

Panasonic

NEW

Compact
CO₂ Laser Marker

LP-GS SERIES

FDA
Conforming to
FDA regulations

CE
Conforming to
Low voltage
and EMC Directive

Revolutionary New Sizes

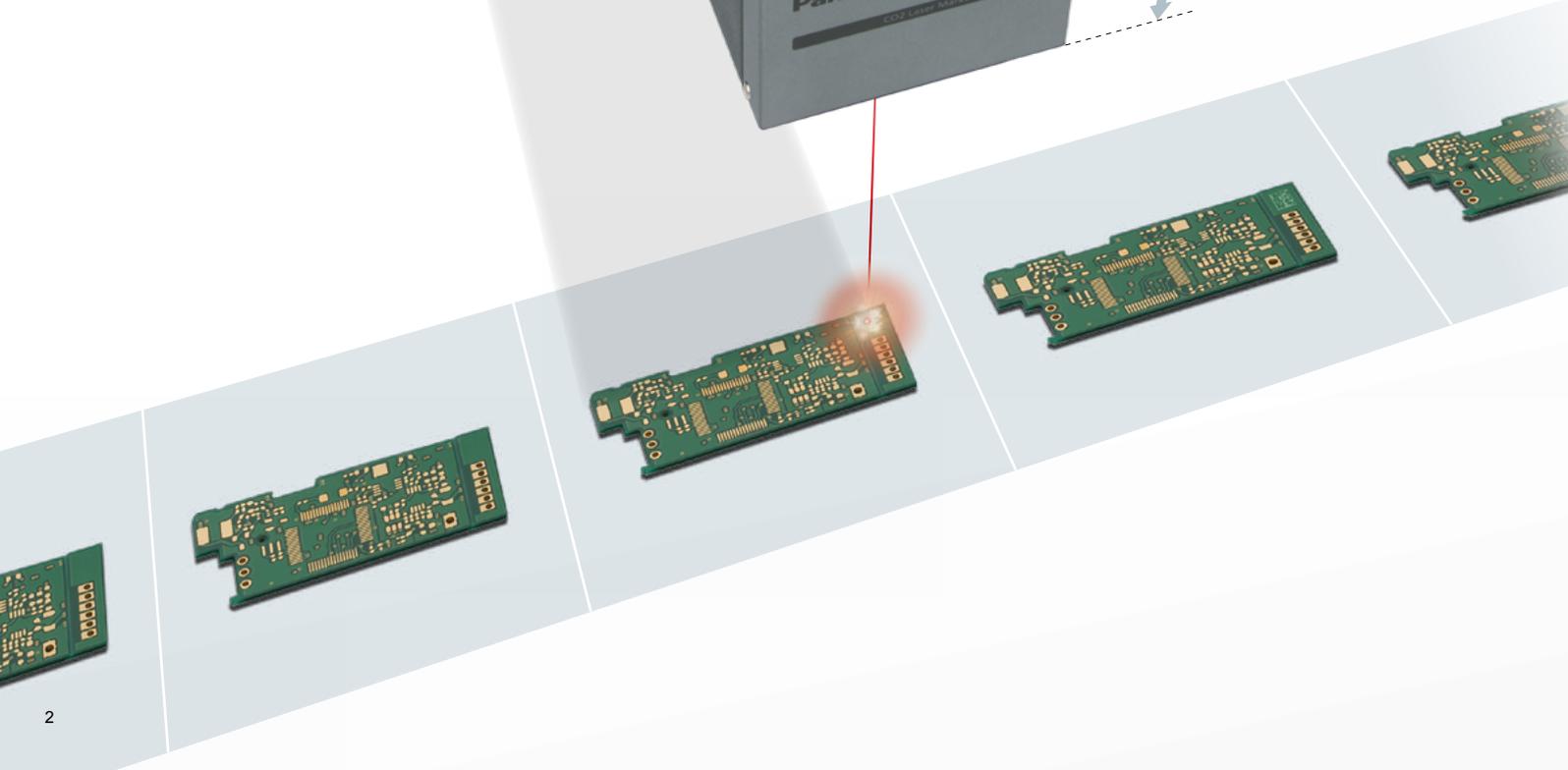


New ultra-small spot model added
Marking character size: 0.2 mm **0.0079 in** or less

