

Marking laser FL+

Precise, fast, economic – the *semket* fiber lasers

Diode-pumped ytterbium fiber lasers ensure highest beam quality. With 50 Watt maximum output power. cabLase provides a graphical user interface for real-time control or the COM interface for customized programming. Different interfaces help to integrate the FL+ into production lines. Laser safety housings and laser marking systems enable products, film and type plates to be comfortably marked..

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	1064			
Beam quality M ²		<1,8			
Pulse width	ns	90 - 120			
Pulse frequency	kHz	20 - 80		30 - 80	
Fiber coupling	m	4,5	2,5		
Scan head					
Mounting		Horizontal/vertical			
Marking speed	mm/s	ca. 5000			
Pilot laser					
Wave length	nm	650			
cw output power max.	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			
Plano-spherical lens		100.1	160.1	254.1	420.1
Working distance	mm	141	202	302	541
Marking area	mm	69x69	112x112	180x180	290x290
Spot diameter	µm	~25	~35	~50	~125
Δ Resolution	dpi	1000	725	500	500
Dimensions and weights		Tower		Rack 4 RU 19"	
Control unit					
H x W x D	mm	312 x 150 x 410		178x420x420	
weight	kg	15		16	
Scan head					
H x W x D	mm	110 x 170 x 330			
weight	kg	7			
Interfaces					
Ethernet 10/100 Base		PC input			
Ethernet 10/100 Base		Peripheral devices			
2x RS232 C 1.200-230.400 Baud		Peripheral devices			
Digital I/O		8 In- and outputs, marking, start			
Remote		System ready, shutter open, emission, pilot laser			
Interlock		External safety relay, e-stop			
Control panel					
Key switch		Laser source ON/OFF			
Push button pilot laser		ON/OFF			
Push button shutter open		ON/OFF			
Display					
emission		Laser source active			
laser Error		Laser source error			
ready		Laser source ready			
power		Power supply voltage ON			
pilot laser		ON			
shutter open		Safety lock open			
Connection					
Service		USB micro			
data storage		USB host			
Operating data					
Operating voltage		100 - 240 VAC ~ 50/60 Hz			
Power consumption standby	W	65			
Power consumption max.	W	150	175	200	250
Temp./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, ICE S3			
Performance Level		d			
Laser class					
control unit		4			
pilot laser		2			

Marking software cabLase	
Recommended system requirements for PC:	
To setup and change device-specific settings a PC providing a valid network connection and a licensed installation of cabLase editor 5 are required.	
PC	IBM PC/AT compatible
Operating system	Microsoft Windows XP® Professional SP3 (32/64 Bit) Microsoft Windows 7® Professional SP1 (32/64 Bit)
Processor	Intel Core i3-540 or higher
Main storage	1 GB RAM minimum, >2 GB recommended
Hard disc	1 GB memory requirement software >40 GB size of hard disc recommended
Drives	CD-ROM- oder DVD-Laufwerk für Softwareinstallation
Interfaces	Network card 10/100 Mbit for laser connection, PS2/USB interfaces for mouse/keyboard, USB 2.0 connection for software dongle, optionally: USB 2.0 connection for storage media, RS232 interface
Software	cabLase Editor 5, version 5.15.2 and higher
Monitor	SVGA, 1280x1024 resolution recommended
Characters	
Fonts	All TrueType fonts installed in Windows, filled or as outline, laser specific single, double and triple line fonts. All fonts can be freely scaled and "wobbled".
Alignment	Any alignment and direction of rotation, circular arc marking
Character spacing	Stretching and compressing
Graphics	
Graphic elements	Lines, circles, rectangles, polygons; Hatching of all filled 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 barcodes	Interleaved 2/5 Codabar Code 39, Code 93 EAN Code 128 UPC
2D codes	Data Matrix, ECC200, QR-Code Barcodes are variable in height, module width and ratio. Optionally: check digits, inverted codes
Further features	
Serial number, date, time	
Variable Felder	
Insertion of graphic data out of Windows programs	
Programmable laser parameters	
Storage of process and parameter files	
Control of digital in- and outputs	
Control and monitoring of additional axes (e.g. lifting, rotating moving axes)	
COM automation server enabling the user to control the laser from any other user interface (Visual Basic, Borland Builder).	
Provided the programming language has access to communicate to COM objects.	

Subject to change.



Tower

Rack



**we leave
a mark.**

semket[®]

Labelling systems

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MARKING LASER FL⁺

The art of laser marking



Issue: 23-08-23.03

Product Marking and Barcode Identification

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