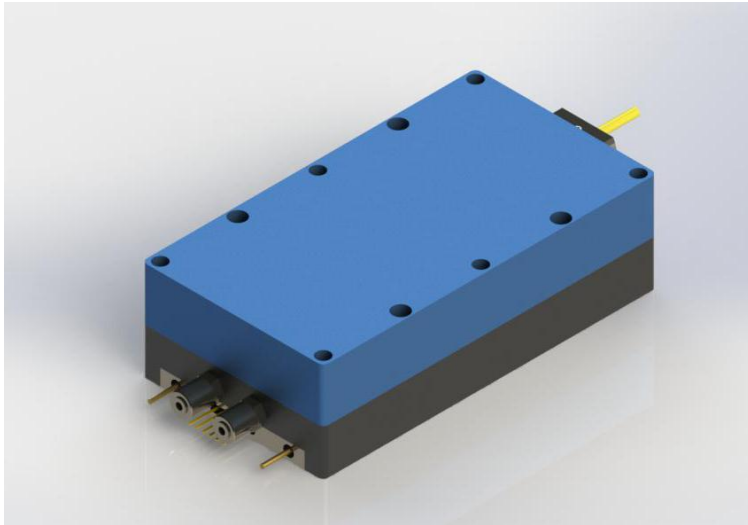


## 445nm 20W Fiber Coupled Diode Laser

**RPK445-20.00W-10522-SM**

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### Features:

- ◆ 445nm wavelength
- ◆ 20W output power
- ◆ 105µm fiber core diameter
- ◆ 0.22NA

### Applications:

- ◆ Illumination
- ◆ Scientific research
- ◆ Material processing
- ◆ 3D printing

These High Power Diode Laser Modules are manufactured by adopting specialized fiber-coupling techniques, resulting in volume products with a high efficiency, stability and superior beam quality. The products are achieved by transforming the asymmetric radiation from the laser diode chip into an output fiber with small core diameter by using special micro optics. Inspecting and burn-in procedures in every aspect come to a result to guarantee each product with the reliability, stability and long lifetime.

Our research staffs are constantly improving and innovating the processing technology in the producing process, based on the professional knowledge and experience accumulated in long-terms. We are also continuously developing new products to meet customers' specific needs.

High quality products with reasonable price is always our goal.

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Specifications(25°C)		Symbol	Unit	RPK445-20.00W-10522-SM		
				Minimum	Typical	Maximum
<b>Optical Data<sup>(1)</sup></b>	CW-Output Power	$P_{bol}^{(4)}$	W	20	-	-
	Central Wavelength	$\lambda_c$	nm	435	445	455
	Spectral Width (FWHM)	$\Delta\lambda$	nm	-	6	-
	Wavelength Shift with Temperature	$\Delta\lambda/\Delta T$	nm/°C	-	0.1	-
	Wavelength Shift with Current	$\Delta\lambda/\Delta A$	nm/A	-	1	-
<b>Electrical Data</b>	Electrical-to-Optical Efficiency	PE	%	-	20	-
	Operating Current	$I_{bol}^{(4)}$	A	-	2.5	3.0
	Threshold Current	$I_{th}$	A	-	0.3	0.45
	Operating Voltage	$V_{op}$	V	-	41	47
	Slope Efficiency	$\eta$	W/A	-	8.5	-
<b>Fiber Data</b>	Core Diameter	$D_{core}$	$\mu m$	-	105	-
	Numerical Aperture	NA	-	-	0.22	-
	Fiber Length	L	m		3.5	
	Loosen tube	-	-	3mm stainless steel		
	Minimum Bending Radius	-	mm	50	-	-
	Fiber Termination	-	-	-	SMA905	-
<b>Thermistor</b>	-	$R_t$	(K $\Omega$ )/ $\beta$ (25°C)	-	10 $\pm$ 3%/3450	-
<b>Others</b>	End of Life Current	$I_{eol}^{(5)}$	A			3.0
	End of Life Power	$P_{eol}^{(5)}$	W	16		
	ESD	$V_{esd}$	V	-	-	500
	Storage Temperature <sup>(2)</sup>	$T_{st}$	°C	-20		70
	Lead Soldering Temp	$T_{ls}$	°C	-	-	260
	Lead Soldering Time	t	sec	-	-	10
	Operating Case Temperature <sup>(3)</sup>	$T_{op}$	°C	15	-	35
	Relative Humidity	RH	%	15	-	75

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

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

(3) Operating temperature defined by the package housing. Acceptable operating range is 15°C~35°C, but performance may vary.

