

LASER MARKING SYSTEMS



Operating Instructions

Workstation *BASIC*

Mark your territory...

This product conforms to the requirements of the Directive 2006/42/EC on machinery.
The CE symbol is located on the type plate.

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We are constantly working on further developments.

Therefore, please understand that we must reserve the right to change the scope of the delivery in respect of the form, equipment and technology at any time.

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The manufacturer shall only be responsible for the safety characteristics of this device within the scope of the legally applicable regulations if it is operated by the user in accordance with the operating instructions and repaired by ACI Laser GmbH itself or someone appointed by and acting under the instructions of ACI Laser GmbH.

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Table of Contents

1	Introduction	7
2	Important Information	7
2.1	Intended Use	8
2.2	Improper Use	8
2.3	Notices in the Document	9
2.4	Warranty	10
2.5	Technical Customer Service	11
3	Safety	12
3.1	Basic Safety Instructions	12
	Laser safety	12
	Emissions	13
	General	13
	Start up	13
	Operation	14
	Maintenance/care	14
3.2	Labels at the Device	15
	Warning signs	15
	Type plate	16
4	Description	17
4.1	Intended Purpose	17
4.2	Views of the Device	18
	Front side	18
	Rear side	19
4.3	Technical Specifications	20
	Laser marking system	20

Table of Contents

	Usable mounting area of the T-slot plate	20
	Height adjustment	20
	Max. component heights and marking fields	20
	Maximum working areas	20
	Safety door	20
	Laser protection screen	20
	Lighting	21
	Extraction	21
	Operation	21
	Laser protection class	21
	Interfaces	21
	Electrical data	21
	Operating conditions	21
	Weight without laser	21
	Dimensions without laser	21
	Options	21
4.4	Scope of Delivery	22
5	Installation	23
5.1	Unpacking	23
5.2	Setting Up	24
5.3	Assembly	25
5.3.1	Connections	25
	Rear side	25
	Workroom	25
5.3.2	Laser Marking Device Assembly	26
	Connection of power cables and fiber laser cable	26
5.3.3	Extraction Assembly	26
5.3.4	Power Connection	26
5.4	Checking the Installation	27

6	Operation	28
6.1	Operating Elements	28
	Emergency stop button	29
6.2	Start	30
6.3	Handling	30
6.4	Fault Finding	31
7	Maintenance, Repair, Care	32
	Cleaning	32
8	Scrap Disposal	33
9	Appendix	34
9.1	Drawing of the T-Slot Plate	34
9.2	Assembly Dimensions	35
9.3	Working Area	36
9.4	EC Conformity Declaration	37
10	Index	39

Table of Contents

1 Introduction

Dear customer,

Thank you for the confidence which you have shown in us by purchasing our quality product. We would like to wish you every success with the use of the devices.

Make yourself familiar with these operating instructions before starting use. It tells you how to use the new devices correctly and safely, and takes you step by step through the actions which have to be performed before using it for the first time.

You will find more detailed information on the enclosed CD-ROM.

2 Important Information

Our products are developed and manufactured under strict quality monitoring to give a long and fault-free service life.

This guarantees:

- highest quality and a long life,
- easy and safe operation,
- functional design,
- optimization for the intended purpose.

The **Workstation BASIC** is state-of-the-art. The Declaration of Conformity confirms that the manufacturer has complied with the relevant directives. The CE mark is located on the type plate.

Please read these operating instructions carefully from the beginning in order to avoid errors and risks.

Reference is made to residual hazards at the relevant places in the operating instructions. Please also take note of the warning notice stickers on the device.

2.1 Intended Use

- The **Workstation BASIC** is intended exclusively for use with the following laser marking device and the associated **Magic Mark** software:
Economy Fibre **DFL Ventus Marker**
- Usage for the intended purpose includes observance of these operating instructions, the operating instructions of the laser marking device, the instructions in the software manual and the warning stickers on the device.

2.2 Improper Use

All other uses other than use for the intended purpose shall be deemed to be improper use!

The workstation must not be used by:

- persons who have not read or understood these operating instructions,
- persons who have not been instructed in the proper operation,
- persons who are under the influence of alcohol and or drugs, or
- persons whose alertness is impaired by medicines or other influences.

The workstation must not be used:

- if protective/safety devices are bridged, defective or if they cannot reliably fulfil their function,
- if there is a suspicion that direct or leakage radiation can emanate.