[Width]
120mm
4.724 in

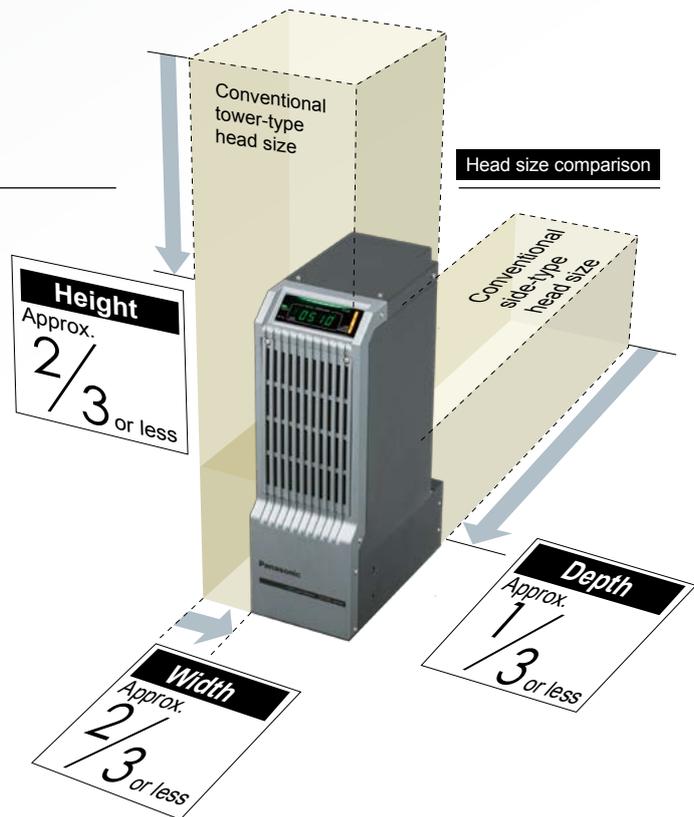
[Depth]
230mm
9.055 in

[Height]
365mm
14.370 in



Downsized unit

The LP-GS series Laser Marker heads have considerably decreased in size. The controller is also miniaturized so this downsized unit contributes to reduce floor space cost. Heads can be installed in any direction (top, bottom, left or right), allowing users more freedom when designing the unit.



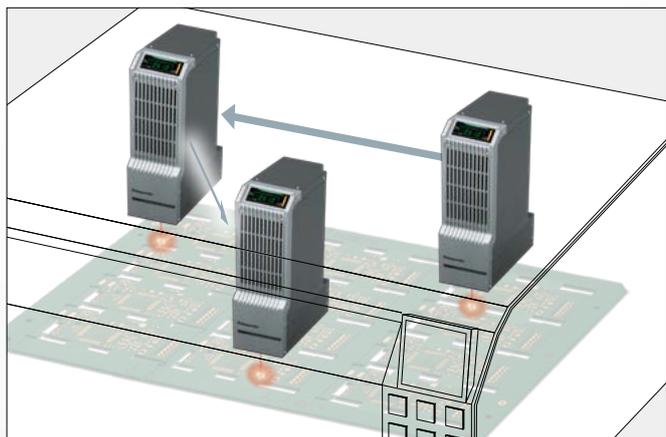
Revolutionary *size*

Head size has been minimized to contribute to reductions in floor space cost.

Marking on a wide area

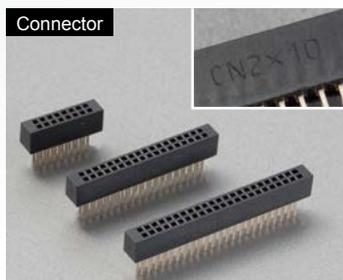
The LP-GS series head ensures both miniature size with light weight. Moving the head to the marking position ensures high-quality marking over a wide area. Due to the smaller head size, less space for installation is required, even when marking on an M- or L-sized large circuit board. The cable between head and controller is flex-resistant.

(Please note that excess force should not be applied when moving the head.)





*This is the adjustment range of the LP-GS051.
In the case of the LP-GS052, it is 3 mm 0.118 in.
The LP-GS051-L does not have the adjustment function.

