	JUSTMARK OS MOPA	JUSTMARK OS CO2
		
Marking fields	(F100/F1OOQ: 70x70mm)* F160/F160Q: 110x110mm **F210/F210Q: 150x150mm (standard)** F254/F254Q: 175x175mm F290/F290Q: 200x200mm	F-Theta 200: 140x140mm **F-Theta 300: 210x210mm (standard)** F-Theta 420: 300x300mm
Spot size	F100/F100Q: 40 µm F160/F160Q: 50 µm F210/F210Q: 65 µm F254/F254Q: 80 µm F290/F290Q: 90 µm	F-Theta 200: 229µm F-theta 300: 285 µm F-Theta 420: 337µm
Max. loading area	500x440mm	
Max. workpiece height	20/30W (glass lens) F160: 490mm **F210: 425 mm (standard)** F254: 365 mm F290: 325 mm 60/80W (quartz lens) F160Q: 465 mm **F210Q: 405 mm (standard)** F254Q: 370 mm F290Q: 335 mm	F-Theta 200: 575 mm **F-Theta 300: 450 mm (standard)** F-Theta 420: 255 mm
Working table	Black anodized aluminum plate (including M5 threads in 25 mm grid for easy positioning of workpieces)	
Max. marking speed	7000 mm/s	5000 mm/s
Max. positioning speed	3000 mm/s	5000 mm/s
Max. jump speed	8000 mm/s	
Max. workpiece weight (distributed across the work table)	50	
Scanner	10 mm aperture, 16-bit resolution, long-term drift (5 h) <5%	20 mm aperture, 16-bit resolution, long-term drift (8 h) <0.3 mrad
Z-axis	Manually movable I software-controlled positioning (repeat accuracy: +/- 0.1 mm)	
Laser power / pulse energy	20W: 0.8mJ at 25kHz and 250ns 30W: 0.8mJ at 37kHz and 250ns 60W: 2.0mJ at 30kHz and 500ns 80W: 2.0mJ at 40kHz and 500ns	
Control elements	Key switch I Emergency stop I Lock switch Z-axis I Rotary dimmer for workpiece lighting **Remote control**: Start laser process I Start positioning laser I Focus finder on/off I Z-axis up/down I Rapid traverse Z-axis I Autofocus (optional)	Key switch I Emergency stop I Lock switch Z axis **Remote control**: Start laser process I Start positioning laser I Focus finder on/off I Z-axis up/down I Rapid traverse Z-axis I Autofocus (optional)
Laser power	20W I 30W I 60W I 80W	30W I 50W
Cooling	Air-cooled (incl. temperature monitoring)	
Wavelength	1064nm	10600 nm
Round engraving device	D60 I D80 (heavy parts) I bottle rotary I rotation table	
Focusing method	Manual focus finder (red light spot) I software-controlled Z-axis I triangulation autofocus sensor (optional)	
Motor system	Stepper motors (Z-axis+ round engraving device)	
Laser source	MOPA pulsed fiber laser	RF CO2 laser
External dimensions without packaging	Laser rack: 610 x 247 x 490 mm Base plate incl. Z-axis: 800 x 500 x 880 mm Aluminum base plate: 650 x 500 x 15 mm	Laser rack: 610 x 247 x 490 mm Base plate incl. Z-axis: 1060 x 500 x 960 mm Aluminum base plate: 700 x 500 x 15 mm
Machine weight without packaging	68	85
External dimensions including packaging	1060 x 670 x 1090 mm	1220 x 670 x 1220 mm
Machine weight including packaging	128	145
Power connection	230V / 6A / 1~ / 50-60Hz	
Max. power consumption per hour	20W/30W: 700VA 60W/80W: 900VA	30W: 1150VA 50W: 1250VA
Laser class	Class 4 (open system)	
Laser safety	Class 4; with EC type-examination certificate	
Ambient conditions	Ambient temperature 15°C – 25°C I Humidity 40 - 70%, non-condensing	
Laser software	EZCAD 3	
System requirements (computer)	Windows 10 Pro or higher; administrator rights; at least two available USB ports	

*When using the F100/F100Q lens in the specified model, it is necessary to place the workpiece higher in order to reach the focus point.

