



Coherent Magnum II

Structured Light Pattern Generating Laser

Coherent's Magnum II structured light laser is a high-power line generator developed for the most demanding industrial applications. It is available with a wide selection of output powers and fan angles and generates a uniform intensity distribution using patented line generating optics. In addition, the laser has exceptional beam pointing and focusing stability.

The Magnum II has fully protected electronics as well as a bipolar thermoelectric cooler used to keep the laser diode at a constant temperature. The laser beam can be modulated by an external signal and all models can operate in either CW or external modulation mode.

FEATURES

- Rugged industrial package
- Power up to 7W
- TEC cooled
- Exceptional pointing stability
- 680 nm and 808 nm
- Uniform intensity distribution
- Focusable
- Fan angles from 10 to 60 degrees
- ESD, over-temperature, and reverse polarity protection

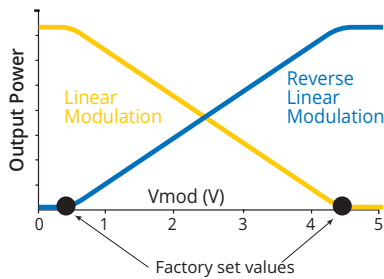
APPLICATIONS

- Road/Rail Inspection
- Tunnel Profiling
- Infrastructure
- Lumber
- Steel/Extrusion Profiling
- Solar Panel
- Dark Field Illumination
- Logistics Volume Measurements



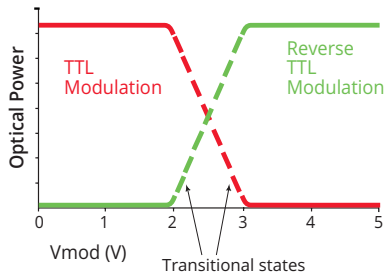
SPECIFICATIONS	Magnum 680	Magnum 808	Magnum 808
Wavelength (nm)	680	808	808
Wavelength Tolerance (nm)	±10	±5	±5
Laser Power (mW)	1500	4000	7000
Spatial Mode	Multi Transverse Mode		
Fan Angles	10, 20, 30, 45, 60		
Straightness (%)	≤0.10		
Relative Intensity Floor (%)	>50		
Warm-up Time (minutes)	<5		
Laser Drive Modes	CW, Analog, or Digital		
Digital (kHz)	10		
Rise/Fall (µsec)	<10		
Analog (kHz)	10		
Rise/Fall (µsec)	<10		
Operating Voltage (VDC)	12		
Operating Current (A)	3	5	5
Input Impedance (kohm)	>1		
Connector	Plug, 3-Pin, Amphenol 97-3102A-105L-3P (946)		
Pointing Stability (µRad/°C)	<10		
Beam Angle (mrad)	<3		
ESD Protection	Level 4		
Operating Temperature	-35 to 50°C		
Storage Temperature	-40 to 60°C		

MODULATION OPTIONS



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

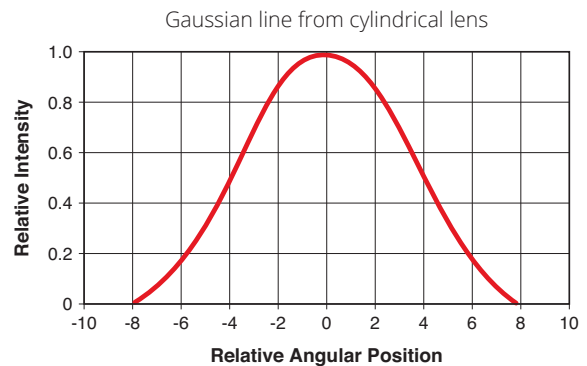
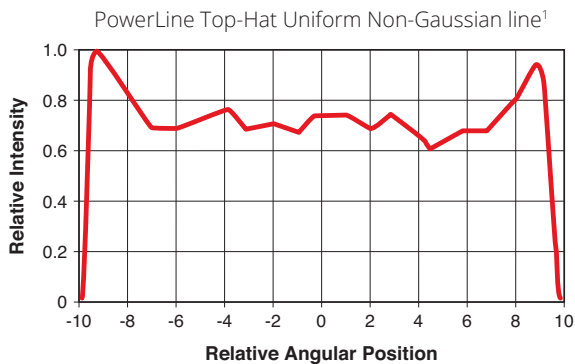
To order, use the following code: MAG II – Wavelength – Diode Power – Pulsing Option (S, RS, T, RT) – Fan Angle. See Modulation Graphs for definitions. Note that the projected fan angle may be less than the lens fan angle.