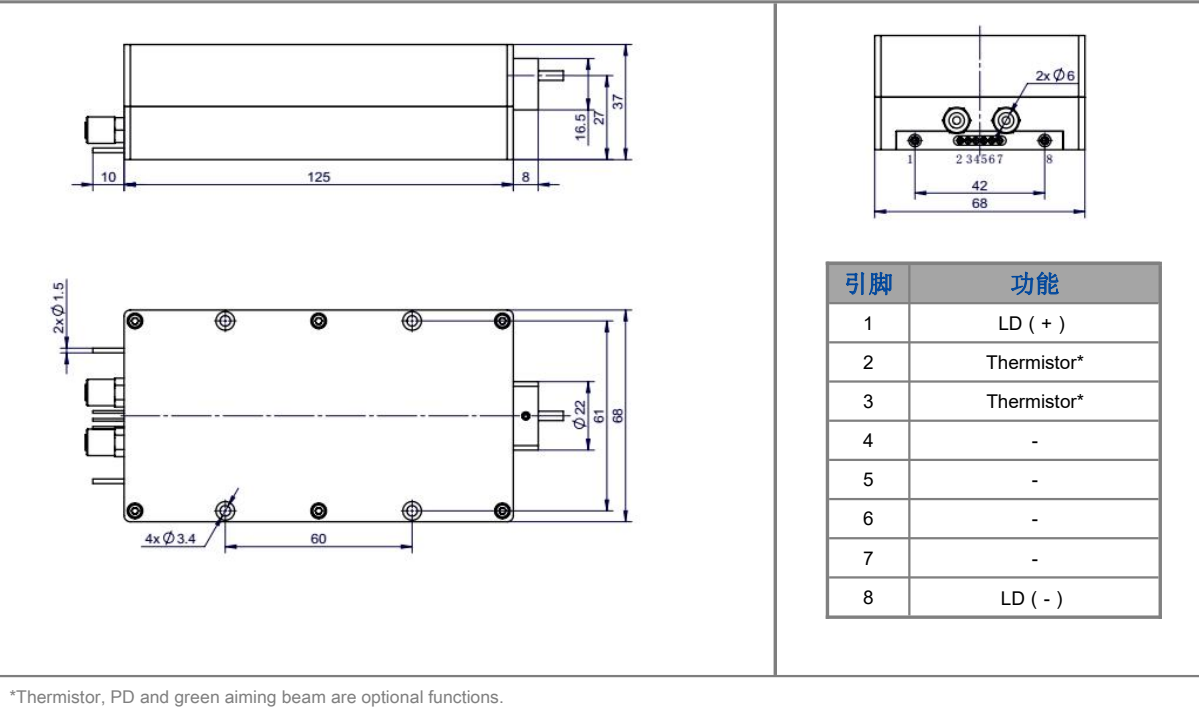
(4) Product delivery qualification standards:  $I_{beginning\ of\ life} \leq 3A$  ,  $P_{beginning\ of\ life} \geq 20W$ ;

(5) Within the warranty period, the product is considered qualified with  $I_{end\ of\ life} = 3A$  ,  $P_{end\ of\ life} \geq 16W$ .

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### Package Dimensions (mm)



### OPERATING NOTES

- ◆ Avoid eye and skin exposure to direct radiation during operation.
- ◆ ESD precautions must be taken during storage, transportation and operation.
- ◆ Make sure the fiber output end and input 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 15°C to 35°C .
- ◆ Storage temperature ranges from -20°C to +70°C .