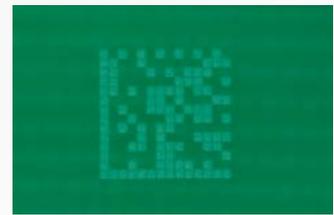


Marking on circuit boards with various thickness

Previously the head height had to be adjusted each time the circuit board thickness was changed. The **LP-GS** series is fitted with a Z-direction control mechanism that can adjust the work distance based on circuit board thickness. The mechanism both eliminates man-hours to change setup and maintains marking quality uniformity.

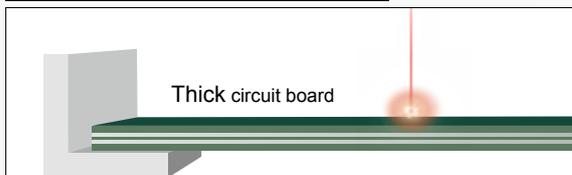


With Z-axis adjustment

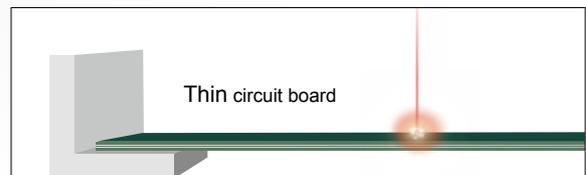


Without adjustment

Example of height control via Z-axis control



Thick circuit board



Thin circuit board



Production *improvements*

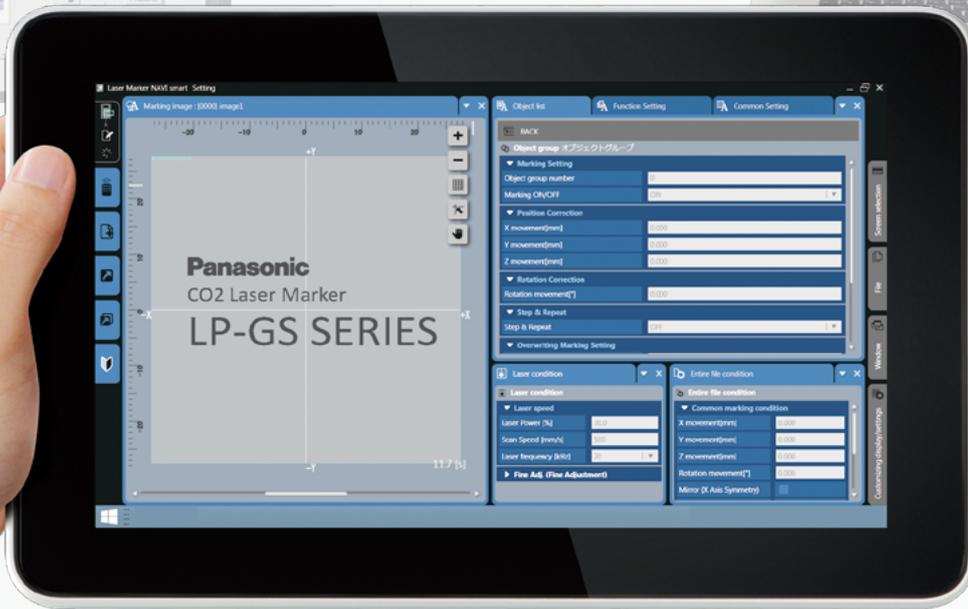
Drastic improvements in marking quality and man-hours for setup change

Camera correction without PLC

A camera is helpful to correct the tilt of the workpiece to maintain the marking quality. Connect the **LP-GS** series and the camera directly to transfer the correction data from camera to the Laser Marker. In addition, man-hours for PLC programming which used to be required can be reduced.
(For feature descriptions, refer to page 8.)



Corrected marking



* Simulated graphics screen.



Smart operation

Operability that focuses on "easy to use for anyone"

New dedicated software: Laser Marker NAVI smart

NEW

Includes the new dedicated PC configuration software **Laser Marker NAVI smart**. It is compatible with Windows® 8. When used with a tablet PC^{*1}, touch panel operation becomes possible. Also wireless access via Bluetooth^{*2} is available. Troublesome cables will not be required and configuration after installation is simple.

