

→ **SpeedMarker 100**  
**Technical Datasheet**



- **Open class 4 system**  
 No housing for ultimate flexibility in part size  
 Electrical Z-axis for precise focusing



<b>Laser</b>					
Laser	Ytterbium pulsed fiber lasers, maintenance free				
Wavelength	1064 nm				
Beam quality	M <sup>2</sup> < 2				
Power stability	better ± 5%				
Cooling	air cooled				
Laser type	FL 10	FL 20	FL 30	FL 50	FL 20 MOPA
Max. average output power	10 W	20 W	30 W	50 W	20 W
Max. pulse energy	1 mJ	1 mJ	1 mJ	1 mJ	1 mJ
Pulse repetition rate [kHz]	2-200	2-200	2-200	2-200	1.6-1000
Adjustable pulse duration	x	x	x	x	✓
Pulse duration [ns]	100 ± 20	100 ± 20	100 ± 20	100 ± 20	4, 8, 14, 20, 30, 50, 100, 200
Integrated pilot laser	✓	✓	✓	✓	✓

<b>Galvo-System</b>				
Lens / Focal length	F-100	Standard: F-160	F-254	F-330
Marking area [mm x mm]	70 x 70	120 x 120	190 x 190	240 x 240
Focal diameter	~ 27 µm	~ 45 µm	~ 68 µm	~ 88 µm
Max. part height	399 mm	322 mm	172 mm	77 mm
Max. marking speed (Option high-speed scan head)	800 cps – 1 mm single line with F = 160 mm (900 cps – 1 mm single line with F = 160 mm)			
Max. positioning speed (Option high-speed scan head)	12.000 mm/s with F = 160 mm (15.000 mm/s with F = 160 mm)			





<b>Control</b>	
Computer	Industrial PC as 19" rack unit, 3RU high, 4 GB RAM, HDD 250 GB, DVD ROM, Windows <sup>®</sup> 7
Interfaces	USB, Ethernet, RS232
Interfaces laser	Laser-interlock, marking-start (24 VDC), marking-stop (24 VDC), E-stop, error-reset, laser-busy, optional digital I/O's (24 VDC),
Software	SpeedMark

<b>Options / Accessories</b>	
Optional lenses and galvo scanners	F-100, F-160, F-254, F-330, F-420 High speed scan heads with lenses <i>(no F-420 lens in combination with high-speed scanner)</i>
Focus finder	Second pilot laser for precise and user friendly adjustment of working distance
Software	DirectMark printer driver: Laser marking as easy as printing. Independent from software
Extended I/O interface	Additional in- and outputs, 24 VDC
Accessories (included in delivery):	Laser safety glasses
Additional optional accessories	<ul style="list-style-type: none"> <li>• Mini rack for computer and laser unit</li> <li>• Rotary unit with different chucks</li> <li>• Foot switch for efficient and user friendly control of the system</li> <li>• Exhaust systems</li> </ul>
Industrial PC – high performance	Optional and more performant version of industrial PC (CPU, HDD, RAM, graphics card) for graphical applications.



**Dimensions / Installation / Laser Safety**

Dimensions (W x H x D)	Marking head: 120 x 138 x 528 mm <sup>3</sup> Laser rack unit: 483 x 140 x 686 mm <sup>3</sup> <i>(equals 3RU, 19" compatible)</i> PC: 483 x 140 x 410 mm <sup>3</sup> <i>(equals 3RU, 19" compatible)</i>
Footprint (W x D)	375 x 800 mm <sup>2</sup>
Height	666 mm
Traveling distance Z-axis	400 mm
Weight	Marking head: app. 8 kg z-axis: app. 25 kg (without PC and laser rack) PC: app. 11,5 kg Laser rack: app. 17 kg
Ambient conditions	Operating temperature range +5 to +35° C. Relative humidity max. 90 %. Non-condensing
Electrical Requirements	115 - 230 VAC, 50/60 Hz, 1/N/PE
Power Consumption	< 600 W (incl. PC)
System Protection	Marking head: sealed against spray water (IP 54) Laser rack unit: dust protected (IP20)
Laser class	CDRH laser safety Laser class 4 CE tested



