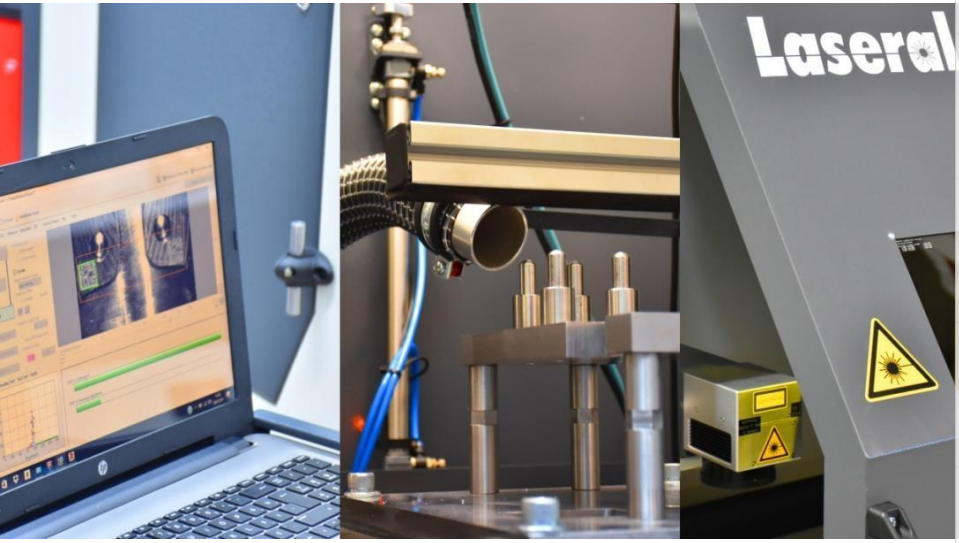


Laseral

PRODUCT LINE

MARKING



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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 processing than mechanical methods
- High-contrast and abrasion-resistant laser markings
- Very small line widths 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:



MAX. AVERAGE OUTPUT POWER: 200 W
MAX. PEAK OUTPUT POWER: 20 kW
PULSE DURATION: 2-500 ns
PULSE REPETITION RATE: 1-4000 kHz
WAVELENGTH RANGE: 900-1200 nm

DANGER - INVISIBLE LASER
RADIATION AVOID EYE OR SKIN
EXPOSURE TO DIRECT OR
SCATTERED RADIATION
CLASS 4 LASER PRODUCT
IEC 60825-1:2014 /A11:2021

FIBER LASER MARKING SYSTEM

Laseral FP and FP M 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
- Wide parameter selection range for FPM series



Technical Data	FP-20 FPM-20	FP-30 FPM-30	FP-50 FPM-60
Laser source	Yb:Fiber	Yb:Fiber	Yb:Fiber
Mean power	20W	30W	50W/60W
Wavelength	1064 nm	1064 nm	1064 nm
Frequency (FP)	20 - 60 kHz	30 - 60 kHz	50 - 100 kHz
Frequency (FP M)	1 - 4000 kHz	1 - 4000 kHz	1 - 4000 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 x 60 mm, 120 x 120 mm, 180 x 180 mm, 240 x 240 mm, 300 x 300 mm.**

Optional Equipments

Optional equipments are used with FP series fiber laser marking systems in some applications. One set of 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

HIGH PERFORMANCE

FIBER LASER MARKING SYSTEM

Laseral FP H 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
- Fused silica optics that can endure high peak power



Technical Data	FPH-100	FPH-200
Laser source	Yb:Fiber	Yb:Fiber
Mean power	100W	200W
Wavelength	1064 nm	1064 nm
Frequency	1 - 4000 kHz	1 - 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 x 60 mm, 120 x 120 mm, 180 x 180 mm, 240 x 240 mm, 300 x 300 mm.**

Optional Equipments

Optional equipments are used with H FP series fiber laser marking systems in some applications. One set of 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

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 FPH-100
	3D FPM-20	3D FPM-30	3D FPM-60	3D FPH-200
Laser source	Yb:Fiber	Yb:Fiber	Yb:Fiber	Yb:Fiber
Mean power	20W	30W	50W/60W	100W/200W
Wavelength	1064 nm	1064 nm	1064 nm	1064 nm
Frequency	20 - 60 kHz	30 - 60 kHz	50 - 100 kHz	1 - 4000 kHz
Frequency (FP M)	1 - 4000 kHz	1 - 4000 kHz	1 - 4000 kHz	
Laser software	MarkingMate	MarkingMate	MarkingMate	MarkingMate
Cooling system	Air cooled	Air cooled	Air cooled	Air cooled
Working temperature	0°C - 36°C	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	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 **200 x 200 mm** and **300 x 300 mm** in the 3D FP series lasers. Dynamic focus height interval is 130 mm maximum.

Optional Equipments

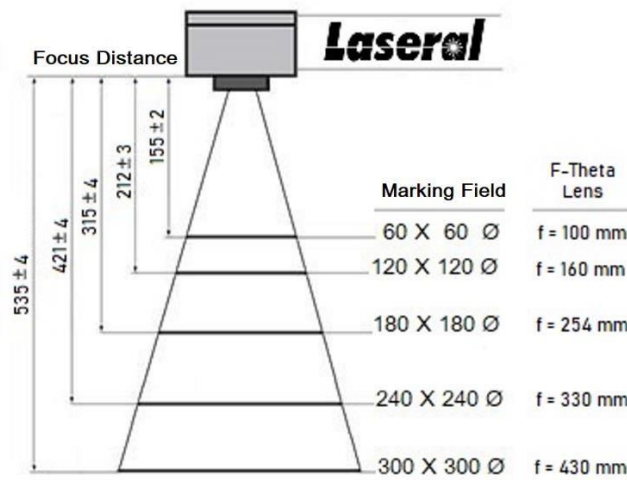
Optional equipments are used with 3D FP series fiber laser marking systems in some applications. One set of laser protection goggles and cleaning (maintenance) kit exist in all our systems for our customers as a standard.

