

# Near-UV Laser Diode Module

## 445 nm, 40 mW

- Compact collimated laser diode module
- Combines power stability and low noise
- Power controllable up to 40 mW
- Driver electronics and cooling integrated in the module

The Violet-445 offers a collimated optical beam in a compact radial package. Advanced electronics ensure precise temperature and power control, maximizing diode lifetime.

The output power can be adjusted manually or modulated through analog and TTL controls. Its power stability and low-noise characteristics make it ideal for a wide range of applications, namely in fluorescence and sensing. In addition, its compactness allows for easy integration in a variety of environments.

The Violet-445 is available in a "Plug & Play" version, compliant with CE and CDRH safety standards, and including a universal power supply. An "OEM" version system integrators requires a 5V power supply. Holding brackets to help attach the module to a base plate are delivered with each laser.



Optical Parameters	Min.	Nominal	Max.	Unit	Conditions
Wavelength	440	445	450	nm	multi-frequency emission
CW Power		40		mW	
Power Stability			± 1	%	over 8 hours and ± 3 K
Optical Noise			0.5	%	rms, 10 Hz - 2 MHz
Beam Diameter (elliptical) <sup>1</sup>		1 x 2.5		mm	at 50 mm from aperture
Beam Divergence (elliptical) <sup>1</sup>			0.6	mrad	1/e <sup>2</sup> , full angle, in far field

<sup>1</sup> Due to the uncorrected ellipticity of the laser diode, the beam will evolve or can be focused onto a near circular spot.

# Violet-445

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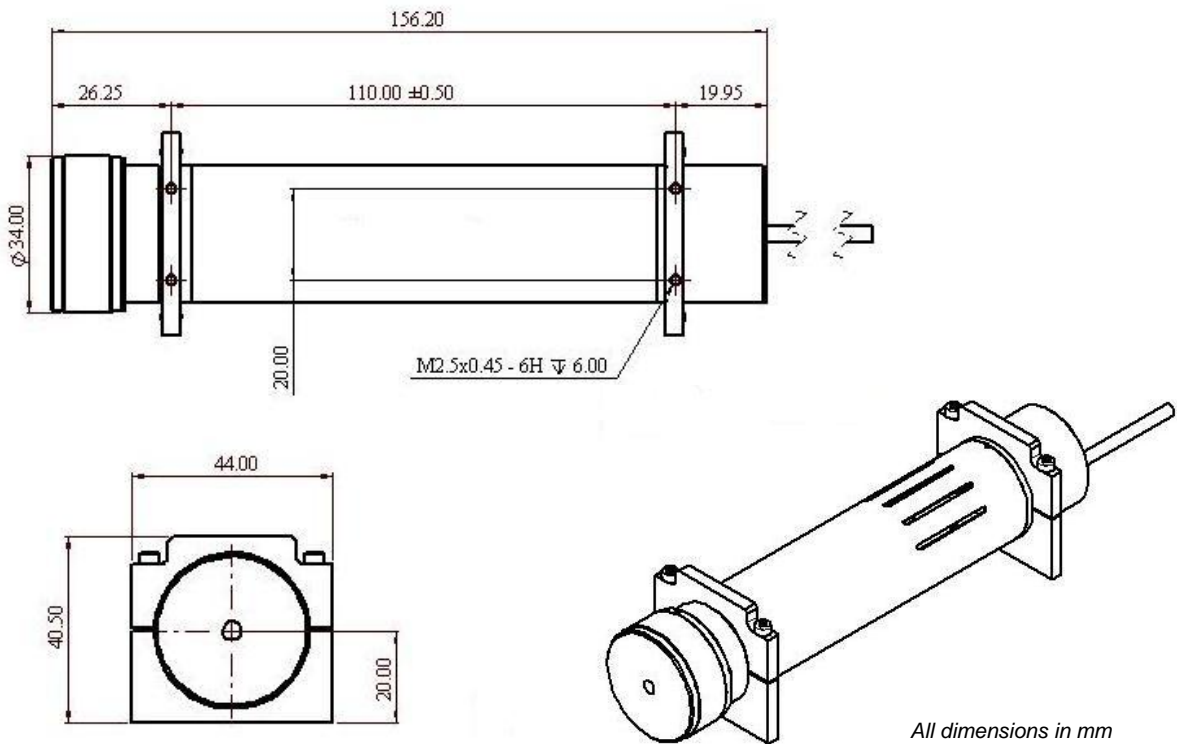
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System Parameters	Min.	Nominal	Max.	Unit	Conditions
<b>Laser Head</b>					
Ambient Temperature	10		35	°C	operation range
Power Consumption		2.5	10	W	OEM version
Start-up Time		1		min	(turn-on delay)
<b>External Control Interface</b>					
TTL Modulation		10 / 2		µs	rise / fall time
Analog Modulation		100		kHz	-3 dB cutoff frequency
<b>Power Supply Requirements</b>					
Input Voltage	4.8		6	V	ripple < 1%
Input Current			2	A	
<b>Dimensions, OEM Version</b>					
Plug & Play Version		150 x 30		mm <sup>3</sup>	L x Ø
		156 x 34		mm <sup>3</sup>	L x Ø
Weight		250		g	

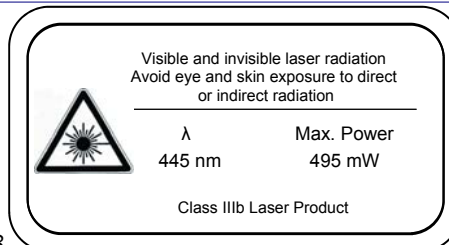
## Maximum Environmental Ratings

Storage Temperature	-20		60	°C	non operational
Relative Humidity	10		90	%	non condensing
Resistance to Shock			25	G	11 ms duration
Resistance to Vibration			2.5	G	sinusoidal, 10 to 500 Hz

## Mechanical Drawing of Laser Module (PP Version with Manual Shutter)



OXXIUS lasers are registered with FDA. Accession numbers: 07200339 (Plug & Play version), 07R0452-000 (OEM version).  
 Oxxius has a policy of sequential product improvement. Specifications may change without notice.



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