Laseral

PRODUCT LINE

MARKING

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Laser Marking

Excellent Markings

Laser technology offers various methods for permanent marking and in this way can be used in more diverse applications than conventional lettering and labeling methods. The laser marks virtually all metals and plastics, wood or ceramics, nearly any material more durable with high contrast and without adding any undesirable substance. In most cases the typical physical effect of the laser marker induces a color change within the material so there is no surface modification by reason of corrugations or burrs.

An overview of the advantages:

- Different type of materials can be marked
- High speed and automation
- High design flexibility
- Force-free and contact-free process
- Sharp images of high quality
- Cost-effective solution
- Dynamic marking (Mark On The Fly)
- Highly precise marking with constant quality
- Permanent marking, wear-, heat- and acid-resistant
- Alphanumeric text, serial numbers, logo, graphics, barcodes and data matrix…

Independent of material and marking method, laser marking offers almost unlimited possibilities in terms of marking contents and shape. The flexible, software-controlled process allows individualized marking contents. As laser technology has advanced, laser markers have become more precise and useful for an increasing number of professional applications.

FIBER LASER TECHNOLOGY

Fiber lasers are preferred due to their high efficiency and excellent beam quality. With 1064 nm wavelength, fiber lasers allow working at high power densities thanks to small focal diameters. It provides marking, engraving at reasonable costs for metal and plastic materials.

Fiber lasers generally do not require maintenance and have a long service life.

An overview of the advantages:

- Faster than mechanical methods
- High-contrast and abrasion-resistant laser markings
- Very small line widths that can be realized.
- Flexible, customizable markings
- No pre- and post-treatment is necessary
- Suitable for hard-to-reach places
- Intact surfaces (annealing), important e.g. for medical industry
- Alphanumeric text, serial numbers, logo, graphics, barcodes and data matrix

Sample Processed Parts:

FIBER LASER MARKING SYSTEM

Laseral FP Series Laser Marking System Features

- Very long-lasting resonator (> 100,000 hours)
- Low power consumption
- Integrated air cooling mechanism
- It does not require maintenance
- No consumables

Technical Data	FP-20	FP-30	FP-50
Laser source	Yb:Fiber	Yb:Fiber	Yb:Fiber
Mean power	20W	30W	50W
Wavelength	1064 nm	1064 nm	1064 nm
Frequency	20 – 60 kHz	30 – 60 kHz	50 – 100 kHz
Processing field	Depends on the lens type		
Laser software	EzCAD	EzCAD	EzCAD
Cooling system	Air cooling	Air cooling	Air cooling
Working temperature	0°C - 36°C	0°C - 36°C	0°C - 36°C
Electricity requirements	220 V ± %10, 50-60 Hz	220 V ± %10, 50-60 Hz	220 V ± %10, 50-60 Hz

Processing Field - Focusing Lenses

In all marking systems, the size of the processing field is determined by the focusing lens (F-theta). A larger focusing distance translates into a bigger marking field but also increases the minimum achievable laser spot size on the surface of the workpiece. LASERAL focusing lenses are available with different processing fields **60 mm x 60 mm, 120mm x 120mm, 180mm x 180mm, 240mm x 240mm, 300 mm x 300 mm.**

Optional Equipments

Optional equipments are used with FP series fiber laser marking systems in some applications. Laser protection goggles and cleaning (maintenance) kit exist in all our systems for our customers as a standard.

- Rotary Device
- Workpiece Holder Clamp
- Fume Extraction System
- Laser Protection Goggles
- Laser Lens Cleaning Kit

HIGH PERFORMANCE
FIBER LASER MARKING SYSTEM

Laseral H FP Series Laser Marking System Features

- Very long-lasting resonator (> 100,000 hours)
- High performance for processes that require speed and power
- Integrated air cooling mechanism
- It does not require maintenance
- No consumables

Technical Data	H FP-100	H FP-200
Laser source	Yb:Fiber	Yb:Fiber
Mean power	100W	200W
Wavelength	1064 nm	1064 nm
Frequency	20 – 200 kHz	2 – 4000 kHz
Processing field	Depends on the lens type	
Laser software	EzCAD	EzCAD
Cooling system	Air cooled	Air cooled
Working temperature	0°C - 36°C	0°C - 36°C
Electricity requirements	220 V ± %10, 50-60 Hz	220 V ± %10, 50-60 Hz

Processing Field - Focusing Lenses

In all marking systems, the size of the processing field is determined by the focusing lens (F-theta). A larger focusing distance translates into a bigger marking field but also increases the minimum achievable laser spot size on the surface of the workpiece. LASERAL focusing lenses are available with different processing fields **60 mm x 60 mm, 120mm x 120mm, 180mm x 180mm, 240mm x 240mm, 300 mm x 300 mm.**

Optional Equipments

Optional equipments are used with H FP series fiber laser marking systems in some applications. Laser protection goggles and cleaning (maintenance) kit exist in all our systems for our customers as a standard.

