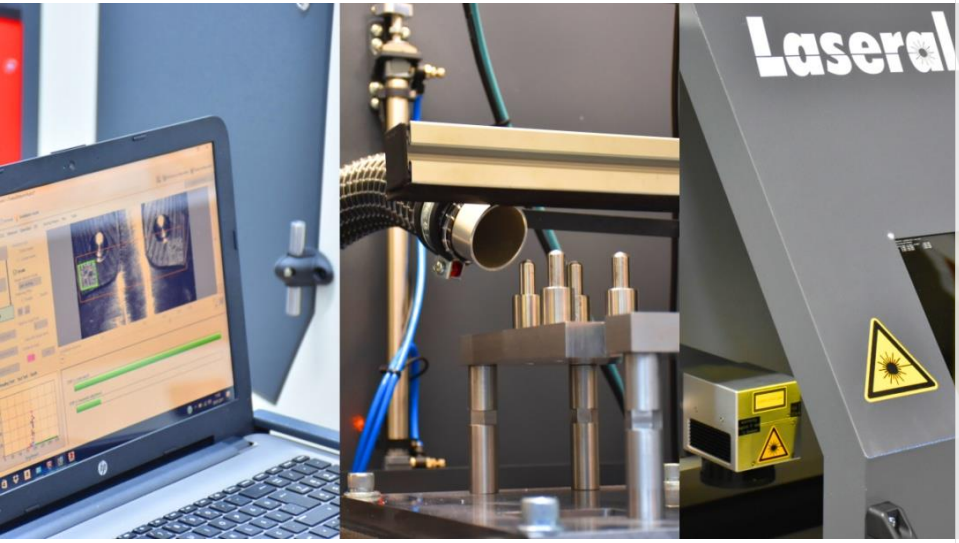


# Laseral

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 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 M series



<b>Technical Data</b>	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 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. 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



<b>Technical Data</b>	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 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. 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



<b>Technical Data</b>	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	
Processing field	MarkingMate	MarkingMate	MarkingMate	MarkingMate
Laser software	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
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

### 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

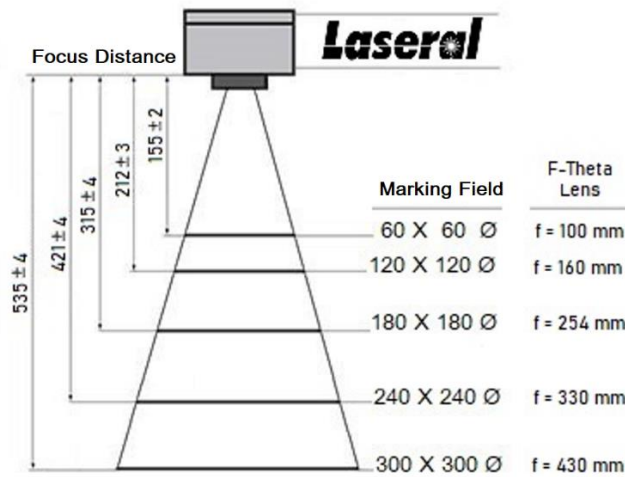
Optional equipments are used with 3D FP series fiber laser marking systems in some applications. One set of laser protection goggles and cleaning (maintenance) kit exist in all our systems for our customers as a standard.

