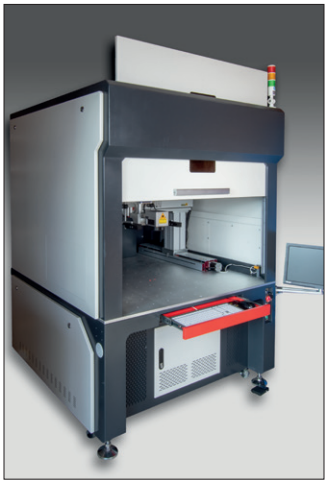
Kemet

LaserMarker

Kemet International Ltd, Parkwood Trading Estate, Maidstone, Kent, ME15 9NJ, UK
+44 (0) 1622 755287 sales@kemet.co.uk www.kemet.co.uk



Contents

Tattoo your moulds, inserts . . . .

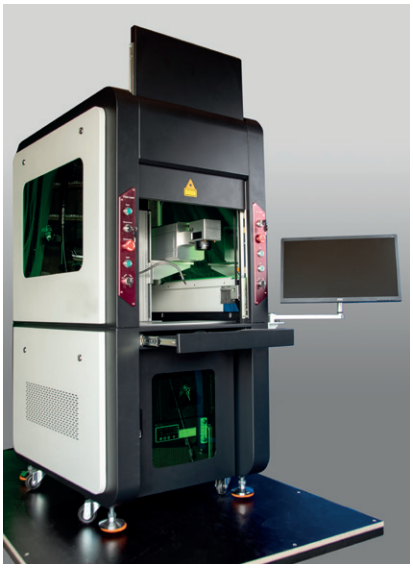
- ***quickly***
- ***easily,***
- ***always legibly***
- ***durably***

It looks professional and highlights the quality of your moulds or tools.

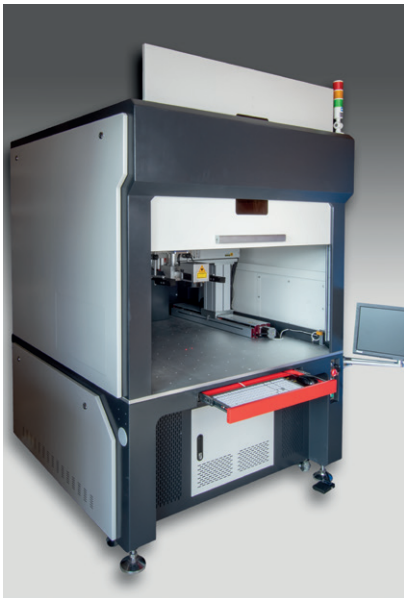
If you then mark all the compo-nents of your mould with a bar-code or QR code too, you can easily identify your parts at any time with a handy scanner - or with your smartphone.

This results in a whole range of interesting possibilities for optimising your workflow.

Standard cabin laser



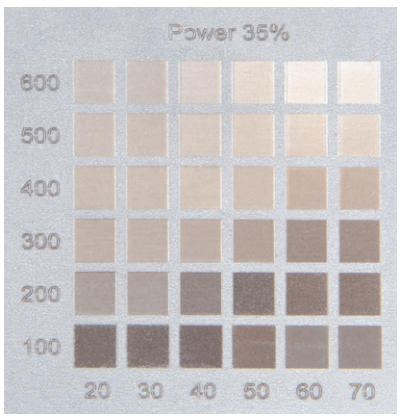
Medium cabin laser



Goliath cabin laser

Our models

The models	***Laser types /output W***			***Options***	
Cabin laser	***Fibre***	***UV***	***Mopa***	***Autofocus***	***3D***
Standard	*20 / 30 / 50*	*5 / 10*	*20 / 30 / 50*	● ● ●	
medium	*20 / 30 / 50*	*5 / 10*	*20 / 30 / 50*	● ● ●	● ●
Goliath	*20 / 30 / 50*	*5 / 10*	*20 / 30 / 50*	● ● ●	● ●
Open laser					
Table-top model	*20 / 30 / 50*	*5 / 10*	*20 / 30 / 50*	● ● ●	● ●
Mobile laser	*20 / 30 / 50*	*5 / 10*	*20 / 30 / 50*		● ●



Here we have varied the speed and frequency at constant power (35%). These variations allow you to mark in very different "colours".

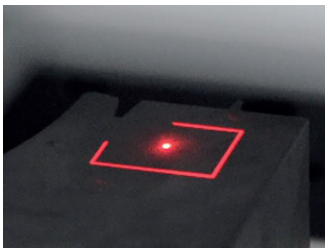
Open laser
Table-top model

Open laser
Mobile laser

The models	***Rotary axis up to Ø mm***			***Lenses***					***Suction***	***Curtains***
Cabin laser	*60*	*80*	*120*	*70*	*110*	*150*	*210*	*300*		
Standard	● ● ●			● ● ●	● ● ●				● ● ●	
medium	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	
Goliath	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	
Open laser										
Table-top model	● ● ●	● ● ●		● ● ●	● ● ●	● ● ●			● ● ●	● ● ●
Mobile laser	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●			● ● ●	● ● ●

LaserMarker

The fascinating aspect of laser marking is its simplicity. You use the software to design what to display and how, and determine the size.



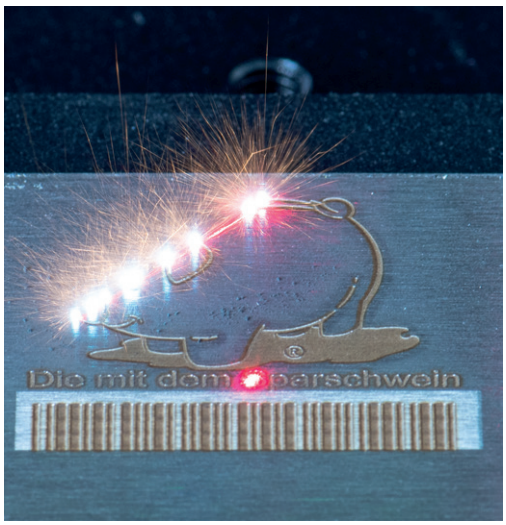
You can see a red-framed rectangle on your workpiece, which corresponds to the desired size of your design. Place the workpiece so as to achieve the optimum result. Then press the knob, or even better the foot switch and whoosh!, marking is finished. If the mark needs to be a little deeper, adjust the repetition rate in the software and after another couple of whooshes that's done too.

