



# Laser Marking System Rotary Table RTM650

Made in Germany





## Laser Marking System LSG100-FL-RTM650

The laser safety housing LSG 100 is the industrial solution for industrial laser marking of parts in series. The robust metal design offers, besides a large working area, space for the integration of the marking laser source and the control PC. Keyboard and monitor are installed in an ergonomic way on a pivot arm. The rotary table module RTM650 is designed for the integration in the laser safety housing LSG 100. Two devices for one or more work pieces can be assembled to the turn table. The operation door / middle wall of the turn table is pneumatic driven. The 180° rotation is released by two-hand operating.

#### **Technical Data**

Working Area I x w x h980 x 980 x 460 mmRotary table diameter $650 \text{ mm}$ F-Theta lens100160254Marking area mm $60 x 60$ $112 x 112$ $180 x 180$ Marking level mm0 - 3600 - 3000 - 150Workpiece height max. $360$ $300$ 150Workpiece weight max. $20 \text{ kg}$ (incl. carrier)Laser protection window $100 x 200 \text{ mm}$ Z-Axis traversing range $500 \text{ mm}$ $700 \text{ cm}$ Position accuracy Z $0,02 \text{ mm}$ $700 \text{ cm}$ Switching accuracy RTM $+/- 0.1 \text{ mm}$ at $d=600 \text{ mm}$ Cycle time rotating $2.5s / 180^\circ$ PLCSiemens Simatic S7Focusing equipmentpointing laser 650 mm / < 1 mW / Kl. 2Aperture extraction systemDN 50Interior lightIow energy light bulb, 11 WOperating doorpneumatic drivenPlacementmachine mount Ø 80 mmMounting frame $2 \times rack$ mount 19" 4HEDimension I x w x h1280 x 1000 x 2280 (w/o pivot arm)Chassis / coloursteel plate / RAL 7035Net weight430 kgWeight operable installedapprox. 470 kgOperating PanelControls On Air SupplyLED-indicatorsPower On Laser Ready Emission Mark in Progress Collective Error Door ClosedPush button On/OffControls On Air SupplyPush button up / down left / rightRotating Axis (n. c. )InterruptorEmergency StopKey switchManual or Automatic Operation <t< th=""><th>Laser Safety Housing</th><th colspan="4">Laser Safety Housing</th></t<>	Laser Safety Housing	Laser Safety Housing			
F-Theta lens100160254Marking area mm $60 \times 60$ $112 \times 112$ $180 \times 180$ Marking level mm $0 - 360$ $0 - 300$ $0 - 150$ Workpiece height max. mm $360$ $300$ $150$ Workpiece weight max. $20 \text{ kg (incl. carrier )}$ Laser protection window $100 \times 200 \text{ mm}$ Z-Axis traversing range $500 \text{ mm}$ $700 \times 200 \text{ mm}$ Switching accuracy Z $0,02 \text{ mm}$ Switching accuracy RTM $+/- 0.1 \text{ mm at d=}600 \text{ mm}$ $Cycle time rotating$ $2.5s / 180^{\circ}$ PLCSiemens Simatic S7Focusing equipmentpointing laser 650 nm / < 1 mW / Kl. 2	Working Area I x w x h	980	x 980 x 460	mm	
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Cycle time rotating2.5s / 180°PLCSiemens Simatic S7Focusing equipmentpointing laser 650 nm / < 1 mW / Kl. 2	Position accuracy Z		0,02 mm		
PLCSiemens Simatic S7Focusing equipmentpointing laser 650 nm / < 1 mW / Kl. 2	Switching accuracy RTM	+/- 0.	1 mm at d=60	0 mm	
Focusing equipmentpointing laser 650 nm / < 1 mW / Kl. 2Aperture extraction systemDN 50Interior lightlow energy light bulb, 11 WOperating doorpneumatic drivenPlacementmachine mount Ø 80 mmMounting frame2 x rack mount 19" 4HEDimension I x w x h1280 x 1000 x 2280 (w/o pivot arm )Chassis / coloursteel plate / RAL 7035Net weight430 kgWeight operable installedapprox. 470 kgOperating PanelEmissionLED-indicatorsPower OnLaser ReadyEmissionMark in ProgressCollective ErrorDoor ClosedPush button On/OffControls OnPush buttonClose Door / StartPush buttonClose Door / StartPush buttonQuery StartPush buttonRotating Axis (n. c.)InterruptorEmergency StopKey switchManual or Automatic Operation	Cycle time rotating	2.5s / 180°			
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Dimension I x w x h1280 x 1000 x 2280 (w/o pivot arm )Chassis / coloursteel plate / RAL 7035Net weight430 kgWeight operable installedapprox. 470 kgOperating PanelEnd to the second seco					
Chassis / coloursteel plate / RAL 7035Net weight430 kgWeight operable installedapprox. 470 kgOperating PanelEmissionLED-indicatorsPower OnLED-indicatorsCollective ErrorDoor ClosedPush button On/OffControls OnPush buttonClose Door / StartPush buttonClose Door / StartPush buttonClose Door / StartPush buttonClose Door / StartPush buttonEmergency StopKey switchManual or Automatic Operation	0				
Net weight   430 kg     Weight operable installed   approx. 470 kg     Operating Panel   Image: Constraint of the second sec		, , , ,			
Weight operable installed   approx. 470 kg     Operating Panel   Image: Constraint of the second		steel plate / RAL 7035			
Operating Panel       LED-indicators     Power On     Laser Ready       Emission     Mark in Progress       Collective Error     Door Closed       Push button On/Off     Controls On     Air Supply       Extraction On     Light       Pointing Laser     Push button     Close Door / Start       Push button     Emergency Stop       Key switch     Manual or Automatic Operation	0	430 kg			
LED-indicatorsPower OnLaser ReadyEmissionMark in ProgressCollective ErrorDoor ClosedPush button On/OffControls OnAir SupplyExtraction OnLightPointing LaserPush buttonClose Door / StartPush button up / downZ-Axisleft / rightRotating Axis ( n. c. )InterruptorEmergency StopKey switchManual or Automatic Operation		approx. 470 kg			
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Collective ErrorDoor ClosedPush button On/OffControls OnAir Supply Extraction OnPush buttonClose Door / StartPush buttonClose Door / StartPush button up / down left / rightZ-Axis Rotating Axis ( n. c. )InterruptorEmergency StopKey switchManual or Automatic Operation	LED-indicators				
Push button On/Off   Controls On   Air Supply     Extraction On   Light     Pointing Laser     Push button   Close Door / Start     Push button up / down   Z-Axis     left / right   Rotating Axis ( n. c. )     Interruptor   Emergency Stop     Key switch   Manual or Automatic Operation					
Extraction On Pointing Laser Light   Push button Close Door / Start   Push button up / down left / right Z-Axis   Interruptor Emergency Stop   Key switch Manual or Automatic Operation					
Pointing Laser   Push button Close Door / Start   Push button up / down left / right Z-Axis   Interruptor Emergency Stop   Key switch Manual or Automatic Operation	Push button On/Off				
Push button Close Door / Start   Push button up / down Z-Axis   left / right Rotating Axis ( n. c. )   Interruptor Emergency Stop   Key switch Manual or Automatic Operation				Light	
Push button up / down left / right Z-Axis   Interruptor Rotating Axis ( n. c. )   Interruptor Emergency Stop   Key switch Manual or Automatic Operation		<u> </u>			
left / rightRotating Axis ( n. c. )InterruptorEmergency StopKey switchManual or Automatic Operation					
InterruptorEmergency StopKey switchManual or Automatic Operation				,	
Key switch Manual or Automatic Operation			<b>0</b> (	,	
Push button rotary table 2-hand operation with indicator					
	Push button rotary table	2-hand c	peration with	indicator	