Photo 1: SpeedMarker 100 and rack



Photo 2: With monitor and exhaust



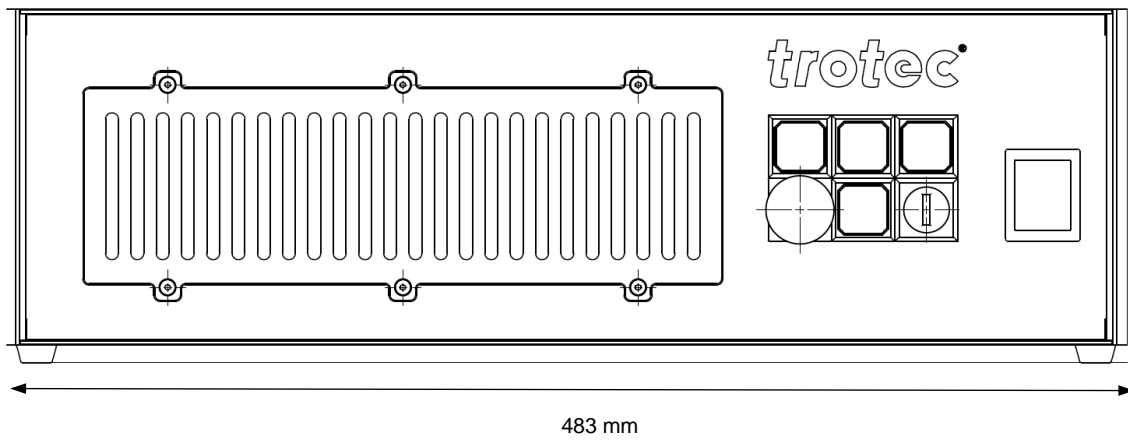


Figure 1: Laser rack

Laser rack: 482,6 x 140 x 686 mm<sup>3</sup> (W x H x D)  
 (equals 3RU, 19" compatible)

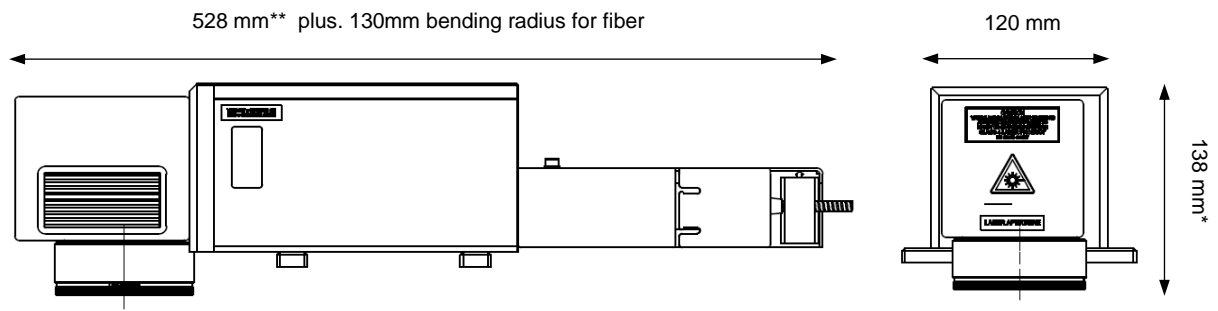


Figure 2: Marking head

\* mit F = 160 mm  
 \*\* 573 mm (50 Watt)



## Working distances for SpeedMarker 100

The working distance is measured between the lower edge of the marking head and the work piece as shown in Figure 3.

Because the actual values for two lenses of the same focal length may vary slightly, it is recommended to check the working distance after the lens has been changed. To do so, continuously mark a circle and adjust the working distance for optimum results.