- Rotary Device
- Workpiece Holder Clamp
- Fume Extraction System

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:

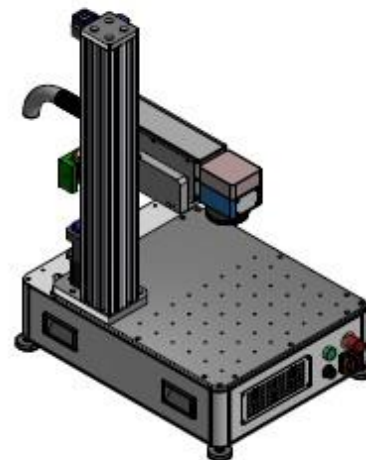
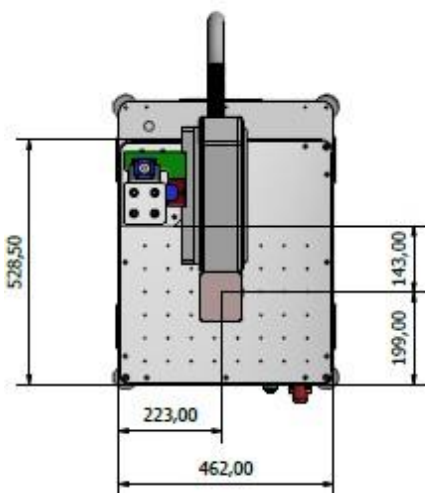
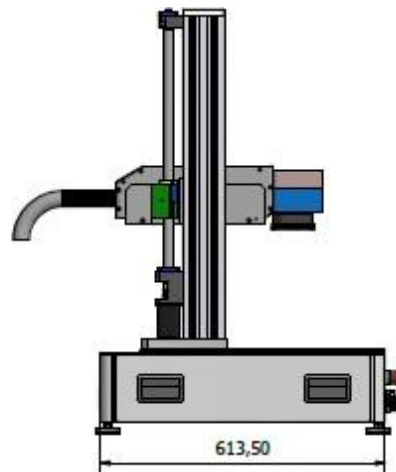
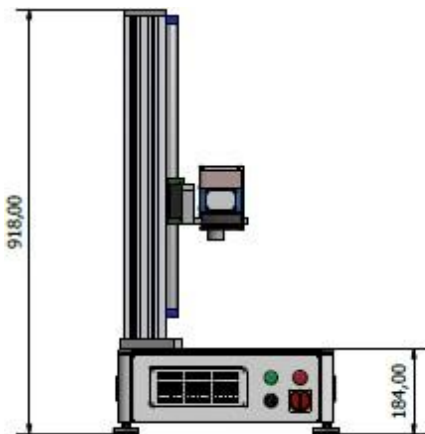
- ✓ DOTMARK
- ✓ MINIMARK
- ✓ MIDIMARK
- ✓ MAXIMARK
- ✓ RAPIDMARK
- ✓ DESKMARK
- ✓ ROTARYMARK
- ✓ DAPPERMARK



DOTMARK

System Features

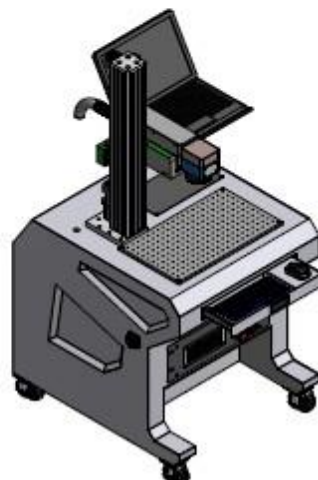
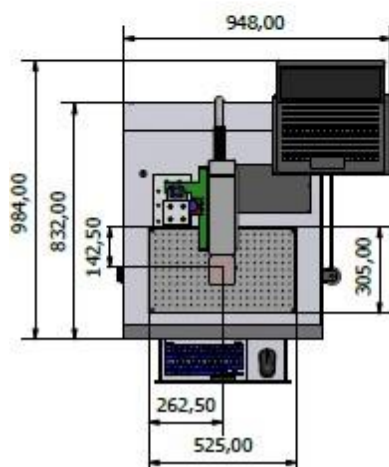
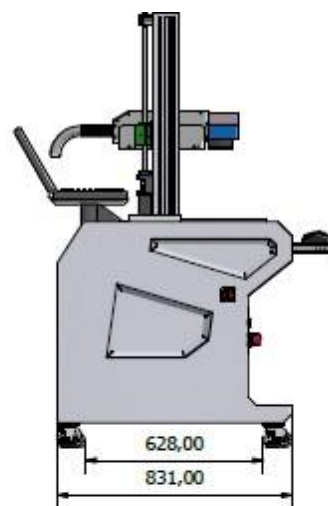
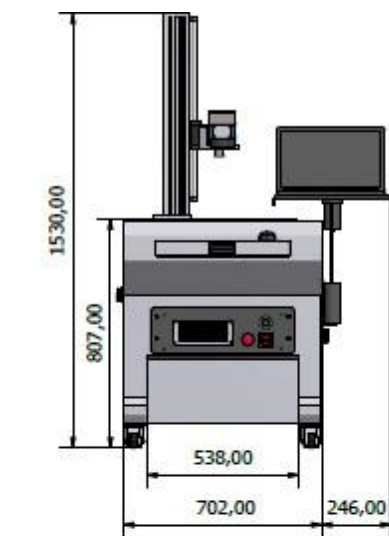
- Flexible open system
- Easy mobility and compact design
- Adjustable, manual or optionally motorized Z-axis
- OD + 6 laser protection goggles for work safety
- Aluminium platform for precise positioning and fixing of the parts



