



Coherent Mini

Structured Light Pattern Generating Laser

Coherent's Mini laser has the smallest dimensions available on the market for a diode laser producing uniform intensity lines. It is designed for years of reliable operation in systems where size and weight are a limitation. These patented line-generating optics have been integrated into the Mini laser to yield a high performance uniform line.

With its small diameter (10 mm), the Mini is packed with features. It is ESD-protected, reverse-polarity protected, over-temperature protected.

FEATURES

- Compact 10 mm diameter
- Power up to 35 mW
- 635 nm to 785 nm
- Uniform intensity distribution
- Focusable
- Fan angles from 1 to 75 degrees
- ESD, over-temperature, and reverse polarity protection

APPLICATIONS

- 3D Scanners
- Automotive
- Food Portioning
- Dental
- Machine Tool Wear
- Casting Profiling
- Alignment

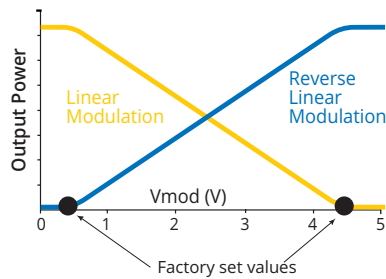


Standard
Mini Laser

Mini Laser with
Separate Drive Electronics

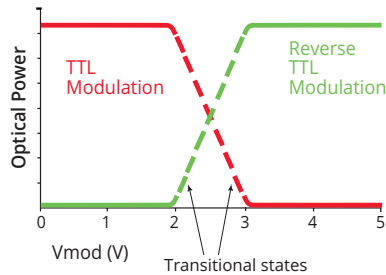
SPECIFICATIONS	Mini 640	Mini 660	Mini 685	Mini 785
Wavelength (nm)	640	660	685	785
Wavelength Tolerance (nm)	+3/-5	+/-6	+/-15	+/-10
Laser Power (mW)	1, 5, 10	1, 5, 10, 20, 35	20, 35	20, 35
Spatial Mode	TEM ₀₀			
M ² (Beam Quality)	<1.5			
Fan Angles	1, 5, 10, 20, 30, 45, 60, 75			
Straightness (%)	≤0.10			
Relative Intensity Floor (%)	>50			
Warm-up Time (minutes)	<5			
Laser Drive Modes	CW, Analog, or Digital			
Digital (kHz)	10			
Rise/Fall (µsec)	<10			
Analog (kHz)	10			
Rise/Fall (µsec)	<10			
Operating Voltage (VDC)	5 (6V required for Separate Driver Option)			
Operating Current (ma)	<200			
Input Impedance (kohm)	>1			
Connector	Mono Jack or Optional Flying Leads			
Beam Angle (mrad)	<3			
ESD Protection	Level 4			
Operating Temperature	10 to 50°C			
Storage Temperature	-20 to 60°C			

MODULATION (sold only with separate driver option)



Option -S
Option -RS

S (synchro) or RS (reverse synchro)
DC to 10 kHz
Linear for amplitude 1.0 V to 4.0 V
Rise/Fall Time: <10 µs



Option -T
Option -RT

T (TTL) or RT (Reverse TTL)
DC to 10 kHz
Rise/Fall Time: <10 µs

ORDERING INFORMATION

To order, use the following code: MINI - Pattern (Interbeam Angle) - Wavelength & Power Option (if applicable) - Diode Power - Fan Angle (for lines) - Separate Electronics option. E.g., MINI-503L-1.5-635S-20-SD. Contact us for more details.