- Rotary Device
- Workpiece Holder Clamp
- Fume Extraction System
- Laser Protection Goggles
- Laser Lens Cleaning Kit

3D FIBER LASER MARKING SYSTEM

Laseral 3D FP Series Laser Marking System Features

- Very long-lasting resonator (> 100,000 hours)
- Ability to process sculpture surfaces and different part heights at once with dynamic lens
- Integrated air cooling mechanism
- It does not require maintenance
- No consumables

Technical Data	3D FP-20	3D FP-30	3D FP-50	3D H FP-100	3D H FP-200
Laser source	Yb:Fiber	Yb:Fiber	Yb:Fiber	Yb:Fiber	Yb:Fiber
Mean power	20W	30W	50W	100W	200W
Wavelength	1064 nm	1064 nm	1064 nm	1064 nm	1064 nm
Frequency	20 – 60 kHz	30 – 60 kHz	50 – 100 kHz	20 – 200 kHz	2 – 4000 kHz
Processing field	MarkingMate	MarkingMate	MarkingMate	MarkingMate	MarkingMate
Laser software	Air cooled	Air cooled	Air cooled	Air cooled	Air cooled
Cooling system	0°C - 36°C	0°C - 36°C	0°C - 36°C	0°C - 36°C	0°C - 36°C
Working temperature	220 V ± %10, 50-60 Hz	220 V ± %10, 50-60 Hz	220 V ± %10, 50-60 Hz	220 V ± %10, 50-60 Hz	220 V ± %10, 50-60 Hz

Processing Field - Focusing Lenses

There is no focusing (f-theta) lens in the 3D marking laser systems. Instead there is a very fast moving dynamic lens group behind behind the galvo mirrors that makes it possible to focus the laser beam at different heights. Depending on the required size and quality of marking, marking field should be chosen between 200mm x 200mm and 300mm x 300mm in the 3D FP series lasers. Dynamic focus height interval is 130 mm maximum.

Optional Equipments

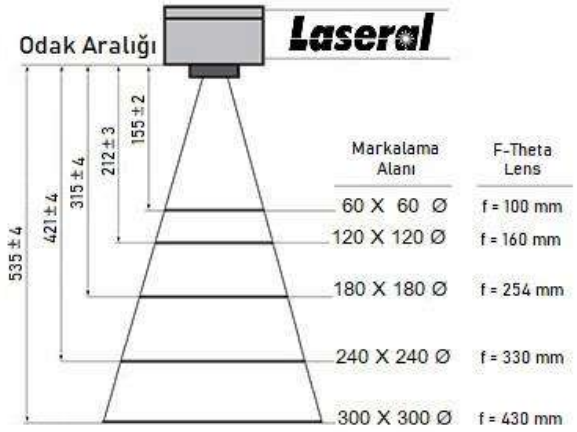
Optional equipments are used with 3D FP series fiber laser marking systems in some applications. Laser protection goggles and cleaning (maintenance) kit exist in all our systems for our customers as a standard.

- Rotary Device
- Workpiece Holder Clamp
- Fume Extraction System
- Laser Protection Goggles
- Laser Lens Cleaning Kit

Use of Fiber Laser Marking Systems

Laseral FP series fiber laser marking system is also provided with a Z axis that allows the adjustment of the laser focal length, an aluminum table for workpiece placement and a computer that controls the laser system with the licensed laser marking software.

Laseral FP series fiber laser marking systems can work in different processing areas depending on the lens type. It is possible to use different lenses in a system when necessary and replacement is very easy. To ensure the operation of these lenses from a certain focal distance, the laser head must be positioned at a certain distance from the material. Thus, with different types of f-theta lenses we have, it is possible to process workpieces of different height.



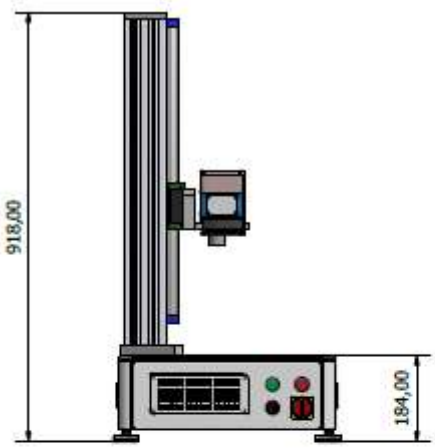
Laseral product range comprises of a wide range of laser marking solutions from compact table top solutions to 4 axis large volume workstations:

