DLC's New High Performance Diode Laser Modules



- Pointing Accuracy <2mrad
- Pointing Stability<10µrad/°C
- Water and Dust Resistant
- Fully Customizable for OEM Applications

These performance advances provide key advantages to the OEM customer:

- Reduced Fixturing/Labor Costs
- Increased OEM Product Performance
- Broader Application Base
- Unmatched Performance at a Competitive Price.



Diode Laser Concepts, Inc.

4731 Industry Drive - Central Point, OR 97502 USA Tel: 541-773-5321 - Fax: 541-773-1705 Web: www.diodelaserconcepts.com

EXTERNAL HOUSING SPECIFICATIONS

Housing Dimensions	Ø9.5mm and Ø12.7mm Length: 25.4mm
Housing Material	Aluminum, Hard Anodized (Type III, Class 2 Anodization, Electrically Isolated)
Exit Aperture Protection	Sapphire Window
Customization	Dimensions, Materials, Exit Aperture Protection

ELECTRICAL SPECIFICATIONS

Operating Voltage	5VDC ± 1%
Load Current	25mA – 150mA (Laser Dependent)
Load Current vs. Temperature	0.7mA/°C Nominal
Continuous Wave (Standard Driver)	CW to 1kHz, Full Depth Modulation
TTL Modulation (Optional Driver)	CW to 1MHz, Full Depth Modulation
Electronic Protection	Reverse Polarity, Over Voltage, Surge Protection
Interconnect	175mm Nominal, 24AWG, UL1569
Customization	Operating Voltage, Interconnect

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-10°C to 50°C
Storage Temperature	-40°C to 85°C
Static Contact Discharge Immunity	>12kV
Dust/Water Resistant	Yes (Sealed Housing)
Customization	Operating Temperature, Dust/Water Resistance

OPTICAL SPECIFICATIONS

Wavelength Range	635-830nm
Wavelength Stability	0.25nm/°C Nominal
Optical Power Range	1-30mW, Single Mode
Power Output Stability at 25C	<1%
Power Output vs. Temperature	<0.5%/°C Nominal
Exit Beam Size	5.0mmX1.2mm, 6.1mmX1.2mm
Beam Divergence	<0.7mrad Nominal, Varies with Optical Configuration
Standard Line Fan angles	10°, 30°, 45°, 60°, 90°
Line Thickness	1mm@1Meter Nominal
Line Thickness Divergence	<0.5mrad Nominal, Varies with Optical Configuration
Line Intensity Profile	Gaussian (Top Hat Profile Available Upon Request)
Lens Material	Glass
Customization	Wavelength, Power Output, Spot Size, Fan Angle, Line Thickness, Line Intensity Profile

POINTING SPECIFICATIONS

Accuracy	<2mrad
Stability vs. Temperature	<10µrad/°C
Customization	Accuracy

RELIABILITY/REGULATORY SPECIFICATIONS

Laser Lifetime	>30,000 hrs at 25°C		
Certification/ Regulatory	CE/ CDRH		
Warranty	2 Years		

 $\label{eq:NOTE: Custom products may/may not conform to these specifications.}$









MECHANICAL			PIED OR USED AS THE BASIS FOR A DESIGN WITHOUT THE WRITTEN PERMISSION OF DLC. REVISION HISTORY					
SPECIFCATIONS			REV	DES	CRIPTION	DATE	APPROVED	
Laser Material:	InGaAIP		1	Origina	te Document	11/17/2005	Zack S.	
Housing Material:	Aluminum* Type III Class 2 Black Anodized					•		
Exit Aperture Protection:	Sapphire Window (Optional)							
Lens Material:	Glass			→ 25.4±0.1 m	m - 1 106 + 10 m	am -	_	
OPTICAL SPECIFCATIONS		$ \emptyset 9.53^{+0.01}_{-0.01} \text{ mm} \qquad \underline{\qquad} $ $ \left[0.3750^{+0.0004}_{-0.0002} \text{ in}\right] $	\	[1.000±0.00				
Wavelength (25°C):	Various within the range of 630nm - 830nm	[0.3730 - 0.0002 111]						
Wavelength Stability	0.25nm / °C (Nominal)				<u> </u>		<u>-</u>	
Output Power (Exit Aperture):	0.97mW, 4.9mW, 20mW (Nominal)*							
Output Power Stability (25°C):	<1% Fluctuation over 60 Minutes							
Output Power vs. Temperature:	<0.5% / °C (Nominal)							
Beam Size (At Exit Aperture):	0.85mm x 3.4mm, 1.2mm x 5.0mm, 1.5mm x 5.5mm (Nominal, varies with optical configuration and focus.)*	Ø12.70 +0.01 mm		→ 25.4±0.1 m			_	
Beam Divergence:	Varies with optical configuration and focus.	Ø12.70 ^{+0.01} mm	\	$[1.000 \pm 0.00]$	04 in] $[7.7 \pm 0.4]$	in]		
Emissions Indicator:	Green LED	$\left[0.5000^{+0.0004}_{-0.0002}\mathrm{in}\right]$						
POINTING SPECIFCATIONS							=	
Accuracy:	<2mrad							
Stability vs. Temperature:	<10µrad / °C							
ELECTRICAL SPECIFCATIONS	·	Ø14.73 ^{+0.01} mm		25.4±0.1 m [1.000±0.00			-	
Operating Voltage:	5VDC Regulated +/- 1%*	[0.5800 +0.0004 in]	\	[1.000±0.00	[7.7 2 6.5			
Load Current –Typical at 25°C:	Varies with Output Power and Wavelength	[0.5800 _{- 0.0002} In]						
Load Current –Max. at 25°C:	Varies with Output Power and Wavelength	4						
Continuous Wave:	CW to 1kHz Full Depth Modulation*	(_ '	
	Turn on Time <0.1s *	`						
Case:	Electrically Isolated			•				
Electronic Protection:	Reverse Polarity Protection Over Voltage Protection Surge Protection			→ 25.0±0.1 mm	m 196±10 n	om A	_1	
Interconnect:	24 AWG, UL1569* Red (+), Black (-)	\emptyset 10.00 $^{+0.01}_{-0.01}$ mm $\left[0.3937 ^{+0.0004}_{-0.0002}$ in $\right]$	\	[0.984±0.00				
ENVIRONMENTAL SPECIFCATIONS		[0.0707 -0.0002 ***]			_			
Operating Temperature:	-10 to 50°C (60°C, 70°, 80°C) *						_	
Storage Temperature:	-40°C to 85°C							
Static Discharge Immunity:	>12Kv (Contact)							
Dust/Water Resistance:	Yes							
RELIABILITY/REGULATORY SPECIFCATIONS			APPROVALS	DATE	/// Property	ACED Co		
Certifications:	CE CDRH Class Dependant Upon Output Power and		Drawn By: Zack S.	11/17/05	4731 Industr	•		
Del IC compliane	Wavelength				Central Poin	t, Oregon 97502	USA	
RoHS compliance:	Beginning January 2006		Approved By: Mike R.	11/17/05	Specific part numbers are issue	d according to co	nfiguration.	
Warranty:	2 Years		Customer Approval:		Description:			
*Indicates Customization A	voilable		N/A	N/A	General specifications for high perfo	rmance spot modul	es.	

