

DLS ECO SERIES

Heating and Drying Diode Laser Solutions



NEW

FEATURES

- ▶ Up to 52% Energy Efficient
- ▶ Ultra-Compact Footprint & Water Cooled
- ▶ Long-life IPG Components
- ▶ Low Carbon Footprint

APPLICATIONS

- ▶ Drying: Li-ion Battery Slurry, Paint, Powder Coating
- ▶ Annealing/Curing: Industrial Coatings
- ▶ Semiconductor: Wafer Heating

DLS ECO Series fiber lasers are ultra-compact and ultra-efficient solutions for industrial heating and drying applications. The DLS ECO Series announces the arrival of solid-state heating to replace less efficient infrared bulbs and environmentally unfriendly gas fired furnaces. Extremely high power conversion efficiency along with exceptionally low impact on the ambient factory environment make the Cost-of-Ownership and Return-on-Investment of a diode furnace compelling.

A diode furnace operates cold, wasting no energy warming insulating walls or the factory floor as all energy is highly directed laser light onto the media being processed. Between batches the diode furnace is off, not idling, so no energy at all is consumed when it is unneeded.

Sub-surface laser drying provides a more efficient process than a thermal convection oven, meaning **a DLS ECO system is up to 4X smaller while processing material up to 4X faster**. The cool open environment is inviting to thermal metrology enabling tighter process control and benefitting from instantaneous, on-the-fly temperature adjustments. The DLS ECO is best suited to dry industrial coatings such as battery slurries, paint or powder coat. Also, diode heaters are employed when extremely tight process control is needed, such as semiconductor wafer heating.

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Optical Characteristics	4500-U-ECO	9000-U-ECO	13500-U-ECO	18000-U-ECO	30000-ECO	40000-ECO	100000-ECO
Wavelength, nm	960-985						
Mode of Operation	CW/modulated						
Modulation Frequency, kHz	0-5 kHz						
Max. Average Power*, W	4500	9000	13500	18000	30000	40000	100000
Power Tunability, %	10-100						
Power Stability**, %	±2						
Laser Illumination Area***, mm	200 × 200			780 × 1300		880 × 1600	
Power Density Uniformity, %	±5						

* The listed power levels represent selected typical models. Other powers levels up to 100 kW and higher powers are available upon request.

** Over 2 hours

*** Illumination area may be tailored to meet customer requirements.

General Characteristics	4500-U-ECO	9000-U-ECO	13500-U-ECO	18000-U-ECO	30000-ECO	40000-ECO	100000-ECO
Cabinet Dimensions (W × D × H), mm	430 × 808 × 567	430 × 808 × 700	430 × 808 × 902		1007 × 808 × 805	1007 × 808 × 1055	2008 × 815 × 1393
Weight, kg	150	200	250	300	550	650	1400
Supply Voltage, VAC	400-480 3-phase, 50/60 Hz						
Cooling	Water						
Min. Chiller Capacity, kW	4.5	9	13.5	18	30	2 × 20	4 × 25
Water Flow, l/min	>23, typ. 32	>45, typ. 63	>68, typ. 95	>90, typ. 126	>150 typ. 210	>2 × 100 typ. 2 × 140	>4 × 125 typ. 4 × 175
Energy Efficiency, %	>50, typ. 52						



+1 (408) 492-8828;
[IPGPhotonics.com/contact](https://www.ipgphotonics.com/contact)
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