FAYb Laser Marker

LP-S500W SERIES

Related Information ■General terms and conditions..... F-7 ■About laser beam..... P.1499~

panasonic.net/id/pidsx/global

FDA Conforming to FDA regulations

CE Conforming to Low Voltage and EMC Directive

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.

This product is introduced to only limited countries. Please contact our office for details.

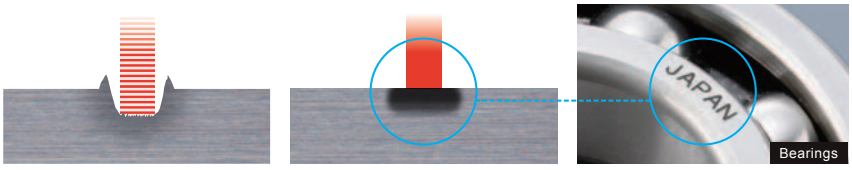
A new standard black laser annealing

Black laser annealing

What is black laser annealing?

Black laser annealing is a printing technique that uses laser irradiation to heat up metal surfaces and form oxide films that appear as letters printed in black*. In contrast to traditional techniques involving metal surface etching, the absence of depressions or burrs keeps surfaces level. This makes black laser annealing the best printing technique for target objects such as bearings that require high surface precision.

* Black laser annealing may not be possible with certain materials.



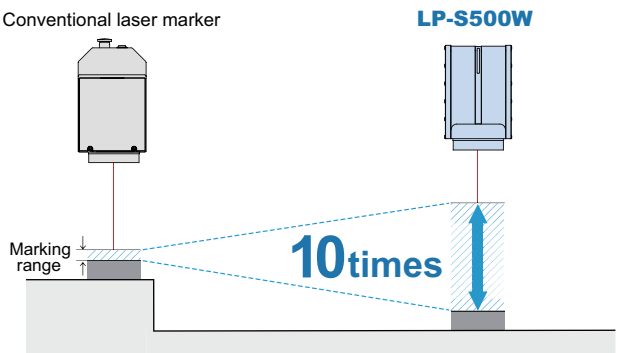
Traditional pulse laser printing — LP-S500W

SIMPLE

Wide marking range achieved through a newly developed optical design

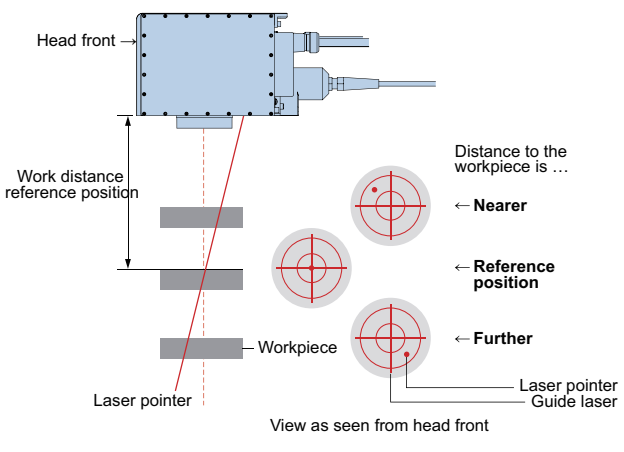
Reliable black laser annealing used to require strict management of the target's work distance. With the **LP-S500W** series, you now have ±15 mm ± 0.591 in* more flexibility in work distance thanks to a newly developed optics design. There is no longer a need to do process changeovers for lines producing products of different sizes. And, because printing is done uniformly regardless of height differences, the **LP-S500W** series helps improve production reliability.

* In case of marking to SUJ2 (material) by **LP-S500W**



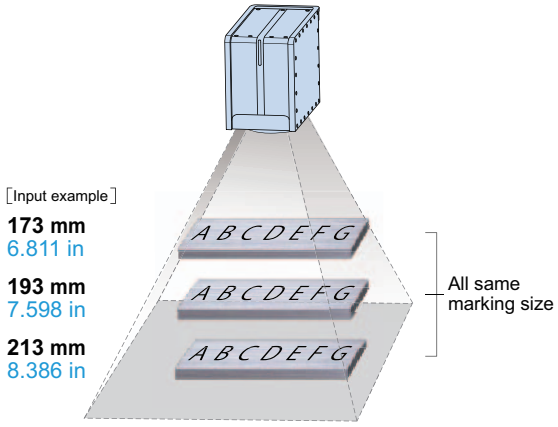
Visualize the printable range: New dual pointer marks

The **LP-S500W** series allows the operator to visualize the printable range based on the relationship between the positions of the guide laser and laser pointer. Now you can check target object position and height based on the laser pointer's marker positions.
Deviation amounts can also be checked. With this feature, equipment setup and maintenance gets a little easier.



