

Compact motorized beam expanders MEX



Motorized laser beam expanders MEX series are used to increase the laser beam diameter and adjust divergence. Standard or custom-made beam expanders feature a unique mechanical closed loop 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 have motorized divergence adjustability.

Main features

- Highest beam pointing stability (< 0,1 mrad)
- All-in-one design with integrated controller
- Two lens simultaneous movement assuring no misfocus
- Absolute encoder (both lenses)
- Adjustment time <1s (all magnifications)
- Fused silica optical elements
- No homing after switching on/off
- Diffraction limited performance for all magnifications

Application examples

- Precise laser micromachining
- Life sciences
- Research

Standard specifications

MOTORIZED BEAM EXPANDERS SPECIFICATIONS	
Adjustment	Motorized
Divergence	Adjustable
Clear input aperture	11,5 mm
Lens material	UVFS
Transmission	>97%
Controller	Integrated
Control interface	USB or RS232
Housing material	Black anodized aluminum
LIDT	3 J/cm ² (10 ns @ 355nm) 5 J/cm ² (10 ns @ 532 nm) 10 J/cm ² (10 ns @ 1064 nm)

*Custom design available

Standard products

ITEM MODEL	EXPANSION	CLEAR INPUT APERTURE	CLEAR OUTPUT APERTURE	RECOMMENDED MAX. INPUT BEAM SIZE, 1/E ²	DIMENSIONS (H X W X L)	WAVELENGTH	POINTING STABILITY	SKU
MEX13	1,0x - 3,0x continuous	11,5 mm	23 mm	ø7 mm - 1x ø6 mm - 3x	45 x 45 x 140 mm	343-355 nm	< 0,2 mrad	6857
						343-355 nm	< 0,5 mrad	6838
						515-532 nm	< 0,2 mrad	6856
						515-532 nm	< 0,5 mrad	6833
						1030-1064 nm	< 0,5 mrad	6825
						1030-1064 nm	< 0,2 mrad	6855
						343-355 + 515-532 nm	< 0,2 mrad	6928
						343-355 + 515-532 nm	< 0,5 mrad	6131
						515-532 + 1030-1064 nm	< 0,5 mrad	6836
MEX18	1,0x - 8,0x continuous	11,5 mm	38 mm	ø7 mm - 1x ø5 mm - 5x ø3 mm - 8x	45 x 45 x 237 mm	515-532 + 1030-1064 nm	< 0,2 mrad	6927
						343-355 nm	< 0,5 mrad	6121
						350-800 nm	< 0,5 mrad	9235
						515-532 nm	< 0,5 mrad	6842
						1030-1064 nm	< 0,5 mrad	6841
343-355 + 515-532 nm	< 0,5 mrad	6844						
515-532 + 1030-1064 nm	< 0,5 mrad	6843						

Mounting options for motorized beam expanders MEX

MOUNTING OPTION	FOR BEAM HEIGHT OF	SKU	PRICE
Manual 4 axis translation stage MSTAGE	27 mm (±2 mm travel)	12571	580 €

www.phototechnica.co.jp
フォトテクニカ株式会社

〒336-0017 埼玉県さいたま市南区南浦和 1-2-17
 TEL:048-871-0067 FAX:048-871-0068
 e-mail:voc@phototechnica.co.jp

High-power motorized beam expanders MEX-HP



High power motorized laser beam expanders MEX series are used to increase the laser beam diameter and adjust divergence. The optical design is dedicated for high power ultrafast femtosecond laser applications. These magnification (zoom) beam expanders are designed for required

wavelength and each type of our beam expanders has motorized divergence adjustability. Standard or custom-made beam expanders feature a unique mechanical closed loop sliding-lens design ensuring high pointing stability and minimal dimensions.

Main features

- High power optical design (up to 200 W @ 1030 nm, 500 fs, 1 Mhz)
- No internal reflections on optical elements
- Highest beam pointing stability < 0,2 mrad
- All-in-one design with an integrated controller
- Two lens simultaneous movement assuring no misfocus
- Absolute encoder (both lenses)
- Fused silica optical elements
- Diffraction limited performance for all magnifications

Application examples

- Precise laser micromachining
- High power laser beam management
- Research

Standard specifications

HIGH POWER MOTORIZED LASER BEAM EXPANDERS SPECIFICATIONS	
Adjustment	Motorized
Divergence	Adjustable
Lens material	UVFS
Transmission	>97% (MEX13-HP), >95% (MEX15-HP)
Control interface	USB or RS232
Controller	Integrated
Housing material	Black anodized aluminum
Max. laser power	Up to 200 W @ 1030 nm, 500 fs, 1 MHz
LIDT	3 J/cm ² (10 ns @ 355nm)
	5 J/cm ² (10 ns @ 532 nm)
	10 J/cm ² (10 ns @ 1064 nm)

*Custom design available

Standard products

ITEM MODEL	EXPANSION	CLEAR INPUT APERTURE	CLEAR OUTPUT APERTURE	RECOMMENDED MAX. INPUT BEAM SIZE, 1/E ²	DIMENSIONS (H X W X L)	WAVELENGTH	POINTING STABILITY	SKU
MEX13-HP	1,0x - 3,0x continuous	11,5 mm	28 mm	ø7 mm - 1x ø6 mm - 3x	60 x 60 x 207 mm	343-355 nm	< 0,5 mrad	9242
						343-355 nm	< 0,2 mrad	9243
						515-532 nm	< 0,5 mrad	9240
						515-532 nm	< 0,2 mrad	9241
						1030-1064 nm	< 0,5 mrad	9238
						1030-1064 nm	< 0,2 mrad	9239
						343-355 + 515-532 nm	< 0,5 mrad	9246
						343-355 + 515-532 nm	< 0,2 mrad	9247
						515-532 + 1030-1064 nm	< 0,5 mrad	9244
						515-532 + 1030-1064 nm	< 0,2 mrad	9245
MEX15-HP	1,0x - 5,0x continuous	11,5 mm	24 mm	ø7 mm - 1x ø3,3 mm - 5x	65 x 65 x 250 nm	343-355 nm	< 0,5 mrad	9252
						515-532 nm	< 0,5 mrad	9250
						1030-1064 nm	< 0,5 mrad	9248
						343-355 + 515-532 nm	< 0,5 mrad	9256
						515-532 + 1030-1064 nm	< 0,5 mrad	9254

Mounting options for high-power motorized beam expanders MEX-HP

MOUNTING OPTION	FOR BEAM HEIGHT OF	SKU	PRICE
Manual 4 axis translation stage MSTAGE-HP (Additional adapter included)	27 mm (±2 mm travel)	12571	580 €

**PHOTO
TECHNICA**

www.phototechnica.co.jp

フォトテクニカ株式会社

〒336-0017 埼玉県さいたま市南区南浦和 1-2-17

TEL: 048-871-0067 FAX: 048-871-0068

e-mail: voc@phototechnica.co.jp