

## Technical Data → FOBA V.0102-gn Marking Laser

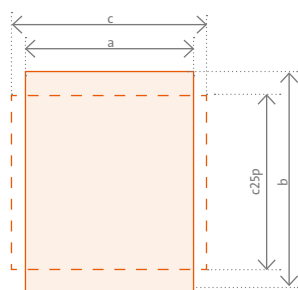
Laser system		V.0102-gn
Overall system	Mechanical configuration	Supply unit, marking unit
	Construction material	supply- & laser control unit -> painted sheet metal marking unit -> painted and anodized metal
	Weight [kg]	Supply unit 13 kg, marking unit 24kg
Environment	Operating temperature (typical, depends on operation)	10- 35 °C
	Storage temperature	-10 - +50 °C
	Humidity	<80 % non-condensing
	IP rating	marking unit IP20, supply unit IP20
	Cooling	air automatic overheat detection
Laser source	Laser type	Nd:YVO4-Laser
	Wavelength, typical [nm]	532
	Laser power [W]	10
	Pulse duration [ns]	5 - 35
	Pulse energy (max.) [µJ]	350
	Peak pulse power (max.) [kW]	50
	Repetition Rate [kHz]	40 - 150
	Beam diameter [mm]	10 (depending on the optics used)
Supply unit	Width x length x height [mm]	436 x 545 x 133
	Cooling	air-cooled
Marking unit	Scan head	CP-10
	Marking Field Calibration	25 point correction possible
	Width x length x height [mm]att	175 x 786 x 212
	Cooling	air-cooled
	Umbilical length – clear length [m]	To the laser control unit: 5
	Min. bending radius umbilical [mm]	140 static / 490 dynamic (to the laser control unit)
	Available optics [mm]	f =100 / 160 / 254 / 410 / 535
	Marking speed*	max. 15.000 mm/s or 1200 Characters/s
	Target/pilot laser	optional
	Vision system	optional
	Vision system lighting	standard with vision system
	Mounting position	horizontal and vertical
Electrical supply	Voltage range	110 - 240 Volt (autorange); 1-phase
	Frequency	50/60 Hz (autorange)
	Electrical consumption	typical: 300W   maximum: 710W
Interfaces	User interfaces (PC software)	FOBA GO, MarkUS
	Communication interfaces	TCP/IP, Profibus, PROFINET, EtherCAT, EtherNetIP
Compliance	RoHS conform	yes
	Legeslative Standards - CE Mark	CE
	UL	yes
	Safety	Integrated safety control FASS (Performance Level D)

\* max. markingspeed is depending on application

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## Optics and marking fields

Lens	F100	F160	F254	F410	F535
Focal length [mm]	100	160	254	410	535
Working distance [mm] <sup>1</sup>	136 - 139	214 - 221	303 - 316	541 - 568	690 - 725
A' [mm] with FOBA Go	67	119,7	204,1	393,4	393,4
B' [mm] with FOBA Go	115,1	185,9	310,0	487,2	487,2
A [mm] with FOBA Go	67	119,7	204,1	393,4	393,4
B [mm] with FOBA Go	111	185,9	301,4	487,2	487,2
a [mm] with MarkUS	47,3	84,6	144,3	201,7	278,2
b [mm] with MarkUS	81,4	131,5	219,2	265,5	344,5
c [mm] with MarkUS	57,9	100,6	170,5	227,1	306,1
Focus spot size [μm] <sup>2</sup>	14	22	34	56	72
c25p [mm] 25pt corrected field sizes	55	100	160	220	270
CP-10 scan head accuracy without 25pt correction	≤ +/- 0.5% of the marking field size				
Accuracy 25pt correction in Root Mean Square [μm] **	15	24	40	70	70



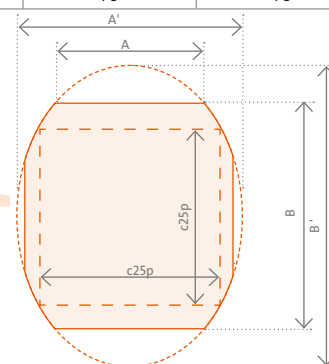
\* Values given refer to root mean square errors; hence the absolute error of a single measuring point might be significantly larger. Values are only valid for stabilized ambient temperature conditions with  $\Delta T < 2$  Kelvin

The useable marking area is the remaining of area A\*B when cut by the ellipse (defined by A max and B max)!

In some cases no cutting is applicable at all (area A\*B fits completely inside the ellipse)!

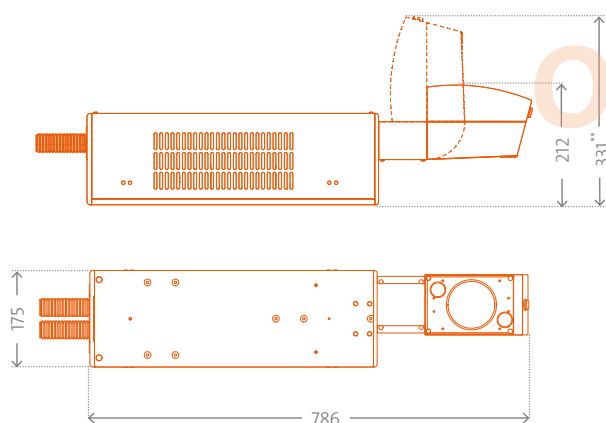
<sup>1</sup> With possible deviation depending on the system. This deviation relates to system-dependent focus tolerances and not to the working distance of a specific application in which an effect is achieved on the material.

<sup>2</sup> Based on internal theoretical calculation.

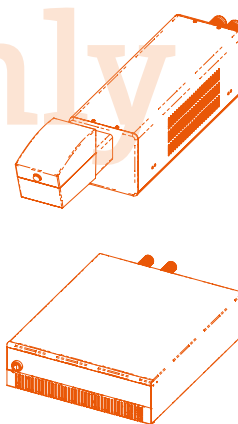


## Drawings → FOBA V.0102-gn

dimensions in mm / \*\* straight-out variant



Laserhead



Supply Unit

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Laser class 4