

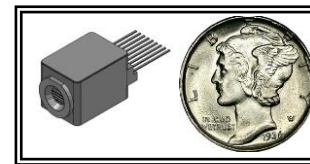
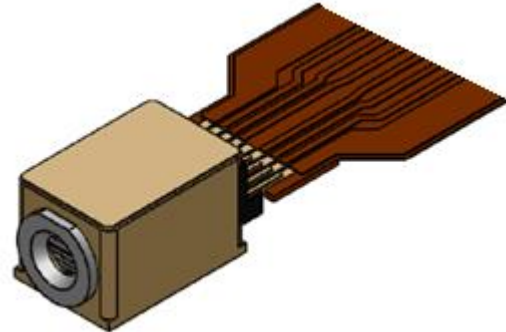
**830nm Mercury™ Series
High-Power Single-Frequency Laser Module
PH830DBRXXXTS**

Technology

- DBR Single-Frequency Laser Chip
- AlGaAs QW Active Layer

Features

- Robust, monolithic die design
- Pulsed operation for spectral stability at short pulse lengths
- Package contains TEC cooling with precise thermistor control
- High Slope Efficiency
- Hermetic package for high reliability



Description

The 830nm Mercury™ series of high-power edge-emitting lasers are based on Photodigm's advanced single-frequency laser technology. It provides a diffraction limited, single lateral and longitudinal mode beam in a compact hermetic package. Facets are passivated for high-power reliability. Applications include mobile spectroscopy instrumentation where durability and reliability are essential.

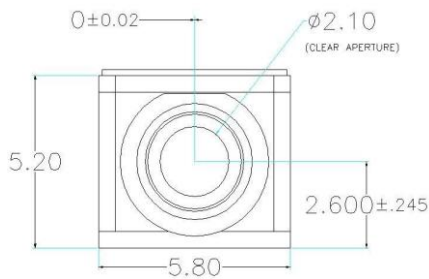
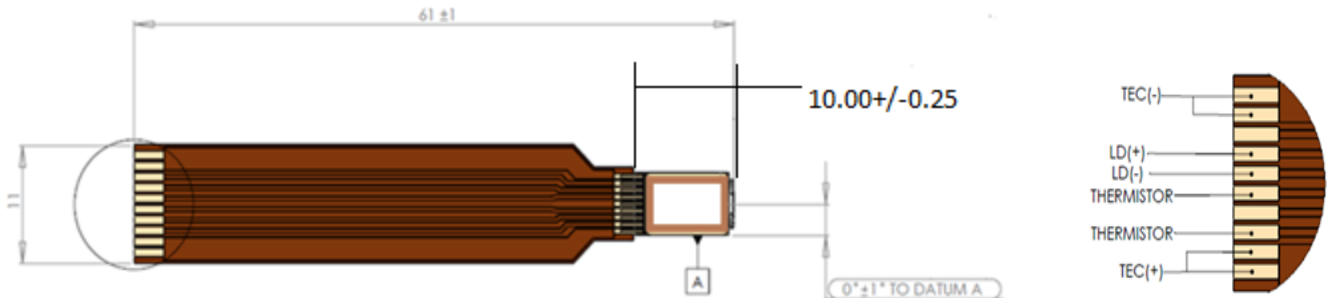
Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature	T _{STG}	°C	0	80
Operating Temperature	T _{OP}	°C	5.0	70
CW Laser Forward Current, T=25°C	I _F	mA	-	**
Laser Reverse Voltage	V _R	V	-	0.0
TEC Current	I _{TEC}	A	-1.1	1.1
TEC Voltage	V _{TEC}	V	-3.0	3.0
Thermistor Current	I _{THRM}	mA	-	1.0
Thermistor Voltage	V _{THRM}	V	-	10

****Do not exceed drive current or operating power of supplied LIV**

CW Characteristics at $T_c = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Unit	Min	Typ	Max
Center Wavelength @ 150mA	λ_c	nm	829	830	831
Optical Output Power	P_o	mW	See Power Options Call-out		
Slope Efficiency	η_d	W/A	0.75	0.85	-
Threshold Current	I_{th}	mA	70	90	130
Laser Series Resistance	R_S	Ω	-	2.0	2.5
Laser Forward Voltage @ 150mA	V_F	V	-	2.0	2.5
Thermistor Resistance @ 25°C	R_T	K Ω	-	10	-
Laser Line Width	$\Delta\nu$	MHz	-	1	-
Beam Divergence @ FWHM	$\theta_{ } \times \theta_{\perp}$	$^\circ$	-	6 X 28	8 X 32
Side Mode Suppression Ratio	SMSR	dB	-30	-	-
Laser Polarization				TE	
Mode Structure					Fundamental Mode



Dimensions in mm

1. Hermeticity: $< 5 \times 10^{-8}$ ATM_(He)cc/sec
2. Window: Sapphire coated with AR both sides, 700nm-1100nm >90% transmission
3. LD facet to outer surface of window holder is 1.3mm typical
4. LD is centered to package (not window)
5. Package base is W85CU15
6. Final finish: 60 μ " of Au over 100 μ " Ni
7. Module is supplied with 2" flex interconnect (FPC). FPC will interface to Molex connector PN522071060. Custom FPC is optional.

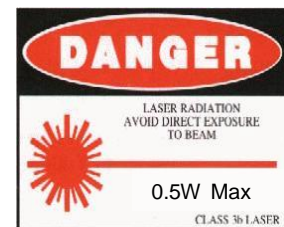
How To Order

Part number example: PH830DBR080TS. Assign optical power from those available. Use a three-digit format for all power entries. These devices are sensitive to ESD.

PH830DBR  TS

Typical Power (mW)

040	120
080	180



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