

Status: 02/2023



Products need labeling

Diode-pumped ytterbium fiber lasers



Laser marking systems

Made in Germany

Brief introduction of important facts

When it comes to precisely and durably marking smallest components up to larger workpieces, laser marking is economic. The benefits are manifold:

- **Focus on smallest spaces**, as laser beams allow enormous bundling
- **Flexibility**, as marking is possible on metals and plastics, even at spots that are difficult to access
- **High marking speeds**, as strongly focused light must not overcome mechanical resistance
- **No mechanical force** on components, as heat energy is brought in without direct contact
- **Highly resistant**, as laser markings are insensitive to acids or alkalis, UV radiation, heat and abrasion

cab marking laser systems have been designed for a wide range of applications. The marking of metal or plastic products that are not in motion is possible in all kinds of industries:

- **Medtech** - machine-readable encoding of medical or surgical instruments according to the guidelines for Unique Device Identification
- **Aerospace** - DataMatrix encoding of strategic components, such as turbines
- **Electronics** - permanent encoding and alpha-numeric data on PCB, clamps or switches in terms of quality assurance
- **Automotive** - traceability of automotive components and units due to laser marked encoding. Marking includes e.g. manufacture data and dates, as well as part, serial and lot numbers

Scopes of delivery, design and technical specifications correspond to the date of the printing. Subject to change. The data provided in the catalog do not represent any warranty or guarantee.



Information is also available on the Internet:
www.cab.de/en/marking-laser

Sample applications

cab marking laser systems mainly work with metals and plastics.
Depending from the requirement and material, different methods are known:



Traceable QR encoding



Cast part marking

Engraving

Evaporation with high energy density removes the material.
An indentation with a sharp outline occurs.



Medical instruments



Traceable sterilization

Annealing

is mainly applied with highly alloyed stainless steel
as well as with titanium.



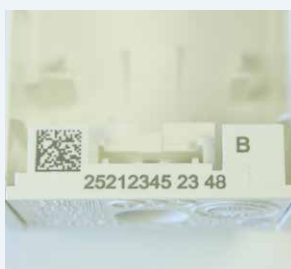
Aluminum rating plates



Automotive components

Ablating

The laser ablates the top layer to uncover
the underneath material. Examples include
anodized layers or paint coatings.



Consumption meters



Medical size allocation

Coloring

is applied with plastics. The way the color changes
depends from the chemical composition of the material
as well as from ingredients and fillers.



Plastic ident clips



Cable marking

Foaming

The laser melts into the surface of the material.

Marking lasers FL+

The performance and quality of a marking mainly depends from the output power and the laser beam focus.

cab FL⁺ marking lasers are diode-pumped and air-cooled. They have high beam quality and pulse peak power. Laser source output powers are from 20 to 50 Watt.

20, 30, 50 Watt

Different plano-spherical lenses allow marking in fields from 69 x 69 to 290 x 290 mm. Marking is possible on plastics and metals as well as on coated surfaces.

FL⁺ marking lasers consist of two units: The control unit has a laser source already integrated. The scan head is connected to the laser source via a fiber. It may be assembled in all possible position.

1.1 - 1.3

cab marking lasers stand for

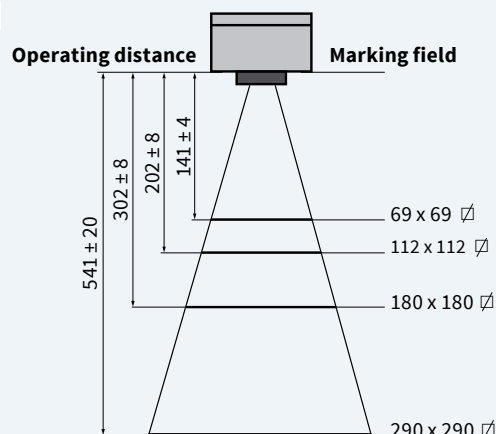
- innovative technologies,
- focus on smallest spaces,
- high marking speeds,
- flexibility,
- resitancy

The control unit with the laser source are incorporated in a 19" rack.



Technical data of plano-spherical lenses F-Theta

9.1 - 9.6



Lenses are available for marking fields of various dimensions. The smaller the marking field, the higher the resolution.

