

Laser Beam Profiler

The Laser Beam Profiler provides high resolution real-time monitoring and quantitative characterization of spatial beam intensity distributions. Primarily designed for excimer lasers, it may be utilized for all pulsed or cw lasers as well as for incoherent sources, covering an extremely wide spectral range from NIR to soft X-rays. The UV/EUV sensitivity is achieved by a quantum conversion coating on the CCD chip.

A variety of different sensor types (large /small area, highest spatial resolution, sensitivity and dynamic range) are available and can be adapted to specific applications. The software supports also peripheral devices like adaptive mirrors, stepper motors, attenuators, shutters or power monitors. Automated or remote-controlled measurements are facilitated by the help of a powerful macro language.

Applications:

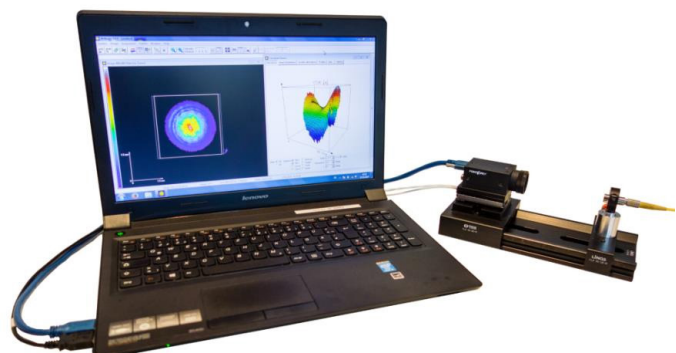
1. Beam diagnostics (NIR, Vis, UV, EUV)
2. ISO beam parameters
3. Beam propagation / focusability
4. M^2 (caustic measurement)

The applications comprise:

1. Determination of beam parameters according to ISO 11146
2. Diagnosis of pointing stability (ISO 11670)
3. Pulse-to-pulse fluctuations
4. Beam propagation analysis (caustic measurement)
5. Characterization of beam shape (uniformity, steepness)
6. According to ISO 13694 (especially for homogenized beams)
7. On-line laser beam inspection (e.g. recognition of “hot spots”)
8. Optimizing of laser operational parameters

Resolution and Sensor Window Size:

1. 1440*1080; 5*3.7mm
2. 2048*1536; 7*5.3mm
3. 1600*1100; 14.4*9.9mm

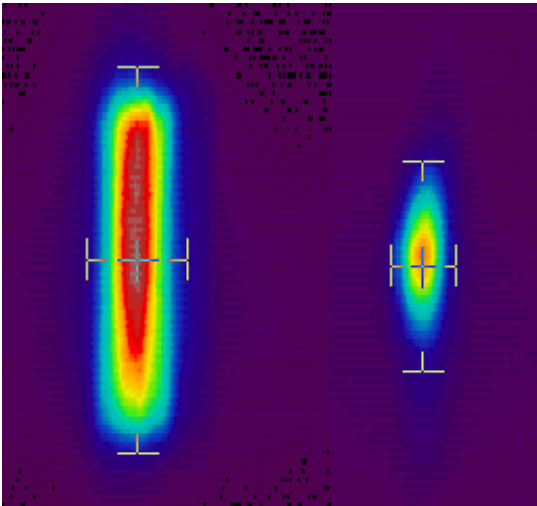


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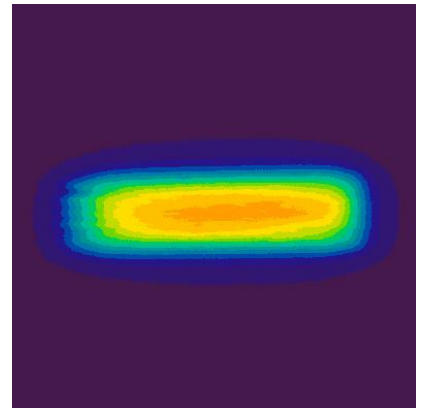
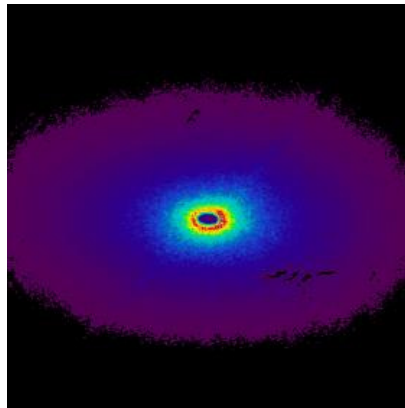
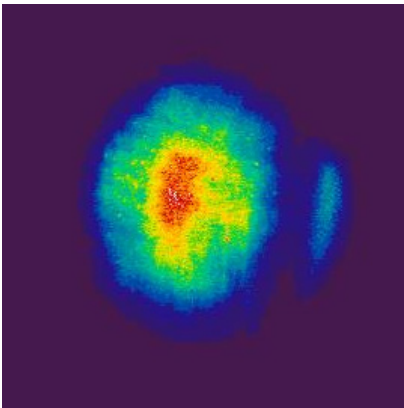
Special Features:

1. wide spectral range: ~ 1 ... 1100 nm
2. small and large area CCD sensors
3. USB 3.0 or GigE (ideal for laptop)
4. high dynamic range (12 / 14 bit)

Example diagram:



Near-field and far-field profile of ArF excimer laser(193nm), indicating 2nd moment beam widths



(Other beam profiles)