RAPIDMARK

System Features

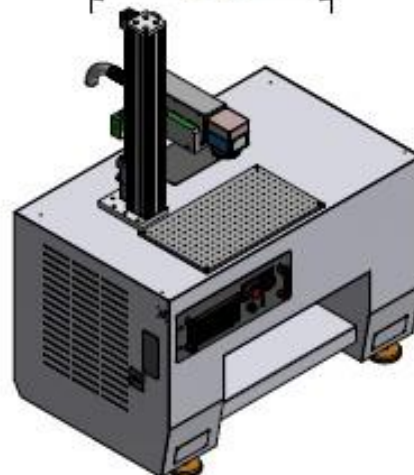
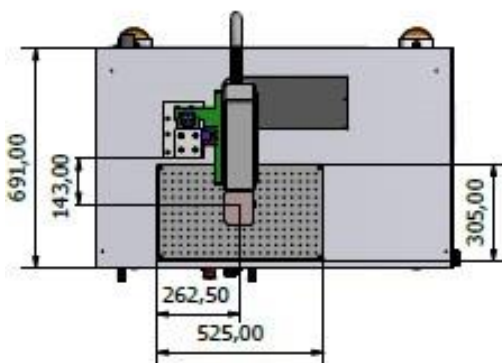
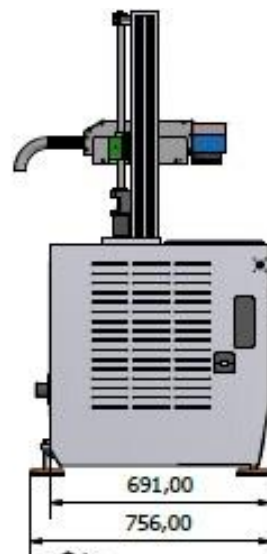
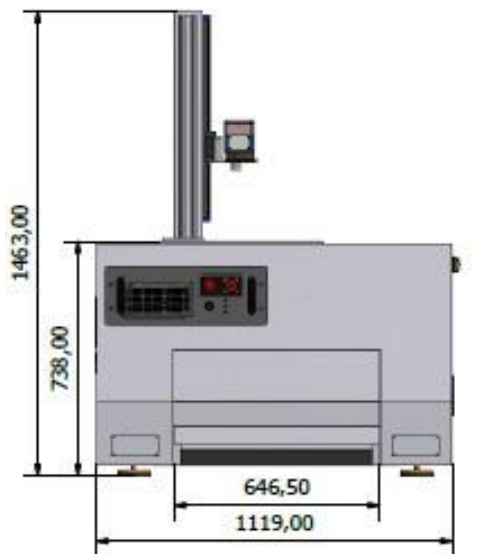
- Flexible and compact open system
- Adjustable, manual or optionally motorized Z-axis
- OD + 6 laser protection goggles for work safety
- Aluminum platform for precise positioning and fixing of the parts



DESKMARK

System Features

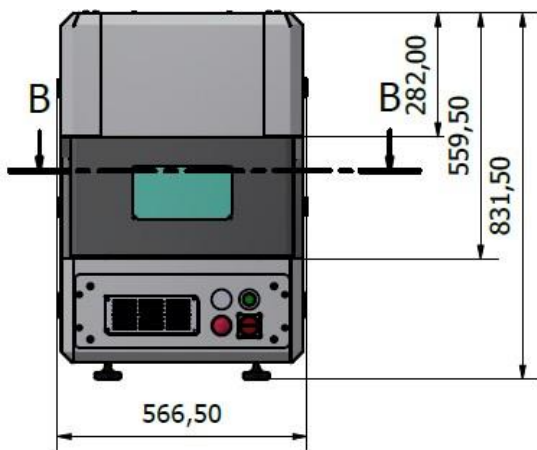
- Flexible and open system with wide work space
- Adjustable, manual or optionally motorized Z-axis
- OD + 6 laser protection goggles for work safety
- Aluminum platform for precise positioning and fixing of the parts
- Robust design, loading capacity up to 200 kg
- A horizontal axis in X direction up to 1000 mm stroke can be added to the Deskmark with the servo/encoder step motor options for automated processing of a large working area.