Plano-spherical lens	100.1	160.1	254.1	420.1
Operating distance FL ⁺ mm	141 ± 4	202 ± 8	302 ± 8	541 ± 20
Marking field mm	69 x 69	112 x 112	180 x 180	290 x 290
Spot diameter μm	~25	~35	~50	~85
Δ Resolution dpi	1,000	725	500	300

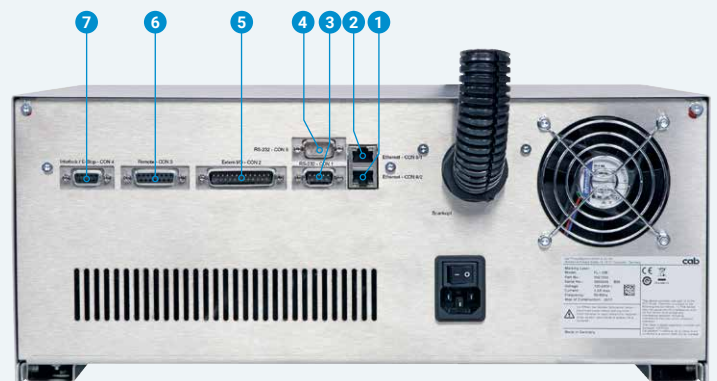
Technical data of the marking laser

		1.1	1.2	1.3
Marking laser		FL+20	FL+30	FL+50
Laser source		Ytterbium fiber laser, pulsed, air-cooled		
cw output power	max. W	20	30	50
Pulse energy	mJ	1	1	1
Wave length	nm	1,064		
Beam quality M ²		<1.8		
Pulse width	ns	80 - 120		
Pulse frequency	kHz	2 - 200		
Fiber coupling	m	2.5		
Scan head				
Assembly		horizontal / vertical		
Marking speed	mm/s	~5,000		
Pilot laser				
Wave length	nm	650		
cw output power	mW	<1		
Electronics				
Processor 32 bit clock rate	MHz	600		
Main memory (RAM)	MB	256		
Data memory (Flash)	MB	512		
Extensions (Flash)		USB memory stick		
Dimensions and weights		Rack 4RU 19"		
Control unit W x H x D	mm	420 x 178 x 420		
Weight	kg	16		
Scan head W x H x D	mm	170 x 110 x 330		
Weight	kg	7		

Operation panel				
Key switch		Laser source ON/OFF		
Push buttons	Pilot laser	ON/OFF		
	Shutter open	open / close		
Indicator	Emission	Laser source active		
	Laser error	Laser source error		
	Ready	Laser source ready		
	Power	Power supply ON		
	Pilot laser	ON		
	Shutter open	Safety lock open		
Connector	Service	USB mini		
Operating data		FL+20	FL+30	FL+50
Power supply		100-240 VAC, 50/60 Hz		
Power switch		ON/OFF		
Power consumption	Standby W	65		
	max. W	175	200	250
Temperature / humidity	Operation	5-40 °C / 10-85 % not condensing		
	Storage	0-60 °C / 20-80 % not condensing		
	Transport	-25-60 °C / 20-80 % not condensing		
Approvals		CE, FCC class A, ICE S3		
Laser safety class	EN60825-1			
	Laser source	Class 4		
	Pilot laser	Class 2		

Interfaces for process flow control

- Ethernet 10/100 Base** to connect a PC. As delivered, the device has been configured with an IP address or in DHCP mode.
- Ethernet 10/100 Base** to connect periphery. Bidirectional data transfer to end devices is enabled.
- + **2 x RS232 C** to connect periphery. Bidirectional data transfer to end devices is enabled.
- Digital I/O** for control and monitoring. 8 freely programmable inputs and outputs are provided. Protective circuit according to IEC 61131-2
- Remote** to switch on the laser as well as for monitoring.
- Interlock / E-Stop** to integrate to external safety circuits and to connect an external E-stop.



Laser safety housing LSG+100E



The laser safety housing LSG+100E offers an industrial solution for marking component series with a marking laser FL⁺. The rugged metal design besides a large work area provides enough space to integrate both the laser beam source and an industrial PC in a 19" rack mount.

The keyboard and the monitor are ergonomically assembled to a pivot arm. The operation door opens and closes electrically.

		3.1		3.2	
Laser safety housing		LSG ⁺ 100E 230 V		LSG ⁺ 100E 120 V	
Work area W x H x D	mm	980 x 460 x 980			
Groove plate T-slot W x D	mm	550 x 375			
Pitch	mm	25			
Z-axis stroke	mm	440			
Position accuracy	mm	0.02			
Repetitive accuracy	mm	± 0.02			
Traversing speed max.	mm/s	60			
Interior lighting		Low energy light bulb			
Operation door		electrical opening / closing			
Opening / closing time	s	<2			
For plano-spherical lens	type	100.1	160.1	254.1	420.1
Marking field	mm	69 x 69	112 x 112	180 x 180	290 x 290
Operating distance	mm	141 ± 4	202 ± 8	302 ± 8	541 ± 20
Workpiece height	max. mm	60 - 490	430	330	90
Workpiece weight	max. kg	50			
Dimensions and weight					
W x H x D	mm	1,000 x 2,280 x 1,120			
Laser prot. window W x H	mm	200 x 100			
Machine stands	Ø mm	80			
Suction nozzle	Ø mm	50			
Rack mount for marking laser FL ⁺ and PC		4RU 19"			
Weight	kg	395			

