

# PLP-10

## Laser diode head series

RoHS/RoHS2 Compliant

High repetition up to 100 MHz

Wavelength range from 375 nm to 1550 nm



The PLP-10 is an ultrashort pulsed light source that utilizes a laser diode (LD). It consists of a LD head and a controller. 13 types of LD head are available to accommodate various wavelengths, enabling optical output over a broad wavelength range of 375 nm to 1550 nm.

PLP-10 is ideal light source for measuring the response of a photodetector device, the characteristics of optical recording device or the Lifetime measurement.

Optical output is selectable from window output or FC connector output.

### FEATURES

- Ultrashort pulses 70 ps FWHM (typ.)
- High-repetition frequency up to 100 MHz
- Stable output power and oscillation timing
- Built-in trigger delay

### APPLICATIONS

- Excitation light source for fluorescence lifetime measurements
- Excitation light source for LIF
- Pulse response measurement of high-speed photodetectors
- Evaluation of an optical recording media
- Photochemical reaction
- Spectrum analysis
- Frequency characteristics of POF communication
- Evaluation of magnetic optical characteristic
- Alternate light source of He-Cd / Ar laser
- Evaluation of macromolecule new material

# SPECIFICATIONS

## ● PLP-10 Laser diode head M10306

Product name	Type number	Wavelength(nm)	Wavelength tolerance(nm)	Spectral half-width(nm)	Pulse width(ps)		Beam divergence angle(typ. deg)*		Peak power(mW)	
					max.	typ.	θ <sub>L</sub>	θ <sub>V</sub>	typ.	min.
PLP-10 Laser diode head 380 nm	M10306-27	375	<±10	<10	80	50	13	26	600	200
PLP-10 Laser diode head 380 nmFC	M10306-28								250	85
PLP-10 Laser diode head 400 nm	M10306-29								400	200
PLP-10 Laser diode head 400 nmFC	M10306-30	405	<±10	<10	100	60	-	-	200	100
PLP-10 Laser diode head 440 nm	M10306-31								160	80
PLP-10 Laser diode head 440 nmFC	M10306-32								80	40
PLP-10 Laser diode head 470 nm	M10306-33	465	<±10	<10	100	70	13	29	180	80
PLP-10 Laser diode head 470 nmFC	M10306-34								90	40
PLP-10 Laser diode head 480 nm	M10306-35								150	70
PLP-10 Laser diode head 480 nmFC	M10306-36	483	<±10	<10	120	80	-	-	70	35
PLP-10 Laser diode head 510 nm	M10306-37								50	20
PLP-10 Laser diode head 510 nmFC	M10306-38								25	10
PLP-10 Laser diode head 650 nm	M10306-11	655	<±20	<5	100	70	8	27	50	20
PLP-10 Laser diode head 650 nmFC	M10306-12								20	8
PLP-10 Laser diode head 780 nm	M10306-15								70	30
PLP-10 Laser diode head 780 nmFC	M10306-16	785	<±20	<10	120	100	-	-	30	10
PLP-10 Laser diode head 850 nm	M10306-17								100	50
PLP-10 Laser diode head 850 nmFC	M10306-18								50	25
PLP-10 Laser diode head 905 nm	M10306-41	905	<±10	<5	100	70	13	28	100	50
PLP-10 Laser diode head 905 nmFC	M10306-42								50	25
PLP-10 Laser diode head 970 nm	M10306-39								400	200
PLP-10 Laser diode head 970 nmFC	M10306-40	970	<±20	<20	120	80	-	-	100	50
PLP-10 Laser diode head 1300 nm	M10306-21								20	10
PLP-10 Laser diode head 1300 nmFC	M10306-22								10	5
PLP-10 Laser diode head 1550 nm	M10306-23	1550	<±30	<10	100	70	25	30	10	5
PLP-10 Laser diode head 1550 nmFC	M10306-24								5	2

\*Measured using a window output type. θ<sub>L</sub>: the value of LD head with CAUTION label upper surface.