	JUSTMARK 4.2 V3	JUSTMARK 6.4 V1.1	JUST MARK 6.4 X-AXIS
			
Marking fields	F100/F100Q: 70x70mm **F160/F160Q: 110x110mm (standard)** F210/F210Q: 150x150mm	(F100/F100Q: 70x70mm)* **F160/F160Q: 110x110mm (standard)** F210/F210Q: 150x150mm F254/F254Q: 175x175mm **F290/F290Q: 200x200mm (standard)**	(F100/F100Q: 470x70mm)* **F160/F160Q: 510x110mm (standard)** F210/F210Q: 550x150mm F254/F254Q: 575x175mm **F290/F290Q: 600x200mm (standard)**
Spot size	F100/F100Q: 40 µm F160/F160Q: 50 µm F210/F210Q: 65 µm F254/F254Q: 80 µm F290/F290Q: 90 µm		
Max. loading area	440x200mm or 360x300mm	605x350mm	605x405mm
Max. workpiece height	20/30W (glass lens) F100: 235 mm **F160: 150 mm (standard)** F210: 85 mm	30W (glass lens) **F160: 255 mm (standard)** F210: 190 mm F254: 130 mm **F290: 90 mm (standard)** 60/80W (quartz lens) **F160Q:** **230 mm (standard)** F210Q: 170 mm F254Q: 135 mm **F290Q: 100 mm (standard)**	30W (glass lens) **F160: 355 mm (standard)** F210: 290 mm F254: 230 mm **F290: 190 mm (standard)** 60/80W (quartz lens) **F160Q:** **330 mm (standard)** F210Q: 270 mm F254Q: 235 mm **F290Q: 200 mm (standard)**
Work table	Black anodized aluminum plate (including M5 threads in 25 mm grid for easy positioning of workpieces)		
Max. marking speed	7000 mm/s		
Max. positioning speed	3000 mm/s		
Max. jump speed	8000 mm/s		
Max. workpiece weight (distributed across the work table)	40	50	
Scanner	10 mm aperture, 16-bit resolution, long-term drift (<5%)		
Z-axis	Manually movable I software-controlled positioning (repeat accuracy: +/- 0.1 mm)		
Laser power / pulse energy	20W: 0.8mJ at 25kHz and 250ns 30W: 0.8mJ at 37kHz and 250ns	30W: 0.8mJ at 37kHz and 250ns 60W: 2.0mJ at 30kHz and 500ns 80W: 2.0mJ at 40kHz and 500ns	
Control elements	Key switch I Emergency stop I Lock switch Z-axis I Rotary dimmer for workpiece lighting **Membrane keypad**: Start laser process I Start positioning laser I Machine lighting on/off I Z-axis up/down I Rapid traverse Z-axis I Autofocus (optional)		
Laser power	20W	30W I 60W I 80W	
Cooling	Air-cooled (incl. temperature monitoring)		
Wavelength	1064 nm		
Round engraving device	D60	D60 I D80 (heavy parts)	
Focusing method	Manual focus finder (red light spot) I software-controlled Z-axis I triangulation autofocus sensor (optional)		
Motor system	Stepper motors (Z-axis+ round engraving device)		Servo motor (X-axis) Stepper motors (Z-axis+ round engraving device)
Laser source	MOPA pulsed fiber laser		
External dimensions without packaging	820 x 500 x 705 mm	1010 x 755 x 1092 mm	1010 x 755 x 1092 mm
Machine weight without packaging	80	126	158
External dimensions including packaging	928 x 626 x 900 mm	1070 x 900 x 1300 mm	1070 x 900 x 1300 mm
Machine weight including packaging	118	218	255
Power connection	230V / 6A / 1~ / 50-60Hz		
Max. power consumption per hour	20W/30W: 700VA	30W: 700VA 60W/80W: 900VA	30W: 1050VA 60W/80W: 1350VA
Laser class	Class 2 (positioning laser <1mW, visible red light with a wavelength of 650nm)		
Laser safety	Class 2; with EC declaration of conformity		
Ambient conditions	Ambient temperature 15°C – 25°C I Humidity 40 - 70%, non-condensing		
Laser software	EZCAD 3		
System requirements (computer)	Windows 10 Pro or higher; administrator rights; at least two available USB ports		

*When using the F100/F100Q lens in the specified model, it is necessary to place the workpiece higher in order to reach the focus point.