The supplier/manufacturer shall not be liable for personal injury or material damage resulting from improper use of the workstation itself or the safety devices.

2.3 Notices in the Document

Take note of the warning notices, take the specified actions and observe the prohibitions. A warning notice warns of a possible hazard and contains recommendations for preventing the hazard occurring. Key words indicate the type of hazard, symbols emphasise this visually.

Follow the stated measures for preventing hazards to the operator or tangible material assets.

The following classification of dangers are used in these safety instructions:

 DANGER
RISK OF DEATH OR SERIOUS INJURIES! Indication of an imminent danger, which will result in death or serious injuries if the appropriate precautionary measures are not taken.
 WARNING
DANGER OF INJURIES AND/OR RISK OF PROPERTY DAMAGE. Indication of an immediately impending hazard which can cause serious injuries or property damage if the appropriate precautionary measures are not taken.
 CAUTION
RISK OF PROPERTY DAMAGE. Indication of a possible hazard which may cause damages of the equipment if the appropriate precautionary measures are not taken.

Important Information

Additional information on working with the device and protection of the environment are emphasised as follows:

NOTICE
Useful additional information and tips!
ENVIRONMENT
Protect the environment! Instructions for observing environmental protection regulations!

2.4 Warranty

The manufacturer guarantees that the product does not have any manufacturing or material defects.

The warranty period shall be 12 months from the dispatch date in as far as no other contractual ruling has been made.

The scope of warranty is limited to the repair or replacement of the product supplied by the manufacturer.

The manufacturer is responsible for returning repairs under warranty to the customer, the customer is responsible for returning the device to the manufacturer.

The manufacturer does not accept any liability,

- if the product has been damaged by incorrect handling or operation, or as a result of improper use,
- if seals on the device have been broken,
- for damage caused by use under unauthorized environmental conditions,
- for consequential damage.

2.5 Technical Customer Service

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NOTICE

The workstation may only be maintained and repaired by the manufacturer. Any manipulations on the device or breaking the warranty seal will void any claims under warranty.

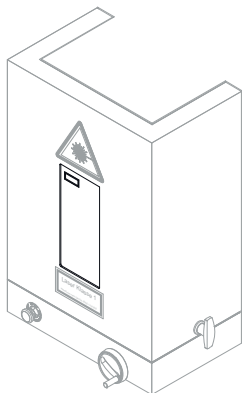
3 Safety

3.1 Basic Safety Instructions



The following safety instructions have fundamental importance for the use of the workstation, and for its care and maintenance. They must always be followed and are only stated centrally here.

Laser safety



If used properly, the workstation with an integrated laser marking device can be operated in laser protection class 1.

The laser protection screen in the viewing window is matched to the characteristics of the laser marking device. The specification corresponds at least to the required protection level and can be taken from the adhesive label on the window.

- Only use the workstation and laser marking device in the combination supplied by the manufacturer!
- If the protection screen is damaged, the device must not be operated.

Emissions

- Chemical and physical reactions during the laser marking can cause
 - gases,
 - vapours,
 - aerosols,
 - dusts,
 - mists or
 - other reaction products

to be given off from the material surface.

These may be toxic, depending upon the material being processed. The operating company must therefore provide effective extraction. Information about this can be found, for example, in the VDI Guideline 2262 1 to 3 "Air Quality in the Work Place".

General

- Read the Operating Instructions, and keep them at hand at all times.
- Follow the Operating Instructions for the laser marking device.
- Follow the Operating Instructions for the air conditioner and the instructions for any other devices made by other manufacturers (for example extraction units).
- Do not mark any easily flammable or combustible materials.

Start up

- Each time before starting up, ensure that all safety devices are mounted and working perfectly.
 - Covers
 - Door mechanism
 - Emergency stop button
- Never use the device system immediately after large temperature changes. Condensation water may damage the device.

Safety

Operation

- The workstation may only be operated by trained personnel. It is advisable to log both the initial training as well as the regular refresher courses.
- The device may only be operated when connected to an alternating voltage supply corresponding to the specifications on the type plate.
- The effectiveness of the protective conductor must be regularly checked and confirmed by an authorized skilled worker.
- If a defect occurs in the workstation, it must be disconnected from the power supply system and secured against being switched on again.

