cycle		1		ms
Measurement signal output specifications		0 V to 10 V (BNC connector) / 4 mA to 20 mA (M3 terminal screw) When measuring the amount of light equivalent to 200 °C to 650 °C in a blackbody furnace (emissivity 0.93)		—
Control unit	Safety function	Interlock		—
	External control	External control terminal (D-Sub 25 pin) (light source section)		—
Dimensions (W × H × D)		360 × 230 × 360 (excluding protrusions)		mm
Weight		Approx. 17		kg
Laser transmission optical fiber	Type no.	A11612 series		—
	Fiber length	Approx. 5		m
Irradiation unit	Type no.	A12803 series		—
	Condensing diameter	$\phi 0.6$ to $\phi 6.4$		mm
	Working distance	Approx. 45 to 200		mm

Figure 1: Dimensions (unit: mm)

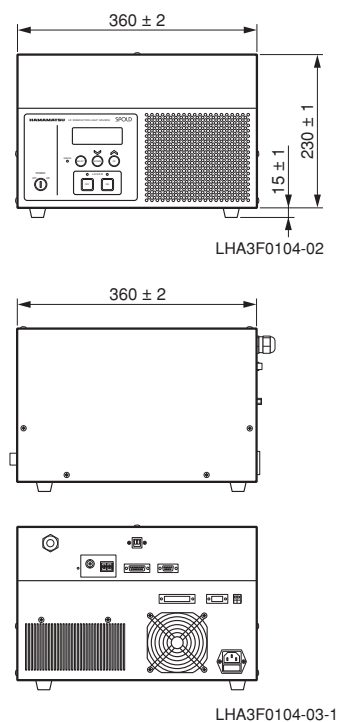
### ●L13920-xxx (excluding -711)



### ●L13920-711



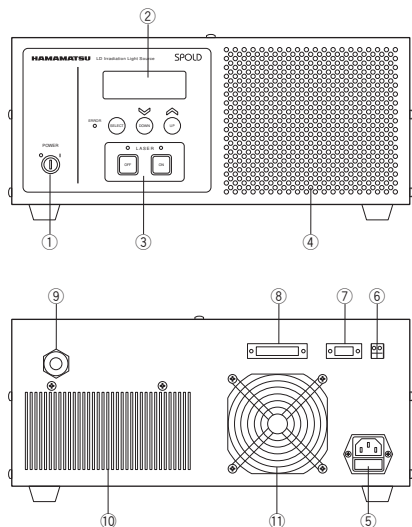
### ●L13920-x11M



# SPOLD® LD Irradiation Light Source L13920 series

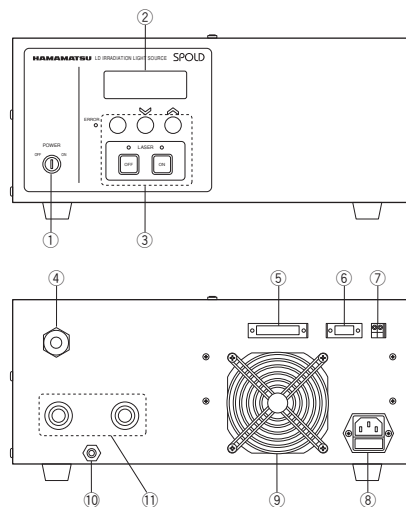
Figure 2: Name and function

## ●L13920-x11 (excluding -611, -711)



No.	Name	Functions and applications
①	Power switch (key switch)	Switching ON/OFF the power of the light source main unit
②	Display panel	Display LD current and LD installation part's temperature, blink when an alarm is issued
③	Operation switch/indicator lamp	Control and display laser irradiation
④	Air inlet	Inlet air for LD cooling
⑤	AC inlet (open device)	Power cable inlet, built-in fuse (GND should be securely connected)
⑥	Interlock terminal	Laser irradiation stops when these terminals are opened
⑦	Serial communication terminal	Not used, for maintenance
⑧	Laser external control signal input terminal	Input/Output terminal for laser external control
⑨	Laser transmission optical fiber outlet	Laser transmission optical fiber outlet
⑩	Air outlet	LD cooling air outlet
⑪	Cooling fan outlet	Air outlet of radiator fan