Operating data			
Power supply		220-240 VAC, 50 Hz	100-140 VAC, 60 Hz
Power switch		ON/OFF	
Temperature / humidity	Operation	5-40 °C / 10-85 % not condensing	
	Storage	0-60 °C / 20-80 % not condensing	
	Transport	-25-60 °C / 20-80 % not condensing	
Laser safety class EN60825-1		Class 1	
Approval		CE	
Operation panel			
LED indicators		Power Ready	Emission Error Marking
Buttons illuminated		Control ON/OFF Focus finder ON/OFF Extraction ON/OFF Lighting ON/OFF Start Z-axis up / down X-axis left / right Rotary axis left / right Door open / close Reserve	
Switch		E-stop	
Key switch		automatic / manual	
Monitoring			
Safety circuits		closed	
Collective error		Marking laser Extraction device	
Interfaces			
Interlock / E-stop FL ⁺			
Remote FL ⁺			
Digital I/O FL ⁺			
Stepper motor Z-axis, X-axis, rotary axis			
Extraction and filter device AF1.1			

Laser safety housing LSG+100E



Setup door

The large setup door allows easily accessing the laser safety housing LSG+100E. At this, jigs may comfortably be mounted on the groove plate in the well-lit work area.

Linear axis Z400

It provides precise and fast focus adjustment. The linear axis is traversed with buttons integrated to the operation panel.

Accessories

- 2.1 **PC in 4RU 19" rack mount**
- 2.2 **Monitor 19"**
- 2.3 **Standard keyboard**
- 2.5 **Keyboard with trackball**
- 8.1 **Extraction and filter device AF1.1**
- 10.3 **Linear axis X400**
- 11.1 **Rotary axis D30**
- 11.2 **3-jaw chuck D30**
- 12.1 **Axis controller 2S**
- 13.1 **Rotary table module RTM650**

Laser label marker LM+

4.1, 4.2



		4.1	4.2
Laser label marker		LM+160.1	LM+254.1
Work area W x H x D	mm	160 x 5 x 190	
Position accuracy	mm	0.2	
Transport speed	mm/s	200	
Interior lighting		LED	
Material		Label or continuous material	
	thickness mm	0.055 - 0.3	
	weight up to g/m²	500	
	width mm	25 - 120	
Label height	max. mm	180	
Roll			
	outside diameter max. mm	300	
	core diameter mm	76	
	winding	inside / (outside on request)	
For plano-spherical lens	type	160.1	254.1
Marking field	mm	112 x 112	120 x 170
Operating distance	mm	202 ± 8	302 ± 8
Dimensions and weight			
W x H x D	mm	440 x 520 x 802	
Laser prot. window W x H	mm	100 x 50	
Machine stands	Ø mm	50	
Suction nozzle	Ø mm	50	
Weight	kg	22	
Operating data			
Power supply		100-240 VAC, 50/60 Hz	
Power switch		ON/OFF	
Temperature / humidity	Operation	5-40 °C / 10-85 % not condensing	
	Storage	0-60 °C / 20-80 % not condensing	
	Transport	-25-60 °C / 20-80 % not condensing	
Laser safety class EN60825-1		Class 1	
Approval		CE	

The laser label marker allows precise marking of labels of different sizes straight from the roll and cut them out without the need of additional tools.

After the marking, labels made of laser markable foil can be separated by a cutter or externally rewound.

Accessories

- 4.3 External rewinder
- 4.4 Hose set
- 4.5 Mobile cart
- 4.6 Console
- 4.7 Column for monitor
- 8.1 Extraction and filter device AF1.1

Operation panel

LED indicators	Continuous material Labels
Push buttons	Material feed forward Material feed backwards Cut
Switches	Automatic / manual E-stop

Monitoring

Safety circuits	closed
Wipe-down roller	locked
Material	in marking position / no material

