

LP-M SERIES

Related Information

- General terms and conditions..... F-3
- Selection guide P.1223~
- About laser beam..... P.1593~
- Korea's KC-mark P.1602



panasonic.net/id/pidsx/global



This product is classified as a Class 4 Laser Product in IEC / JIS standards and in FDA* regulations. Never look at or touch the direct laser beam and its reflection.

* This product complies with 21 CFR 1040.10 and 1040.11 Laser Notice No. 50, dated June 24, 2007, issued by CDRH.

Productivity and safety in one 3D fiber laser marker LP-M series

The 40 W high-power laser for deep engraving and high-speed marking

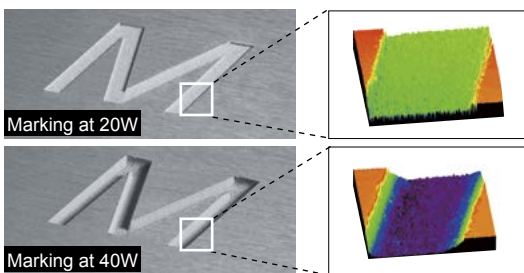
Deep engraving marking / laser processing

Allows deeper and sharper marking and processing to handle demanding applications. No blade is used for high-quality, stable processing.

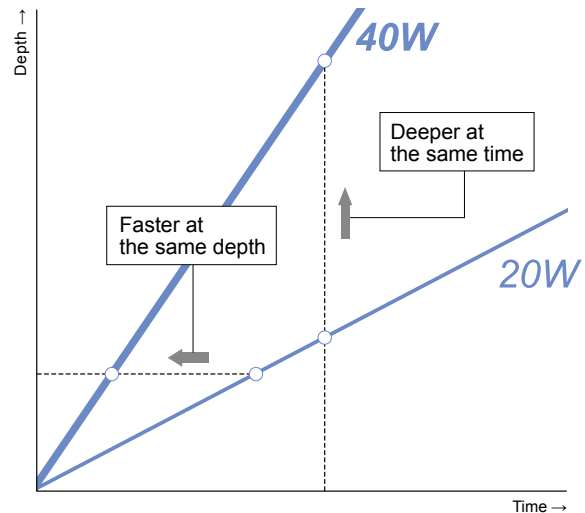
High-speed marking

The larger the energy amount sent to the workpiece, the faster and deeper the marking / processing. Takt time reduction greatly enhances productivity.

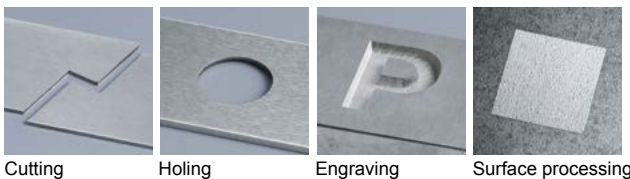
■ Deep engraving sample [image]



■ Image of high-speed deep engraving



■ Laser processing sample [image]



MARKING EXAMPLES



Engine block (marking)



Connecting rod (marking)



Engine part (marking)



Gasket (coating removal)

- LASER MARKERS
- PLC
- HUMAN MACHINE INTERFACES
- ENERGY MANAGEMENT SOLUTIONS
- FA COMPONENTS
- MACHINE VISION SYSTEMS
- UV CURING SYSTEMS

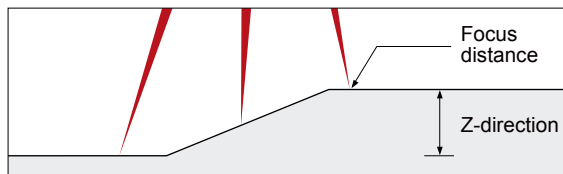
- Selection Guide
- FAYb Laser
- CO2 Laser
- Option

- LP-M
- LP-S
- LP-S500W
- LP-RF
- LP-Z
- LP-V/LP-W

Optimum marking quality on every workpiece by high performance Z-axis stroke mechanism

The Z-axis stroke mechanism controls the laser beam focal point in the Z-direction to enable marking on an item with height differences. Marks clearly with no distortion on slanted, curved and stepped surface shapes. Spot average marking enables control of the laser beam spot diameter for uniform marking thickness and depth.