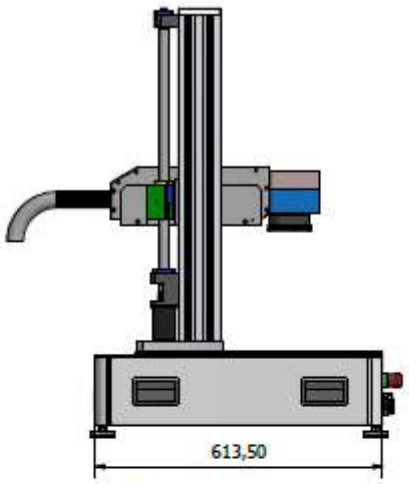
- ✓ *DOTMARK*
- ✓ *RAPIDMARK*
- ✓ *MIDIMARK*
- ✓ *MAXIMARK*
- ✓ *ROTARYMARK*
- ✓ *DAPPERMARK*

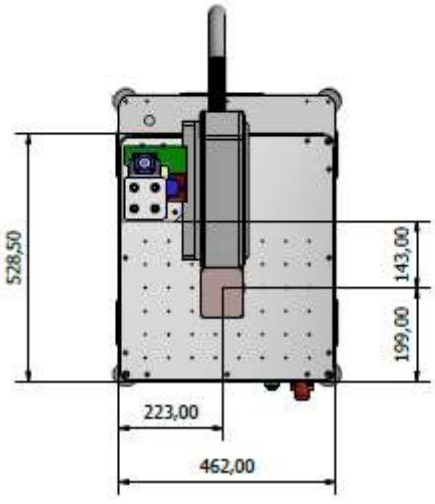
DOTMARK

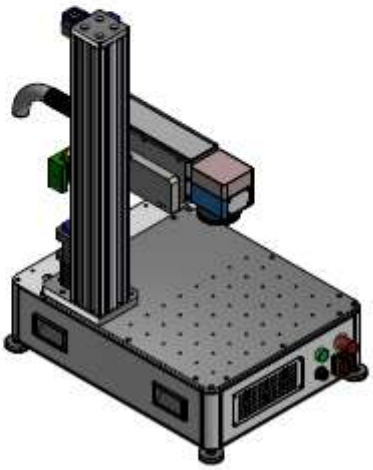
System Features

- Flexible open system
- Easy mobility and compact design
- Adjustable, manual or optionally motorized Z-axis
- OD + 6 laser protection goggles for work safety
- Aluminium platform for precise positioning and fixing of the parts









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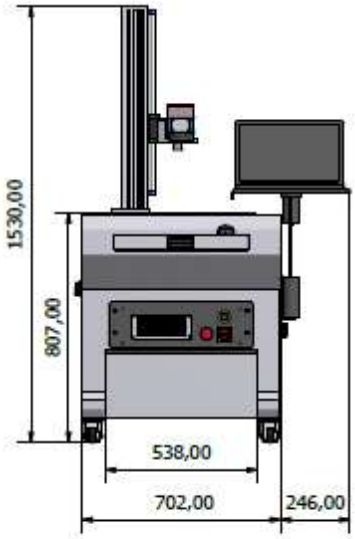
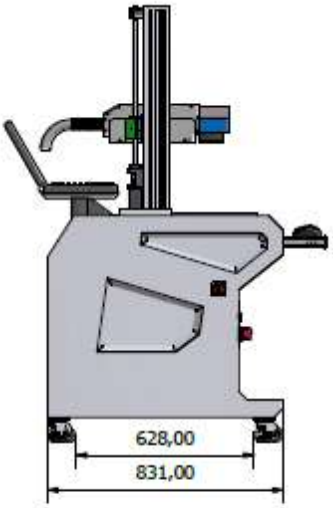
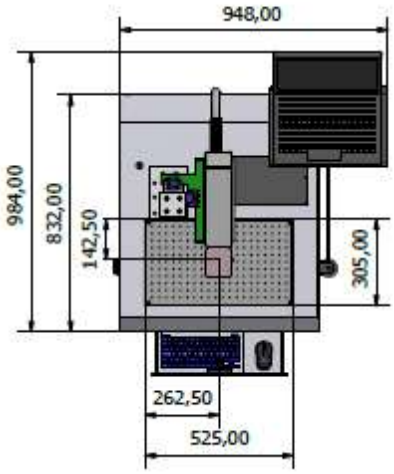
RAPIDMARK

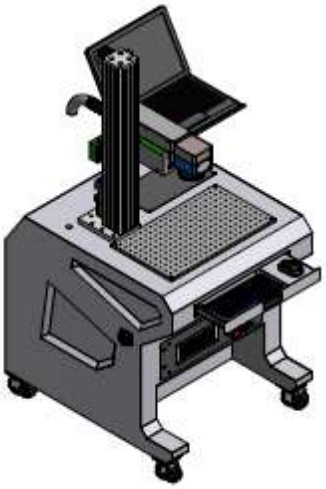
System Features

- Flexible and compact open system
- Adjustable, manual or optionally motorized Z-axis
- OD + 6 laser protection goggles for work safety
- Aluminium platform for precise positioning and fixing of the parts
- Robust design, loading capacity up to 200 kg









