

**Laser solutions**  
for general marking  
applications



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## **ROFIN – Lasers for industrial material processing**

ROFIN is a global leader in developing and manufacturing of industrial lasers and laser-based products used in material processing applications. With a variety of CO<sub>2</sub>, rod, disc, fiber and diode lasers, pulsed or cw, ROFIN offers the widest and most powerful product range for industrial materials processing.

ROFIN combines the benefits of an experienced laser manufacturer with application-specific professional competence. People at ROFIN have always developed not only laser sources but also complete turn-key laser systems for most diverse applications. That means long-time of experience – not only in building lasers – but also in application development, in laser systems manufacture and in the entire range of material processing technologies.



## **Laser marking – fast, flexible, durable**

Whether it's metal, plastics, glass, ceramics, wood or semiconductors – there are few materials that cannot be marked by laser. In a wide variety of sectors, flexible and permanent marking with lasers has become the preferred method of identifying parts. Laser marking is a fast and flexible process that can mark alphanumerics, graphics, logos, barcodes and bitmaps. Compared with other marking technologies such as inkjet printing and mechanical marking, laser marking has a number of advantages. It offers very high processing speeds, low operational costs and consistent high quality and durable results. It is a contact-free process which avoids adding any undesirable substance to the workpiece. Laser marking systems are compact and offer very high flexibility in automation.

ROFIN offers a complete product line-up, optimized for laser marking: laser sources, laser markers, all-in-one laser marking systems and customized marking solutions. In order to perfectly meet specific application requirements, laser sources are available in different power ranges and wavelengths of 1064, 532 and 355 nm. Most marking systems can be equipped with different laser sources. Superior beam quality and excellent mechanical and optical quality ensure sustained, precise marking results and reliable operation in rough industrial environments.

## All-in-one marking solutions

Class 1 laser marking stations from ROFIN are available in different sizes and designs in order to offer best solutions for individual requirements. Various options, fixed and selectable laser sources enable exact adaptation to every marking task.



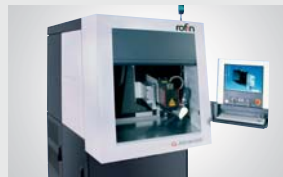
**EasyMark**

With a footprint of just 60x60 cm, the EasyMark series are one of the most compact laser marking devices on the market. Marking tasks on metallic surfaces and plastics are handled effortlessly and with perfect results. The laser marker operates with conventional household power source and does not require any external cooling.



**CombiLine Cube**

The CombiLine Cube is an innovative all-purpose laser marking station. Different laser sources, such as PowerLine E Air series, PowerLine E series or PowerLine F series, can be integrated into the laser workstation according to individual requirements.



**CombiLine Advanced**

The CombiLine Advanced offers reliable 24/7 operation, ensured through ROFIN's many years of experience in the manufacture of superior machines. The stable design of the laser workstation guarantees precise marking results. The worktable even carries large and heavy workpieces of up to 100 kg (model WT).

## Marking lasers

Each of the laser sources mentioned below offers excellent marking results on nearly all materials.



**PowerLine E Air 10 and 25**

### All air-cooled laser marker with low operating costs

The PowerLine E Air 10 is an end-pumped solid-state laser, which is completely air-cooled. The operating costs of the system are low due to reduced energy consumption. Due to its efficient cooling technology the PowerLine E Air 10 is almost maintenance-free.

As part of industrial production processes, laser marking has to deal with critical surfaces quite frequently. The PowerLine E Air 25 provides best marking results even in case of dusty, oily or oxidized parts. Besides common marking tasks the PowerLine E Air 25 is a perfect choice for engraving, as well.



**PowerLine F 20 and 30**

### Fiber technology with compact design

The PowerLine F 20/30 is a diode-pumped, q-switched fiber laser. It excels in high diode life and requires only minimum maintenance with attractive total operating costs. The system is air-cooled and needs only 330 and 390 watts respectively.

The space-efficient design of the PowerLine F series facilitates integration into existing production environments. A flexible optical fiber connects the very compact laser head with the supply unit where the laser beam is being generated.

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## EasyMark

Most compact  
laser marking solution



Metallic surfaces and plastics, plain and curved parts, standard marking tasks or serial numbers, stationary or mobile use – the EasyMark series provide a flexible solution for moderate batch sizes. Program-controlled axes (one linear Z-axis and one rotary axis) can be easily integrated into the system for more marking freedom. The laser marker holds parts up to a size of 450 x 150 x 200 mm (W x H x D). Focusing and positioning aids ensure that the device can be easily operated. The system is available either with an actively air-cooled 10 watts laser or with a 20 watts fiber laser.