Maintenance/care

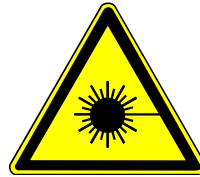
- Maintenance and repair work on the workstation may only be performed by the manufacturer.
- Disconnect the device from the power supply before starting cleaning and care tasks.
- Do not touch the electrical/electronic components.

3.2 Labels at the Device

Warning signs

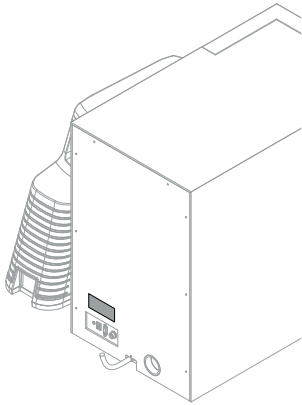
The warning signs on the device indicate possible residual hazards.

- On the workroom door: Warning about laser radiation!



Safety

Type plate



The type plate on the rear of the workstation contains information about:

- Serial number,
- Manufacturer,
- Date of manufacture,
- Operating voltage/frequency range,
- Power consumption,
- Fuse,
- Laser protection screen on the device.

4 Description**4.1 Intended Purpose**

The manual workplace solution **Workstation BASIC** is characterized by its large workroom. You can mount workpieces with an area of up to 340 mm x 360 mm on its T-slot plate.

The integrated manually operated Z axis allows marking on work pieces with differing heights.

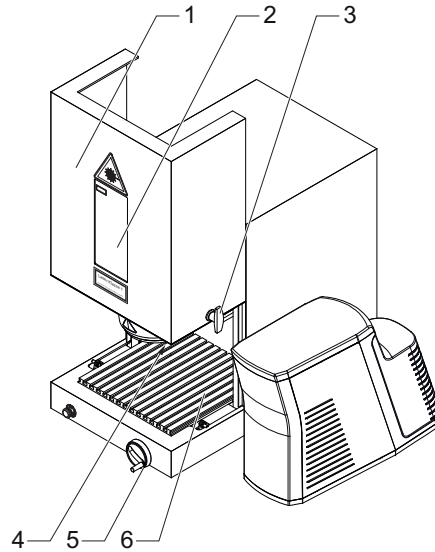
The integration of a rotary module for outline marking is possible.

An extraction and filter unit can be connected and controlled.

Description

4.2 Views of the Device

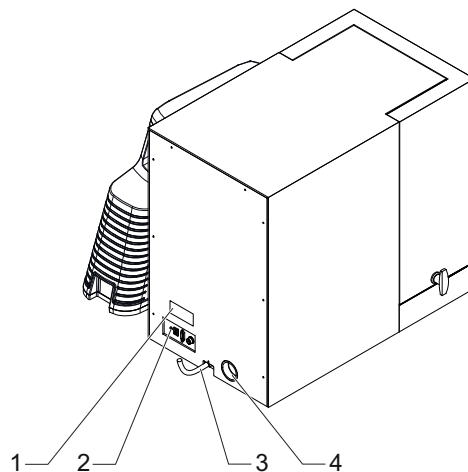
Front side



- (1) Safety door
- (2) Viewing window
- (3) Door locking handle
- (4) Workroom
- (5) Crank handle for Z axis
- (6) T-slot plate

There is also an adapter in the workroom available for an optionally connectable rotary module.

Rear side



- (1) Type plate
- (2) Connections rear side
- (3) Fiber laser cable
- (4) Extraction connector

Description

4.3 Technical Specifications

Laser marking system **Economy Fibre:** **DFL Ventus Marker**

Usable mounting area of the T-slot plate Width x Depth: 340 mm x 360 mm

Height adjustment Stroke length Z axis: 150 mm

Max. component heights and marking fields

Laser group	Objective	Max. component height	Marking field
Economy Fibre	F-Theta 163	150 mm	110 mm x 110 mm
	F-Theta 100	218 mm	60 mm x 60 mm

Maximum working areas The working areas correspond to the physical marking fields of the laser systems.

Safety door Manually movable

Laser protection screen Width x Height: 276 mm x 124 mm
Specification: 1040 - 1100 nm, D AB6 IR AB6 (DIN EN 12254)
 >1100 - 1185 nm, D AB6 IR AB6 (DIN EN 12254)
 >1185 - 1215 nm, D AB5 IR AB5 (DIN EN 12254)
 for Yb:fibre laser

The listed laser protection screen specifications are the minimum requirements for the protective windows. Depending on the application, laser protection screens with higher levels of protection may be installed. The specifications of the laser protection screen can be found on the adhesive label on the window.

