

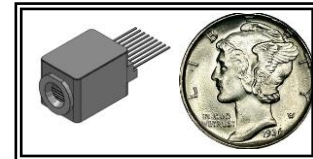
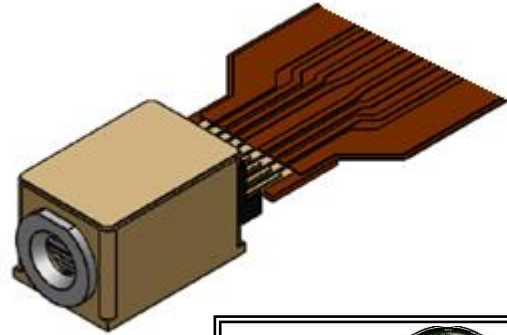
**770nm Mercury™ Series  
High-Power Single-Frequency Laser Diode  
PH770DBRXXXTS**

**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 770nm 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. Spectroscopy certified to D1 line of Potassium.

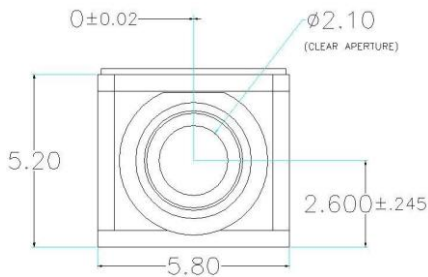
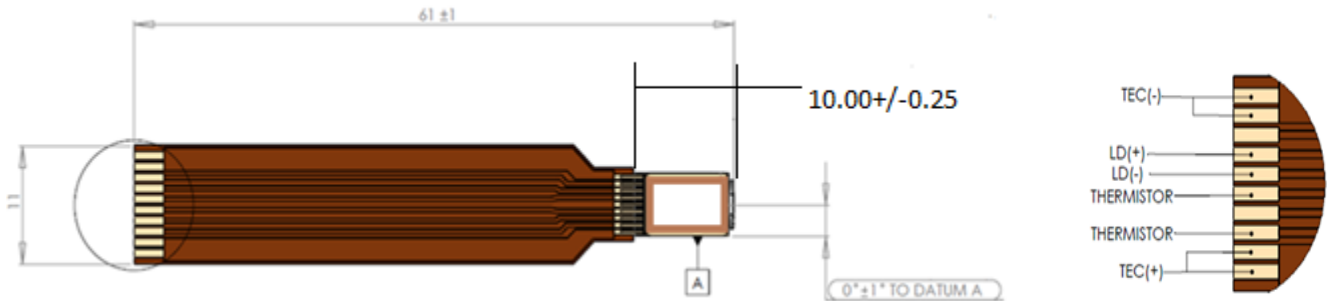
**Absolute Maximum Ratings**

Parameter	Symbol	Unit	Min	Max
Storage Temperature	T <sub>STG</sub>	°C	0	80
Operating Temperature	T <sub>OP</sub>	°C	5.0	70
CW Laser Forward Current, T=25°C	I <sub>F</sub>	mA	-	**
Laser Reverse Voltage	V <sub>R</sub>	V	-	0.0
TEC Current	I <sub>TEC</sub>	A	-1.1	1.1
TEC Voltage	V <sub>TEC</sub>	V	-3.0	3.0
Thermistor Current	I <sub>THRM</sub>	mA	-	1.0
Thermistor Voltage	V <sub>THRM</sub>	V	-	10

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

**CW Characteristics at T<sub>C</sub> = 25°C unless otherwise specified**

Parameter	Symbol	Unit	Min	Typ	Max
Center Wavelength @ 150mA	$\lambda_c$	nm	769	770	771
Optical Output Power	P <sub>o</sub>	mW	See Power Options Call-out		
Slope Efficiency	$\eta_d$	W/A	0.50	0.7	-
Threshold Current	I <sub>th</sub>	mA	-	70	100
Laser Series Resistance	R <sub>S</sub>	$\Omega$	-	2.0	2.5
Laser Forward Voltage @ 150mA	V <sub>F</sub>	V	-	2.0	2.5
Thermistor Resistance @ 25°C	R <sub>T</sub>	K $\Omega$	-	10	-
Laser Line Width	$\Delta\nu$	MHz	-	0.5	1
Beam Divergence @ FWHM	$\theta_{  } \times \theta_{\perp}$	°	-	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: <math> < 5 \times 10^{-8}</math> ATM<sub>(He)</sub>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 $\mu$ m of Au over 100 $\mu$ m Ni
7. Module is supplied with 2" flex interconnect (FPC). FPC will interface to Molex connector PN522071060. Custom FPC is optional.

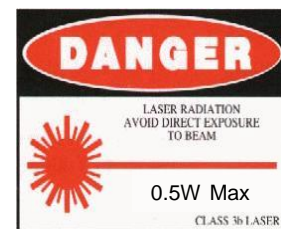
**How To Order**

Part number example: PH770DBR080TS. Assign optical power from those available. Use a three-digit format for all power entries. These devices are sensitive to ESD.

PH770DBR 040 080 TS

**Typical Power (mW)**

040  
080



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