



INTEGRABLE LASER MARKER

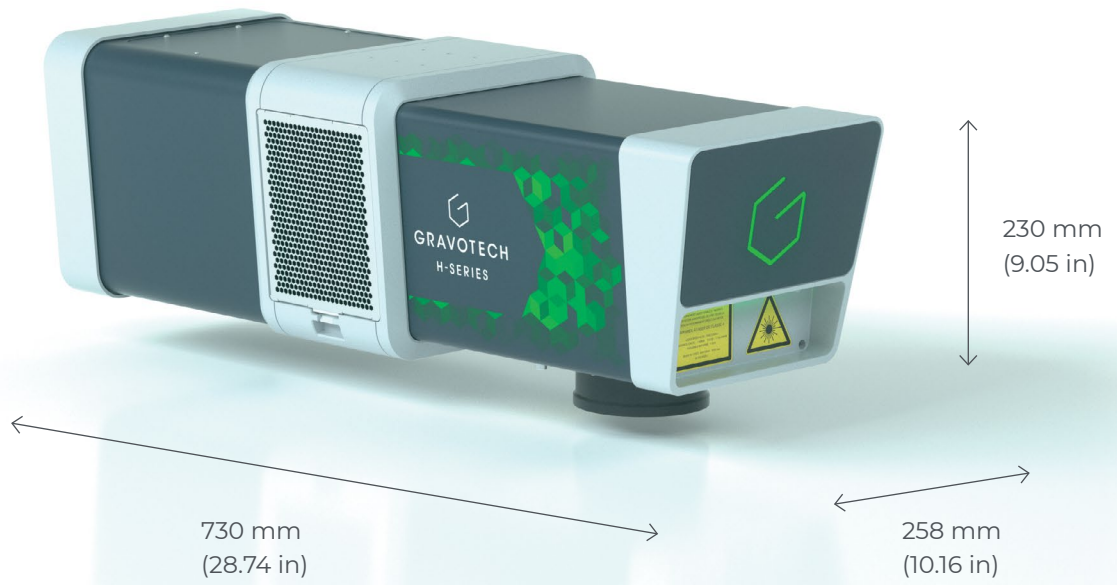
**HYBRID LASER**



**GRAVOTECH**  
EXPRESSION OF THINGS



The 1064 nm HYBRID laser marker is perfect for applications requiring a great versatility in terms of marking materials at the highest speed, from plastics to metal.



#### EXTRAORDINARY PEAK POWER

The Hybrid laser is characterized by its peak power and extremely short pulse duration. Thanks to its high peak power of up to 150,000 W per shot, which is 15 times more powerful than a standard fiber laser at the same energy level, it offers a unique interaction on plastics for high-contrast marking.

#### SHORT PULSE DURATION FOR AN OUTSTANDING QUALITY MARKING

The small diameter of the laser spot is combined with a very short pulse duration of 8ns, 10 times shorter than a standard fiber laser. The quality of the marking is perfect, with no halos or distortion due to heating. It is the ideal solution for applications requiring thin marking and perfect aesthetic results such as the horology and jewelry sectors.

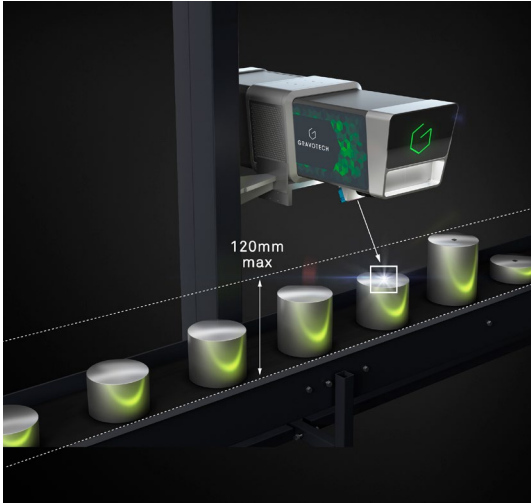
#### VERSATILITY

All types of marking finishes are possible thanks to the power range of the HYBRID laser. It is the perfect solution when you have a variety of parts made of different materials from hard metal to soft plastics.