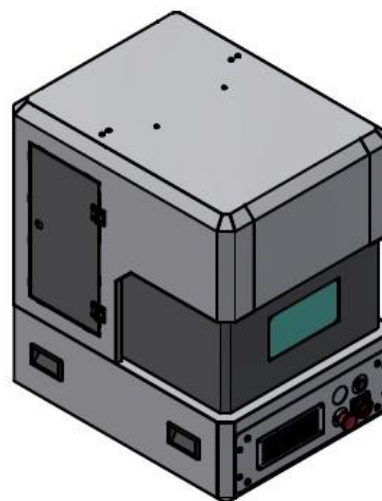
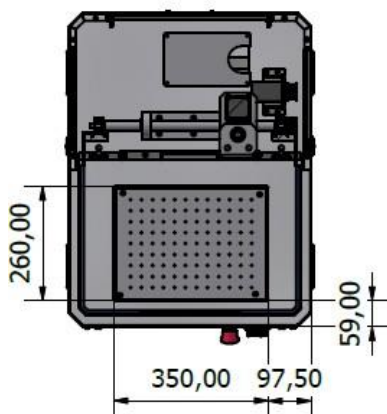
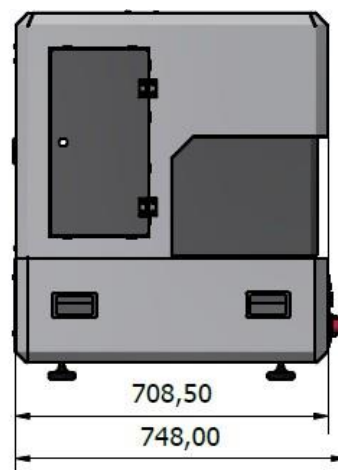
MINIMARK

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.
- Aluminum platform for precise positioning and fixing of the parts.
- Button controlled, motorized door for ease of use.
- Space-saving, compact, desktop design.



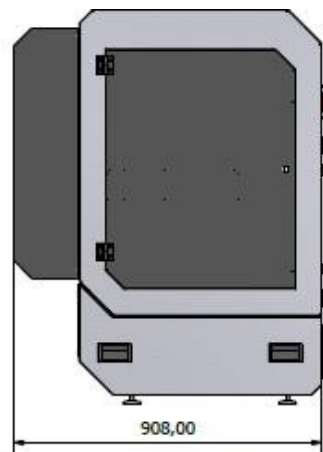
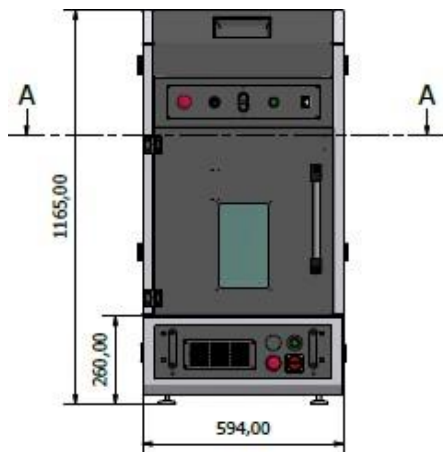
B-B (0,08 : 1)



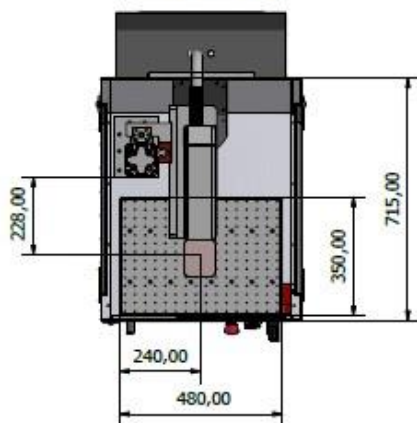
MIDIMARK

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.
- Aluminum platform for precise positioning and fixing of the parts.
- Adaptable design to integrate fume extractor for harmful gases and smoke occurred during operation.
- Flexible operating with front door and hinged door at two sides.
- Space-saving, compact, desktop design.



A-A (1 : 11)



MAXIMARK

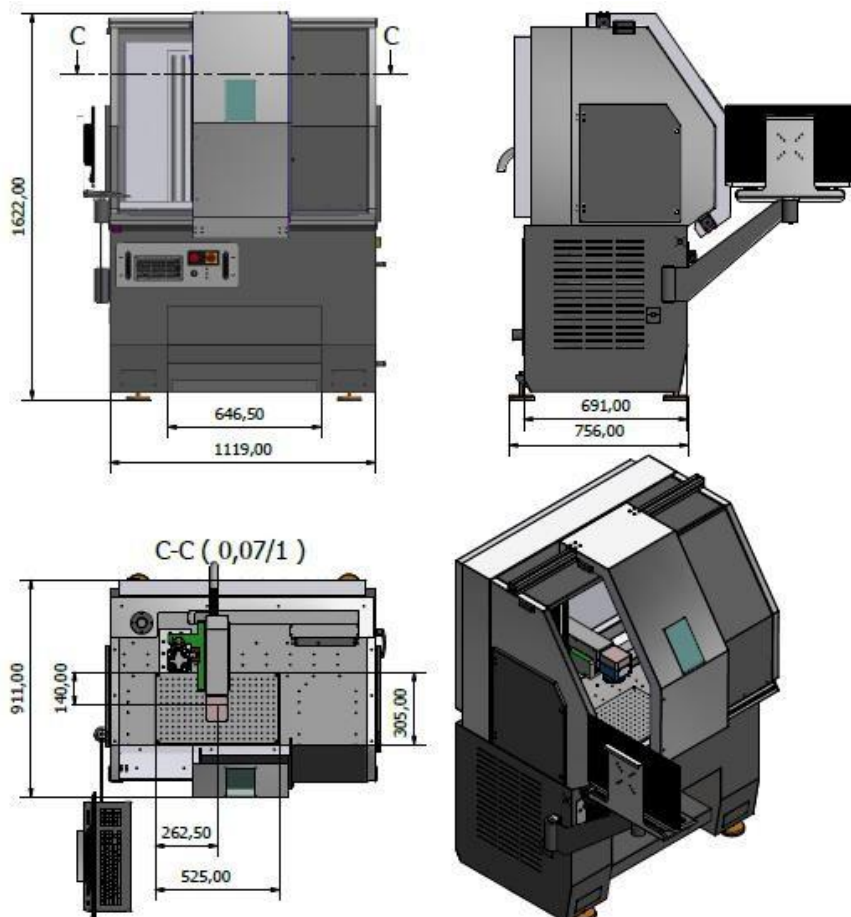
System Features

- 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
- Aluminum platform for precise positioning and fixing of the parts.
- Adaptable design to integrate fume extractor for harmful gases and smoke occurred 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.



