				MF	SC-	-500(25μm) (Cutting Dat	ta			
Material Type	Thicknes(mm)	Speed(m/min)	Focus Point	Cutting Height (mm)	Gas	Nozzle Type	Air Pressure (bar)	Power (W)	utting frequency (Hz	Duty Ratio (%)	Cutting effect
	1	13~14	0	0.5	N2	Single layer:1.0	12~16	500	5000	100	
	2	3.5~4.5	2~3	1.5	O2	Dual layer:2.0	0.6~0.9	500	5000	100	
Q235B	3	2.0~2.2	2~3	1.5	O2	Dual layer:2.0	0.6~0.9	500	5000	100	Frosting surface
Q233B	4	1.5~1.6	2~3	1.5	O2	Dual layer:2.5	0.6~0.9	500	5000	100	riosting surface
	5	0.9~1.1	2~3	1.5	O2	Dual layer:2.5	0.6~0.9	500	5000	100	
	6	0.6~0.7	2~3	1.5	O2	Dual layer:3.0	0.6~0.9	500	5000	100	
	1	13~14	0	0.5	N2	Single layer:1.0/1.2/1.5	12~16	500	5000	100	No slag
SUS304	2	2.6~2.9	0~-0.5	0.5	N2	Single layer:1.5/2.0	12~16	500	5000	100	140 Slag
303304	3	0.9~1.1	-1~-1.5	0.5	N2	Single layer:2.0/2.5/3.0	12~16	500	5000	100	small amount
	4	0.5~0.6	-2~-2.5	0.5	N2	Single layer:3.0	12~16	500	5000	100	of hanging slag
AL (6061)	1	2.5~2.7	0	0.5	AIR	Single layer:1.0/1.2/1.5	12~16	500	5000	100	
Brass	1	2.3~2.5	0	0.5	AIR	Single layer:1.0/1.2/1.5	12~16	500	5000	100	
	Green color indic	cate that the mater	ila under sucl	thickness is usitable	for lo	ng time processing.					
				ickness can be used f gest to use higer pow		th processing. But with tr source.	he material temperat	ure going on, the	cutting presure fluctuati	ng and material co	mponents uneven,
	Red color indicat	te that the material	under this th	ickness can be cut, bu	ıt can't	be used for long time p	rocessing.				
	1. Above cutting	data sheet based of	n MAX stan	dard 500W fiber laser	with 2	25um fiber core diamete	r;				
Comments	Above cutting	data based on Ray	tools cutting	head.Focusing/collin	nating	lens spec:100/125;					
Comments	3. Cutiing GAS:	Liquid Oxygen (Purity 99.99%	6), Liquid Nitrogen(P	urity 9	9.999%);					
	4. Consideirng t	he difference of ec	uipment con	figuration (for example	le, Cut	ting bed, Water chiller,	Environment, Nozzle	Gas pressure etc	.) and cutting technolog	y, above Cutting D	ata Sheet for refere

Material Type	Thicknes(mm)	Speed(m/min)	Focus Point	Cutting Height (mm)	Gas	Nozzle Type	Air Pressure (bar)	Power (W)	Cutting frequency (Hz)	Duty Ratio (%)	Cutting effec
	1	20~21	0	0.5	N2	Single layer:1.0	12~16	800	5000	100	C1.1.1
	2	6~7	4.5~5.5	0.8	O2	Dual layer:1.0	0.6~0.9	800	5000	100	Shining surface
	3	2.3~2.5	2~3	1.5	O2	Dual layer:2.0	0.6~0.9	800	5000	100	
Q235B	4	1.8~2.0	2~3	1.5	O2	Dual layer:2.5	0.6~0.9	800	5000	100	
Q235B	5	1.3~1.4	2~3	1.5	O2	Dual layer:2.5	0.6~0.9	800	5000	100	Frosting surface
	6	1~1.1	2~3	1.5	O2	Dual layer:3.0	0.6~0.9	800	5000	100	riosung suria
	8	0.7~0.8	2~3	1.5	O2	Dual layer:3.0	0.6~0.9	800	5000	100	
	10	0.5~0.6	2~3	1.5	O2	Dual layer:3.0	0.6~0.9	800	5000	100	
	1	17~19	0	0.5	N2	Single layer:1.0/1.2/1.5	12~16	800	5000	100	
	2	5.3~5.6	0~-0.5	0.5	N2	Single layer:1.5/2.0	12~16	800	5000	100	No slag
SUS304	3	1.8~2	-1~-1.5	0.5	N2	Single layer:2.0/2.5/3.0	12~16	800	5000	100	
	4	1.1~1.3	-2~-2.5	0.5	N2	Single layer:3.0	12~16	800	5000	100	Small amoun
	5	0.4~0.5	-3~-3.5	0.5	N2	Single layer:3.5/4.0	12~16	800	5000	100	of hanging sla
AL (6061)	1	6.5~7	0	0.5	AIR	Single layer:1.0/1.2/1.5	12~16	800	5000	100	
AL (0001)	2	0.8~1	0~-0.5	0.5	AIR	Single layer:1.5/2.0	12~16	800	5000	100	
Brass	1	6~6.5	0	0.5	AIR	Single layer:1.0/1.2/1.5	12~16	800	5000	100	
Diass	2	0.6~0.8	0~-0.5	0.5	AIR	Single layer:1.5/2.0	12~16	800	5000	100	
	Green color indic	ate that the mater	ila under sucl	n thickness is usitable	for lon	g time processing.					
