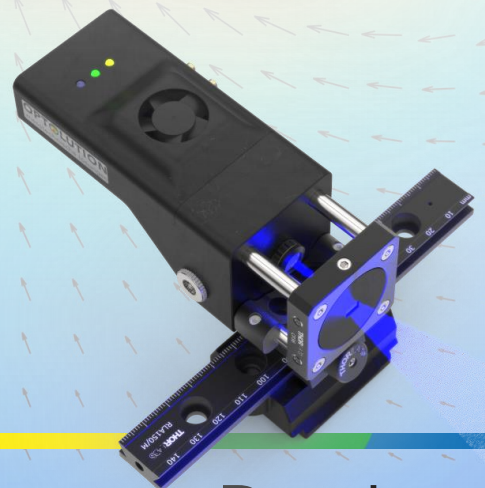
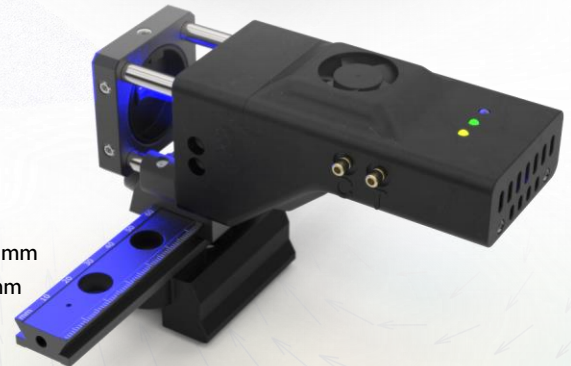
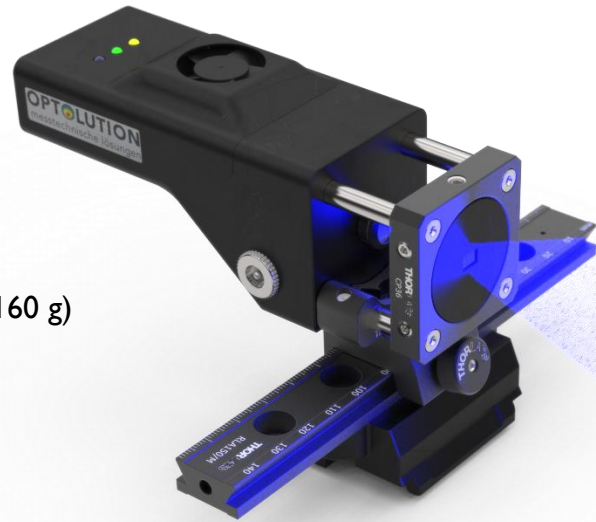


LD-PS/5: OEM laser module for Particle Image Velocimetry (PIV)

Pulsed laser diodes are used for PIV illumination. The OPTOLUTION LD-PS is a low-cost and easy to operate OEM solution for PIV studies.

Main Features:

- Designed for PIVlab
- Synchronizer for Panda and Pixelfly cameras (pco) or Chronos (Kron Technologies) built-in
- Wireless remote control
- Thin laser sheet (<0.7 mm)
- Cost-effective and compact design (130x40x40 mm, 160 g)
- Up-to-date 5 W OSRAM laser diode
- Wavelength: 450 ± 20 nm (blue)
- Pulse length: 5 μ s – 10 ms
- Duty cycle: 0 – 50 %
- Double pulse repetition rate: 1 Hz – 17 kHz
- Min. interframe time: 10 μ s
- Optical rail and Manfrotto tripod mount included
- Laser sheet optics included (full sheet opening angle 15°)
- 100 - 240V AC power supply, 40 W
- Typical diode life time: 20.000 hours
- Typical PIV application (5 W version):
 - Water: velocities up to 7 m/s with an illuminated area of 300 x 250 mm
 - Air: velocities up to 4.5 m/s with an illuminated area of 200 x 170 mm
- Example images (water, area = 250 * 300 mm):
 - 1000 μ s pulse length, $\Delta t = 1000$ μ s, 16 megapixels
 - 37 μ s pulse length, $\Delta t = 75$ μ s, 25 megapixels
 - 20 μ s pulse length, $\Delta t = 100$ μ s, 1 megapixel
- Example images (air, area = 170 * 170 mm):
 - 80 μ s pulse length, $\Delta t = 80$ μ s, 6.5 megapixels
- Example videos (air and water):
 - [Drone propeller](#)
 - [Turbulent jet](#)
 - [Falling lens cap](#)



