

High Power Multi-Mode Lasers Dies  
5 Watts of Continuous Operation Power  
1470, 1532, or 1550 nm Wavelengths

SemiNex delivers the highest available CW power at infrared wavelengths. SemiNex will optimize the design of its laser chips to meet customers' optical and electrical performance specifications. Diodes are designed and tested to meet custom applications. Typical results are shown. Actual results will vary depending on packaging and application. Contact SemiNex for additional details or to discuss your application.

Key Features

- High output power
- High dynamic power range
- High efficiency

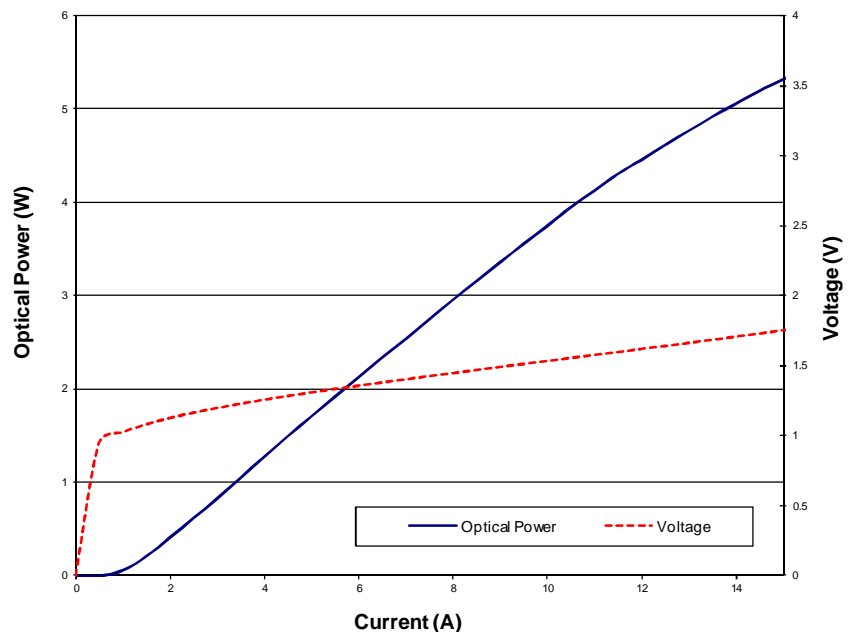
Applications

- Medical laser equipment
- LIDAR
- Free Space Optical Communication
- DPSS pump lasers
- Military / Aerospace

	Symbol	Typical	Units
<b>Optical</b>			
Output power (CW)	$P_o$	5	watts
Center Wavelength Range	$\lambda_c$	1470, 1532, 1550	nm
Emitter Width	W	95	$\mu\text{m}$
Emitter Height	H	1	$\mu\text{m}$
Spectral Width	$\Delta\lambda$	10	nm 3dB
Slope Efficiency	$\eta_o$	0.4	W/A
Fast Axis Divergence	$\theta_{\text{perp}}$	26	deg FWHM
Slow Axis Divergence	$\theta_{\text{parallel}}$	8	deg FWHM
Wavelength Temp. Coeff.	$\lambda_{\text{coef}}$	0.7	nm/C

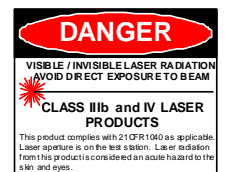
	Symbol	Typical	Units
<b>Electrical</b>			
Power conversion Efficiency	$\eta$	0.2	W/W
Threshold Current	$I_{\text{th}}$	0.45	A
Operating Current	$I_{\text{op}}$	14	A
Operating Voltage	$V_{\text{op}}$	1.8	V
Series Resistance	$R_s$	0.05	ohm