						n processing. But with to use higer power laser so		ture going or	n, the cutting presure flu	actuating and ma	terial
	Red color indicat	e that the material	under this th	ickness can be cut, bu	ıt can't l	be used for long time p	rocessing.				
	1. Above cutting	data sheet based o	n MAX stan	dard 800W fiber laser	with 50	Oum fiber core diameter	r;				
						ens spec:100/125;					

Material Type							_				
	Thicknes(mm)	,		Cutting Height (mm)		Nozzle Type	Air Pressure (bar)	Power (W)	Cutting frequency (Hz)		Cutting effect
	1	24~26	0	0.5	N2	Single layer:1.0	12~16	1000	5000	100	
	2	8~9	0~-0.5	0.5	N2	Single layer:1.5	12~16	1000	5000	100	Shining surface
	3	2.8~3	4.5~5.5	0.8	O2	Dual layer:1.0	0.6~0.9	1000	5000	100	
O235B	4	2.2~2.4	2~3	1.5	O2	Dual Layer:2.5	0.6~0.9	1000	5000	100	
(Carbon Steel)	5	1.5~1.7	2~3	1.5	O2	Dual Layer:3.0	0.6~0.9	1000	5000	100	
(6	1.2~1.4	2~3	1.5	O2	Dual Layer:3.0	0.6~0.9	1000	5000	100	Frosting surface
	8	1.0~1.1	2~3	1.5	O2	Dual Layer:3.0	0.6~0.9	1000	5000	100	rrosung sarrac
	10	0.75~0.85	2~3	1.5	O2	Dual Layer:3.0	0.6~0.9	1000	5000	100	
	12	0.6~0.65	2~3	1.5	O2	Dual Layer:3.0	0.6~0.9	1000	5000	100	
	1	21~23	0	0.5	N2	Single layer:1.0/1.2/1.5	12~16	1000	5000	100	
	2	6.5~7	0~-0.5	0.5	N2	Single layer:1.5/2.0	12~16	1000	5000	100	No slag
SUS304	3	2.3~2.5	-1~-1.5	0.5	N2	Single layer: 2.0/2.5/3.0	12~16	1000	5000	100	NO Slag
Stainless steel)	4	1.4~1.6	-2~-2.5	0.5	N2	Single layer:3.0	12~16	1000	5000	100	
	5	0.6~0.7	-3~-3.5	0.5	N2	Single layer:3.5/4.0	12~16	1000	5000	100	small amount
	6	0.5~0.6	-4.5~-5	0.5	N2	Single layer:3.5/4.0	12~16	1000	5000	100	of hanging slag
	1	19~21	0	0.5	AIR	Single layer:: 1.0/1.2/1.5	12~16	1000	5000	100	
AL (6061)	2	4.5~5	0~~0.5	0.5	AIR	Single layer:1.5/2.0	12~16	1000	5000	100	
	3	1.8~2	-1~-1.5	0.5	AIR	Single layer: 2.0/2.5/3.0	12~16	1000	5000	100	
	1	16~18	0	0.5	AIR	Single layer:1.0/1.2/1.5	12~16	1000	5000	100	
Brass	2	3~3.5	0~~0.5	0.5	AIR	Single layer:1.5/2.0	12~16	1000	5000	100	
	3	1.1~1.3	-1~-1.5	0.5	AIR	Single layer:2.0/2.5/3.0	12~16	1000	5000	100	
				thickness is usitable			the material tempera	ature going o	n, the cutting presure flu	actuating and ma	iterial components
				le. We suggest to use							
	Red color indicat	e that the mater	ial under this	thickness can be cut,	but can	't be used for long time	processing.				
