Parallel Light Sheet Optics (LSO)

PIV and PLIF measurements require a light sheet with well defined geometrical characteristics and intensity distribution. ILA_5150 offers a range of integrated LSO that are compact, modular and simple to adjust. Our LSOs are compatible with all commercial Nd:YAG lasers with energies up to 600 mJ/pulse, especially recommended for lasers with high divergent beams due to the special collimator design. The collimator allows to focus the light sheet down to a thickness of less than 1mm while the axial focal point still can be positioned freely(*).
The included cylindrical lens-kit (16°, 30° and 50°) allows different opening angles for an optimal adaption of energy per area for your setup. An optional cylindrical lens mount is available to parallelize the second beam axis, generating a 50mm light sheet over a long distance.

Features:

- Single, extendable unit
- Simple adjustment of both light sheet thickness and divergence angle
- 360 degree adjustable light sheet orientation
- Multiple light sheet thickness and angles ranges
- Mounts on articulated mirror arm
- High energy level over long distance when using parallel mount
- Light volume illumination with additional collimation

Data Sheet
June 2024

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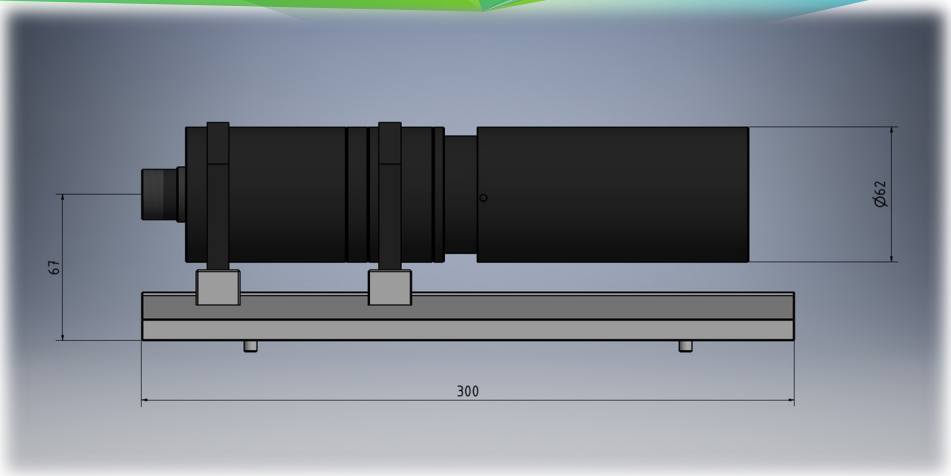

Specifications

Dimensions:	300- 400 mm x Ø60 mm
Weight:	2 kg
Aperture:	Ø50 mm (standard design)
Lenses:	4 lenses, anti-reflection coating, energy threshold 4,5 J/cm2
Light sheet divergence angle:	3 lenses: 16°, 30° and 50°
Adjustable focal distance range:	100...3000 mm
Min. Light Sheet Thickness(*):	0.5 mm
Volume illumination:	45 to ~50 mm diameter

Accessories

- Laser adapter mount for Nd:YAG Laser (for several models available)
- General-purpose rail-mounted clamp to fix light sheet optics position (when connected to the mirror arm)
- Adapter piece for mirror arm (M23x1.5)

(*) Achievable minimum light sheet thickness is a function of the beam diameter, and therefore of the laser model coupled to the light sheet optic.

Options

- Different lenses for non-standard wavelength (e.g. 266nm for LiF)
- optional cylindrical lens mount to parallelize the second beam axis
- Customized versions available on demand:
  - fixed-focus
  - special geometries
  - endoscopic adaptation
  - miniature version

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