

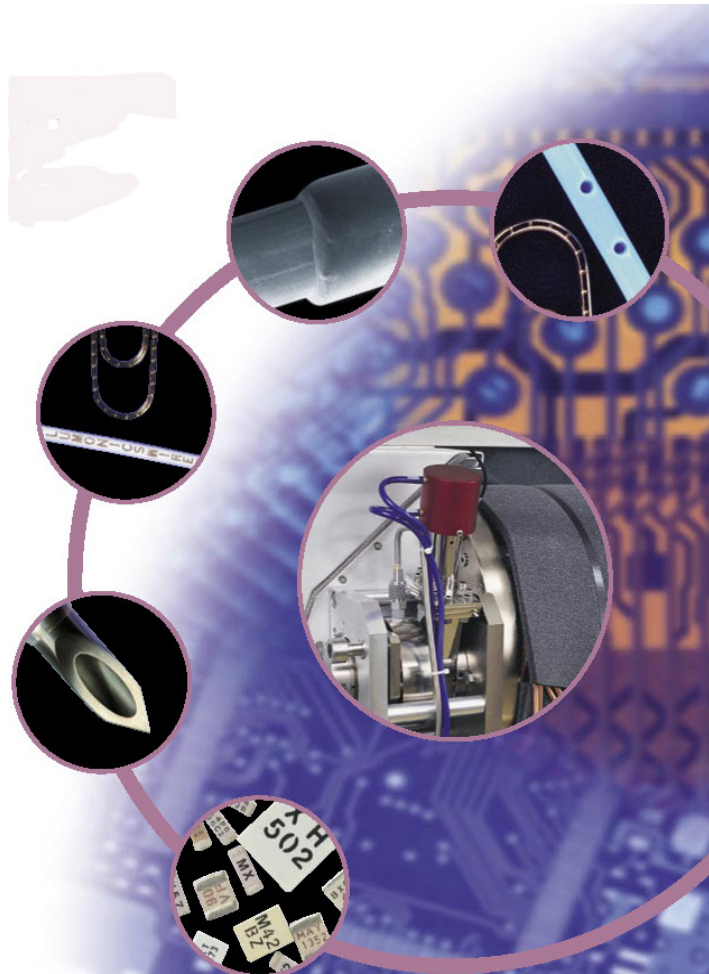
# IPEX™ - 800 SERIES

*Industrial Excimer Lasers*



**Industrial excimer lasers for precision applications in electronics, telecommunications, semiconductor, medical devices and pulsed laser deposition**

- Now with exciPure™ technology for ultimate gas lifetimes and lowest cost of operation
- EasyClean™ automated optics seals to retain gas fill and reduce downtime during optics maintenance
- Optional High-Brightness optics for applications requiring low beam divergence or extended coherence length
- High-stability optics mounts for ultimate beam pointing accuracy
- Simple integration into industrial processing systems



**LightMachinery**  
Excellence in lasers and optics

# IPEX™ -840 / 860 Series Industrial Excimer Lasers

**IPEX-840/860 Series** excimer lasers, originally developed by Lumonics and now offered by LightMachinery, deliver the performance and reliability required for a wide range of advanced, high duty-cycle industrial manufacturing applications in the electronics, semiconductor and medical device industries.

**exciPure™** technology, introduced in 2016, combines improved materials, a new dual-stage filter that removes both particulate and gaseous contaminants and an improved stabilization algorithm. It represents the greatest improvement in excimer gas lifetime and reduction in operating costs in a generation.

**High-Brightness** ("Unstable Resonator") optics are available for applications that demand long-path low beam divergence (e.g. Lidar), extended coherence length (including manufacturing of Fiber Bragg Gratings) and improved focusing.

Easy to use, simple to service, and economical to operate, **IPEX-840/860 Series** lasers combine the benefits of high precision excimer processing with the lowest total cost of ownership and highest uptime on the market today.