- 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

✓ MAXIMARK

✓ RAPIDMARK

✓ ROTARYMARK

✓ MIDIMARK

✓ DAPPERMARK

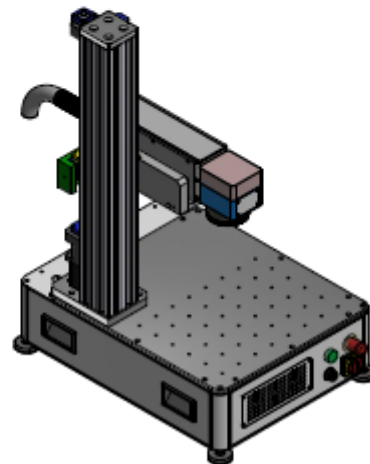
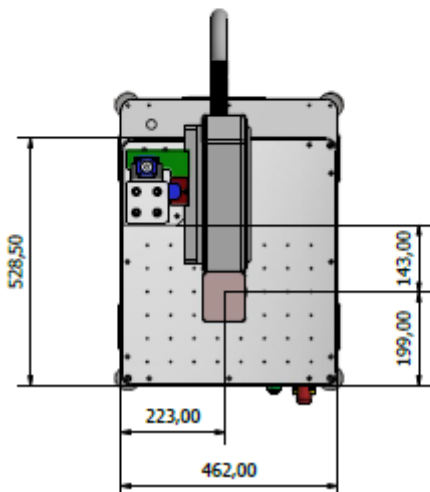
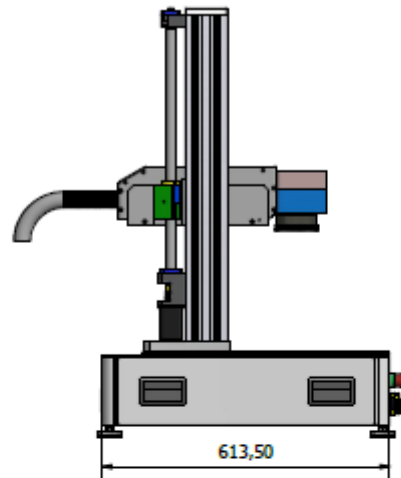
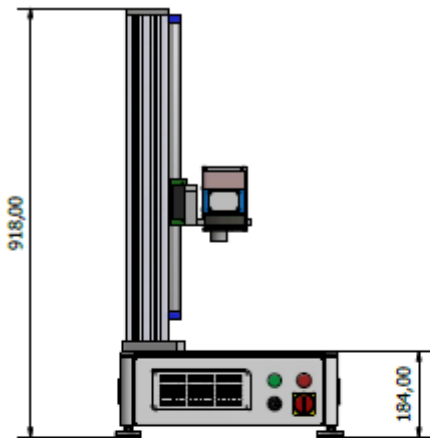




# DOTMARK

## System Features

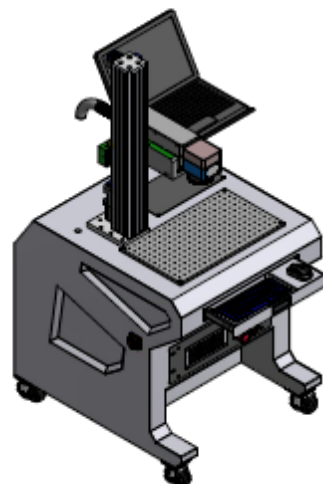
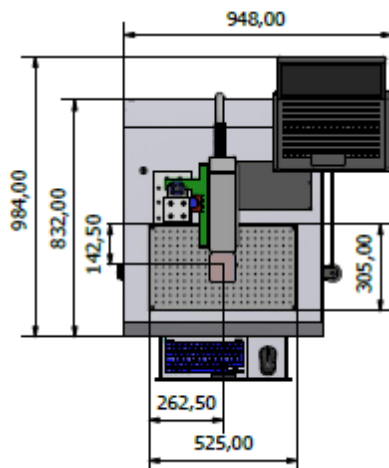
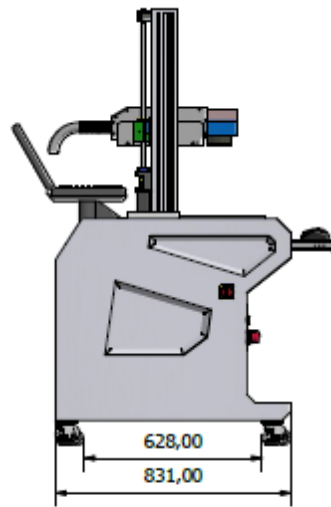
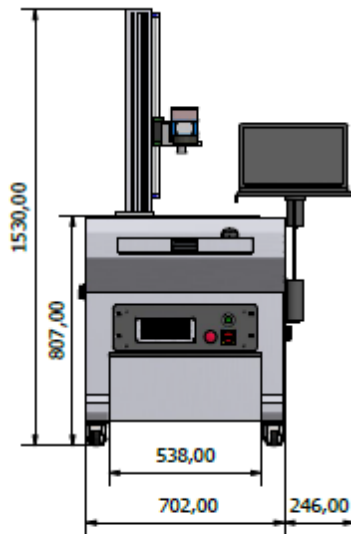
- Flexible open system
- Easy mobility and compact design
- Adjustable, manual or optionally motorized Z-axis
- OD + 6 laser protection goggles for work safety
- Aluminium platform for precise positioning and fixing of the parts