Lighting	Integrated workroom lighting
Extraction	Connection for external extraction unit is ready
Operation	Integrated membrane keyboard/operating software
Laser protection class	1
Interfaces	Interface: Connector for rotary module Power connection: 24 V
Electrical data	Connection values: 24 V/4 A Power consumption: Max. 6 W
Operating conditions	Working temperature: 15°C - 35°C Air humidity (rel.): 30% - 85%, not condensing
Weight without laser	56 kg
Dimensions without laser	Length x Width x Height: 850 mm x 450 mm x 680 mm Height 1024 mm when the door is open
Options	<ul style="list-style-type: none">• Workpiece holders• Laser extraction unit• Rotary module

4.4 Scope of Delivery

- Workstation with power adapter
- Operating instructions

Optional:

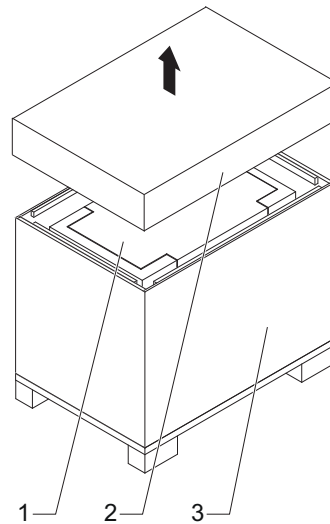
- Extraction unit with control cable and extraction hose
- Rotary module

NOTICE

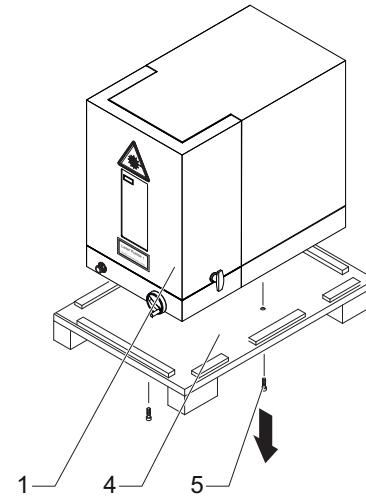
Check that the delivery is complete and undamaged. Please contact our service department if you have any queries.

5 Installation

5.1 Unpacking



- (1) Workstation
- (2) Lid
- (3) Carton



- (4) Pallet
- (5) Fixing screws

The workstation is supplied packed in a carton on a pallet. It is screwed to the pallet, and secured by tensioning straps.

The accessories are located in the workroom.

1. Remove the tensioning straps.
2. Remove the lid (2).
3. Remove the carton (3).
4. Lift the pallet (4) bearing the workstation (1) with a suitable device (such as a lifting truck), and remove the fixing screws (5).

NOTICE

The **Workstation BASIC** weighs 56 kg.

5. Place the device on a suitable flat surface.
6. Remove the accessories from the workroom, and put them in a safe place.
7. Check the scope of delivery.

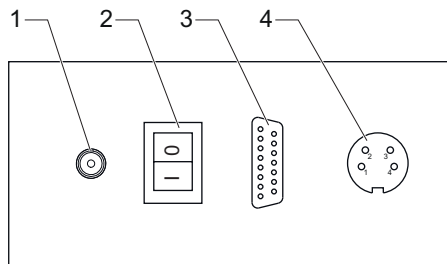
5.2 Setting Up

1. Place the workstation on a stable, flat table.
2. Use a spirit level to check that the workstation is horizontal.
It can be adjusted by screwing the four feet in or out as necessary.

5.3 Assembly

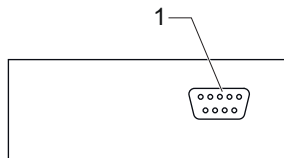
5.3.1 Connections

Rear side



- (1) Power input module
- (2) Power switch
- (3) Interface rotary module
- (4) Interlock

Workroom



- (1) Connector for rotary module

5.3.2 Laser Marking Device Assembly

1. Fasten the laser marking unit to the mounting panel of the workstation, following the laser marking unit's operating instructions.
2. Connect the connecting cables to the laser marking device.

Connection of power cables and fiber laser cable

The power cables and the BDO fiber laser cable of the laser marking device between the laser head and the supply unit must be connected.

