VYPER

Very High-Power Excimer Lasers

The VYPER Series lasers are multiple beam very high-power excimer lasers specially designed for Excimer Laser Annealing (ELA). The high quality demand in high resolution mobile display manufacturing requires high grade low temperature poly-Silicon (LTPS) which can be created only with excimer lasers.

The lasers are ideally suited for the high-power optical systems LineBeam 750 (VYPER), LineBeam 1000 (TwinVYPER), LineBeam 1300 (TwinVYPER), and LineBeam 1500 (TriVYPER).



FEATURES

- Highest UV power to enable high throughput applications
- Excellent energy stability to ensure high production yield
- EquiSwitch synchronization to provide lowest jitter
- Laser data acquisition to allow advanced process control
- Sealed and purged beam path for stable long term operation
- Ethernet interface for control and fast data acquisition

APPLICATIONS

- Excimer Laser Annealing
- Pulsed Laser Deposition

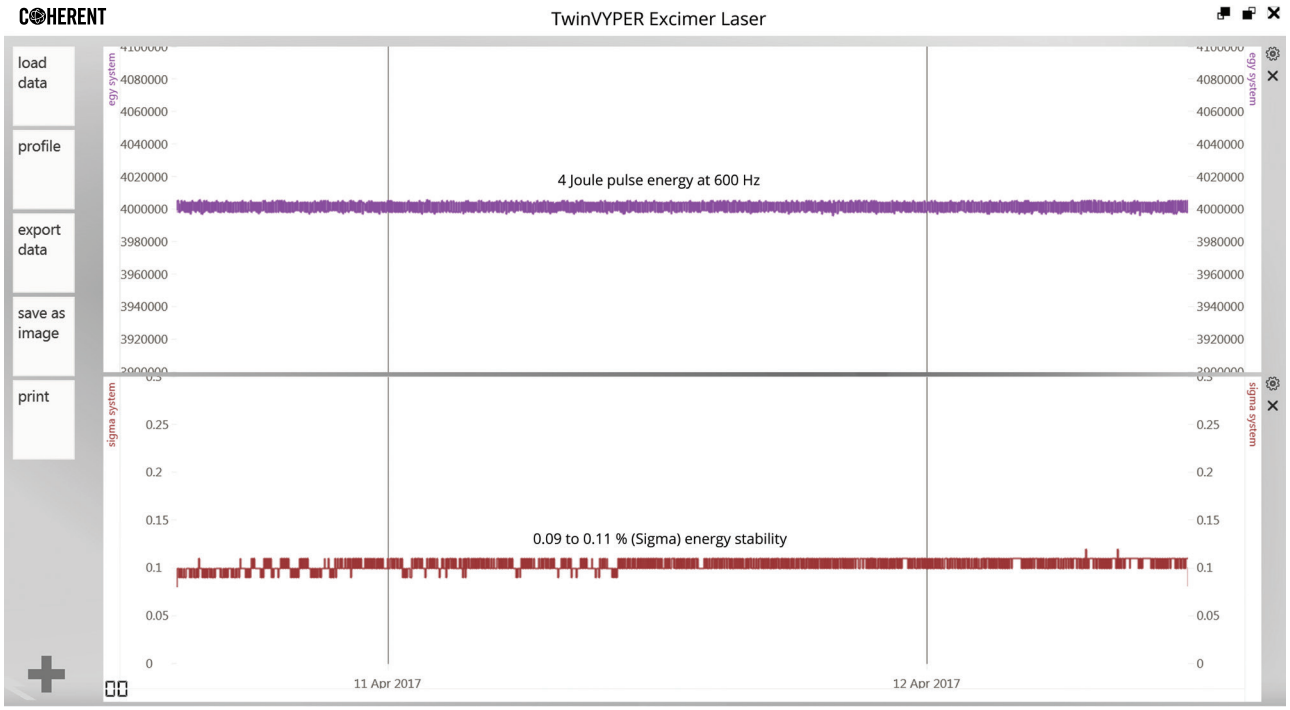
COHERENT

Specifications[1]	VYPER	TwinVYPER	TriVYPER
Wavelength (nm)	308	308	308
Maximum Stabilized Pulse Energy (mJ)	2000[2]	4000[3]	6000[4]
Maximum Stabilized Average Power (W)	1200[2]	2400[3]	3600[4]
Maximum Repetition Rate (Hz)	600	600	600
Energy Stability (sigma, %)	≤0.45	≤0.35	≤0.30
Pulse Duration (FWHM) (ns)	24 ±4[5]	24 ±4[5]	24 ±4[5]
