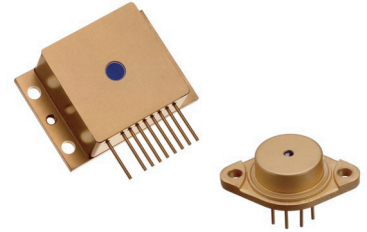


### VISIBLE COMPONENTS

# Series 1300

## Visible CW Lasers for Medical and Display Applications



The Series 1300 are state-of-the-art, high power CW visible diode lasers. These broad area multimode lasers offer extremely high brightness, excellent reliability, good quantum efficiency, and low thermal impedance. Close tolerances to  $\pm 3\text{nm}$  are provided in certain wavelengths. Available in a variety of

open, window, and fibered packages, including C mount, 9MM, TO3 with TE cooler, and HHL with TE cooler and fast axis collimator, these lasers are easily integrated into systems. Applications include photodynamic therapy, medical imaging and diagnostics, illumination, optical pumping, and process control.

### Typical Specifications @ 20°C

Series 1300		1305	1305	1310	1310
Output Power	(W)	0.5	0.5	1.0	1.0
Source Size	( $\mu\text{m}$ )	100	100	200	200
Typical Wavelength*	(nm)	670	690	670	690
Operating Current	(A)	0.9	0.9	1.5	1.5
Threshold Current	(A)	0.35	0.35	0.55	0.55
Series Resistance	( $\Omega$ )	0.4	0.4	0.35	0.35
Operating Voltage		2.3V			
Spectral Width		1nm			
Wavelength Tolerance*		$\pm 10\text{nm}$			
Slope Efficiency		1 W/A			
Beam Divergence		40 x 10 deg (FWHM)			
Max Laser Temp		20°C			
Typical Packages		9MM, C, TO3, HHL			

\* Other wavelengths and tolerances available upon request.

### Drivers

Intense can recommend companies offering commercial drivers for visible CW laser diodes. Contact an applications engineer for additional information.

### Safety

Intense Gallium Indium Arsenide Phosphide lasers emit radiation which is visible to the human eye. Safety precautions must be taken to prevent potential eye damage. Do not view or stare at operating lasers. If viewing is required, use a matte surface or suitable viewing screen.

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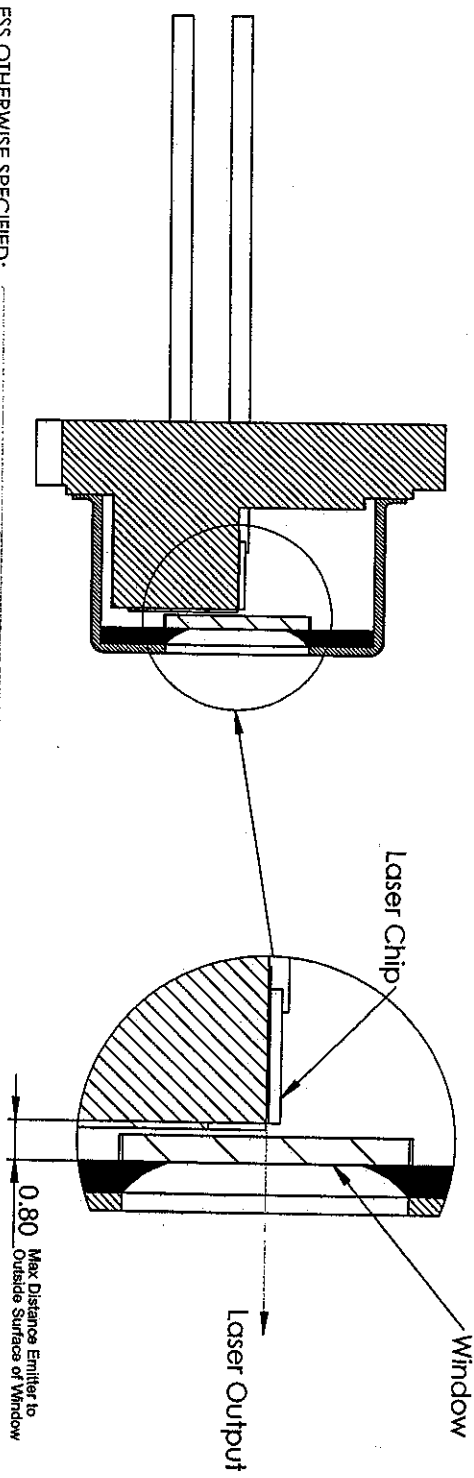
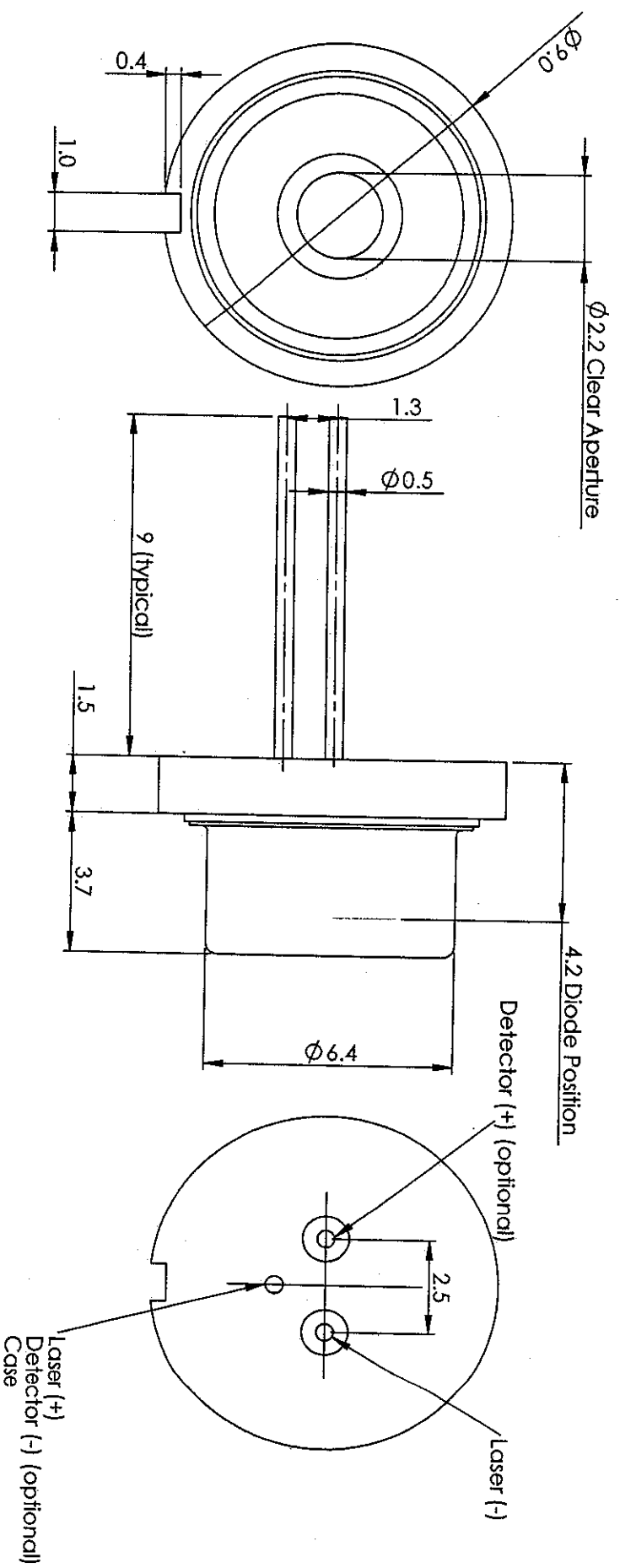
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### Disclaimer

