DESIGN MEETS FUNCTION

Funktionale Sicherheit
PLe
SAFETY FIRST
gem. DIN EN ISO 13849-1

Laser marking systems

Technology, Innovation and Environment

ACI
Laser-Components

Company

Mark your territory ...

ACI Laser GmbH is an innovative company in the field of laser technology. Our long-term experience and permanent focus on market requirements has enabled us to become a leading manufacturer of laser marking systems worldwide.

With four different wavelengths, our portfolio covers all the major areas of marking applications. The striking streamlined design and compact structure, in which all components fit in one case, have for years been the trademark of ACI laser systems.

From product development via production through to sales, our employees at the head office in Nohra near Weimar, Thuringia and in our sales office in Chemnitz ensure the best possible quality for you. Additionally, our trading partners support sales and provide services for all of our products all over the world.

The basis of ACI Laser GmbH's success is our skilled and motivated team of employees. They are a key factor because they guarantee our customer's satisfaction for the future.

Development

In the development of laser marking systems, ACI focuses on:

- **User-friendly and simple operation**
- **Environmentally compatible technologies**
- **Best design**

Development

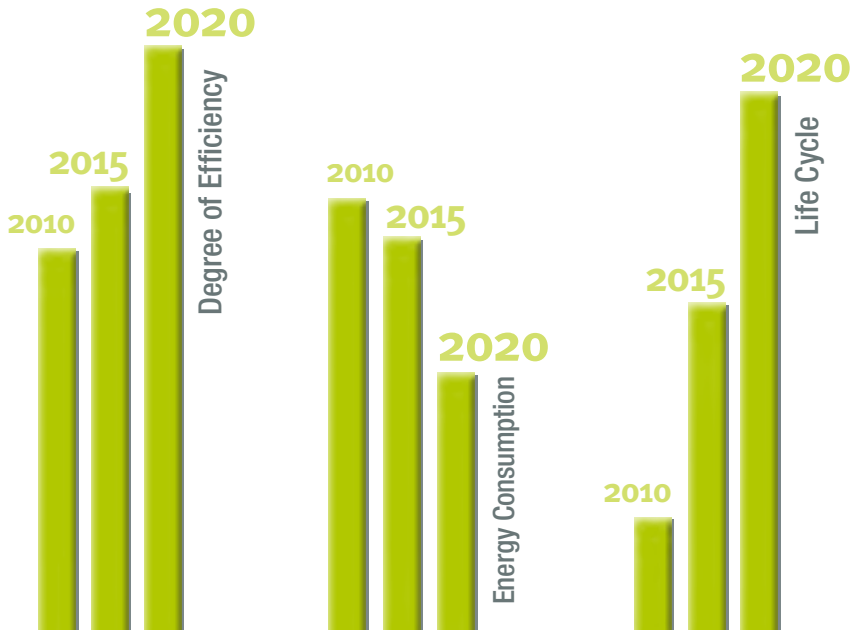
Our Products – Highest Standards

ACI's development team combines creativity and innovative know-how with a distinct sense for technology and appealing design.

Our development goals include:

- Development of energy efficient products
- On-going quality control
- Use of environmentally friendly substances and materials
- Highest degree of functional security:
  Performance Level e (acc. DIN EN ISO 13849-1)

Quality and Environmental Goals:



Production

Efficient machine employment – our guarantor for an environmentally friendly production.

Production

Focus on people and environment

ACI Laser GmbH's highest priority is the environmentally conscious use of machines and innovative technologies. This includes the manufacturing process as well as the laser marking systems themselves.

- Efficient production allows short delivery times
- Consistent quality standards thanks to a high degree of vertical integration
- Highly qualified employees

Sales

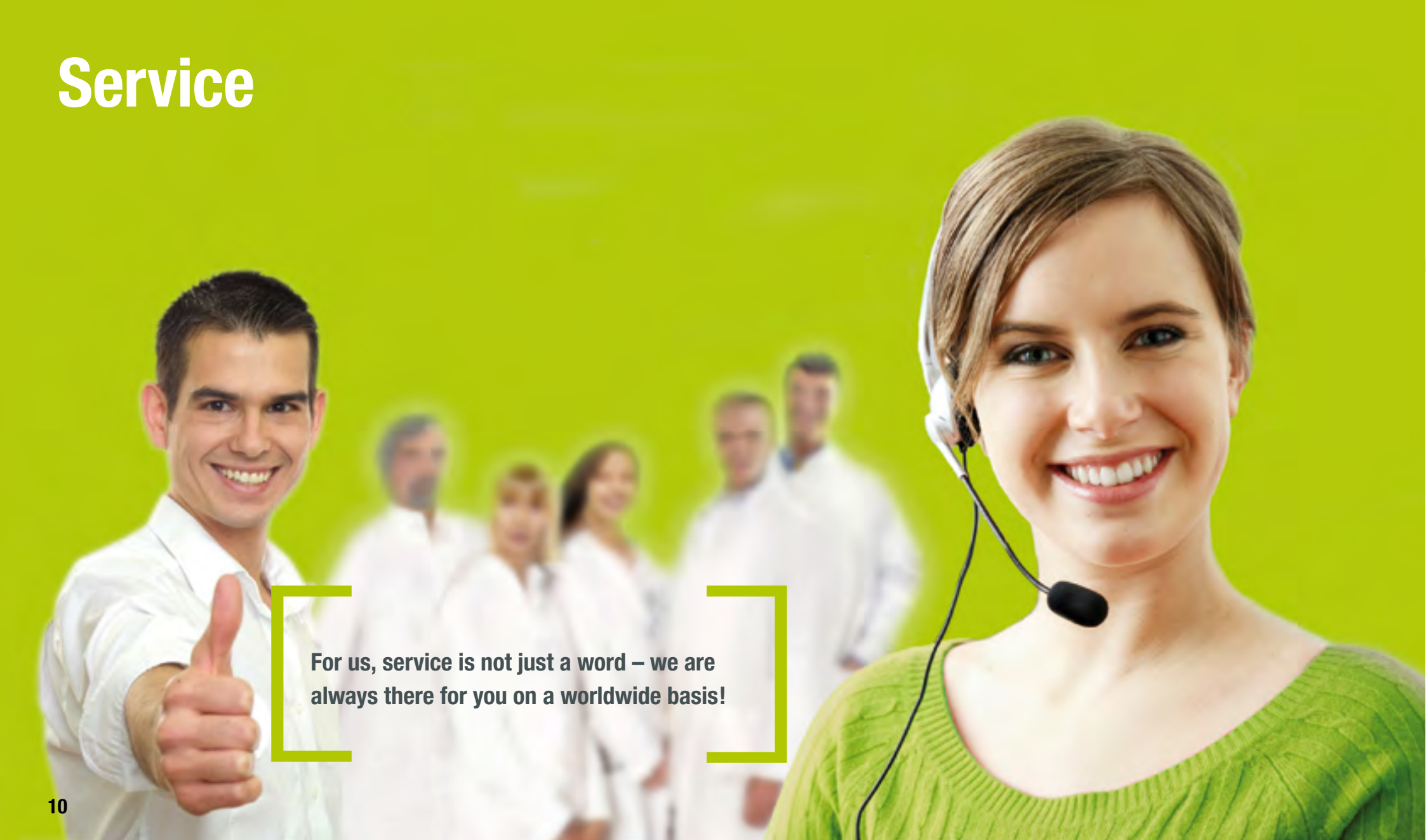
Sales

You can trust us

Based on our client's specifications, our highly qualified sales team develops customised concept solutions. Individual assistance guarantees highest client satisfaction.

