



Compact motorized laser beam expanders MEX

Main features

- Highest beam pointing stability (< 0,3 mrad)
- All-in-one design with integrated controller
- Two lens simultaneous SMART movement assuring no misfocus
- Absolute encoder (both lenses)
- Adjustment time <1 sec (all magnifications)
- Fused silica optical elements
- No homing after switching on/off
- Diffraction limited performance for all magnifications

Application examples

- Industrial laser micromachining
- Life sciences
- Research

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.

Standard specifications

MOTORIZED BEAM EXPANDERS SPECIFICATIONS	
Adjustment	Motorized
Divergence	Adjustable
Clear input aperture	11,5 mm
Transmission	>97%
Optical element number	3 (MEX13, MEX18), 4 (MEX18-ACH)
Lens material	UVFS
Control interface	USB or RS232
Housing material	Black anodized aluminum
LIDT	3 J/cm ² (10 ns @ 355 nm) 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 DIAMETER (1/E2)	DIMENSIONS (H X W X L)	DESIGN 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	1030-1064 nm	<0.5 mrad	6825	
						515-532 nm		6833	
						343-355 nm		6838	
						1030-1064 + 515-532 nm		6836	
						515-532 + 343-355 nm		6131	
						760-840 nm		31223	
						390-410 nm		31224	
						400 + 800 nm		31225	
						1030-1064 nm		6855	
						515-532 nm		6856	
						343-355 nm		6857	
						1030-1064 + 515-532 nm		<0.2 mrad	6927
						515-532 + 343-355 nm		6928	
						760-840 nm		31226	
						390-410 nm		31227	
400 + 800 nm	31228								
MEX18	1.0x - 8.0x continuous	11.5 mm	38 mm	ø7 mm (1x) - ø5mm (5x) mm - ø3 mm (8x)	45 x 45 x 237 mm	1030-1064 nm	<0.5 mrad	6841	
						515-532 nm		6842	
						343-355 nm		6121	
						1030-1064 + 515-532 nm		6843	
						515-532 + 343-355 nm		6844	
						760-840 nm		31229	
						390-410 nm		31230	
						400 + 800 nm		31231	
						1030-1064 nm		31232	
						515-532 nm		31233	
						343-355 nm		31234	
						1030-1064 + 515-532 nm		<0.2 mrad	31235
						515-532 + 343-355 nm		31236	
						760-840 nm		31237	
						390-410 nm		31238	
400 + 800 nm	31239								
MEX18-ACH	1.0x - 8.0x continuous	11.5 mm	38 mm	ø7 mm (1x) - ø5mm (5x) mm - ø3 mm (8x)	45 x 45 x 237 mm	300-750 nm	<0.5 mrad	9235	

Mounting options for motorized beam expanders MEX

MOUNTING OPTION	FOR BEAM HEIGHT OF	SKU
Manual 4 axis translation stage M-STAGE	27 mm (±2 mm travel)	12571



High-power motorized beam expanders MEX-HP

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

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 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.

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 DIAMETER (1/E2)	DIMENSIONS (H X W X L)	DESIGN 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	1030-1064 nm	<0,5 mrad	9238	
						515-532 nm		9240	
						343-355 nm		9242	
						1030-1064 + 515-532 nm		9244	
						515-532 + 343-355 nm		9246	
						257-266 nm		31243	
						760-840 nm		31240	
						390-410 nm		31241	
						400 + 800 nm		31242	
						1030-1064 nm		9239	
						515-532 nm		9241	
						343-355 nm		9243	
						1030-1064 + 515-532 nm		9245	
						515-532 + 343-355 nm		<0,2 mrad	9247
						257-266 nm		31244	
						760-840 nm		31245	
						390-410 nm		31246	
						400 + 800 nm		31247	
						MEX15-HP		1.0x - 5.0x continuous	11,5 mm
515-532 nm	9250								
343-355 nm	9252								
1030-1064 + 515-532 nm	9254								
515-532 + 343-355 nm	9256								
257-266 nm	31251								
760-840 nm	31248								
390-410 nm	31249								
400 + 800 nm	31250								
1030-1064 nm	22062								
515-532 nm	22063								
343-355 nm	22064								
1030-1064 + 515-532 nm	22065								
515-532 + 343-355 nm	<0,2 mrad	22066							
257-266 nm	31252								
760-840 nm	31253								
390-410 nm	31254								
400 + 800 nm	31255								

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

MOUNTING OPTION	FOR BEAM HEIGHT OF	SKU
Manual 4 axis translation stage M-STAGE-W	27 mm (±2 mm travel)	29135



High-power motorized beam expanders MEX-HP-V2

Main features

- High power optical design (up to 200 W @ 1030 nm, 500 fs, 1 Mhz)
- No internal reflections on optical elements
- All-in-one design with an integrated controller
- Two lens simultaneous movement assuring no misfocus
- Absolute encoder (both lenses)
- Fused silica optical elements
- Adjustment time <0,7 sec (all magnifications)
- Diffraction limited performance for all magnifications
- Remotely changing focused beam spot size and its position on Z axis

What's new?