Neat, always easy to read and very simple to handle: these are the special advantages of laser marking.

A pleasant side effect:
The whole thing looks very professional and emphasises the high quality of your mould or workpiece.

The process

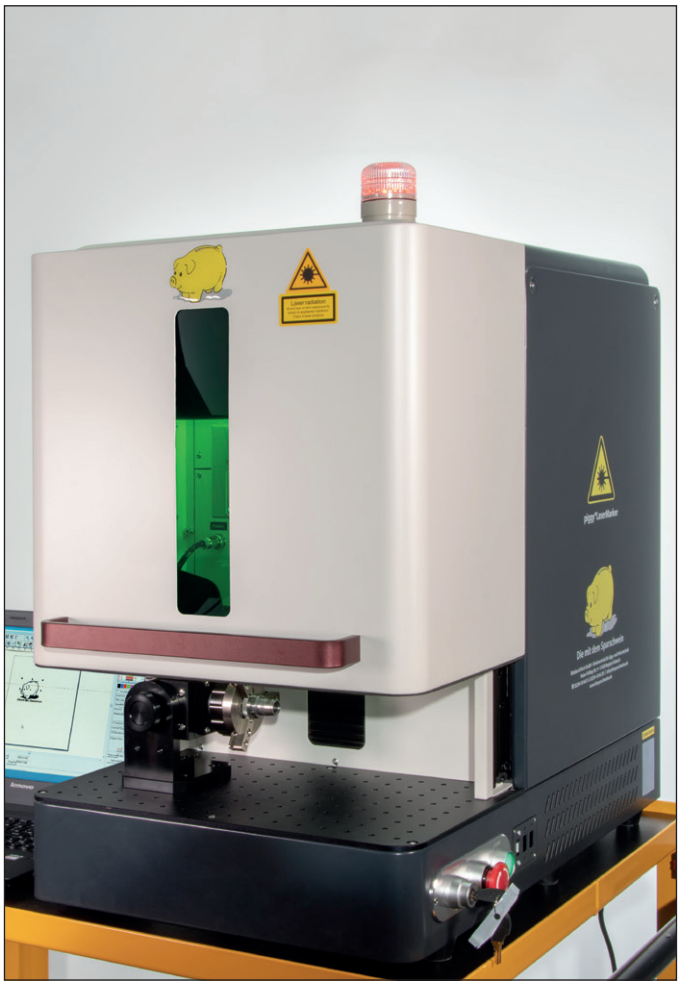
The entire system is PC-controlled. The software is easy to learn. Let's take a look at the process: You place your logo for example on the raster area and add the text and/or QR code. Place the component to be marked in the cabin. You can now project your layout on to the tool surface and check, whether everything is alright. If it's all OK, start the ***LaserMarker*** *and the work is finished in a few seconds.*



The software
is intuitive to use and quick to master owing to its simple design. We have selected the German version for you.

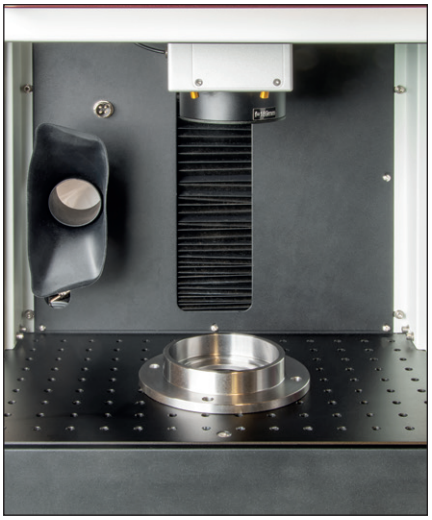
The software generates
the bar and QR codes directly from your text in-puts. Up to 4000 characters can be encrypted in a QR code of this kind. We have accommo-dated more than 60 characters clearly legibly in a 2 x 2 mm area. The marking was performed on hardened steel and also on carbide. If a tool or mould liner is marked with a QR code, it can always be clearly identified with a scanner or smartphone. When corresponding documenta-tion is present on the respective computers, it is possible to trace at any time which process-ing steps have already been accomplished and what is to be done or to be taken into account in the steps still to be completed. This makes it possible, without using paper to set up a closed process chain that can be accessed at any time.

Laser cabins - Standard



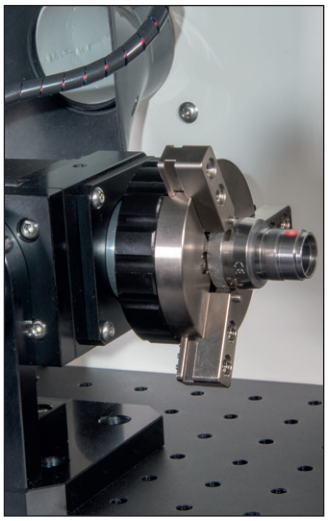
Our standard cabin lets you mark workpieces of up to 350 x 230 x 130 mm quickly and easily.

Standard is the model you need if you want to use it on a workbench.



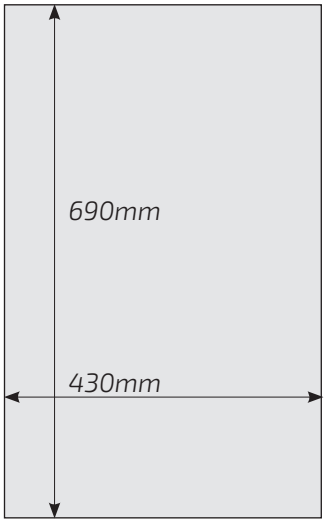
Here you can see the cabin interior with connection for a suction system on the left side.

Example
We lasered this punch with a Ø of 25 mm and a depth of 0.2 mm in very good quality within 60 minutes.