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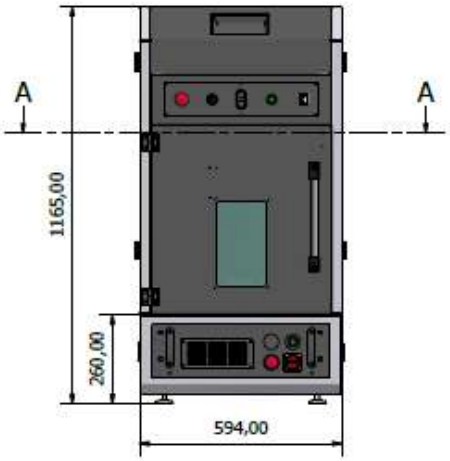
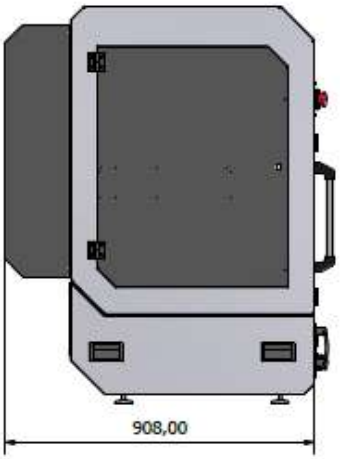
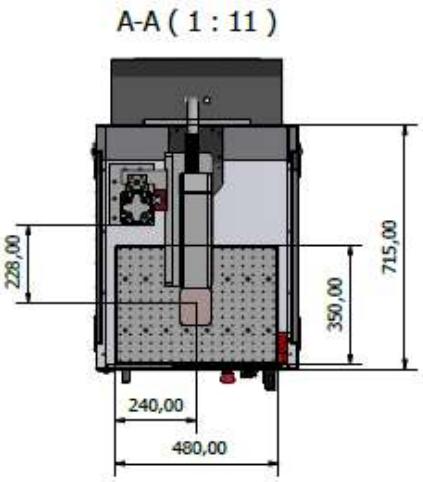
MIDIMARK

System Features

- Safety Class 1 cabin system for work safety.
- OD + 6 laser protection glass provides transparent processing.
- Safety switch against the opening the door during the laser operation.
- Automatic controlled, adjustable Z-axis.
- Aluminium platform for precise positioning and fixing of the parts.
- Adaptable design to integrate fume extractor for harmful gases and smoke occured during operation.
- Flexible operating with front door and hinged door at two sides.
- Space-saving, compact, desktop design.