Variable control of focus distance via Z-axis stroke

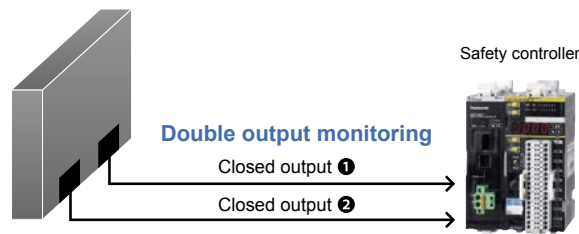


Two new functions simplify safe circuit design

Laser interceptor [-S type only]

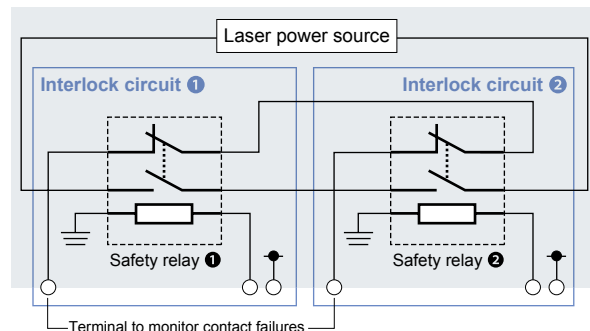
Durability has vastly improved since the first laser interceptor developed. Two outputs can be monitored to check laser interception. Safety is ensured even when the laser power source is on, preventing productivity losses.

Laser interception image



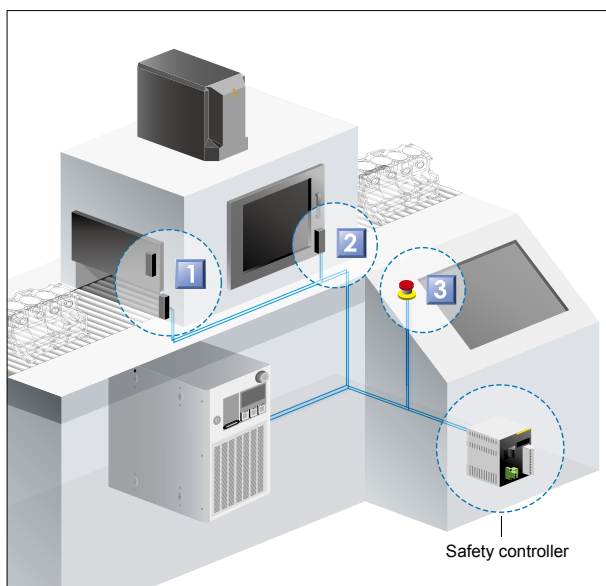
Duplicate interlock circuits

Mounted with 2 interlock circuits instead of one. A safety relay is also deployed to ensure the laser power source is stopped.



Safety control system structure

International standard ISO 13849-1 (JIS B 9705-1) regulates safety function of safety-related parts of control systems, and requires safeguards be taken for an entire system embedded with a laser marker.



1 Safeguards for the shutter where workpiece is loaded / unloaded

Safe structure with laser intercept feature

Each time a workpiece is loaded or unloaded, the shutter opens and closes. When the shutter is open, the laser intercept mechanism closes to ensure safety. Impacts on production efficiency during mass production are avoided because the laser power source does not need to be stopped each time it opens or closes.

[Operation safety device] Safety magnetic switch, etc.

2 Safeguards for maintenance shutter

Safe structure with laser intercept feature

The shutter opens and closes during maintenance or fine tuning. When the shutter is open, the laser intercept mechanism closes to ensure safety. Work efficiency during mass production is not lost because the laser power source does not need to be stopped each time it opens or closes.

[Operation safety device] Safety door switch, etc.

3 Safeguards for emergencies

Safe structure with interlock circuits

In an emergency, forces the laser power source (hazard source) to stop.