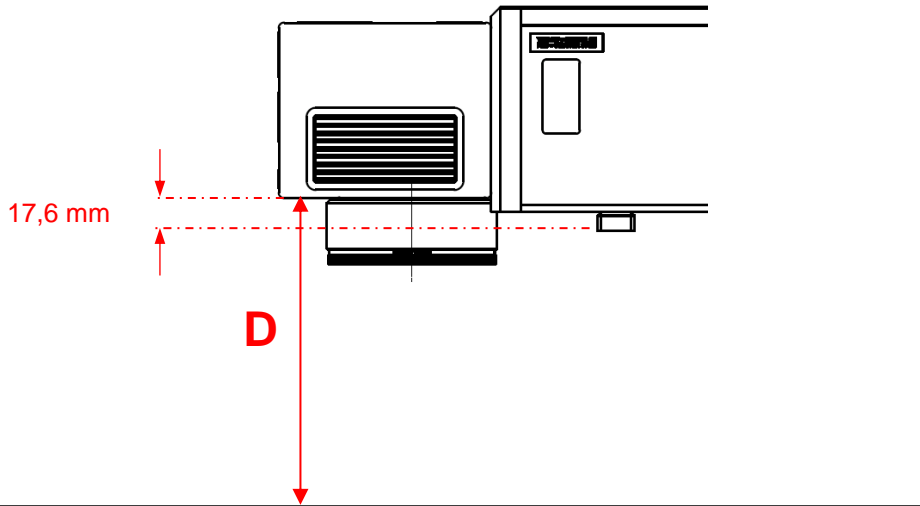


Figure 3: Working distances

Lens	Working distance D ( +/- 0,2 mm)	Marking field
F-100	134,6 mm	70 x 70 mm <sup>2</sup>
F-160	211,6 mm	120 x 120 mm <sup>2</sup>
F-254	361,6 mm	190 x 190 mm <sup>2</sup>
F-330	456,6 mm	240 x 240 mm <sup>2</sup>