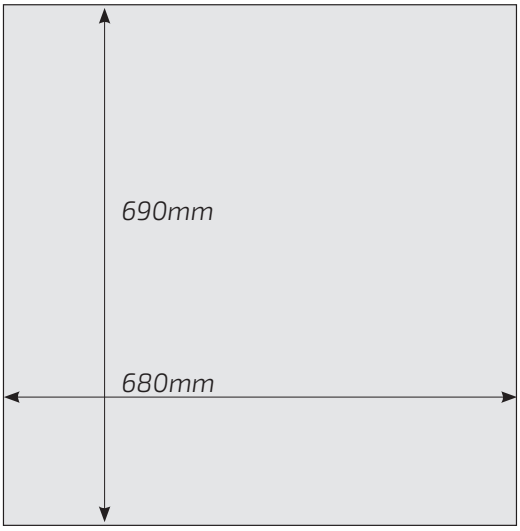


Optionally, you can use a rotary axis of up to Ø 60 mm for circumferential engravings on round parts. The laser software takes care of control.

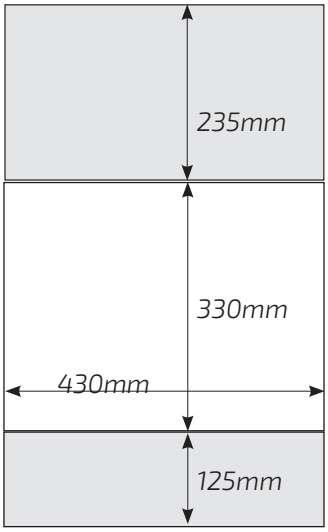
Technical data



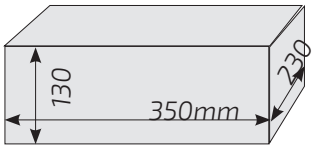
Base area



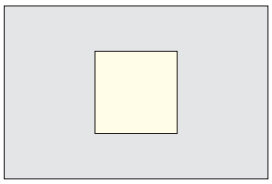
Side view



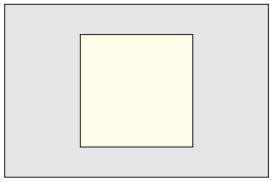
Front view
+ door opening



Workpiece size



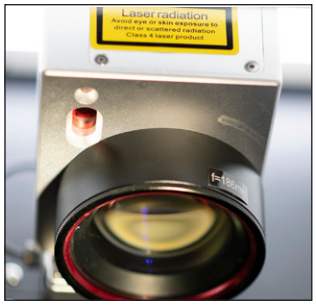
Marking area *110 x 110mm*
with standard lens



Marking area *150 x 150mm*
with 32-PLM0150 lens
(workpiece height is reduced by 75 mm)

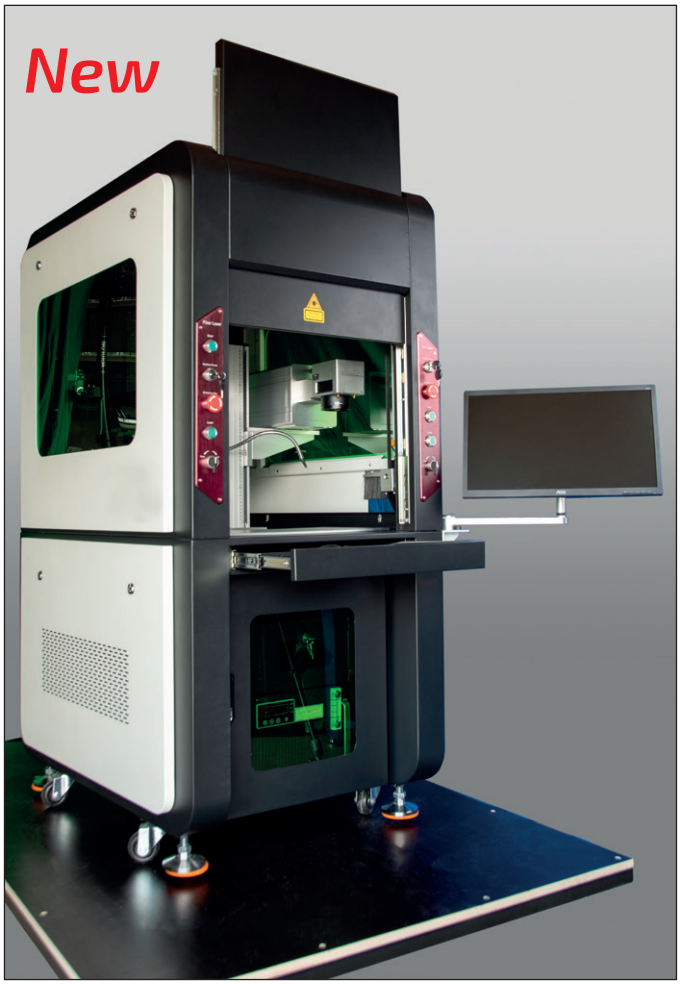
Model	***20 watts***	***30 watts***	***50 watts***
Fibre laser	*√*		
Wavelength	*1,064*		
*Output**	*20 watts*	*30 watts*	*50 watts*
*Marking area **	*110 x 110mm*		
Workpiece size	*350 x 230 x 130 mm max.*		
Current	*220-240 V, 0.5 kVA, 50 Hz*		
Weight	*63 kg*		
Order no.	*32-PLM20*	*32-PLM30*	*32-PLM50*
with autofocus	*√*		
Order no.	*32-PLM20AF*	*32-PLM30AF*	*32-PLM50AF*

** = other on request*



Autofocus
Focuses at the touch of a button before lasering. This is particularly advantageous when lasering the bottom of narrow slots for example.

Laser cabins - Medium



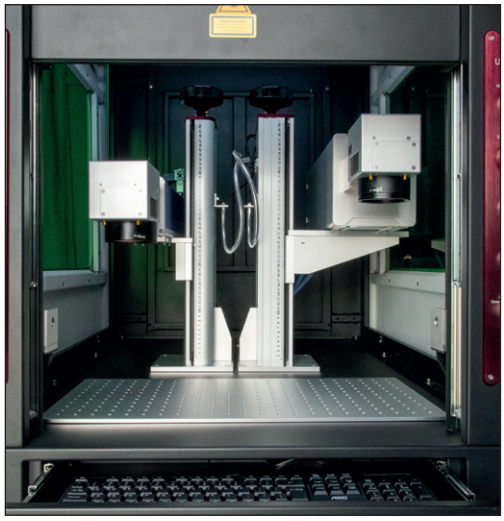
On the 550 x 350 mm working surface, you can laser mark workpieces of up to a maximum height of 450 mm. This cabin has a fibre laser with an output of 30 watts as standard equipment. ***UV laser is also possible.*** *We can also install both if you wish, then you can use a single cabin to mark both metals and plastics.*

All is controlled by user-friendly software that is intuitively controlled and quickly learnt owing to its simple structure.