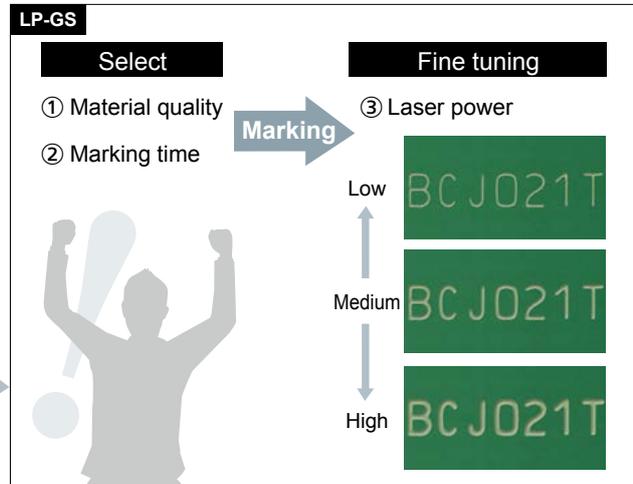
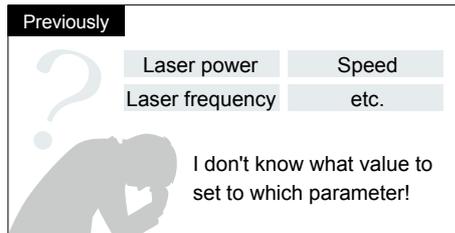
*1 Use a commercially available tablet PC.
*2 Bluetooth-compatible devices only.



Setting assist functions

NEW

It requires a certain amount of experience to set the optimum conditions for a wide variety of workpieces. So, an assist function has been added to make settings of optimum conditions simply. Even a beginner can output conditions, greatly shortening the lead time to start production.



Individual screens for different purposes

NEW

The "Laser Marker NAVI smart" display can be switched according to user purpose, such as for the "operator" or "supervisor". The precise screen indication enhances operability when configuring or checking settings.

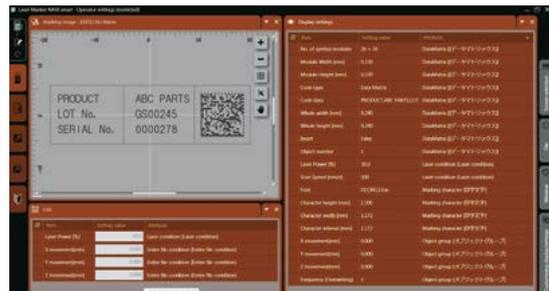
[For supervisor] Configuration screen

The data to be marked can be edited not only previewing it. Even complicated settings can be finely adjusted while previewing the data, which improves the work efficiency.



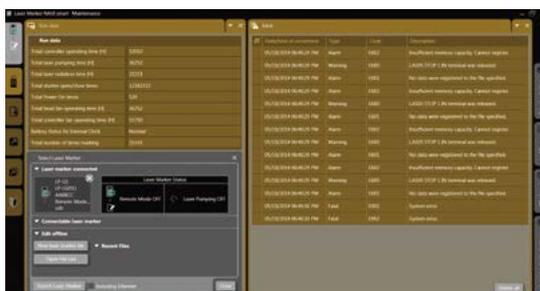
[For operator] Configuration screen

Equipped with a "watch function" that displays only the necessary parameters while production is in progress. Operator error can be prevented because only the parameters to be changed by the operator are selected and displayed.



[For maintenance manager] Maintenance inspection screen

The Laser Marker operation history, error history and other parameters required for stable operation can be confirmed. This information is useful for making maintenance plans and preparation.



Many convenient functions

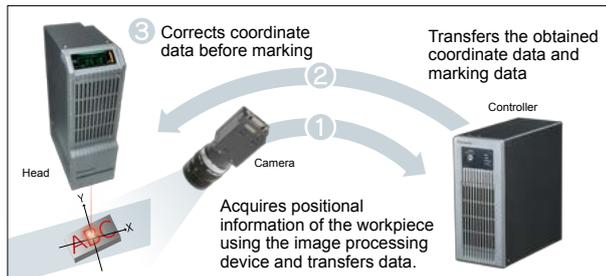
"External device link function"- controllable without PLC

Previously, a PLC was required in order to coordinate the Laser Marker with image processing devices and readers. The LP-GS series is capable of direct data processing with certain devices even without a PLC, thanks to the external device link function.