## Features

- **exciPure™** laser tube
- **EasyClean™** automated optics seals
- Advanced optic mounts
- Keyed optics <sup>(1)</sup>
- StabiLase energy control with micro-injections
- Soft preionisation <sup>(2)</sup>

(1) U.S. Patent 5,237,583

(2) U.S. Patent 5,081,638

## Benefits

- Extended gas lifetime, long replacement intervals, low operating cost
- Simplifies optical maintenance, retains gas fill and passivation
- Delivers 200 microradian pointing stability
- No realignment required after cleaning or replacing optics
- Fast, precise energy stabilization in internal, burst and external trigger modes
- Excellent pulse-to-pulse energy stability, better than 1.0% (1-σ, KrF)

## Specifications

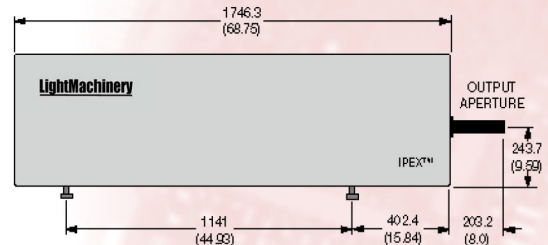
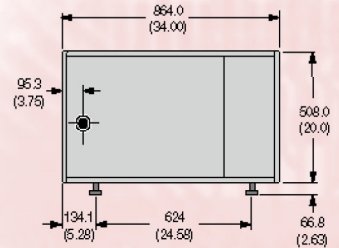
	ArF	KrF	XeCl	XeF
Wavelength (nm)	193	248	308	351
Stabilised Pulse Energy (mJ) at maximum repetition rate	Ipex-840 Series	150	400	250
	Ipex-860 Series	200	600	500
Maximum Pulse Energy (mJ) at low repetition rate	Ipex-840 Series	230	450	300
	Ipex-860 Series	250	700	600
Stabilised Average Power (W)	Ipex-848	30	80	50
	Ipex-846	15	40	25
	Ipex-844	6.0	20	12
	Ipex-842	3.0	10	6.0
	Ipex-868	20	60	50
	Ipex-866	10	30	25
	Ipex-864	5.0	18	10
	Ipex-862	2.5	9.0	5.0
Maximum Repetition Rate (pps)	Ipex-848	200	200	200
	Ipex-846	100	100	100
	Ipex-844	40	50	50
	Ipex-842	20	25	25
	Ipex-868	100	100	100
	Ipex-866	50	50	50
	Ipex-864	25	30	30
	Ipex-862	12	15	10

Pulse Duration (ns) FWHM, nominal		12-20
Beam Dimensions (mm) (V x H, nominal)	Ipex-840 Series	12 x 26
	Ipex-860 Series	12 x 28
Beam Divergence (mrad) (V x H, nominal)	Ipex-840 Series	1 x 3
	Ipex-860 Series	1 x 3

## Facilities

<b>Electrical:</b>	
8X8 models	3-phase, 208 V or 400 V, 4.5 kW, 50 or 60 Hz
8X6 / 8X4 / 8X2 models	Single-phase 200 - 240 V, 2.5kW / 1.5 kW / 1 kW, 50 or 60 Hz
<b>Cooling water:</b>	
8x8 & 8x6 models:	10 liters / minute, 5°-20°C, 40-60 psig
8x4 & 8x2 models:	5 liters / minute, 5°-20°C, 40-60 psig
<b>Laser gases:</b>	
	Ar, Kr or Xe rare gas, F <sub>2</sub> or HCl halogen gas (diluted), Ne and He buffer gases; or Pre-mixed gas.
	Compressed air or nitrogen (for optics gate valves & beam shutter)
<b>Weight:</b>	
8x8 models:	400 kg
8X6 / 8X4 / 8X2 models:	380 kg

Specifications are subject to change. Please consult LightMachinery for latest information.



Dimensions in mm (inches)

[www.lightmachinery.com](http://www.lightmachinery.com)

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