The cabin is equipped with 4 adjustable feet and 4 castors making it also suitable for "mobile" use. The motor-operated door makes work convenient and safe. 3 large laser protection glass windows provide the required "insight".

The motor-operated door makes daily work easier.

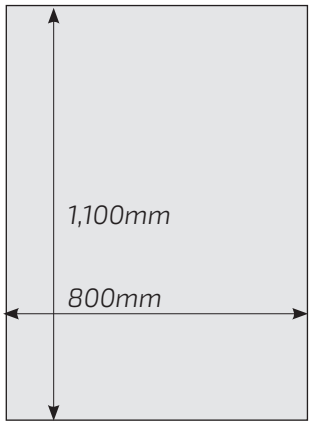
The laser source, the entire controller, the computer system and if necessary the cooling device are housed in the base.



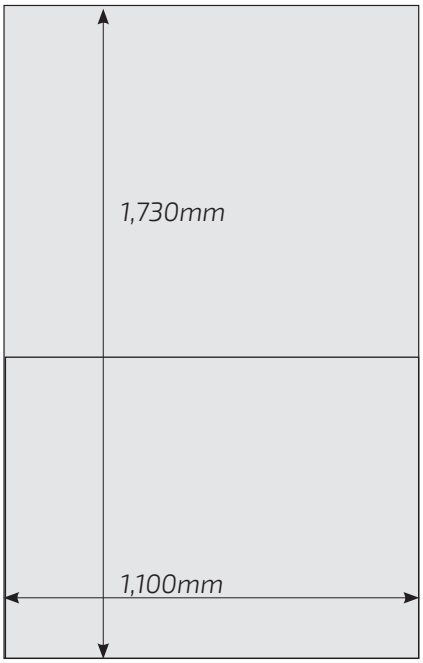
Here you can see the large work chamber with 1 fibre laser and 1 UV laser respectively.

Technical data

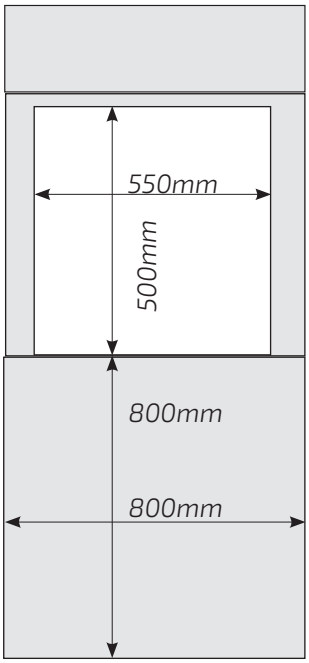
Base area

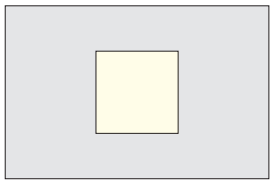


Side view

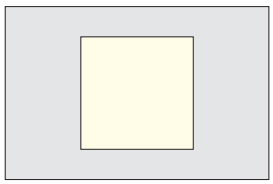


Front view + door opening





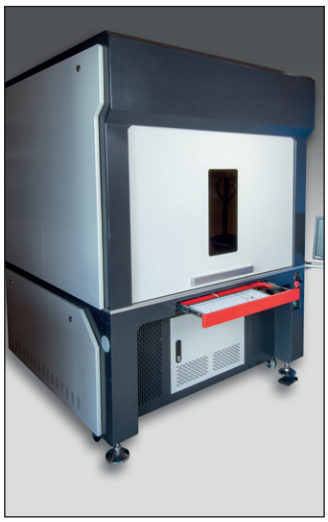
Marking area
110 x 110 mm standard lens



Marking area
150 x 150mm with lens 32-PLMO150
Workpiece height is reduced by 75 mm

Laser medium	*Fibre laser*
Laser wavelength	*1060~1085 Nm (nominal value)*
Laser output power	*20 watts / 30 watts*
Laser pulse frequency	*30-80 KHz*
Beam diameter (focus)	*<20 µm*
Cooling	*Air, heat sink*
Laser class when installed in a class 1 housing	*Class 1 (all safety locking devices closed)*
	Class 4 (operation in maintenance mode)
Laser source warm-up time	*< 10 minutes*
Ambient temperature, operation	*0°C to 45°C*
Ambient temperature, storage	*- 10°C to 60°C*
Humidity, operation and storage	*10% to 95% non-condensing*
Height (above sea level)	*0 to 2000 metres*
Noise level	*≤ 75 dBA*
L x W x H in (cm)	*1,700 x 800 x 1,100 mm (HxWxD)*
Weight (kg)	*260 kg*
Electrical connections	*220 volts, 50/60 Hz, 2.5 A*
Marking area	*110 x 110mm*
Working surface	*Width 550 mm, depth 350 mm*
Maximum workpiece height	*450mm*

Laser cabins - Goliath



*This **LaserMarker** may consist of the following modules depending on the configuration:*

- *A class 4 laser installed in a class 1 housing.*
- *A separate extractor hood connected to the rear work chamber.*
- *Multiple-axis positioning device (motorised)*
- *Lens with protective disc*
- *PC (integrated) with keyboard and mouse*

The modular construction of the laser system makes it easier to perform repairs in case of a failure by replacing complete functional units.

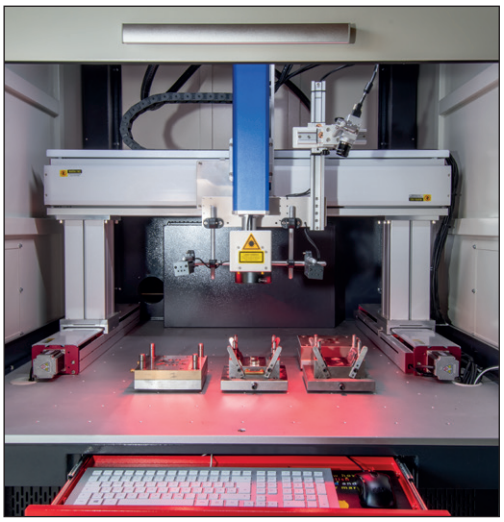
*We call this laser **Goliath**, since for us it is a giant.*

What makes it so big?