Typical CW LIV Optical Power Chart



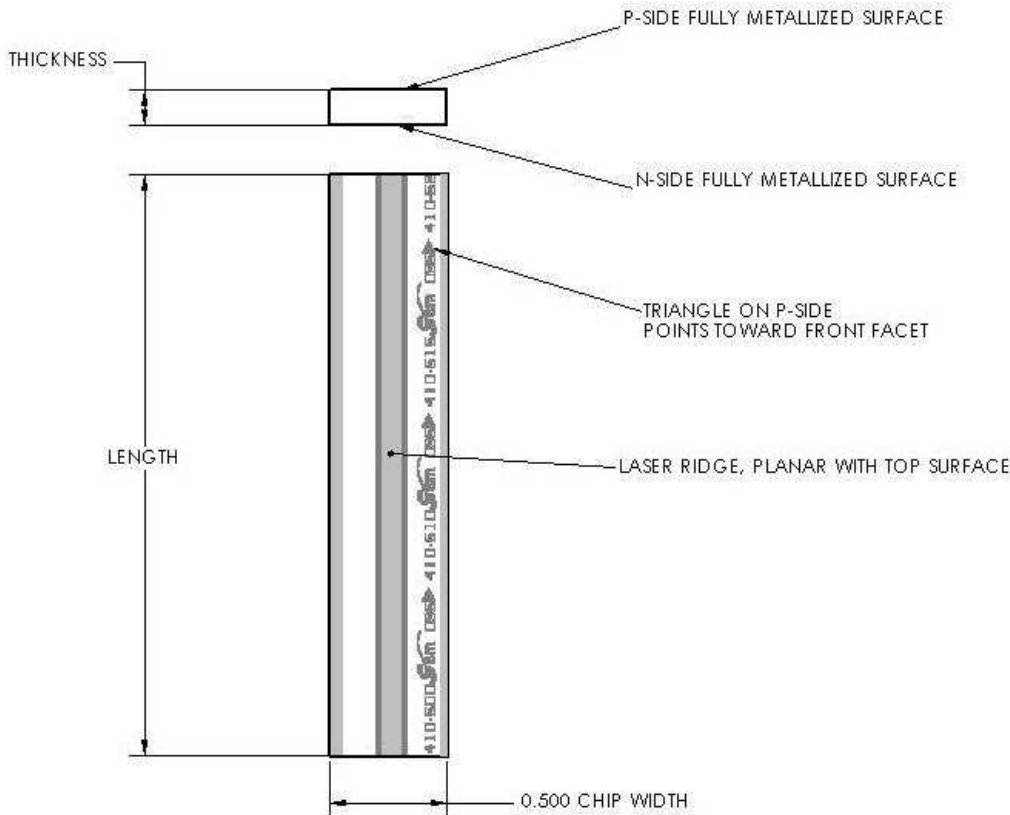
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		CHP-1470-6-95	CHP-1532-6-95	CHP-1550-6-95	Units
<b>Optical</b>					
Chip Cavity Length (typical)		2500	2500	2500	$\mu\text{m}$
Output power (CW)	$P_o$	5	4	4	watts
Center Wavelength	$\lambda_c$	1470	1532	1550	nm
Emitter Width	$W$	95	95	95	$\mu\text{m}$
Emitter Height	$H$	1	1	1	$\mu\text{m}$
Spectral Width	$\Delta\lambda$	15	15	15	nm 3dB
Slope Efficiency	$\eta_o$	0.4	0.3	0.3	W/A
Fast Axis Divergence	$\theta_{\text{perp}}$	26	26	26	deg FWHM
Slow Axis Divergence	$\theta_{\text{parallel}}$	8	8	8	deg FWHM
<b>Electrical</b>					
Power conversion Efficiency	$\eta$	0.2	0.2	0.2	W/W
Threshold Current	$I_{\text{th}}$	0.45	0.45	0.45	A
Operating Current	$I_{\text{op}}$	14	12	12	A
Operating Voltage	$V_{\text{op}}$	1.8	1.6	1.6	V
Series Resistance	$R_s$	0.05	0.05	0.05	ohm



#### CHIP ATTRIBUTES

APERTURE WIDTH	95 $\mu\text{m}$ $\pm$ 3 $\mu\text{m}$
CHIP WIDTH	500 $\mu\text{m}$ $\pm$ 10 $\mu\text{m}$
THICKNESS	160 $\mu\text{m}$ $\pm$ 10 $\mu\text{m}$
CAVITY LENGTH	1.50 or 2.50 $\pm$ 10 $\mu\text{m}$

#### P METALLIZATION

MATERIAL	THICKNESS (nm)	TOLERANCE
Ti	50	+/- 10
Pt	125	+/- 25
Au	250	+/- 50

#### N METALLIZATION

MATERIAL	THICKNESS (nm)	TOLERANCE
Ti	30	+/- 10
Pt	125	+/- 25
Au	400	+/- 40

NOTE: Optical power is estimated and will vary greatly from the above specification depending on the mounting configuration and quality.

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