[Link with an image processing device]

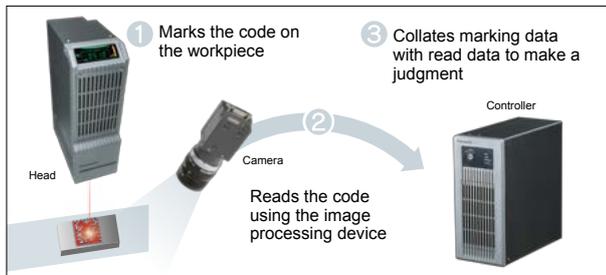
Position adjustment marking

The Laser Marker is equipped with a new function that provides direct control of an image processing device (IPD). Now the Laser Marker itself can trigger the IPD to send the workpiece position (coordinate data). As there is no need for a PLC and programming, the amount of man-hours is reduced.



Read and collate marking data

A new function has been added which enables to control a sequence of operations from marking to reading the code. The reader (IPD) reads codes marked by the Laser Marker and collates them with the original data to check whether the code is correctly marked. This helps to prevent mixup of incorrectly marked products. The reader (image processing device) reads code marked by the Laser Marker and the Laser Marker collate it with the original data to check whether the code is correctly marked, in order to prevent mixup of incorrectly marked products.

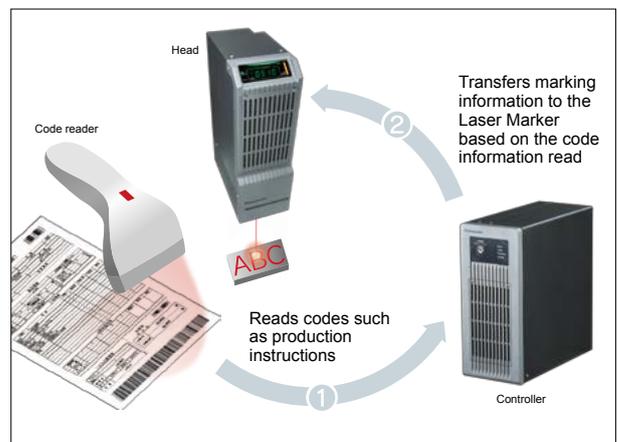


[Link with a code reader]

The Laser Marker can be controlled based on the read code data.

Model switch, code data marking, marking character changes and other operations

Connect the Laser Marker and code reader directly to read data of codes listed on production instructions, etc. Based on this information, the Laser Marker can execute different operations configured in advance, e.g. change the marking data. Laser Marker control based on code data prevents operator input error.



Functions useful at equipment startup

[Guide laser]

Marking data and position are traced and displayed by the red guide laser. Before actual marking on a workpiece, the operator can check the marking area or marking position visually.

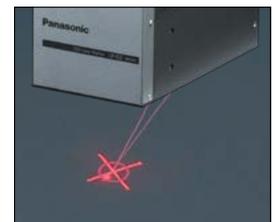
*The LP-GS052 does not have the guide laser function.



[Dual-pointer]

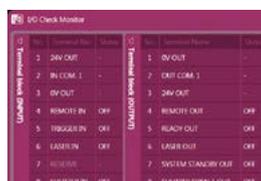
Incorporate a dual-pointer with red guide light to make checking and adjustment of focal point distance easier.

*The LP-GS052 does not have the dual pointer laser function.



[I/O check monitor]

The ON / OFF status of the input and output terminals can be confirmed on the monitor. I/O signals can be quickly checked at equipment startup.



[Backup / restore]

Convenient when copying configuration data of one laser marker to another.

[External control function]

Compatible with I/O control, Ethernet, and RS-232C communication command control. Can be automatically controlled by PLC, PC and other external devices.

Functions useful at the production site

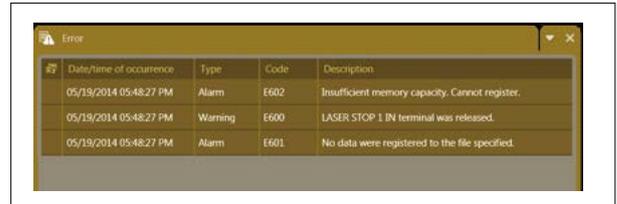
[Operation indicators]

Various indicators are located on the head. Laser Marker operation status can be identified at a glance while the equipment is running.



