

CO₂ Laser Marker LP-300 SERIES

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panasonic-electric-works.net/sunx

FDA
Conforming to
FDA regulations
(LP-310-A only)

CE
Conforming to Low Voltage
and EMC Directive
(LP-310-C only)

GB
Conforming to
GB standard
(LP-310-B only)

This product is classified as a Class 4 Laser Product in IEC / JIS / GB standards and a Class IV Laser Product in FDA regulations 21 CFR 1040.10. Never look at or touch the direct laser beam and its reflection.

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

New entry-level model for laser marking

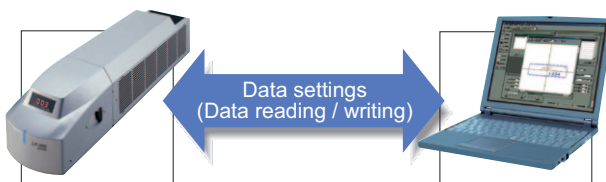
Entry price achieved

Basic functions, such as "lot number", "serial number", "date of manufacture", "counter" and "logo", have been adopted. This enables us to provide the product with an initial cost that is reasonable to customers who are worried about expenses.

Excellent operability

Superb ease of operation

Data such as the characters to be marked and their sizes can be set using a computer and then sent to the laser marker via a USB cable. The laser marker can store up to 120 types of marking settings (files). These settings can be read and marked when required. There is no need to keep the unit connected to the computer if the unit is running.

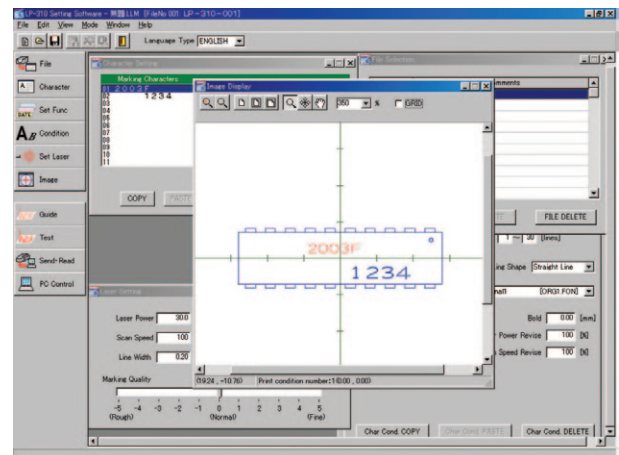


Compact, lightweight and easy to setup

Because it has a compact size with the controller integrated in the main unit, it can be mounted vertically and at an angle as well as horizontally. This makes it easier to change from previous marking devices.

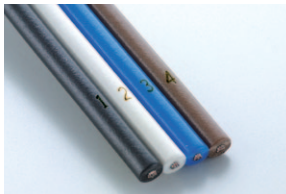
Simple enough for anyone to operate

The LP-300 series laser markers are the result of accumulated manufacturing experience and know-how from Panasonic Electric Works SUNX, and are designed to be easy to use in the same way as a printer.

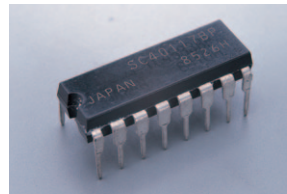


Note: The screen display is for explanations.

MARKING EXAMPLES



Cable



ICs



Switch (Resin part)



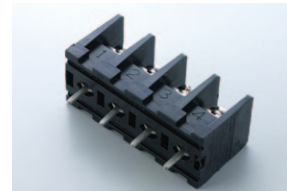
Laser labels (Marking + half cutting)