- 30% faster and more stable lens movement (<0,7 sec)
- Optimized for 24/7 usage
- Improved pointing stability <0,1 mrad or <0,3 mrad
- Redesigned Controller with Reverse polarity and Overcurrent protection

Application examples

- Industrial laser micromachining 24/7
- Precise laser micromachining
- High power laser beam management
- Research

High power motorised laser beam expanders MEX-HP-V2 series are used to increase the laser beam diameter and adjust divergence. The optical design is dedicated for high power ultrafast femtosecond laser applications. Improved lens movement speed and pointing stability ensure better control quality.

These magnification (zoom) beam expanders are designed for the 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.

What's in the box?

- Motorised laser beam expander MEX-HP
- USB key with software and manual
- Power supply DC 12V
- USB (1,5 m) cable

Standard products

ITEM MODEL	EXPANSION	CLEAR INPUT APERTURE	CLEAR OUTPUT APERTURE	RECOMMENDED MAX INPUT BEAM DIAMETER (1/E ₂)	DIMENSIONS (H X W X L)	DESIGN WAVELENGTH	POINTING STABILITY	SKU							
MEX13-HP-V2	1.0x - 3.0x continuous	11.5 mm	28 mm	ø7 mm (1x) - ø6 mm (3x)	60 x 60 x 207 mm	1030-1064 nm	<0.5 mrad	31007							
						515-532 nm		31011							
						343-355 nm		31015							
						1030-1064 + 515-532 nm		31009							
						515-532 + 343-355 nm		31013							
						257-266 nm		31258							
						760-840 nm		31259							
						390-410 nm		31260							
						400 + 800 nm		31261							
						1030-1064 nm		31006							
						515-532 nm		31010							
						343-355 nm		31014							
						1030-1064 + 515-532 nm		31008							
						515-532 + 343-355 nm		31012							
						257-266 nm		31262							
						760-840 nm		31263							
						390-410 nm		31264							
						400 + 800 nm		31265							
						MEX15-HP-V2		1.0x - 5.0x continuous	11.5 mm	24 mm	ø7 mm (1x) - ø3.3 mm (5x)	65 x 65 x 250 mm	1030-1064 nm	<0.5 mrad	31017
													515-532 nm		31021
343-355 nm	31025														
1030-1064 + 515-532 nm	31019														
515-532 + 343-355 nm	31023														
257-266 nm	31266														
760-840 nm	31267														
390-410 nm	31268														
400 + 800 nm	31269														
1030-1064 nm	31016														
515-532 nm	31020														
343-355 nm	31024														
1030-1064 + 515-532 nm	31018														
515-532 + 343-355 nm	31022														
257-266 nm	31270														
760-840 nm	31271														
390-410 nm	31272														
400 + 800 nm	31273														

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

MOUNTING OPTION	FOR BEAM HEIGHT OF	SKU
Manual 4 axis translation stage M-STAGE-W	27 mm (±2 mm travel)	29135


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



Compact motorized laser beam expanders MEX-V2

Main features

- Highest beam pointing stability ($< 0,1$ mrad)
- All-in-one design with integrated controller
- Two lens simultaneous SMART movement assuring no misfocus
- Absolute encoder (both lenses)
- Adjustment time $< 0,7$ sec (all magnifications)
- Fused silica optical elements
- No homing after switching on/off
- Diffraction limited performance for all magnifications
- Remotely changing focused beam spot size and its position on Z axis

What's new?

- 30% faster and more stable lens movement ($< 0,7$ sec)
- Optimized for 24/7 usage
- Improved pointing stability $< 0,1$ mrad or $< 0,3$ mrad
- Redesigned Controller with Reverse polarity and Overcurrent protection

Application examples

- Industrial laser micromachining 24/7
- Life sciences
- Research

Motorised laser beam expanders MEX-V2 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. Improved lens movement speed and pointing stability ensure better control quality. These variable magnification (zoom) beam expanders and reducers are designed for the required wavelength and each type of our beam expanders has motorized divergence adjustability.