The above value is measured with 100 MHz. The values can be changed depending on the frequency. The PLP head should be selected according to wavelength and output form and can be exchangeable with the controller C10196. It is necessary to adjust the PLP head for the controller. M10306-28 comes with APC polished quartz fiber.

## ● Controller for PLP-10 C10196

Repetition frequency (Hz) : Internal trigger	100 MHz, 50 MHz, 20 MHz, 10 MHz, 5 MHz, 2 MHz, 1 MHz, 500 kHz, 200 kHz, 100 kHz, 50 kHz, 20 kHz, 10 kHz, 5 kHz, 2 kHz, 1 kHz, 500 Hz, 200 Hz, 100 Hz, 50 Hz, 20 Hz, 10 Hz, 5 Hz, 2 Hz
: External trigger	Single shot to max. 50 MHz
External trigger input : Amplitude	- 4 V to + 4 V (50 Ω)
: Minimum pulse width	10 ns
Synchronous trigger output : Amplitude (Selectable)	+ 2 V to + 3 V (50 Ω) or - 500 mV to - 700 mV (50 Ω)
: Pulse width	5 ns ± 3 ns
: Timing	Before or after optical output (selectable)
: Delay time	Ref (0 ns)*, 20 ns, 40 ns, 60 ns, 80 ns, 100 ns
Line voltage	AC 100 V to AC 240 V, 50 Hz/60 Hz
Power supply	AC 90 V to AC 264 V
Power consumption	90 VA

\*Ref (0 ns) does not define zero time difference of synchronized signal and optical output with selecting Ref.

## ● Common specifications

Ambient operating temperature	+10 °C to +30 °C
Ambient storage temperature	-10 °C to +50 °C
Ambient operating humidity	70 % max. (with no condensation)

## OPTION

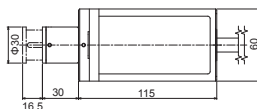
### ● Focusing lens for PLP-10 A10089

Lens unit to condense or to collimate laser for PLP-10 (Window output).



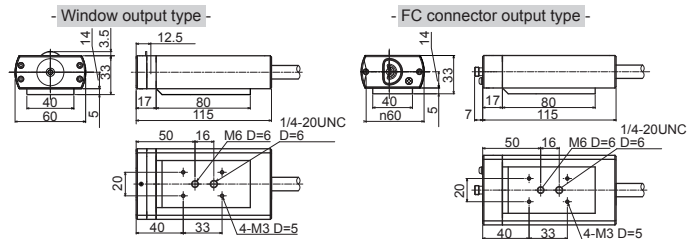
▲ Fitting image

### DIMENSIONAL OUTLINES (Unit: mm)

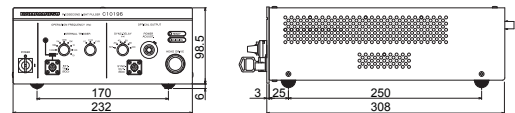


## DIMENSIONAL OUTLINES (Unit: mm)

### ● PLP-10 Laser diode head M10306 (Approx. 0.6 kg)



### ● Controller for PLP-10 C10196 (Approx. 4.6 kg)



## LASER SAFETY

The PLP-10 uses lasers to be classified, Class 3B. Conforming to international laser safety standards (USA: 21 CFR 1040.10 CDRH, other areas: IEC 60825-1), which obligate manufacturers to provide preventive safety measures, Hamamatsu lasers are classified, and appropriate safety measures and labeling are provided. During operation, users must also use their preventive safety measures according to laser-related regulations.



Description label (sample)



Caution label

- Product and software package names noted in this documentation are trademarks or registered trademarks of their respective manufacturers.
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- Information furnished by HAMAMATSU is believed to be reliable. However, no responsibility is assumed for possible inaccuracies or omissions.

Specifications and external appearance are subject to change without notice.

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