

PowerLine E Air Series

High-Performance Air-Cooled DPSS Laser Markers

PowerLine E Air Series are air-cooled Class 4 laser marking sub-systems ideal for applications where mark quality, aesthetics and legibility are critical. They combine a diode-pumped, infrared solid-state laser 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, 3D marking, and marking of variable data (bar codes, serial numbers). The PowerLine E Air 25 EM is specifically designed for grayscale marking. It incorporates an external modulator that ensures marking results of prime quality at high marking speed.



FEATURES

- Compact design for easy integration
- 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
- Day & Night Marking
- Organics and Glass Marking
- Marking-on-the-Fly (conveyor belt or rotary axis)
- SmartMap3D Freeform Marking
- High-Precision Marking with Vision System

Specifications	PowerLine E Air 10-1064	PowerLine E Air 25-1064	PowerLine E Air 25-1064 EM	PowerLine E Air 30-1064
Laser Type	DPSS			
Wavelength (nm)	1064			
Average CW Power (W)	8.5	24	25	25
Average Power (W)	6 (at 20 kHz)	18 (at 20 kHz)	24 (at 70 kHz)	20 (at 60 kHz)
Pulse Energy (mJ)	0.3 (at 20 kHz)	0.9 (at 20 kHz)	0.34 (at 70 kHz)	0.36 (at 60 kHz)
Pulse-to-Pulse Stability (% rms)	<2	<2	<2	<3
Frequency Range (kHz)	CW, 0 to 200	CW, 0 to 200	CW, 0 to 400	CW, 0 to 200
Pulse Width (ns)	10 (at 20 kHz)	20 (at 20 kHz)	35 (at 70 kHz)	40 (at 60 kHz)
M ²	<1.5	≤1.3	≤1.3	2 to 4
Beam Diameter (mm)	2.5	1.9	1.6	3.4
Cable Laser Head - Supply Unit (m)	5 (optional: 3)			
Weight (kg)				
Laser Head	18	18	20	20
Supply Unit	22.3	22.3	22.3	22.3
DPSS Laser Type	Vanadate			
Cooling	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	Yes ¹ (option)			
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.			
PC	Intel Core i3, 3.7 GHz, 256 GB SSD, single-board PC integrated into supply unit			
Supply Unit	19" rack mount unit, height: 3 rack units			
Interfaces				
PLC Control	Parallel interface (digital I/Os). Encoder devices can be connected to differential I/Os. LAN (TCP/IP), RS-232 ³ Profibus DP, Profinet IO			
PC Control ²				
Fieldbus Control ⁴				
Variable Data	Keyboard input, local file (lot file), barcode reader, via LAN (TCP/IP) ² , 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			

Notes:

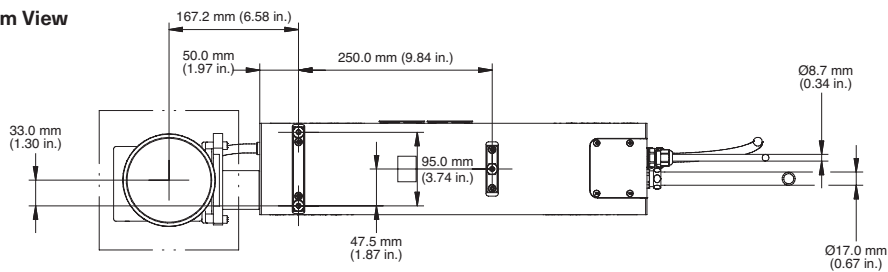
1. Integrated into laser head of models without external modulator. PowerLine E Air 25 EM: Mounted between laser head and scan head.
2. Requires Host Coupling HK, Marker Job Control (MJC) or SECS/GEM software feature.
3. Requires an RS-232-to-USB-adaptor.
4. The fieldbus interface is provided by a fieldbus coupler. The fieldbus coupler is connected to the supply unit by Fast Ethernet connection.

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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			
Standards	PowerLine E Air laser markers comply with 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, CDRH (radiation) standard.			

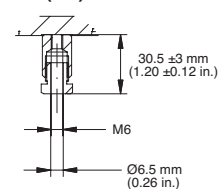
Mechanical Specifications

PowerLine E Air 10-1064 / E Air 25-1064 / E Air 25-1064 EM / E Air 30-1064,
cable connected at rear of laser head

