Status: 10/2018

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ROAN SYSTEMS
THE PRINTER & MOBILITY SOLUTIONS COMPANY

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:

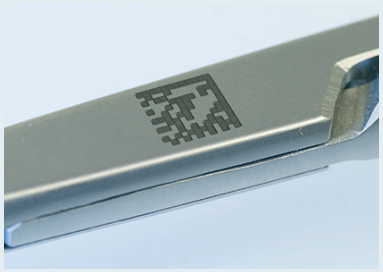
Traceable QR encoding

Cast part marking

Engraving

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

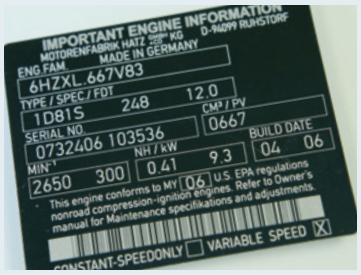
Medical instruments



Traceable sterilization

Annealing

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



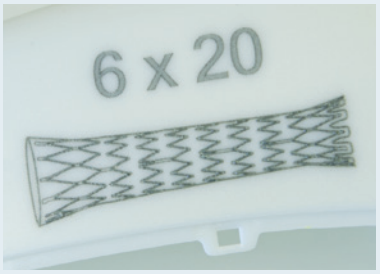
Aluminum rating plates

Automotive components

Ablating

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

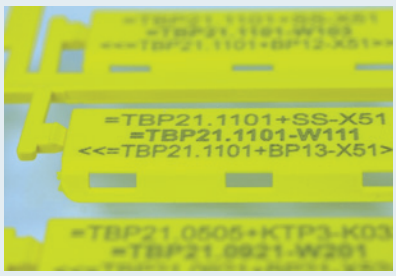
Consumption meters



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 10 to 50 Watt.

10, 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 - 1.4

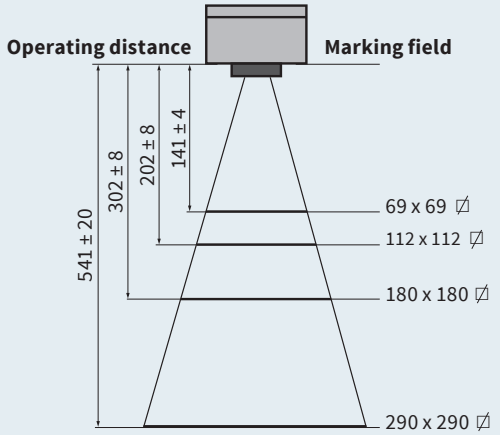
cab marking lasers stand for

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

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

Technical data of plano-spherical lenses F-Theta

9.1 - 9.4



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
≙ Resolution	dpi	1,000	725	500	300

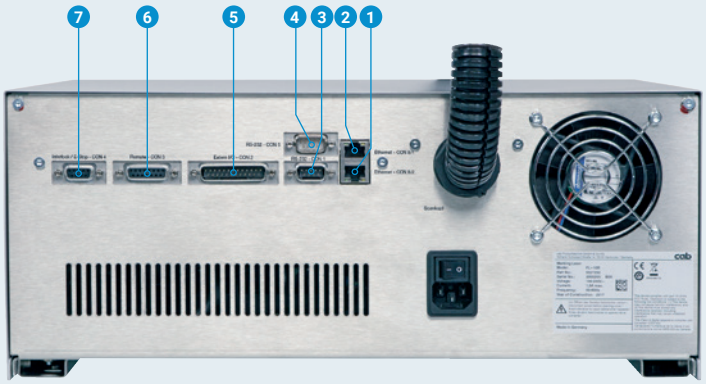
Technical data of the marking laser

		1.1	1.2	1.3	1.4
Marking laser		**FL+10**	**FL+20**	**FL+30**	**FL+50**
Laser source		Ytterbium fiber laser, pulsed, air-cooled			
cw output power	max. W	10	20	30	50
Pulse energy	mJ	0.5	1	1	1
Wave length	nm	1,064			
Beam quality M^2		<1.8			
Pulse width	ns	90 - 120	80 - 120		
Pulse frequency	kHz	20 - 80	2 - 200	2 - 200	2 - 200
Fiber coupling	m	4.5	2.5	2.5	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			
	Data memory	USB			
Operating data		**FL+10**	**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	150	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

