PowerLine E Series

High-Performance DPSS Laser Markers

PowerLine E Series are Class 4 laser marking sub-systems ideal for applications where mark quality, aesthetics and legibility are critical. They combine a diode-pumped, solid-state laser (with infrared, green, or ultraviolet output), with high-performance scanning and beam delivery optics, drive electronics, and powerful control software to yield a fast, flexible and accurate marking platform. The included Visual Laser Marker (VLM) applications software enables mark artwork to be transferred directly from a computer to the marker, and supports a number of sophisticated functions, including marking-on-the-fly and 3D marking, and marking of variable data (bar codes, serial numbers).

FEATURES & BENEFITS

- Compact design for easy integration
- Water/air cooling
- Precision optics for superior mark quality
- Powerful VLM marking software
- Control by PC, PLC, or fieldbus
- Versatile configuration options including optical z-axis, internal power sensor, positioning laser

APPLICATIONS

- Semiconductor IC and Wafer Marking
- Organics and Glass Marking
- Marking-on-the-Fly (conveyor belt or rotary axis)
- SmartMap3D Freeform Marking
- High-Precision Marking with Vision System

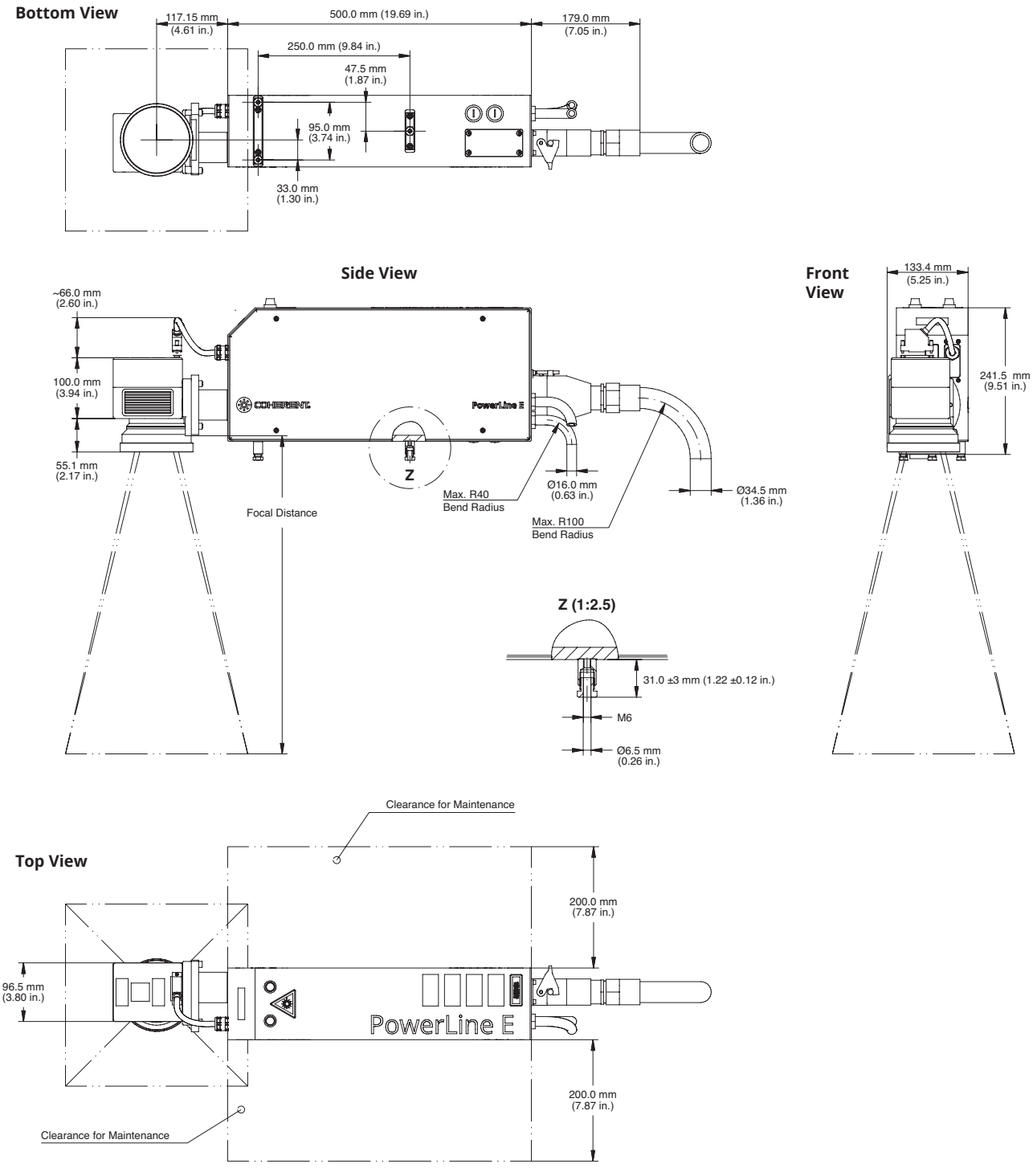
COHERENT®
Superior Reliability & Performance