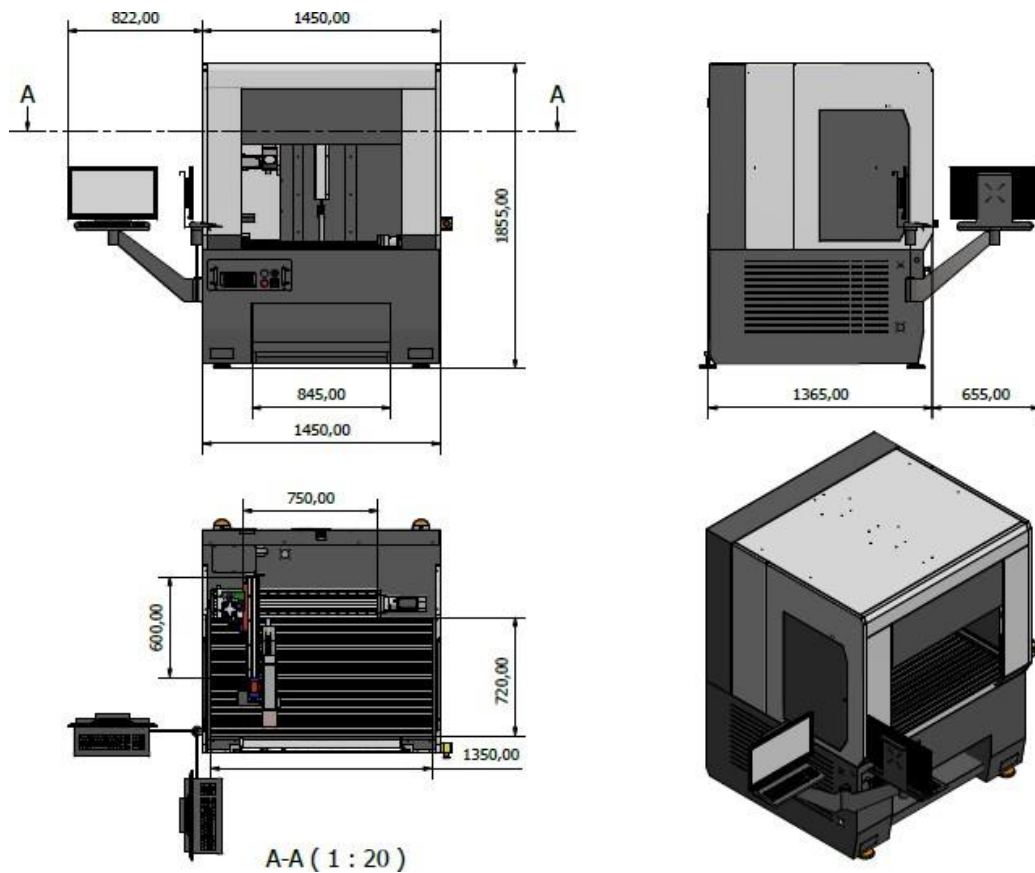
DAPPERMARK

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 pneumatic front door
- Safety switch against the opening door during the laser operation.
- Automatic controlled, adjustable Z-axis
- Aluminum platform for precise positioning and fixing of the parts.
- Adaptable design to integrate fume extractor for harmful gases and smoke occurred during operation.
- Robust design, loading capacity up to 200kg.

Customizable Design

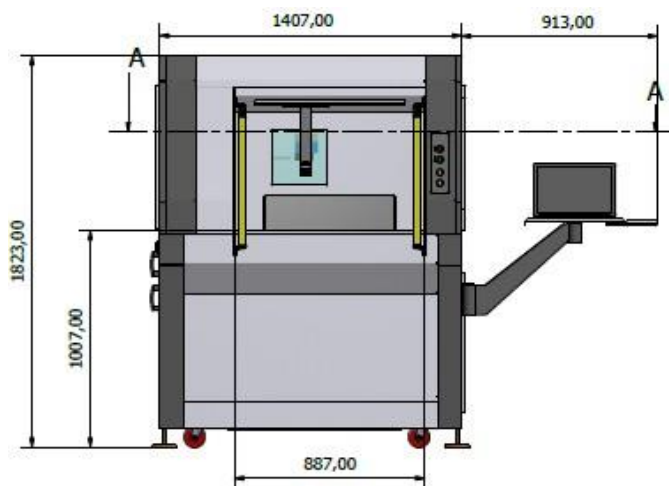
DAPPERMARK has a design that X-axis, Y-axis and R-axis can be integrated into the closed system as an option. 3-axis laser marking and 4-axis laser marking with rotary axis applications can be offered in a way that can work all together and controlled by customer-specific software