- Competent, solution-oriented support by our distribution engineers
- Client visits and on-site product demonstrations
- In-house sample marking

Service



For us, service is not just a word – we are always there for you on a worldwide basis!

Service

Fast expert support

ACI Laser GmbH puts an emphasis on high-quality service. Our experts provide guidance and support to our customers regarding questions about lasers, software and maintenance.

- Software and laser training either on your premises or at ACI
- Immediate response in event of malfunction
- Substitute system suppliable
- Remote problem diagnostics

Metal

Plastics

Ceramics

Coatings and Finishes

Glass

Wood

Leather

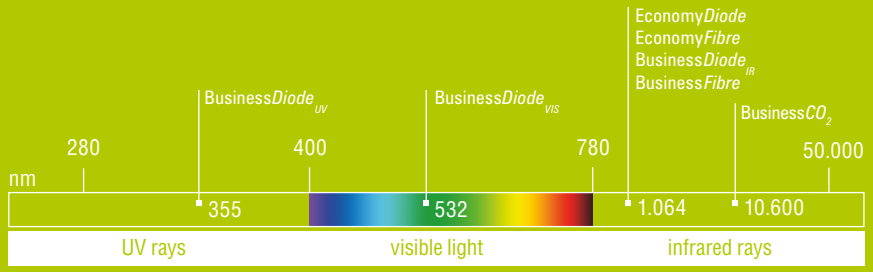
Labels and Laser Foils

Materials

Permanent and high-contrast marking

The lasers developed and produced by ACI Laser GmbH can be used to mark the following materials:

- Inorganic materials such as metal, plastics, foil, etc.
- Organic materials such as wood, paper, leather, etc.



Application Matrix:

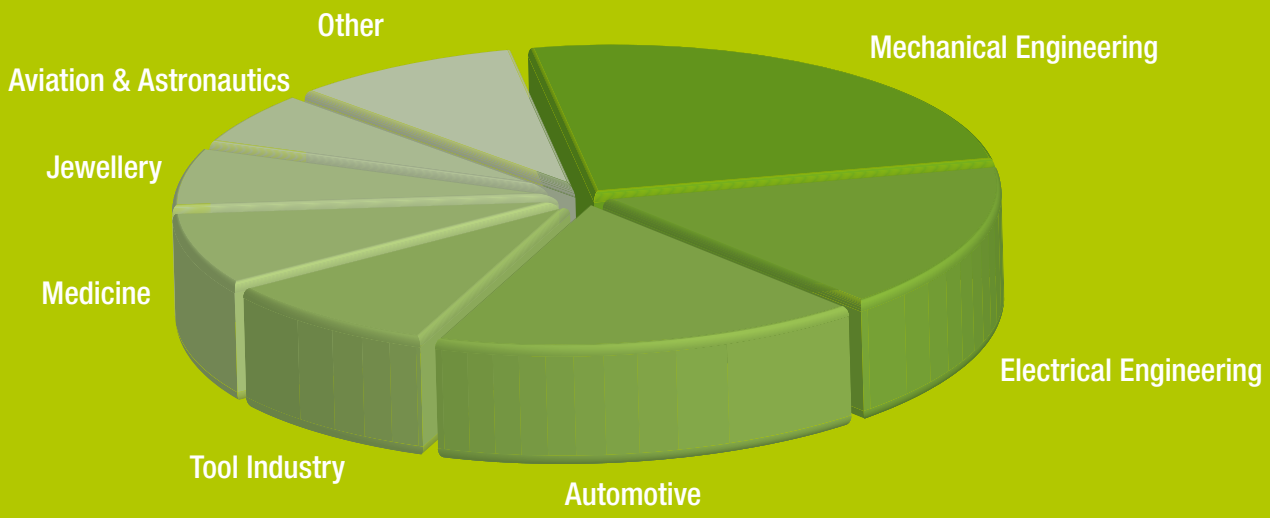
Material	Economy Diode	Economy Fibre	Business Diode$_{IR}$	Business Diode$_{VIS}$	Business Diode$_{UV}$	Business Fibre	Business CO_2
Metals							
Black annealing	○	○	●	○	–	●	–
Engraving	○	●	○	○	○	●	–
Abrasion	●	●	●	●	○	●	○
Plastics							
Foaming*	●	○	●	●	●	○	–
Carbonization*	●	○	●	●	●	○	–
Engraving*	–	–	–	–	–	–	●
Ceramics	–	–	○	○	○	○	○
Wood, paper and leather	–	–	–	–	○	–	●
Glass	–	–	–	○	●	–	●
Laser foil							
Abrasion	●	●	●	●	●	●	○
Colouring	●	○	●	●	●	●	–

● very good ○ good – unsuitable

* Limitations may occur depending on the composition of the plastic.

Applicability

Fields of Application



Customized marking

A wide range of different laser technologies offers a solution to almost every requirement. The most appropriate choice for a client results from a consideration of the following criteria:

- Material characteristics
- Cycle time requirements
- Budget

Material	Plastics
Branch	Medicine

Material	Metal
Branch	Tool Industry

Material	Plastics
Branch	Automotive

Material	Metal
Branch	Electrical Engineering

Material	Plastics
Branch	Sanitary Engineering

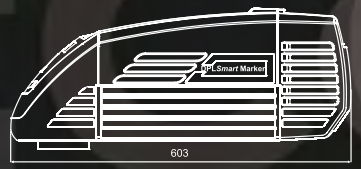
Material	Metal
Branch	Electrical Engineering

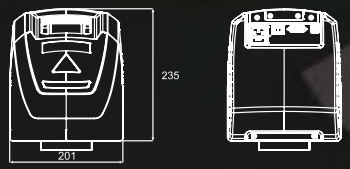
Economy *Diode*
Economy *Fibre*

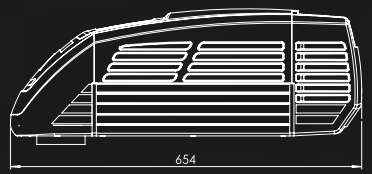
Business *Diode*
Business *Fibre*
Business CO_2