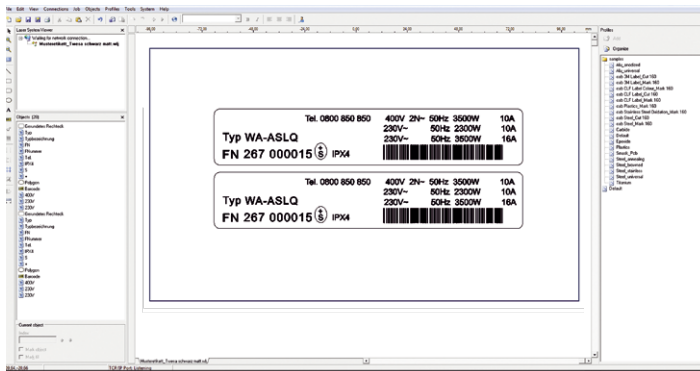
Interfaces

Interlock / E-stop FL ⁺
Serial RS232C FL ⁺ CON5
External E-stop
Cutter



Laser label marker LM⁺ with a mobile cart, an external rewinder on the console, a column with a monitor attached and an extraction and filter device AF1.1

- graphic layout design,
- marking control,
- process monitoring



Software		
Software	cabLase Editor 5	
Fonts		
Font types	All TrueType fonts included in Windows, filled or outline; laser typical single, double, triple line fonts. All font types can be freely scaled and “wobbled”.	
Alignment	Any alignment and direction of rotation, circular ark marking	
Character spacing	compress and stretch	
Graphics		
Graphic elements	Lines, circles, rectangles, polygons; hatching of all closed surface elements	
Graphic formats	PLT, DXF, BMP, JPG, PCX, WMF, EPS, TIF; All graphic elements can be scaled, moved, rotated, grouped or mirrored. Special tools are available to align the objects.	
Codes		
1D barcodes (linear)	Interleaved 2/5 Code 39, Code 93 Code 128	Codabar EAN UPC
2D codes	DataMatrix, ECC200, QR code	
	All codes are variable in height, modular width, ratio; check digit or inverted code output are options	

Serial numbers, time, date
Variable fields
Add graphic data of Windows programs
Program laser parameters
Memory process data and parameters
Control digital inputs and outputs
Control and monitor additional axes, e.g. stroke, rotary and linear

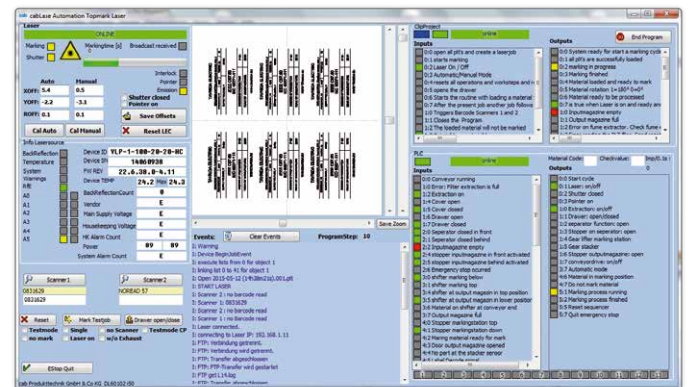
Operation system	Windows 10 (32/64 bit)
Processor	Min. Intel Core i5-6400, recommended i7-6700 or higher
Main storage	Minimum 8 GB, recommended 16 GB or higher
Hard disc	Memory requirements software 1 GB
Interfaces	Network card 10/100 Mbit for laser connection USB 2.0 connection for dongle

cabLase supports marking without the need of a PC. Marking layouts and related fonts are downloaded by the software to the laser control unit and managed. Digital signals provide process control and monitoring.

cabLase allows remote control by a master control unit such as a PC or PLC serially, via Ethernet or ProfiBus. Programming commands are provided to select a layout, change marking data, control and monitor processes.

if lasers are integrated in complex production processes. Objects and parameters, layouts and variable data can be set, administrated and processed externally via a PC or PLC.

for customer-specific marking applications. A library of commands provides all the functions of the cabLase marking software.



cabLase provides program modules to integrate a marking system in MES and ERP platforms. As cab is a member of the SAP Printer Vendor Program, marking applications may be for example connected to the SAP data stream.

Industry 4.0 and the IoT represent smart production. Usable software and connectivity are implementation keys. Future-proof cab marking lasers provide all the interfaces necessary for programming and data transfer.

We gladly advise you in your application!

9.1 - 9.2



At delivery, all marking laser systems include a cabLase Editor 5 USB software dongle.

Extraction and filter device AF1.1

Laser marking processes produce poisonous dusts and gases. The extraction and filter device protects the health of the operators and prevents both the laser area and lens from contamination. At this, it also ensures that the laser power maintains. The air from the working area is extracted by a highly performant turbine via a flexible hose.