1. **Ethernet 10/100 Base** to connect a PC. As delivered, the device has been configured with an IP address or in DHCP mode.
2. **Ethernet 10/100 Base** to connect periphery. Bidirectional data transfer to end devices is enabled.
3. + 4. **2 x RS232 C** to connect periphery. Bidirectional data transfer to end devices is enabled.
5. **Digital I/O** for control and monitoring. 8 freely programmable inputs and outputs are provided. Protective circuit according to IEC 61131-2
6. **Remote** to switch on the laser as well as for monitoring.
7. **Interlock / E-Stop** to integrate to external safety circuits and to connect an external E-stop.



Recommended system requirements

Computer	compliant to IBM PC AT
Operating system	Microsoft Windows 7 Professional SP1 (32/64 bit)
Processor	Intel Core i3-540 or more powerful
Main storage	at least 1 GB for RAM, 2 GB or more are recommended
Hard disc	Software requires 1 GB memory, 40 GB or more are recommended for hard disc size
Drives	CD-ROM / DVD drive for software installation

Interfaces	Network card 10/100 Mbit to connect the laser PS2 USB interfaces to connect a mouse or keyboard USB 2.0 port to connect a dongle Options: USB 2.0 port to connect a data carrier, RS232 interface to connect a cab axis system or a cab laser label marker LM+
Software	cabLase Editor 5
Monitor	SVGA, 1,280 x 1,024 px resolution are recommended

Laser safety housing LSG+100E

3.1, 3.2

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 Emission Marking Ready Error	
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

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**

		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 or outside	
For plano-spherical lens	type	160.1	254.1
Marking field	mm	112 x 112	120 x 180
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	

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

Laser typeplate handling THS+M

The laser typeplate handling allows to durably mark flat parts as e.g. typeplates or marker sheets made of plastic or metal. Applications are plates for motors, pumps, control cabinets, etc., on which markings have to be clearly legible even after years.

In case of metal engravings or surface ablation please contact us.

6.1

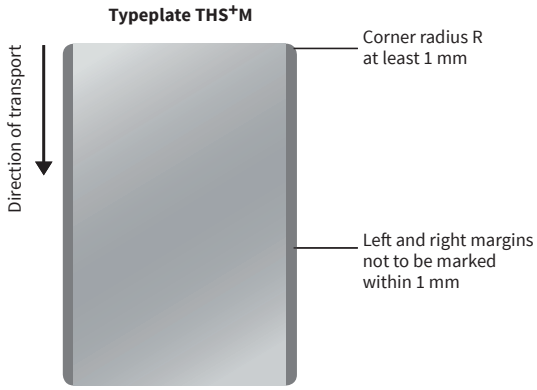
The plates are stacked in a magazine. The most upper one gets a marking and is then automatically rejected.

Accessories

6.2 **Customer-specific magazine** for THS+M

8.1 **Extraction and filter device AF1.1**

		6.1
Laser typeplate handling		**THS+M**
Typeplate W x H	min. mm	40 x 40
	max. mm	110 x 90
Position accuracy	mm	± 0.2
Motor-driven handling		Magazine
Plates 0.5 mm	pieces	100
For plano-spherical lens	type	160.1
Marking field W x H	max. mm	110 x 88
Operating distance	mm	202 ± 8
Plate thickness	mm	0.5 - 1.0
Workpiece weight	max. kg	0.1
Dimensions and weight		
W x H x D	mm	176 x 299 x 340
Laser prot. window W x H	mm	98 x 100
Suction nozzle	Ø mm	50
Total weight	kg	14
Operating data		
Power supply		110-240 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



Operation panel	
Buttons illuminated	Synchronization / Manual rejection
Switch	E-stop
Monitoring	
Safety circuits	closed
Magazine	Position
Typeplate	in marking position
Interfaces	
Interlock / E-stop FL+	
Digital I/O FL+	
Extraction and filter device AF1.1	

Laser marking system XENO 1

Never has laser marking been so easy!
Unpack the device, install the software, connect and get started.

7.1 - 7.4

XENO 1 is a compact desktop system, offering little footprint and a large work area.

XENO 1 perfectly fits with marking on metals or plastics.