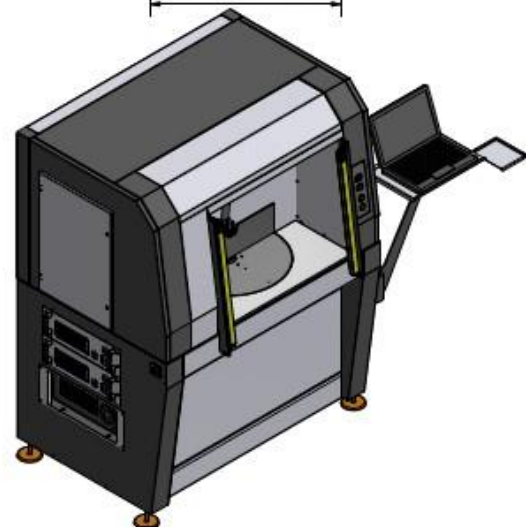
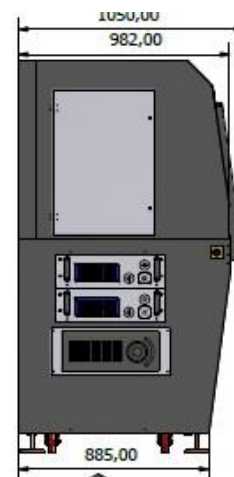
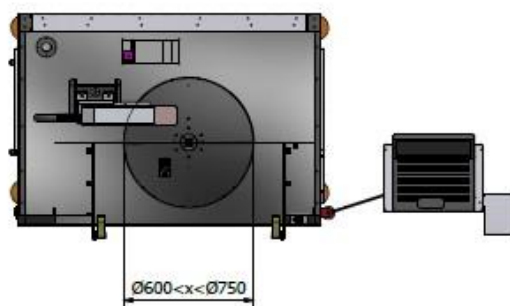
ROTARYMARK

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
- Aluminum platform with fixtures for precise positioning and fixing of the parts.
- Adaptable design to integrate fume extractor for harmful gases and smoke occurred during operation.
- Flexible operating with the hinged doors at two sides.



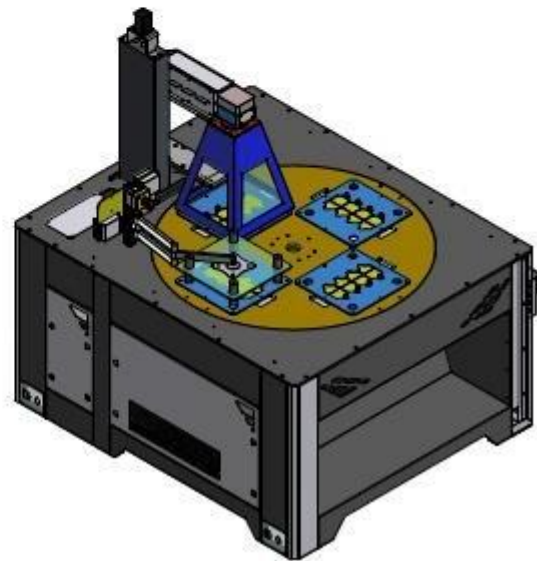
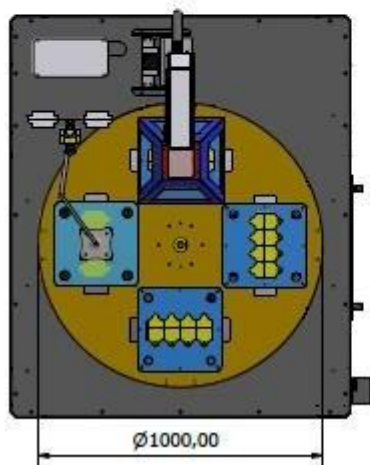
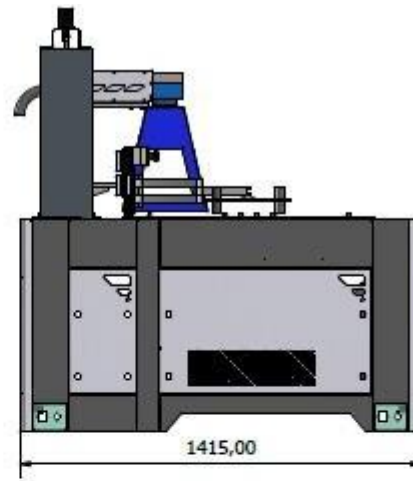
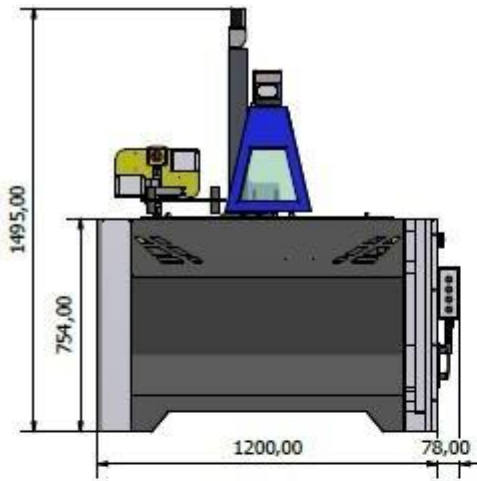
A-A (0,06/1)



TAGMARK

System Features

- A special design for both RFID and laser coding of animal ear tags
- OD+6 protective shield around galvo head for laser safety
- 1 m diameter rotary table that is suitable for both mass production and low volume production with large workspace for multiple operators
- Adjustable Z axis that is manual or optionally motorized
- Aluminum drum with assembly holes for easily adapting fixtures.
- Integrated design of the suction unit for harmful gases and fumes that may occur during operation.

