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# Laser Marking System LSG 65-FL

Made in Germany

# 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.

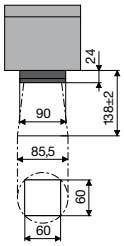
The software cablase provides a graphical interface for real-time control or the COM interface for customized programming. cab offers solutions for integration into manufacturing lines, laser safety workstations as well foil and type plate marking systems.

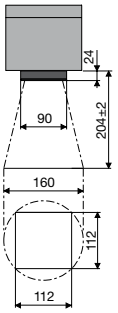
## Technical Data

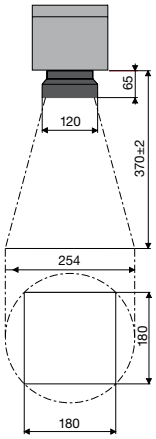
| **Laser Source** | **FL10** | **FL 20** |
|---|---|---|
| Max. cw power | 10 Watt | 20 Watt |
| Pulse energy | 0.5 mJ | 1 mJ |
| Laser type | ytterbium fiber laser, pulsed | |
| Cooling | air cooled | |
| Wavelength | 1064 nm | |
| Beam quality $M^2$ | < 1.8 | |
| Pulse width | 80 - 120 ns | |
| Pulse frequency | 20 - 80 kHz | |
| Pilot laser | 650 nm / < 1 mW / Class 2 | |
| Length fiber connection | 4.5 m | 2.5 m |
| Laser safety class | class 4 | |
| **Scan head** | | |
| Mounting | horizontal / vertical | |
| Scanning speed | max. 5000 mm/s | |
| Weight | 8 kg | |
| Dimension h x w x d | 110 x 170 x 330 mm | |
| **Control Unit** | | |
| Supply voltage / frequency | 100 - 240 VAC / 50-60 Hz | |
| Power consumption | 350 Watt | 450 Watt |
| Fuse (230 V) | 2.5 AT | |
| Fuse (110 V) | 5 AT | |
| Weight | 17 kg | |
| Dimension h x w x d | 178 x 420 x 420 mm | |
| **Ambient Conditions** | | |
| Temperature/humidity | | |
| Operation: | + 5 - 40°C / 10 - 85% not condensing | |
| Stock: | + 0 - 60°C / 20 - 80% not condensing | |
| Transport: | – 25 - 60°C / 20 - 80% not condensing | |
| **Interfaces** | | |
| PC-Interfaces | PCI, TCP/IP | |
| Laser Control Interface for | System Ready, Start Marking | |
| | 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, | |
| Operating Systems | Windows XP®, Windows 7® | |

| **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 direction, radial marking. | |
| Character width | Stretching and compressing 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<br>All graphic elements can be scaled, moved, rotated, grouped or mirrored.<br>Special tools are available to tune, align and resize the objects. | |
| **Barcodes** | | |
| Linear Barcodes | 2 of 5<br>Code 39, Code 93<br>Code 128 | Codabar<br>EAN<br>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.<br>Inverted marking of code. | |
| **Additional Features of the Marking Software** | | |
| Serial number, date, time. | | |
| Variable fields. | | |
| Direct import of graphic data from Windows based applications. | | |
| 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. | | |
| cablase provides a COM Automation Server enabling the user to control the laser from any other user interface developed by e.g. Visual Basic, Borland Builder, provided the programming language has ability to communicate to COM-objects. | | |

| **Plano Sperical Lens F-Theta** | **100** | **160** | **254** |
|---|---|---|---|
| Working Distance mm | 138±2 | 204±2 | 370±2 |
| Marking Area mm ☒ | 60 x 60 | 112 x 112 | 180 x 180 |
| Spot Diameter µm | ~25 | ~35 | ~50 |
| ≙ Resolution dpi | 1000 | 725 | 500 |



# Laser Marking System LSG65-FL

The laser safety housing LSG 65 offers a professional solution for an easy and fast industrial laser marking of single work pieces and small series. The desktop version offers enough working space even for larger work pieces.
The manual operation door is balanced. Keyboard and monitor are installed in an ergonomic way on a pivot arm.