MODEL	PL E 30	PL E 40	PL E 12 SHG	PL E 20 SHG	PL E 25 SHG	PL E 20 THG
Laser Type	DPSS					
Wavelength (nm)	1064	1064	532	532	532	355
Average CW Power (W)	25	40	-	-	-	-
Average Power (W)	20 (at 60 kHz)	35 (at 60 kHz)	6 (at 50 kHz)	12 (at 50 kHz)	18 (at 50 kHz)	2 (at 15 kHz)
Pulse Energy (mJ)	0.36 (at 60 kHz)	0.60 (at 60 kHz)	0.12 (at 50 kHz)	0.24 (at 50 kHz)	0.36 (at 50kHz)	0.13 (at 15 kHz)
Frequency Range (kHz)	cw, 0 to 200	cw, 30 to 200	5 to 200	15 to 200	15 to 200	15 to 100
Pulse Width (ns)	40 (at 60 kHz)	35 (at 60 kHz)	40 (at 50 kHz)	25 (at 50 kHz)	32 (at 50 kHz)	10 (at 15 kHz)
M^2	2 to 4	2 to 4	≤1.5	≤1.5	≤1.5	≤1.5
Beam Diameter (mm)	3.4 ±0.4	3.3 ±0.4	1.6 ±0.2	2.5 ±0.3	2.7 ±0.4	0.55
Cable laser head - supply unit	5 m (optional: 3 m)					
Weight (kg) Laser Head Supply Unit Water/Air Chiller PC Unit	 15 28 45 (PowerLine E 40: 55 kg) 10					
DPSS Laser Type	Vanadate					
Cooling	Water-air cooling. Ambient operating temperature: +15 to +35°C					
Scanners	Range of scanners for general marking, on-axis alignment, high precision marking (digital encoder)					
Optical Z-Axis	Yes (option)					
Marking Field Size	Between 60 mm x 60 mm and to 600 mm x 600 mm depending on f-Theta objective and wavelength					
Positioning Help Laser	Optional for 1064 nm and 532 nm models					
Physical Dimensions	Physical dimensions and working distance of the laser marker depend on the detailed configuration. Please refer to the technical drawing.					
Mounting of Laser Marker	Horizontal. Optionally, other mounting directions possible on demand.					
Supply Unit	19" rack mount unit, height: 3 rack units					
Water-Air Chiller	19" rack mount unit, height: 6 rack units (PowerLine E 40: 7 rack units)					
PC Unit	19" rack mount unit, height: 2 rack units					
Interfaces PLC Control PC Control[1] Fieldbus Control[3]	 Parallel interface (digital I/Os). Encoder devices can be connected to differential I/Os. LAN (TCP/IP), RS-232[2] Profibus DP, Profinet IO					
Variable Data	Keyboard input, local file (lot file), barcode reader, via LAN (TCP/IP)[1], Matrix objects					
Standard Software	Visual Laser Marker (VLM), Visual Marking Controller (VMC2), Laser Console, RCU.exe					
Marking Objects	Vector graphics, text, logos, ring, bitmap, banding					
Barcodes	GS1 DataBar, Code 39, Code 128, EAN8, EAN13, UPC-A, UPC-E, BookLan and others					
2D Codes	ECC200, Code 49, Micro-PDF417 and other data matrix and QR codes					
Optional Software Features	MJC (Marker Job Control), HK (Host Coupling), Marking-on-the-Fly (MoF), SmartMap3D, CAD Extension, AI, PDF and PS Import, SECS/GEM					
Operating System	Windows 10					
Certificates	PowerLine F laser markers are certified according to the following international standards: EN 60825-1:2014, EN 55011:2009/A1:2010, EN 61000-6-4:2007, EN 61000-6-2:2005, EN 61000-3-2:2014, EN 61000-3-3:2013, 47 CRF Part 18 ICES-003 Issue 4:2004 and fulfill the CDRH (radiation) standard.					