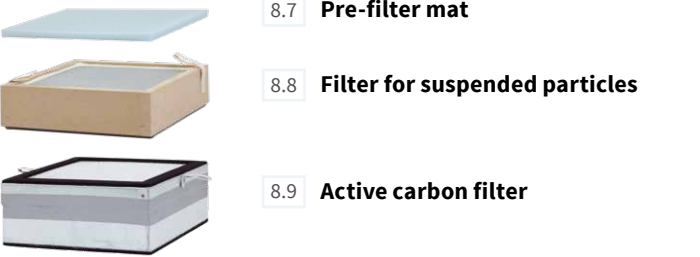
The pollutants resp. dusts are separated by the pre-filter and the filter for suspended particles. Gaseous pollutants are absorbed by the active carbon filter. Cleaned air is then returned to the environment.

The extraction and filter device has a modular design, filters are easy to exchange.

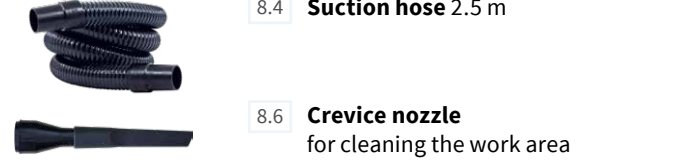


			8.1
Extraction and filter device			AF1.1
Suction capacity	max. m³/h	320	
Vacuum	max. Pa	12,500	
Filter		Filter class	
Pre-filter mat	M5	■	
Filter for susp. particles	H13	■	
Active carbon filter		■	
Dimensions and weight			
Device	Width	mm	355
	Height	mm	682
	Depth	mm	355
	Weight approx.	kg	35
Suction nozzle	NW	mm	50
Operating data			
Power supply		240 VAC, 50/60 Hz	
Power consumption	Standby	W	<40
	typical	W	400
	max.	W	1,200
Temperature / humidity	Operation	+5-40 °C / 10-85 % not condensing	
	Storage	0-60 °C / 20-85 % not condensing	
	Transport	-25-60 °C / 20-85 % not condensing	
Approval		CE	

Consumables



Accessories



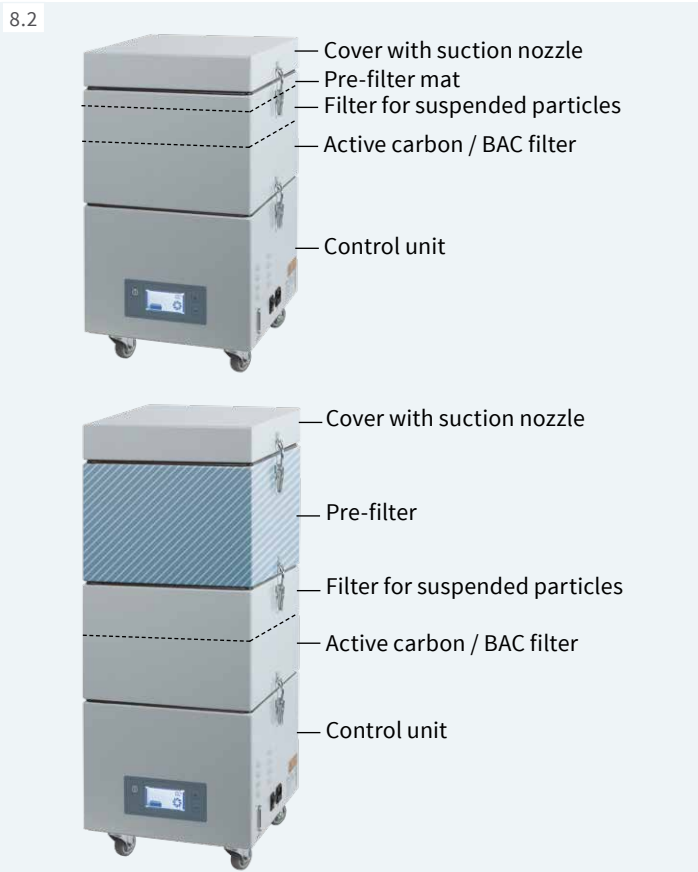
Operation panel	
Displays	LED
	Filter saturation
	Extraction ON/OFF
	Reset
Push button 1	Run / Standby
Push button 2	Reset
Retaining knob	Speed regulation
Interface	
	Digital I/O
Monitoring	Run / Standby
	Operation OK
	Collective errors:
	- Temperature error
	- Turbine failure
	- Filter saturated
	- Pre-filter error
Operation	Run / Standby

Extraction and filter device AF5

Laser marking processes produce poisonous dusts and gases. The extraction and filter device protects the health of the operators and prevents both the laser area and lens from contamination. At this, it also ensures that the laser power maintains. The air from the working area is extracted by a highly performant turbine via a flexible hose.

