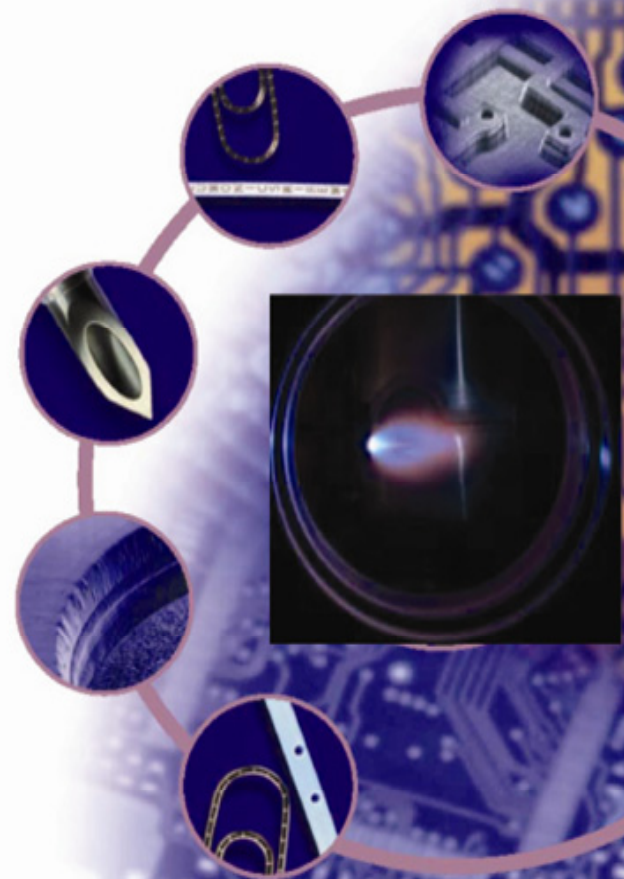


# IPEX™ 840 / 860 PLD Series

*Excimer Lasers for Pulsed Laser Deposition*



- Optimised lasers for PLD applications, based on LightMachinery's best-selling IpeX Series industrial excimer lasers
- Excellent beam uniformity, pulse-to-pulse energy stability and short pulse duration
- Constant energy at all repetition rates
- ICON™ (Integrated Ceramic on Nickel) technology for ultimate gas lifetimes and lowest cost of operation
- EasyClean automated optics seals to retain gas fill and reduce downtime during optics maintenance
- High-stability optics mounts for ultimate beam pointing accuracy & high-brightness optics for low beam divergence
- Custom-designed beam delivery systems



# IPEX™ -840 / 860 Series Excimer Lasers for Pulsed Laser Deposition

Originally developed by Lumonics, now offered by LightMachinery and incorporating ICON™ (Integrated-Ceramic-On-Nickel) technology, the **IPEX-840/ 860 Series** excimer lasers deliver the exceptional performance, lifetimes, reliability and ease-of integration demanded by researchers and system builders in the field of Pulsed Laser Deposition (PLD)

## Constant Performance for Dependable PLD Results.

### Constant Energy:

The specified pulse energy of **IPEX-840/ 860 Series** lasers is constant at all repetition rates from single-shot to the maximum repetition rate of the laser. This is in contrast to some competitive lasers where the specified energy can only be achieved at low repetition rates and the energy falls rapidly as the pulse rate is increased. The LightMachinery approach ensures constant PLD process parameters that are invariant with laser repetition rate.

### Constant Pulse Stability:

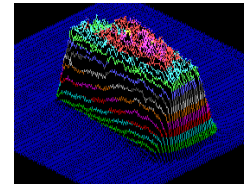
Pulse energy is regulated by an advanced energy monitor that accurately adjusts the discharge voltage and gas mixture to maintain constant output energy under all operating conditions, including bursts of pulses typically required in PLD applications.

### Constant Pointing Stability:

High stability keyed optics mounts ensure 200 µ-radian pointing stability and that no beam re-alignment is required after optics maintenance.

### Constant Beam Profile:

The beam intensity profile of the **IPEX-840/ 860 Series** lasers has been designed for steep edges, flat top and especially for minimal changes over the operating life of the laser tube.



## Optical Beam Delivery Systems for PLD

LightMachinery is more than just a laser supplier. In combination with our in-house optical designers and with external integration partners, we can offer complete laser / beam delivery systems tailored to any specific PLD requirement.

## Specifications

Wavelength (nm)		248 (KrF)	193 (ArF)
Stabilised Pulse Energy (mJ) at all repetition rates	Ipex-840 Series	400	150
	Ipex-860 Series	600	200
Maximum Repetition Rate (pps)	Ipex-844	50	40
	Ipex-842	25	20
	Ipex-864	30	25
	Ipex-862	15	12
Stabilised Average Power (W)	Ipex-844	20	6.0
	Ipex-842	10	3.0
	Ipex-864	18	5.0
	Ipex-862	9.0	2.5
Pulse Duration (ns) (FWHM, nominal)		12 – 20 ns	
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	1.5 x 4	

\*With standard resonator optics. Can be reduced to ~250 µradian with High Brightness Unstable Resonator Optics  
Specifications subject to change. Please consult LightMachinery for latest information

## Facilities

### Electrical Power

Single-phase, 200 – 240 V  
20 A, 50 / 60 Hz

### Cooling

Water, 5 litres / minute  
5-20°C, 40-60 psig

### Laser Gas

Consult LightMachinery  
Can be operated on pre-mix gas

### Weight

210 kg / 460 lbs

# LightMachinery

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

For further technical and sales information, please visit our website or contact:

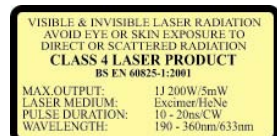
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Printed in Canada. January 2011