[Operation safety device] Emergency stop switch

FIBER SENSORS

LASER SENSORS

PHOTOELECTRIC SENSORS

MICRO PHOTOELECTRIC SENSORS

AREA SENSORS

SAFETY LIGHT CURTAINS / SAFETY COMPONENTS

PRESSURE / FLOW SENSORS

INDUCTIVE PROXIMITY SENSORS

PARTICULAR USE SENSORS

SENSOR OPTIONS

SIMPLE WIRE-SAVING UNITS

WIRE-SAVING SYSTEMS

MEASUREMENT SENSORS

STATIC CONTROL DEVICES

LASER MARKERS

PLC

HUMAN MACHINE INTERFACES

ENERGY MANAGEMENT SOLUTIONS

FA COMPONENTS

MACHINE VISION SYSTEMS

UV CURING SYSTEMS

Selection Guide

FAYb Laser

CO₂ Laser

Option

LP-M

LP-S

LP-S500W

LP-RF

LP-Z

LP-V/LP-W

SPECIFICATIONS

Item	Type	LP-M500				LP-M200			
		LP-M500	LP-M500-S	LP-M505	LP-M505-S	LP-M200	LP-M200-S	LP-M205	LP-M205-S
CE marking directive compliance		Low Voltage Directive, EMC Directive, RoHS Directive							
Work distance		190 ± 22 mm 7.480 ± 0.866 in	220 ± 22 mm 8.661 ± 0.866 in	190 ± 22 mm 7.48 ± 0.866 in	220 ± 22 mm 8.661 ± 0.866 in				
Marking field		120 × 120 mm 4.724 × 4.724 in	220 × 220 mm 8.661 × 8.661 in	120 × 120 mm 4.724 × 4.724 in	220 × 220 mm 8.661 × 8.661 in				
Marking laser		Class 4 Yb fiber laser; λ= 1,064 nm 0.0419 mil laser							
Average output (Note1)		40 W ± 5 % (pulse oscillation)				16 W ± 5 % (pulse oscillation)			
Guide laser / pointer		Red semiconductor laser, λ= 655 nm 0.026 mil , Class 2 laser, Maximum output: 1 mW or less							
Scanning method		X-, Y- and Z-axis directions; 3D scanning method							
Scan speed		Maximum 12,000 mm/sec. 472.441 in/sec.							
Character settings (character height, width)		0.1 to 120 mm 0.004 to 4.724 in (configurable in 0.001 mm 0.0004 in steps)	0.1 to 220 mm 0.004 to 8.661 in (configurable in 0.001 mm 0.0004 in steps)	0.1 to 120 mm 0.004 to 4.724 in (configurable in 0.001 mm 0.0004 in steps)	0.1 to 220 mm 0.004 to 8.661 in (configurable in 0.001 mm 0.0004 in steps)				
Setting range (Straight line, Proportional, Justify)	Character spacing	0 to 120 mm 0 to 4.724 in		0 to 220 mm 0 to 8.661 in		0 to 120 mm 0 to 4.724 in		0 to 220 mm 0 to 8.661 in	
	Line pitch	0 to 120 mm 0 to 4.724 in		0 to 220 mm 0 to 8.661 in		0 to 120 mm 0 to 4.724 in		0 to 220 mm 0 to 8.661 in	
	Radius	0 to 999.999 mm 0 to 39.370 in (configurable in 0.001 mm 0.0004 in steps)							
	Angle	-180° to +180° (configurable in 0.01° steps)							
	Line pitch radius	0 to 120 mm 0 to 4.724 in (configurable in 0.001 mm 0.0004 in steps)	0 to 220 mm 0 to 8.661 in (configurable in 0.001 mm 0.0004 in steps)	0 to 120 mm 0 to 4.724 in (configurable in 0.001 mm 0.0004 in steps)	0 to 220 mm 0 to 8.661 in (configurable in 0.001 mm 0.0004 in steps)				
Logo data		VEC (Note 2), DXF, BMP, HPGL, JPEG, AI, EPS							
Marking shape		Straight Line, Proportional, Justify, Arc							
Character types		English uppercase letters, English lowercase letters, numerals, katakana, hiragana, kanji (JIS No. 1 and No. 2 standards), symbols, user-registered characters (up to 50)							
Barcodes		Code 39, Code 128, ITF, NW-7, JAN / UPC, RSS-14 (GS1 DataBar), RSS (GS1 DataBar) Limited, RSS (GS1 DataBar) Expanded							
2D codes		QR Code, Micro QR Code, Data Matrix, GS1 Data Matrix							
Composite codes		RSS-14 (GS1 DataBar) CC-A, RSS (GS1 DataBar) Limited CC-A, RSS (GS1 DataBar) Expanded CC-A, UCC / EAN COMPOSITE, etc.							
I/O		Input terminal, Output terminal, I/O connector							
Interface		VGA port, USB connector A, I/O input and output, RS-232C, Ethernet, Input-output terminal, INTERLOCK (Note 3), displacement sensor, laser gate I/O (-S type only)							
Displacement sensor input		Analog current input (4 to 20 mA)							
Cooling method		Head: Naturally air cooling, Controller: Forced air cooling							
Power supply		90-132 V AC, or 180-264 V AC, 50/60 Hz (Auto-switching)							
Power consumption		580 VA or less (100 V AC), 720 VA or less (200 V AC)				390 VA or less (100 V AC), 510 VA or less (200 V AC)			
Laser gate		Not equipped	Equipped in Head	Not equipped	Equipped in Head	Not equipped	Equipped in Head	Not equipped	Equipped in Head
Ambient temperature		0 to +40 °C +32 to +104 °F (Controller, Head) (No dew condensation or icing allowed)							
Storage ambient temperature		-10 to +60 °C +14 to +140 °F (Controller, Head) (No dew condensation or icing allowed)							
Ambient humidity		35 % to 85 % RH (Controller, Head) (No dew condensation or icing allowed)							
Protection degree		IP64 (Note 4)							
Net weight	Head	12 kg							
	Controller	28 kg							
Supported OS	Laser Marker Utility (Note 5)	Microsoft Windows®10 Professional (32-bit / 64-bit) / 8 Professional (32-bit / 64-bit) / 7 Professional (32-bit / 64-bit) SP1 / Vista Business (32-bit) SP2 / XP Professional (32-bit) SP3							
	NAVILINK-3D (Note 5) (Optional)	Microsoft Windows®10 Professional (32-bit / 64-bit) / 8 Professional (32-bit / 64-bit) / 7 Professional (32-bit / 64-bit) SP1 / Vista Business (32-bit) SP2 / XP Professional (32-bit) SP3							