SPECIFICATION	Magnum 680-1500	Magnum 808-4000	Magnum 808-7000
Wavelength (nm)	680	808	808
Laser Power (mW)	1500	4000	7000
Final Beam Power (mW)	1200	3200	5600
Electrical Power	12VDC, 3A	12VDC, 5A	12VDC, 5A
Fan Angle	10°, 20°, 30°, 45°, 60°		

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 spread 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

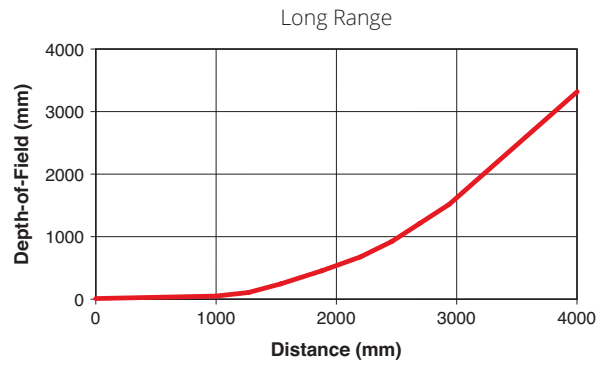
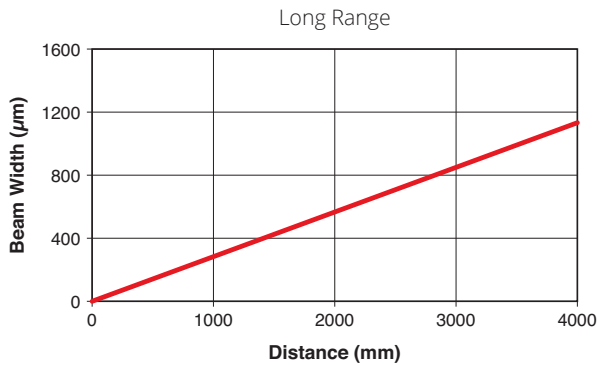
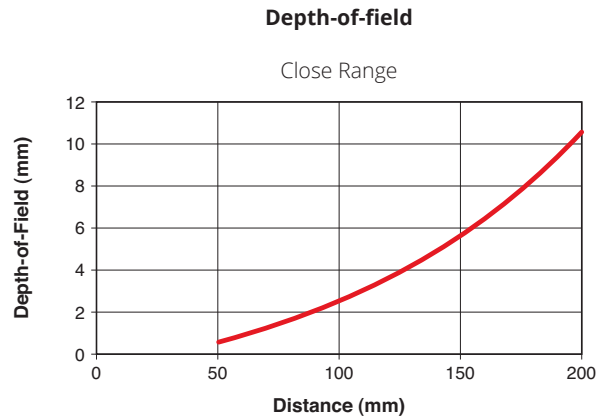
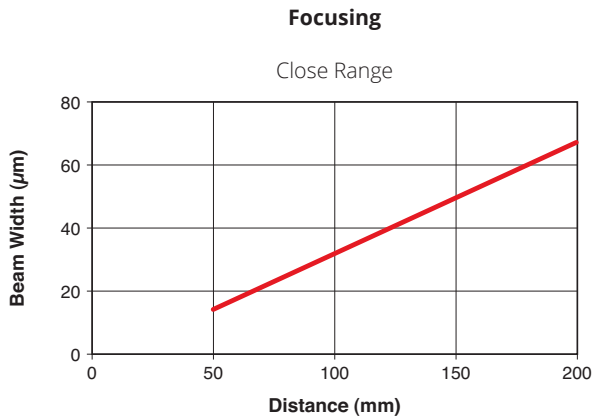
Definition	Description
Fan Angle or Line Length	Length of flat top profile, measured at 80% intensity clip levels. Reported in degrees for the fan angle.
Straightness	Maximum deviation from the best fit line. Measured as the delta from the best fit line divided by the line length. Reported as a percentage.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

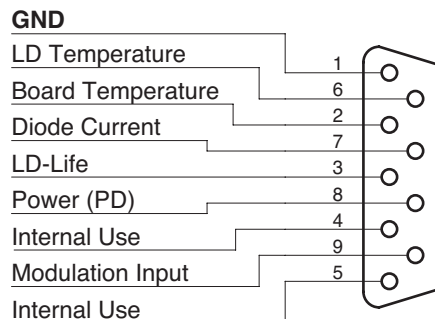
FOCUSING PERFORMANCE

The following figures show the typical focusing and depth-of-field performance of the Magnum II 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 $\sqrt{2}$.