### Your benefits

- compact desktop system
- suitable for small parts
- integrated air cooling

## CombiLine Cube

Flexible and  
efficient



The CombiLine Cube has compact dimensions and offers an efficient solution for manual laser marking. All 19" components can be integrated into the support frame. The 17" TFT monitor and the keyboard are integrated in the housing. An observation window allows monitoring of the marking progress. Two different modes of access ensure easy setup process and short cycle times. For easy job setup the machine front slides up to give wide access to the marking field. During production, the fully automated pneumatic door provides for short cycle times. The marking process is easily started at the push of a button or optionally by a foot switch. Process visualization is done via the monitor, this ensuring high operation comfort. As an option, two circumferential indexers are available for marking cylindrical workpieces. A compact compressor serves for the operation of the pneumatic door.

### Your benefits

- cost-optimized, flexible solution
- short cycle times by quick job setup
- low operating costs by actively air-cooled, efficient lasers

## CombiLine Advanced

### Reliable 24/7 operation



Version with rotary table

Due to the positioning possibilities of the laser via three program-controlled axes, even parts of complex geometry can be marked easily. A rotary axis, which is required for the marking of cylindrical parts, is available optionally. The CombiLine Advanced process visualization via 15" TFT touchscreen monitor ensures maximum operating comfort. Accommodating all its supply units in a compact housing, the workstation can be set up where it ideally meets the demands for workflow and best access. To ensure optimal working height, the CombiLine Advanced is available for seated or standing operation.

#### Your benefits

- suitable for complex geometry and heavy workpieces
- worktable and rotary table versions available
- selectable laser source



Marking of small-size batches



Marking of middle-size batches



Marking of heavy parts at high flexibility

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## PowerLine E Air 10 and 25

### Completely air-cooled laser markers



Each component of the PowerLine E Air 10 /25 laser markers work with efficient air-cooling. The operating costs of the system are low due to reduced energy consumption and use of advanced air-cooled technology. In order to perfectly meet specific application requirements, the laser markers of the PowerLine E Air series are available in two different power ranges. They mark different materials with alphanumeric, graphics, grayscale pictures, barcodes and matrix codes with high quality and within a short cycle time. In order to offer best marking results on certain metals and plastics, the Power Line E series are also available with water-air cooling with wavelengths of 1064 nm, 532 nm and 355 nm. Double head configurations with beam splitter and beam switch offer benefits when it comes to large marks or need for short process times. The PC (2 rack units) and the supply module (3 rack units) of the laser marker PowerLine E Air series are housed in standard 19" modules. The compact laser head has a length of 500 mm and can be integrated together with the supply and control components in customer-specific or ROFIN-supplied laser workstations.

#### Your benefits

- low operating costs due to air cooling technology
- 19" components, compact dimensions
- different power ranges

## PowerLine F 20 and 30

### Fiber laser for a wide range of marking applications



The PowerLine F 20/30 is a diode-pumped q-switched fiber laser offering different output powers and specially optimized for marking applications. Nearly all metals and plastics can be economically processed with this laser sources. The space-efficient design of the PowerLine F 20/30 facilitates integration into existing production environments. A flexible optical fiber connects the very compact laser head with the supply unit where the laser beam is being generated. The diode-pumped laser source excels in high diode life and allows efficient operation with minimum maintenance and with reduced total operating costs. This system is air-cooled and needs only 330 and 390 watts respectively.

#### Your benefits

- efficient operation with minimum maintenance
- low operating costs with only 330 and 390 watts power consumption respectively
- extremely compact design for easy integration



Marking of small characters



Marking of plastics



Marking of machine-readable codes

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## Application knowledge

ROFIN offers you a comprehensively equipped laser application lab. Customer applications and lab studies can be carried out with the assistance of our experienced engineers. Practically all of our marking systems are available for application trials.

You specify your characteristic application data, the material to be processed, the desired marking geometry and constraints of your process environment. We will present you all possible laser concepts for consideration, with benefits and implications and together we will find the perfect solution for your individual laser task.



Lab studies by experienced engineers

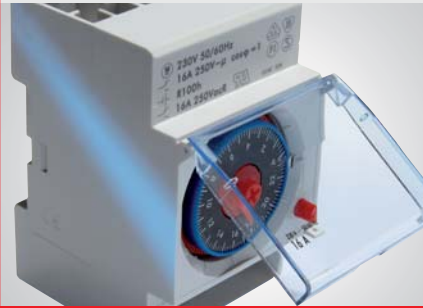
If your application strikes a new path in laser marking, we can call on our wide range of high-performance laser sources and combine them with efficient engineering and process technology to create a tailor-made complete system solution. We are glad to welcome customers to join us for application tests in order to achieve best results.