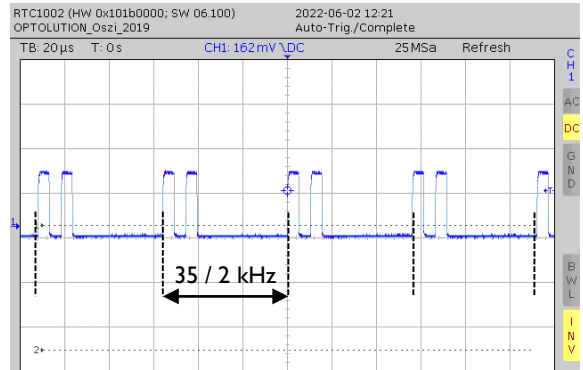
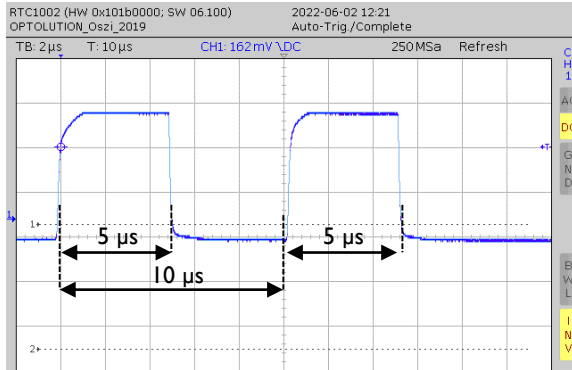
!!! Safety notes on next page !!!

Datasheet

LD-PS/5: Laser module for Particle Image Velocimetry (PIV)

Pulse characteristics:

Laser operated at 35 kHz (17.5 kHz double pulse repetition rate), with 5 μ s pulse length and 10 μ s interframe. Light emission measured with a photo diode.



Safety notes:

This laser is a *laser class 4 OEM product*. It must only be sold to trained personnel and is not available for any individuals.

As a OEM product, the laser is *only prepared* for safe use. But it must *always* be integrated into a system that fully complies to the legal rules. The device must *never be used as a stand-alone system*. In the condition as supplied to the customer, this OEM device has a very high risk of serious harm to the user, and it does not or only partly comply to legal rules.

The laser must only be used when integrated into a system that does not allow laser radiation to exit the system. Any eye and skin exposure of the light must be strictly prevented. *Never operate the device without the cylindrical divergent lens.*

Never point the laser beam at humans or animals or flammable materials. Fire, serious injury or death might result from this action. Never adjust the laser while it is turned on. Always use safety goggles designed for a wavelength of 400-500 nm.

Abstract of relevant standards:

DIN EN 12254:2010-07

DIN EN 60825-1:2015-07

DIN EN 60825-4

Laser Radiation

Avoid eye and skin exposure by direct or scattered laser light.

Laser Class 4

DIN EN 60825-1:2015-07

Output power (P_o): 5W max.

Wavelength (λ): 400-500nm



LD-PS/5: Laser module for Particle Image Velocimetry (PIV)

Easy setup:

Connect the camera (Chronos 1.4, by Kron Technologies shown here) to the laser (LD-PS/40 shown here) using a trigger cable and plug in the power supply. Connect wirelessly to your computer (dongle included), start MATLAB and control your PIV experiment directly from PIVlab.