Because it has 3 motor-controlled axes (X,Y,Z) giving you full latitude over a marking area of 700 x 700 mm. The maximum marking height is 300 mm.

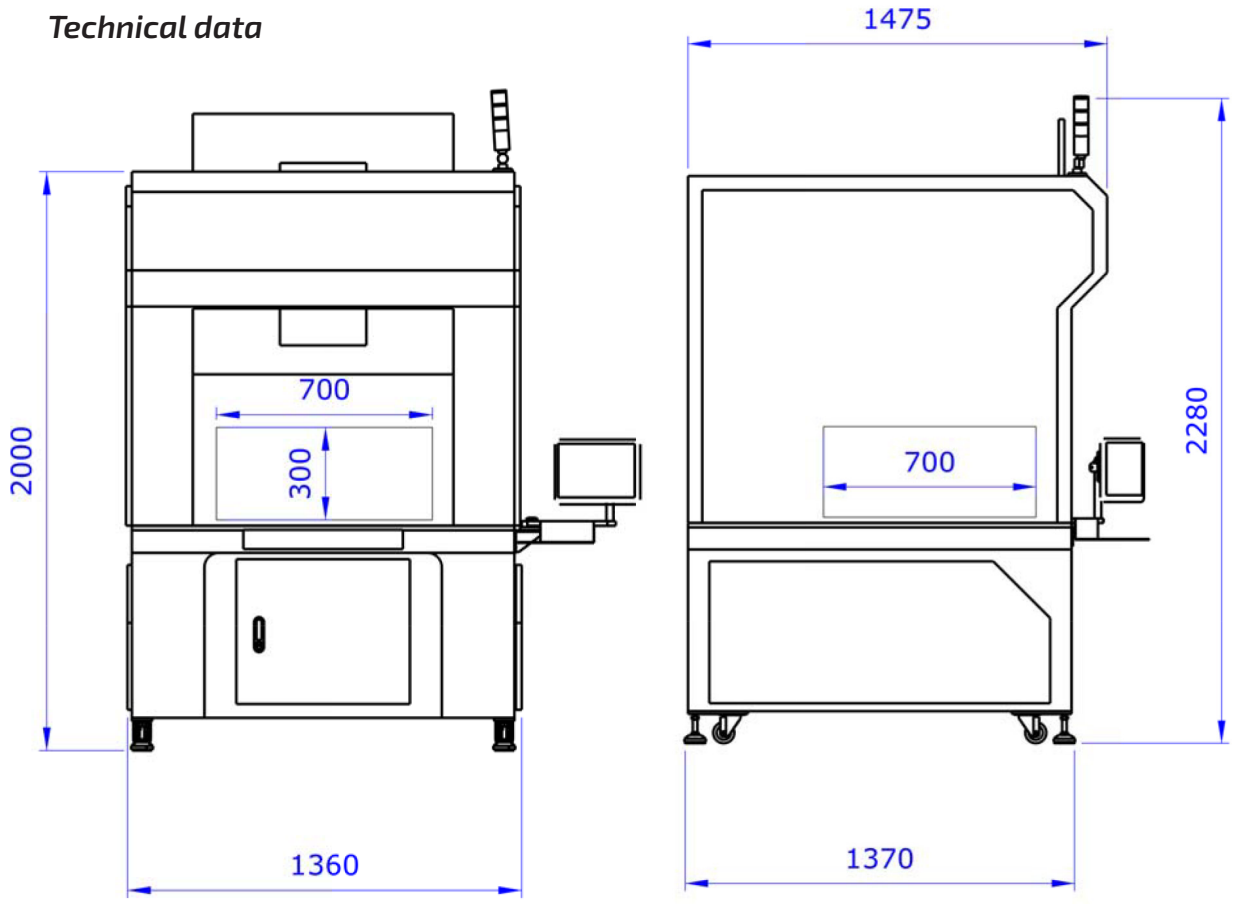
This lets you for instance mark various different components of different heights and dimensions in sequence.

Or divide up and process larger markings in a controlled manner.



The generously dimensioned cabin with motorised X, Y and Z axes.

Technical data

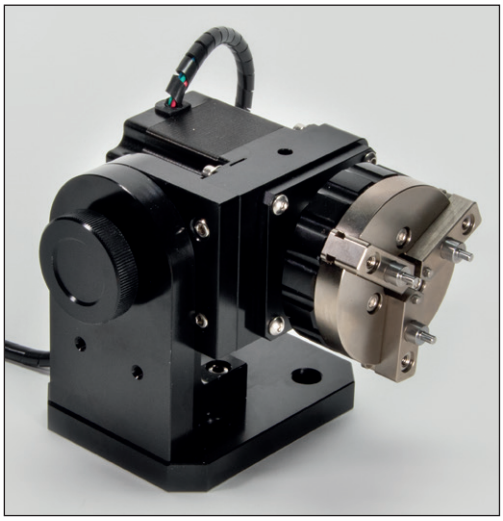


Laser medium	*Fibre laser*
Laser wavelength	*1060~1085 Nm (nominal value)*
Laser output power	*20 watts / 30 watts*
Laser pulse frequency	*30-80 KHz*
Beam diameter (focus)	*<20 µm*
Cooling	*Air, heat sink*
Laser class, when installed in a class 1 housing	*Class 1 (all safety locking devices closed)* *Class 4 (operation in maintenance mode)*
Laser source warm-up time	*< 10 minutes*
Ambient temperature, operation	*0°C to 45°C*
Ambient temperature, storage	*- 10°C to 60°C*
Humidity, operation and storage	*10% to 95% non-condensing*
Height (above sea level)	*0 to 2000 metres*
Noise level	*≤ 75 dBA*
L x W x H in (cm)	*2,000 x 1,320 x 1,350 mm (HxWxD)*
Weight (kg)	*350 kg*
Electrical connections	*220 volts, 50/60 Hz, 2.5 A*
Marking area	*110 x 110mm by moving the head 700 x 700 mm*
Working surface	***Width 700 mm, depth 700 mm***
Maximum workpiece height	***300mm***