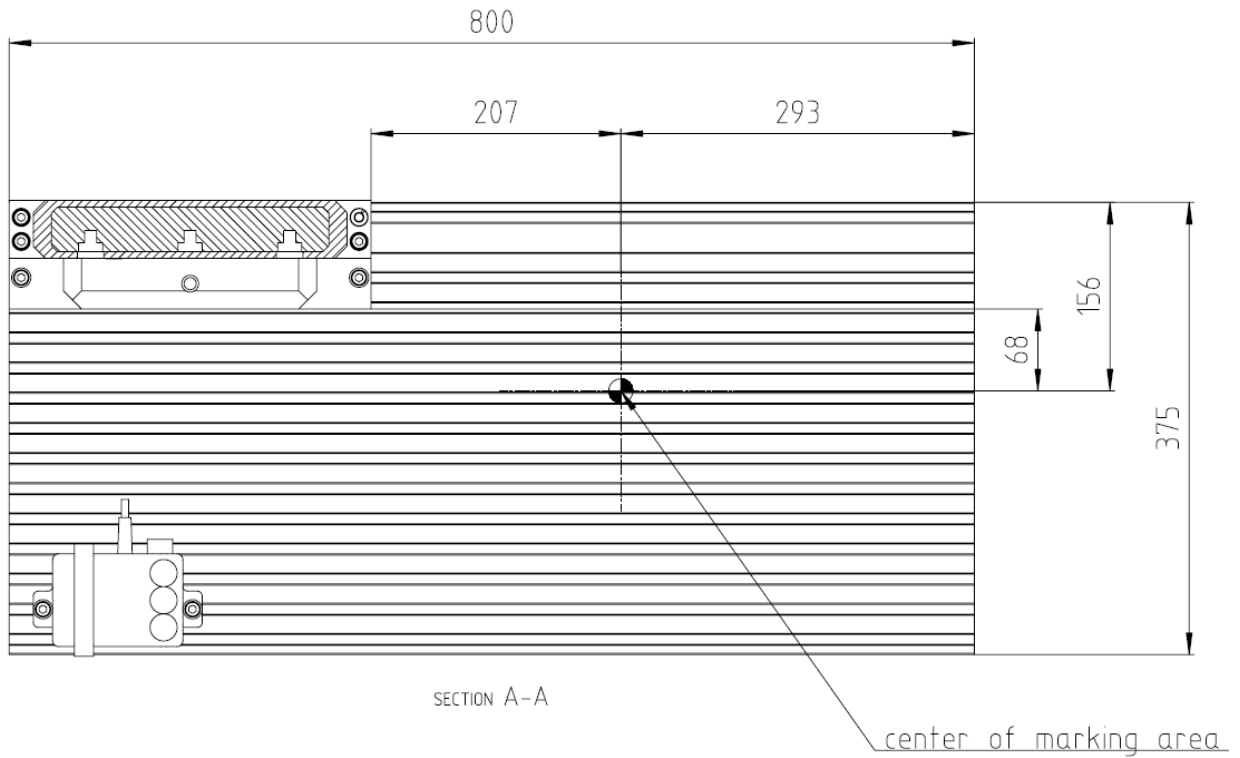


Figure 4: Top view

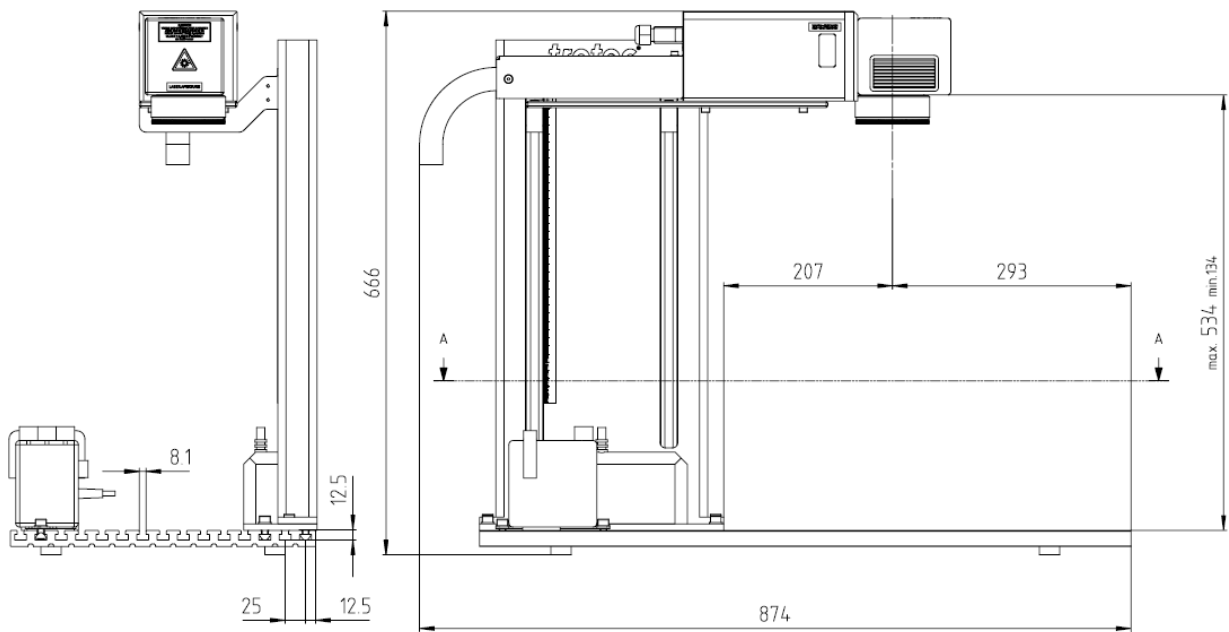


Figure 5: Side view

Content subject to change without prior notice  
 Updated: October 2016

