



# MFMC-3000 (100 μm) cutting data

Jinan Weihua Machinery & Equipment Co., Ltd

Material	Thickness (mm)	Gas	Speed (m/min)	Laser power (W)	Cutting Frequency)	Duty Ratio (%)	Air pressure (bar)	Cutting Height (mm)	Focus position	Cutting effect
Carbon steel (Q235B)	1	N2/Air	38~40	3000	5000	100	12~16	0.5	0	Glossy
	2	N2/Air	15	3000	5000	100	12~16	0.5	0~-0.5	
	3	N2/空气	7~8	3000	5000	100	12~16	0.5	-1~-1.5	
		O2	4~4.2	3000	5000	100	0.6~0.9	0.8	4.5~5.5	
	4	O2	3.3~3.5	3000	5000	100	0.6~0.9	0.8	4.5~5.5	
	6	O2	2.5~2.7	3000	5000	100	0.6~0.9	0.8	4.5~5.5	
	8	O2	2.1~2.2	3000	5000	100	0.6~0.9	0.8	4.5~5.5	
	10	O2	1.5	3000	5000	100	0.6~0.9	0.8	4.5~5.5	Frosted surface
	12	O2	1.0~1.1	2200~2400	5000	100	0.6~0.9	1.5	2~3	
	14	O2	0.9~1.0	2200~2400	5000	100	0.6~0.9	1.5	2~3	
	16	O2	0.85~0.9	2200~2400	5000	100	0.6~0.9	1.5	2.5~3.5	
	18	O2	0.7~0.75	2200~2400	5000	100	0.6~0.9	1.5	2.5~3.5	
	20	O2	0.6~0.65	2200~2400	5000	100	0.6~0.9	1.5	2.5~3.5	
	22	O2	0.5~0.55	2200~2400	5000	100	0.6~0.9	1.5	2.5~3.5	
25	O2	0.45~0.5	2200~2500	5000	100	0.6~0.9	1.5	2.5~4		
SS (SUS304)	1	N2/Air	35~37	3000	5000	100	12~16	0.5	0	No residue (N2)
	2	N2/Air	13~15	3000	5000	100	12~16	0.5	0~-0.5	
	3	N2/Air	7~8	3000	5000	100	12~16	0.5	-1~-1.5	
	4	N2/Air	4.5~5.5	3000	5000	100	12~16	0.5	-2~-2.5	
	6	N2/Air	2.0~2.3	3000	5000	100	12~16	0.5	-3.5~-4	
	8	N2/Air	1.0~1.2	3000	5000	100	16~18	0.5	-5~-6	

	10	N2/Air	0.6~0.7	3000	5000	100	16~18	0.5	-6.5~-7	A small amount residue
Aluminum	1	Air	30~33	3000	5000	100	12~16	0.5	0	
	2	Air	10~12	3000	5000	100	12~16	0.5	0~-0.5	
	3	Air	5.5~5.9	3000	5000	100	12~16	0.5	0~-0.5	
	4	Air	2.8~3.2	3000	5000	100	12~16	0.5	-1~-1.5	
	6	Air	1.2~1.4	3000	5000	100	12~16	0.5	-2~-3	
	8	空气	0.5~0.6	3000	5000	100	16~18	0.5	-3~-4	
Copper	1	Air	28~29	3000	5000	100	12~16	0.5	0	
	2	Air	9~10	3000	5000	100	12~16	0.5	0~-0.5	
	3	Air	4.5~5	3000	5000	100	12~16	0.5	0~-0.5	
	4	Air	2.6~2.8	3000	5000	100	12~16	0.5	-1~-1.5	
	6	Air	1~1.2	3000	5000	100	16~18	0.5	-2~-3	
	8	空气	0.5~0.6	3000	5000	100	16~18	0.5	-3~-4	
	Materials with green thickness indicate that they can be processed in large quantities over a long period of time.									
	Materials with yellow thickness indicate that they can be processed in small batches. However, as the material temperature rises, cutting air pressure fluctuates, the composition of the sheet is uneven and other factors fluctuate, the processing process may be unstable. It is recommended to use a higher power laser.									
	Materials with red thickness indicate that they can be cut and proofed, but are not suitable for batch processing.									
Note	1. In the cutting data, the core diameter of the output fiber of the 3000W laser is 100 microns;									
	2. This cutting data uses RayTools cutting head, and the optical ratio is 100/125 (collimation/focusing lens focal length);									
	3. Cutting auxiliary gas: liquid oxygen (purity 99.99%), liquid nitrogen (purity 99.999%), air (oil, water and filtration);									
	4. The air pressure in this cutting data specifically refers to the monitored air pressure at the cutting head;									
	5. Due to differences in various equipment configurations and cutting processes (machine tools, water cooling, environment, cutting gas nozzles, gas pressure,									