

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

Integrating *n*LIGHT's single-emitter based Pearl<sup>™</sup> 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<sup>™</sup> 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<sup>™</sup> 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		P16			
Optical					
Wavelength	nm	790-830 nm			
Wavelength tolerance	nm	±3			
CW output power	W	60	70	80	
Fiber core diameter	μm	400 or 600			
Beam divergence	NA <sup>1</sup>	0.17			
Fiber length (standard)	m	2.0			
Electrical					
Power conversion efficiency (typical)	%	50			
Operating current (typical)	А	5.7			
Operating voltage (typical)	V	22.2	25.9	29.6	
Mechanical					
Storage temperature range <sup>2</sup>	°C	-40 to +80			
Mass	gr	220			
Thermal					
Operating temperature <sup>2</sup>	°C	+15 to +35			
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**

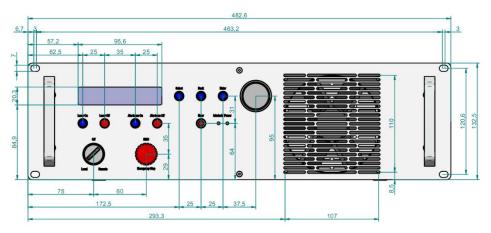
# *n* L I G H T Pearl<sup>™</sup> P16 TKS Series

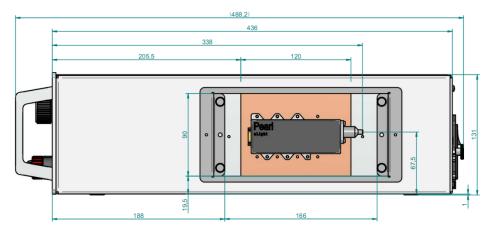
Mechanical					
Dimensions (LxWxH)	mm	432x482x133			
Weight	kg	16			
Cooling Method		Air Cooled			
General Condition					
Operating Temperature	°C	20 to +35			
Storage Temperature	°C	-20 to + 60			
Temperature delta from ambient to diode temperature	°C	15	10	5	
Maximum Diode Waste Heat	W	60	100	120	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

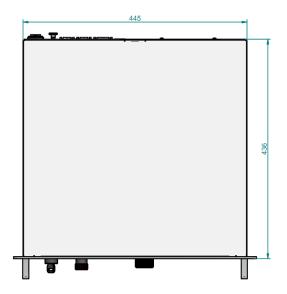
<sup>1</sup>A non-condensing environment is required for storage and operation.

#### **Proven Performance**

## Package Dimensions







**Proven Performance**