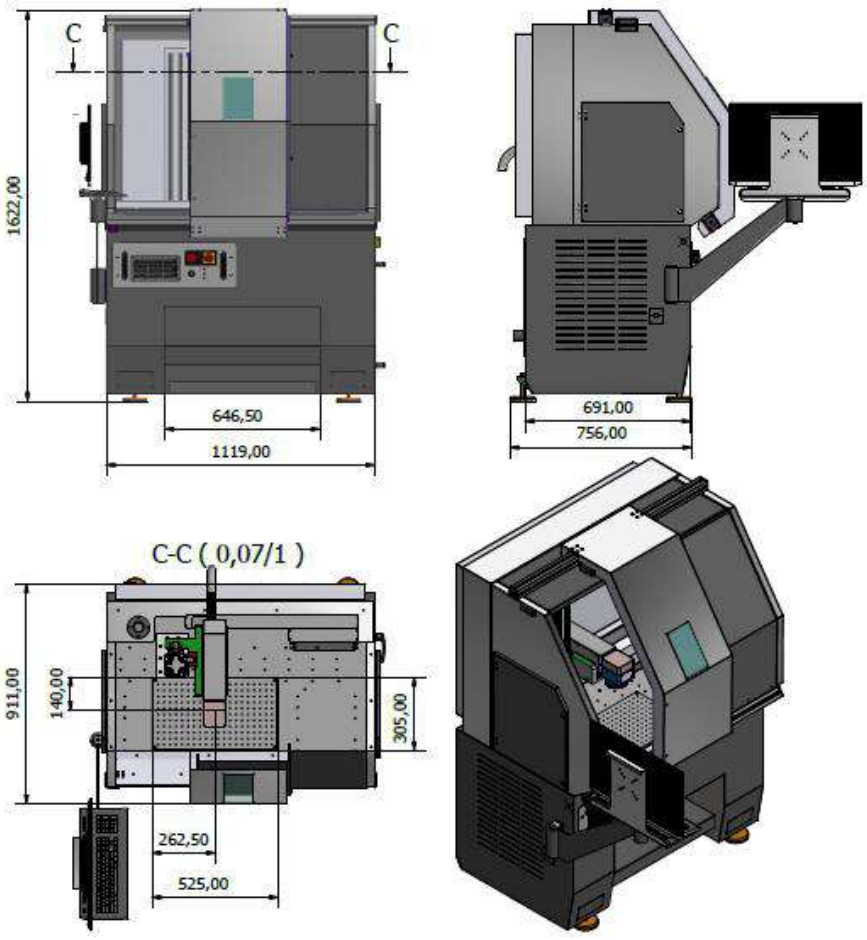
MAXIMARK

System Features

- Safety Class 1 cabin system for work safety
- OD +6 laser protection glass provide transparent processing.
- Ergonomic computer holder arm.
- Sliding door on linear guides.
- Safety switch against the opening door during the laser operation.
- Automatic controlled, adjustable Z-axis
- Aluminium platform for precise positioning and fixing of the parts.
- Adaptable design to integrate fume extractor for harmful gases and smoke occured during operation
- Flexible operating with the hinged doors at two sides.
- Robust design, loading capacity up to 200kg.
- Fast and safe marking with foot switch

Customizable Design

MAXIMARK has a design that X-axis and R-axis can be integrated into the closed system as an option. Sliding axis laser marking and rotary axis laser marking applications can be offered in a way that can work with the Z axis and controlled by customer-specific software.

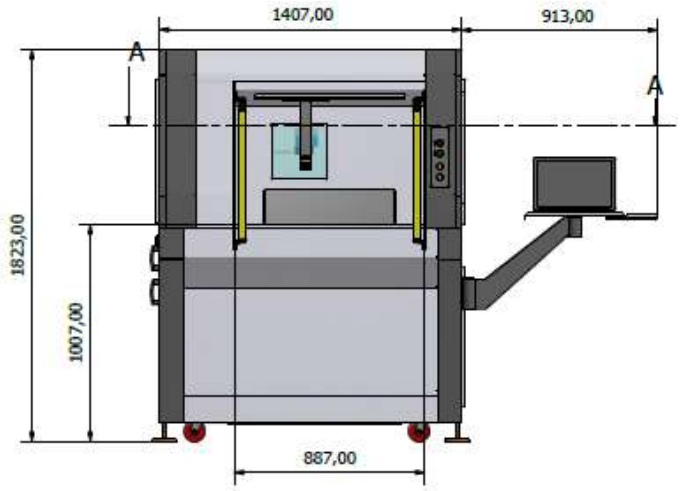


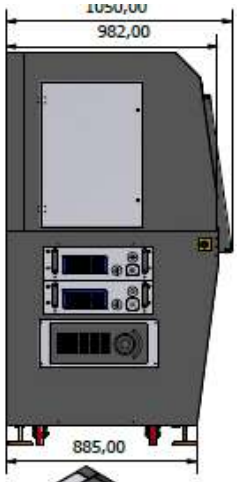
Laseral

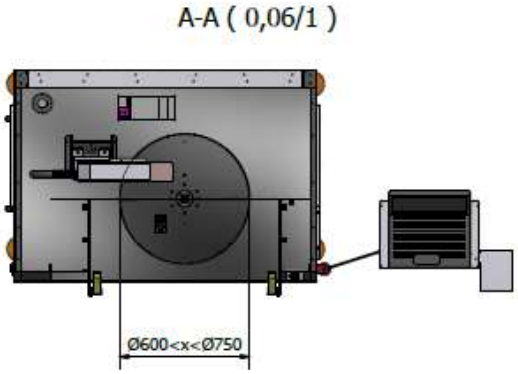
ROTARYMARK

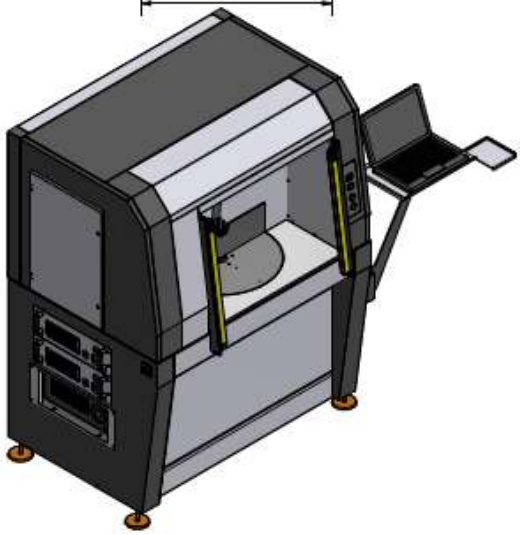
System Features

- Safety Class 1 cabin system for work safety
- OD +6 laser protection glass provide transparent processing.
- Ergonomic computer holder arm.
- Rotary table with optionally 2 or 4 stations for serial and monotype part production.
- Safety switch against the opening door during the laser operation.
- Automatic controlled, adjustable Z-axis
- Aluminium platform with fixtures for precise positioning and fixing of the parts.
- Adaptable design to integrate fume extractor for harmful gases and smoke occured during operation.
- Flexible operating with the hinged doors at two sides.