Beam Dimensions[6] (FWHM, V x H, mm^2)	35 ±4 x 14.5 ±3[5]	35 ±4 x 14.5 ±3[5]	35 ±4 x 14.5 ±3[5]
Beam Divergence (FWHM, V x H, $mrad^2$)	≤4.5 x 1.3[5]	≤4.5 x 1.3[5]	≤4.5 x 1.3[5]
Dynamic Gas Lifetime (at max. stabilized energy) (mio. pulses)	100	100	100
Weight/Utilities/Dimensions			
Weight	4400 k g/9700 lbs.	8800 kg/19,400 lbs.	13,200 kg/29,100 lbs.
Cooling	Water, up to 2x 70 l/min. (2x 18.5 gal./min.), 12 to 15°C	Water, up to 4x 70 l/min. (4x 18.5 gal./min.), 12 to 15°C	Water, up to 6x 70 l/min. (6x 18.5 gal./min.), 12 to 15°C
Electrical	2x 39 kVA, 3-phase, 400 VAC, 50 or 60 Hz	4x 39 kVA, 3-phase, 400 VAC, 50 or 60 Hz	6x 39 kVA, 3-phase, 400 VAC, 50 or 60 Hz
Dimensions (L x W x H)	2800 x 1700 x 2085[7] mm (110 x 66.9 x 82 in.)	2800 x 4950x 2085[7] mm (110 x 195 x 82 in.)	2800 x 8200 x 2085[7] mm (110 x 323 x 82 in.)

1. All specifications are subject to change without prior notice in order to provide the best possible product.
2. Sum of two beams.
3. Sum of four beams.
4. Sum of six beams.
5. Per single beam.
6. Beam dimensions measured at 1.0 m from beam exit.
7. ±20 mm (0.8 in.).

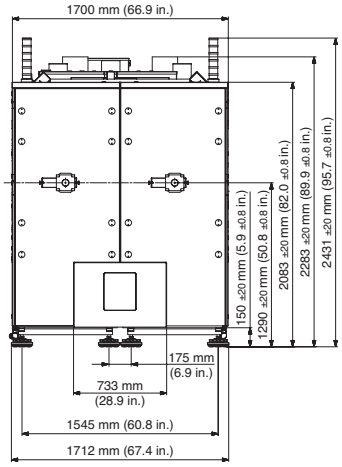
ExiScope Data Analysis

System energy, sum sigma, individual sigma, and much more parameter can be analyzed and displayed with the ExiScope software.