High precision marking made simple:
Work distance setting

For accurate marking on workpieces with different heights, marking sizes, positions, etc. need modification in consideration of each target's height. With the **LP-S500W** series, marking size and position are corrected automatically by entering the distances to each target object. Setting for marking target objects of different heights just got much simpler.



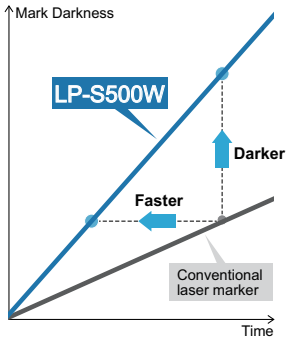
Improved productivity:
High-speed black marking

A significant amount of heat energy used to be needed to achieve a sufficiently dark black laser annealing. Featuring a high-output 42 W FAYb laser, the **LP-S500W** series has twice the output of other models*. Improve productivity with black laser annealing that is faster and that produces darker markings.

*LP-F13W

Conventional laser marker

LP-S500W



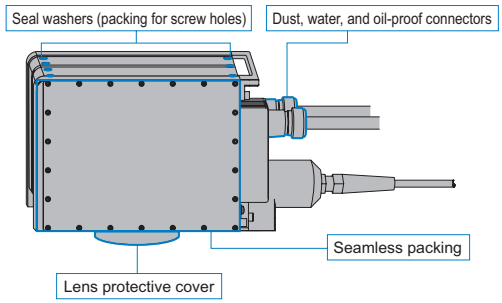
TOUGH

IP67G fanless head

Superior design

The **LP-S500W** series features minimum frame seams. Minor seams and screw holes are completely sealed, producing high sealing performance. This performance is sustained by applying constant pressure to the sealed areas. Maximum cooling efficiency is also achieved allowing the use of a fanless head for thorough cooling.

LP-S500W Series



High quality protection parts

Seamless sealing materials are used that have low water absorption and excellent oil resistance properties. Connectors are dust, water, and oil-proof. The lens has a protective glass cover.

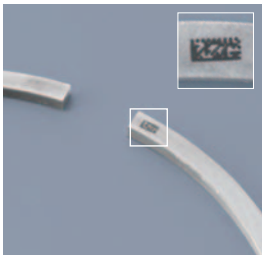
What is IP?
IP indicates the degree of protection from water, human body, or solid foreign objects.
This is based on IEC/JIS standards.

IP6X: Prevents chips from entering inside the product (complete prevention).
IPX7: Prevents water from entering inside the product when it is immersed under water under the specified conditions.
G: Indicates the oil protection structure specified by JIS standards and able to prevent oil drops or oil foam from entering from any direction.

MARKING EXAMPLES

Bearings

End mills



Piston rings

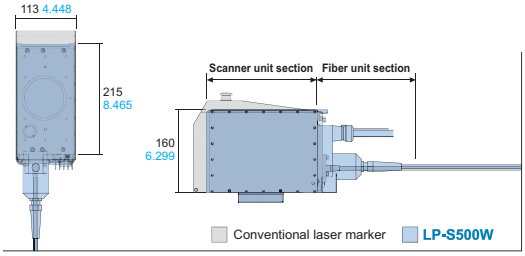
FLEXIBLE

A small head and the ability to remove and reinstall the fiber unit provides freedom in facility design

Space-saving small head

The **LP-S500W** series takes up close to 15 % less floor space with about 20 % less volume*1 compared to other models*2.
Save floor costs by using more space-saving equipment.

*1: Scanner unit section
*2: **LP-F** series



Unit: mm in

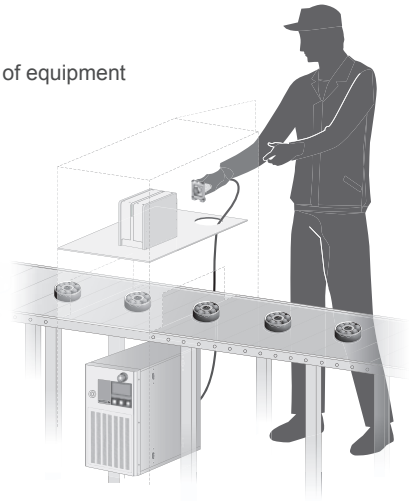
Removable fiber unit

Thanks to the removable fiber unit, a first*1 for the fiber laser marking industry, it is now easier than ever to maintain and integrate it with other equipment.
*1: Data obtained by Panasonic Industrial Devices SUNX as of February 2012