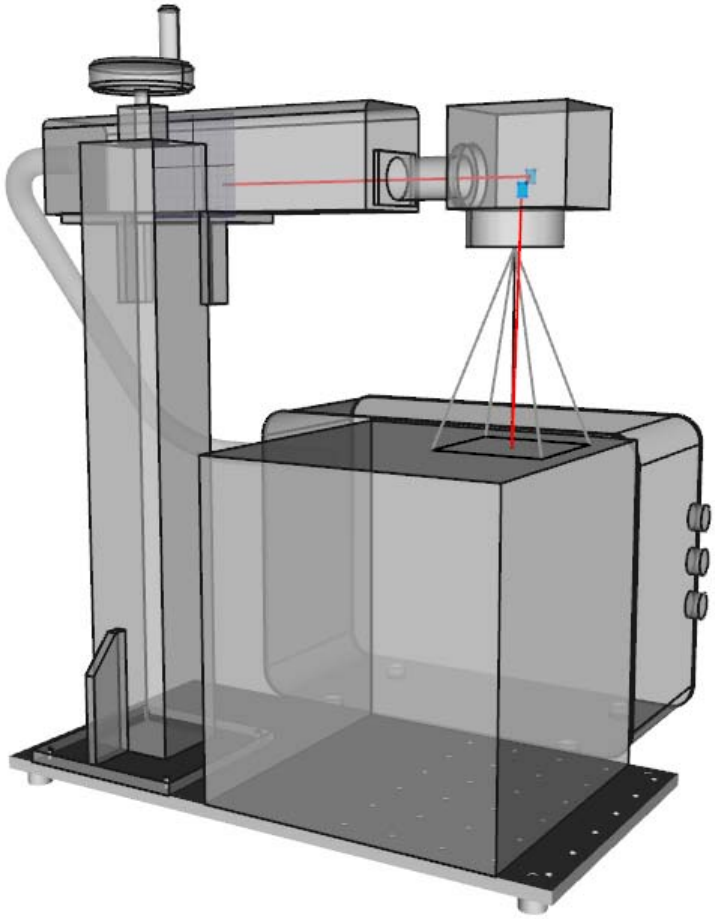
*Open laser - **table-top model***

Whenever greater flexibility is required, it makes sense to use an open laser marker. Here you have considerably fewer restrictions with regard to the workpiece size. In addition, you can swivel the LaserMarker head (on the PLMPF30 model) as desired, making it possible to apply markings on vertical surfaces for example.

Here you can see the manual X/Y table with which you can precisely position the workpiece in both directions.



Motorised rotary axes are required when cylindrical components need to be marked circumferentially.

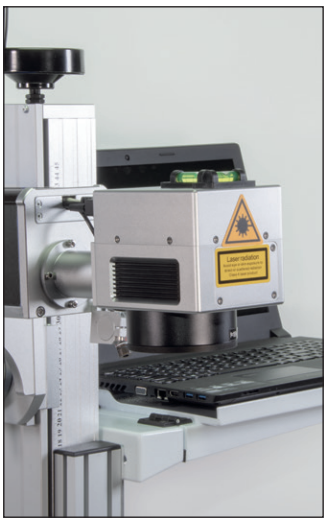


Technical data

Laser medium	*Fibre laser*
Laser wavelength	*1060~1085 Nm (nominal value)*
Laser output power	*20 watts / 30 watts / 50 watts*
Laser pulse frequency	*30-80 KHz*
Beam diameter (focus)	*<20 µm*
Cooling	*Air, heat sink*
Laser classes	*Class 2 standby mode*
	Class 4
Laser source warm-up time	*< 10 minutes*
Ambient temperature, operation	*0°C to 45°C*
Ambient temperature, storage	*- 10°C to 60°C*
Humidity, operation and storage	*10% to 95% non-condensing*
Height (above sea level)	*0 to 2000 metres*
Noise level	*≤ 75 dBA*
L x W x H device (cm)	*710 x 305 x 600 (HxWxD)*
Weight (kg)	*40 kg*
Electrical connections	*220 volts, 50/60 Hz, 2.5 A*
Marking area	*110 x 110mm*
Working surface (mm)	***Width 400, depth 300***
Maximum workpiece height (mm)	***350***

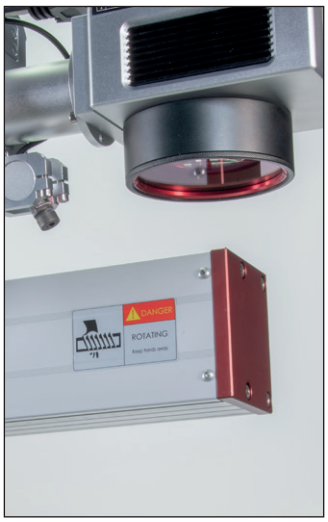
*Open laser - **mobile***

If you want to be really mobile, this series is exactly what you need. Change the laser head position vertically and/or horizontally. In addition, the head can be pivoted through up to 360°.