XENO 1 completes the range of cab laser marking systems in the lower price segment. Processing the system complies with high industrial standards.

The marking plane is adjustable in heights up to 200 mm with the motor-driven moveable Z-axis and easily and quickly with the focus finder. In case of graduated marking surfaces, the scan head is automatically tracked by software.

Depending from the lens, the size of the marking field is 112 x 112 or 180 x 180 mm. It can be moved from the center to the right margin.

The marking can be simulated with the pilot laser.

Interior LED lighting allows observing the workpiece when the operation door is closed.

The workpiece holder is assembled to the groove plate. A rotary axis is available for cylindrical objects.

The automatic operation door opens or closes within seconds. Material can be inserted manually or by a handling system from three sides.

The extraction and filter system extracts pollutant particles, dusts or gases. It is provided as an accessory.

With the comprehensive cabLase marking software layouts are graphically designed, markings controlled and processes monitored.

The legal environmental regulations RoHS and REACH are observed.

		7.1	7.2	7.3	7.4
Laser marking system		**XENO 1**			
Laser source		Ytterbium fiber laser, pulsed			
cw output power	max. W	20		30	
Pulse energy	mJ	1			
Wave length	nm	1,064			
Beam quality M^2		<1.6			
Pulse width	ns	120			
Pulse frequency	kHz	20 - 60			
Pilot laser / focus finder					
Wave length	nm	650			
cw output power	mW	<0.4			
For plano-spherical lens	type	160.1	254.1	160.1	254.1
Operating distance	mm	210 ± 8	310 ± 8	210 ± 8	310 ± 8
Marking field	mm	112 x 112	180 x 180	112 x 112	180 x 180
Work area height	mm	200	100	200	100
Groove plate W x H x D x pitch	mm	500 x 20 x 375 x 25			
Z-axis stroke motor-driven	mm	210			
Position accuracy	mm	± 0.1			
Repetitive accuracy	mm	± 0.1			
Traversing speed	mm/s	20			
Interior lighting		LED			
Operation door		motor-driven opening / closing			
Workpiece weight	max. kg	30			
Dimensions and weight					
Device W x H x D	mm	580 x 660 x 700			
Weight	approx. kg	65			
Laser prot. window W x H	mm	100 x 200			
Extraction					
Nozzle flexible hose	NW mm	38			
Suction nozzle	NW mm	50			
Operating data					
Power supply		100-240 VAC, 50/60 Hz			
Power consumption		Standby <35 W / typical 150 W / max. 200 W			
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			
Approvals		CE, FCC class A			
Laser safety class EN60825-1		Class 1			
Operation panel					
LED indicators		Power, Ready, Emission, Error, Marking			
Buttons illuminated		Control ON/OFF Focus finder ON/OFF Extraction ON/OFF LED ON/OFF		Start Z-axis up / down Rotary axis left / right Operation door open / close	
Switch		E-stop			
Key switch		automatic / manual			
Monitoring					
Safety circuits		closed			
Collective error		Marking laser		Extraction device	
Interfaces					
Work area		Rotary axis		Digital I/O	
Back of device		2 x Ethernet TCP/IP 24 V for digital I/O		Extraction and filter device AF5 External start, external E-stop	

Details

XENO 1 is a fully equipped laser marking system offering high operating comfort for marking single components and series.

1. **Integrated Ytterbium fiber laser** 20 or 30 W
2. Motor-driven **operation door**
3. Motor-driven **scan head** adjustable in height, with a pilot laser to preview the marking
4. **Focus finder** to set up the marking lane
5. **LED lit work area**
6. **Rotary axis** with a 3-jaw chuck to mark cylindrical objects
7. **Digital I/O** enables control and monitoring, providing 8 freely programmable inputs and outputs
8. **Plug** to connect the rotary axis
9. **Operation panel** with function keys, status displays
10. **Groove plate** to clamp the workpiece carriers
11. **Z-axis,** slideable along the groove plate
12. **Suction hose**

Interfaces

13. **External start signal**
14. **E-stop** to integrate into external safety circuits
15. **External 24 V** for additional operations
16. **2 x Ethernet 10/100 Base**
    As delivered, the device is configured with an IP address or in DHCP mode.
17. **Port to connect the extraction and filter device**