Interfaces				
Marking laser system	FL10 / 20			
Filtering devices	AF1/2/3/4			
Interface RS232	axis c	ontrol		
Internal I/O interface	inputs /	outputs		
Status Monitoring				
Safety interlock circuits	clos	sed		
Collective failure	marking la	ser system		
Filtering device		e of filter		
Operating Data	LSG 230 V	LSG 120 V		
Voltage	220-240 V AC	100-140 V AC		
Frequency	50/60 Hz			
Fuse	16 A type B	15 A type B		
Power consumption max.	3500 Watt	1750 Watt		
Compressed air supply	4-6 bar ( 58-87 psi ) oil free, dry			
Operating temperature	+10 - +35°C			
Air humidity	30 - 85% no	30 - 85% not condensing		
Laser safety class	class 1			
Approvals	C	E		
Content of Delivery				
Operating manual				
Main supply cable				
Connecting cable FL, length 3 m				
Connecting cable PC, length				
Connecting cable filtering device, length 3 m				
Connecting cable filtering de	vice, iongth o m			

Additional functionality, special options for air conditioning and integration to production lines as well as workpiece carrier and accessories are available on request.

# **Diode Pumped Ytterbium Fiber Laser**

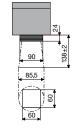
With the air cooled Ytterbium fiber lasers cab supplements the delivery program of high resolution, diode pumped marking lasers.

They mark on steel, aluminum, various plastics and many further materials with high beam quality and output power up to 20 watts.