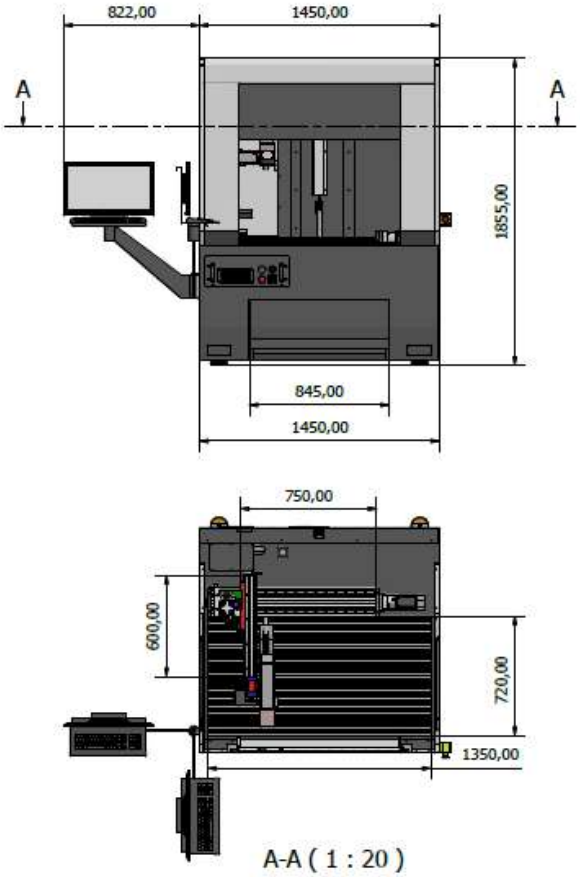
DAPPERMARK

System Features

- Safety Class 1 cabin system for work safety
- OD +6 laser protection glass provide transparent processing.
- Ergonomic computer holder arm.
- Easy and quick load and unload with pneaumatic front door
- Safety switch against the opening door during the laser operation.
- Automatic controlled, adjustable Z-axis
- Aluminium platform for precise positioning and fixing of the parts.
- Adaptable design to integrate fume extractor for harmful gases and smoke occured during operation.
- Robust design, loading capacity up to 200kg.

Customizable Design

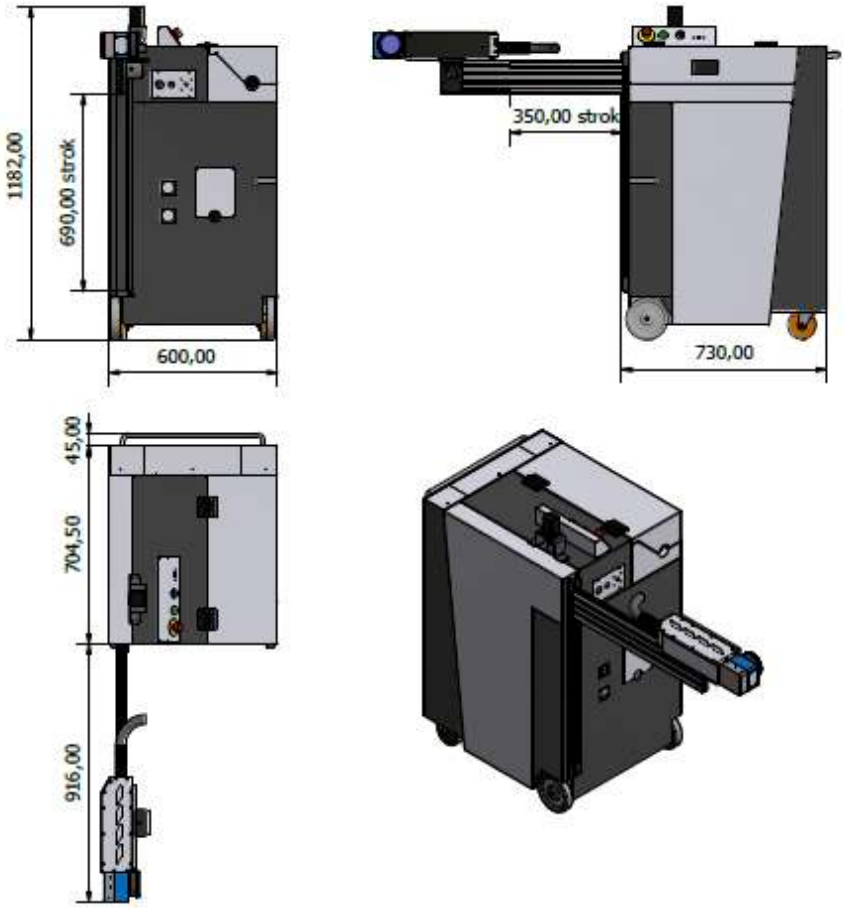
DAPPERMARK has a design that X-axis, Y-axis and R-axis can be integrated into the closed system as an option. 3-axis laser marking and 4-axis laser marking with rotary axis applications can be offered in a way that can work all together and controlled by customer-specific software