Accessories for LSG+100E, LM+ and THS+M

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

Consumables

8.7 **Pre-filter mat**

8.8 **Filter for suspended particles**

8.9 **Active carbon filter**

Accessories

8.4 **Suction hose** 2.5 m

8.6 **Crevice nozzle**
for cleaning the work area

			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

Operation panel	
Displays	LED
	Filter saturation Extraction ON/OFF Reset
Push button 1 Push button 2	Run / Standby 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

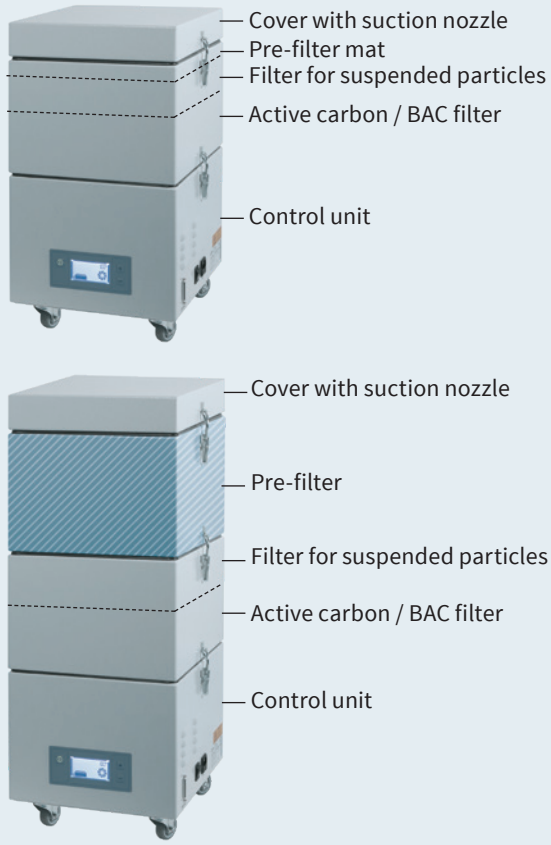
Accessories for XENO 1

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



			8.2	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	350
	Height	mm	650	880
	Depth	mm	350	350
	Weight	~kg	40	55
Suction nozzle	NW	mm	50	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**

Accessories

8.3 **Pre-filter module**
for retrofitting

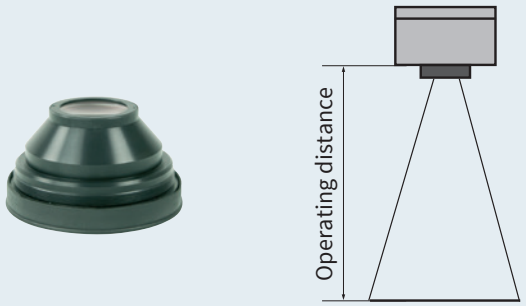
8.5 **Suction hose** 2.5 m
included in the AF5 scope of delivery

8.6 **Crevice nozzle**
for cleaning the work area;
included in the AF5 scope of delivery

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 Push button 2		Run / Standby 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

Lenses with different marking fields are available.
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
	XENO 1	mm	-	210 ± 8	310 ± 8	-
Marking field		mm	69 x 69	112 x 112	180 x 180	290 x 290
Spot diameter		µm	~25	~35	~50	~85
≙ Resolution		dpi	1,000	725	500	300

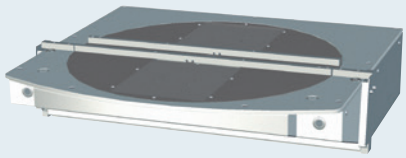
9.5

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		100.1	160.1	254.1	420.1
Outside diameter	mm	80	75	75	114

13.1

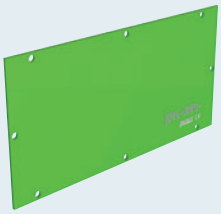


Rotary table module RTM650 for LSG+100E

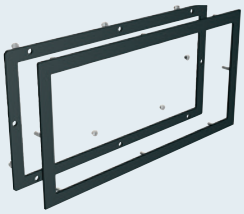
to assemble two jigs for a single or more workpieces.
180° rotation is released by two-hand operation.