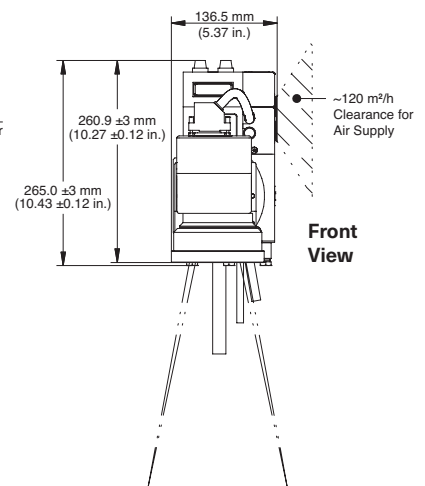
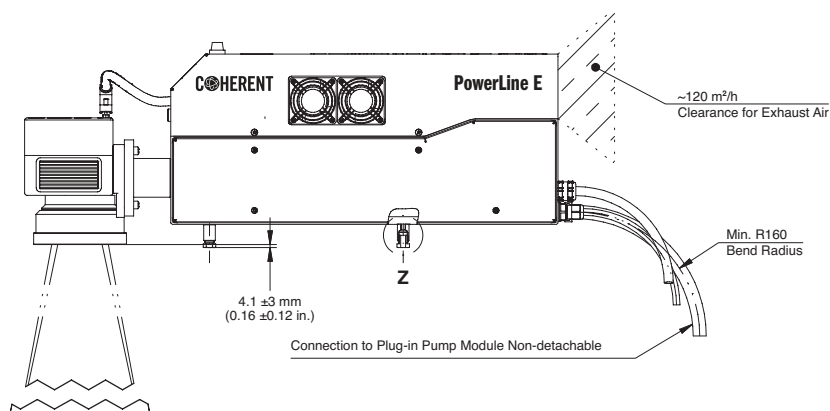
Bottom View



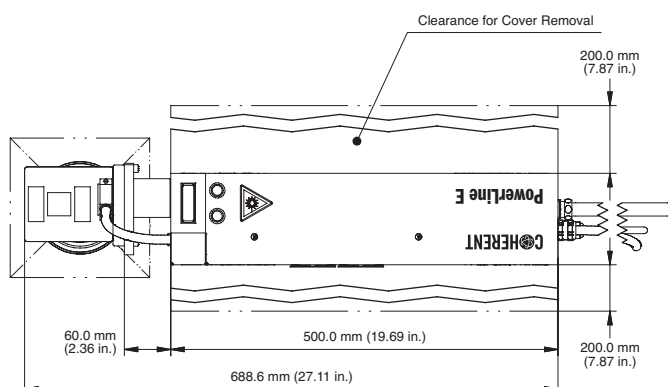
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Side View



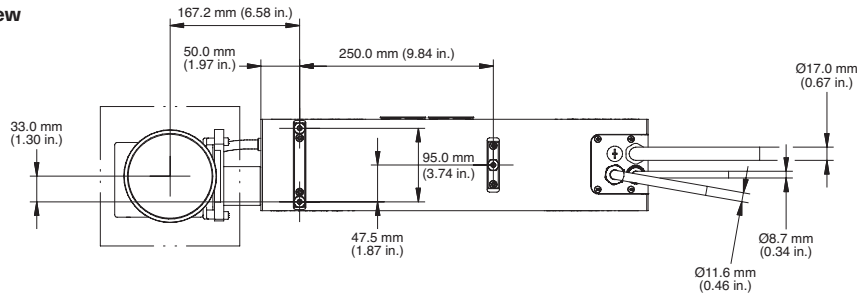
Top View



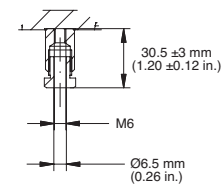
Mechanical Specifications

PowerLine E Air 10-1064 / E Air 25-1064 / E Air 25-1064 EM / E Air 30-1064,
cable connected at bottom of laser head

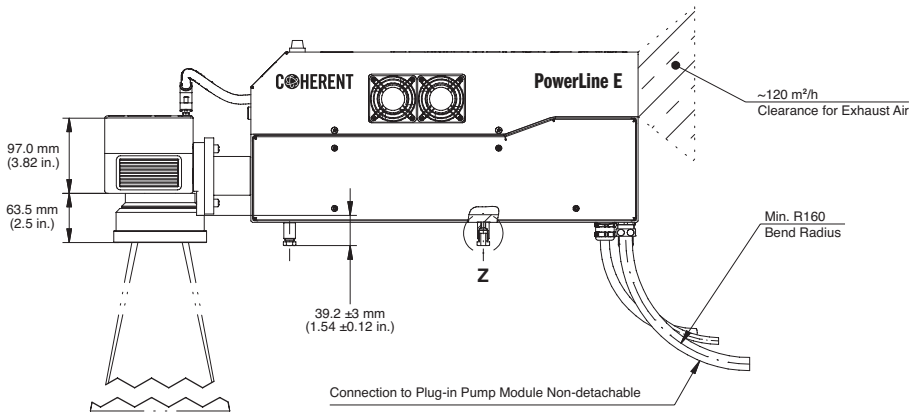
Bottom View



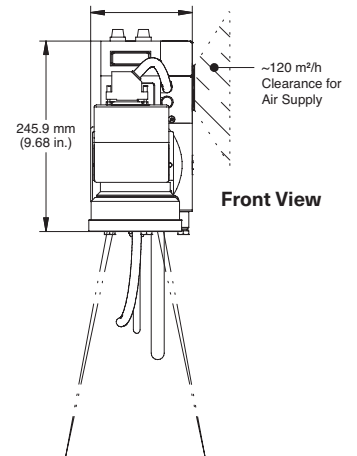
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Side View



Front View



Top View