#### **Technical Data**

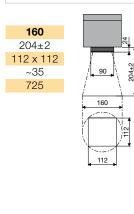
Max. cw power10 Watt20 WattPulse energy $0.5 \text{ mJ}$ 1 mJLaser typeytterbium fiber laser, pulsedCoolingair cooledWavelength $1064 \text{ nm}$ Beam quality M2< 1.8Pulse width $80 \cdot 120 \text{ ns}$ Pulse frequency $20 \cdot 80 \text{ kHz}$ Pilot laser $650 \text{ nm / < 1 mW / Class 2}$ Length fiber connection $4.5 \text{ m}$ Laser safety class $class 4$ Scan head $class 4$ Mountinghorizontal / verticalScanning speedmax. $5000 \text{ mm/s}$ Weight $8 \text{ kg}$ Dimension h x w x d $110 \times 170 \times 330 \text{ mm}$ Control UnitSupply voltage / frequency100 - 240 VAC / $5-60 \text{ Hz}$ Power consumption $350 \text{ Watt}$ 450 Watt $450 \text{ Watt}$ Fuse (230 V) $5 \text{ AT}$ Fuse (110 V) $5 \text{ AT}$ Weight $178 \times 420 \times 420 \text{ mm}$ Ambient Conditions $90 \text{ not condensing}$ InterfacesPC-InterfacesPC-InterfacesPCI, TCP/IPLaser Control Interface forSystem Ready, Start Marking Laser Emission, Shutter/Chamber InterlockMarking Softwaremin. Pentium IV-PC, 500 MHZ, min. 1GB RAM, CD-ROM-Disk, $2 \times PCI Slot (Version PCI),$ 150 MB free hard drive capacity, 10/100/1000 Eth-met-LAN RJ45,Operating SystemsWindows XP®, Windows 7®	Laser Source	FL10	FL 20	
Pulse energy $0.5 \text{ mJ}$ $1 \text{ mJ}$ Laser typeytterbium fiber laser, pulsedCoolingair cooledWavelength $1064 \text{ m}$ Beam quality M2< 1.8	Max. cw power	10 Watt	20 Watt	
Coolingair cooledWavelength $1064 \text{ nm}$ Beam quality M2< 1.8		0.5 mJ	1 mJ	
Coolingair cooledWavelength $1064 \text{ nm}$ Beam quality M2< 1.8	Laser type	ytterbium fibe	r laser, pulsed	
Beam quality M2< 1.8Pulse width80 - 120 nsPulse frequency20 - 80 kHzPilot laser650 nm / < 1 mW / Class 2	Cooling	air co	oled	
Pulse width $80 - 120 \text{ ns}$ Pulse frequency $20 - 80 \text{ kHz}$ Pilot laser $650 \text{ nm} / < 1 \text{ mW} / \text{ Class } 2$ Length fiber connection $4.5 \text{ m}$ $2.5 \text{ m}$ Laser safety class $class 4$ Scan head $vertical$ Mountinghorizontal / verticalScanning speedmax. $5000 \text{ mm/s}$ Weight $8 \text{ kg}$ Dimension h x w x d $110 \text{ x } 170 \text{ x } 330 \text{ mm}$ Control UnitSupply voltage / frequency100 - 240 VAC / 50-60 HzPower consumption $350 \text{ Watt}$ Fuse (230 V) $2.5 \text{ AT}$ Fuse (110 V) $5 \text{ AT}$ Weight $178 \text{ x } 420 \text{ watt}$ Fuse (110 V) $5 \text{ AT}$ Operating temperature $+5 - +40 \text{ °C}$ Air humidity $15 - 90 \text{ % not condensing}$ InterfacesPC-InterfacesPC-InterfacesPCI, TCP/IPLaser Control Interface forSystem Ready, Start Marking Laser Emission, Shutter/Chamber InterlockMarking Softwaremin. Pentium IV-PC, 500 MHZ, min 1GB RAM, CD-ROM-Disk, $2x PCI Slot (Version PCI),$ $150 MB free hard drive capacity,10/100/1000 \text{ Ethernet-LAN RJ45},$	Wavelength	1064	1 nm	
Pulse frequency20 - 80 kHzPilot laser650 nm / < 1 mW / Class 2	Beam quality M <sup>2</sup>	< -	1.8	
Pilot laser650 nm / < 1 mW / Class 2Length fiber connection4.5 m2.5 mLaser safety classclass 4Scan headMountinghorizontal / verticalScanning speedmax. 5000 mm/sWeight8 kgDimension h x w x d110 x 170 x 330 mmControl UnitSupply voltage / frequency100 - 240 VAC / 50-60 HzPower consumption350 Watt450 Watt450 WattFuse (230 V)2.5 ATFuse (110 V)5 ATWeight17 kgDimension h x w x d178 x 420 x 420 mmAmbient ConditionsOperating temperature+5 - +40 °CAir humidity15 - 90 % not condensingInterfacesPC-Interfaces forSystem Ready, Start Marking Laser Emission, Shutter/Chamber InterlockMarking Softwaremin. Pentium IV-PC, 500 MHZ, min. 1GB RAM, CD-ROM-Disk, 2x PCI Slot (Version PCI), 150 MB free hard drive capacity, 10/100/1000 Ethernet-LAN RJ45,	Pulse width			
Length fiber connection $4.5 \text{ m}$ $2.5 \text{ m}$ Laser safety class $class 4$ Scan headhorizontal / verticalMountinghorizontal / verticalScanning speedmax. $5000 \text{ mm/s}$ Weight $8 \text{ kg}$ Dimension h x w x d $110 \times 170 \times 330 \text{ mm}$ Control UnitSupply voltage / frequency $100 - 240 \text{ VAC} / 50-60 \text{ Hz}$ Power consumption $350 \text{ Watt}$ $450 \text{ Watt}$ Fuse (230 V) $2.5 \text{ AT}$ Fuse (110 V) $5 \text{ AT}$ Weight $17 \text{ kg}$ Dimension h x w x d $178 \times 420 \times 420 \text{ mm}$ Ambient Conditions $-50 \text{ % not condensing}$ Operating temperature $+5 - +40 \text{ °C}$ Air humidity $15 - 90 \text{ % not condensing}$ Interfaces $PC-Interfaces$ PC-Interfaces forSystem Ready, Start Marking Laser Emission, Shutter/Chamber InterlockMarking Softwaremin. Pentium IV-PC, 500 MHZ, min. 1GB RAM, CD-ROM-Disk, $2x PCI Slot (Version PCI),150 MB free hard drive capacity,10/100/1000 \text{ Ethernet-LAN RJ45},$	Pulse frequency	20 - 8	0 kHz	
Laser safety classclass 4Scan headMountinghorizontal / verticalScanning speedmax. 5000 mm/sWeight8 kgDimension h x w x d110 x 170 x 330 mmControl UnitSupply voltage / frequency100 - 240 VAC / 50-60 HzPower consumption350 Watt450 WattFuse (230 V)2.5 ATFuse (110 V)5 ATWeight177 kgDimension h x w x d178 x 420 x 420 mmAmbient Conditions0perating temperature0perating temperature+5 - +40 °CAir humidity15 - 90 % not condensingInterfacesPCI, TCP/IPPC-Interfaces forSystem Ready, Start Marking Laser Emission, Shutter/Chamber InterlockMarking Softwaremin. Pentium IV-PC, 500 MHZ, min. 1GB RAM, CD-ROM-Disk, 2x PCI Slot ( Version PCI ), 150 MB free hard drive capacity, 10/100/1000 Ethermet-LAN RJ45,	Pilot laser	650 nm / < 1	mW / Class 2	
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Mountinghorizontal / verticalScanning speedmax. 5000 mm/sWeight8 kgDimension h x w x d110 x 170 x 330 mmControl UnitSupply voltage / frequency100 - 240 VAC / 50-60 HzPower consumption350 Watt450 WattFuse (230 V)2.5 ATFuse (110 V)5 ATWeight17 kgDimension h x w x d178 x 420 x 420 mmAmbient ConditionsOperating temperature+5 - +40 °CAir humidity15 - 90 % not condensingInterfacesPCI, TCP/IPLaser Control Interface forSystem Ready, Start Marking Laser Emission, Shutter/Chamber InterlockMarking Softwaremin. Pentium IV-PC, 500 MHZ, min. 1GB RAM, CD-ROM-Disk, 2x PCI Slot (Version PCI), 150 MB free hard drive capacity, 10/100/1000 Ethernet-LAN RJ45,	Laser safety class	clas	ss 4	