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



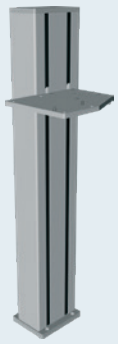
Laser protection window and assembly frame for LSG+100E

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
Rotary axis D30.1 for XENO 1
for marking on the circumference of a cylindrical workpiece. The latter can be clamped in the 3-jaw chuck.

Rotary axis		D30 / D30.1
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

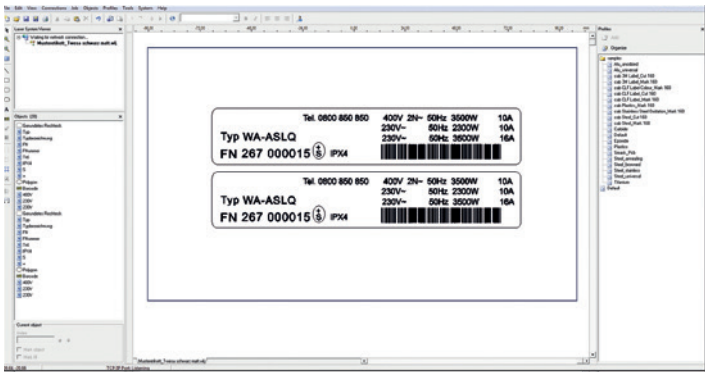
Axis controller 2S for LSG+100E and FL+
It allows positioning of the linear and rotary axes via the RS232 or digital I/O interface.

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

cabLase marking software

cablase Editor 5 features are:

- Layout design
- Marking control
- Process monitoring



cabLase at a glance

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	compressing and stretching	
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.	
Barcodes		
Linear	Interleaved 2/5 Code 39, Code 93 Code 128	Codabar EAN UPC
2D	DataMatrix, ECC200, QR code	
	All codes are variable as regards height, modular width and ratio; optional check digit or inverted code output	
Further features		
Serial number, time, date		
Variable fields		
Insertion of graphic data of Windows programs		
Programmable laser parameters		
Storage of process and parameter data		
Control of digital inputs and outputs		
Control and monitoring of additional axes, e.g. stroke, rotary and linear axes		

17.1, 17.2

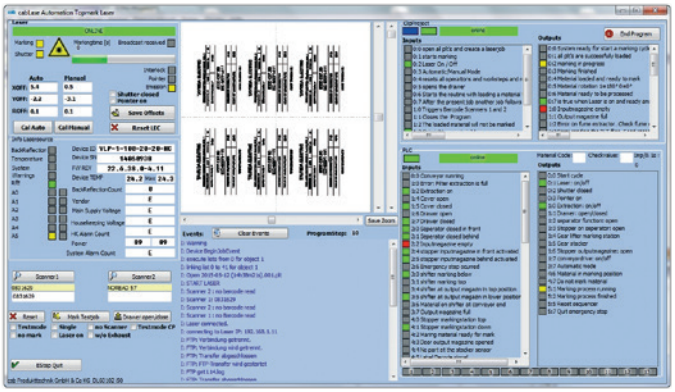
All laser marking system deliveries include a USB software dongle of cabLase Editor 5.

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

Remote host mode
cabLase allows remote control serial, via Ethernet or ProfiBus, by a master control unit such as a PC / PLC. Programming commands are available for layout selection, change of marking data, process control and monitoring.

Remote API interface
This is most useful especially in combination with complex production processes. It allows to generate objects and their parameter setting, as well as to externally manage and process consisting layouts and variable data via a PC / PLC.

COM Automation Server
for customer specific marking applications. Provided is a command library including all the functions of the cabLase marking software.



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

Industry 4.0

Industry 4.0 and the Internet of Things symbolize tomorrow's smart production. User software and connectivity are keys for their implementation. cab marking laser systems are future-proof and provide all necessary programming and data interfaces. **We are looking forward to advise you in your application!**

Delivery program

Pos.		Part no.	Devices
1.1		**5527250**	Marking laser FL+10R
1.2		**5527580**	Marking laser FL+20R
1.3		**5527590**	Marking laser FL+30R
1.4		**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	

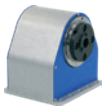
Pos.		Part no.	Accessories
4.3		**5525355**	External rewinder ER 4/300 LM
4.4		**5527655**	Hose set LM+
4.5		**5527585**	Mobile cart
4.6		**5527675**	Console R/L
4.7		**5527705**	Column for monitor