1 Requires Host Coupling HK, Marker Job Control (MJC) or SECS/GEM software feature.
2 Requires an RS-232-to-USB-adapter.
3 The fieldbus interface is provided by a fieldbus coupler. The fieldbus coupler is connected to the supply unit by Fast Ethernet connection.

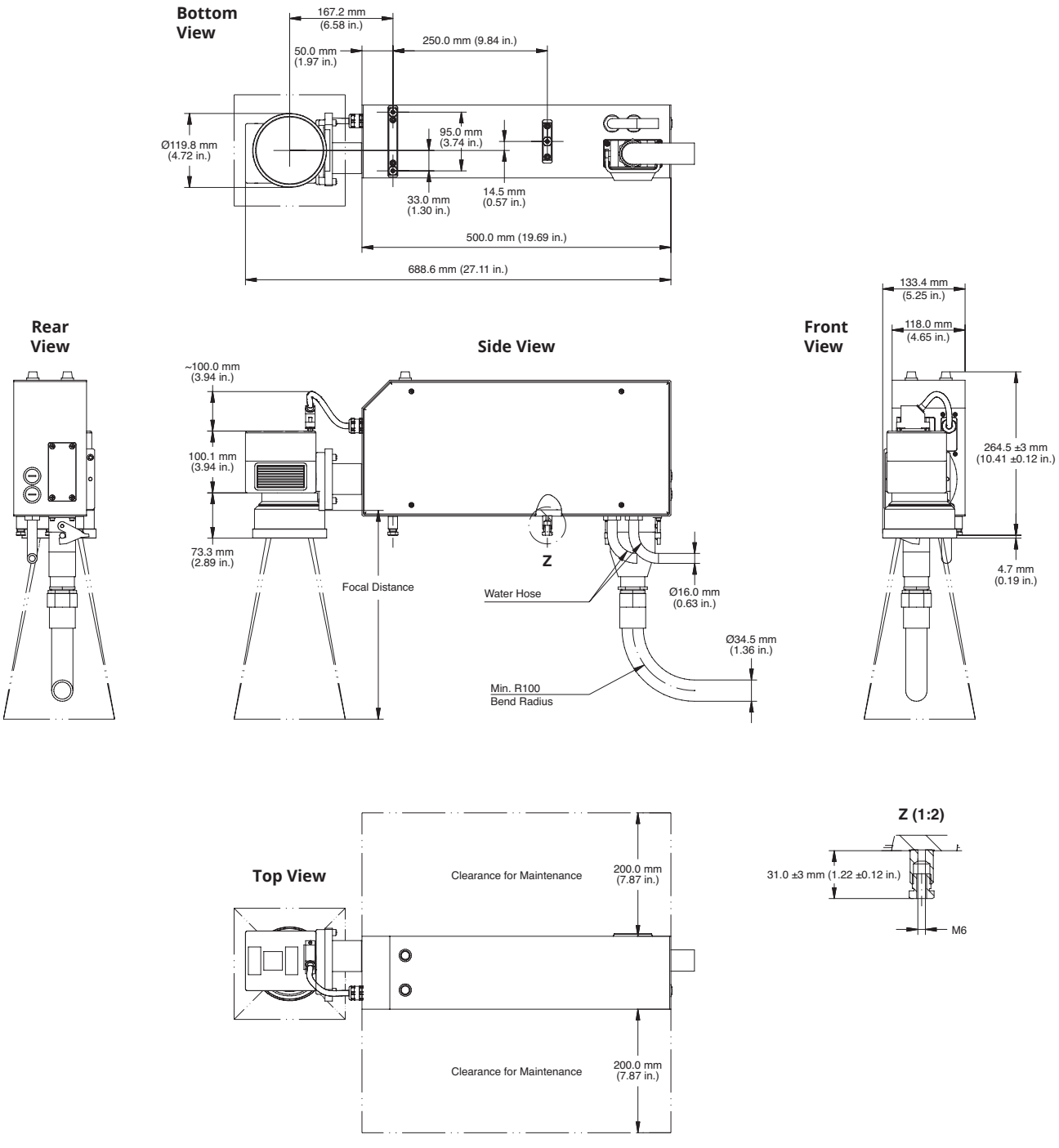
MECHANICAL SPECIFICATIONS

PowerLine E 25 / E 30, PowerLine E 12 SHG / E 20 SHG, PowerLine E 20 THG, cable connected at rear of laser head