# RAPIDMARK

## System Features

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

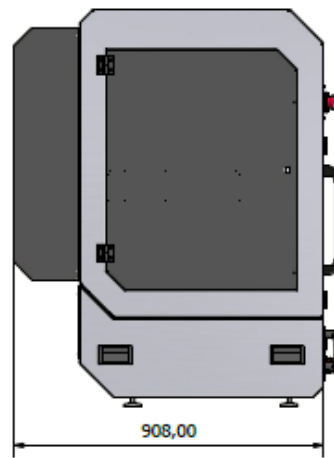
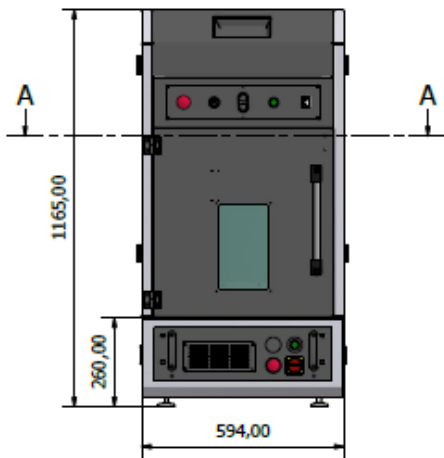




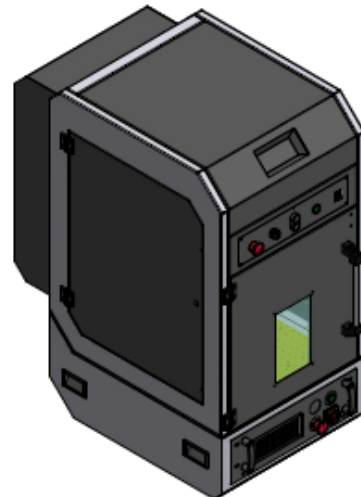
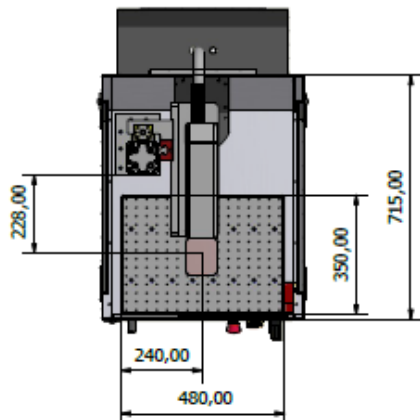
# MIDIMARK

## 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 occurred during operation.
- Flexible operating with front door and hinged door at two sides.
- Space-saving, compact, desktop design.