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Dimension h x w x d110 x 170 x 330 mmControl UnitSupply voltage / frequency100 - 240 VAC / 50-60 HzPower consumption350 Watt450 WattFuse (230 V)2.5 ATFuse (110 V)5 ATWeight17 kgDimension h x w x d178 x 420 x 420 mmAmbient ConditionsOperating temperature+5 - +40 °CAir humidity15 - 90 % not condensingInterfacesPC-InterfacesPCI, TCP/IPLaser Control Interface forSystem Ready, Start Marking Laser Emission, Shutter/Chamber InterlockMarking Softwaremin. Pentium IV-PC, 500 MHZ, min.1GB RAM, CD-ROM-Disk, 2x PCI Slot (Version PCI), 150 MB free hard drive capacity, 10/100/1000 Ethernet-LAN RJ45,	Scanning speed	max. 5000 mm/s		
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Supply voltage / frequency100 - 240 VAC / 50-60 HzPower consumption350 Watt450 WattFuse (230 V)2.5 ATFuse (110 V)5 ATWeight17 kgDimension h x w x d178 x 420 x 420 mmAmbient Conditions0Operating temperature+5 - +40 °CAir humidity15 - 90 % not condensingInterfacesPCI, TCP/IPLaser Control Interface forSystem Ready, Start Marking Laser Emission, Shutter/Chamber InterlockMarking Softwaremin. Pentium IV-PC, 500 MHZ, min. 1GB RAM, CD-ROM-Disk, 2x PCI Slot (Version PCI), 150 MB free hard drive capacity, 10/100/1000 Ethernet-LAN RJ45,	Dimension h x w x d	110 x 170	x 330 mm	
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Fuse (230 V)2.5 ATFuse (110 V)5 ATWeight17 kgDimension h x w x d178 x 420 x 420 mmAmbient ConditionsOperating temperature0perating temperature+5 - +40 °CAir humidity15 - 90 % not condensingInterfacesPCI, TCP/IPLaser Control Interface forSystem Ready, Start Marking Laser Emission, Shutter/Chamber InterlockMarking Softwaremin. Pentium IV-PC, 500 MHZ, min.1GB RAM, CD-ROM-Disk, 2x PCI Slot (Version PCI), 150 MB free hard drive capacity, 10/100/1000 Ethernet-LAN RJ45,	Supply voltage / frequency	100 - 240 VAC / 50-60 Hz		
Fuse (110 V)5 ATWeight17 kgDimension h x w x d178 x 420 x 420 mmAmbient ConditionsOperating temperature+5 - +40 °CAir humidity15 - 90 % not condensingInterfacesPC-InterfacesPCI, TCP/IPLaser Control Interface forSystem Ready, Start Marking Laser Emission, Shutter/Chamber InterlockMarking SoftwareHardwaremin. Pentium IV-PC, 500 MHZ, min. 1GB RAM, CD-ROM-Disk, 2x PCI Slot (Version PCI), 150 MB free hard drive capacity, 10/100/1000 Ethernet-LAN RJ45,	Power consumption	350 Watt	450 Watt	
Weight17 kgDimension h x w x d178 x 420 x 420 mmAmbient Conditions		2.5 AT		
Dimension h x w x d178 x 420 x 420 mmAmbient Conditions	Fuse (110 V)	5 AT		
Ambient ConditionsOperating temperature+5 - +40 °CAir humidity15 - 90 % not condensingInterfacesPC-InterfacesPCI, TCP/IPLaser Control Interface forSystem Ready, Start Marking Laser Emission, Shutter/Chamber InterlockMarking SoftwareHardwaremin. Pentium IV-PC, 500 MHZ, min. 1GB RAM, CD-ROM-Disk, 2x PCI Slot (Version PCI), 150 MB free hard drive capacity, 10/100/1000 Ethernet-LAN RJ45,	Weight	17 kg		
Operating temperature+5 - +40 °CAir humidity15 - 90 % not condensingInterfacesPCI, TCP/IPLaser Control Interface forSystem Ready, Start Marking Laser Emission, Shutter/Chamber InterlockMarking Softwaremin. Pentium IV-PC, 500 MHZ, min. 1GB RAM, CD-ROM-Disk, 2x PCI Slot (Version PCI), 150 MB free hard drive capacity, 10/100/1000 Ethernet-LAN RJ45,	Dimension h x w x d	178 x 420 x 420 mm		
Air humidity15 - 90 % not condensingInterfacesPC-InterfacesPCI, TCP/IPLaser Control Interface forSystem Ready, Start Marking Laser Emission, Shutter/Chamber InterlockMarking Softwaremin. Pentium IV-PC, 500 MHZ, min. 1GB RAM, CD-ROM-Disk, 2x PCI Slot (Version PCI), 150 MB free hard drive capacity, 10/100/1000 Ethernet-LAN RJ45,	Ambient Conditions			
Interfaces   Output     PC-Interfaces   PCI, TCP/IP     Laser Control Interface for   System Ready, Start Marking Laser Emission, Shutter/Chamber Interlock     Marking Software   Min. Pentium IV-PC, 500 MHZ, min. 1GB RAM, CD-ROM-Disk, 2x PCI Slot (Version PCI), 150 MB free hard drive capacity, 10/100/1000 Ethernet-LAN RJ45,	Operating temperature	+5 - +40 °C		
PC-Interfaces   PCI, TCP/IP     Laser Control Interface for   System Ready, Start Marking Laser Emission, Shutter/Chamber Interlock     Marking Software   min. Pentium IV-PC, 500 MHZ, min. 1GB RAM, CD-ROM-Disk, 2x PCI Slot (Version PCI), 150 MB free hard drive capacity, 10/100/1000 Ethernet-LAN RJ45,	Air humidity	15 - 90 % no	t condensing	
Laser Control Interface forSystem Ready, Start Marking Laser Emission, Shutter/Chamber InterlockMarking Softwaremin. Pentium IV-PC, 500 MHZ, min. 1GB RAM, CD-ROM-Disk, 2x PCI Slot (Version PCI ), 150 MB free hard drive capacity, 10/100/1000 Ethernet-LAN RJ45,	Interfaces			
Laser Emission,     Shutter/Chamber Interlock     Marking Software     Hardware   min. Pentium IV-PC, 500 MHZ,     Min. 1GB RAM, CD-ROM-Disk,     2x PCI Slot (Version PCI),     150 MB free hard drive capacity,     10/100/1000 Ethernet-LAN RJ45,	PC-Interfaces	PCI, TCP/IP		
Marking SoftwareHardwaremin. Pentium IV-PC, 500 MHZ, min.1GB RAM, CD-ROM-Disk, 2x PCI Slot ( Version PCI ), 150 MB free hard drive capacity, 10/100/1000 Ethernet-LAN RJ45,	Laser Control Interface for	System Ready, Start Marking		
Marking Software       Hardware     min. Pentium IV-PC, 500 MHZ, min. 1GB RAM, CD-ROM-Disk, 2x PCI Slot (Version PCI), 150 MB free hard drive capacity, 10/100/1000 Ethernet-LAN RJ45,			,	
Hardware min. Pentium IV-PC, 500 MHZ, min.1GB RAM, CD-ROM-Disk, 2x PCI Slot (Version PCI), 150 MB free hard drive capacity, 10/100/1000 Ethernet-LAN RJ45,		Shutter/Chan	nber Interlock	
min. 1GB RAM, CD-ROM-Disk, 2x PCI Slot (Version PCI), 150 MB free hard drive capacity, 10/100/1000 Ethernet-LAN RJ45,	Marking Software			
2x PCI Slot (Version PCI), 150 MB free hard drive capacity, 10/100/1000 Ethernet-LAN RJ45,	Hardware		, ,	
150 MB free hard drive capacity, 10/100/1000 Ethernet-LAN RJ45,				
10/100/1000 Ethernet-LAN RJ45,				
		1 37		
Operating Systems Windows XP®, Windows 7®			,	
	Operating Systems	Windows XP®	, Windows 7®	