SEE OUR VIDEO



## KEY FEATURES

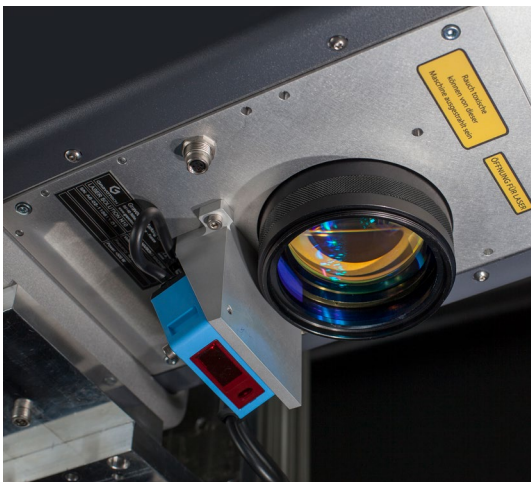


### More flexibility in your production

This module guarantees you an exact and consistent laser marking without any mechanical adaptation when you change the type of part. It simplifies your integration:

- No need to re-adjust the focal distance, even when you are marking various types of parts with different heights on the same line.
- It offers more flexibility on your production lines, giving the possibility to have parts with a difference of up to 120 mm (4.1 in) height without moving the laser.

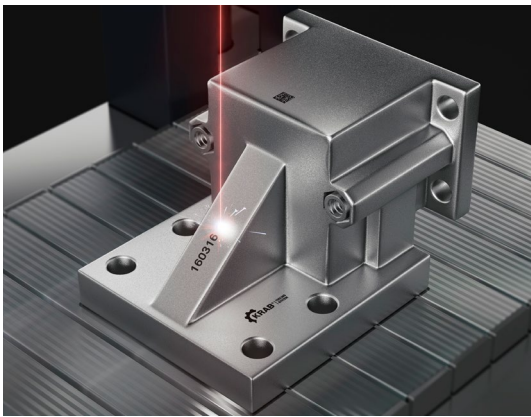
Just select the right marking job and you are ready to switch to another product line.



### More quality in all conditions

This module is combined with a distance sensor to make an Autofocus. The laser detects automatically the part surface and adjusts the focal distance without any calibration or waiting time:

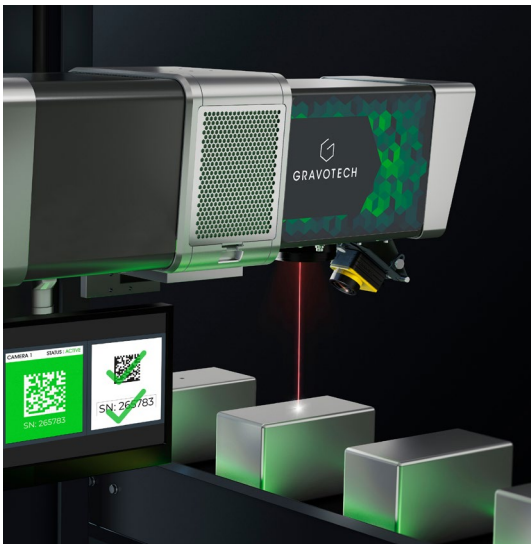
- Guarantee of optimal marking quality regardless of the flatness of the parts or their shape.
- Constant contrast & depth. Boost your productivity with the fastest solution.
- Instant refocusing: Less than 100ms to change focal distance.
- Reduce your marking cycle time.



### More possibilities in complex part shapes

This HYBRID laser marker also manages cylindrical surfaces, angled planes and multilevel surfaces without any head movement:

- Instantaneous marking on complex part with the possibility to mix curved surfaces and angled planes at different heights up to 120 mm (4.1 in) amplitude.
- No character deformation.
- Uniform contrast over the entire engraving area.



### Vision Manager – One solution for marking & reading

This package helps you read codes and texts during the marking process, to ensure the marking has been done properly and keep a 100% traceability of your products:

- High performance: reading camera with lighting, auto-focus system and protective lens.
- Easy set up: You are a few clicks away to complete control of the 1D/2D codes and your text (OCR fonts).
- Quality control of the code visibility (Grade).
- Monitoring of the marking quality by triggering large choice of operations: send status info and history to the PLC, activation of alarms, activate actuators to reject faulty parts.



# SOFTWARE



## Embedded on the Laser

This Hybrid laser marker can work independently in a production line and generate all data necessary to your identification without a computer.

It can serialize your parts instantaneously, generate unique ID with complex marking content (timestamps with multiple formats, variables, counters, shift codes) and update the text and 1D/2D codes predefined in your templates.

This powerful embedded electronic can communicate and centralize information coming from your PLCs and database in real-time, saving you time while increasing your productivity.