A-A (1 : 11)



# MAXIMARK

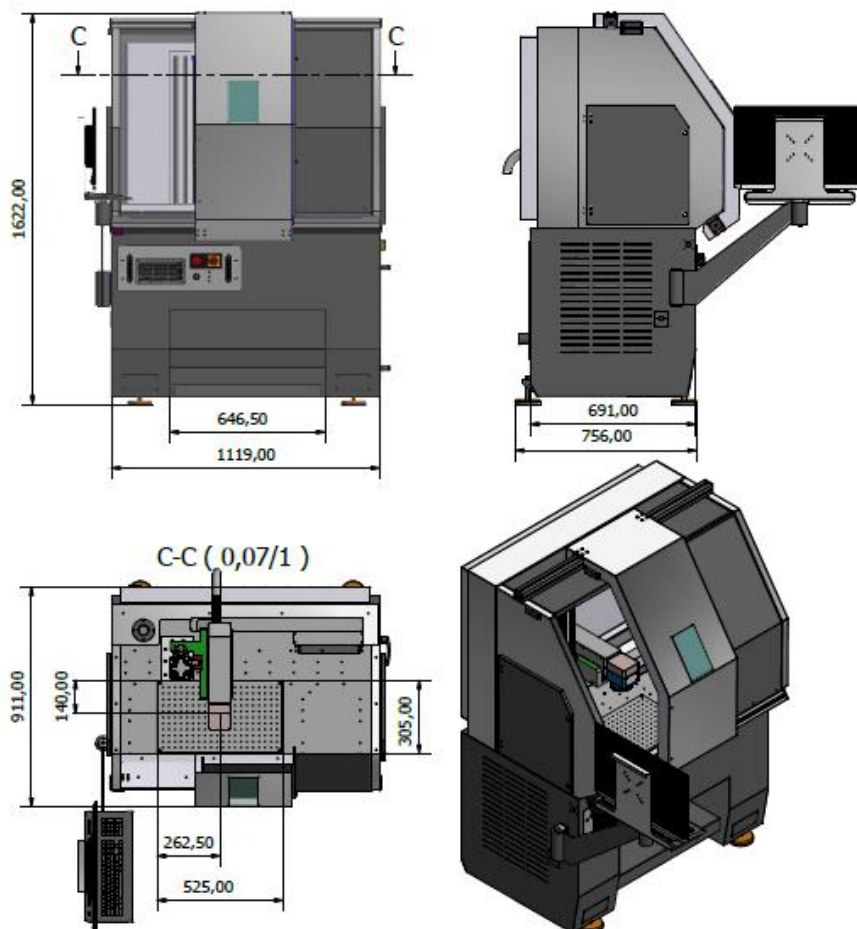
## System Features

- 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
- Aluminium 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

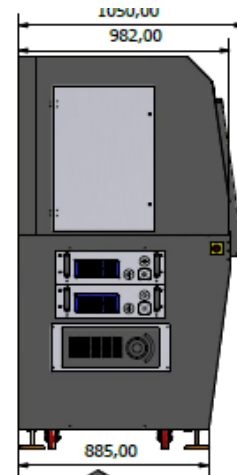
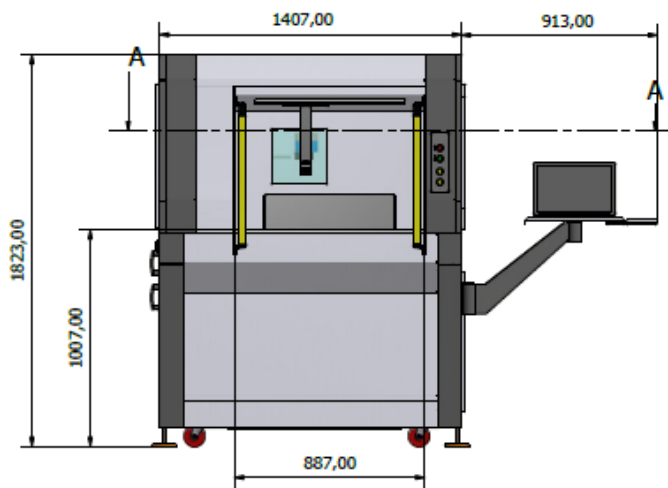
MAXIMARK has a design that X-axis and R-axis can be integrated into the closed system as an option. Sliding axis laser marking and rotary axis laser marking applications can be offered in a way that can work with the Z axis and controlled by customer-specific software.