[Error history display]

Displays a history of errors as well as the time and date of occurrence. Errors are listed not only as codes, but with an explanation so that an operator can confirm the type of error and when it occurred.

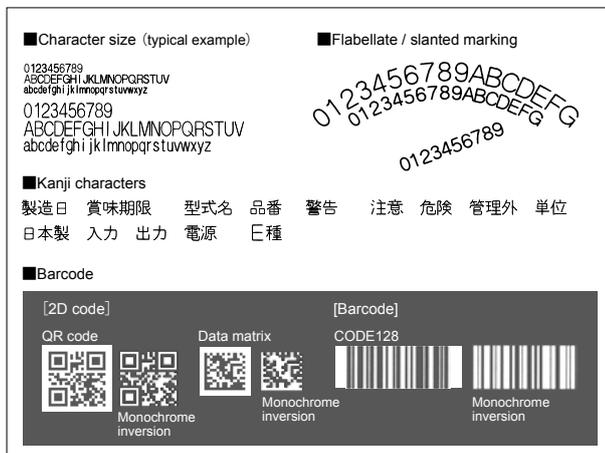


[Display in 3 languages]

The Laser Marker NAVI smart display language is available in Japanese, English, and Simplified Chinese. The language can be changed to the one used at the location. It is not dependent on the language of the operating system.

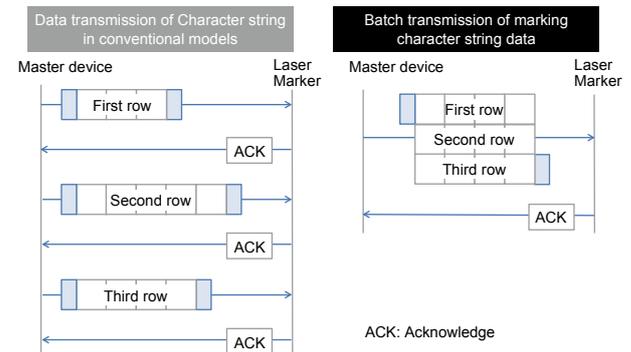
[Various kinds of markings]

Marking characters can be used in any form and in any layout. Bold, flabellate, slanted, inversion, equal placement, proportional and other complicated layouts are available and can be configured easily. Barcode and two-dimensional codes can be marked.



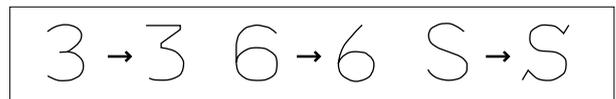
[New command system: batch data transmission]

In conventional models, commands had to be transmitted one by one based on the character string data. This type of transmission took time and was a factor that brought a production takt delay for the entire equipment. The LP-GS series is capable of combining the required character strings data into one set and send it with a single command, thus shortening production takt.



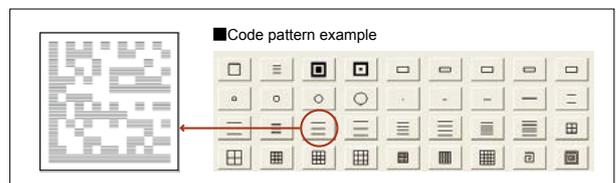
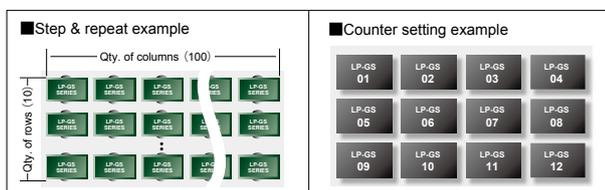
[Font correction]

The Laser Marker NAVI smart font correction function makes it easy for a customer to correct character shapes for other purposes.



[Step & repeat]

Function to load large quantities such as resin packaging inside trays and circuit boards, and to mark workpieces at once. Used in combination with Counter Function allows marking of serial numbers. Quantities of rows and columns can be set arbitrarily. Marking or no marking, laser strength, and marking position can be corrected, allowing fine-tuning as needed.



The LP-GS series is even simpler to use because Laser Marker parameters can be used to create simple patterns.