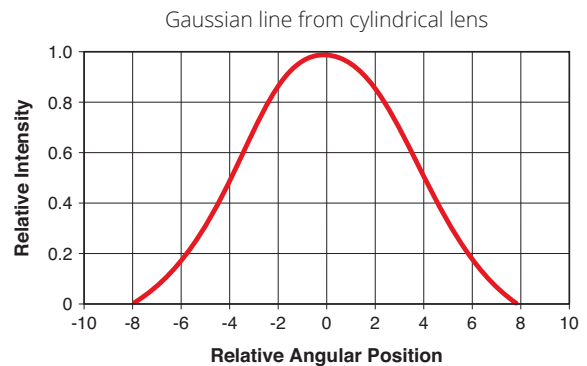
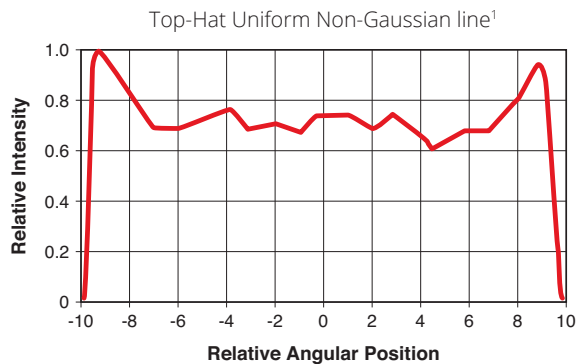
SPECIFICATION	501L or 701L	503L or 703L	533L or 733L
Pattern ¹	1 line	3 lines for 640 nm or 660 nm	33 line for 660 nm
Interbeam Angle	-	1.5°	0.38°

¹ Line patterns are also available as dots -- add "D" instead of "L" in the order code.

UNIFORM INTENSITY

Conventional laser line patterns are often generated by cylindrical optics that produce a Gaussian line profile with a bright center and fading ends. Coherent patented beam shaping optics distribute the light into an evenly illuminated line. The result is an exceptional, uniform line with sharp ends.

Line Intensity Profile Along Line Length



¹ Typical profile.

Relative intensity vs. angular position along line length

GLOSSARY OF TERMS

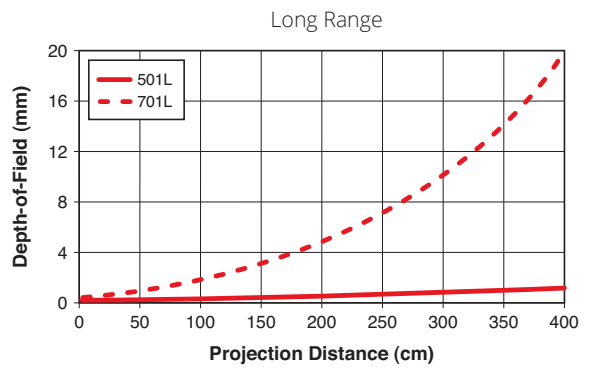
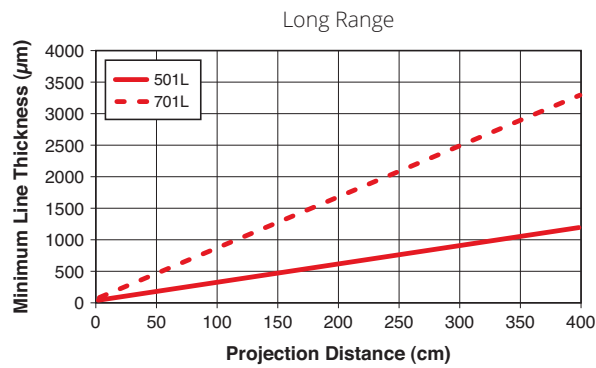
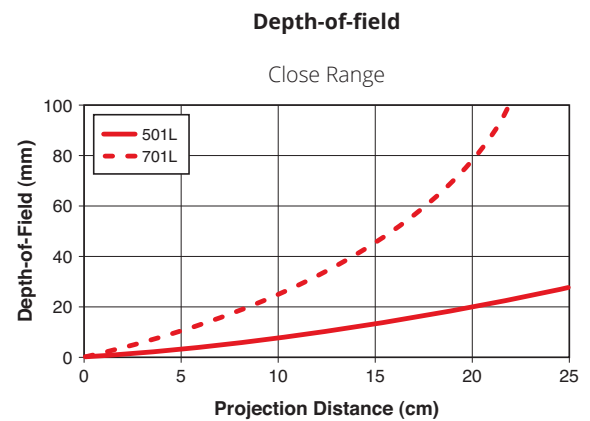
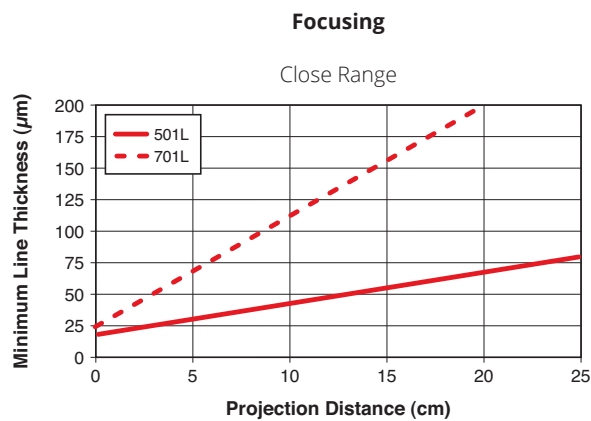
Definition	Description
Fan Angle or Line Length	Length of flat top profile, measured at 80% intensity clip levels. Reported in degrees for the fan angle.
Straightness	Maximum deviation from the best fit line. Measured as the delta from the best fit line divided by the line length. Reported as a percentage.
Relative Intensity Floor	Minimum relative intensity at any point along the line length. Reported as a relative intensity.