MECHANICAL			COPIED OR USED AS THE BASIS FOR A DESIGN WITHOUT THE WRITTEN PERMISSION OF DLC. REVISION HISTORY					
SPECIFCATIONS			REV				APPROVED	
Laser Material:	InGaAIP		1	Originate Document		11/17/2005	Zack S.	
Housing Material:	Aluminum* Type III Class 2 Black Anodized							
Exit Aperture Protection:	Sapphire Window						1	
Lens Material:	Glass			25.4±0.1 mm	200 ± 10 m		-	
OPTICAL SPECIFCATIONS		Ø9.53 ^{+0.01} mm _		[1.000±0.004 in]	$[7.9 \pm 0.4]$	in]		
Wavelength (25°C):	Various within the range of 630nm - 830nm	$\left[0.3750^{+0.0004}_{-0.0020}\mathrm{in}\right]$			1 1			
Wavelength Stability	0.25nm / °C (Nominal)				\prec		<u>—</u>	
Output Power (Exit Aperture):	0.97mW, 4.9mW, 20mW (Nominal)*							
Output Power Stability (25°C):	<1% Fluctuation over 60 Minutes							
Output Power vs. Temperature:	<0.5% / °C (Nominal)							
Fan Angle:	45°, 70°, 90° (Nominal) *							
Line Thickness :	1mm nominal (Measured at Face)	+0.01		25.4±0.1 mm	200 ± 10 r		_	
Line Intensity Profile:	Gaussian	Ø12.70 ^{+0.01} mm	\	[1.000±0.004 in]	$[7.9 \pm 0.4]$			
Emissions Indicator:	Green LED	$\left[0.5000^{+0.0004}_{-0.0020}\mathrm{in}\right]$						
POINTING SPECIFCATIONS					+ +			
Accuracy:	<2mrad							
Stability vs. Temperature:	<10µrad / °C							
ELECTRICAL SPECIFCATIONS		Ø14.73 ^{+0.01} mm _	_	25.4±0.1 mm	200 ± 10 n		_	
Operating Voltage:	5VDC Regulated +/- 1%*			$[1.000 \pm 0.004 \text{ in}]$	$[7.9 \pm 0.4]$	inJ		
Load Current –Typical at 25°C:	Varies with Output Power and Wavelength	[0.5800 ^{+0.0004} _{-0.0020} in]						
Load Current –Max. at 25°C:	Varies with Output Power and Wavelength				ر ر			
Continuous Wave:	CW to 1kHz Full Depth Modulation* Turn on Time <0.1s*				7		—	
Case:	Electrically Isolated							
Electronic Protection:	Reverse Polarity Protection Over Voltage Protection Surge Protection						ı	
Interconnect:	24 AWG, UL1569*			25.0±0.1 mm [0.984±0.004 in]	200 ± 10 m [7.9 ± 0.4 i		-	
	Red (+), Black (-)	Ø10.00 ^{+0.01} mm -	<u></u>	[0.704 ± 0.004 [1]]	[7.7±0.4]	11]		
ENVIRONMENTAL SPECIFCATIONS		$\left[0.3937\ ^{+0.0004}_{-0.0020}\ in ight]$			ح حـ			
Operating Temperature:	-10 to 50°C (60°C, 70°, 80°C) *							
Storage Temperature:	-40°C to 85°C		_					
Static Discharge Immunity:	>12Kv (Contact)							
Dust/Water Resistance:	Yes							
RELIABILITY/REGULATORY SPECIFCATIONS			APPROVALS	DATE	DIONE L	ASER CON	CEPTS. INC	
Certifications:	CE CDRH Class Dependant Upon Output Power and Wavelength		Drawn By: Zack S.	11/17/05	4731 Industry			
RoHS compliance:	Beginning January 2006		Approved By:	11/17/05 Part Number:		-		
Warranty:	2 Years		Mike R.	Specific part	numbers are issue	d according to c	onfiguration.	
*Indicates Customization A	vailable		Customer Approval: N/A	N/A Description: General specif	ications for high perfo	rmance line gener	ator modules.	