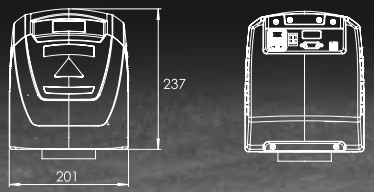
OEM-Laser Markers

DPL *Smart* Marker
4 W/10 W

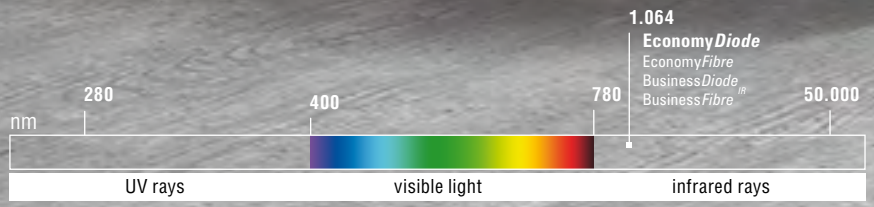








- Cost-effective entry into laser material marking thanks to low investment costs
- Compact and space saving lasers for individual parts and small production volumes
- Low operating costs
- Air-cooled



Economy *Diode*

DPL *Smart* **Marker I**
4 W

DPL *Smart* **Marker II**
10 W

Technical Data

	Smart I	Smart II
Laser type	Nd:YAG	
Wave length	1064 nm	
Pumping principle	Longitudinal	
Laser power	4 W	10 W
Beam mode M^2	Typ. 1.5	
Pulse length	15–100 ns	
Pulse repetition rate	1–100 kHz	1–80 kHz
Laser class	4, optional 1	
Size of marking area [mm]	optional 60 x 60/110 x 110/180 x 180	
Power consumption	max. 150 W	
Weight	15 kg	16 kg
Dimensions (l x w x h) [mm]	603 x 201 x 235	654 x 201 x 237
Connected load	100–240 VAC/16 A/50–60 Hz	
Interfaces	USB 2.0, PLC-Interface	
Functional security acc. to DIN EN ISO 13849-1	PLe	

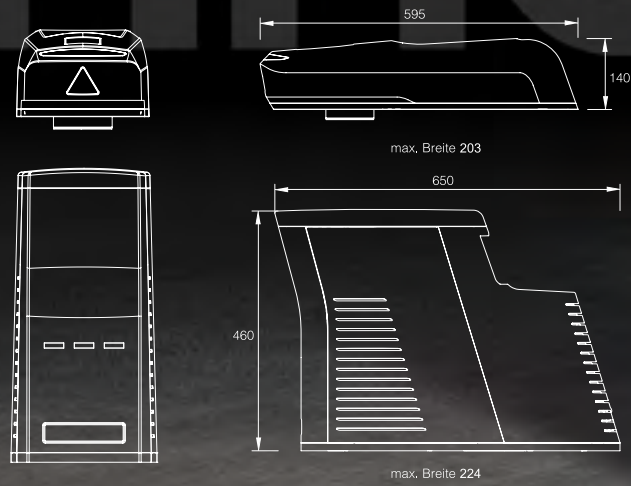
Material	Economy Diode
Metals	
Black annealing	○
Engraving	○
Abrasion	●
Plastics	
Foaming*	●
Carbonization*	●
Engraving	–
Ceramics	–
Wood, paper and leather	–
Glass	–
Laser foil	
Abrasion	●
Colouring	●

● very good ○ good – unsuitable

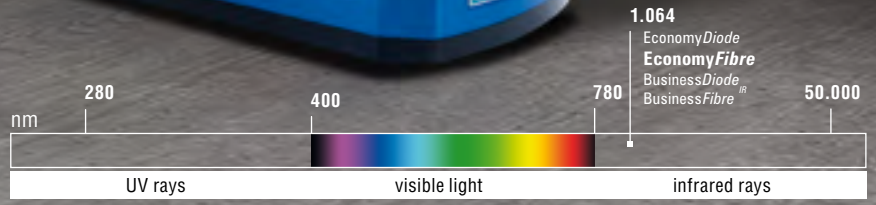
* Limitations may occur depending on the composition of the plastics.

DFL *Ventus* Marker

Ventus$_Z$: 20 W/30 W/50 W/70 W



- Cost-effective entry into material marking with fibre laser technology
- Low investment and operating costs
- Main area of use is in the quick marking of metals



Economy *Fibre*

DFL *Ventus* Marker

Technical Data

	Ventus Z
Beam quality	1,4 ≤ M² ≤ 1,6
	
Laser power	20 W, 30 W, 50 W, 70 W
Laser type	Yb:fibre
Wave length	1064 nm ± 5 nm
Peak power	up to 10 kW
Pulse energy[1]	up to 1 mJ
Number of adjustable pulse forms/-lenghts[1]	up to 2
Pulse repetition rate[1]	1 kHz–1 MHz
Transport fibre	3 m
Laser class	4, optional 1
Size of marking area [mm]	optional 60 x 60/110 x 110/180 x 180
Power consumption[1]	max. 600 W
Connected load	85–240 VAC/10 A/50–60 Hz
Weight[2]	8 kg/27 kg
Dimensions[2] (l x w x h) [mm]	595 x 203 x 140/650 x 224 x 460
Interfaces	USB 2.0, PLC-Interface
Functional security acc. to DIN EN ISO 13849-1	PLe

[1] Dependant on the laser power, [2] Specifications refer to: laser head/power supply

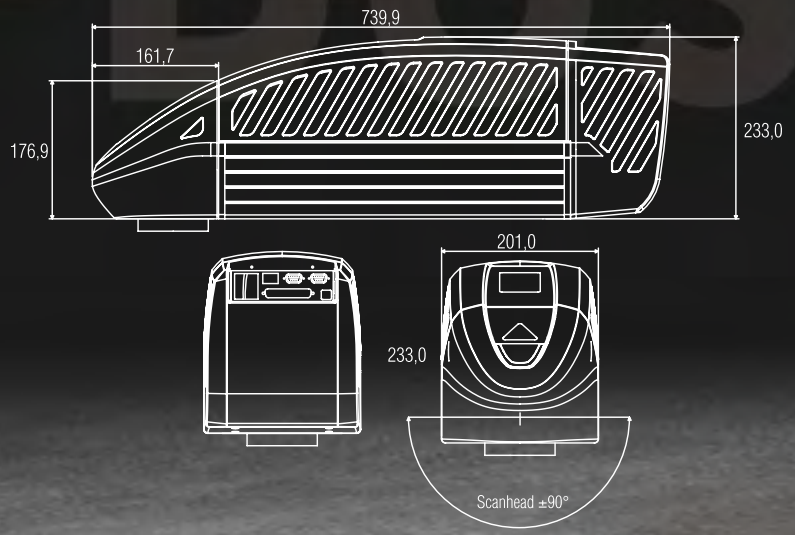
Material	Economy Fibre
Metals	
Black annealing	○
Engraving	●
Abrasion	●
Plastics	
Foaming*	○
Carbonization*	○
Engraving	–
Ceramics	–
Wood, paper and leather	–
Glass	–
Laser foil	
Abrasion	●
Colouring	○