The pollutants resp. dusts are separated by the pre-filter and the filter for suspended particles. Gaseous pollutants are absorbed by the active carbon filter. Cleaned air is then returned to the environment.

The extraction and filter device has a modular design, filters are easy to exchange.



		8.2	8.3
Extraction and filter device		AF5	AF5 with pre-filter module
Suction power	max. m³/h	230	
Vacuum	max. Pa	11,000	
Filter equipment		Filter class	
Pre-filter mat	F5	■	-
Pre-filter	F7	-	■
Filter for suspended particles	H13	■	■
Active carbon / BAC filter		■	■
Dimensions and weights			
Device	Width	mm	350
	Height	mm	650
	Depth	mm	350
	Weight	~kg	40
Suction nozzle	NW	mm	50
Operating data			
Power supply		100-240 VAC, 50/60 Hz	
Power consumption	Standby	W	<40
	typical	W	400
	max.	W	1,100

Consumables

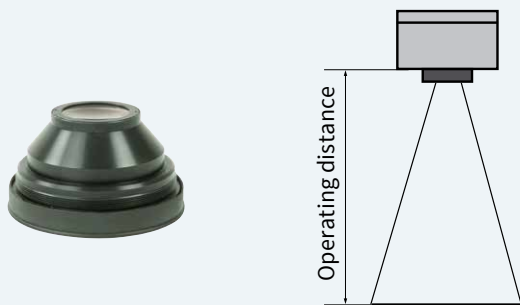
- 8.10 **Pre-filter mat**
- 8.11 **Pre-filter**
Compared to the mat, it absorbs approx. 10 times more pollutant particles and dusts.
- 8.12 **Filter for suspended particles**
- 8.13 **Active carbon / BAC filter**
- 8.3 **Pre-filter module**
for retrofitting
- 8.5 **Suction hose 2.5 m**
included in the AF5 scope of delivery
- 8.6 **Crevice nozzle**
for cleaning the work area;
included in the AF5 scope of delivery

Accessories

Temperature / humidity	Operation	+5-40 °C / 10-85 % not condensing	
	Storage	-25-55 °C / 20-85 % not condensing	
	Transport	-25-55 °C / 20-85 % not condensing	
Approvals		CE, FCC, cETLus, W3, CAN ICES-3	
Operation panel			
Displays		LCD color display	
	Filter saturation	Error	
	Filter status	Turbine / Temperature	
	Suction power	Machine error	
Push button 1		Run / Standby	
Push button 2		Suction power	
Interface			
	Serial RS232 C		
Monitoring	Run / Standby	Vacuum filter 1/2	
	Suction power	Rotation speed	
	Temperature error	Temperature	
	Turbine failure	Operating hours Run	
	Filter saturated	Operating hours standby	
	Filter pre-warning (75 %)		
Control unit		Run / Standby Suction power ± Reset	

Accessories

9.1 - 9.4



Plano-spherical lenses F-Theta FL+

Lenses can be equipped with marking fields of different sizes. The smaller the marking field, the higher the resolution.

Plano-spherical lens	100.1	160.1	254.1	420.1
Operating distance mm	141 ± 4	202 ± 8	302 ± 8	541 ± 20
Marking field mm	69 x 69	112 x 112	180 x 180	290 x 290
Spot diameter μm	~25	~35	~50	~85
Δ Resolution dpi	1.000	725	500	300

9.6

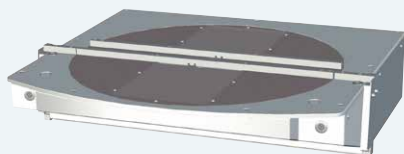


Protective glass for F-Theta

It is mounted on the plano-spherical lens F-Theta and can be replaced in case of a damage.

Protective glass for F-Theta	100	160	254	420
Outside diameter mm	80	75	75	114

13.1

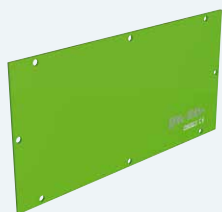


Rotary table module RTM650 for LSG+100E

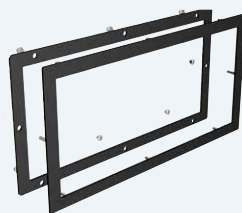
to assemble two jigs for a single or more workpieces. 180° rotation is released by two-hand operation.