MARKMOBILE

System Features

- Ergonomic and portable design for marking on site.
- Compact and easy mobility.
- A covered segment for protection of the laser head after the operations.
- Flexible operation by the laser head equipped with ball joint.
- High reachability Z-axis and Y-axis



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CO_2 LASER TECHNOLOGY

CO2 lasers can be used to permanently mark almost any organic material. The far infrared wavelength of 10.6 μm burns the surface of wood, paper, cork, leather, marble and often creates a dark contrast, painted surfaces and photographic brands of emulsions or can effectively change its color the fabric.

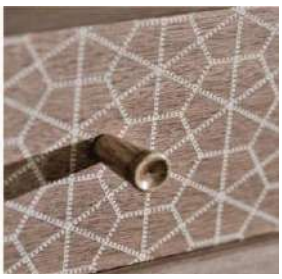
Laser marking of organic materials; dark laser marking is obtained with the gap and shadow formed by removing the relevant material from the surface. The material itself usually undergoes a slight carbonization.

An overview of the advantages*:*

- Different type of materials can be marked
- Faster than mechanical methods
- Smooth surfaces (with discoloration)
- Flexible and unique marking content
- Suitable for hard to reach places
- Alphanumeric text, serial numbers, logo, graphics, barcodes and data matrix

Example Applications:

- Marking and processing of furniture surface
- Processing molel of gun body
- Marking and cutting of textiles such as leather and jeans
- Precision cutting of paper and cardboard products



CO_2 LASER MARKING SYSTEM

Laseral CC Series Laser Marking System Features

- Long Life Metal Tube
- Integrated Air Cooling System
- Easy Maintenance and Service
- Unique Result For Organic Materials (Wood, Leather, Cardboard, Paper ve Polymers)

Technical Data	CC-30	CC-50	CC-100	CC-150
Laser source	CO_2 Metal Tube	CO_2 Metal Tube	CO_2 Metal Tube	CO_2 Metal Tube
Mean power	30W	50W	100W	150W
Wavelength	10600 nm	10600 nm	10600 nm	10600 nm
Frequency	5 – 20 kHz	5 – 20 kHz	N/A	N/A
Processing field	Depends on the lens type			
Laser software	EzCAD	EzCAD	EzCAD	EzCAD
Cooling system	Air cooled	Air cooled	Air cooled	Water cooled
Working temperature	0°C - 36°C	0°C - 36°C	0°C - 36°C	0°C - 36°C
Laser source	220 V ± %10, 50-60 Hz	220 V ± %10, 50-60 Hz	220 V ± %10, 50-60 Hz	220 V ± %10, 50-60 Hz

Processing Field - Focusing Lenses

In all marking systems, the size of the processing field is determined by the focusing lens (F-theta). A larger focusing distance translates into a bigger marking field but also increases the minimum achievable laser spot size on the surface of the workpiece. LASERAL focusing lenses are available with different processing fields 100mm x 100mm, 200mm x 200mm and 300 mm x 300 mm for the $\boldsymbol{CO_2}$ laser.

Optional Equipments

Optional equipments are used with CC series $\boldsymbol{CO_2}$laser marking systems in some applications. Laser protection goggles and cleaning (maintenance) kit exist in all our systems for our customers as a standard.

- Rotary Device
- Workpiece Holder Clamp
- Fume Extraction System
- Laser Protection Goggles
- Laser Lens Cleaning Kit

UV LASER TECHNOLOGY

UV lasers, like fiber lasers, are mainly used for marking plastic and metal materials. The 355 nm ultraviolet wavelength gives positive results by creating a dark contrast especially in polymer materials such as white ABS, where optimum results cannot be obtained with fiber laser and which contain less pigment.