Personalization



Annealing



Identification



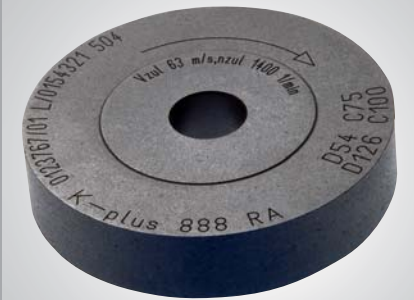
Tracability



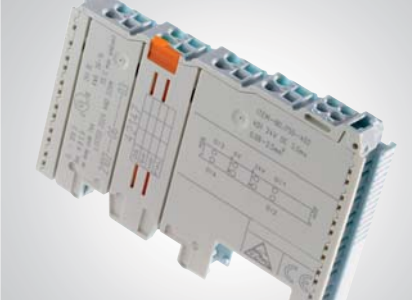
Machine readable codes



Deep engraving



Circular marking



Color change



Just-in-time marking

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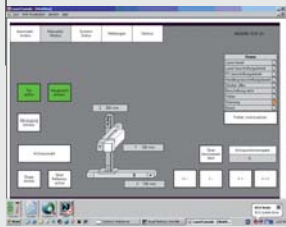
## VisuLaserMarker software – powerful and simple to use

VisuLaserMarker (VLM) is a sophisticated and flexible marking software used for all Rofin lasers. Running on a standard PC environment, layout and transfer of the marking contents is a breeze. VLM is a “what you see is what you get” type software and offers the flexibility to be simple to use and yet powerful. VLM is able to fully integrate into any production software and is configured to handle all common communication methods. True type fonts are used directly, no need to convert to special fonts. VLM offers a wide range of marking functions, fonts and predefined laser parameter sets. The user-interface is clearly arranged and can be operated easily, which reflects ROFINs longtime laser marking expertise.

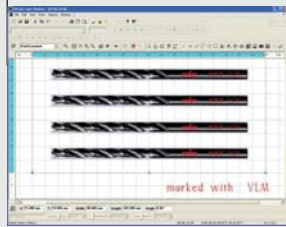
Laser display, graphical user interface for the operator.



Laser workstation oriented visualization via web interface.



Row and column marking of workpieces.



VLM handles a wide variety of marking content e.g. matrix-codes, barcodes and serial numbers. Extremely small marks can be realized depending on the material. The sophisticated software controls marking on flat and curved surfaces and even marking-on-the-fly applications. Via an optical fast focussing module various workpiece heights can be processed quickly – travel time between the upper and the lower maximum positions is just 15 ms.



A competent, strong software team with solid knowledge ensures excellent software quality harmonized with the customer requirements. Continuous, user-oriented development, individual solutions and customer support are the focus of software work.

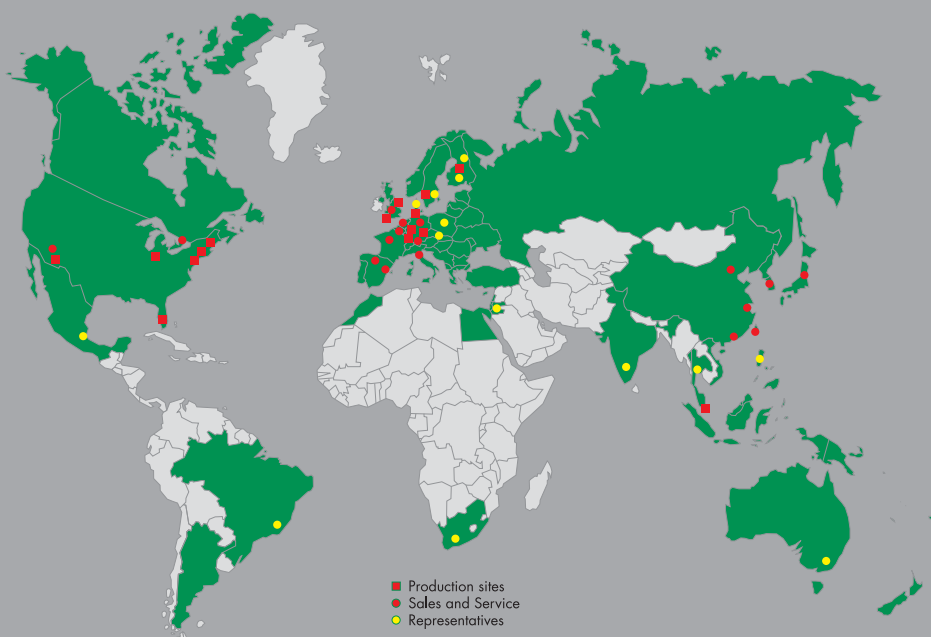
## Service and training

Modern industrial laser marking equipment requires a qualified knowledge of laser technology and of its applications. At the ROFIN Laser Marking Seminar Center, we can offer you a choice of various training programs. With our operation, maintenance, and programming courses we provide the qualified training necessary to meet these demands.