Rotary table module		RTM650		
Rotary table diameter	mm	650		
Plano-spherical lens	type	100.1	160.1	254.1
Workpiece height	max. mm	360	300	150
Workpiece weight	max. kg	20 (workpiece carrier included)		
Switch accuracy		± 0.1 mm at = 600 mm		
Cycle time rotating		2.5 s / 180°		

14.1



15.1



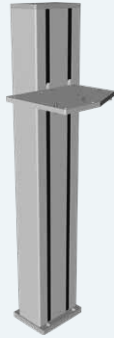
Laser protection window and assembly frame for LSG+100E

to be built in housings or doors to observe the marking process. The window may be assembled either directly or with the black anodized front panel and the back side frame behind the wall of the housing.

Laser protection window		100 x 200	
Assembly frame		100 x 200	
Dimensions	Width mm	228	228
	Height mm	128	128
	Thickness mm	3	2

Accessories

10.1, 10.2



Linear axes Z400, Z200 for FL+

They allow precisely positioning the scan head.

Linear axis		Z400	Z200
Traversing distance	mm	440	200
Position accuracy	mm	0.05	0.05
Repetitive accuracy	mm	± 0.05	± 0.05
Traversing speed	max. mm/s	60	20
Dimensions W x H x D	mm	110 x 840 x 220	110 x 510 x 220
Load capacity	kg	10	7
Weight	kg	16	9

10.3



Linear axis X400 for LSG+100E

It allows precisely positioning customized jigs or pallet carriers with a maximum weight of 50 kg.

Linear axis		X400
Traversing distance	mm	440
Position accuracy	mm	0.05
Repetitive accuracy	mm	± 0.05
Traversing speed	max. mm/s	60
Dimensions W x H x D	mm	835 x 110 x 220
Load capacity	kg	50
Weight	kg	16

11.1 - 11.3



Rotary axis D30 for LSG+100E

for marking on the circumference of a cylindrical workpiece. The latter can be clamped in the 3-jaw chuck.

Rotary axis		D30
Rotation speed	rpm	0 - 40
Operating torque	Nm	12
Increment	min. [arcmin]	2.5
Holding torque	Nm	2.0
Through bore	Ø mm	15
Workpiece	Ø max. mm	160
Distance to groove plate	mm	84
Dimensions W x H x D	mm	125 x 105 x 128
Weight	kg	3
3-jaw chuck		D30
Clamping range	inside Ø mm	23 - 76
	outside Ø mm	3 - 76
Connecting cable for rotary axis		D30
Length	mm	1,000

12.1, 12.2









Axis controller 2S for LSG+100E and FL+

It allows positioning of the linear and rotary axes via the RS232 or digital I/O interface.

Axis controller		2S
Dimensions W x H x D	mm	150 x 110 x 25
Interfaces for Z and rotary axis		
Digital I/O		for manual operation
RS232		for automatic operation
Power supply		24 VDC
Connecting cable for axis controller		2S
Length	mm	3,000


Delivery program

Pos.		Part no.	Devices
1.1		5527580	Marking laser FL ⁺ 20R
1.2		5527590	Marking laser FL ⁺ 30R
1.3		5527450	Marking laser FL ⁺ 50R
	Scope of delivery	Marking laser FL ⁺ USB software dongle cabLase Editor 5 Power cable type E+F, 1.8 m Patch cable CAT 5e, 3 m Assembly instructions DE / EN	
2.1		5570125	PC in 19" mount 4RU, DE
		5570135	PC in 19" mount 4RU, EN
2.2		5570130	Monitor 19"
2.3		5901626	Standard keyboard USB, DE
		5901677	Standard keyboard USB, EN
2.4		5901658	Optical mouse
2.5		5901621	Keyboard USB with trackball, DE
		5901651	Keyboard USB with trackball, EN
3.1		5528090	Laser safety housing LSG ⁺ 100E 230 V
3.2		5528095	Laser safety housing LSG ⁺ 100E 120 V
	Scope of delivery	Laser safety housing LSG ⁺ 100E Power cable type E+F, 1.8 m Connect. cable, 9/9 pin, 3 m, for Interlock / E-stop Connect. cable, 9/9 pin, 3 m, for remote Connect. cable, 25/25 pin, 3 m, for digital I/O Connect. cable, 15/15 pin, 3 m, for extraction AF1.1 Pivot arm for monitor with keyboard tray Assembly instructions DE / EN	

