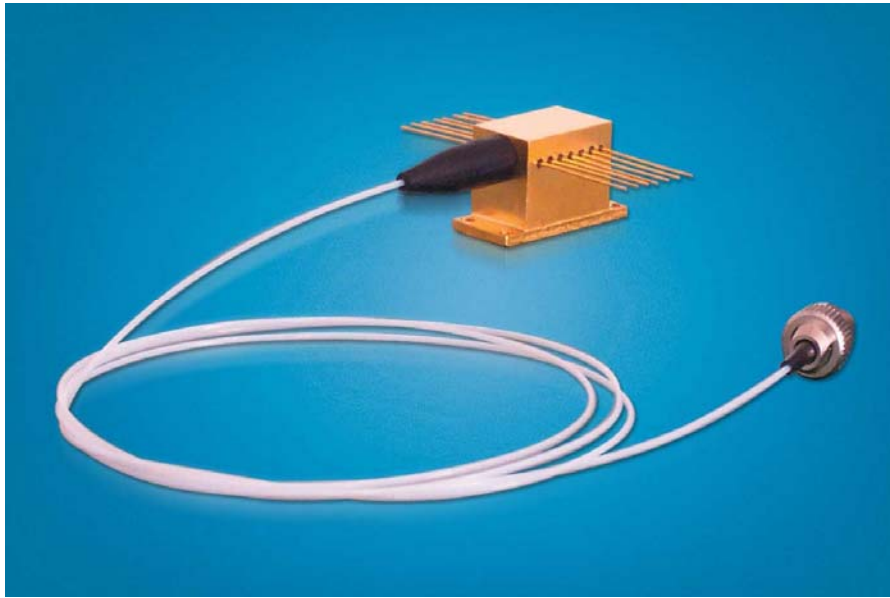


## 785nm Fiber-Coupled CW Module

K78S14F-1.60W



### Key Features:

- ◆ 1.6W output power
- ◆ 100 $\mu$ m or 200 $\mu$ m fiber core diameter
- ◆ 0.22NA
- ◆ 785nm wavelength

### Applications:

- ◆ Laser pumping
- ◆ Medical use
- ◆ Printing
- ◆ Heating
- ◆ Material processing
- ◆ Marking

BWT Beijing's 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.

At BWT Beijing, to provide high quality products with reasonable price is our always goal.

## 785nm Fiber-Coupled CW Module

### K78S14F-1.60W

Specifications (25°C)		Symbol	Unit	K78S14F-1.60W
Optical data	CW-output power	$P_o$	W	1.60
	Center wavelength	$\lambda_c$	nm	785
	Tolerance of $\lambda$	-	nm	$\pm 5$
	Spectral width (FWHM)	$\Delta\lambda$	nm	<3
	Temperature drift of $\lambda$	-	nm/°C	~0.3
Fiber data <sup>1</sup>	Fiber core diameter	$W_c$	$\mu\text{m}$	100/200
	Numerical aperture	NA	-	0.22
	Fiber connector	-	-	FC, ST, SMA-905
Electrical data	Operation current	$I_{op}$	A	2.0
	Threshold current	$I_{th}$	A	0.3
	Conversion efficiency <sup>2</sup>	$\eta$	%	45
	Slope efficiency <sup>3</sup>	$\eta_D$	W/A	0.95
	Operation voltage	$V_{op}$	V	1.8
	Reverse voltage	$V_{re}$	V	2
PD data	Current	$I_{mo}$	$\mu\text{A}$	200~2,000
TEC data	Max. current	$I_t$	A	2
	Max. voltage	$V_t$	V	3.8
Thermistor data <sup>4</sup>	Thermistor	$R_t$	(K $\Omega$ )/ $\beta$ (25°C)	10 $\pm$ 5%/3477
Other specifications	Operation temperature	$T_{op}$	°C	10~30
	Storage temperature	$T_{st}$	°C	-20~80
	Expected lifetime	MTBF	h	>10,000
	Dimensions (fiber and connector not included)	-	mm	~30 $\times$ 13 $\times$ 17
	Weight	-	g	~33
	Lead soldering temperature	$T_{is}$	°C	260(10 sec.)

1. Other fibers available for OEM applications. Contact BWT Beijing.

2.  $\eta = P_o / (I_{op} V_{op})$ .

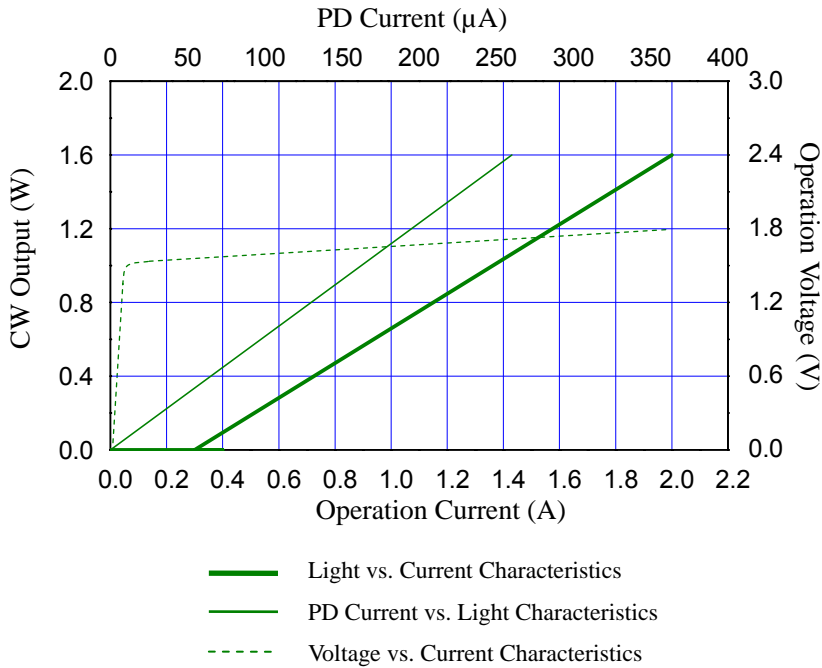
3.  $\eta_D = P_o / (I_{op} - I_{th})$ .