ROFIN optimized the design of its marking lasers for easy servicing. Maintenance work is reduced to a minimum. Just in case: ROFIN's worldwide service network is ready for support on-site when required.

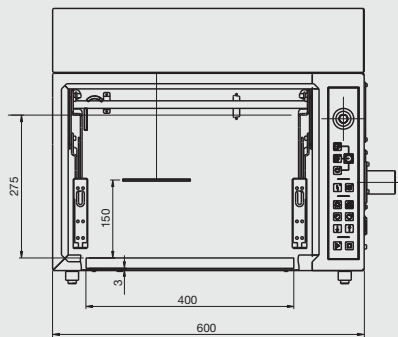


We offer local spare parts centers with modern logistics. Our customers all over the world benefit from individual service agreements and hotline support.

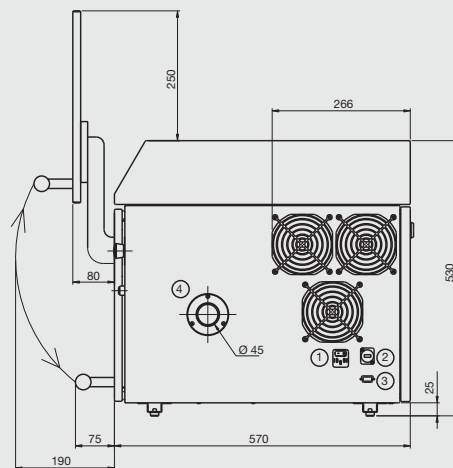


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## EasyMark



Front view



Side view

### EasyMark

Laser power class (W): 10, 20

### Supply and marking unit

Dimensions (W x D x H, mm): 600 x 645 x 530

Machine weight (kg): 85

Max. workpiece dimension (W x D x H, mm): 450 x 200 x 150

Max. workpiece weight incl. fixture (kg): 10

Marking field size (mm): 120 x 120

Z-axis travel (mm): 120

Door: manual

Power supply: 100 - 240 VAC +/-10%, 50/60 Hz

Max. power consumption (W): 410

Cooling: integrated air cooling

Environment temperature (°C): 15 - 35

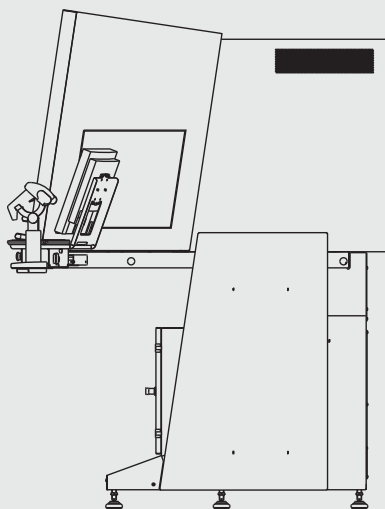
Focal distance (mm): 160

Color: RAL 7016, RAL 9002

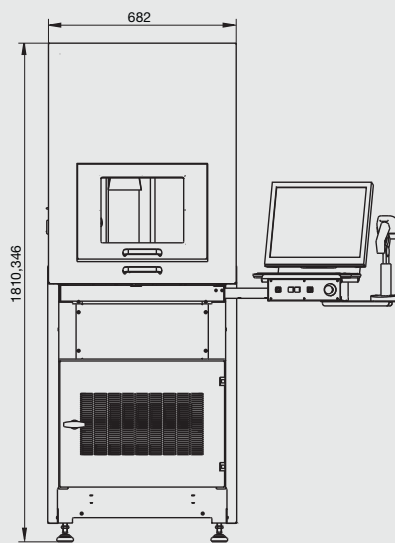
### Options

z-axis  
circumferential indexer  
extraction unit

## CombiLine Cube



Side view



Front view

### CombiLine Cube

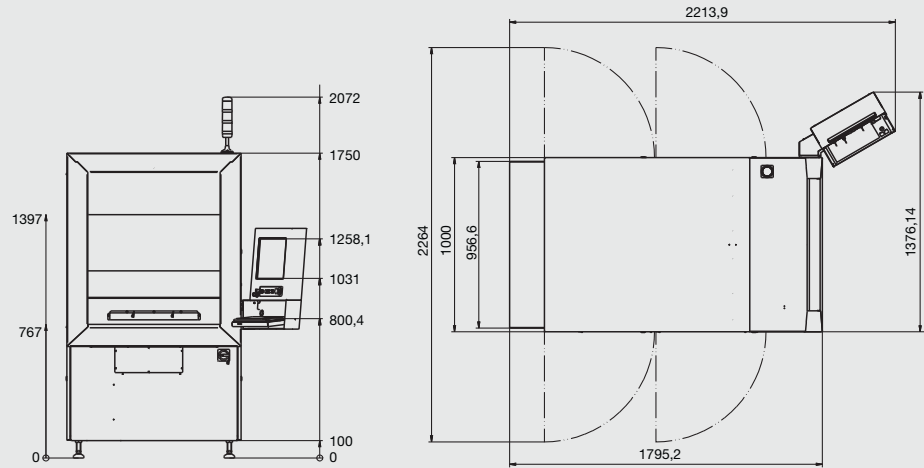
|  |  |
|--|--|
| Marking laser:                               | PowerLine E Air 10/25, PowerLine E 20/25,<br>PowerLine E 20 SHG, PowerLine E 20 THG,<br>PowerLine F 20/30 /50  |
| Dimensions (W x D x H, mm):                  | 1182 x 1380 x 1810 (closed),<br>with open hood H = 2285  |
| Machine weight (kg):                         | depending on laser system max. 450   |
| Max. workpiece dimension<br>(W x D x H, mm): | ca. 350 x 350 x 350<br>(height depends on optics)<br>max. 500 x 375 x 300<br>for loading via open service door   |
| Max. workpiece weight<br>incl. fixture (kg): | 20   |
| Marking field size (mm):                     | 120 x 120, (f = 160 standard)  |
| Z-axis travel (mm):                          | Max. 300,<br>depending on optics and laser system  |
| Door:  | fully automated  |
| Lateral feeding of<br>the workpiece:         | customized solution  |
| Power supply:                                | PowerLine F 20/30/50: 115 - 240 VAC, +/-10% VAC,<br>50/60 Hz<br>PowerLine E Air 10: 120 - 240 VAC, +/-10% VAC, 50/60 Hz<br>PowerLine E Air 25: 208 - 240 VAC, +/-10% VAC, 50/60Hz<br>PowerLine E 20/25: 230 +/-10% VAC, 50/60 Hz<br>PowerLine E 20 SHG/THG: 230 VAC +/-10%, 50/60 Hz |
| Max. power consumption (W):                  | 400 (depending on configuration)   |
| Compressed air (bar):                        | 6 - 10 optionally: compressor  |