## Technical Data

| **Laser Safety Housing** | | | |
|---|---|---|---|
| Working area l x w x h | 530 x 380 x 200 mm | | |
| Base plate T-slot l x w | 495 x 375 mm | | |
| Pitch | 25 mm | | |
| F-Theta lens | 100 | 160 | 254 |
| Marking area mm | 60 x 60 | 112 x 112 | 180 x 180 |
| Max. height workpiece mm | 267 | 200 | 85 |
| Marking level mm | 30 - 267 | 0 - 200 | 0 - 85 |
| Laser protection window | 100 x 200 mm | | |
| Z-Axis traversing range | 240 mm | | |
| Positioning accuracy Z | 0.02 mm | | |
| Focusing equipment | pointing laser 650 nm / < 1 mW / cl. 2 | | |
| Aperture extraction system | DN 50 | | |
| Interior light | LED | | |
| Operating door | manual driven | | |
| Dimension l x w x h | 815 x 675 x 615 ( 665 ) mm | | |
| Chassis / colour | steel plate / RAL 9023 | | |
| Door / colour | plastics / RAL 9006 | | |
| Weight | 90 kg ( w/o laser system ) | | |
| **Operating Panel** | | | |
| LED-indicators | Power On<br>Emission<br>Collective Error | Laser Ready<br>Mark in Progress<br>Door Closed | |
| Push button On/Off | Controls On<br>Extraction On | Pointing Laser Light | |
| Push button | Start | | |
| Push button up / down<br>left / right | Z-Axis<br>Rotating Axis | | |
| Interruptor | Emergency Stop | | |
| Key switch | Manual or Automatic Operation | | |

| **Interfaces** | |
|---|---|
| Marking laser system | FL10 / 20 |
| Filtering devices | AF1/2/3/4 |
| Interface RS232 | axis control |
| Peripheral connection | rotary axis / auxiliary |
| Internal I/O interface | inputs / outputs |
| Housing feed through | USB port |
| **Status Monitoring** | |
| Safety interlock circuits | closed |
| Collective failure | marking laser system |
| Filtering device | change of filter |
| **Operating Data** | |
| Supply voltage | 100-240 V AC |
| Frequency | 50 / 60 Hz |
| Power consumption max. | 250 Watt |
| Temperature/humidity | |
| Operation: | + 5 - 40°C / 10 - 85% not condensing |
| Stock: | + 0 - 60°C / 20 - 80% not condensing |
| Transport: | – 25 - 60°C / 20 - 80% not condensing |
| Laser safety class | class 1 |
| Approvals | CE |
| **Content of Delivery** | |
| Operating manual | |
| Main supply cable type CEE 7/7, length 3 m | |
| Connecting cable FL, length 3 m | |
| Connecting cable PC, length 3 m | |
| Connecting cable filtering device, length 3 m | |

Carriers for work pieces, special accessoires and additional solutions for automation are available on request.

*For current data, please go to www.cab.de/en/lsg65*

*Scan this QR code with your smartphone and learn more about LSG 65.*

## AF1


### Technical Data

| Device Type | AF1 | |
|---|---|---|
| Dimension l x w x h | 355 x 355 x 655 mm | |
| Space requirement for filter change l x w x h | 700 x 700 x 1000 mm | |
| Weight without fiter equipment approx. | 29 kg | |
| IP protection level | IP 42 | |
| Suction capacity max. | 100 - 320 $m^3/h$ | |
| Vacuum max. | 12500 Pa | |
| Number of fans | 1 | |
| **Electrical Power Supply Filtering Device** | | |
| Supply voltage | 230 V AC | 120 V AC |
| Frequency | 50 / 60 Hz | |
| Power consumption | 1.2 kW | |
| Rated current | 7.2 A | 10 A |
| Fuse | 16 A | 15 A |
| Operating temperature | +5 - +35 °C | |
| Storage temperature | +5 - +40 °C | |
| Maximum installation altitude | 2000 m | |
| Chassis material | steel plate powder coated | |
| Colour | RAL 7035 | |
| **Noise Level at Filtering Device** | | |
| Continous sound pressure level | 82 dB (A) | |
| Acoustic power level to CE DIN 45635-3 1m | 67 dB (A) | |
| **Filter Equipment** | | |
| Total 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 Interface** | | |
| Status signal | Device OK | |
| Status signal | Error Filter 100% | |
| Switching contact | Device ON | |

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

### 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 |

### Delivery Program Laser Marking System LSG 65-FL

| Part No. | Device |
|---|---|
| **5528000.xxxx** | LSG65-FLxx |
| | |
| **Part No.** | **Accessories** |
| **5526167** | Pivot arm for LCD/TFT Monitor w/ Keyboard Tray |
| **5901621** | Keyboard With Trackball PS/2 german |
| **5901651** | Keyboard With Trackball PS/2 english |
| **5901660** | Protective Plastic Sheeting WetEx Keyboard |
| **5905933** | Rotary Axis ZD30 |
| **5905978** | 3-jaw Chuck ZD30 |
| **5526156** | Cable Rotary Axis |
| On request | Roll Cart LSG65 w/ 19“ Rack Mounts |

## Rotary Axis ZD 30

Applicable for marking the outline of rotationally symmetric work pieces.

## Sliding Table 200

The pneumatic driven linear axis allows positioning of workpieces below the laser at 2 predefined positions.

## Type Plate Handling

The Type Plate Handling THS Standard is used for batch processing of type plates.

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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