1. Unscrew the rear wall of the workstation and the mounting block.
2. Plug in the power cables and the BDO fiber laser cable.
Ensure that the fiber laser cable is not kinked - observe the operating instructions of the laser marking device.
3. Screw on the mounting block and rear wall, tightening the screws by hand.
Ensure that the cables are not pinched in the process.

5.3.3 Extraction Assembly

1. Connect the control cable between the extraction unit and the laser marking device.
2. Connect the extraction hose.

NOTICE
For all other work, follow the operating instructions for the extraction unit.

5.3.4 Power Connection

Connect the delivered power adapter to the power input module of the workstation.

5.4 Checking the Installation



RISK OF PROPERTY DAMAGE.
Perform the following tests to avoid material damage.

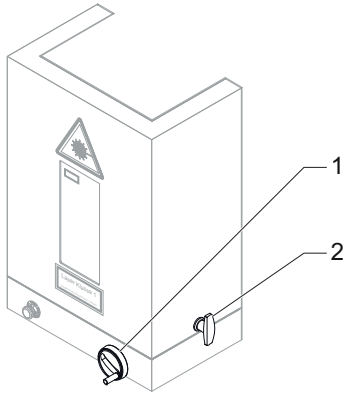
Please check the following points again before you bring your workstation into operation.

- Have the mechanical and electrical installations been performed correctly and completely?
- Does the fuse for the device correspond to the available operating voltage?
- Do the environmental conditions meet the requirements (temperature, air humidity)?
- Are you familiar with the essential laser protection regulations? Have all the laser safety measures been taken?

Operation

6 Operation

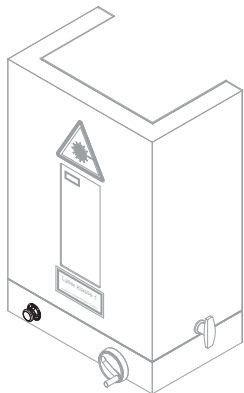
6.1 Operating Elements



The workstation possesses:

- a crank handle (1) to move the Z axis,
- door locking handles (2) on both sides of the door,
- a power switch at the rear of the device.

Emergency stop button



The emergency stop button is located on the left-hand side of the front of the device. Stop the machine by pressing the emergency stop button whenever a situation arises which poses danger to the operating personnel or the device system.

The emergency stop button interrupts the power supply to the rotary module and breaks the laser safety circuit.

 **WARNING**

DANGER OF INJURIES AND/OR RISK OF PROPERTY DAMAGE.

Before releasing the emergency stop button, ensure that the cause of the danger has been rectified!

6.2 Start

NOTICE

Keep to the switching sequence on each start.

1. Start the laser marking device in accordance with the operating instructions.
2. If the door to the workroom is closed, open it in order to initialize the laser safety circuit.
3. Activate the power switch for the workstation.
4. The first time you use this device, the settings for an optionally installed rotary module must be entered in the software.

You will find more detailed information in the software manual.

6.3 Handling

The system is operated via the marking software.

All operating sequences are controlled from the control PC via the laser control interface of the laser marking device.

All the parameters are exclusively entered on the keyboard of the control computer.

This also applies to operation with the optional rotary module.

NOTICE

Opening the door breaks the laser safety circuit.

NOTICE

Detailed information for using the marking software is contained in the provided software manual.

6.4 Fault Finding

Problem/Fault	Possible cause	Elimination
Cut off	Emergency stop button pressed	Releasing the emergency stop button
Safety circuit open	Door not fully closed, there may be a flat foreign body in the door gap	Check and clear the door gap, press the Door close button

NOTICE

Please contact our Technical Customer Service in the first instance if the fault cannot be eliminated as described above.

7 Maintenance, Repair, Care

All maintenance and repair work must be performed exclusively by the manufacturer.

We recommend you to perform maintenance at intervals of 24 months.

The right to claim under warranty is lost as soon as third parties work on or modify the device.

Cleaning

 WARNING	
	DANGER OF INJURIES AND/OR RISK OF PROPERTY DAMAGE. Ensure that the power plug has been pulled out before starting the maintenance and cleaning work!

Clean the normally accessible areas of the workstation at regular intervals.

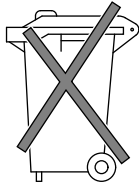
Do not use any sharp objects or aggressive cleaning agents for cleaning.

8 Scrap Disposal

ENVIRONMENT

Protect the environment!