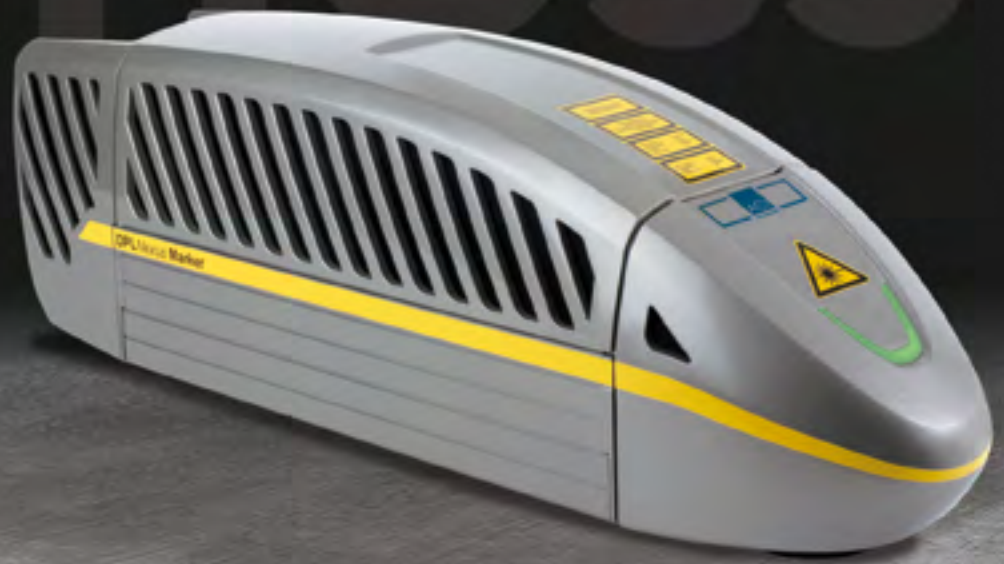
● very good ○ good – unsuitable

* Limitations may occur depending on the composition of the plastics.

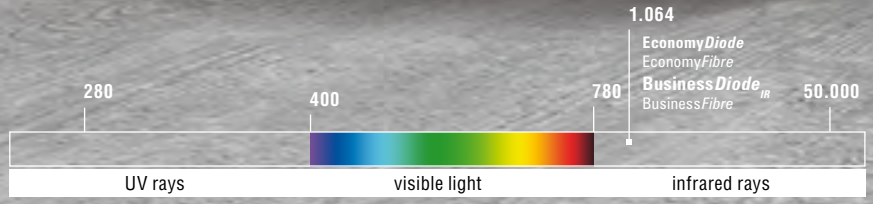
Genesis

DPL *Nexus* **Marker**
12 W





- For use in single or multi-shift operation
- Easy to integrate into production lines
- Ideal for time sensitive applications and large production volumes
- Stable operation thanks to thermoelectric air cooling
- Minimal operation costs thanks to a high degree of efficiency



Business *Diode*$_{IR}$

DPL *Genesis* **Marker** 8 W

DPL *Nexus* **Marker** 12 W

DPL *Fortis* **Marker** 16 W

Technical Data

	Genesis	Nexus	Fortis
Laser type		Nd:YAG	
Wave length		1064 nm	
Pumping principle		Longitudinal	
Laser power	8 W	12 W	16 W
Beam mode M^2	Typ. < 1.5	Typ. < 2	Typ. < 2.5
Pulse length		15–100 ns	
Pulse repetition rate		1–100 kHz	
Laser class		4, optional 1	
Size of marking area [mm]		optional 60 x 60/110 x 110/180 x 180	
Power consumption	max. 200 W	max. 250 W	max. 300 W
Weight		20 kg	
Dimensions (l x w x h) [mm]		740 x 201 x 233	
Connected load		100–240 VAC/16 A/50–60 Hz	
Interfaces		USB 2.0, PLC-Interface	
Functional security acc. to DIN EN ISO 13849-1		PLe	

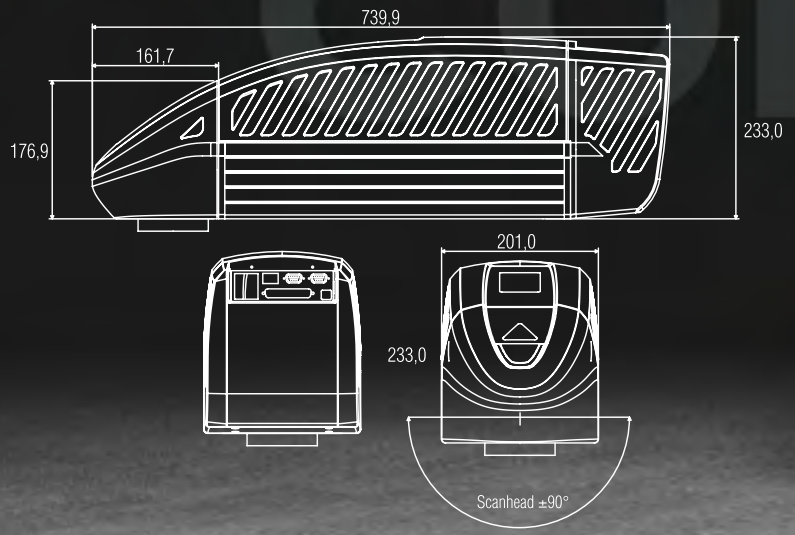
Material	Business Diode$_{IR}$
Metals	
Black annealing	●
Engraving	○
Abrasion	●
Plastics	
Foaming*	●
Carbonization*	●
Engraving	–
Ceramics	○
Wood, paper and leather	–
Glass	–
Laser foil	
Abrasion	●
Colouring	●

● very good ○ good – unsuitable

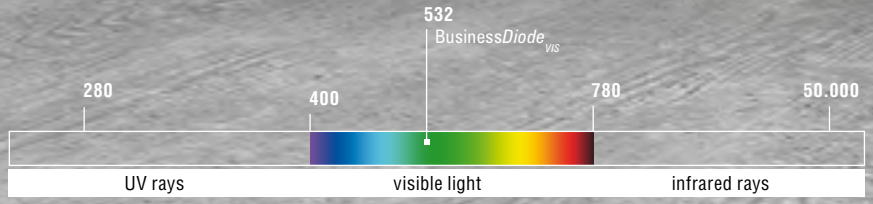
* Limitations may occur depending on the composition of the plastics.

visible compact

DPL *Nobilis* Marker
5 W



- Ideal for high-contrast markings on plastics
- Integration of all components required for operation in one single housing
- Fast thermoelectric air cooled marking laser with high precision
- Easy integration into existing production lines thanks to its small dimensions



Business *Diode*$_{VIS}$

DPL *Nobilis* Marker

Technical Data

	Nobilis
Laser type	Nd:YVO4
Wave length	532 nm
Laser power	5 W
Beam mode M^2	$M^2 < 1,2$
Peak power	up to 6 kW
Pulse energy	up to 50 µJ
Pulse length	8–25 ns
Pulse repetition rate	60–300 kHz
Laser class	4, optional 1
Size of marking area [mm]	optional 50 x 50/100 x 100/160 x 160
Power consumption	max. 220 W
Weight	20 kg
Dimensions (l x w x h) [mm]	740 x 201 x 233
Connected load	100–240 VAC/16 A/50–60 Hz
Interfaces	USB 2.0, PLC-Interface
Functional security acc. to DIN EN ISO 13849-1	PLe