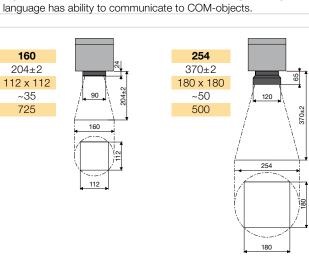
Plano Sperical Lens F-Theta	100
Working Distance mm	138±2
Marking Area mm 🗹	60 x 60
Spot Diameter µm	~25
≙ Resolution dpi	1000



The software cablase provides a graphical interface for real-time control or the COM interface for customized programming. cab offers solutions for integration into manufacturing lines, laser safety workstations as well foil and type plate marking systems.

Font Types				
Font formats	All Windows TrueType Fonts, filled or as outline, laser specific Single-, Double and Tripple Line Fonts; all fonts can be freely scaled and "wobbled".			
Font alignments	Any alignment and font radial marking.	direction,		
Character width	Stretching and compres	ssing possible.		
Graphics				
Graphic objects	Line, circle, rectangle, polygon. Hatch and cross hatch for all basic graphic objects.			
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 tune, align and resize the objects.			
Barcodes				
Linear Barcodes	2 of 5 Code 39, Code 93 Code 128	Codabar EAN UPC		
2D-Barcodes	Data Matrix, ECC200, QRCode Barcodes are variable in height, module width and ratio. Tuning possibilities and Check Digit generation. Inverted marking possible. Inverted marking of code.			
Additional Featur	res of the Marking Soft	ware		
Serial number, date				
Variable fields.				
Programable laser parameters.				
Process and parameter file saving.				
Control of external and digital inputs and outputs is implemented in the software.				
Additional axes (e.g. for lifting, rotating, linear axis) can be controlled.				
to control the laser e.g. Visual Basic, E	COM Automation Server from any other user inter Borland Builder, provided to	face developed by the programming		





AF1



#### **Exhaust and Filtering Device**

Part No.	Device
5906614	Filtering Device AF1 230V
5906615	Filtering Device AF1 120V
Part No.	Accessories
5906616	Filter Set AF1
5906617	Pre-Filter AF1 305x305
5906618	Filter For Suspended Matter AF1 305x305x78
5906619	Activated Carbon Filter 300x300x115
5905818	Suction Hose 50 / 2.5 m
5906682	Connecting Sleeve Extraction Hose d=50
5550888	Cabel 1:1, 15/15-pins, 3m