[Fiber Unit Removability Advantages]

- Smaller equipment, lower costs
- Simpler equipment assembly
- Simpler dismantling when transporting equipment
- Simpler laser marker maintenance

■Illustration of equipment integration



OPERABILITY

Simple operation

A color touch panel is used so that even persons unfamiliar with machine operation can easily handle it. An intuitive and easily understandable software package allows the operator to smoothly access any setting screens, and the ergonomically designed console is easy to operate whether hand-held or directly attached to a machine.

Touch panel console
* An inlaid composite image is used for the screen.

Flexible programming and monitoring

The laser marker comes standard with PC software that allows for easy configuration of print data and layout, via a familiar PC based environment. Data can also be created on a PC in offline mode, which means that data configuration is possible without stopping the laser marker. In addition, connecting a PC to the laser marker allows you to check the operation status, I/O status or error log.

Quick and simple setup

Laser marker setup and operation is made simple by connecting a commercially available monitor and a mouse. When the monitor is placed in an easy-to-view position, the printed content can be viewed from a distance and any changes made to the printed content can easily be verified.

* Operation check is required in advance.

SPECIFICATIONS

Item \ Model No.		**LP-S500W** (Marking range 90 × 90 mm)	**LP-S505W** (Marking range 160 × 160 mm)
Work distance reference position (Note 1)		193 mm 7.598 in	357 mm 14.055 in
Work distance range (Note 2)		173 to 213 mm 6.811 to 8.385 in	327 to 387 mm 12.874 to 15.236 in
Marking laser		Class 4 Yb fiber laser; wavelength: 1,070 nm 0.042 mil	
	Average output (Note 3)	42 W (±5 %) CW oscillation	
Guide laser / pointer		Class 2 semiconductor laser; wavelength: 655 nm 0.026 mil	
Marking range		90 × 90 mm 3.543 × 3.543 in	160 × 160 mm 6.299 × 6.299 in
Scanning method		Galvano scanning method	
Character settings (character height, width)		0.1 to 90 mm 0.004 to 3.543 in (configurable in 0.001 mm 0.0004 in steps)	0.1 to 160 mm 0.004 to 6.299 in (configurable in 0.001 mm 0.0004 in steps)
Marking spacing (character spacing, line pitch)		0 to 90 mm 0 to 3.543 in (configurable in 0.001 mm 0.0004 in steps)	0 to 160 mm 0 to 6.299 in (configurable in 0.001 mm 0.0004 in steps)
		Arced output: −180° to +180° (configurable in 0.01° steps)	
Marking shape		Straight Line, Arc, Propotional, Justify	
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 (EAN) /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) Stacked CC-A, RSS (GS1 DataBar) Limited CC-A, UCC / EAN COMPOSITE etc.	
I/O		Input terminal, Output terminal, I/O connector	
Interface		RS-232C, Ethernet	
Cooling method		Head: Naturally air cooling, Controller: Forced air cooling	
Power supply		90 to 132 V AC, or 180 to 264 V AC (Auto-switching), 50 / 60 Hz	
Power consumption		470 VA or less (100 V AC), 650 VA or less (200 V AC)	
Protection degree		Head: IP67G (Excluding the controller)	
Ambient temperature		0 to +40 °C +32 to +104 °F (Controller, Head) (No dew condensation or icing allowed)	
Ambient temperature for storage		−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)	
Applicable standards		FDA regulations, CE marking (Note 4)	
Net weight	Head	6.5 kg approx.	7.0 kg approx.
	Controller	24 kg approx.	24 kg approx.
Laser Marker Utility OS (Note 5)		Microsoft Windows® 7 Professional (32 bit / 64 bit) / Vista Business (32 bit) SP2 / XP Home Edition / XP Professional (32 bit) SP3	

Notes: 1) Work distance reference position represents the calculated center position of the work distance range. Depending on objects to be marked, optimal distance may vary.
2) Work distance range represents the configurable work distance. Depending on objects to be marked, optimal distance or markable range may vary.
3) This output is measured at the work end. (The preset power is 100, at the shipment time.)
4) China models are available,too. Please contact our sales office.
5) Windows® 7 Professional, Vista Business, XP Home Editon, and XP Professional are trademarks or registered trademarks of Microsoft Corporation in the United States and other countries.

