

## 445 nm 250 W Fiber Coupled Blue Laser Diode

K445HR6FN-250.0W



### Features:

- 445nm wavelength
- 250W output power
- 105µm fiber core diameter
- 0.22 NA

### Applications:

- Material processing
- 3D printing
- Scientific research
- EV battery production

Specifications (20°C)		Symbol	Unit	K445HR6FN-250.0W		
				Minimum	Typical	Maximum
Optical Data <sup>(1)</sup>	CW Output Power	P <sub>o</sub>	W	250	-	-
	Center Wavelength	λ <sub>c</sub>	nm	445±20		
	Spectral Width (FWHM)	Δλ	nm	-	6	-
	Wavelength Shift with Temperature	Δλ/ΔT	nm/°C	-	0.1	-
Electrical Data	Electrical-to-Optical Efficiency	PE	%	-	30	-
	Threshold Current	I <sub>th</sub>	A	-	0.35	-
	Operating Current (single module)	I <sub>op</sub>	A	-	3.5	3.8
	Operating Voltage (single module)	V <sub>op</sub>	V	-	52	60
	Slope Efficiency	η	W/A	-	19.2	-
	Sub-module	-	-	4		
Fiber Data	Core Diameter	D <sub>core</sub>	µm	-	105	-
	Cladding Diameter	D <sub>clad</sub>	µm	-	125	-
	Numeric Aperture	NA	-	-	0.22	-
	Fiber Length	L <sub>f</sub>	m	-	2.0	-
	Minimum Bending Radius	-	mm	50	-	-
	Fiber Termination	-	-	HP-SMA905		
Others	Cooling Method	-	-	Water Cooling		
	Cooling Capacity	-	W	≥500		
	Cooling Water Temperature	T	°C	20±5		
	Water Discharge	-	L/min	7		
	ESD	V <sub>esd</sub>	V	-	-	500
	Storage Temperature <sup>(2)</sup>	T <sub>st</sub>	°C	-20	-	70
	Lead Soldering Temperature	T <sub>ls</sub>	°C	-	-	260
	Lead Soldering Time	t	sec	-	-	10
	Operating Case Temperature <sup>(3)</sup>	T <sub>op</sub>	°C	20	-	30
	Relative Humidity	RH	%	15	-	75

(1) Data measured under operation output at 250W@20°C.

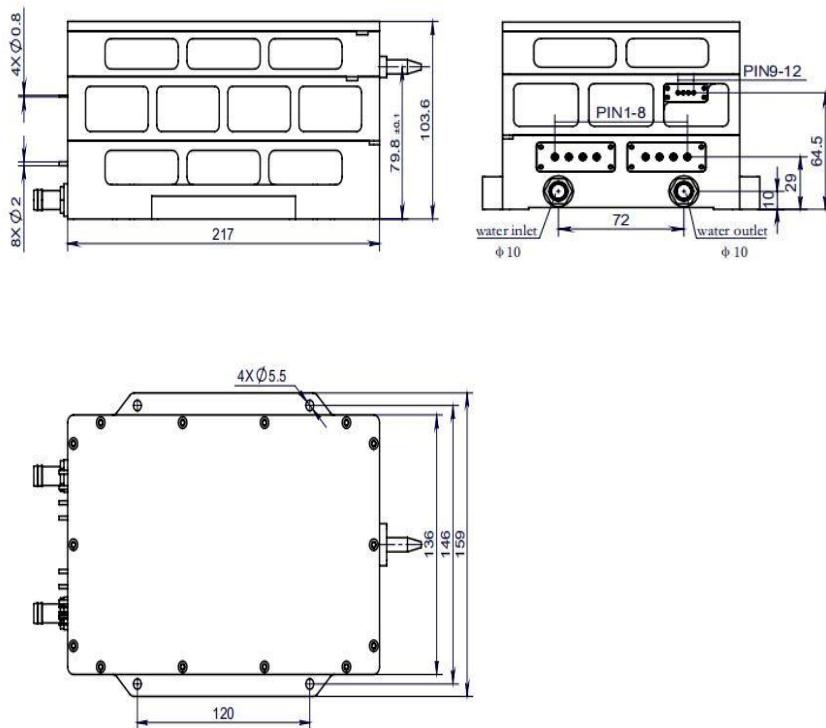
(2) A non-condensing environment is required for operation and storage.

(3) Operating temperature defined by the package case. Acceptable operating range is 20°C~30°C, but performance may vary.

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### Package Dimensions (mm)



Pin	Function
1	LD1 (+)
2	LD1 (-)
3	LD2 (+)
4	LD2 (-)
5	LD3 (+)
6	LD3 (-)
7	LD4 (+)
8	LD4 (-)
9	*Thermistor
10	*Thermistor
11	*Aiming beam (+)
12	*Aiming beam (-)

### OPERATING NOTES

- Avoid eye and skin exposure to direct radiation during operation.
- ESD precautions must be taken during storage, transportation and operation.
- Short-circuit is required between pins during storage and transportation.
- Please connect pins to wires by solder instead of using socket when operation current is higher than 6A. Soldering point should be close to the middle of the pins. Soldering temperature should be lower than 260°C and time shorter than 10 second.
- Make sure the fiber output end is properly cleaned before operation of laser. Follow safety protocols to avoid injury when handling and cutting the fiber.
- Use constant current power supply to avoid surge current during operation.
- Laser diode must be used according to the specifications.
- Laser diode must work with good cooling.
- Operation temperature ranges from 20°C to 30°C.
- Storage temperature ranges from -20°C to +70°C.