Note: Line is optimized in the factory at 500 mm working distance from laser

FOCUSING PERFORMANCE

The following figures show the typical focusing and depth-of-field performance of the Mini laser. The focus charts indicate the minimum line thickness (at $1/e^2$) achievable for a specific projection distance. The depth-of-field is defined as twice the distance over which the thickness of the line has increased by a factor of $\sqrt{2}$.

Focusing and Depth-of-Field Performance



AVAILABLE PATTERNS

Single Line



Parallel Lines



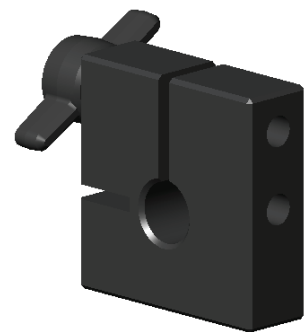
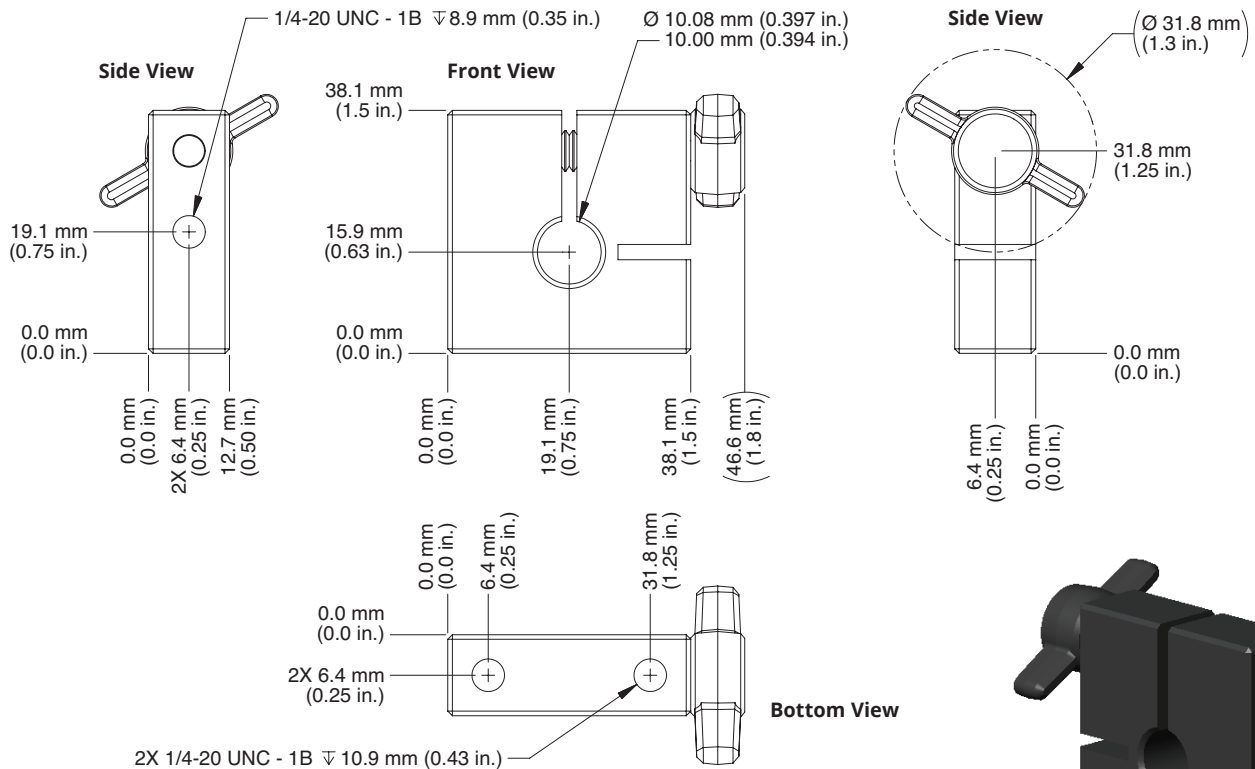
Single Dot