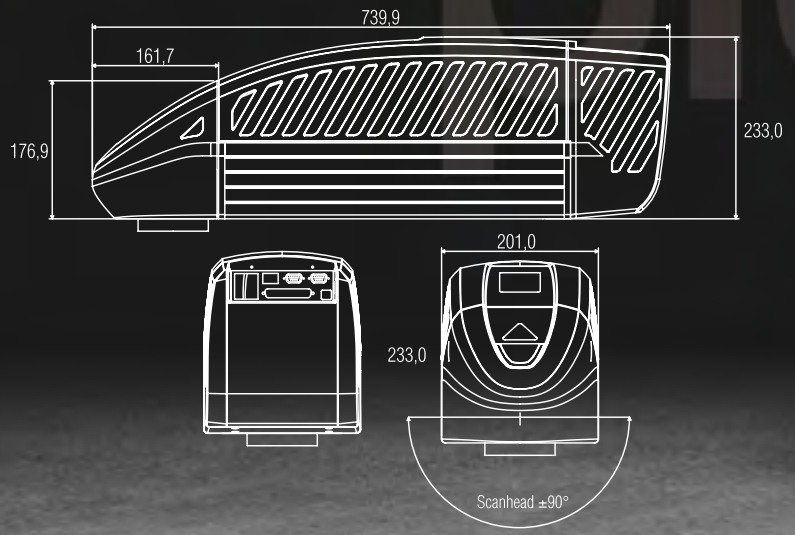
Material	Business Diode$_{VIS}$
Metals	
Black annealing	○
Engraving	○
Abrasion	●
Plastics	
Foaming*	●
Carbonization*	●
Engraving	–
Ceramics	○
Wood, paper and leather	–
Glass	–
Laser foil	
Abrasion	●
Colouring	●

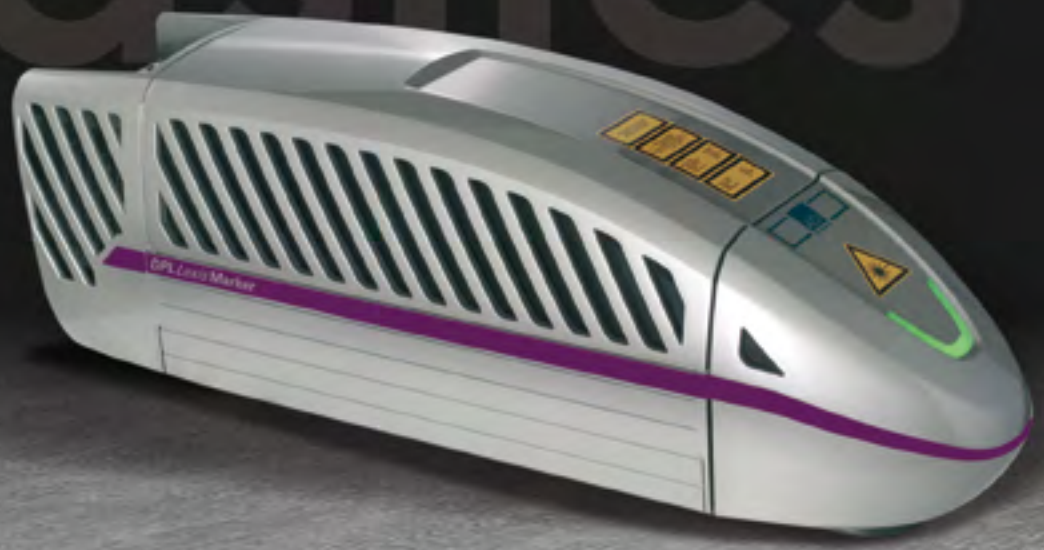
● very good ○ good – unsuitable

* Limitations may occur depending on the composition of the plastics.

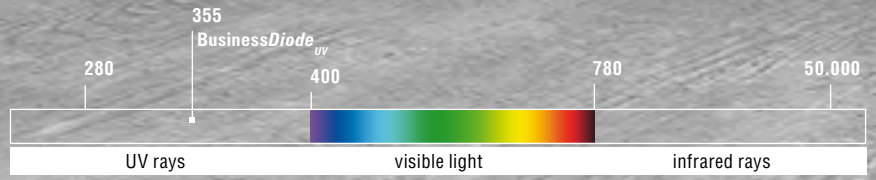
ultraviolet plastics

DPL *Lexis* Marker
2 W





- Main area of use is in the high-contrast marking of plastics and glass
- Particularly suitable for markings with a low heat input
- Extremely fine and precise markings possible
- Stable operation thanks to thermoelectric air cooling



Business *Diode*$_{UV}$

DPL *Lexis* Marker

Technical Data

	Lexis
Laser type	Nd:YVO4
Wave length	355 nm
Laser power	2 W
Beam mode M^2	$M^2 < 1,2$
Peak power	up to 1,4 kW
Pulse energy	up to 15 µJ
Pulse length	10–15 ns
Pulse repetition rate	40–200 kHz
Laser class	4, optional 1
Size of marking area [mm]	optional 60 x 60/95 x 95/140 x 140
Power consumption	max. 220 W
Weight	20 kg
Dimensions (l x w x h) [mm]	740 x 201 x 233
Connected load	100–240 VAC/16 A/50–60 Hz
Interfaces	USB 2.0, PLC-Interface
Functional security acc. to DIN EN ISO 13849-1	PLe

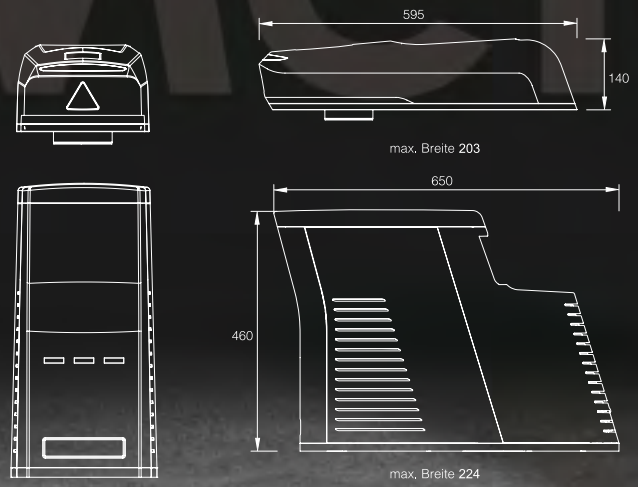
Material	Business Diode$_{UV}$
Metals	
Black annealing	–
Engraving	○
Abrasion	○
Plastics	
Foaming*	●
Carbonization*	●
Engraving	–
Ceramics	○
Wood, paper and leather	○
Glass	●
Laser foil	
Abrasion	●
Colouring	●

● very good ○ good – unsuitable

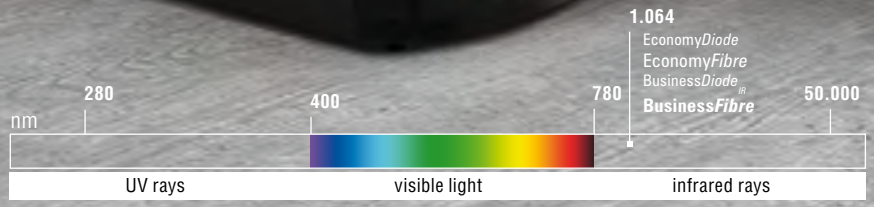
* Limitations may occur depending on the composition of the plastics.