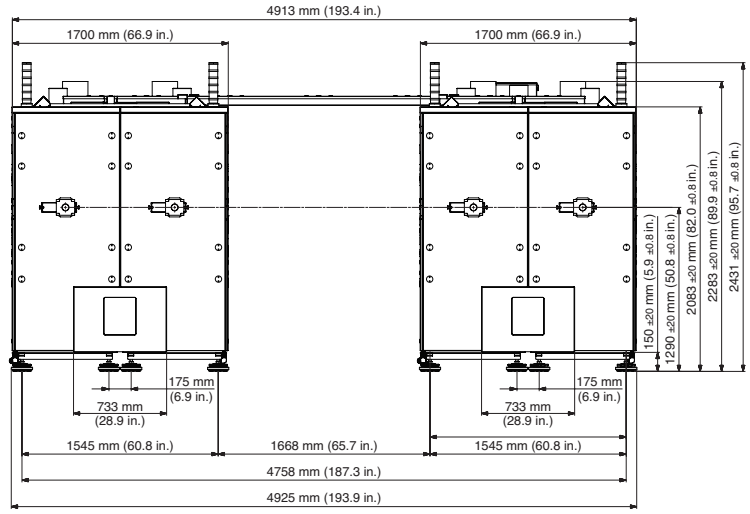


Mechanical Specifications

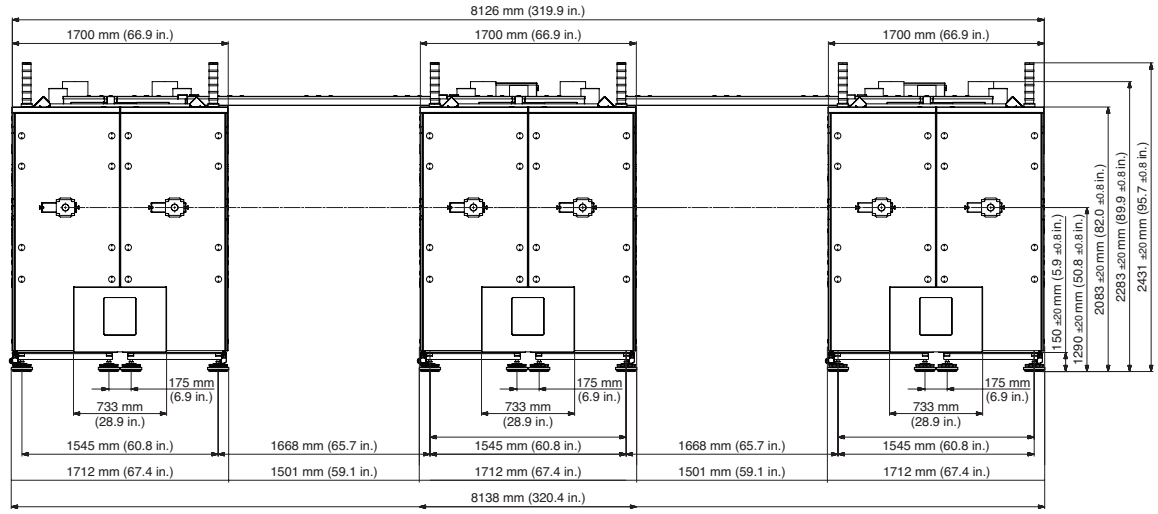
VYPER



TwinVYPER



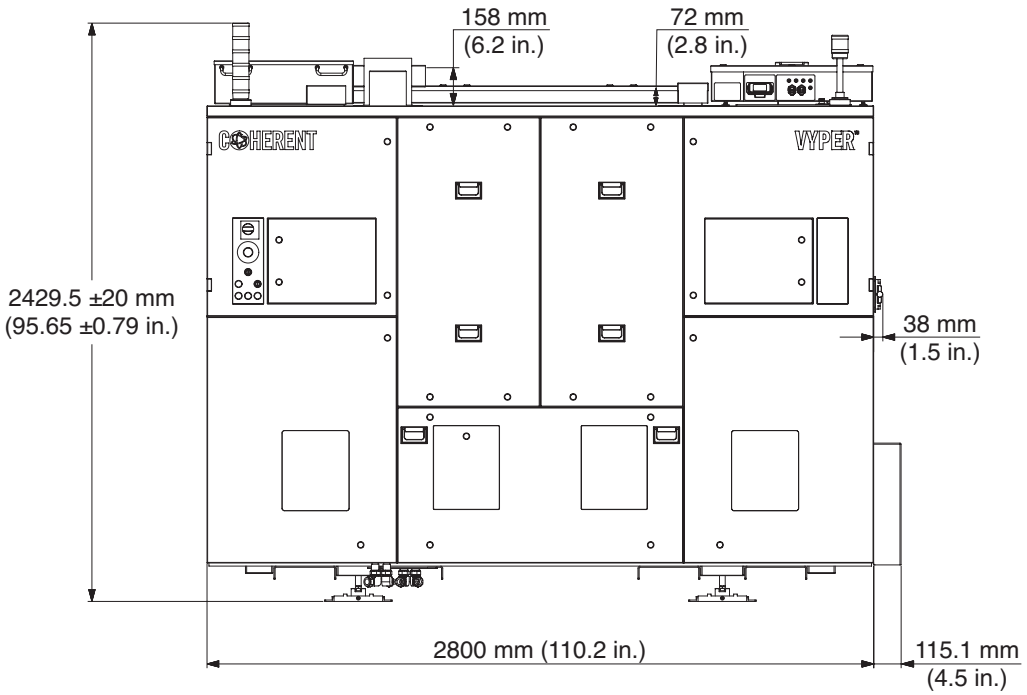
TriVYPER



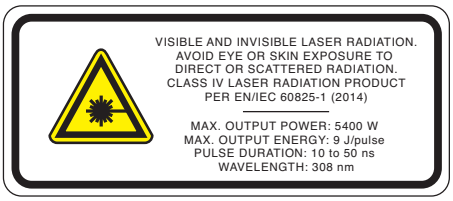
Mechanical Specifications

VYPER

Side View



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