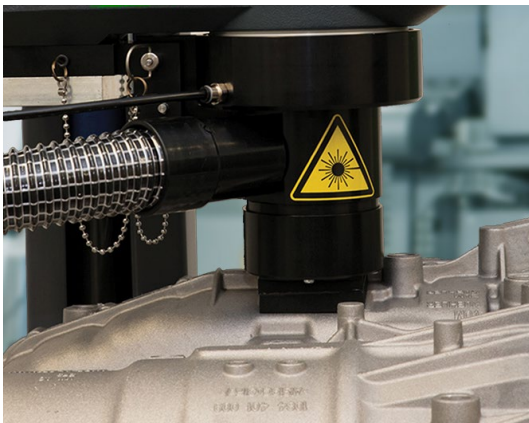
## Lasertrace

Developed by Gravotech and enriched by numerous application experiences,

Lasertrace is a unique software specially designed to create marking files to be loaded in the laser system.

It includes a graphic composition to add text, logos and codes like Datamatrix in your marking templates.

You can describe your marking process according to specified rules: the actions (marking blocks) to be carried out, the sequence of execution and the possibility to implement a large choice of transitions (output activations, camera blocks, variables, etc).



## Mini Inline - Innovative solutions for permanent marking

Gravotech has designed a turnkey marking solution that will fit perfectly on your production lines.

Mini in line is a Class-1 nozzle to perform marking without designing a costly class-1 casing to secure all the marking process.

Designed for Marking of large industrial parts: This class 1 solution is fully customizable to fit your parts perfectly.

MAKE YOUR SAMPLES



## APPLICATIONS



Foaming effect on plastics



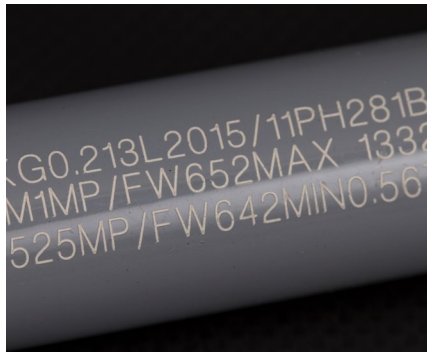
Contrasted marking on plastic without any additives



Annealing on stainless steel



High quality marking on any plastics colors



Coloring of coated material



Surface marking on metals

## SERVICE & SUPPORT



### Training

Our training modules are designed to optimize your use of our solutions and are available for our full range of machines, software and accessories.



### Technical support

We bring you local support in your language in more than 50 countries, where we have established presence directly and with our distribution partners.



### Maintenance

Thanks to experience gathered with Gravograph and Technifor and our global presence in more than 50 countries with 150 Gravotech technicians and our distributor partners, we can offer you a wide range of services.

# TECHNICAL DATA

## HYBRID SERIES

<b>Model</b>	H10 / H20
<b>Laser technology</b>	DPSS
<b>Power</b>	10W / 20 W
<b>Peak power</b>	60 kW
<b>Frequency</b>	10-100 KHz
<b>Scan speed</b>	Up to 10000 mm/s (393.7 in/s)
<b>Marking area - Available lenses</b>	F100: 65 x 65 mm (2.56 x 2.56 in) F160: 110 x 110 mm (4.33 x 4.33 in) F254: 175 x 175 mm (6.89 x 6.89 in) F330: 205 x 205 mm (8.07 x 8.07 in)
<b>Communication Interfaces (standard)</b>	Ethernet TCP/IP; Terminal block 8I / 8O; Laser Safety Dedicated I/O; RS232; USB
<b>Fieldbus</b>	PROFINET or ETHERNET IP
<b>Display</b>	Integrated screen with control panel for: real-time supervision, easy diagnosis, software updates, memory back-up...
<b>Marking Specifications</b>	+60 Gravotech fonts, Possible to convert User & TTF fonts, All formats of barcode and 2D codes, Logos
<b>Operating temperature</b>	15 - 40°C (59 to 104 F)
<b>Rated voltage</b>	100 - 240 V AC
<b>Marking head weight</b>	19.8 kg (43.651 lbs)
<b>Marking head cable length</b>	All-in-One laser
<b>Marking head installation direction</b>	All positions
<b>Laser Safety Classification</b>	Class 4 Laser system, possibility to switch in Class 1 for integration on a station or equipped with Mini Inline module



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