DFL *Ventus* Marker

Ventus$_S$: 30 W
Ventus$_Z$: 20 W/50 W/70 W
Ventus$_H$: 40 W/70 W



- Ideal for markings on metal
- For advanced applications with variable pulse width
- Integration of all optical, electronic and mechanical components in a single housing
- Excellent marking results due to superior beam quality



DFL *Ventus* Marker

Technical Data

	Ventus$_S$	Ventus$_Z$	Ventus$_H$
Beam quality	$M^2 \leq 1{,}3$ 	$1{,}4 \leq M^2 \leq 1{,}6$ 	$2{,}6 \leq M^2 \leq 3{,}7$ 
Products	30 W	20 W, 50 W, 70 W	40 W, 70 W
Laser type	Yb:fibre		
Wave length	1064 nm ± 5 nm		
Peak power[1]	9 kW	up to 12 kW	up to 20 kW
Pulse energy[1]	0,70 mJ	up to 1,00 mJ	up to 1,3 mJ
Number of adjustable pulse forms/-lenghts[1]	25	up to 40	25
Pulse repetition rate	1 kHz–1 MHz		
Transport fibre	2 m	3 m	3 m
Laser class	4, optional 1		
Size of marking area [mm]	optional 60 x 60/110 x 110/180 x 180		
Power consumption	max. 350 W	max. 600 W	max. 600 W
Weight[2]	8 kg/27 kg		
Dimensions[2] (l x w x h) [mm]	595 x 203 x 140/650 x 224 x 460		
Connected load	85–240 VAC/16 A/50–60 Hz		
Interfaces	USB 2.0, PLC-Interface		
Functional security acc. to DIN EN ISO 13849-1	PLe		

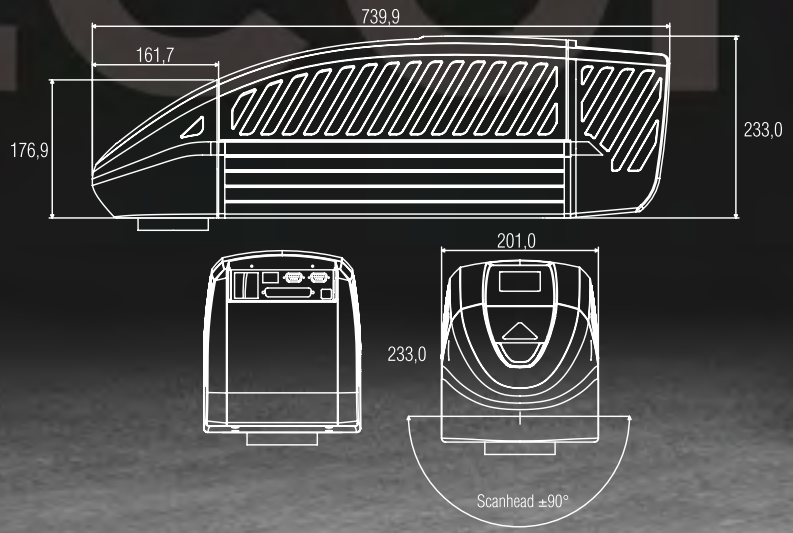
[1] Dependant on the laser power, [2] Specifications refer to: laser head/power supply

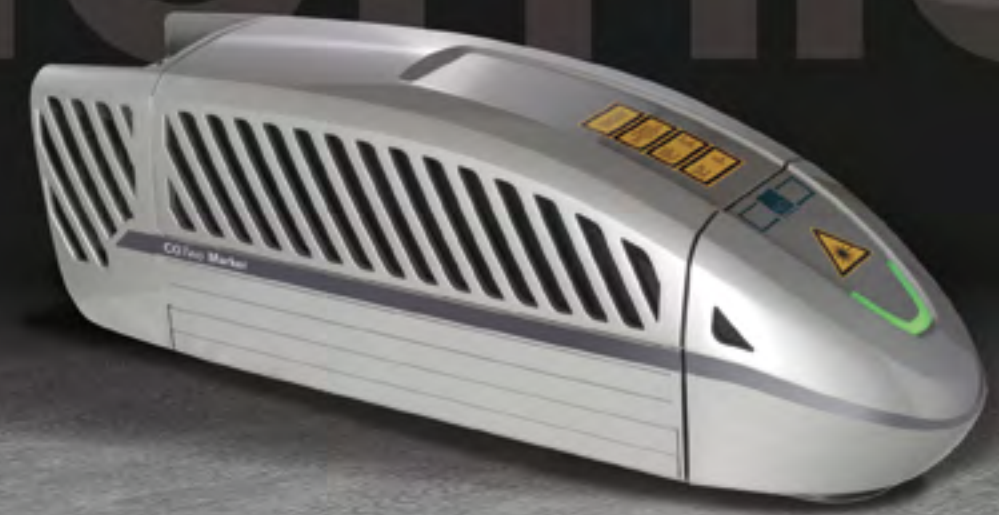
Material	Business Fibre
Metals	
Black annealing	●
Engraving	●
Abrasion	●
Plastics	
Foaming*	○
Carbonization*	○
Engraving	–
Ceramics	○
Wood, paper and leather	–
Glass	–
Laser foil	
Abrasion	●
Colouring	●

● very good ○ good – unsuitable

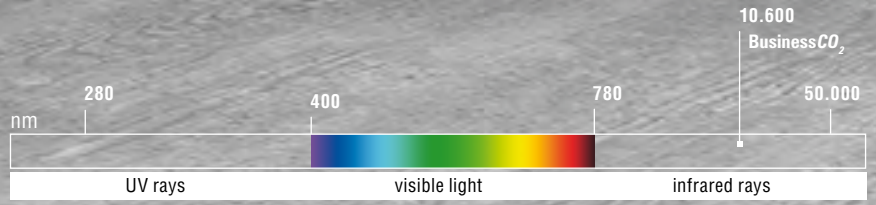
* Limitations may occur depending on the composition of the plastics.