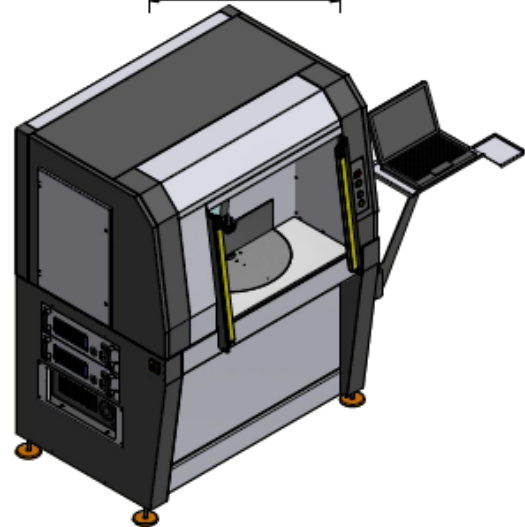
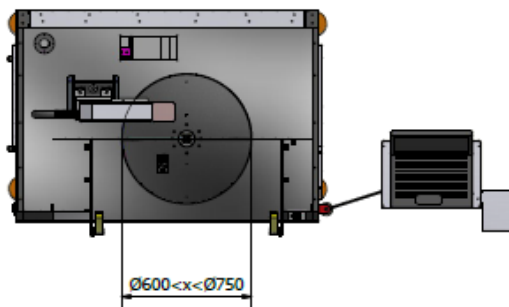
# ROTARYMARK

## 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 occurred during operation.
- Flexible operating with the hinged doors at two sides.



A-A ( 0,06/1 )