Connector



CD



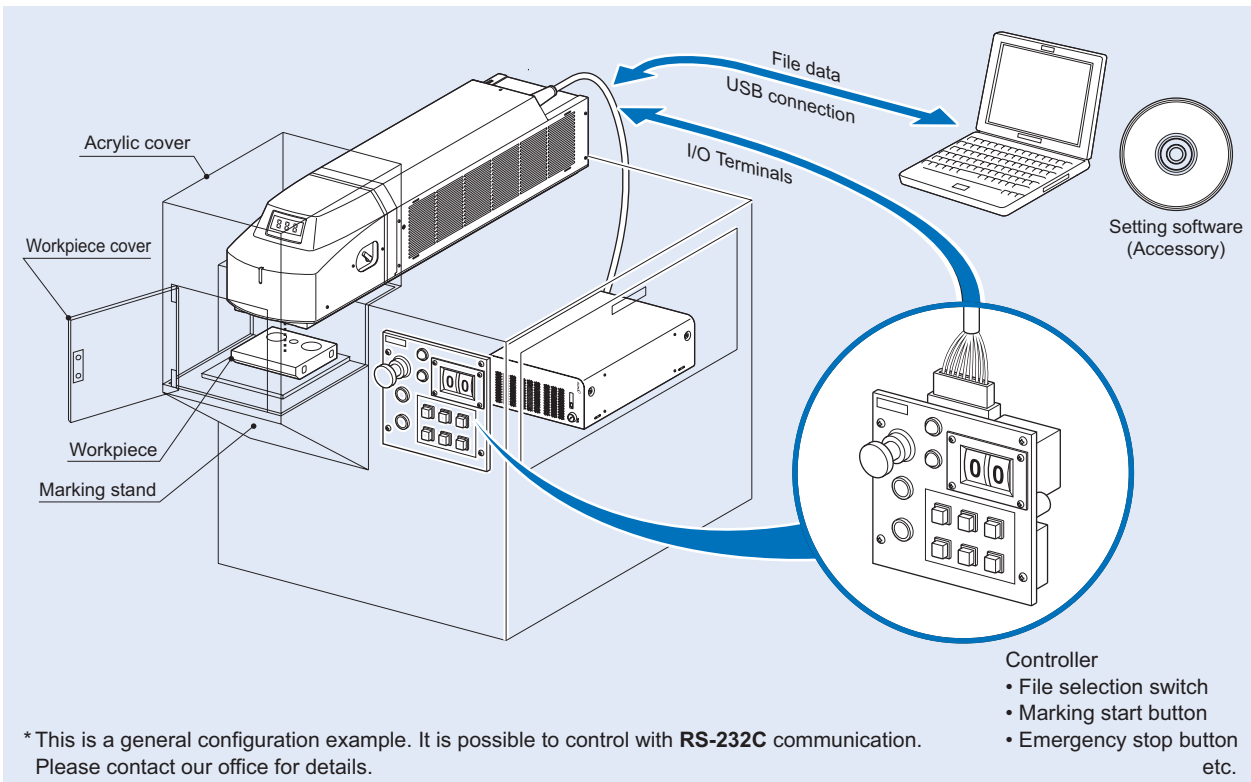
Terminal block (Resin part)



Connector

MARKING SYSTEM CONFIGURATION EXAMPLE

Marking systems that use the **LP-300** series laser marker can consist of a laser marker unit, a computer for setting and administering marking details, and other peripheral devices such as those shown in the example configuration below.