Pos.		Part no.	Devices	
4.1		5527265	Laser label marker LM+ 160.1	
4.2		5527485	Laser label marker LM+ 254.1	
	Scope of delivery	Laser label marker LM+ Power cable type E+F, 1.8 m Connect. cable, 9/9 pin, 3 m, for Interlock / E-stop Connect. cable, 9/9 pin, 3 m, for remote Connect. cable, 25/15 pin, 3 m, for extraction AF1.1 Funnel for scan head Guide 1 mm for label transport Guide 2 mm for label transport Cutter Closure for extraction Hinge with throttle valve for extraction Assembly instructions DE / EN		
Pos.		Part no.	Accessories	
4.3		5525355	External rewinder ER 4/300 LM	
4.4		5527655	Hose set LM+	
4.5		5527585	Mobile cart	
4.6		5527675	Console R/L	
4.7		5527705	Column for monitor	
Pos.		Part no.	Extraction and filter devices	
8.1		5907275	Extraction and filter device AF1.1 including filter set and integrated power cable type E+F, 2.5 m	
	Scope of delivery	Extraction and filter device including filter set Operator's manual DE		
Pos.		Part no.	Accessories	
8.4		5905818	Suction hose, 2.5 m	
8.6		5907174.001	Crevice nozzle	
Pos.		Part no.	Consumables	PU
8.7		5906617.001	Pre-filter mat AF1.1	10
8.8		5906618.001	Filter for susp. particles AF1.1	1
8.9		5906619.001	Active carbon filter AF1.1	1

Delivery program

Pos.		Part no.	Extraction and filter devices	
8.2		5907550	Extraction and filter device AF5 including filter set	
	Scope of delivery	Extraction and filter device including filter set Crevice nozzle Suction hose Power cable type E+F, 2 m Cable SUB-D25 male/male, 3 m Operator's manual DE / EN		
Pos.		Part no.	Accessories	
8.6		5907174.001	Crevice nozzle	
8.3		5907570	Pre-filter module with pre-filter	
8.5		5907537.001	Suction hose, 2.5 m	
Pos.		Part no.	Consumables	PU
8.10		5906555.001	Pre-filter mat	10
8.11		5907575.001	Pre-filter	1
8.12		5906569.001	Filter for susp. particles	1
8.13		5906570.001	Active carbon / BAC filter	1
Pos.		Part no.	Accessories	
9.1		5525039.001	Plano-sph. lens F-Theta 100.1 69 x 69 mm	
9.2		5527254.001	Plano-sph. lens F-Theta 160.1 112 x 112 mm	
9.3		5525038.001	Plano-sph. lens F-Theta 254.1 180 x 180 mm	
9.4		5527405.001	Plano-sph. lens F-Theta 420.1 290 x 290 mm	
9.6		5528305.001	Protective glass for F-Theta 100	
		5528310.001	Protective glass for F-Theta 160 and 254	
		5528315.001	Protective glass for F-Theta 420	
10.1		5527695	Linear axis Z400	
10.2		On request	Linear axis Z200	
10.3		5527690	Linear axis X400	

Pos.		Part no.	Accessories
11.1		5905933	Rotary axis D30
11.2		5905978	3-jaw chuck D30
11.3		5526156	Connecting cable D30
11.4		5528368	Foot switch
12.1		5527685	Axis controller 2S
12.2		5527665	Connecting cable 2S
13.1		5526030	Rotary table module RTM650
14.1		5907189	Laser protection window 100 x 200 mm
15.1		5527416	Assembly frame 100 x 200 mm
16.1		5527478	Adapter cable set FL-PCI/FL ⁺
16.2		5527479	Adapter cable set FL-TCP/FL ⁺
Pos.		Part no.	Software
17.1		5526096.001	USB Software dongle cabLase Editor 5
17.2		5526094	USB Software dongle cabLase Editor 5, save only

Overview of cab products

Label printers
MACH1, MACH2



Label printers
EOS 2



Label printers
EOS 5



Label printers
MACH 4S



Label printers
SQUIX 2



Label printers
SQUIX 4



Label printers
SQUIX 6.3



Label printers
SQUIX 8.3



Label printers
XD Q double-sided



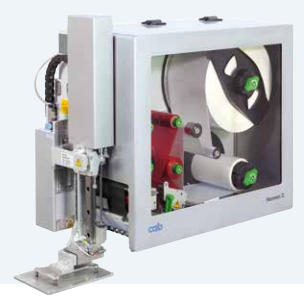
Label printers
XC Q two-colored



Print and apply systems
HERMES Q



Print and apply systems
Hermes C two-colored



Tube labeling systems
AXON 1



Print modules
PX Q



Labels and ribbons



Label software
cablabel S3



Label dispensers
HS, VS



Labeling heads
IXOR



Marking lasers
XENO 4



Laser marking systems



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