For a fee, the customer will accept return of the laser device and dispose of it properly in a manner that is environmentally compatible.



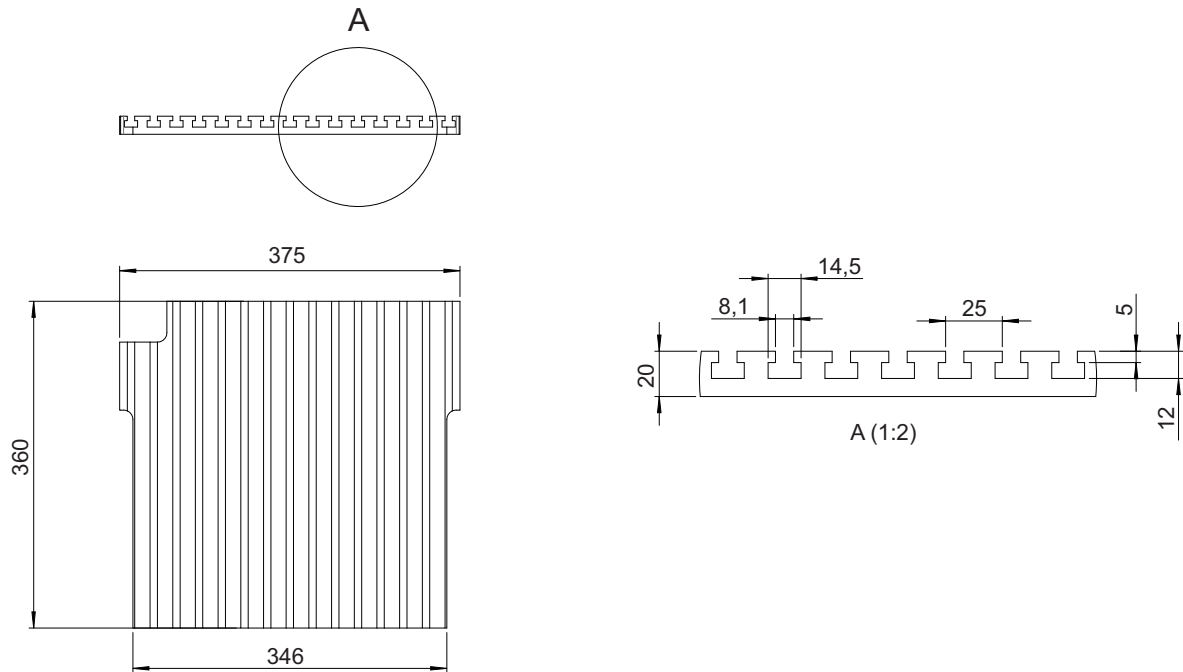
Environmentally sensible disposal of electrical and electronic equipment!

Electrical and electronic equipment contains valuable materials that should be supplied to recycling or recovery.

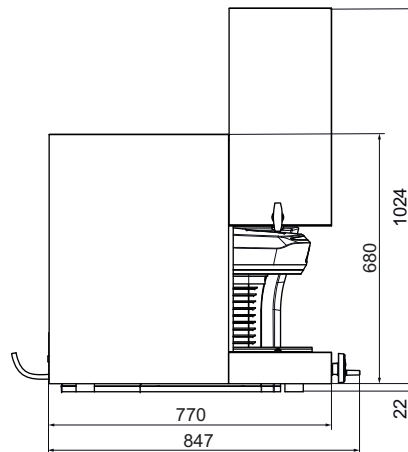
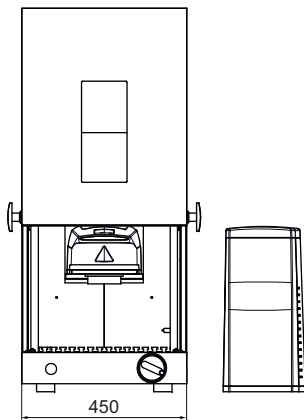
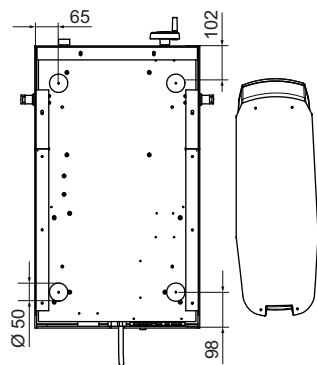
Please dispose of electrical and electronic equipment at qualified collecting points separate from municipal waste.