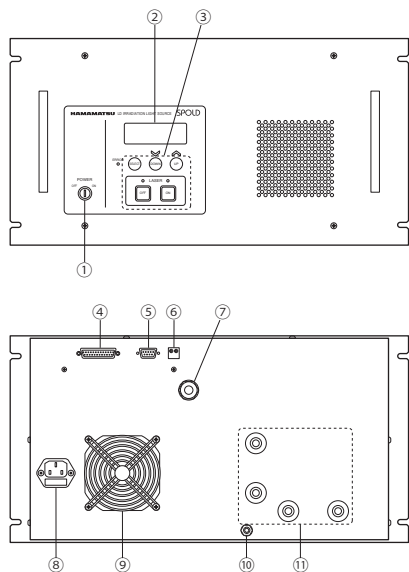
## ●L13920-611



No.	Name	Functions and applications
①	Power switch (key switch)	Switching ON/OFF the power of the light source main unit
②	Display panel	Display LD current and LD installation part's temperature, blink when an alarm is issued
③	Operation switch/indicator lamp	Control and display laser irradiation
④	Laser transmission optical fiber outlet	Laser transmission optical fiber outlet
⑤	Laser external control signal input/output terminal	Input/Output terminal for laser externa control
⑥	Serial communication terminal	Not used, for maintenance
⑦	Interlock terminal	Laser irradiation stops when these terminals are opened
⑧	AC inlet (open device)	Power cable inlet, built-in fuse (GND should be securely connected)
⑨	Cooling fan outlet	Air outlet of radiator fan
⑩	Cooling water drain	Inside diameter $\phi 8$ mm horse connection tube
⑪	Cooling water inlet/outlet	$\phi 8$ mm tube connection fitting

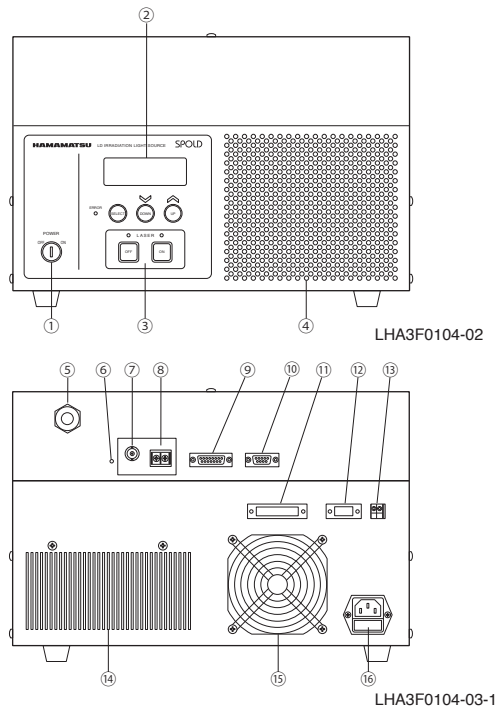
# SPOLD® LD Irradiation Light Source L13920 series

## ●L13920-711



No.	Name	Functions and applications
①	Power switch (key switch)	Switching ON/OFF the power of the light source main unit
②	Display panel	Display LD current and LD installation part's temperature, blink when an alarm is issued
③	Operation switch/indicator lamp	Control and display laser irradiation
④	Laser external control signal input/output terminal	Input/Output terminal for laser external control
⑤	Serial communication terminal	Not used, for maintenance
⑥	Interlock terminal	Laser irradiation stops when these terminals are opened
⑦	Laser transmission optical fiber outlet	Laser transmission optical fiber outlet
⑧	AC inlet (open device)	Power cable inlet, built-in fuse (GND should be securely connected)
⑨	Cooling fan outlet	Air outlet of radiator fan
⑩	Cooling water drain	Inside diameter $\phi 8$ mm horse connection tube
⑪	Cooling water inlet/outlet	$\phi 8$ mm tube connection fitting

## ●L13920-x11M



No.	Name	Functions and applications
①	Power switch (key switch)	Switching ON/OFF the power of the light source main unit
②	Display panel	Display LD current and LD installation part's temperature, blink when an alarm is issued
③	Operation 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 outlet
⑥	LEDs for power ON indication	Light when power is ON
⑦	Analog voltage output terminal	Output thermal information in voltage BNC connector receptacle
⑧	Analog current output terminal	Output thermal information in current M3 terminal screw
⑨	Process monitor control signal input terminal	Input/Output terminal for process monitor
⑩	Connector for maintenance	Not used, for maintenance
⑪	Laser external control signal input/output terminal	Input terminal for laser external control
⑫	Serial communication terminal	Not used, for maintenance
⑬	Interlock terminal	Laser irradiation stops when these terminals are opened
⑭	Air outlet	LD cooling air outlet
⑮	Cooling fan outlet	Air outlet of the radiation fan
⑯	AC inlet (open device)	Power cable inlet, built-in fuse (GND should be securely connected)

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

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