### Options

circumferential indexer  
compressor (if no pneumatic supply)  
foot switch  
extraction unit completely controlled by system interface  
barcode scanner with carrier integrated in support frame

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## CombiLine Advanced



Front view CombiLine Advanced RT

Top view CombiLine Advanced RT

|  | CombiLine Advanced WT   | CombiLine Advanced RT   |
|--|---|---|
| Marking laser:                               | PowerLine E Air 10/25<br>PowerLine E 20/25<br>PowerLine E 40<br>PowerLine E 20/25 SHG<br>PowerLine E 20 THG<br>PowerLine F 20/30/50 | PowerLine E Air 10/25<br>PowerLine E 20/25<br>PowerLine E 40<br>PowerLine E 20/25 SHG<br>PowerLine E 20 THG<br>PowerLine F 20/30/50 |
| Dimensions:<br>(W x D x H, mm)               | 1376 x 2013 x 1750<br>(seated operation)<br>1376 x 2013 x 1900<br>(standing operation)  | 1376 x 2214 x 1750<br>(seated operation)<br>1376 x 2214 x 1900<br>(standing operation)  |
| Machine weight (kg):                         | 420   | 490   |
| Max. workpiece dimension:<br>(W x D x H, mm) | 700 x 550 x 500 (depend-<br>ing on optics and axis system)  | 400 x 300 x 295 (RT)  |
| Max. workpiece weight<br>incl. fixture (kg): | 100   | 10 each side  |
| Working height (mm):                         | 750<br>(standing operation: 900)  | 750<br>(standing operation: 900)  |
| Marking field size (mm):                     | 120 x 120   | 120 x 120   |
| Axis travel (mm):                            | z: max. 300, depending on<br>optics and laser system  | z: max. 300, depending on<br>optics and laser system  |
| Rotary table diameter (mm):                  | not applicable  | 800   |
| Rotation time of rotary table (s):           | not applicable  | 1.2   |
| Door:  | pneumatic door  | fully automatic   |
| Power supply:                                | 230 / 400 V (+/- 10%);<br>3P; N; PE; 50/60 Hz;  | 230 / 400 V (+/- 10%);<br>3P; N; PE; 50/60 Hz;  |
| Max. power consumption (W):                  | approx. 800   | approx. 800   |
| Compressed air (bar):                        | 6   | not applicable  |
| Color:                                       | RAL 7016, RAL 9002  | RAL 7016, RAL 9002  |

### Options

|   |     |            |
|---|-----|------------|
| x-axis:                                       | yes | yes        |
| y-axis:                                       | yes | on request |
| circumferencial indexer:                      | yes | yes        |
| extraction unit:                              | yes | yes        |
| foot switch:                                  | yes | yes        |
| barcodescanner integrated<br>in support frame | yes | yes        |