Mini Accessories	Part Number
Standard Mount, M-10	320-0550
Standard Mount, M-10-M6	320-0660
Pivot Mount, M-10P	320-0554
Pivot Mount, M-10P-M6	320-0552
Focusing Key Adjustment Tools	320-1526
Power Supply, 115V input, 5V Output, 2.5mm Plug	320-0773G
Power Supply, 220V input, 5V Output, 2.5mm Plug with European Adaptor	320-1158G
Power Supply, 115V input, 6V Output, 3.5mm Plug for Separate Driver Option	320-0568G
Power Supply, 220V input, 6V Output, 3.5mm Plug for Separate Driver Option	320-0570G

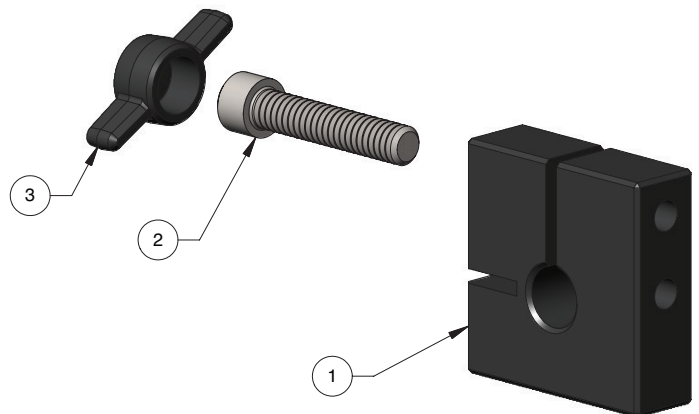
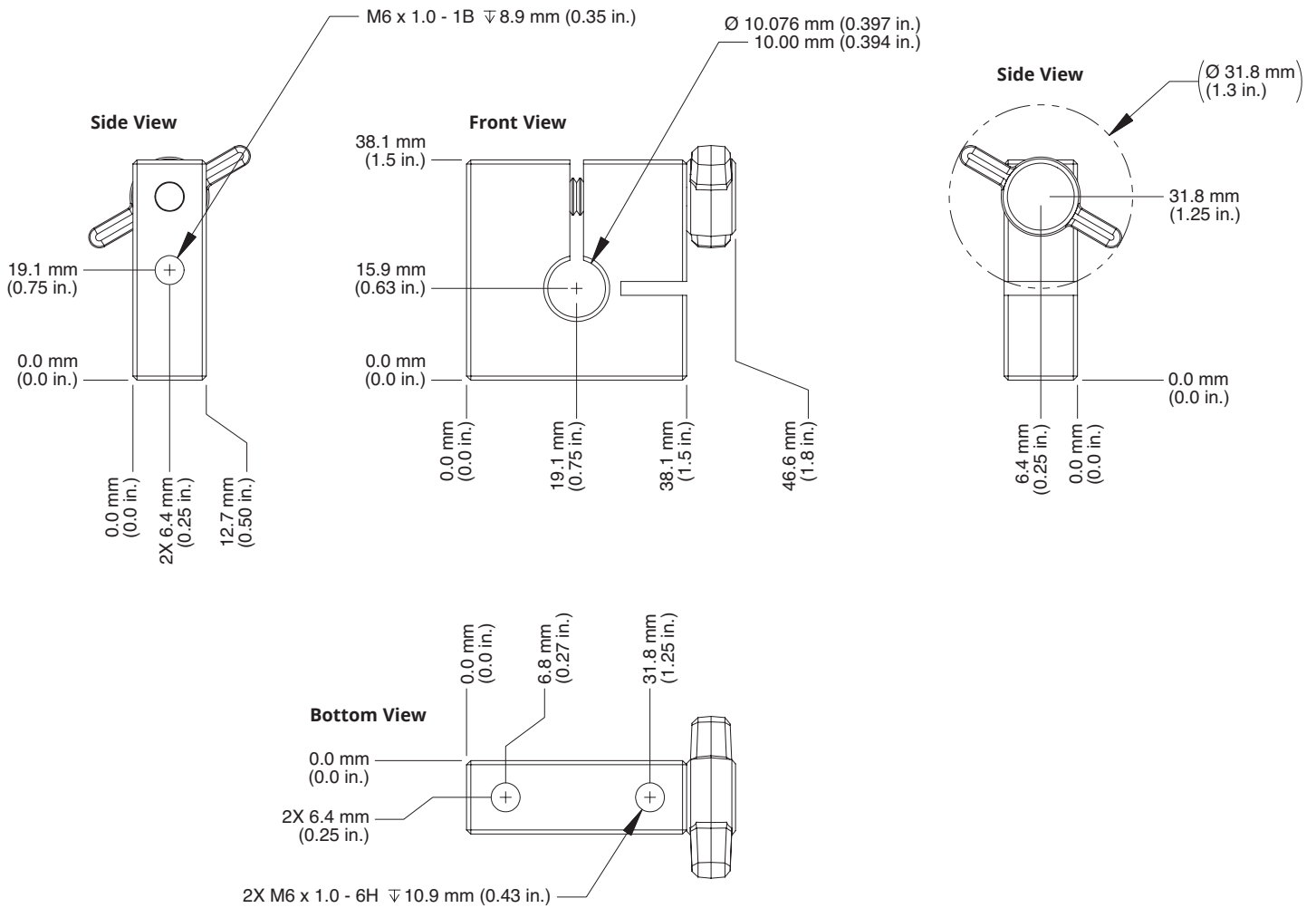
MECHANICAL SPECIFICATIONS