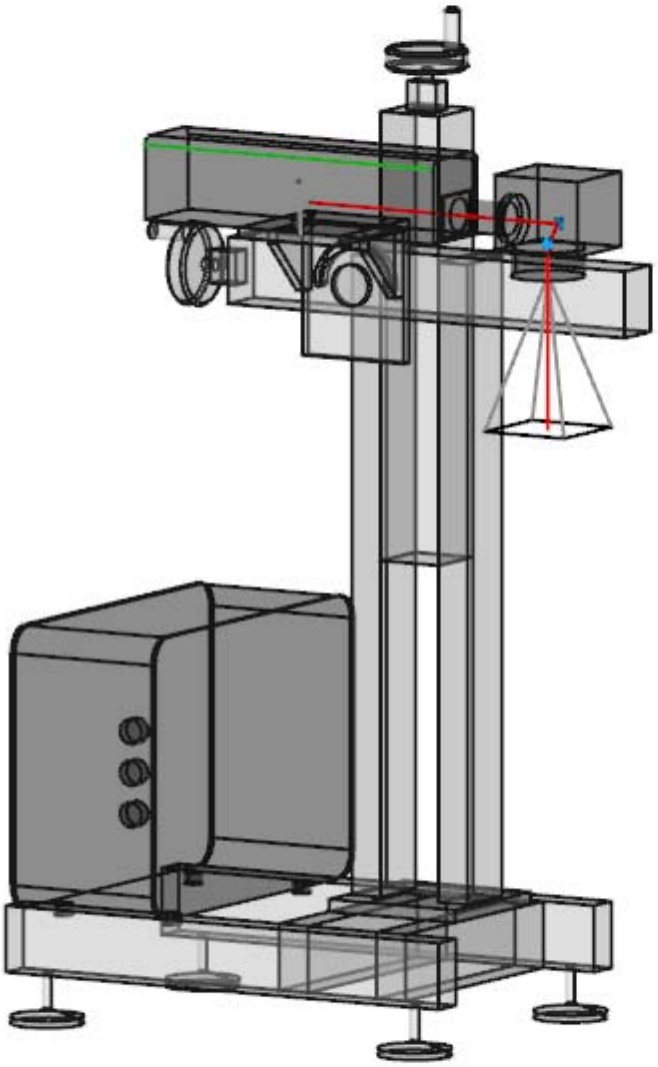
The notebook
Supplied with user-friendly software.

The control unit



Exchangeable optics

Clearly legible, durable markings in just a few seconds.



Technical data

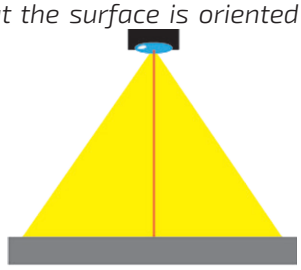
Laser medium	*Fibre laser*
Laser wavelength	*1060~1085 Nm (nominal value)*
Laser output power	*20 watts / 30 watts / 50 watts*
Laser pulse frequency	*30-80 KHz*
Beam diameter (focus)	*<20 µm*
Cooling	*Air, heat sink*
Laser classes	*Class 2 standby mode*
	Class 4
Laser source warm-up time	*< 10 minutes*
Ambient temperature, operation	*0°C to 45°C*
Ambient temperature, storage	*- 10°C to 60°C*
Humidity, operation and storage	*10% to 95% non-condensing*
Height (above sea level)	*0 to 2000 metres*
Noise level	*≤ 75 dBA*
Working height / depth	*max. 1.11 / 320 mm*
L x W x H device (cm)	*1,370 - 1,480 x 850 x 800 mm (HxWxD)*
Weight (kg)	*51 kg*
Electrical connections	*220 volts, 50/60 Hz, 2.5 A*
Marking area	*110 x 110mm*
Working surface (mm)	***Width ∞, depth 100 - 620***
Maximum workpiece height (mm)	***1150***

LaserMarker 3D mobile

Technical data	32-PLMPF3D-30	32-PLMPF3D-50
Laser medium	Fibre laser	
Laser wavelength	1060 - 1085 Nm (nominal value)	
Output	30 W	50 W
Mains voltage	220 volts, 50/60 Hz, 2.5 A	
Speed	up to 7000 mm/sec.	
Accuracy	up to 0.018 mm	
Repetition	up to 0.050 mm	
Laser class	Class 2 standby mode Class 4	
Marking area	max. 200 x 200 mm	
Control unit	400 x 210 x 490 mm	
Working height/depth	max. 1131 / 320 mm	
Dimensions, laser unit	800 x 100 x 140 mm	
Dimensions, stand	1,370-1480 x 850 x 800 mm	
Weight	65 kg	

Standard LaserMarkers are restricted to flat surfaces. The 2D lens systems achieve good quality when the workpiece surface is flat and symmetrically oriented in relation to the lens. The height differences in this case may only be 1-2 mm.

For marking free-formed surfaces, the marking must be divided up and the components and laser head moved in manual steps so that the surface is oriented in relation to the lens. Exact positioning on the lasered contours represents a challenge to the operator.

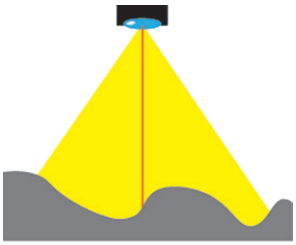


The solution:** LaserMarker **3D

*The LaserMarker **3D** has the dy-namic lens system. The special feature is the software-controlled 130 mm height compensation.*

The working area in 2D covers 200x200 mm.

You can simulate the surface by standard 3D formats or include contours from the CAD in the laser software. All objects to be marked are adapted to the 3D contour by the software and thus receive the optimum focal distance for uniform marking.



Special machines, e.g. with UV laser and automation

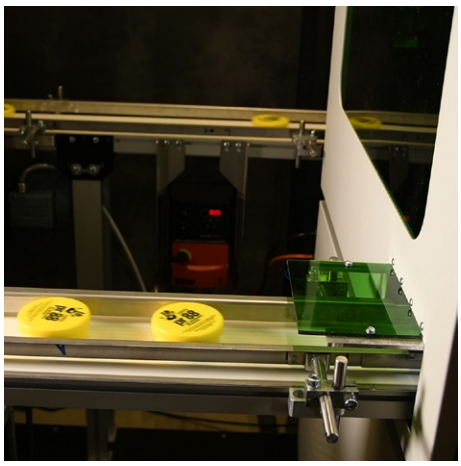
Plastics can be marked with a high level of quality using a UV laser.