CO *Two* Marker
30 W





- Perfect tool for marking circuit boards, as well as wood, glass or leather
- Minimal maintenance and operating costs
- Easy integration into existing production lines thanks to its compact design
- Thermoelectric air cooled marking laser



Business CO_2

CO *Two* Marker

Technical Data

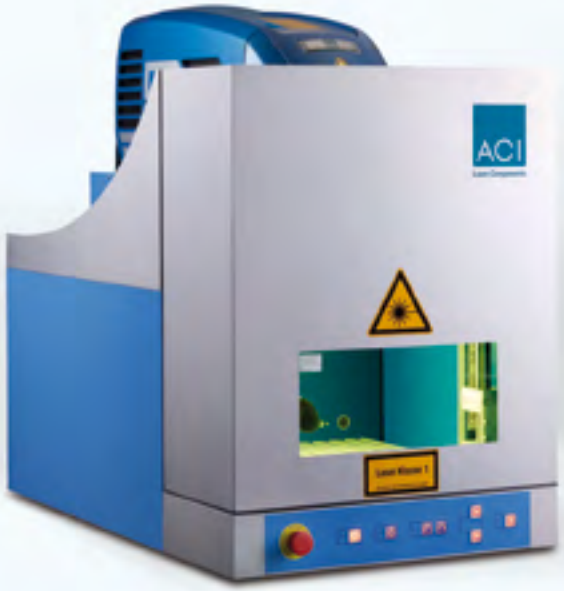
	CO *Two* Marker
Laser type	CO_2, sealed off
Wave length	10,600 nm
Laser power	20 W, 30 W
Beam mode M^2	Typ. 1.2
Laser class	4, optional 1
Size of marking area [mm]	optional 50 x 50/90 x 90/150 x 150
Connected load	100–240 VAC/16 A/50–60 Hz
Power consumption	max. 350 W
Weight	20 kg
Dimensions (l x w x h) [mm]	740 x 201 x 233
Interfaces	USB 2.0, PLC-Interface
Functional security acc. to DIN EN ISO 13849-1	PLe

Material	Business CO_2
Metals	
Black annealing	–
Engraving	–
Abrasion	○
Plastics	
Foaming	–
Carbonization	–
Engraving*	●
Ceramics	○
Wood, paper and leather	●
Glass	●
Laser foil	
Abrasion	○
Colouring	–

● very good ○ good – unsuitable

* Limitations may occur depending on the composition of the plastics.

Workstation *CLASSIC*
Workstation *COMFORT*
Workstation *PROFESSIONAL*
Foil *STAR*



Workstations

Workstation *CLASSIC*

Technical Data

Dimensions (l x w x h) [mm]	760 x 450 x 625
Clamping area (l x w) [mm]	T-Slot Plate 340 x 360
z-axis	100 mm travel distance
Laser class	1
Rotary axis	360° (optional)

- Manual workstation with automatic door opening
- Integrated motor-driven z-axis
- Optional rotary axis integration for peripheral marking
- Suction and filter system connection and control possible

Combination Options	Workstation *CLASSIC*
Economy *Diode*	●
Economy *Fibre*	●
Business *Diode*	●
Business *Fibre*	●
Business CO_2	●
Features	
Laser class 1	●
USB 2.0/RS 232	● / –
Focus-finder	●
Motor-driven x-axis	–
Motor-driven y-axis	–
Motor-driven z-axis	●
Rotary axis	◉
Integrated control panel	●
Large laser protection window	●
Electric door	●
Foil management	–

● available
– not available
◉ optional

Workstation *COMFORT*

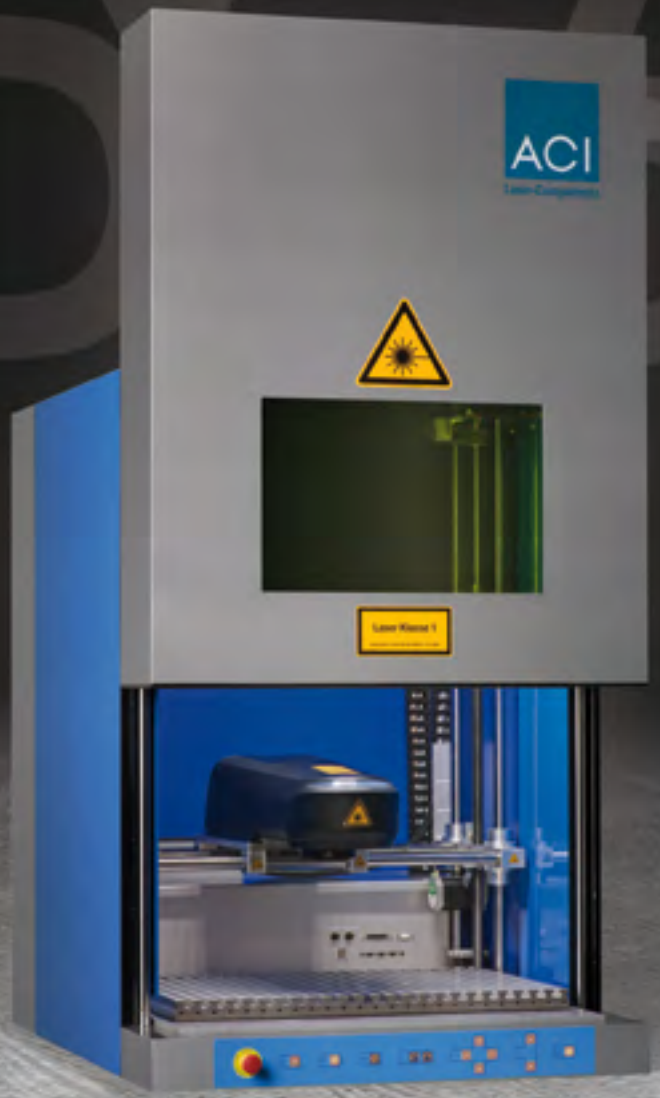
Technical Data

Dimensions (l x w x h) [mm]	900 x 760 x 690
Clamping area (l x w) [mm]	T-Slot Plate 600 x 400
z-axis	140 mm travel distance
Laser class	1
Rotary axis	360° (optional)

- Manual workstation with automatic safety door
- Integrated electrical z-axis
- Optional rotary axis for peripheral marking
- Suction and filter system connection and control possible

Combination Options	Workstation *COMFORT*
Economy *Diode*	●
Economy *Fibre*	●
Business *Diode*	●
Business *Fibre*	●
Business CO_2	●
Features	
Laser class 1	●
USB 2.0/RS 232	● / –
Focus finder	●
Motor-driven x-axis	–
Motor-driven y-axis	–
Motor-driven z-axis	●
Rotary axis	◉
Integrated control panel	●
Large laser protection window	●
Electric door	●
Foil management	–

● available
– not available
◉ optional



Workstation *PROFESSIONAL*

Technical Data

Dimensions (l x w x h) [mm]	1050 x 760 x 1050
Clamping area (l x w) [mm]	T-Slot Plate 600 x 600
z-axis	440 mm travel distance
y-axis	240 mm travel distance (optional)
Laser class	1
Rotary axis	360° (optional)

- Manual workstation with automatic safety door
- Integrated electrical x-axis
- Optional y-axis for expansion of the marking area
- Optional Rotary axis for peripheral marking
- Suction and filter system connection and control possible

