





Production and quality assurance capabilities

Main capabilities & specialities:

- Design and development of custom laser beam expanders, & beam delivery devices
- Development and production of different optical devices, including beam delivery systems and laser power attenuators
- From standard compact to custom large size devices
- Automated PC controlled and robust manual adjustment options
- Experience and knowledge in advanced high power (>75 J/cm², 8 nm @1064 nm available) and ultrafast dedicated optical systems

EXPERIENCE

Over 15 years' experience in laser optics industry

EFFICIENCY

Efficient communication & short leadtime for custom parts

TECHNICAL SUPPORT

>90 % of staff has technical background in Laser Physics

RELIABILITY & REPEATABILITY

Standardized production and quality assurance

CUSTOM SOLUTIONS

Custom laser components design and production

COSTS SAVINGS

Superior price - performance ratio

In-house optical metrology instruments to guaranty every specified parameter:

ZYGO Verifire 4inch interferometer including full set of spherical references

Spectrophotometers Photon RT and HighFinesse WS6

Optical benches with multiple laser sources

Stereo zoom microscopes Olympus SZX7

X-ray crystallograph/refractometer

M2 metter and set of cameras for laser beam quality measurements

Main product lines

Laser beam delivery systems (BDS)



- All-in-1 device to control laser beam diameter and power
- Wavelength range 260 nm to 2 μ m
- Compact and robust industrial design
- High pointing stability
- Custom and OEM design

Motorised laser beam expanders, collimators & beam reducers



- Wavelength range 250 nm to 12 μ m
- Compact and robust sliding lens design
- High pointing stability
- Adjustable divergence
- Custom and OEM design

Tunable laser beam expanders and beam reducers



- Custom and Large aperture design
- Wavelength range 250 nm to 12 μ m
- Compact and robust sliding lens design
- High pointing stability
- Adjustable divergence

Laser power attenuators



- High damage threshold $> 7 \text{ J/cm}^2$ (10 ns @ 1064 nm)
- Wavelength range 260 nm to 2 μ m
- Compact and robust industrial design
- High precision and repeatability
- Secondary laser beam rejected trough output window



Motorised laser beam expanders, collimators & beam reducers

Standard or custom made Galilean type laser beam expanders and reducers for use in the UV, visible, and NIR spectral ranges has a unique mechanical sliding-lens design, ensuring high pointing stability and minimal dimensions. These variable magnification (zoom) beam expanders and reducers are designed for required wavelength and each type

of our beam expanders has a divergence adjustability. As an optional module laser beam attenuation unit can be integrated together with BDS series systems.

All optical elements of beam expanders are made of fused silica with high LIDT coatings and provide stable and reliable performance even using them with high power lasers.

MODEL	MEX13	MEX210	MEX180
Design wavelength	1064 nm (or other in the range from 240 nm to 2000 nm)		
Magnification factor	1 - 3 continuous	2 - 10 continuous	1 - 8 continuous
Adjustment	Motorised		
Divergence	Adjustable		
Pointing stability	< 0,5 mrad		
Clear input aperture	8 mm		
Clear output aperture	22 mm	38 mm	38 mm
Dif. limited max. input beam diameter	8,0(1x) - 6,0(3x) mm	12 (2x) - 3,5(10x) mm	12 (1x) - 4,5 (8x) mm
Number of optical elements	3	4	3
Total transmission	97 %	95 %	97 %
Lens material	fused silica		
Lidt (coating)	10 [J/cm ²] (10 ns @ 1064 nm)		
Mechanical length	140 mm	210 mm	245 mm



Tunable laser beam expanders and reducers

Standard or custom made Galilean type laser beam expanders for use in the UV, visible, and NIR spectral ranges has a unique mechanical sliding-lens design, ensuring high pointing stability and minimal fixed dimensions.

These variable magnification (zoom) beam expanders and

reducers are designed for required wavelength and each type of our beam expanders has a divergence adjustability. All optical elements of beam expanders are made of fused silica with high LIDT coatings and provide stable and reliable performance even using them with high power lasers.

MODEL	TEX18	TEX13	TRE13	TRE13SH
Design wavelength	1064 nm (or other in the range from 240 nm to 2000 nm)			
Magnification factor	1 - 8 continuous	1 - 3 continuous	0,33 – 1 continuous	0,33 - 1 continuous
Adjustment	Manual			
Divergence adjustable	Yes			
Pointing stability	< 0,5 mrad	< 0,5 mrad	< 1 mrad	< 1 mrad
Clear input aperture	8 mm	10 mm	10,5 mm	10,5 mm
Clear output aperture	40 mm	22 mm	8 mm	8 mm
Dif. limited max. input beam diameter	8,0(1x) - 4,5(8x) mm	10,0(1x) - 6,0(3x) mm	10 mm	10 mm
Total number of lenses	3			
Total transmission	97 %			
Lens material	fused silica			
Lidt (coating)	10 [J/cm ²] (10 ns @ 1064 nm)			
Mechanical length	210 mm	100 mm	120 mm	120 mm



Laser beam delivery systems (BDS) and Laser Power attenuators

Optogama designs and manufactures compact Motorised laser power attenuators and beam delivery systems.

Galilean type laser beam expanders integrated together with laser power attenuation module allows to control all the laser output parameters from one device!

BDS are designed and produced for use in the UV, visible, and NIR spectral ranges. These devices have a unique mechanical

sliding-lens design, ensuring high pointing stability and minimal dimensions.

All optical elements of these Beam delivery systems are made of fused silica with high LIDT coatings and provide stable and reliable performance even using them with high power lasers.

MODEL	BDS13	BDS210	LPA
Design wavelength	1064 nm (or other in the range from 240 nm to 2000 nm)		
Magnification factor	1 - 3 continuous	2 - 10 continuous	None
Adjustment	Motorised		
Divergence	Adjustable	Adjustable	Not adjustable
Pointing stability	< 0,5 mrad		
Clear input aperture	8 mm		
Clear output aperture	22 mm	38 mm	8 mm
Total transmission	95 %	95 %	97 %
Lidt (coating)	10 [J/cm ²] (10 ns @ 1064 nm)		
Laser power attenuation	0,1 - 95 %	0,1 - 95 %	0,1 - 97 %
Mechanical length	285 mm	285 mm	91 mm