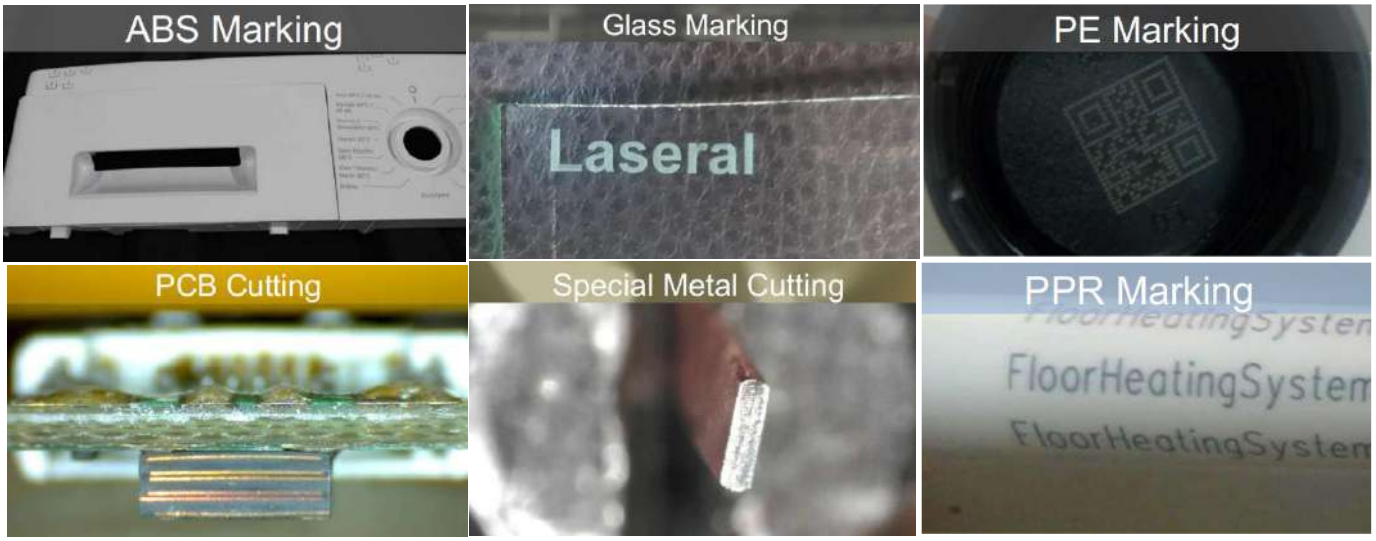
The wavelength of 355 nm is a high-energy and high-frequency wavelength, and its absorption by metals is much better than other industrial laser wavelengths. As a result, processes such as precise marking, ablating and drilling of reflective metals can be made more efficiently.

An overview of the advantages*:*

- Relatively high absorption by metal materials
- Ability to mark polymer materials often without the need for pigment
- Less deformation compared to IR fiber lasers
- Ability to mark exotic materials such as glass

Example Applications:

- Marking of White ABS polymers
- Precise marking of glass
- Marking of polyethylene
- Precision cutting of PCBs
- Cutting and marking of special metals
- Marking of special plastics



UV LASER MARKING SYSTEM

Laseral UV Series Laser Marking System Features

- Diode laser unit
- 355 nm λ with THG crystal
- Water cooled precision system
- Optimum result on many industrial materials

Technical data	UV-5
Laser source	UV Metal Tube
Mean power	5 W
Wavelength	355 nm
Frequency	20 – 200 kHz
Processing field	Variable
Laser software	EzCAD
Cooling system	Air cooled
Working temperature	0°C - 36°C
Laser source	220 V ± %10, 50-60 Hz

Processing Field - Focusing Lenses

In all marking systems, the size of the processing field is determined by the focusing lens (F-theta). A larger focusing distance translates into a bigger marking field but also increases the minimum achievable laser spot size on the surface of the workpiece. LASERAL focusing lenses are available with different processing fields **60 mm x 60 mm, 120mm x 120mm, 180mm x 180mm, 240mm x 240mm, 300 mm x 300 mm.**

Optional Equipments

Optional equipments are used with UV series laser marking systems in some applications. Laser protection goggles and cleaning (maintenance) kit exist in all our systems for our customers as a standard.

- Rotary Device
- Workpiece Holder Clamp
- Fume Extraction System
- Laser Protection Goggles
- Laser Lens Cleaning Kit

Optional Accessories

ROTARY DEVICE:

Round marking of cylindrical parts. An additional rotation axis can be integrated to the systems (see following specifications).

Jaws : 3
Clamping diameter : inner / outer 2...80 mm / 18...62 mm
Tiltable : Yes (0 – 90°)
Accuracy : 0.05°
Chuck Accuracy : 0.04° (DIN6386)

WORKPIECE HOLDER CLAMP:

The clamp is for fixing the thin materials while marking and cutting to avoid deformation.

PROTECTION GOGGLES:

Laser safety goggles for eye protection against the 355 nm, 1064 nm, 10600 nm wavelength.

FUME EXTRACTION:

Extractor unit to filter harmful dust and vapor come up with operation.

- Front, HEPA and Carbon Filtered
- Powerful Suction

LASER CLEANING KIT

Maintenance and cleaning kit for the laser system:

- 50 ml etanol
- Latex gloves
- Air pump
- Optical cleaning cloth

EXCELLENCE AT THE SPEED OF LIGHT

Contact us...

Our laser systems for sale has been designed to help our customers find exactly what they are looking for. In addition, our professional customer service and sales staff that is expert in laser technologies and these laser machines and systems, and we can answer your questions and help you pick the best equipment for your manufacturing and other custom needs. Contact us now to learn more.

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