[Protection Grade Note (dustproofness, waterproofness and oilproofness)]

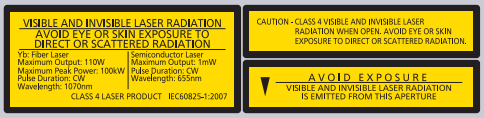
- The marker head is designed to be dustproof and waterproof to JIS / IEC protection grade IP67 and oilproof to JIS IPXXG. (Excluding the controller)
  The test methods for determining the dustproof, waterproof and oilproof characteristics are specified in JIS C 0920 and IEC 60529. Note that the protection grade is applicable only within the specified conditions.
  The oilproofness of the product is evaluated using the following typical lubrication oil and cutting oil. Please be noted that the oilproofness of the product may not be ensured depending on the types of lubrication or cutting oils.
- The proof characteristics of the marker head are ensured only when the fiber unit, connector and lens protection cover are installed properly.
- The marker head has proof characteristics but cannot be used in water or oil.
- The surface of this product may discolor by some additives for the cutting oil, which causes no performance problems.

PRECAUTIONS FOR PROPER USE

Refer to p.1499~ 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-S500W** 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.

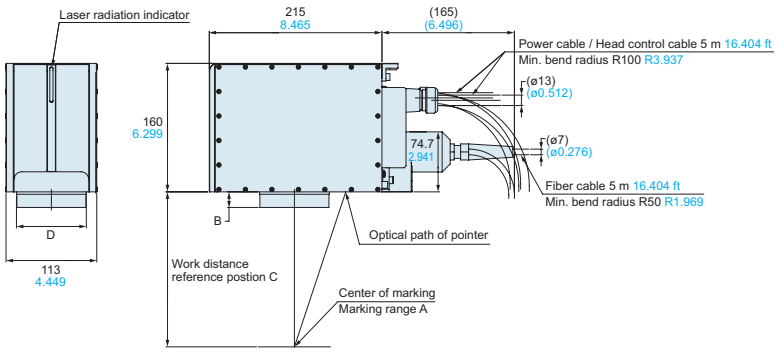
Maintenance

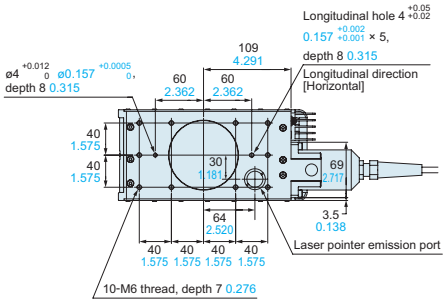
- Air filter: Regularly clean the air filter attached to the FAYb Laser Marker to maintain cooling effects.
- Laser pointer emission port: Dust or chips adhering to the laser pointer emission port may affect the printing quality or seriously damage the laser marker. Clean the laser pointer emission port regularly.

DIMENSIONS (Unit: mm in)

The CAD data in the dimensions can be downloaded from our website.

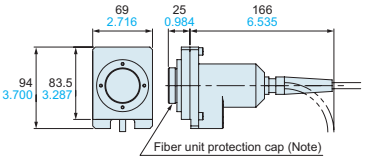
Head





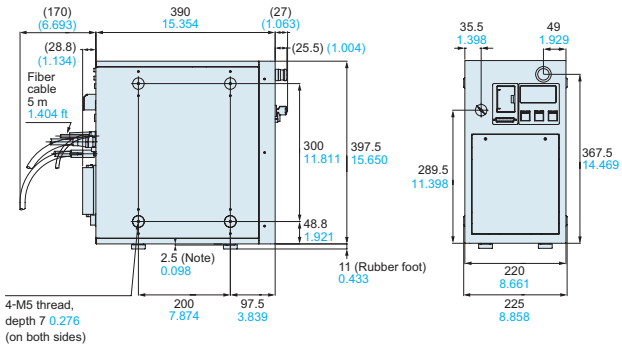
	LP-S500W	LP-S505W
A	90 × 90 3.543 × 3.543	160 × 160 6.299 × 6.299
B	(20) (0.787)	(46) (1.811)
C	193 7.598	357 14.055
D	ø87 ø3.425	ø106 ø4.173

■Fiber unit (when removed)



Note: The fiber unit protection cap should be removed when the scanner unit is connected.

Controller



Note: Indicates the height at the protruding section when the rubber foot are not attached. The rubber foot can be attached to either the right or left side of the controller.

LP-ADP40 Console (Optional)