## Laser workstation comparison at a glance



|  | <b>EasyMark series</b>                           | <b>CombiLine Cube</b>   | <b>CombiLine Advanced</b>  |
|--|--|---|--|
| Marking laser:                               | fixed,<br>10 watts air-cooled,<br>20 watts fiber | PowerLine E Air 10/25<br>PowerLine E 20/25<br>PowerLine E 20 SHG<br>PowerLine E 20 THG<br>PowerLine F 20/30/50        | PowerLine E Air 10/25<br>PowerLine E 20/25,<br>PowerLine E 40<br>PowerLine E 20/25 SHG<br>PowerLine E 20 THG<br>PowerLine F 20/30/50 |
| Dimensions<br>(W x D x H, mm):               | 600 x 645 x 530                                  | 1182 x 1380 x 1810<br>(closed),<br>with open hood<br>H = 2285   | 1376 x 2013 x 1900<br>(WT, standing operation)<br>1376 x 2214 x 1900<br>(RT, standing operation)                                     |
| Machine weight (kg):                         | 85   | depending on laser<br>system max. 450   | 420 (WT), 490 (RT)   |
| Max. workpiece dimension:<br>(W x D x H, mm) | 450 x 200 x 150                                  | ca. 350 x 350 x 350<br>(height depends on<br>optics)<br>max. 500 x 375 x 300<br>when loading via open<br>service door | 700 x 550 x 500 (WT)<br>(depending on optics<br>and axis system)<br>400 x 300 x 295 (RT)   |
| Max. workpiece weight<br>incl. fixture (kg)  | 10   | 20  | 100 (WT)<br>10 each side (RT)  |
| Marking field size (mm):                     | 120 x 120  | 120 x 120<br>(f = 160 standard)   | 120 x 120 (WT)<br>120 x 120 (RT)   |
| Axis travel (mm):                            | 120,   | z: max. 300,<br>depending on optics<br>and laser system   | z: max. 300,<br>depending on optics<br>and laser system  |
| Door:  | manual   | fully automated   | fully automated (RT)<br>pneumatic door (WT)  |

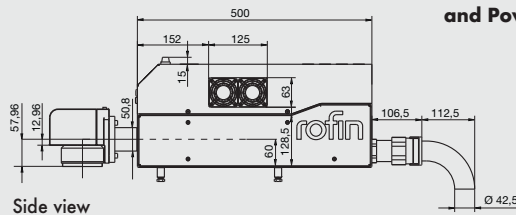
### Options

|   |                |                    |                           |
|---|----------------|--------------------|---------------------------|
| x-axis:                                       | not applicable | yes, 200 mm travel | yes                       |
| z-axis:                                       | yes            | standard           | standard                  |
| y-axis:                                       | not applicable | not applicable     | yes (WT), on request (RT) |
| circumferential indexer:                      | yes            | yes                | yes                       |
| extraction unit:                              | yes            | yes                | yes                       |
| foot switch:                                  | not applicable | yes                | yes                       |
| barcodescanner integrated<br>in support frame | not applicable | yes                | yes                       |

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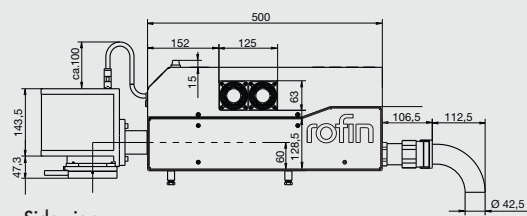
## PowerLine E Air 10 and 25

### Laser and galvo PowerLine E Air 10



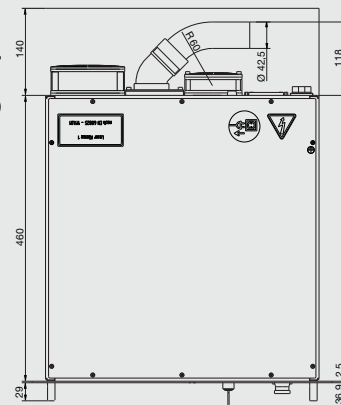
Side view

### Laser and galvo PowerLine E Air 25

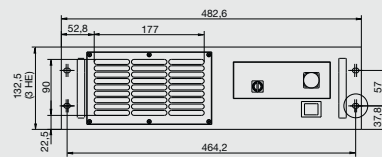


Side view

### Supply unit for PowerLine E Air 10/25 and PowerLine F 20/30



Top view



Front view

### Laser head

|                                   |                     |
|-----------------------------------|---------------------|
| Wavelength (nm):                  | 1064                |
| Pulse frequency (kHz):            | 1 - 200, cw as well |
| Laser dimensions (W x L x H, mm): | 118 x 500 x 220     |
| Laser weight (kg):                | approx. 16          |
| Ingress protection:               | IP 54               |
| Air flow (m <sup>3</sup> /h):     | approx. 120         |

