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Pulsed Solid State Laser L11564-03

Features

- Wavelength: 1342 nm
- Average output power: 11 W (max.)
- Excellent spatial mode: TEM00
- ●High beam quality: M²<1.1
- Pulse mode: Normal mode or waveform control mode
- Pulse width : 35 ns to 700 ns (depending on repetition rate)



Applications

Trimming

- Ablation processing (repair)
- Backside processing of Si wafer
- Scribing

Outline

This is a solid state nanosecond pulsed laser with stability and ease of maintenance needed for industrial applications. This unit is specifically designed to be built into equipment. Even when the output power of the pump laser diode becomes low due to the end of its service life, it can be easily replaced without removing the laser head from the equipment, so maintenance is easy. This laser also has a useful function that varies the pulse waveform to adapt to the processing conditions.

General ratings

Parameter	Value	Unit
Ambient operating temperature	+15 to +35	С°
Ambient storage temperature	-10 to +50	°C
Operating / Storage relative humidity *1	≤90	%
Startup time	10	min
Place of use	Indoor at an altitude of ≤2000 m	—

*1 No condensation (If stored below 0 °C, allow to reach room temperature for at least 12 hours.)

■Specification

Parameter	Value	Unit
Wavelength	1342	nm
Average output power (max.)	11	W
Repetition rate	90	kHz
Pulse width *1	82 ± 7	ns
Repetition rate variable range	60 to 120	kHz
Pulse peak-stability *2	10	%
Average power stability *3	±2	% (RMS)
Spatial mode *1	TEMoo	_
Beam waist diameter *4	φ510 ± 10 %	μm
Beam waist position *4	150 \pm 20 inside the head from the optical reference point	mm
Polarization	Vertical (polarization factor >100:1)	—
Operation mode *5	Pulse and CW	_
Regulation mode	ACC and APC	
Interlock functioning *6	Available	-
Solid state laser head dimensions (W \times H \times D) * ⁷	282 × 60 × 120	mm
Solid state laser head weight *8	Approx. 3.5	kg
Laser controller dimensions (W × H × D) *9	426 × 176 × 450	mm
Laser controller weight	Approx. 23.8	kg

*1 At pulse repetition rate 90 kHz.

*2 At 1σ and pulse repetition rate 90 kHz.

*3 ≤8 hours (in APC mode)

*4 Average in horizontal and vertical directions with respect to the bottom surface (heat dissipation surface). At pulse repetition rate 90 kHz.

*5 Values such as output power, stability, spatial mode, and polarization ratio shall not be applied during CW operation.

*6 The interlock functioning for safety shall take appropriate safety measures on the final product incorporating this product.

*7 Projecting parts. Fiber for pumping cannot be attached or detached.

*8 Including a fiber for pumping.

*9 Excluding protrusions and rack mount brackets.



Figure 1: Pulse time-waveform control (60 kHz)

Figure 2: Beam profile example



LJA7B740093

LJA7B740167

Accessory: Laser Diode Module L11593-11



This is a laser diode module that supplies pump light to laser head of L11564-03. It is stored inside of L11564-03's controller.

* L11593-11 replacement period (reference): 20000 hours or 3 years

General ratings

Parameter	Value	Unit
Ambient operating temperature	+15 to +35	С°
Ambient storage temperature *1	-10 to +50	С°
Operating / Storage relative humidity *1	≤90	%
Place of use	Indoor at an altitude of ≤2000 m	_
Dimensions (W \times H \times D) * ²	200 × 75 × 124	mm
Weight	4.0	kg

*1 No condensation (If stored below 0 °C, allow to reach room temperature for at least 12 hours.)

*2 Excluding protrusions

Optical properties

Parameter	Value	Unit
Operation mode	CW	—
Wavelength	879	nm
Excitation light output *1	35 or more (@50 A, reference value)	W

*1 At the fibre ends with a core diameter of 600 μ m and NA0.2.

Figure 3: Dimensions (unit: mm)

•Laser head (L11564-03)



•Laser controller (L11564-03)



LJA7B740095

Laser Diode Module (L11593-11)



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.



• Information described in this material current as of April 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 Foothing Revater, NJ 08807, U.S.A., Telephone: (19):03-02-024, Fax. (19):08-231-098, Fax: (19):08-221-08
U.S.A.: HAMAMATSU CORPORATION: 360 Foothing Revater, NJ 08807, U.S.A., Telephone: (19):08-231-098, Fax: (19):08-231-098, Fax: (19):08-231-098, Fax: (29):08-231-098, Fax: (20):08-231-098, Fax: (20):08-231-098,