

Variable beam expanders VEX and reducers VRE



4Lasers introduces variable manual beam expanders VEX series used to increase or decrease the laser beam diameter. Standard or custom-made laser beam expanders for the UV, visible, and NIR spectral ranges feature a unique mechanical sliding-lens design, ensuring a high pointing stability and minimal dimensions. These variable magnification (zoom) beam expanders are designed for the required wavelength and each type of our beam expanders have

divergence adjustability. All optical elements of beam expanders are made of fused silica with high LIDT coatings and provide stable and reliable performance even when using them with high power lasers. Large input and output apertures allow the optical beam expanders to produce diffraction limited expanded (or reduced) beams for a wide range of input beams.

Main features

- Highest beam pointing stability (< 0,5 mrad)
- Fused silica optical elements
- Grease free mechanical design
- Sliding lens design
- Diffraction limited performance for all magnifications

Application examples

- Laser micromachining
- Research

Standard specifications

VARIABLE BEAM EXPANDERS AND REDUCERS SPECIFICATIONS	
Adjustment	Manual
Divergence	Adjustable
Pointing stability	<0,5 mrad, <1 mrad [VEX15-HP]
Lens material	UVFS
Transmission	>97%, >95% [VEX15-HP]
LIDT	3 J/cm ² (10 ns @ 355nm) 5 J/cm ² (10 ns @ 532 nm) 10 J/cm ² (10 ns @ 1064 nm)

Standard products

ITEM MODEL	EXPANSION	CLEAR INPUT APERTURE	CLEAR OUTPUT APERTURE	RECOMMENDED MAX. INPUT BEAM SIZE, 1/E ²	DESIGN	DIMENSIONS	MOUNTING OPTIONS	WAVELENGTH	SKU	PRICE
VEX13	1,0x - 3,0x continuous	11 mm	23,5 mm	ø7 mm - 1x ø5 mm - 3x	Standard	ø42 x 110 mm	M30x1 external, SM1 internal, ø38,1 mm [1,5"], T-mount [M42x0,75]	343-355 nm	4357	1180 €
								515-532 nm	6987	980 €
								1030-1064 nm	6985	980 €
								343-355 + 515-532 nm	6991	1180 €
VEX18	1,0x - 8,0x continuous	11 mm	40 mm	ø7 mm - 1x ø5,3 mm - 5x ø3,3 mm - 8x	Standard	ø53 x 203 mm	SM2, ø50,8 mm [2"]	343-355 nm	6455	1390 €
								515-532 nm	6725	1190 €
								1030-1064 nm	6992	1190 €
								343-355 + 515-532 nm	6456	1390 €
VEX15-HP	1,0x - 5,0x continuous	11 mm	24 mm	ø7 mm - 1x ø3,3 mm - 5x	High power	ø58 x 250 mm	T-mount, SM2, ø50,8 mm [2"]	343-355 + 515-532 nm	6994	1390 €
								515-532 + 1030-1064 nm	9279	2200 €
								515-532 + 1030-1064 nm	9273	2200 €
VRE13	0,33x - 1,0x continuous	22 mm	11 mm	ø15 mm - 0,33x ø7 mm - 1x	Standard	ø42 x 110 mm	M30x1 external, SM1 internal, ø38,1 mm [1,5"], T-mount [M42x0,75]	343-355 nm	6997	1180 €
								515-532 nm	6995	980 €
								343-355 + 515-532 nm	7000	1180 €
								515-532 + 1030-1064 nm	6999	1180 €

Mounting options for variable beam expanders VEX

MOUNTING OPTION	FOR BEAM HEIGHT OF	SKU	PRICE
Fixed post mounting set	100-125 mm (4" - 5")	9336	60 €
Fixed post mounting set	76,2 mm (3")	9337	55 €
X-Y adjustable (3 adjusters) kinematic mount with post holder, D50,8mm option	76,2 mm (3")	9348	160 €
X-Y adjustable (3 adjusters) kinematic mount with post holder, SM2 option	76,2 mm (3")	9349	170 €
X-Y adjustable (3 adjusters) kinematic mount with post holder, D50,8mm option	100-125 mm (4" - 5")	9350	165 €
X-Y adjustable (3 adjusters) kinematic mount with post holder, SM2 option	100-125 mm (4" - 5")	9351	175 €