### Marking unit

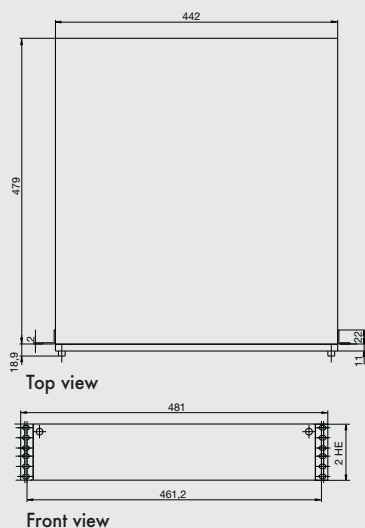
|                                      |  |
|--------------------------------------|--|
| Field size (mm):                     | 120 x 120 (other size on request)  |
| Focal distance (mm):                 | 160 (other focal distance on request)                                      |
| Galvo dimensions:<br>(W x L x H, mm) | PowerLine E Air 10: 100 x 77 x 77.5<br>PowerLine E Air 25: 167 x 118 x 200 |
| Galvo weight (kg):                   | PowerLine E Air 10: approx. 2.2<br>PowerLine E Air 25: approx. 4.3         |
| Ingress protection:                  | IP 54  |

### Supply unit and PC (19")

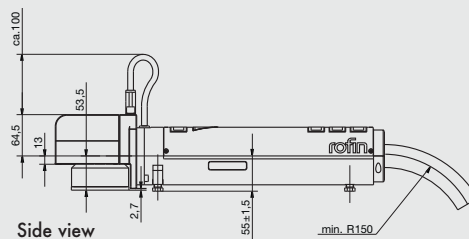
|   |  |
|---|--|
| Supply unit dimensions<br>(W x L x H, mm):    | 483 (19") x 460 x 3 rack units   |
| Supply unit weight (kg):                      | 25   |
| PC dimensions (W x L x H, mm):                | 483 (19") x 479 x 2 rack units   |
| PC weight (kg):                               | 10   |
| Software:                                     | Windows XP embedded, DVD RW, USB 2.0, LAN  |
| Cooling:                                      | integrated air cooling   |
| Power supply:                                 | 120 - 240 VAC, +/-10% VAC, 50 - 60 Hz (E Air 10)<br>208 - 240 VAC, +/-10% VAC, 50 - 60 Hz (E Air 25) |
| Power consumption supply<br>unit (W):         | 500 (PowerLine E Air 10)<br>610 (PowerLine E Air 25)   |
| Ingress protection:                           | IP 20  |
| Operating temperature (°C):                   | 15 - 35  |
| Air flow 19" supply unit (m <sup>3</sup> /h): | approx. 250  |
| Air flow 19" PC (m <sup>3</sup> /h):          | approx. 80   |

## PowerLine F 20 and 30

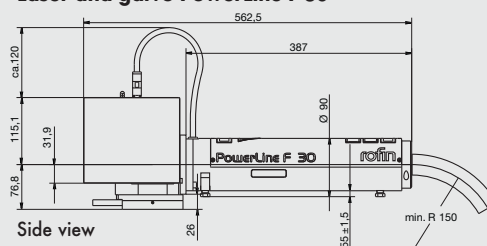
### PC for PowerLine E Air 10/25 and PowerLine F 20/30



### Laser and galvo PowerLine F 20



### Laser and galvo PowerLine F 30



#### Laser head

|                        |  |
|------------------------|--|
| wavelength, typ. (nm): | 1064   |
| Pulse frequency (kHz): | PowerLine F 20: 20 - 100<br>PowerLine F 30: 30 - 100 |
| Laser dimensions (mm): | length 387, Ø 90                                     |
| Laser weight (kg):     | PowerLine F 20: 5.5<br>PowerLine F 30: 5.7           |
| Ingress protection:    | IP 54  |

