

# PLP-10

## Laser diode head series

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. 12 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

### Application

- Excitation light source for fluorescence lifetime measurements
- Excitation light source for LIF
- Pulse response measurement of high-speed photodetectors
- Evaluation of an optical recording device
- 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 (Max. deg)*		Peak power (mW)	
					max.	Typ.	$\theta_{//}$	$\theta_{\perp}$	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 nm FC	M10306-28								250	85
PLP-10 Laser diode head 400 nm	M10306-29	405	<±10	<10	100	60	12	23	400	200
PLP-10 Laser diode head 400 nm FC	M10306-30								200	100
PLP-10 Laser diode head 440 nm	M10306-49	445	<±10	<10	100	70	11	29	400	200
PLP-10 Laser diode head 440 nm FC	M10306-50								200	100
PLP-10 Laser diode head 470 nm	M10306-33	465	<±10	<10	100	70	13	29	180	80
PLP-10 Laser diode head 470 nm FC	M10306-34								90	40
PLP-10 Laser diode head 480 nm	M10306-35	483	<±10	<10	120	80	13	27	150	70
PLP-10 Laser diode head 480 nm FC	M10306-36								70	35
PLP-10 Laser diode head 510 nm	M10306-37	510	<±10	<10	180	130	13	26	50	20
PLP-10 Laser diode head 510 nm FC	M10306-38								25	10
PLP-10 Laser diode head 650 nm	M10306-43	655	<±20	<5	100	70	13	18	50	20
PLP-10 Laser diode head 650 nm FC	M10306-44								20	8
PLP-10 Laser diode head 780 nm	M10306-45	785	<±20	<10	120	100	10	19	70	30
PLP-10 Laser diode head 780 nm FC	M10306-46								30	10
PLP-10 Laser diode head 885 nm	M10306-51	885	<±20	<10	100	70	14	20	100	50
PLP-10 Laser diode head 885 nm FC	M10306-52								50	25
PLP-10 Laser diode head 970 nm	M10306-39	970	<±20	<20	120	80	-	50	400	200
PLP-10 Laser diode head 970 nm FC	M10306-40								100	50
PLP-10 Laser diode head 1300 nm	M10306-21	1310	<±30	<20	100	70	25	30	20	10
PLP-10 Laser diode head 1300 nm FC	M10306-22								10	5
PLP-10 Laser diode head 1550 nm	M10306-23	1550	<±30	<30	100	70	25	30	10	5
PLP-10 Laser diode head 1550 nm FC	M10306-24								5	2

\*Measured using a window output type.  $\theta_{\perp}$ : 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. FC connector type comes with APC polished quartz fiber (GI 50/125, 2 m).

## ● Controller for PLP-10 C10196

Repetition frequency (Hz)	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
• Internal trigger	
• External trigger	Single shot to max. 50 MHz
External trigger input	-4 V to +4 V (50 $\Omega$ )
• Amplitude	
• Minimum pulse width	10 ns
Synchronous trigger output	+2 V to +3 V (50 $\Omega$ ) or -700 mV to -500 mV (50 $\Omega$ ) (Selectable)
• Amplitude	
• Pulse width	5 ns $\pm$ 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	Approx. 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)

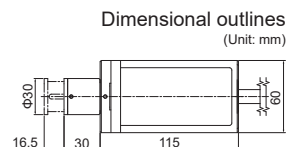
# Options

## ● Focusing lens for PLP-10 A10089

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



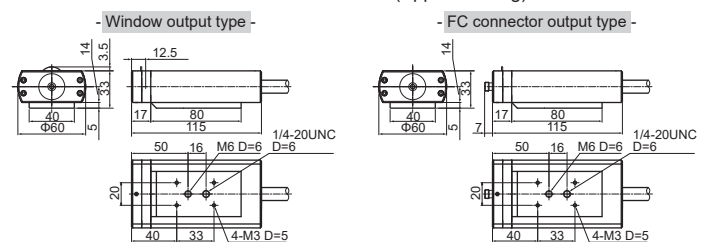
▲ Fitting image



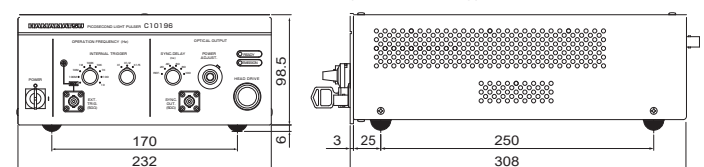
Dimensional outlines (Unit: mm)

# Dimensional outlines (Unit: mm)

## ● PLP-10 Laser diode head M10306 (Approx. 0.9 kg)



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



# Laser Safety

The PLP-10 is a Class 3B laser product. Conforming to international laser safety standards (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

- The product and software package names noted in this brochure are trademarks or registered trademarks of their respective manufacturers.
- Subject to local technical requirements and regulations, availability of products included in this brochure may vary. Please consult your local sales representative.
- The products described in this brochure are designed to meet the written specifications, when used strictly in accordance with all instructions.
- Specifications and external appearance are subject to change without notice.

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