What's in the box?

- Motorised laser beam expander MEX-V2
- USB key with software and manual
- Power supply DC 12V
- USB (1,5 m) cable

Standard products

ITEM MODEL	EXPANSION	CLEAR INPUT APERTURE	CLEAR OUTPUT APERTURE	RECOMMENDED MAX INPUT BEAM DIAMETER (1/E2)	DIMENSIONS (H X W X L)	DESIGN WAVELENGTH	POINTING STABILITY	SKU
MEX13-V2	1.0x - 3.0x continuous	11.5 mm	23 mm	ø7 mm (1x) - ø6 mm (3x)	45 x 45 x 140 mm	1030-1064 nm	<0.3 mrad	29283
						515-532 nm		29284
						343-355 nm		29285
						1030-1064 + 515-532 nm		29286
						515-532 + 343-355 nm		29287
						760-840 nm		31274
						390-410 nm		31275
						400 + 800 nm		31276
						1030-1064 nm		29288
						515-532 nm		29289
						343-355 nm		29290
						1030-1064 + 515-532 nm		29291
						515-532 + 343-355 nm		29292
						760-840 nm		31277
390-410 nm	31278							
400 + 800 nm	31279							
MEX18-V2	1.0x - 8.0x continuous	11.5 mm	38 mm	ø7 mm (1x) - ø5mm (5x) mm - ø3 mm (8x)	45 x 45 x 237 mm	1030-1064 nm	<0.3 mrad	29293
						515-532 nm		29294
						343-355 nm		29295
						1030-1064 + 515-532 nm		29297
						515-532 + 343-355 nm		29298
						760-840 nm		31280
						390-410 nm		31281
						400 + 800 nm		31282
						1030-1064 nm		31284
						515-532 nm		31285
						343-355 nm		31286
						1030-1064 + 515-532 nm		31287
						515-532 + 343-355 nm		31288
						760-840 nm		31289
390-410 nm	31290							
400 + 800 nm	31291							
MEX18-ACH-V2	1.0x - 8.0x continuous	11.5 mm	38 mm	ø7 mm (1x) - ø5mm (5x) mm - ø3 mm (8x)	45 x 45 x 237 mm	350-800 nm	<0.3 mrad	31283

Mounting options for motorized beam expanders MEX

MOUNTING OPTION	FOR BEAM HEIGHT OF	SKU
Manual 4 axis translation stage M-STAGE	27 mm (±2 mm travel)	12571



Vertical motorized laser beam expander MEX-V

Main features

- High power optical design (up to 200 W @ 1030 nm, 500 fs, 1 Mhz)
- No internal reflections on optical elements
- High beam pointing stability <0,2 mrad
- All-in-one design with integrated controller
- Two lens simultaneous movement assuring no misfocus
- Absolute encoder (both lenses)
- Adjustment time <4 sec (all magnifications)
- Fused silica optical elements
- Diffraction limited performance for all magnifications
- No mounting limitations

Application examples

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

Vertical motorized laser beam expanders MEX-V series are used to increase the laser beam diameter and adjust divergence. The optical design is dedicated for high power ultrafast femtosecond laser applications. Slower and more stable lens control combines the advantages of a high-power model with the ability to be mounted vertically for greater functionality.

These magnification (zoom) beam expanders are designed for the 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.

What's in the box?

- Motorised laser beam expander MEX-V
- USB key with software and manual
- Power supply DC 12V
- USB (1,5 m) cable

Standard products

ITEM MODEL	EXPANSION	CLEAR INPUT APERTURE	CLEAR OUTPUT APERTURE	RECOMMENDED MAX INPUT BEAM DIAMETER (1/E2)	DIMENSIONS (H X W X L)	DESIGN WAVELENGTH	POINTING STABILITY	SKU	
MEX15-V	1.0x - 5.0x continuous	11 mm	24 mm	ø7 mm (1x) - ø3.3 mm (5x)	80 x 80 x 245 mm	1030-1064 nm	<0.5 mrad	31165	
						515-532 nm		31167	
						343-355 nm		31169	
						1030-1064 + 515-532 nm		31166	
						515-532 + 343-355 nm		31168	
						257-266 nm		31257	
						760-840 nm		31170	
						390-410 nm		31171	
						400 + 800 nm		31172	
						1030-1064 nm		31157	
						515-532 nm		31159	
						343-355 nm		31161	
						1030-1064 + 515-532 nm		31158	
						515-532 + 343-355 nm		<0.2 mrad	31160
						257-266 nm		31256	
						760-840 nm		31162	
						390-410 nm		31163	
						400 + 800 nm		31164	


