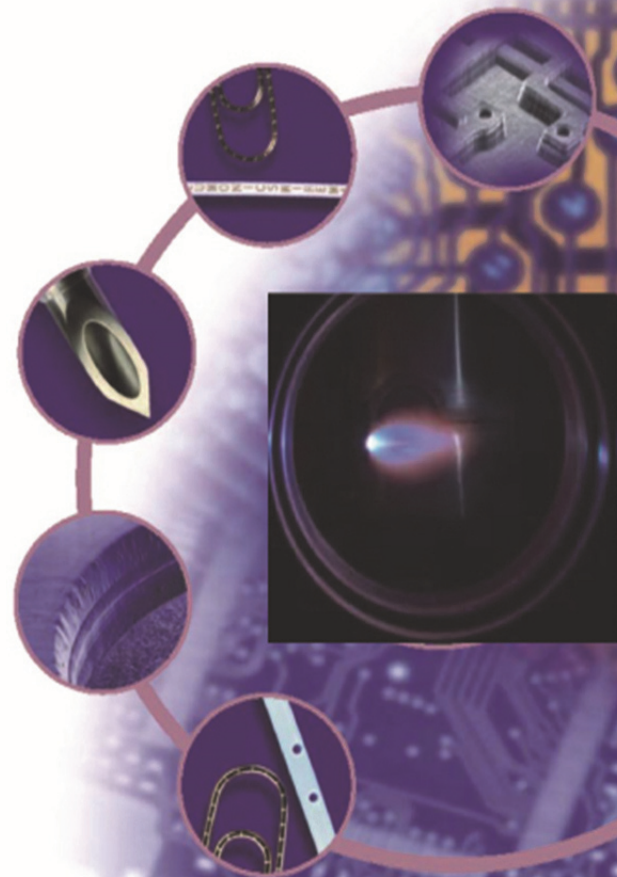


IPEX™ 740 / 760 PLD Series

Excimer Lasers for Pulsed Laser Deposition



- An advanced series of excimer lasers, optimised for PLD applications and based on LightMachinery's best-selling IpeX-800 industrial excimer lasers
- GasMiser-1000 option with ICON™ (Integrated Ceramic on Nickel) technology for ultimate gas lifetimes and lowest cost of operation
- Excellent beam uniformity, pulse-to-pulse energy stability and short pulse duration
- Constant energy at all repetition rates
- EasyClean automated optics seals to retain gas fill and reduce downtime during optics maintenance
- High-stability optics mounts for excellent beam pointing accuracy
- Custom-designed beam delivery systems



IPEX™ -740 / 760 Series Excimer Lasers for Pulsed Laser Deposition

IPEX-740/ 760 Series excimer lasers incorporating ICON™ (Integrated-Ceramic-On-Nickel) and GasMiser-1000 technology deliver the exceptional performance, gas lifetimes, reliability and ease-of-integration demanded by researchers and system integrators in the field of Pulsed Laser Deposition (PLD)

Constant Performance for Dependable PLD Results.

Constant Pulse Energy:

The combination of ICON™ and GasMiser-1000 technologies in **IPEX-740/ 760 Series** lasers ensures unmatched static and dynamic gas lifetimes for long process times on a single gas fill. The pulse energy is constant at all repetition rates from single-shot to the maximum repetition rate of the laser.

This approach ensures that PLD process parameters that are invariant with laser lifetimes and repetition rate.

Constant Pulse Stability:

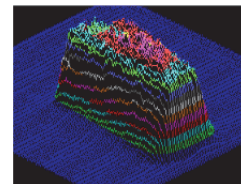
Pulse energy is regulated by an advanced energy monitor that accurately adjusts the discharge voltage and gas mixture to maintain constant output energy under all operating conditions, including burst mode. Pulse-to-pulse stability is better than 1%.

Constant Pointing Stability:

High stability keyed optic mounts offer better than 200 µrad pointing stability and ensure that no beam re-alignment is required after optics maintenance.

Constant Beam Profile:

The beam intensity profile of the **IPEX-740/ 760 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)	308 (XeCl)	193 (ArF)
Stabilised Pulse Energy (mJ) at all repetition rates	Ipex-760 Series	600	500	200
	Ipex-740 Series	400	250	150
Maximum Pulse Energy (mJ) at low repetition rates	Ipex-760 Series	700	600	250
	Ipex-740 Series	450	300	230
Maximum Repetition Rate (pps)	Ipex-766	50	40	40
	Ipex-764	30	20	25
	Ipex-762	15	10	12
	Ipex-746	100	100	100
	Ipex-744	50	50	40
	Ipex-742	25	25	20
Stabilised Average Power (W)	Ipex-766	30	25	10
	Ipex-764	18	10	5.0
	Ipex-762	9.0	5.0	2.5
	Ipex-746	40	25	15
	Ipex-744	20	12	6.0
	Ipex-742	10	6.0	3.0
Pulse Duration (ns) (FWHM, nominal)			12 – 20	
Beam Dimensions (mm) (VxH, nominal)	Ipex-840 Series		12 x 26	
	Ipex-860 Series		12 x 28	
Beam Divergence (mrad) (VxH, nominal)*	Ipex-840 Series		1 x 3	
	Ipex-860 Series		1 x 3	

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

Facilities

Electrical Power

Single-phase, 200 – 240 V
50 / 60 Hz

Cooling

Air cooling to 25 Hz repetition rates.
Water cooling (5 litres / minute
5-20°C, 40-60 psig) at higher
repetition rates

Laser Gas

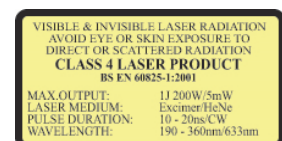
Consult LightMachinery
Ipex-700 lasers can be
operated with individual gas
cylinders or a single cylinder of
pre-mix gas

LightMachinery

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