- Notes : 1) Output at product processing edge (at configured power of 100, standard factory settings).
 2) File format (logo file) that can be used by the laser marker.
 3) Use a dry contact to connect the INTERLOCK 1 PIN-3 PIN. Deposition on the internal relay contact point can be monitored using INTERLOCK 1-2 PIN and INTERLOCK 2-2 PIN. When 1 PIN-3 PIN is closed, 2 PIN-2 PIN opens.
 4) The head is IP64 only in regions where an electrical or optical part is deployed.
 5) To use Export Vec, Adobe® Illustrator® must be installed. Please contact us about the version corresponding to Adobe® Illustrator®. Microsoft and Windows are trademarks or registered trademarks of Microsoft Corporation in the United State and other countries.

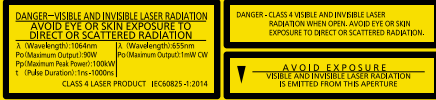
• China models are available, too. Please contact our sales office.

PRECAUTIONS FOR PROPER USE

Refer to p.1593~ for information about laser beam.

• This catalog is a guide to select a suitable product. Be sure to read instruction manual attached to the product prior to its use.

- This product is classified as a Class 4 Laser Product in IEC / JIS standards and in FDA* regulations. Never look at or touch the direct laser beam and its reflection.
- The laser used by this product generates infrared light that is invisible to the human eye. Use particular caution when the laser is operating.
- The following labels are attached to this product. Handle the product according to the instruction given on the warning labels. (Warning labels are not shown in the product photographs in this catalog.)



* This product complies with 21 CFR 1040.10 and 1040.11 Laser Notice No. 50, dated June 24, 2007, issued by CDRH.

Safety standards for laser beam products

- A laser beam can harm human being's eyes, skin, etc., because of its high energy density. IEC has classified laser products according to the degree of hazard and the stipulated safety requirements. The **LP-M** series are classified as Class 4 laser.

Overview of classification by IEC 60825-1

Classification	Description
Class 4	Lasers that are also capable of producing hazardous diffuse reflections. They may cause skin injuries and could also constitute a fire hazard.

Safe use of laser products

- For the purpose of preventing user from suffering injuries by laser products, IEC 60825-1 (Safety of laser products). Kindly check the standards before use.