Here you can see an interesting special solution. Our customer needs to mark both steel and plastic in one single process. So we have installed a fibre laser and a ***UV laser*** *in the cabin.*

The components are fed in and discharged via ***conveyor belts****, thereby achieving a rapid throughput.*

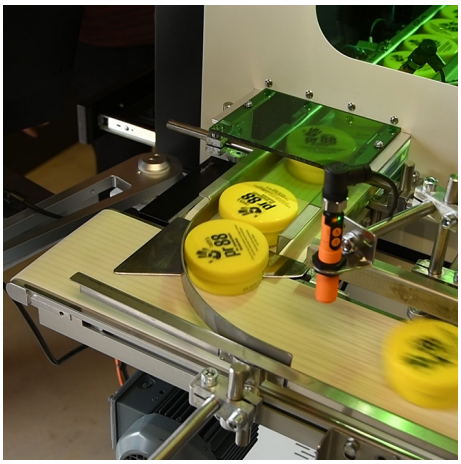
During the subsequent expansion stage, loading and unloading will be performed by ***cobots*** *with corresponding grippers.*

On the left you can see the fibre laser, on the right the UV laser



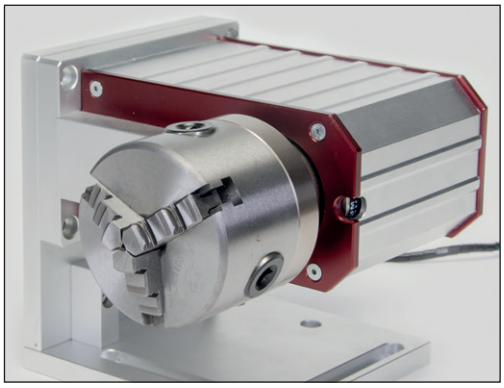
Infeed via a conveyor belt

UV laser marking in the cabin



Discharge with conveyor belt

Accessories



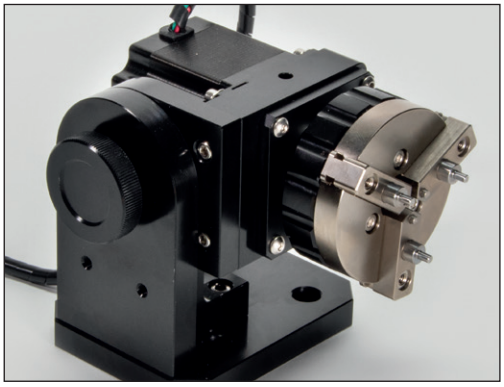
Motorised rotary axes
are required wherever circumferential markings are needed on cylinders. Software-controlled, the workpiece is always in the optimum position.

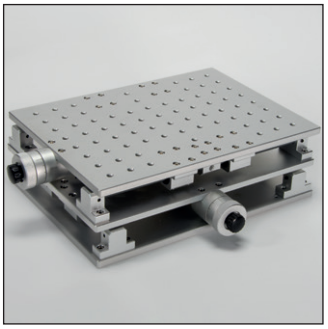
3 sizes are available. (refer to table on page 5)

Eye protection glasses
Designed for use with our Laser-Markers.

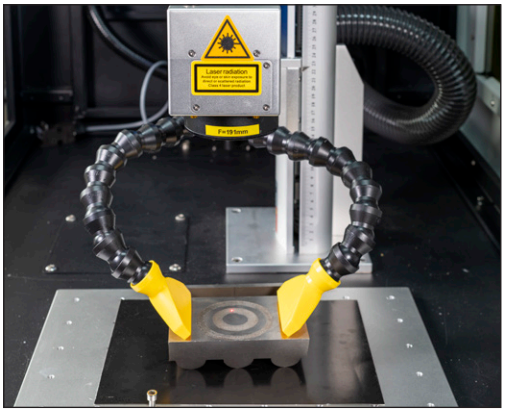
***Optics** (exchangeable)*
5 different focal lengths are available for these machining surfaces.

70 x 70mm
110 x 110mm
150 x 150mm
210 x 210mm
300 x 300mm



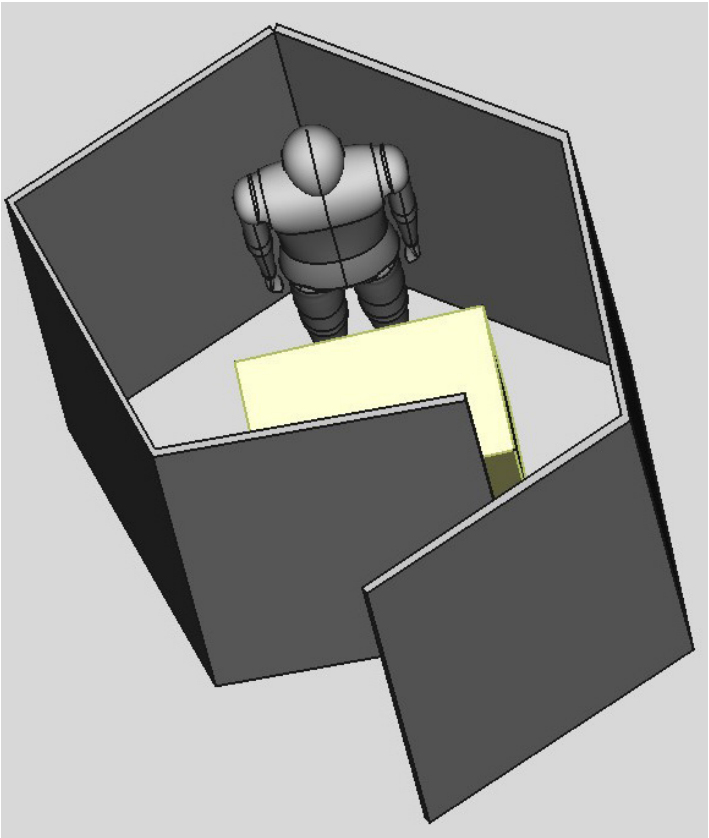


***x/y table** for precise positioning*
Dimensions 95 x 35 x 270 cm
M6 drilling holes in 25 x 25 mm grid size



Extraction
Marking produces fine dusts and vapours that need to be extracted.

Laser protection screen



Portable laser protection screen
1 x 2 m, carbon curtain material with frame and storage bag.

Protection levels according to DIN EN 12254:
D AB7 + R AB3 + M AB5Y: 180 - 315
D AB5: > 315 - 1050
D AB4: > 1050 - 1400
I AB7 + R AB6 + M AB8: > 315 - 1400
DIR AB2 + M AB3Y: > 1400 - 11000 PF CE

Velcro fastener for a laser-proof connection when extending the protection systems.
Bag: 1,130 x 220 x 170 mm
Weight: 5 kg

The drawing shows a safe, comfortable set-up with 6 elements.

The individual elements of the protective screens are clamped in a stable frame and are easy to transport.

Kemet International Ltd, Parkwood Trading Estate, Maidstone, Kent, ME15 9NJ, UK
+44 (0) 1622 755287 sales@kemet.co.uk www.kemet.co.uk