MECHANICAL SPECIFICATIONS

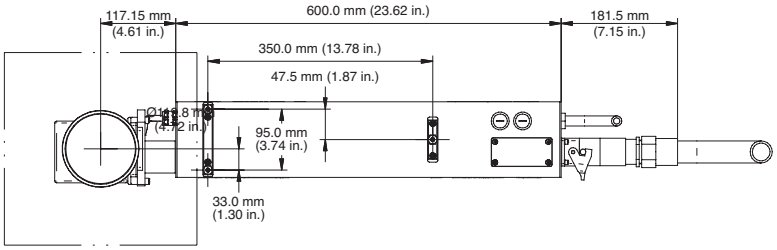
PowerLine E 25 / E 30, PowerLine E 12 SHG / E 20 SHG, PowerLine E 20 THG, cable connected at bottom of laser head



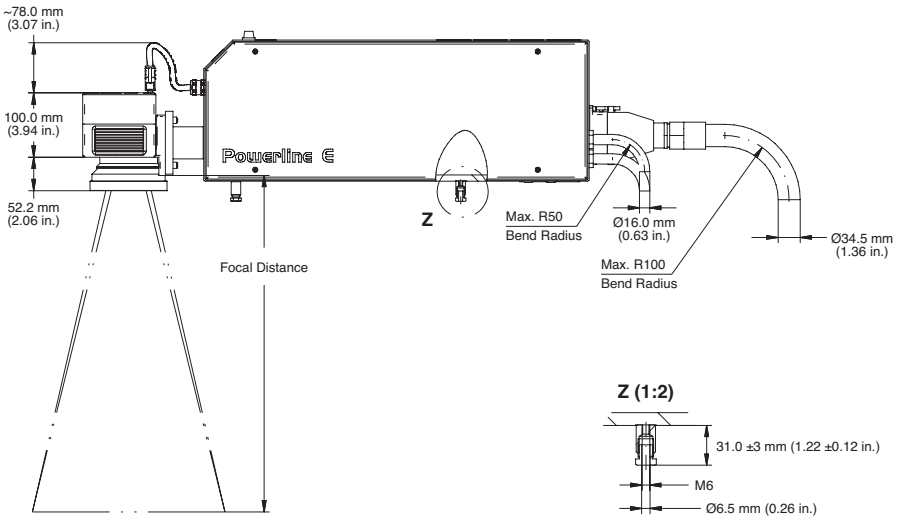
MECHANICAL SPECIFICATIONS

PowerLine E 40 and PowerLine E 25 SHG, cable connected at rear of laser head

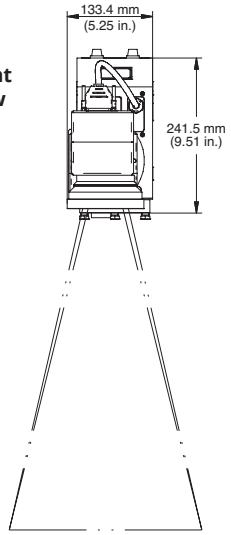
Bottom View



Side View

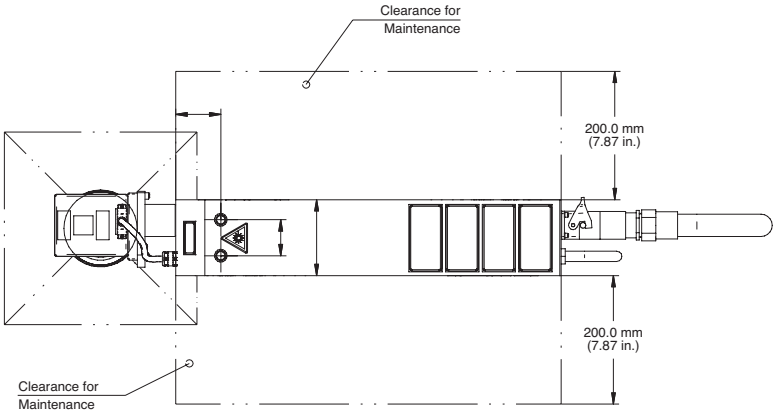