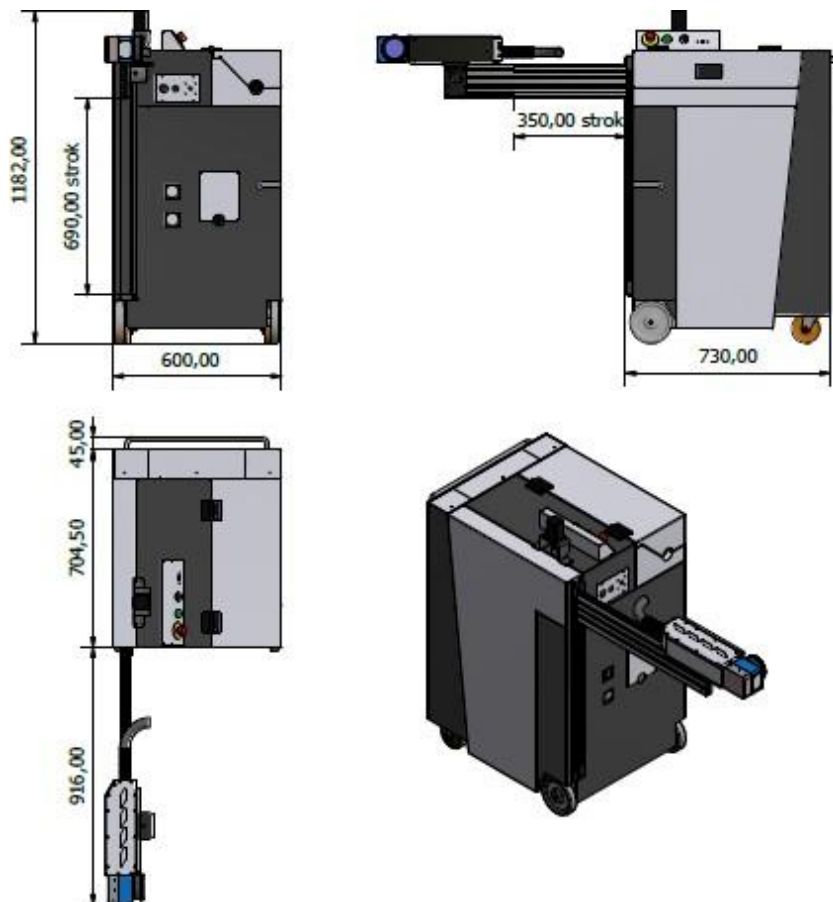


MARKMOBILE



System Features

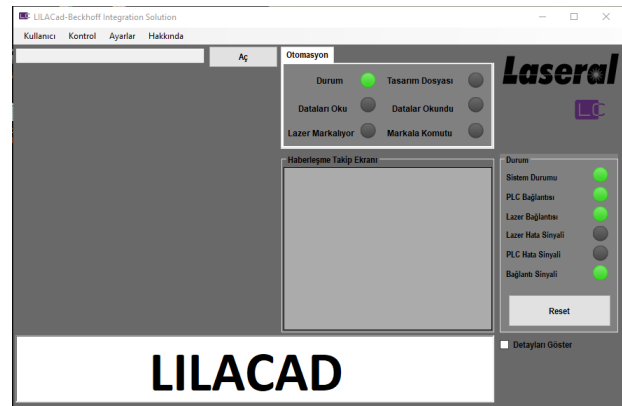
- Ergonomic and portable design for marking on site.
- Compact and easy mobility.
- A covered segment for protection of the laser head after the operations.
- Flexible operation by the laser head equipped with ball joint.
- High reachability Z-axis and Y-axis



CUSTOMIZED MARKING SOLUTIONS



Laseral can offer numerous customized marking solutions with robotic arms, label feeders, conveyors, motorized axes or other automation components that is specialized for your project. Specialized LILA (Laseral Industrial Laser Application) software is also offered where standard user interfaces are not enough to cover requirements. Please contact our sales engineers for more information.



CO₂ 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 model of gun body
- Marking and cutting of textiles such as leather and jeans
- Precision cutting of paper and cardboard products



MAX. AVERAGE OUTPUT POWER: 200 W
MAX. PEAK OUTPUT POWER: 200 W
PULSE REPETITION RATE: 0-5 kHz
WAVELENGTH RANGE: 10600 nm

DANGER - INVISIBLE LASER
RADIATION AVOID EYE OR SKIN
EXPOSURE TO DIRECT OR
SCATTERED RADIATION
CLASS 4 LASER PRODUCT
IEC 60825-1:2014 /A11:2021

CO₂ 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)
- In addition to basic rack version (AirMark), can be obtained with a RapidMark or DeskMark type marking platform.



Technical Data	CC-30	CC-50	CC-100
Laser source	CO ₂ Metal Tube	CO ₂ Metal Tube	CO ₂ Metal Tube
Mean power	30W	50W	100W
Wavelength	10600 nm	10600 nm	10600 nm
Frequency	Up to 5 kHz	Up to 5 kHz	Up to 5 kHz
Processing field	Depends on the lens type		
Laser software	EzCAD	EzCAD	EzCAD
Cooling system	Air cooled	Air cooled	Air cooled
Working temperature	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

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 **100 x 100 mm**, **200 x 200 mm** and **300 x 300 mm** for the CO₂ laser.