Combination Options	Workstation *PROFESSIONAL*
Economy *Diode*	●
Economy *Fibre*	●
Business *Diode*	●
Business *Fibre*	●
Business CO_2	●
Features	
Laser class 1	●
USB 2.0/RS 232	● / –
Focus finder	●
Motor-driven x-axis	●
Motor-driven y-axis	◉
Motor-driven z-axis	●
Rotary axis	◉
Integrated control panel	●
Integrated rotary table 2x 180°	◉
Large laser protection window	●
Electric door	●
Foil management	◉

● available
– not available
◉ optional

Foil *STAR*

Technical Data

Dimensions (l x w x h) [mm]	700 x 300 x 340
Maximum roll diameter	300 mm
Maximum label width	120 mm
Feed rate	100 mm/sec
Laser class	1

- Permanent and non-abrasive laser foil marking
- Individual design of custom label sizes by laser cutting
- Resolution: up to 725 dpi
- Roll diameter: 300 mm
- Integrated cutting blade

Combination Options	**Foil** *STAR*
Economy ***Diode***	●
Economy ***Fibre***	●
Business ***Diode***	●
Business ***Fibre***	●
Business CO_2	–
Features	
Laser class 1	●
USB 2.0/RS 232	– / ●
Continuous operation mode	●
Label mode	●
Exhaust ventilation guidance	●
Foil end detection sensor	●
Cutting blade	●
External rewinder	◉
Forward and return transport	●

● available
– not available
◉ optional

Options

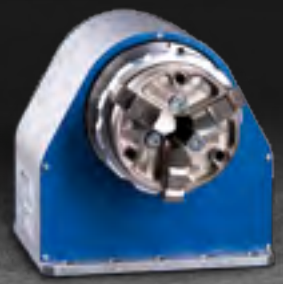
Options and accessories

For the purpose of expanding the spectrum of applications, a wide range of laser accessories are available for ACI Laser marking systems. These accessory options include, for example, the rotation axis for marking cylindrical components. This enables 360° marking on the circumference of the workpiece to be processed. Here the rotation axis is controlled by the marking software, which synchronises the laser and axis. Other features of this software include the segmented labelling of texts and logos as well as the application of scales on the circumference. In addition to the rotation axis, the scope of these system applications is also expanded by various laser extractions, diverse linear axes as well as the „Vision Pack“ camera module.

Alongside the complete solutions, the use of lasers as OEM laser markers is also possible. This becomes necessary in the case of integration into an existing production process. ACI Laser provides an extensive range of accessories for self-integration processes. These include various types of laser protection glass as well as software interfaces specifically developed for communication with higher-level systems. The close contact between the users and ACI sales engineers ensures that the optimal solution on an individual basis will be found.

Axis solutions

In conjunction with a standard objective (F-Theta 163) and the **Workstation *PROFESSIONAL***, the y-axis enlarges the marking field to 350 mm in the y-direction (refer to page 33). For marking rotationally symmetrical workpieces, ACI Laser provides a rotational axis for integration into the ACI complete solutions. Texts, logos and graphics are automatically suitably segmented by the software.



Laser protection

For efficient laser protection of viewable areas with, for example, integrated applica-tions, ACI Laser offers laser protection windows specially customised for the relevant systems and wavelengths. These allow the user to view the marking area without exposure to hazardous laser radiation. Only CE certified protective windows are used for this purpose.

Laser extraction

Since the gases, dusts and other reaction products produced in the laser marking process can be toxic, ACI Laser offers three different standard extraction and filter systems for normal marking applications: the compact, standard and low-noise models.

Vision Systems

AOI (Automatic Object Identification)
Image Processing and Evaluation

AOI is used for the fully automatic detection, identification and measurement of objects, texts and codes with complex geometries. The combination of object detection and laser marking offers an excellent opportunity for quality and process assurance, and for increasing the efficiency of the process control of many applications. **AOI** captures and analyzes the marked area online via a camera system. The laser marking is directed at the object fully automatically, and afterwards can be checked by the labelling. Another field of application for **AOI** is reading 1D and 2D codes and optical character recognition (OCR). The **AOI** high-end camera system is designed to meet customer-specific technical requirements, and to be suitable for the geometric properties of the object to be labelled.

CPM (Capturing, Positioning, Marking)
Camera for capturing a live or single image of the marking area

CPM is used for positioning markings on components, workpieces and objects with the aid of a camera. In the standard version, the camera lenses are selected to capture the entire marking area. In the Ventus series version with the fibre lasers, the camera is integrated in the scan head. In Diode series lasers and the **CO***Two***Marker**, the camera is mounted on the outside of the head. The distortion caused by perspective in the live image captured by the camera is corrected. The single image is used for positioning the layout in the graphic area of **Magic***Mark* **V3**.

For applications requiring higher resolution, **CPM** enables even smaller areas of the marking field to be captured with high resolution by selecting suitable lenses, and processed.

Typical parameters of CPM

Design	**Standard**			**User-defined**
	Optical marking system			
	f=100	f=163	f=253	User-defined
Typ. field of view [mm]	60 x 60	110 x 110	180 x 180	> 20 x 20
Resolution [µm/pixel]	65	125	200	> 22
Features				
Usage with **Magic***Mark* **V3**	✓	✓	✓	✓
Object positioning (digital)	✓	✓	✓	✓
Zoom (digital)	✓	✓	✓	✓

Marking Software

Magic*Mark* V3

The factors to consider when deciding on a laser marking investment are how user-friendly the marking software is, what is included in the scope of delivery and how innovative the laser system is. In the area of laser marking software, **Magic***Mark* **V3** sets new standards. The simple operation of the software's graphical interface allows fast creation of complex marking even for inexperienced PC-users.

In addition to its extensive graphic functionality, the software offers a Visual Basic programming module, to facilitate integration into production lines. Another highlight is the option to control the marking software th-rough external .NET programs. Even the most complicated data communi-cations can be easily achieved by using this method. In this way, additional investment costs in client-specific software solutions can be avoided.

Magic*Mark* **V3** is a Windows (WIN 7 32 bit/64 bit recommended) based mar-king software that communicates with the laser via a high-speed USB 2.0 interface. Thus, laser system control ensues via standard Windows-PCs.

Laser Communication

- USB 2.0
- 480 Mbit/s

Laser Functions

- Parameter control
- Shutter operation
- Laser start/stop function
- Function monitoring

Control Functions

- Motor-driven axes (x, y, z rotary axis) supported

Communication Interfaces

- Digital Laser I/O's
- ASCII/XML file
- Profibus Communication (via Siemens OPC Server)
- TCP/IP Communication
- Serial Communication RS-232

Program Functions

- Integration of graphic files (HPGL, DWG, DXF, BMP, JPG, GIF)
- Extensive barcode library
- Data-Matrix-Code
- TrueType fonts
- Single line fonts
- Complex sequential control system including database and network access using integrated scripting language (BASIC)
- Control of marking software through external .NET programs possible

Program Functions

- Text and graphic rotation
- Stretching/compressing of text and graphics
- Circular marking
- Alignment of marking elements
- Free selectable font size
- Serial numbers
- Processing of variables and subroutines
- Object-oriented programming
- Filing of complete processes and parameters in special menus or data bases
- Extensive help functions
- etc.

Innovations from Germany, worldwide.
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