# DAPPERMARK

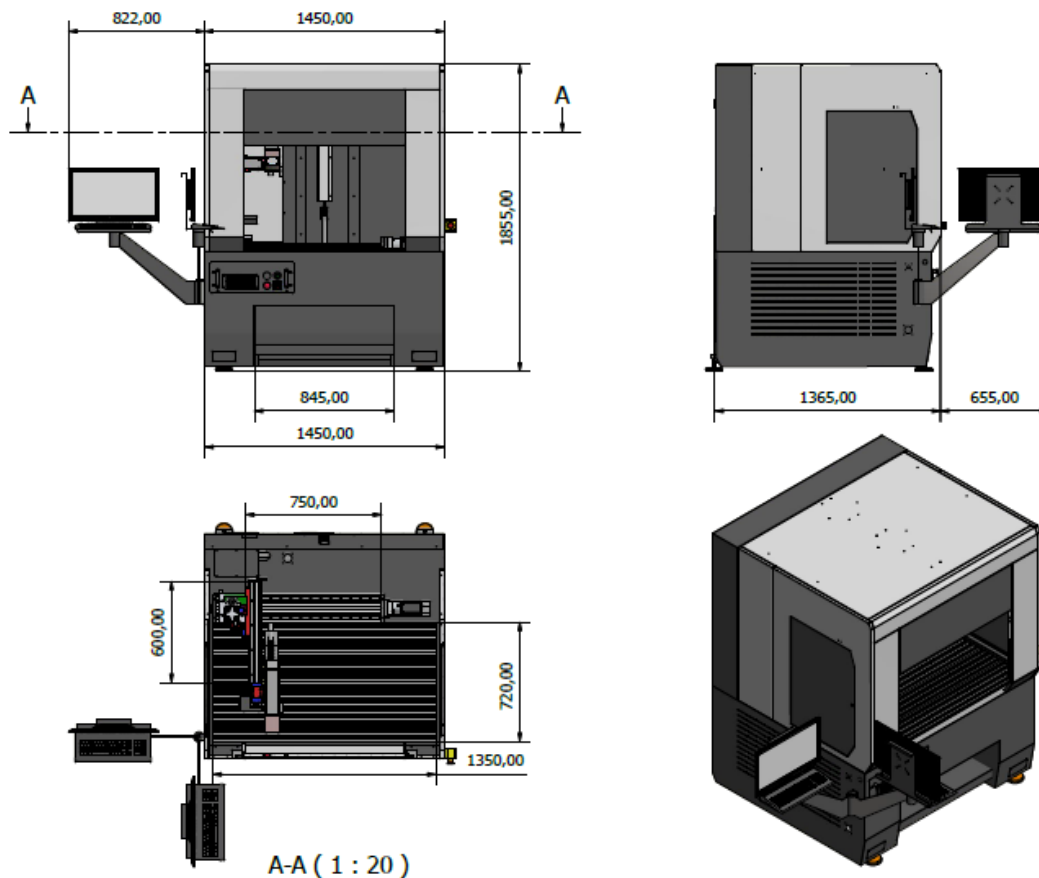
## System Features

- 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
- Aluminium 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



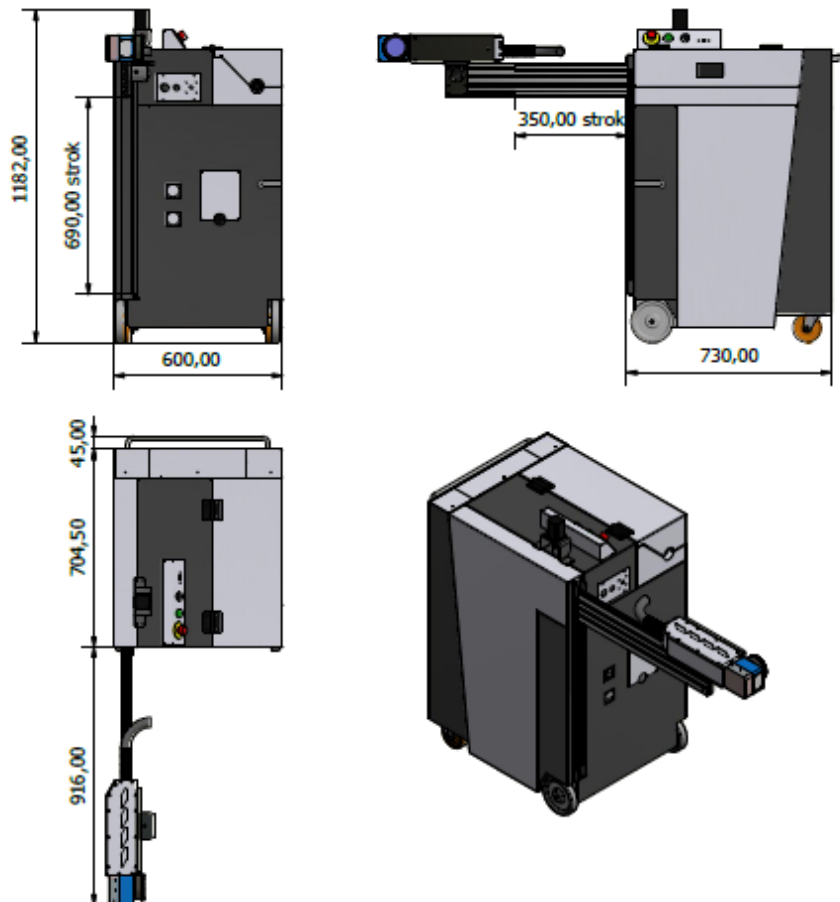
A-A ( 1 : 20 )

# 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





# CO<sub>2</sub> LASER TECHNOLOGY

CO<sub>2</sub> lasers can be used to permanently mark almost any organic material. The far infrared wavelength of 10.6  $\mu\text{m}$  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



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



# CO<sub>2</sub> 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)



<b>Technical Data</b>	CC-30	CC-50	CC-100
Laser source	CO <sub>2</sub> Metal Tube	CO <sub>2</sub> Metal Tube	CO <sub>2</sub> 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 100mm x 100mm, 200mm x 200mm and 300 mm x 300 mm for the CO<sub>2</sub> laser.

