



Optimized for industrial applications, the Pearl™ P72 TKS delivers industrial-grade controls in a high-power direct diode laser system.

Integrating nLIGHT's single-emitter based Pearl™ fiber-coupled diode laser modules, the system offers unparalleled reliability. Fast modulation rates, high reliability and robust industrial design make it the perfect tool for many industrial applications.

## Features

- Convenient user interfaces: RS-232, CAN-BUS, USB, Analog, or front panel control
- FieldFlex™ technology allows for in-field upgrade or replacement of Pearl modules
- Field replaceable fiber optic cables
- Industrial-grade sealed TEC with bi-directional temperature control
- Redundant interlocks for machine tool integration
- Advanced warning protocol prior to system errors
- DiodeSafe™ electronics
- Industrial grade electronics with multiple operation modes: CW, QCW, Gated, or Triggered Power Control
- 19" rack design with slim 3U form factor
- Intuitive graphical user interface software for simple system control

## Applications

- FPD Bonding
- Li-Ion Battery Welding
- Projection Displays
- Plastic Welding
- Soft Soldering
- Thin Metal Welding
- Medical Systems
- Entertainment
- Marking / Engraving
- Material Heating

## Typical Device Performance Pearl

Package		P72			
<b>Optical</b>					
Wavelength	nm	900-990 nm			
Wavelength tolerance	nm	± 10			
CW output power	W	200	300	400	500
Fiber core diameter	µm	400			
Beam divergence	NA <sup>1</sup>	0.17			
Fiber length (standard)	m	5m Mitsubishi D80			
<b>Electrical</b>					
Power conversion efficiency (typical)	%	46			
Operating current (typical)	A	8.6	9.3	9.7	9.5
Operating voltage (typical)	V	51.5	70.8	90.1	115.8
<b>Mechanical</b>					
Storage temperature range <sup>2</sup>	°C	-40 to +80			
Mass	gr	220			
<b>Thermal</b>					
Operating temperature <sup>2</sup>	°C	+20 to +30			
<b>Accessories</b>					
Line Generator Optic Modules Collimator and Spot Generator Optic Modules Monitor Photo Diode PPS™ OEM Diode Controller Turn-Key System					

## Typical Device Performance TKS

Package		TKS-A	TKS-B	TKS-C
<b>System Characteristics</b>				
Mode of Operation		CW/QCW		
Maximum Heat Dissipation	W	60	100	120
Output Power Tunability	%	0-100		
Output Power Stability	%	<1		
<b>Electrical</b>				
Supply Voltage	VAC	100-250		
AC Power Supply Frequency	Hz	50-60		
Power Consumption	W	<350	<550	<600
Min Pulse Width	µs	10		
Rise/Fall Time	µs	<10 /10		
Maximum Repetition Rate	kHz	12.5		
Duty Ratio	%	5-95		

**Proven Performance**

Mechanical				
Dimensions (LxWxH)	mm	432x482x133		
Weight	kg	16		
Cooling Method		Air Cooled		
General Condition				
Operating Temperature	°C	20 to +35		
Storage Temperature	°C	-20 to + 60		
Temperature delta from ambient to diode temperature	°C	15	10	5
Maximum Diode Waste Heat	W	60	100	120
Relative Humidity <sup>1</sup>	%	10 to 95		

<sup>1</sup>A non-condensing environment is required for storage and operation.

### Package Dimensions