#### **Technical Data**

Dimension I x w x h355 x 355 x 655 mmSpace requirement for filter change I x w x h700 x 700 x 1000 mmWeight without fiter equipment approx.29 kgIP protection levelIP 42Suction capacity max.100 - 320 m³/hVacuum max.12500 PaNumber of fans1Electrical Power Supply Filtering Device230 V ACSupply voltage230 V ACFrequency50 / 60 HzPower consumption1.2 kWRated current7.2 AFuse16 A15 AOperating temperature+5 - +35 °CStorage temperature+5 - +35 °CStorage temperature2000 mChassis materialSteel plate powder coatedColourRAL 7035Noise Level at Filtering Device200 kgContinous sound pressure level82 dB (A)Acoustic power level to CE DIN 45635-3 1m67 dB (A)Filter Equipment2.20 m²Total surface area of particle filter approx.8.20 kgTotal weight of gasfilter approx.8.20 kgAutomation InterfaceServer KStatus signalDevice KStatus signalError Filter 100%Switching contactDevice N	Device Type	A	F1
Weight without fiter equipment approx.29 kgIP protection levelIP 42Suction capacity max.100 - 320 m³/hVacuum max.12500 PaNumber of fans1Electrical Power Supply Filtering DeviceSupply voltage230 V ACFrequency50 / 60 HzPower consumption1.2 kWRated current7.2 AFuse16 A15 A15 AOperating temperature+5 - +35 °CStorage temperature+5 - +40 °CMaximum installation altitude2000 mColourRAL ToxisNoise Level at Filtering Device2000 mContinous sound pressure level82 dB (A)Acoustic power level to67 dB (A)CE DIN 45635-3 1m67 dB (A)Filter Equipment6.00 kgTotal surface area of particle filter approx.6.00 kgTotal weight of gasfilter approx.8.20 kgAutomation Interface500 kgStatus signalDevice OKStatus signalDevice OK	Dimension I x w x h	355 x 355	x 655 mm
IP protection level   IP 42     Suction capacity max.   100 - 3∠0 m³/h     Vacuum max.   1250∪ Pa     Number of fans   1     Electrical Power Supply Filtering Device   230 V AC   120 V AC     Supply voltage   230 V AC   120 V AC     Frequency   50 / 6∪ Hz   Power consumption   1.2 kW     Power consumption   1.2 kW   Rated current   7.2 A   10 A     Fuse   16 A   15 A   15 A     Operating temperature   +5 - +35 °C   Storage temperature   +5 - +40 °C     Maximum installation altitude   200∪ m   Colour   Maximum installation altitude     Colour   RAL To35   Storage   Storage   Storage     Noise Level at Filtering Device   Storage   Storage   Storage     Colour   RAL To35   Storage   Storage   Storage     Noise Level at Filtering Device   Storage   Storage   Storage     Colour   RAL To35   Storage   Storage   Storage     Noise Level at Filtering Device   Storage   Storage   Storage     Colour   St	Space requirement for filter change I x w x h	700 x 700 x	x 1000 mm
Suction capacity max.100 - 3∠ m³/hSuction capacity max.100 - 3∠ m³/hVacuum max.1250∪ PaNumber of fans1Electrical Power Supply Filtering Device230 V ACSupply voltage230 V ACFrequency50 / 6∪ HzPower consumption1.2 kWRated current7.2 AFuse16 AOperating temperature+5 - +35 °CStorage temperature+5 - +40 °CMaximum installation altitude200∪ mChassis materialsteel platepowder coated2000 mColourRAL 7035Noise Level at Filtering Device2000 mContinous sound pressure level82 dB (A)Acoustic power level to67 dB (A)CE DIN 45635-3 1m67 dB (A)Filter Equipment500 kgTotal surface area of particle filter approx.6.00 kgTotal weight of gasfilter approx.8.20 kgAutomation Interface500 kgStatus signalDevice OKStatus signalDevice OK	Weight without fiter equipment approx.	29	kg
Vacuum max. $125 \cup Pa$ Number of fans1Electrical Power Supply Filtering DeviceSupply voltage $230 \lor AC$ $120 \lor AC$ Frequency $50 / 6 \cup Hz$ Power consumption $1.2 \lor W$ Rated current $7.2 A$ $10 A$ Fuse $16 A$ $15 A$ Operating temperature $+5 + +35 \degree C$ Storage temperature $+5 - +40 \degree C$ Maximum installation altitude $200 \cup m$ Chassis material $steel plate$ powder $-cated$ $colstrometeretereteretereteretereteretereterete$	IP protection level	IP	42
Number of fans1Ilectrical Power Supply Filtering DeviceSupply voltage230 V AC120 V ACFrequency $50 / 6^{-}$ HzPower consumption $1.2 \ W$ Rated current $7.2 \ A$ $10 \ A$ Fuse $16 \ A$ $15 \ A$ Operating temperature $+5 - +35 \ ^{\circ}C$ Storage temperature $+5 - +40 \ ^{\circ}C$ Maximum installation altitude $200 \ W$ Chassis material $stee \ Dowder \ C$ Colour $RAL \ -0.5$ Noise Level at Filtering Device $82 \ ^{\circ}B \ ^{\circ}A$ Continous sound pressure level $82 \ ^{\circ}B \ ^{\circ}A$ Acoustic power level to CE DIN 45635-3 1m $67 \ ^{\circ}B \ ^{\circ}A$ Total surface area of particle filter approx. $6.0 \ ^{\circ}B \ ^{\circ}A$ Total surface area of particle filter approx. $8.2 \ ^{\circ}B \ ^{\circ}A$ Total weight of gasfilter approx. $8.2 \ ^{\circ}B \ ^{\circ}A$ Automation Interface $Steet \ ^{\circ}B \ ^{\circ}A$ Status signal $Device \ ^{\circ}K \ ^{\circ}A$	Suction capacity max.	100 - 3	20 m³/h