Typical Focusing and Depth-of-Field Performance



DB9 CONNECTOR

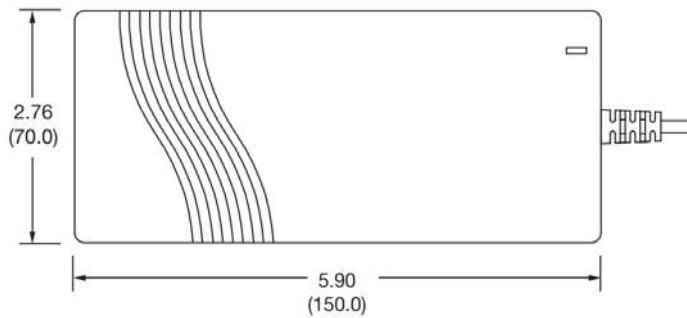


PowerLine Accessories	Part Number
Power Supply, 115V input includes USA Power Cord	320-1402G
Power Supply, 220V input includes German Power Cord	320-1690G

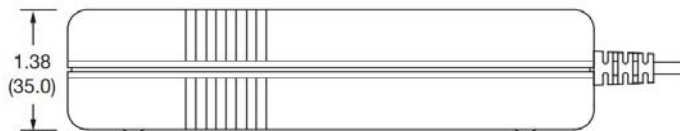
MECHANICAL SPECIFICATIONS

Power Supply 320-1402G/320-1690G

Top View

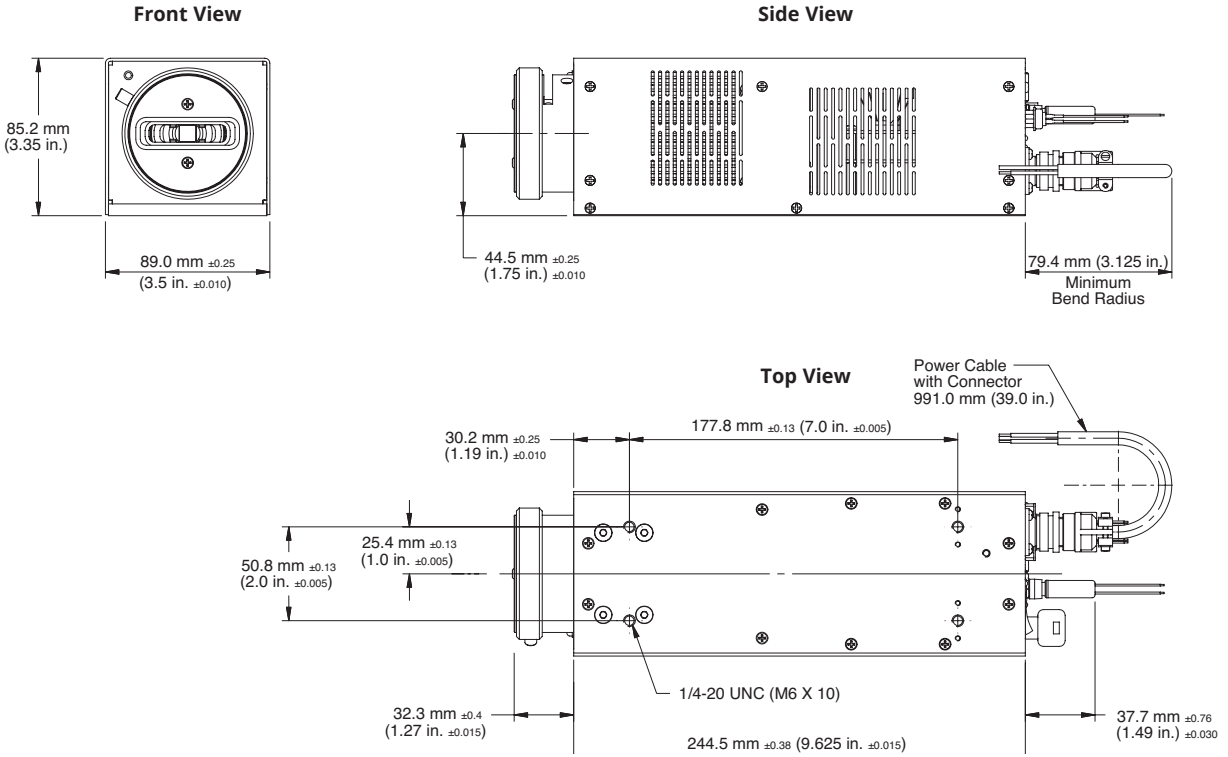


Side View



MECHANICAL SPECIFICATIONS

Magnum II Laser



Coherent, Inc.,
 5100 Patrick Henry Drive Santa Clara, CA 95054
 p. (800) 527-3786 | (408) 764-4983
 f. (408) 764-4646

tech.sales@Coherent.com www.Coherent.com

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 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 Magnum II 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-011-10-0M1017Rev.C Copyright ©2017 Coherent, Inc.