Front View



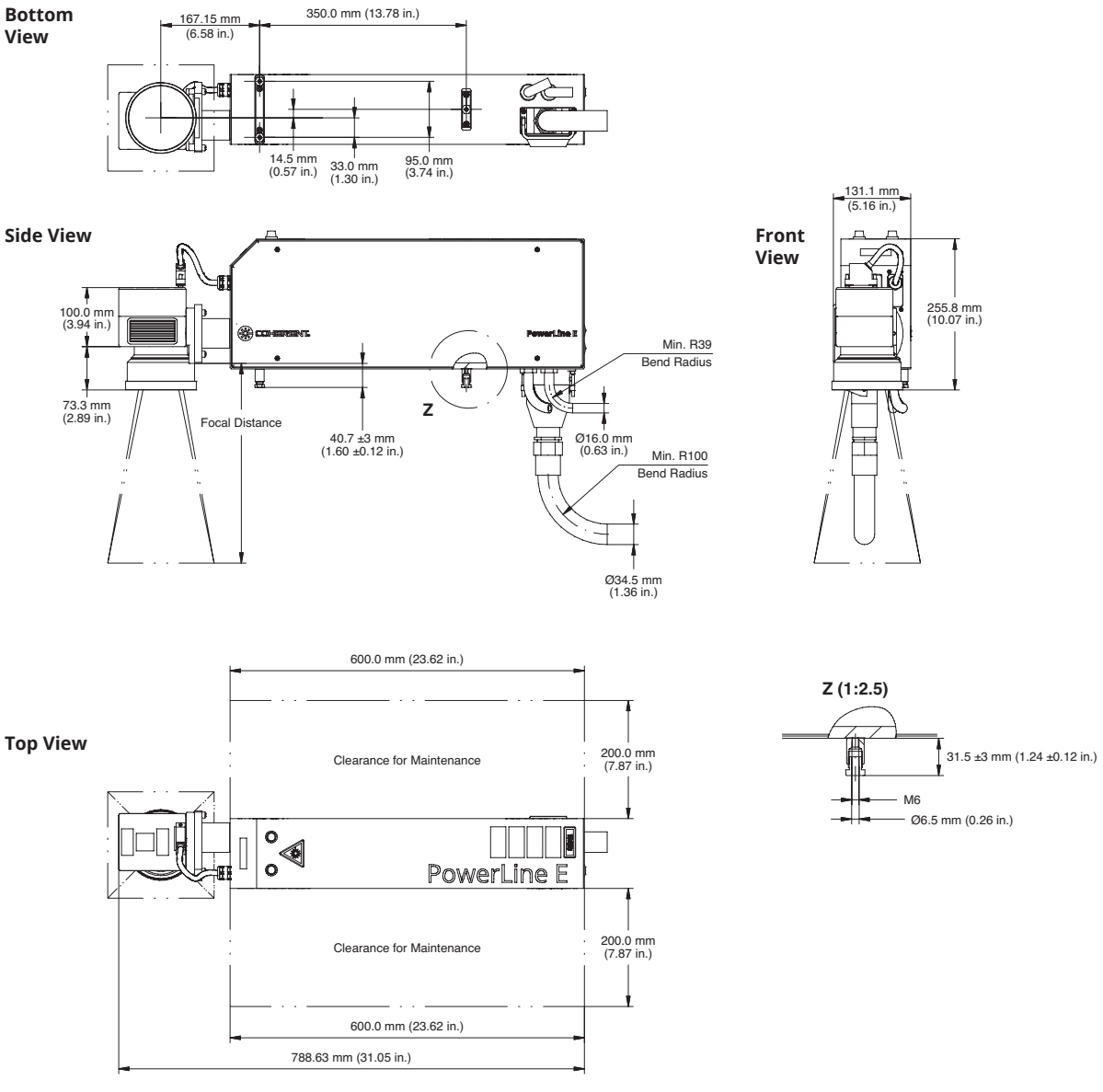
Z (1:2)

Top View



MECHANICAL SPECIFICATIONS

PowerLine E 40 and PowerLine E 25 SHG, cable connected at bottom of laser head



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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 PowerLine E Series 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. MC-056-19-0M1220Rev.A Copyright ©2020 Coherent, Inc.