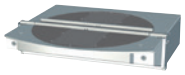
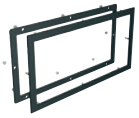
Pos.		Part no.	Devices
6.1		**5527290**	Laser typeplate handling THS+M
6.2		**On request**	Customer-specific magazine
	Scope of delivery	Laser typeplate handling THS+M Power cable type E+F, 3 m Connect. cable, 9/9 pin, 3 m, for Interlock / E-stop Connect. cable, 25/25 pin, 3 m, for digital I/O Connect. cable, 15/15 pin, 3 m, for extraction AF1.1 Assembly instructions DE / EN	

Pos.		Part no.	Devices
7.1		**5528130**	Laser marking system XENO 1 20 W / 160.1 including lens
7.2		**5528140**	Laser marking system XENO 1 20 W / 254.1 including lens
7.3		**5528150**	Laser marking system XENO 1 30 W / 160.1 including lens
7.4		**5528160**	Laser marking system XENO 1 30 W / 254.1 including lens
	Scope of delivery	Laser marking system XENO 1 including lens USB software dongle cabLase Editor 5 Power cable type E+F, 1.8 m Patch cable CAT 5e, 3 m E-stop dongle Operator's manual DE / EN	

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	
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	

Delivery program

Pos.		Part no.	Accessories	PU
8.3		**5907570**	Pre-filter module for AF5 with pre-filter	
8.4		**5905818**	Suction hose, 2.5 m for AF1.1	
8.5		**5907537.001**	Suction hose, 2.5 m for AF5	
8.6		**5907174.001**	Crevice nozzle for AF1.1, AF5	
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
8.10		**5906555.001**	Pre-filter mat AF5	10
8.11		**5907575.001**	Pre-filter AF5	1
8.12		**5906569.001**	Filter for susp. particles AF5	1
8.13		**5906570.001**	Active carbon / BAC filter AF5	1
Pos.		**Part no.**	**Accessories**	
9.1		**5525039.001**	Plano-sph. lens F-Theta 160.1 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	
9.5		**5528305.001**	Protective glass for F-Theta 100.1	
		5528310.001	Protective glass for F-Theta 160.1, 254.1	
		5528315.001	Protective glass for F-Theta 420.1	
10.1		**5527695**	Linear axis Z400	
10.2		**On request**	Linear axis Z200	
10.3		**5527690**	Linear axis X400	
11.1		**5905933**	Rotary axis D30	
		5906350	Rotary axis D30.1 with connecting cable and axis controller	
11.2		**5905978**	3-jaw chuck D30	

Pos.		Part no.	Accessories
11.3		**5526156**	Connecting cable D30
11.4		**5528250.001**	E-stop dongle
11.5		**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

cab product overview

Label printers MACH1, MACH2
in the lower price segment

Label printers MACH 4S
where little space is available

Label printers EOS2
Desktop device for label rolls
up to diameter 152 mm

Label printers EOS5
Desktop device for label rolls
up to diameter 203 mm

Label printers SQUIX 2
Industrial device for print widths
up to 57 mm

Label printers SQUIX 4
Industrial device for print widths
up to 108 mm

Label printers SQUIX 6
Industrial device for print widths
up to 168 mm

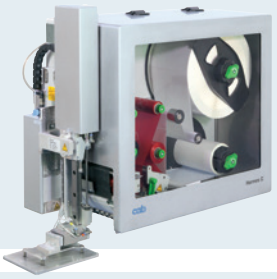
Label printers A8+
Industrial device for print widths
up to 216 mm

Label printers XD4T
for double-sided printing

Label printers XC
for two-color printing

Print and apply systems Hermes+
for automation

Print and apply systems Hermes C
for two-color printing and applying



Print modules PX
to be integrated in labeling machines

Labels
made from more than 400 materials

Ribbons
in wax, resin and resin/wax qualities

Label software cablabel S3
Design, print, control

Label dispensers HS, VS
for horizontal or vertical dispense

Labeling heads IXOR
to be integrated in labeling machines

Marking lasers FL+
with output powers 10 to 50 Watt

Laser marking systems XENO 1
for single workpieces and series

we identify more