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



Fixed ratio beam expanders FEX

Main features

- Divergence adjustment
- Galilean optical design
- UVFS optical elements
- Grease free mechanical design
- Wide wavelength adoption - 200 nm to 2 μm

Application examples

- Laser material processing
- Medical
- Research

Fixed ratio beam expanders FEX series are used to increase the laser beam diameter. The FEX model diversity covers the UV, visible and NIR spectral ranges. These compact beam expanders are designed for required wavelength and have divergence adjustability. All optical elements of beam expanders are made of fused silica with high LIDT coatings and provide a stable and reliable performance even using them with high power lasers.

Standard specifications

FIXED RATIO BEAM EXPANDER SPECIFICATIONS	
Clear output aperture	23 mm
Divergence	Adjustable
Outer Diameter	30 mm
Mounting options	SM1 (male, female), ø30 mm
Transmission	>98%
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	RECOMMENDED MAX. INPUT BEAM SIZE, 1/E ²	CLEAR OUTPUT APERTURE	MECHANICAL LENGTH	WAVELENGTH	SKU
FEX-2	2 x	11.5 mm	ø7 mm	23 mm	65 mm	343-355 nm	7723
						515-532 nm	7725
						1030-1064 nm	7727
						1030-1064 + 515-532 nm	11169
FEX-3	3 x	11.5 mm	ø5.3 mm	23 mm	65 mm	343-355 nm	7733
						515-532 nm	7731
						1030-1064 nm	7729
						1030-1064 + 515-532 nm	11170
FEX-4	4 x	11.5 mm	ø4 mm	23 mm	90 mm	343-355 nm	7735
						515-532 nm	7737
						1030-1064 nm	7739
						1030-1064 + 515-532 nm	11171
FEX-5	5 x	11.5 mm	ø3.2 mm	23 mm	95 mm	343-355 nm	7741
						515-532 nm	7743
						1030-1064 nm	7746
						1030-1064 + 515-532 nm	11172
FEX-8	8 x	7 mm	ø2 mm	23 mm	104 mm	343-355 nm	7749
						515-532 nm	7752
						1030-1064 nm	7754
						1030-1064 + 515-532 nm	11173

Mounting options for motorized beam expanders FEX

RECOMMENDED ACCESSORY	FOR BEAM HEIGHT OF	SKU
Adapter SM1 male to M30 X 1 male	-	9338
Adapter SM1 female to C-mount	-	9339
Adapter SM1 female to M30 X 1 male	-	9340
X-Y adjustable (3 adjusters) kinematic mount with post holder	50.8 mm (2")	9341
X-Y adjustable (3 adjusters) kinematic mount with post holder	76.2 - 100 mm (3" - 4")	9342



Flat top converter FTC

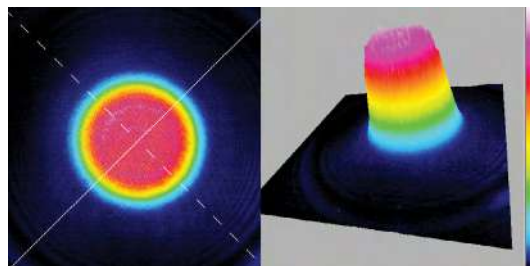
Main features

- Quick change between Gaussian and Flat-top beam
- The beam profile remains Flat-Top shape along optical axis
- Integrated controller
- Designed according your laser specs.
- Clear aperture up to 15 mm
- Quick switching time - 0.2 sec
- High damage threshold up to 10J/cm² (10 ns @ 1064 nm)
- Conversion efficiency up to 70% (while on Flat-Top mode)

Application examples

- Precise laser micromachining
- Life sciences
- Research

Flat top converter unit is "all in one" motorized solution for a Gaussian beam transformation to a Flat-Top (Top Hat) beam. The beam profile remains Flat-Top shape along optical axis. The device consists of quartz wave-plate, space-variant wave-plate and a high contrast polarizer. The FTC is produced in the UV, visible and NIR spectral ranges, from 250 nm to 2000 nm. All optical components of the FTC are made for high LIDT and provide stable and reliable performance even using them with high power lasers in industrial applications. A secondary laser beam from Flat top converter unit can be rejected to an external beam dump. The beam dump is used for avoiding any thermal effects or stress in the housing of the FTC device.



