

Optimized for industrial applications, the Pearl[™] TKS delivers industrial-grade laser performance and control in a full-function turn-key system.

Integrating *n*LIGHT's single-emitter based Pearl[™] fiber-coupled diode laser modules, the system offers unparalleled reliability. The system's fast modulation rates, high reliability and robust industrial design make it the perfect tool for 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		P10				
Optical						
Wavelength	nm	790-830 nm				
Wavelength tolerance	nm	± 10				
CW output power	W	20	30	40	50	
Fiber core diameter	μm	400 or 600				
Beam divergence	NA ¹	0.17				
Fiber length (standard)	m	2.0				
Electrical						
Power conversion efficiency (typical)	%	50				
Operating current (typical)	А	5.7				
Operating voltage (typical)	V	7.4	11.1	14.8	18.5	
Mechanical						
Storage temperature range ²	°C	-40 to +80				
Mass	gr	220				
Thermal						
Operating temperature ²	°C	+15 to +25				
Accessories						
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
System Characteristics				
Mode of Operation			CW/QCW	
Maximum Heat Dissipation	W	60	100	120
Output Power Tunability	%	0-100		
Output Power Stability	%	<1		
Electrical				
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

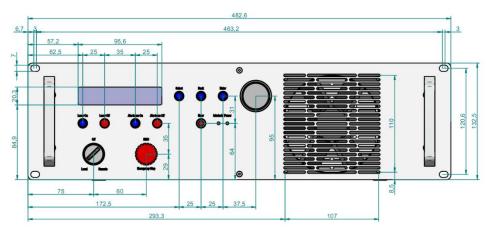
n L I G H T Pearl[™] P10 TKS Series

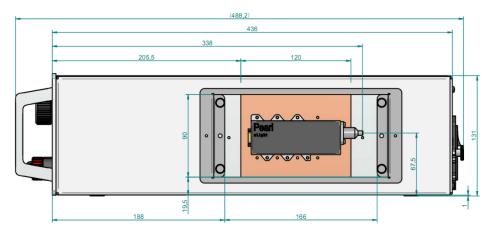
Mechanical					
Dimensions (LxWxH)	mm	432x482x133			
Weight	kg	16			
Cooling Method		Air Cooled			
General Condition					
Operating Temperature	°C	20 to +35			
Storage Temperature	°C	-20 to + 60			
Temperature delta from ambient to diode temperature	°C	15	10	5	
Maximum Diode Waste Heat	W	60	100	120	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

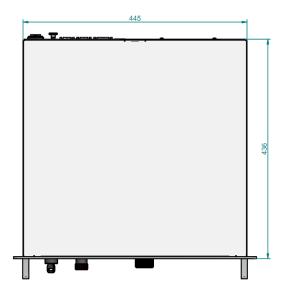
¹A non-condensing environment is required for storage and operation.

Proven Performance

Package Dimensions







Proven Performance