Standard Mount, M-10 320-0550



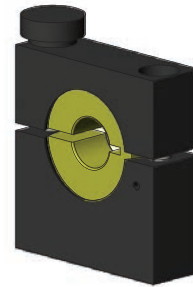
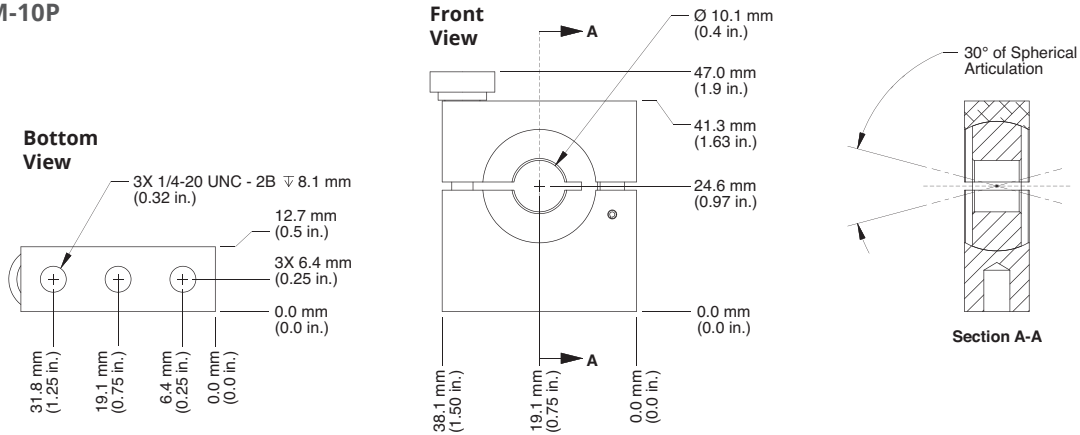
MECHANICAL SPECIFICATIONS