Standard specifications

FLAT TOP CONVERTER FTC SPECIFICATIONS	
Input and output clear aperture	ø15 mm (depends on waveplate)
Conversion efficiency and transmission	Up to 70 % (Flat-Top beam mode) No less than 97 % (Gaussian beam mode)
LIDT coating	>10 [J/cm ²] (10 ns @ 1064 nm)
Controller	USB and RS232
Control interface	External
Dimensions (H x W x L)	105 x 53 x 62,5 mm FTC 105 x 70 x 62,5 mm FTC with beam dump (BD-6)

*Custom design available

Standard products

MODEL	APERTURE	WAVELENGTH	ADJUSTMENT	TYPE	CONTROL INTERFACE	TYPICAL APPLICATION	SKU
FTC	ø 6 mm	1030 nm	Motorised	DOE	USB or RS232	Flat top converter	19750
	ø 6 mm	515 nm	Motorised	DOE	USB or RS232	Flat top converter	19751
	ø 3 mm	1030 nm	Motorised	DOE	USB or RS232	Flat top converter	19752
	ø 3 mm	515 nm	Motorised	DOE	USB or RS232	Flat top converter	19753
	ø 6 mm	1064 nm	Motorised	DOE	USB or RS232	Flat top converter	19754
	ø 3 mm	1064 nm	Motorised	DOE	USB or RS232	Flat top converter	19755
	ø 6 mm	532 nm	Motorised	DOE	USB or RS232	Flat top converter	19756
	ø 3 mm	532 nm	Motorised	DOE	USB or RS232	Flat top converter	19757



Motorized polarization rotator MRO

Main features

- Compact design
- High resolution 175543 μ steps in 360 deg rotation
- High accuracy - ± 10 μ steps accuracy (± 0.02 deg)
- Clear aperture - 18 mm
- Fast adjustment - less than 0.2 sec (0 to 45 deg)

Rotator (MRO) is a compact motorized device for laser polarization control. The MRO is produced in the UV, visible and NIR spectral ranges, from 250 nm to 2000 nm. The device has external controller. All optical components of the MRO are made for high LIDT and provide stable and reliable performance even using them with high power lasers in industrial applications.

Standard specifications

SPECIFICATIONS	
Clear aperture	ϕ 18 mm
Standard wavelengths	257 nm; 343 nm; 355 nm; 400 nm; 515 nm; 532 nm; 800 nm; 1030 nm; 1064 nm
LIDT coating	>10 [J/cm ²] (10 ns @ 1064 nm)
Close to open time (0 to 45 deg)	< 0.2 sec
Resolution	175,543 μ steps in full rotation 21,943 μ steps in 45deg rotation (0.002 deg, 7.2 arcsec, 0.035 mrad)
Accuracy	± 10 μ steps (± 0.02 deg)
Motor	2 phase stepper motor, 200 steps with 256 μ stepping
Mechanical dimensions	37.5 x 36 x 58 mm
Controller mechanical dimensions	125 x 53 x 31 mm
Software	LPA software

Standard products

CLEAR APERTURE	CONTROL INTERFACE	WAVEPLATE	RETARDATION	LIDT	SKU	PRIC
18 mm	USB or RS232	1064 nm	L/2	10 J/cm ² (10 ns@1064 nm)	19706	
		1030 nm	L/2	10 J/cm ² (10 ns@1030 nm)	19572	
		532 nm	L/2	5 J/cm ² (10 ns@532 nm)	19705	
		515 nm	L/2	5 J/cm ² (10 ns@515 nm)	19700	
		355 nm	L/2	3 J/cm ² (10 ns@355 nm)	19702	
		343 nm	L/2	3 J/cm ² (10 ns@343 nm)	19701	
		266 nm	L/2	2 J/cm ² (10 ns@266 nm)	19703	
		257nm	L/2	2 J/cm ² (10 ns@257 nm)	19704	
		1064 nm	L/4	10 J/cm ² (10 ns@1064 nm)	19708	
		1030 nm	L/4	10 J/cm ² (10 ns@1030 nm)	19479	
		532 nm	L/4	5 J/cm ² (10 ns@532 nm)	19709	
		515 nm	L/4	5 J/cm ² (10 ns@515 nm)	19478	
		355 nm	L/4	3 J/cm ² (10 ns@355 nm)	13527	
		343 nm	L/4	3 J/cm ² (10 ns@343 nm)	19477	
		266 nm	L/4	2 J/cm ² (10 ns@266 nm)	19711	
		257nm	L/4	2 J/cm ² (10 ns@257 nm)	19710	
		without optics	None	None	19707	


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