Specifications

Item		Model No.	LP-GS051	LP-GS051-L	LP-GS052
Marking laser	Laser type	CO ₂ laser, Wavelength: 10,600 nm 0.417 mils , Class 4 laser			
	Average output* ¹	5 W		1.3 W	
	Laser oscillation	CW oscillation			
Guide laser	Red semiconductor laser, Wavelength: 655 nm 0.026 mil , Class 2 laser Maximum output: 1 mW or less				
Laser pointer	Red semiconductor laser, Wavelength: 655 nm 0.026 mil , Class 2 laser Maximum output: 1 mW or less				
Scanning method	Galvano-scanning method				
Marking field	55 × 55 mm 2.165 × 2.165 in			30 × 30 mm 1.181 × 1.181 in	
Work distance (center position) ²	111 mm 4.370 in				
Work distance range	108 to 114 mm 4.252 to 4.488 in		—————		69.5 to 72.5 mm 2.736 to 2.854 in
Scan speed ³	Maximum 3,000 mm/sec. 118.110 in/sec.		Maximum 2,000 mm/sec. 78.740 in/sec.		Maximum 3,000 mm/sec. 118.110 in/sec.
Registration file quantity	10,000 files				
Marking data quantity	2,000/file				
Marking object types	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			
	2D codes	QR code, Micro QR code, iQR code, Data Matrix, GS1 Data Matrix			
	Graphic data	VEC ⁴ , DXF, BMP, HPGL, JPEG, AI, EPS			
Character height / width ³	0.1 to 55 mm 0.004 to 2.165 in			0.06 to 30 mm 0.002 to 1.181 in	
Marking shape	Straight line, arc, proportional, justify				
Marking condition	Stationary				
I/O ports	I/O terminal (40-pin), I/O connector (40-pin)				
Serial communication interface	EIA-RS-232C, Ethernet				
Included software	Laser Marker NAVI smart, logo data conversion software, logo data editing software, Font Maker, ExportVec				
Laser Marker NAVI smart connection methods	USB, Ethernet, Bluetooth ⁵				
Laser Marker NAVI smart display languages	Japanese, English, Simplified Chinese				
Power supply	90 to 132 V AC or 180 to 264 V AC (includes ±10 % voltage fluctuation) ⁶ , frequency 50 / 60 Hz				
Power consumption	At 100 V AC	370 VA or less (4.2 A or less)			
	At 200 V AC	500 VA or less (2.8 A or less)			
Cooling method	Forced air cooling to both head and controller				
Ambient temperature ⁷	0 to +40 °C +32 to +104 °F				
Ambient temperature for storage ⁷	-10 to +60 °C +14 to +140 °F				
Ambient humidity ⁷	35 to 85 % RH				
Main unit net weight	Head	Approx. 11 kg			
	Controller	Approx. 8 kg			
Supported OS	Windows® 8 Pro 32 / 64 bit (Japanese / English / Simplified Chinese) ⁸ , Windows® 7 Professional SP1 32 / 64 bit (Japanese / English / Simplified Chinese)				

*1 Output at product processing edge (at configured power of 100).

*2 There is an approx. ±0.5 mm **0.020 in** individual difference in work distance center position.

*3 Values listed here are the variable range. Setting values that can maintain marking or processing quality differ based on marking conditions and target materials.

*4 VEC is an exclusive Laser Marker image file format.

*5 Bluetooth cannot be used with model names containing "-F".

*6 Power supply is auto-switching.

*7 Common to controller and head. No dew condensation or icing allowed. If a unit was stored at a temperature other than ambient temperature, sufficient time should be given to reach ambient temperature before use.

*8 Does not run on Windows® 8 RT.

*9 Windows® 8 and Windows® 7 are trademarks or registered trademarks of Microsoft Corporation in the United States and other countries.

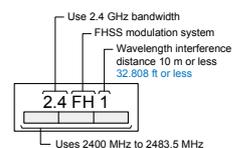
Lineup

Model No.			Z-axis control function	Bluetooth function	
LP-GS051	LP-GS051-E	—————	Yes	Yes	
LP-GS052	LP-GS052-E	—————		No	An "E" or "N" at the end of the Model No. indicates the specification of the included controller power cable.
LP-GS051-F	LP-GS051-FE	LP-GS051-FN			
LP-GS052-F	LP-GS052-FE	LP-GS052-FN			
LP-GS051-L	LP-GS051-LE	—————	No	Yes	
LP-GS051-LF	LP-GS051-LFE	LP-GS051-LFN		No	Others: Rating 125 V, PSE, CSA and UL-certified AC cable is included.

