

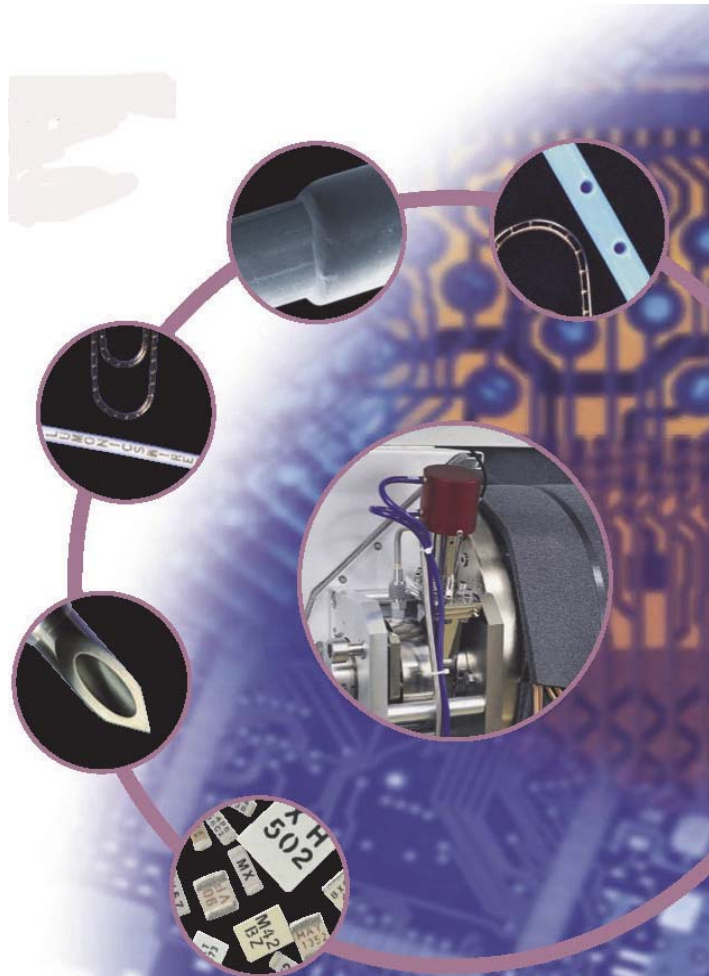
IPEX™ 840 / 860 SERIES

Industrial Excimer Lasers



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

- **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**
- **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**



IPEX™ -840 / 860 Series Industrial Excimer Lasers

Originally developed by Lumonics and now offered by LightMachinery, the **IPEX-840/860 Series** excimer lasers 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.

With ICON™ (Integrated-Ceramic-On-Nickel) technology, LightMachinery **IPEX-Series** lasers offer an exceptionally low cost of ownership and superior optical performance. High-Brightness (“Unstable Resonator”) optics are available for applications that demand long-path low beam divergence (e.g. Lidar), extended

coherence length (e.g. FBG manufacturing) 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

- ICON laser tube
- EasyClean automated optics seals
- Advanced optic mounts
- Keyed optics ⁽¹⁾
- StabiLase energy control
- Soft preionisation ⁽²⁾
- Internal gas filtration ⁽³⁾

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

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

(3) U.S. Patent 5,319, 663

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 energy stability, better than 1.0% (1-σ, KrF)
- Removes particulates and maintains optics cleanliness

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 | 350 |
| Maximum Pulse Energy (mJ) at low repetition rate | Ipex-840 Series | 230 | 450 | 300 |
| | Ipex-860 Series | 250 | 700 | 400 |
| 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 | 35 |
| | Ipex-866 | 10 | 30 | 18 |
| | Ipex-864 | 5.0 | 18 | 10 |
| | Ipex-862 | 2.5 | 9.0 | 5.0 |
| Maximum Repetition Rate (pps) | Ipex-848 | 200 | | |
| | Ipex-846 | 100 | | |
| | Ipex-844 | 50 (40 on ArF) | | |
| | Ipex-842 | 25 (20 on ArF) | | |
| | Ipex-868 | 100 | | |
| | Ipex-866 | 50 | | |
| | Ipex-864 | 30 (25 on ArF) | | |
| | Ipex-862 | 15 (12 on ArF) | | |

Facilities

Electrical:

8x8 / 8x6 models 3-phase, 208 V or 400 V, 4.5 kW / 2.5 kW, 50 or 60 Hz
 8x4 / 8x2 models Single-phase 200 – 240 V, 1.5 kW / 1 kW, 50 or 60 Hz

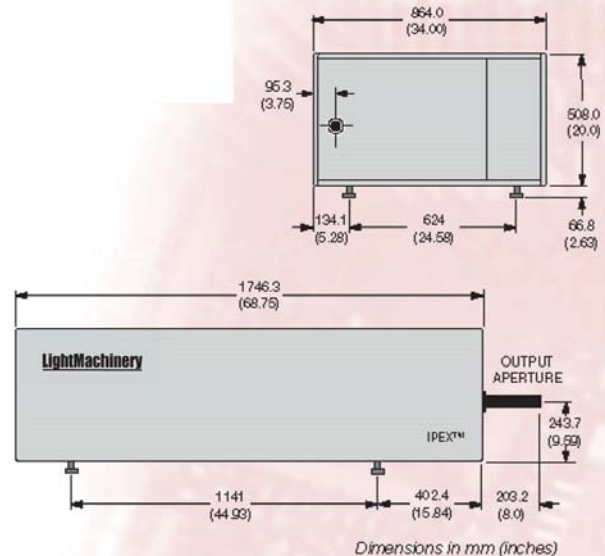
Cooling water: 8x8 & 8x6 models: 10 liters / minute, 5°-20°C, 40-60 psig
 8x4 & 8x2 models: 5 liters / minute, 5°-20°C, 40-60 psig

Laser gases: Ar, Kr or Xe rare gas, F₂ or HCl halogen gas (diluted), Ne and He buffer gases; or Pre-mixed gas.
 Compressed air or nitrogen (for optics gate valves & beam shutter)

Shipping Weight: 8x8 & 8x6 models: 570 kg 8x4 & 8x2 models: 550 kg

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

| | | |
|--|-----------------|---------|
| 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 |



www.lightmachinery.com

LightMachinery

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

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VISIBLE & INVISIBLE LASER RADIATION
 AVOID EYE OR SKIN EXPOSURE TO
 DIRECT OR SCATTERED RADIATION
CLASS 4 LASER PRODUCT
 BS EN 60825-1:2001
 MAX OUTPUT: 1J 200W/5mW
 LASER MEDIUM: Excimer/HeNe
 PULSE DURATION: 10 - 20ns CW
 WAVELENGTH: 190 - 360nm/633nm

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