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SPECIFICATIONS

Type	Japanese model	FDA regulations conforming type	CE marking conforming type	GB standard conforming type	
Item	Set Model No.	LP-310	LP-310-A	LP-310-C	LP-310-B
Work distance (Note 1)	145 mm 5.7 in				
Scanning method	Galvano-scanning method				
Marking Laser	CO ₂ Laser Class 4 (Laser oscillator output: Average 12 W (Note 2), Peak emission wavelength: 10.6 μm 0.417 mil)				
Guide laser	Semiconductor laser; Peak emission wavelength: 655 nm 0.026 mil				
Range to be marked	50 × 50 mm 2.0 × 2.0 in				
Basic dimensions of characters (Note 3)	Height and width: 0.2 to 50 mm 0.008 to 2.0 in , Interval / position of marked characters: settable at 0.01 mm 0.0004 in interval				
Scanning speed	2,000 mm/sec. max.				
Array of characters	Straight-line, fan-like, tilt straight-line				
Marking condition	Stationary				
Type of characters	English capital and small characters, Figures, Katakana, Hiragana, Kanji (JIS first level) Symbols, User-defined characters (Up to 50 types)	English capital and small characters, Figures, Symbols, User-defined characters (Up to 50 types)	English capital and small characters, Figures, Katakana, Hiragana, Simplified chinese Level1 Level2, User-defined characters (Up to 50 types)		
Marking setting	Numbers of registered file	120 files max.			
	Setting condition	30 types / file			
I/O terminal	Input	Laser radiation stop, file No., trigger, counter reset, external interlock (Power supply box)			
	Output	Alarm, marking ready, counter end			
External communication port	RS-232C	For external devices only			
	USB Ver. 1.1	For setup software only			
Setting software	Applicable OS (Note 4)	Windows® (Japanese) (98 Second Edition, 2000 Professional, XP Professional, XP Home Edition, Vista Business)	Windows® (English) (2000 Professional, XP Professional, XP Home Edition, Vista Business)	Windows® (Chinese) (XP Professional, Vista Business)	
	Screen display	Screen resolution: 800 × 600 or more			
Cable length	5 m 16.4 ft (between head and power supply box)				
Installation direction	Omnidirectional				
Cooling method	Forced-air cooling (Head and power supply box)				
Supply voltage	100 to 120 V AC ±10 %, or 200 to 240 V AC ±10 % (auto-changing) 50 / 60 Hz				
Power consumption	700 VA or less				
Functions	<ul style="list-style-type: none"> ●Lot marking ●Correction of intersection ●Test marking 	<ul style="list-style-type: none"> ●Current date / time marking ●Guide laser ●File transfer / File reading 	<ul style="list-style-type: none"> ●Expiration date / time marking ●Bold character marking ●Error history display 	<ul style="list-style-type: none"> ●Counter marking ●Marking image display 	<ul style="list-style-type: none"> ●CAD marking ●Saved file list
Ambient temperature	0 to +40 °C +32 to +104 °F , Storage: -10 to +50 °C +14 to +122 °F (No dew condensation or icing allowed)				
Ambient humidity	35 to 85 % RH, Storage: 35 to 85 % RH				
Net weight	Head: 13 kg approx, Power supply box: 5 kg approx.				

Notes: 1) The work distance has an individual error of ±2 mm **±0.079 in** from product to product.

2) Independent output of oscillator.

3) The actual character size varies depending on the work.

4) Windows® 98 Second Edition, 2000 Professional, XP Professional, XP Home Edition, Vista Business are trademarks or registered trademarks of Microsoft Corporation in the United States and other countries.

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PRECAUTIONS FOR PROPER USE

Refer to About laser beam.

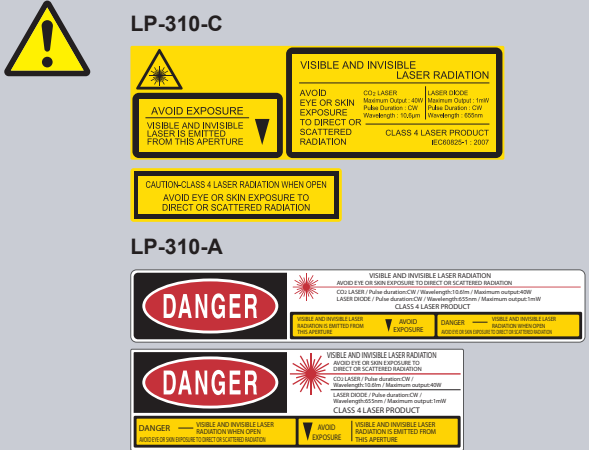
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• This catalog is a guide to select a suitable product. Be sure to read instruction manual attached to the product prior to its use.

• This product is classified as a Class 4 Laser Product in IEC / JIS / GB standards and a Class IV Laser Product in FDA regulations 21 CFR 1040.10. 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 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.)



LP-310-C

LP-310-A

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.

Safety standards for laser 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-300 series is classified as Class 4 laser.