4.  $R_T = R_0 \cdot \exp(\beta(1/T - 1/T_0))$ , ( $T_0 = 25^\circ\text{C} = 298\text{K}$ ).

# 785nm Fiber-Coupled CW Module

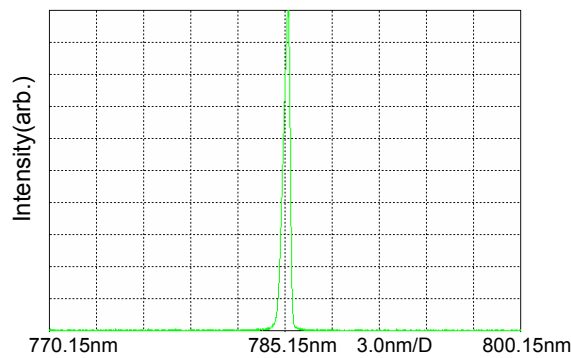
K78S14F-1.60W

## LD Characteristics



## Typ. spectrum (T=25°C)

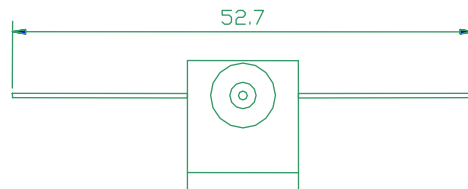
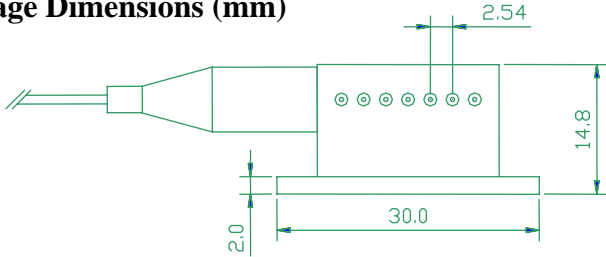
Typ. spectrum of 785nm diode laser modules



## 785nm Fiber-Coupled CW Module

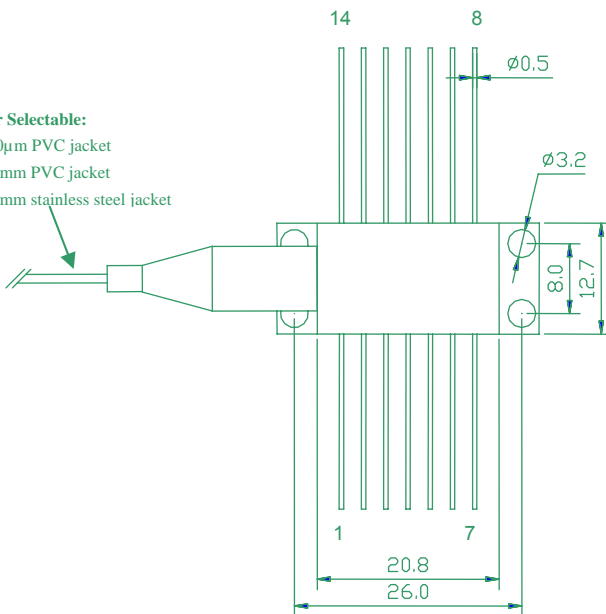
K78S14F-1.60W

### Package Dimensions (mm)



#### Customer Selectable:

- 900 $\mu$ m PVC jacket
- 3.0mm PVC jacket
- 2.1mm stainless steel jacket



Pin	Function	Pin	Function
1	TEC (+)	8	None
2	Thermistor ( 1 )	9	None
3	PD ( P )	10	Laser Anode (+)
4	PD ( N )	11	Laser Cathode ( - )
5	Thermistor ( 2 )	12	None
6	None	13	Case
7	None	14	TEC ( - )

### OPERATING NOTES

- Avoid eye exposure to direct or scattered radiation when the device is in operation.
- ESD precautions must be taken when handling unit.
- Using constant power supplies to guarantee the component works under the limits of its maximum peak optical power.
- The laser diode must be used under the specifications.
- Unit requires a condition to spread the heat as well as possible.
- Keep the fiber end clean before use. Fiber is not allowed to be curved so much. The diameter of curvature should be 300 times greater than fiber diameter.
- Environment temperature is 10 $^{\circ}$ C--30 $^{\circ}$ C.
- Storage temperature is -20 $^{\circ}$ C--80 $^{\circ}$ C, short circuit store.



VISIBLE AND/OR INVISIBLE LASER RADIATION  
 AVOID EYE OR SKIN EXPOSURE TO DIRECTOR  
 SCATTERED RADIATION  
 MAXIMUM OUTPUT IS DEPENDANT UPON AND LESS THAN  
 INPUT RADIATION EMITTED WAVELENGTH DEPENDS UPON  
 FILTER SETTING  
 CLASS IV LASER PRODUCT



Information and specifications contained herein are deemed to be reliable and accurate. BWT Beijing reserves the right to change, alter or modify the design and specifications of these products at any time with out notice.