### Optional Equipments

Optional equipments are used with CC series CO<sub>2</sub> 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

## **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 ve Polymers)
- Ability to process sculpture surfaces and different part heights at once with dynamic lens



<b>Technical Data</b>	3D CC-30	3D CC-50	3D CC-100
Laser source	CO <sub>2</sub> Metal Tube	CO <sub>2</sub> Metal Tube	CO <sub>2</sub> 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 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 300mm x 300mm and 600mm x 600mm in the 3D CC series lasers. Dynamic focus height interval is 20 mm.

### **Optional Equipments**

Optional equipments are used with CC series CO<sub>2</sub> 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.

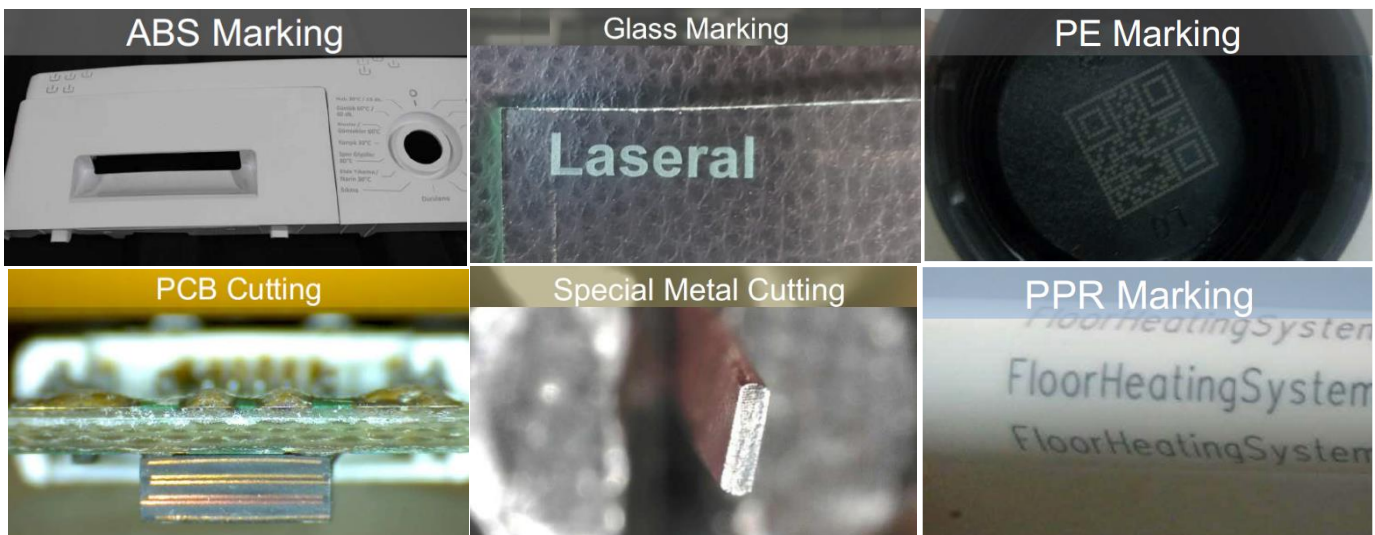
The wavelength of 355 nm is a high-energy and high-frequency wavelength, and its absorption by metals is much better than other industrial laser wavelengths. As a result, processes such as precise marking, ablating and drilling of reflective metals can be made more efficiently.

## 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  $\lambda$  with THG crystal
- Water cooled precision system
- Optimum result on many industrial materials



<b>Technical data</b>	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 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. 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

## Optional Accessories

### ROTARY DEVICE:

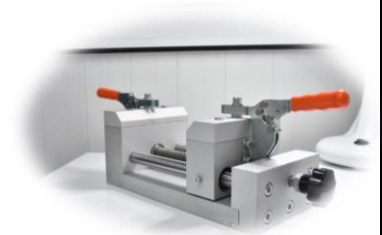
Round marking of cylindrical parts. An additional rotation axis can be integrated to the systems (see following specifications).

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 ethanol
- Latex gloves
- Air pump
- Optical cleaning cloth





# **Laseral**

*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.

# **Laseral**

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