Electrical Power Supply Filtering DeviceSupply voltage230 V AC120 V ACFrequency $50 / 6^{-}$ HzPower consumption $1.2 \ W$ Rated current $7.2 \ A$ $10 \ A$ Fuse $16 \ A$ $15 \ A$ Operating temperature $+5 - +35 \ ^{\circ}C$ Storage temperature $+5 - +40 \ ^{\circ}C$ Maximum installation altitude $200 \cup m$ Chassis material $stee \   ate$ colour $RAL \ -035$ Noise Level at Filtering DeviceContinous sound pressure level $82 \ dB \ (A)$ Acoustic power level to $67 \ dB \ (A)$ CE DIN 45635-3 1m $67 \ dB \ (A)$ Filter EquipmentTotal surface area of particle filter approx. $2.20 \ m^2$ Total weight of gasfilter approx. $6.00 \ kg$ Total weight of filter equipment approx. $8.20 \ kg$ Automation InterfaceStatus signalDevice $OK$	Vacuum max.	12500 Pa	
Supply voltage230 V AC120 V ACFrequency50 / 50 / 50 / HzPower consumption1.2 kWRated current7.2 A10 AFuse16 A15 AOperating temperature+5 - +35 °CStorage temperature+5 - +40 °CMaximum installation altitude200∪ mChassis materialsteel platepowder coated2000ColourRAL 7035Noise Level at Filtering DeviceContinous sound pressure level82 dB (A)Acoustic power level to CE DIN 45635-3 1m67 dB (A)Filter Equipment1000 kgTotal surface area of particle filter approx.6.00 kgTotal weight of gasfilter approx.8.20 kgAutomation Interface54tus signalStatus signalDevice OKStatus signalError Filter 100%	Number of fans	1	
Trequency $50 / 60$ HzPower consumption $1.2$ kWRated current $7.2$ A $10$ AFuse $16$ A $15$ AOperating temperature $+5 - +35$ °CStorage temperature $+5 - +40$ °CMaximum installation altitude $2000$ mChassis material $steel$ platepowder coated $coated$ ColourRAL $7035$ Noise Level at Filtering DeviceContinous sound pressure level $82$ dB (A)Acoustic power level to $cf$ dB (A)CE DIN 45635-3 1m $67$ dB (A)Filter Equipment $1.2 \times 1000$ kgTotal surface area of particle filter approx. $6.00$ kgTotal weight of gasfilter approx. $8.20$ kgAutomation Interface $200 \times 1000$ kgStatus signalDevice OKStatus signalDevice OK	<b>Electrical Power Supply Filtering Device</b>	e	
Power consumption $1.2 \text{ kW}$ Power consumption $1.2 \text{ kW}$ Rated current $7.2 \text{ A}$ $10 \text{ A}$ Fuse $16 \text{ A}$ $15 \text{ A}$ Operating temperature $+5 + +35 \text{ °C}$ Storage temperature $+5 - +40 \text{ °C}$ Maximum installation altitude $200 \cup \text{ m}$ Chassis material $steel \text{ plate}$ powder coated $200 \cup \text{ m}$ Colour $\text{RAL } 7035$ Noise Level at Filtering DeviceContinous sound pressure level $82 \text{ dB} (\text{A})$ Acoustic power level to $C \text{ CE DIN } 45635 \cdot 3 \text{ 1m}$ CE DIN $45635 \cdot 3 \text{ 1m}$ $67 \text{ dB} (\text{A})$ Filter EquipmentTotal surface area of particle filter approx. $2.20 \text{ m}^2$ Total weight of gasfilter approx. $6.00 \text{ kg}$ Total weight of filter equipment approx. $8.20 \text{ kg}$ Automation Interface $Status$ signalStatus signalDevice OK	Supply voltage	230 V AC	120 V AC
Rated current7.2 A10 AFuse16 A15 AOperating temperature $+5 - +35 \ ^{\circ}C$ Storage temperature $+5 - +40 \ ^{\circ}C$ Maximum installation altitude $200 \cup m$ Chassis material $steel \   late$ powder coated $rowder \ coated$ ColourRAL $7035$ Noise Level at Filtering DeviceContinous sound pressure level82 dB (A)Acoustic power level to $67 \ dB \ (A)$ CE DIN 45635-3 1m $67 \ dB \ (A)$ Filter EquipmentTotal surface area of particle filter approx.Total surface area of particle filter approx. $8.20 \ \text{kg}$ Automation Interface $Device \ OK$ Status signal $Device \ OK$	Frequency	50 / 60 Hz	
Fuse16 A15 AOperating temperature $+5 - +35 ^{\circ}$ CStorage temperature $+5 - +40 ^{\circ}$ CMaximum installation altitude $200 \cup m$ Chassis material $steel  plate$ powder $coated$ ColourRAL $7035$ Noise Level at Filtering DeviceContinous sound pressure level $82  dB  (A)$ Acoustic power level to CE DIN 45635-3 1m $67  dB  (A)$ Filter EquipmentTotal surface area of particle filter approx. $2.20  m^2$ Total weight of gasfilter approx. $8.20  kg$ Automation Interface $Status signal$ Status signalDevice OKStatus signalError Filter 100%	Power consumption	1.2 kW	
Operating temperature+5 - +35 °CStorage temperature+5 - +40 °CMaximum installation altitude2000 mChassis materialsteel platepowder coatedpowder coatedColourRAL 7035Noise Level at Filtering Device2000 mContinous sound pressure level82 dB (A)Acoustic power level to67 dB (A)CE DIN 45635-3 1m67 dB (A)Filter Equipment70tal surface area of particle filter approx.Total surface area of particle filter approx.6.00 kgTotal weight of gasfilter approx.8.20 kgAutomation Interface200 kgStatus signalDevice OKStatus signalError Filter 100%	Rated current	7.2 A	10 A