Intense reserves the right to make changes at any time as necessary to improve the design and to supply the best product. The information provided is believed to be accurate at the time of printing. No responsibility is assumed for its use or on the infringements on the rights of others.

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**UNCONTROLLED DOCUMENT**

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN mm  
TOLERANCES:

XX ±0.1  
X.XX ±0.05

SCALE: 6:1	MATERIAL	DATE
	Copper Headstink with Copper or Steel Base	6/10/08
DRAWN	DATE	DATE
E. Goutain	6/10/08	6/10/08
APPROVED	DATE	DATE
J. Riordan	6/10/08	6/10/08
732-249-2228		

TITLE:	DWG. NO.	REV
9mm Package Case (+), Detector (optional)	PO-0005-1	C

**intense**

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## TEC Parameters

		TO3-TEC BUTF-TEC	TO3-HpTEC BUTF-HpTEC	HHL-TEC	HHL-HpTEC Included in Series 5200 & 5300
<b>Qmax</b>	<b>watts</b>	4.1	6.5	14.4	27.5
<b>I<sub>max</sub></b>	<b>amps</b>	1.8	1.7	3.9	5.3
<b>V<sub>max</sub></b>	<b>volts</b>	3.5	5.3	8.6	8.1
<b>(Th-Tc)<sub>max</sub></b>	<b>° C</b>	61	61	61	61
<b>AC R</b>	<b>ohms</b>	1.8	3.0	2.0	1.5

\* Note: The above values are from TEC manufacturer.

Actual operating parameters are a function of specific device and operating conditions.

## Thermistor Resistance vs Temperature

		Standard Thermistor	Bead Thermistor Series 5200, 5300 & BUTF Pkgs
Resistance	Ohms (Ω)	10,000	10,000
Tolerance	(at 25 °C)	+/- 5%	+/- 0.2C

Temp (°C)	Resistance Ohms (Ω)	Resistance Ohms (Ω)
-40	220500	336600
-35	165900	242800
-30	125800	177000
-25	96100	130400
-20	74220	97120
-15	57770	72980
-10	45270	55340
-5	35800	42340
0	28480	32660
5	22820	25400
10	18380	19900
15	14920	15710
20	12180	12490
25	10000	10000
30	8261	8058
35	6862	6532
40	5727	5326
45	4804	4368
50	4045	3602
55	3427	2986
60	2914	2488



## Silicon Photodetector Parameters

	Standard	TO56 (case -)	TO56, 9mm (case +)
Size (mm <sup>2</sup> )	1.31	0.64	0.64
Active Area (mm <sup>2</sup> )	0.86	0.36	0.36
Dark Current (nA)	0.5	10 (max)	
Reverse Voltage (V)		40	6
Responsivity -detector (A/W)	0.3 - 0.5	0.6	0.6

\* Responsivity (in pkg) varies - please contact factory