#### Marking unit

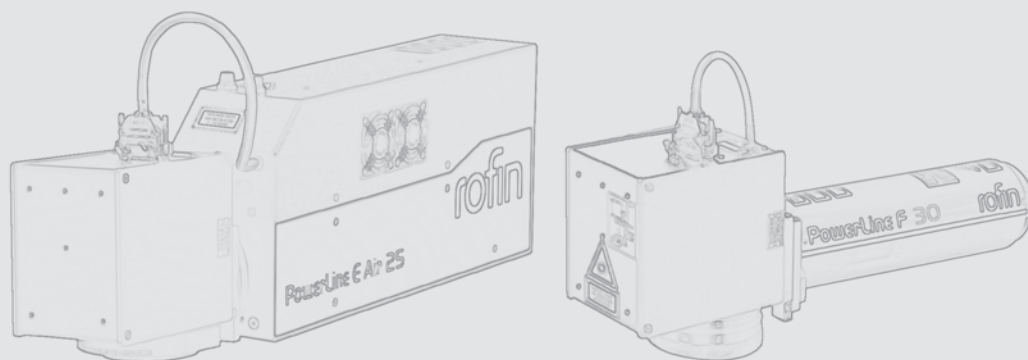
|                                   |  |
|-----------------------------------|--|
| Field size (mm):                  | 120 x 120  |
| Focal distance (mm):              | 160 (other focal distance on request)                              |
| Galvo dimensions (W x L x H, mm): | PowerLine F 20: 100 x 77 x 77.5<br>PowerLine F 30: 167 x 118 x 200 |
| Galvo weight (kg):                | PowerLine F 20: approx. 2.2<br>PowerLine F 30: approx. 4.3         |
| Ingress protection:               | IP 54  |

#### Supply unit and PC (19")

|   |  |
|---|--|
| Supply unit dimensions (W x L x H, mm): | 483 (19") x 460 x 3 rack units                             |
| Supply unit weight (kg):                | 23.5   |
| PC dimensions (W x L x H, mm):          | 483 (19") x 479 x 2 rack units                             |
| PC weight (kg):                         | 10   |
| Software:                               | Windows XP embedded, DVD RW, USB 2.0, LAN                  |
| Power supply:                           | 115 - 240 VAC, +/-10% VAC, 50/60 Hz                        |
| Power consumption supply unit (W):      | PowerLine F 20: approx. 330<br>PowerLine F 30: approx. 390 |
| Ingress protection:                     | IP 20  |
| Operating temperature (°C):             | 15 - 35  |
| Air flow 19" supply unit (m³/h):        | approx. 170  |
| Air flow 19" PC (m³/h):                 | approx. 80   |

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LASER

## Laser comparison at a glance



|  | <b>PowerLine E<br/>Air 10</b>                      | <b>PowerLine E<br/>Air 25</b>                      | <b>PowerLine<br/>F 20/30</b>                       |
|--|--|--|--|
| Wavelength (nm):   | 1064   | 1064   | 1064 (typ.)  |
| Cooling:   | completely air-cooled                              | completely air-cooled                              | completely air-cooled                              |
| Power class (W):   | up to 10   | up to 25   | up to 30   |
| Pulse frequency (kHz):   | 1 - 200,<br>cw as well                             | 1 - 200,<br>cw as well                             | 20 - 100 (F 20)<br>30 - 100 (F 30)                 |
| Laser dimensions<br>(W x L x H, mm):                             | 118 x 500 x 220                                    | 118 x 500 x 220                                    | 387, Ø 90  |
| Laser weight (kg):   | approx. 16   | approx. 16   | approx. 5.5 (F 20)<br>approx. 5.7 (F 30)           |
| Galvo dimensions<br>(W x L x H, mm):                             | 100 x 77 x 77.5                                    | 167 x 118 x 200                                    | 100 x 77 x 77.5 (F 20)<br>167 x 118 x 200 (F 30)   |
| Galvo weight (kg):   | approx. 1.5  | approx. 2.7  | approx. 2.2 (F 20)<br>approx. 4.3 (F 30)           |
| Standard marking<br>field size (mm):<br>(other sizes on request) | 120 x 120  | 120 x 120  | 120 x 120  |
| Supply unit dimensions<br>(W x L x H, mm):                       | 483 (19") x 460<br>x 3 rack units                  | 483 (19") x 460<br>x 3 rack units                  | 483 (19") x 460<br>x 3 rack units                  |
| Supply unit weight (kg):   | 25   | 25   | 23.5   |
| PC dimensions<br>(W x L x H, mm)                                 | 483 (19") x 479<br>x 2 rack units                  | 483 (19") x 479<br>x 2 rack units                  | 483 (19") x 479<br>x 2 rack units                  |
| PC weight (kg):  | 10   | 10   | 10   |
| Software:  | Windows XP<br>embedded,<br>DVD RW,<br>USB 2.0, LAN | Windows XP<br>embedded,<br>DVD RW,<br>USB 2.0, LAN | Windows XP<br>embedded,<br>DVD RW,<br>USB 2.0, LAN |
| Power supply:  | 120 - 240 VAC,<br>+/-10% VAC,<br>50/60 Hz          | 208 - 240 VAC,<br>+/-10% VAC,<br>50/60 Hz          | 115 - 240 VAC,<br>+/-10% VAC,<br>50/60 Hz          |
| Power consumption<br>supply unit (W):                            | 500  | 610  | 330 (F 20), 390 (F 30)                             |
| Operating temperature (°C):                                      | 15 - 35  | 15 - 35  | 15 - 35  |

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