Classification by IEC 60825-1

Classification	Description
Class 1	Lasers that are safe under reasonably foreseeable conditions of operation, including the use of optical instruments for intrabeam viewing.
Class 1M	Lasers emitting in the wavelength range from 302.5 nm to 4,000 nm which are safe under reasonably foreseeable conditions of operation, but may be hazardous if the user employs optics within the beam.
Class 2	Lasers that emit visible radiation in the wavelength range from 400 nm to 700 nm where eye protection is normally afforded by aversion responses, including the blink reflex. This reaction may be expected to provide adequate protection under reasonably foreseeable conditions of operation including the use of optical instruments for intrabeam viewing.
Class 2M	Lasers that emit visible radiation in the wavelength range from 400 nm to 700 nm where eye protection is normally afforded by aversion responses, including the blink reflex. However, viewing of the output may be more hazardous if the user employs optics within the beam.
Class 3R	Lasers that emit in the wavelength range from 302.5 nm to 10 ⁶ nm where direct intrabeam viewing is potentially hazardous but the risk is lower than for Class 3B lasers, and fewer manufacturing requirements and control measures for the user apply than for Class 3B lasers.
Class 3B	Lasers that are normally hazardous when direct intrabeam exposure occurs (i.e. within the NOHD). Viewing diffuse reflections is normally safe.
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.

Summary of user precautions (IEC 60825-1)

* Quoted from Safety of laser products, Annex Table D.3

Requirements subclause	Classification						
	Class 1	Class 1M	Class 2	Class 2M	Class 3R	Class 3B	Class 4
Laser safety officer	Not required but recommended for applications that involve direct viewing of the laser beam				Not required for visible emission Required for non-visible emission	Required	
Remote interlock	Not required			Connect to room or door circuits			
Key control	Not required			Remove key when not in use			
Beam attenuator	Not required			When in use prevents inadvertent exposure			
Emission indicator device	Not required				Indicates laser is energized for non-visible wavelengths	Indicates laser is energized	
Warning signs	Not required						Follow precautions on warning signs
Beam path	Not required	Class 1M (Note 1) as for Class 3B	Not required	Class 2M (Note 2) as for Class 3B	Terminate beam at end of useful length		
Specular reflection	No requirements	Class 1M (Note 1) as for Class 3B	No requirements	Class 2M (Note 2) as for Class 3B	Prevent unintentional reflections		
Eye protection	No requirements				Required if engineering and administrative procedures not practicable and MPE exceeded		
Protective clothing	No requirements				Sometimes required		Specific requirements
Training	No requirements	Class 1M (Note 1) as for Class 3R	No requirements	Class 2M (Note 2) as for Class 3R	Required for all operator and maintenance personnel		

Notes: 1) Class 1M laser products that failed condition 1 of table 10. Not required for Class 1M laser products that failed condition 2 of table 10.
2) Class 2M laser products that failed condition 1 of table 10. Not required for Class 2M laser products that failed condition 2 of table 10.