Optional Equipment

Optional equipment is used with CC series CO₂ laser marking systems in some applications. One set of 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

3D CO2 LASER MARKING SYSTEM

Laseral 3D 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, and Polymers)
- Ability to process sculpture surfaces and different partheights at once with dynamic lens



Technical Data	3D CC-30	3D CC-50	3D CC-100
Laser source	CO ₂ Metal Tube	CO ₂ Metal Tube	CO ₂ Metal Tube
Mean power	30W	50W	100W
Wavelength	10600 nm	10600 nm	10600 nm
Frequency	Up to 5 kHz	Up to 5 kHz	Up to 5 kHz
Processing field	Depends on the lens type		
Laser software	MarkingMate	MarkingMate	MarkingMate
Cooling system	Air cooled	Air cooled	Air cooled
Working temperature	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

Processing Field - Focusing Lenses

There is no focusing (f-theta) lens in the 3D marking laser systems. Instead of there is a very fast-moving dynamic lens group 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 **300 x 300 mm** and **600 x 600 mm** in the 3D CC series lasers. Dynamic focus height interval is 20 mm.

Optional Equipment

Optional equipment are used with CC series CO₂ laser marking systems in some applications. One set of 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

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.

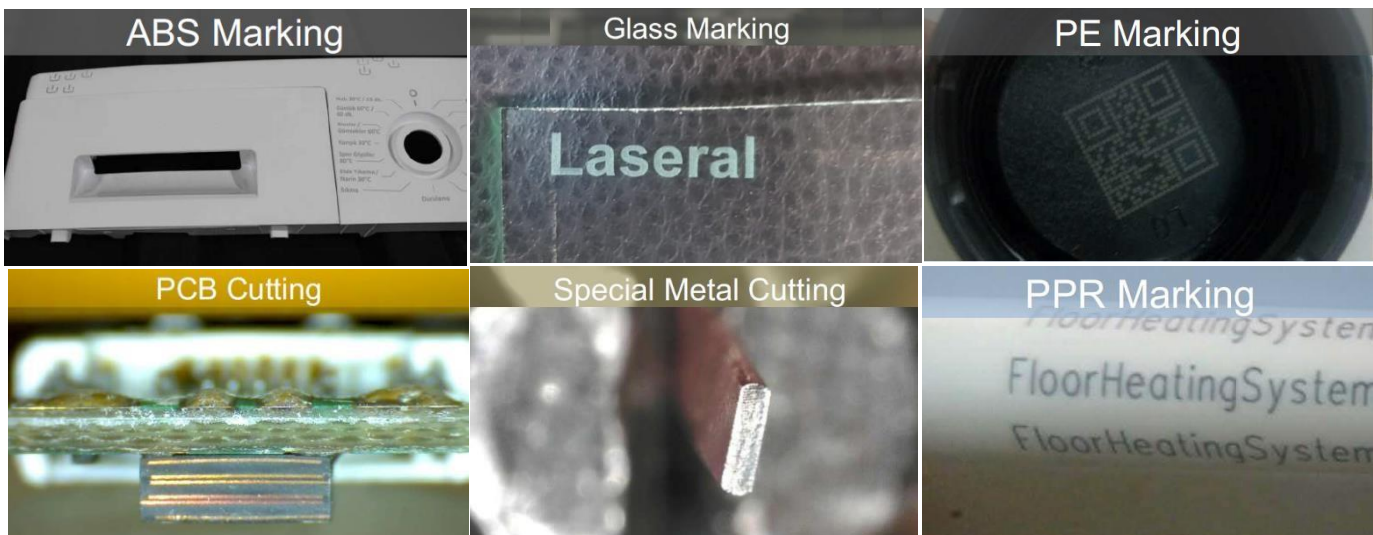
The wavelength of 355 nm is a high-energy and high-frequency wavelength, and its absorption by metals is much better than other industrial laser wavelengths. As a result, processes such as precise marking, ablating, and drilling of reflective metals can be made more efficiently.

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



MAX. AVERAGE OUTPUT POWER: 5 W
MAX. PEAK OUTPUT POWER: 5 KW
PULSE REPETITION RATE: 20 - 200 kHz
WAVELENGTH RANGE: 355 nm

DANGER - INVISIBLE LASER
RADIATION AVOID EYE OR SKIN
EXPOSURE TO DIRECT OR
SCATTERED RADIATION
CLASS 4 LASER PRODUCT
IEC 60825-1:2014 /A11:2021

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 \pm %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 x 60 mm, 120 x 120 mm, 180 x 180 mm, 240 x 240 mm, 300 x 300 mm.**

Optional Equipment

Optional equipment is used with UV series laser marking systems in some applications. Onset of 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

Optional Accessories

ROTARY DEVICE:

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

Jaws	: 3
Clamping diameter	: Inside 2...80 mm / Outside min 18 mm
Tiltable	: Yes, 0 – 90°
Accuracy	: 0.05°



WORKPIECE HOLDER CLAMP:

The clamp is for fixing the thin materials while marking and cutting in order to avoid deformations during laser process



FUME EXTRACTION:

Extractor unit to filter harmful dust and vapor that forms during laser process.

- Front, HEPA and Carbon Filtered
- Powerful Suction



Standard Accessories

PROTECTION GOGGLES:

Laser safety goggles for eye protection against the 355 nm, 1050-1085 nm, 10600 nm wavelengths.



LASER CLEANING KIT

Maintenance and cleaning kit for the laser system:

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





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MATERIAL PROCESSING AT THE SPEED OF LIGHT

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