Recommended use of a dust collector

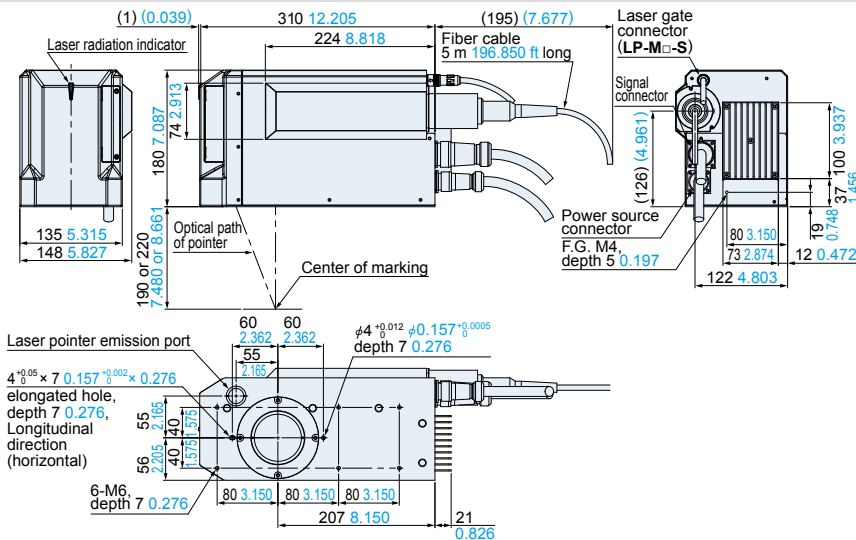
- Depending on the object being marked, harmful gasses or smoke that have a detrimental effect on the human body or the laser marker may be generating during marking. If your application falls under this description, use a dust collector.

* For more information, contact our office.

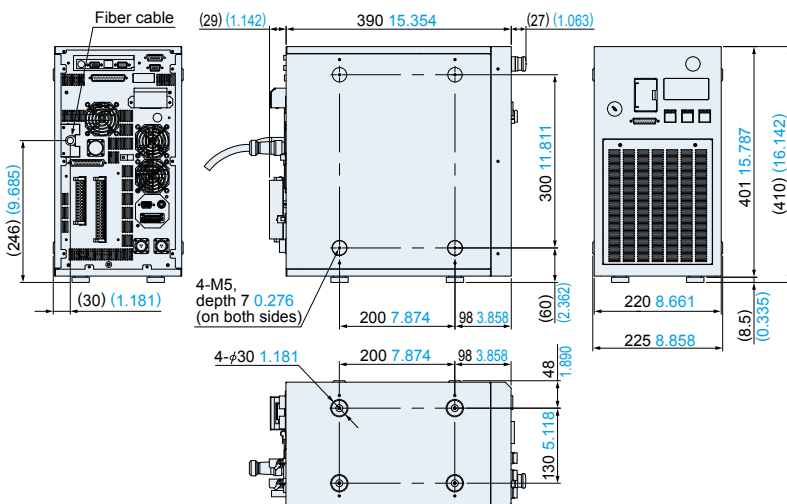
DIMENSIONS (Unit: mm in)

The CAD data can be downloaded from our website.

Head

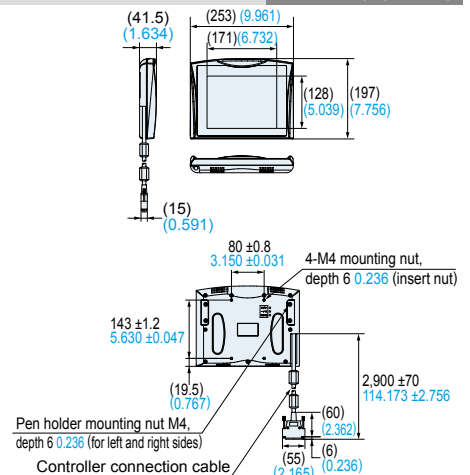


Controller



LP-ADP40

Console (Optional)



- FIBER SENSORS
- LASER SENSORS
- PHOTO-ELECTRIC SENSORS
- MICRO PHOTO-ELECTRIC SENSORS
- AREA SENSORS
- SAFETY LIGHT CURTAINS / SAFETY COMPONENTS
- PRESSURE / FLOW SENSORS
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