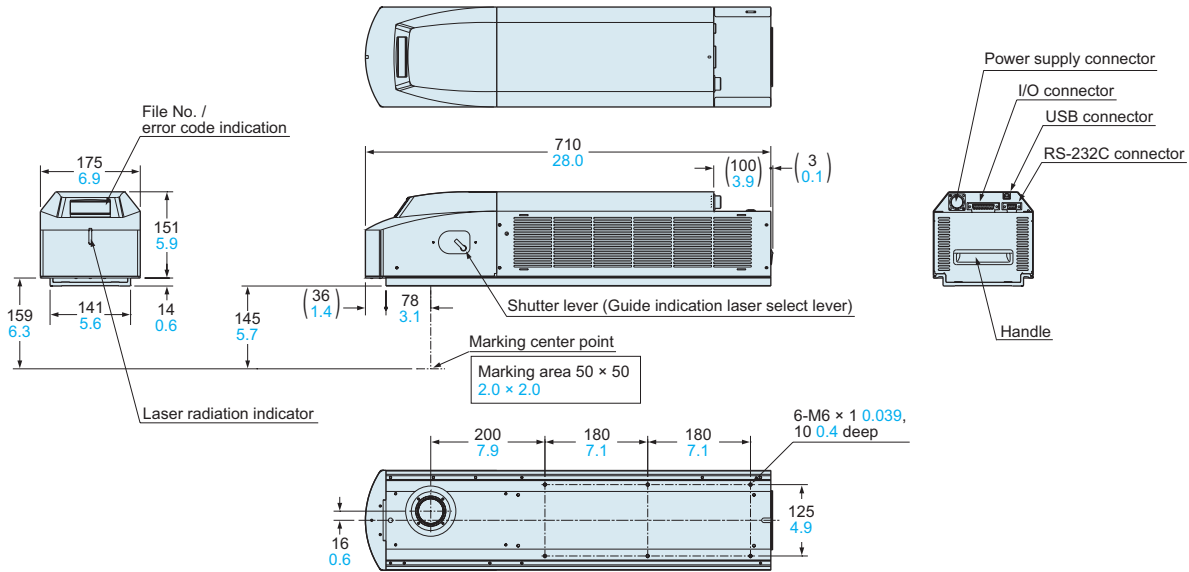
Remarks: This table is intended to provide a convenient summary of precautions. See text of this standard for complete precautions.

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DIMENSIONS (Unit: mm in)

LP-310 LP-310-A LP-310-B LP-310-C

Head

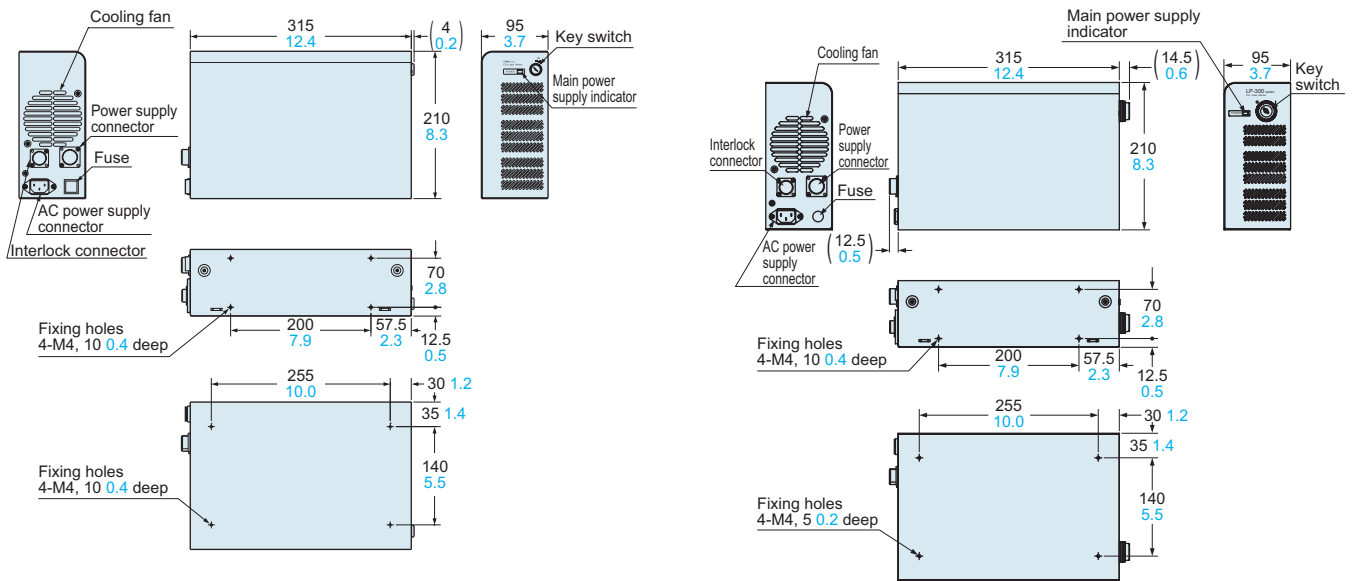


LP-310 LP-310-A LP-310-B

Power supply box

LP-310-C

Power supply box



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MEMO