Storage temperature+5 - +40 °CMaximum installation altitude2000 mChassis materialsteel plate powder coatedColourRAL 7035Noise Level at Filtering Device82 dB (A)Continous sound pressure level82 dB (A)Acoustic power level to CE DIN 45635-3 1m67 dB (A)Filter Equipment57 dB (A)Total surface area of particle filter approx.6.00 kgTotal weight of gasfilter approx.8.20 kgAutomation Interface51 du contentStatus signalDevice OKStatus signalError Filter 100%	Fuse	16 A	15 A
Maximum installation altitude2000 mChassis materialsteel plate powder coatedColourRAL 7035Noise Level at Filtering Device82 dB (A)Continous sound pressure level82 dB (A)Acoustic power level to CE DIN 45635-3 1m67 dB (A)Filter Equipment2.20 m²Total surface area of particle filter approx.6.00 kgTotal weight of gasfilter approx.8.20 kgAutomation InterfaceDevice OKStatus signalDevice OK	Operating temperature	+5 - +	35 °C
Chassis materialsteel plate powder coatedColourRAL 7035Noise Level at Filtering DeviceContinous sound pressure level82 dB (A)Acoustic power level to CE DIN 45635-3 1m67 dB (A)Filter Equipment67 dB (A)Total surface area of particle filter approx.2.20 m²Total weight of gasfilter approx.6.00 kgTotal weight of filter equipment approx.8.20 kgAutomation Interface5tatus signalStatus signalDevice OKStatus signalError Filter 100%	Storage temperature		
powder coatedColourRAL 7035Noise Level at Filtering DeviceEContinous sound pressure level82 dB (A)Acoustic power level toECE DIN 45635-3 1m67 dB (A)Filter Equipment100 kgTotal surface area of particle filter approx.6.00 kgTotal weight of gasfilter approx.8.20 kgAutomation Interface100 kgStatus signalDevice OKStatus signalError Filter 100%	Maximum installation altitude		
ColourRAL 7035Noise Level at Filtering DeviceContinous sound pressure level82 dB (A)Acoustic power level to CE DIN 45635-3 1m67 dB (A)Filter Equipment67 dB (A)Total surface area of particle filter approx.2.20 m²Total weight of gasfilter approx.6.00 kgTotal weight of filter equipment approx.8.20 kgAutomation InterfaceDevice OKStatus signalDevice OK	Chassis material		
Noise Level at Filtering DeviceContinous sound pressure level82 dB (A)Acoustic power level to67 dB (A)CE DIN 45635-3 1m67 dB (A)Filter Equipment70 da (A)Total surface area of particle filter approx.2.20 m²Total weight of gasfilter approx.6.00 kgTotal weight of filter equipment approx.8.20 kgAutomation Interface50 kgStatus signalDevice OKStatus signalError Filter 100%		powder coated	
Continous sound pressure level82 dB (A)Acoustic power level to CE DIN 45635-3 1m67 dB (A)Filter Equipment67 dB (A)Total surface area of particle filter approx.2.20 m²Total weight of gasfilter approx.6.00 kgTotal weight of filter equipment approx.8.20 kgAutomation Interface5Status signalDevice OKStatus signalError Filter 100%	Colour	RAL 7035	
Acoustic power level to CE DIN 45635-3 1m67 dB (A)Filter Equipment67 dB (A)Total surface area of particle filter approx.2.20 m²Total weight of gasfilter approx.6.00 kgTotal weight of filter equipment approx.8.20 kgAutomation InterfaceDevice OKStatus signalDevice OKStatus signalError Filter 100%			
CE DIN 45635-3 1m67 dB (A)Filter Equipment7000 mmTotal surface area of particle filter approx.2.20 m²Total weight of gasfilter approx.6.00 kgTotal weight of filter equipment approx.8.20 kgAutomation Interface1000 kgStatus signalDevice OKStatus signalError Filter 100%	Continous sound pressure level	82 dB (A)	
Filter Equipment     Total surface area of particle filter approx.   2.20 m²     Total weight of gasfilter approx.   6.00 kg     Total weight of filter equipment approx.   8.20 kg     Automation Interface   Status signal     Status signal   Device OK     Status signal   Error Filter 100%	•		
Total surface area of particle filter approx.2.20 m²Total weight of gasfilter approx.6.00 kgTotal weight of filter equipment approx.8.20 kgAutomation InterfaceDevice OKStatus signalDevice OKStatus signalError Filter 100%	CE DIN 45635-3 1m	67 dB (A)	
Total weight of gasfilter approx.6.00 kgTotal weight of filter equipment approx.8.20 kgAutomation InterfaceDevice OKStatus signalDevice OKStatus signalError Filter 100%			
Total weight of filter equipment approx.8.20 kgAutomation InterfaceDevice OKStatus signalDevice OKStatus signalError Filter 100%		2.20 m <sup>2</sup>	
Automation InterfaceStatus signalDevice OKStatus signalError Filter 100%	<b>o o</b> 11	6.00 kg	
Status signalDevice OKStatus signalError Filter 100%	<b>o</b> 11 11	8.20 kg	
Status signal Error Filter 100%			
	0		
Switching contact Device ON			
	Switching contact	Devic	e ON

Further application specific filtering devices with increased suction capacity and additional filter equipment are available on request.

### **Delivery Program Laser Marking System**

### LSG100-FL with Rotary Table RTM650

eyboard

All specifications about delivery, design and technical data are given to the best of our current knowledge and are subject to change without prior notice. For more information go to www.cab.de

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