Bluetooth precautions

- Bluetooth version: V3.0, Power Class: Class 2, Modulation method: FHSS (frequency hopping method), Communication distance: 5 m (visible distance indoor), frequency bandwidth: 2400 MHz to 2483.5 MHz
- To use wireless equipment, you need to obtain the authorization required by the country or the region where you use the equipment. Emitting radio waves in the area without an authorization is subject to punishment by the laws and regulations of each region. Make sure to verify the laws, regulations, and standards of the country and region. The regions in which this device can use Bluetooth function are Japan, the United States of America and EU. Use a device with no Bluetooth function in other regions.
- This product does not guarantee connections and operations with every Bluetooth-ready device.
- Bluetooth usage may be restricted depending on the ambient situation or environment. Check with the administrator or the manager of the building if using Bluetooth is allowed before using the Bluetooth function of this product.
- Do not use the Bluetooth function of this product when wireless LAN or any other wireless device is used around, in places where there are many obstacles or in an environment subject to weaker radio wave signals. Otherwise, decrease of communication speed, communication error or disconnection may occur.

- The wireless equipment loaded onto this product uses the frequency band of 2.4GHz.
- The followings are operated within the applicable frequency bandwidth of this device: the premises radio station (license required) for mobile identification used in a production line of factories in addition to the industrial, scientific, and medical equipment including microwaves, the specified low power radio stations (no license required) and amateur radio station (license required).
Make sure that there is no active premises radio station for mobile identification, specified low power radio stations, or amateur radio stations nearby before using this product.
In case radio wave interference occurs by this device to the premises radio station for mobile identification or amateur radio stations, change the place to use the device or stop emitting radio waves immediately.
- The Bluetooth Word Mark and logo are registered trademarks of Bluetooth SIG, Inc.



■Precautions for Proper Use

Laser safety

- This device is classified as a Class 4 Laser Product in IEC / JIS / FDA regulations 21 CFR 1040.10 and 1040.11. Never look at or touch the direct laser beam and its reflection. Take safety measures to satisfy requirements of regulations.
- The labels on the right are attached to this Laser Marker. (Warning labels are not shown in Laser Marker photographs in this catalog.)
- The laser beam is infrared light that is invisible to the human eye. Use particular caution when the laser is operating.

Maintenance

- Air filter: Regularly clean the air filter attached to this Laser Marker to maintain cooling effects.
- Laser emission port: Dust or contamination adhering to the laser emission port may affect the marking quality or seriously damage the Laser Marker. Clean the laser emission port regularly.

Recommend to install a dust collector

- Depending on the material of the marking objects, dust and/or smoke harmful to the human body and the Laser Marker may be generated. Reflection or absorption of laser beam by smoke may also adversely affect marking quality. When using a Laser Marker, using a dust collector is recommended.
- * For more information, contact your sales representative.



Laser Marker Lineup

A full series for every application.

3D laser marker with high levels of productivity and safety

FAYb Laser Marker

LP-M SERIES

High power laser enables deeper and faster marking and processing. Equipped with 3D control capability which allows the best marking on every product shape.



Short pulse laser marker for clear high contrast marking on resin surfaces

FAYb Laser Marker

LP-V SERIES

Enables beautiful high contrast marking on resin surfaces by fully utilizing the characteristics of short pulse laser beams with minimal thermal influence.



Fast, high-stability, high grade laser markers with advanced functions

CO2 Laser Marker

LP-400 SERIES

Mark on resin, glass, paper, and a wide range of other materials. The high-power, high-performance galvanoscanner delivers exceptional marking quickly and accurately.



Connecting rod (marking)



Gasket (coating removal)



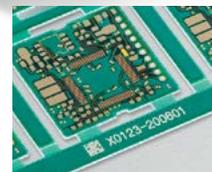
IC



Resin molded products



Laser label (marking and half-cut)



Printed circuit board

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