9 Appendix

9.1 Drawing of the T-Slot Plate



9.2 Assembly Dimensions

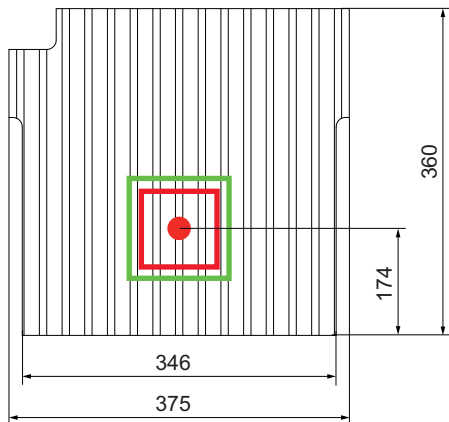


9.3 Working Area

Economy Fibre

F-Theta 163

F-Theta 100



Usable mounting area

340 mm x 360 mm

Marking field = working area

F-Theta 100 60 mm x 60 mm

F-Theta 163 110 mm x 110 mm

Maximum component height

F-Theta 100 218 mm

F-Theta 163 150 mm

9.4 EC Conformity Declaration

We herewith declare that the device described below, by virtue of its design and construction and moreover in the type brought onto the market by us, conforms to the relevant safety and health requirements of the applicable EU Directives. We further declare that the device as defined hereinbelow conforms to class laser safety class 1.

In the event of any alteration to the device or the intended purpose which has not been approved by us, this statement shall thereby be made invalid.

Device:

Laser protection housing with marking laser

Type:

Laser protection housing:

Marking laser:



Applied EC directives and standards:

Directive 2014/30/EC through

EN 55022:2010

Electromagnetic compatibility

EN 55024:2010 + A1:2015

Directive 2011/65/EU on Hazardous

EN 61000-3-2:2014

Substances (RoHS)

EN 61000-3-3:2013

EN 50581:2012

Directive 2006/42/EC through Machines

EN ISO 12100:2010

EN ISO 13857:2008

EN 349:1993+A1:2008

EN 60204-1:2006+A1:2009

EN 60825-4:2006+A1:2008+A2:2011

Representative for compiling technical documents: Mirko Wunderlich, Steinbrüchenstraße 14, 99248 Grammetal OT Nohra

Signed on behalf of the manufacturer by:

Nohra, 01.02.2019

ACI Laser GmbH

Mirko Wunderlich, Geschäftsführer

Steinbrüchenstraße 14, 99428 Grammetal OT Nohra

10 Index**A**

Air humidity (rel.) 21

C

Care 14, 32

CE symbol 7

Cleaning 32

Component height 20

Connection values 21

Connections 25

Connections rear side 19

Crank handle 18

Customer service 11

D

Date of manufacture 16

Defect 14

Dimensions 21

Door locking handle 18

E

Electrical data 21

Emergency stop button 29

 Releasing 29

Emissions 13

Extraction 13, 21

 Assembly 26

Extraction connector 19

F

Fault finding	31
Fiber laser cable	19
Connection	26
Frequency range	16
Front side view	18
Fuse	16, 27

H

Height adjustment	20
-------------------------	----

I

Improper use	8
Instructions	14
Intended use	8
Interfaces	21

L

Laser marking device assembly	26
Laser marking system	20
Laser protection class	12, 21
Laser protection screen	12, 16, 20
Laser safety	12
Laser safety circuit	30
Liability	8
Lighting	21

M

Maintenance	14, 32
Manufacturer	16
Manufacturer's address	11
Marking field	20

Mounting area of the T-slot plate	20
O	
Operating conditions	21
Operating voltage	16, 27
Operation	14, 21, 28
Options	21
P	
Power cables, connection	26
Power connection	26
Power consumption	16, 21
Power input module	26
R	
Rear side	
Connections	25
View	19
Repair work	14, 32
Residual hazards	7, 15
S	
Safety door	18, 20
Safety instructions	12
Scope of delivery	22
Scrap disposal	33
Serial number	16
Start up	13
Switching sequence	30
T	
Technical specifications	20
T-slot plate	18

Index

Mounting area	20
Type plate	16, 19
V	
View of device	18
Viewing window	18
W	
Warning signs	15
Warranty	10, 32
Weight	21
Working area	20
Working temperature	21
Workroom	18, 25



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Mark your territory...