**Standard Mount, M-10-M6
320-0660**

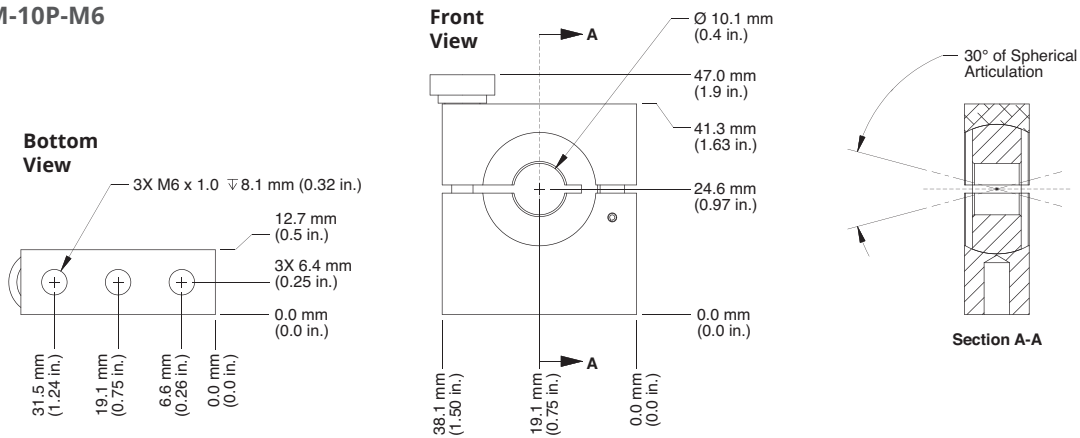


MECHANICAL SPECIFICATIONS

**Pivot Mount, M-10P
320-0554**



**Pivot Mount, M-10P-M6
320-0552**

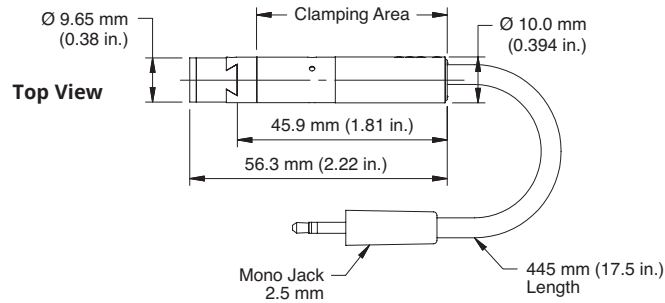


**Focusing Key Adjustment Tools
320-1526**

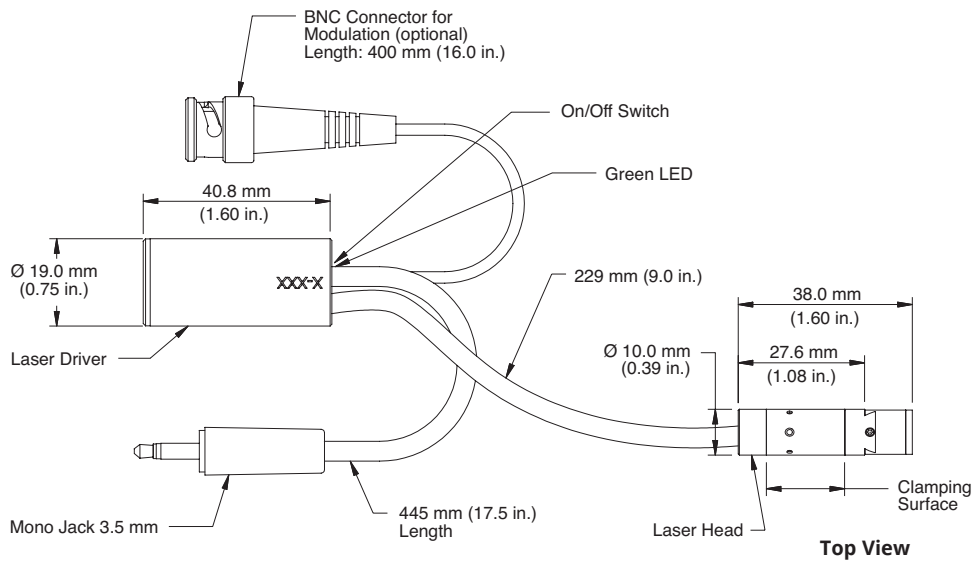


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Standard Mini Laser



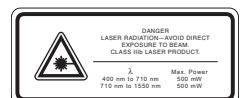
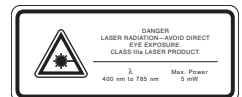
Mini Laser with Separate Electronics Option



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U.S. Patent No. 4,826,299
 U.S. Patent No. 5,523,889
 CAN. Patent No. 1,276,827



Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice. Coherent's scientific and industrial lasers are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by the Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

Coherent offers a limited warranty for all Coherent Mini lasers. For full details of this warranty coverage, please refer to the Service section at www.Coherent.com or contact your local Sales or Service Representative. Printed in the U.S.A. MC-001-10-0M1017Rev.B Copyright ©2017 Coherent, Inc.