						h 50um fiber core diame	eter;				
	Above cutting	data based on F	taytools cuttir	ng head.Focusing/colli	imating	lens spec:100/125;					
Comments	3. Cutiing GAS:	Liquid Oxyger	(Purity 99.9	9%), Liquid Nitrogen(Purity	99.999%);				·	·

	Thicknes(mm) 1	Speed(m/min)	Focus Point								
-	1			Cutting Height (mm)			Air Pressure (bar)	Power (W)	utting frequency (Hz		Cutting effect
	2	32~35	0	0.5	N2	Single layer:1.0	12~16	1500	5000	100	
		9~10	0~-0.5	0.5	N2	Single layer:1.5	12~16	1500	5000	100	Shining surface
	3	2.9~3.2	4.5~5.5	0.8	O2	Dual layer:1.0	0.6~0.9	1500	5000	100	
	4	2.4~2.6	4.5~5.5	0.8	O2	Dual layer:1.0	0.6~0.9	1500	5000	100	
	5	1.8~2.0	2~3	1.5	O2	Dual layer:3.0	0.6~0.9	1500	5000	100	
Q235B	6	1.6~1.8	2~3	1.5	O2	Dual layer:3.0	0.6~0.9	1500	5000	100	
	8	1.1~1.3	2~3	1.5	O2	Dual layer:3.0	0.6~0.9	1500	5000	100	
	10	0.9~1.0	2~3	1.5	O2	Dual layer:3.0	0.6~0.9	1500	5000	100	Frosting surfac
	12	0.8~0.9	2~3	1.5	O2	Dual layer:3.0	0.6~0.9	1500	5000	100	
	14	0.6~0.7	2~3	1.5	O2	Dual layer:4.0	0.6~0.9	1500	5000	100	
	16	0.5~0.6	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	1500	5000	100	
	1	32~35	0	0.5	N2	Single layer: 1.0	12~16	1500	5000	100	
	2	9~10	0~-0.5	0.5	N2	Single layer:1.5	12~16	1500	5000	100	
	3	4.2~4.5	-1~-1.5	0.5	N2	Single layer:2.0	12~16	1500	5000	100	No slag
SUS304	4	2.1~2.3	-2~-2.5	0.5	N2	Single layer:3.0	12~16	1500	5000	100	140 Slug
	5	1.6~1.8	-3~-3.5	0.5	N2	Single layer: 3.5	12~16	1500	5000	100	
	6	1.0~1.2	-4.5~-5	0.5	N2	Single layer: 3.5	12~16	1500	5000	100	
	8	0.5~0.6	-6~-7	0.5	N2	Single layer: 4.0	16~18	1500	5000	100	Small Amount of hanging slag
	1	30~32	0	0.5	AIR	Single layer: 1.0	12~16	1500	5000	100	
	2	8~9	0~-0.5	0.5	AIR	Single layer:1.5	12~16	1500	5000	100	
I ((0(1)	3	3.8~4.2	-1~-1.5	0.5	AIR	Single layer: 2.0	12~16	1500	5000	100	
L (6061)	4	2~2.2	-2~-2.5	0.5	AIR	Single layer: 3.0	12~16	1500	5000	100	
	5	0.8~1.0	-3~-3.5	0.5	AIR	Single layer: 3.5	12~16	1500	5000	100	
	6										
	1	25~27	0	0.5	AIR	Single layer: 1.0	12~16	1500	5000	100	
	2	7~8	0~-0.5	0.5	AIR	Single layer: 1.5	12~16	1500	5000	100	
	3	2.7~3	-1~-1.5	0.5	AIR	Single layer: 2.0	12~16	1500	5000	100	
Brass	4	1.5~1.7	-2~-2.5	0.5	AIR	Single layer: 3.0	12~16	1500	5000	100	
	5										
	6										
	Green color indic	cate that the mat	terila under s	uch thickness is usital	ble for	long time processi	ng.				
				thickness can be use				emperature going	on, the cutting presure	luctuating and ma	aterial compone
		0.1									
				s thickness can be cut			0 1				
ŀ	-			andard 1500W fiber la							
				ng head.Focusing/coll 9%), Liquid Nitrogen			3;				

Iaterial Type	Thicknes(mm)	Speed(m/min)	Focus Point	Cutting Height (mm)	Gas	Nozzle Type	Air Pressure (bar)	Power (W)	Cutting frequency (Hz)	Duty Ratio (%)	Cutting effect
	1	45~47	0	0.5	N2	Single layer:1.0	12~16	2000	5000	100	
	2	16~17	0~-0.5	0.5	N2	Single layer:1.5	12~16	2000	5000	100	
	3	3.4~3.6	4.5~5.5	0.8	O2	Dual layer:1.0	0.6~0.9	2000	5000	100	61
	4	3.1~3.2	4.5~5.5	0.8	O2	Dual layer:1.0	0.6~0.9	2000	5000	100	Shining surfac
	5										
	6	2.4~2.5	4.5~5.5	0.8	O2	Dual layer:1.0	0.6~0.9	2000	5000	100	
Q235B	8	1.5~1.7	2~3	1.5	O2	Dual layer:3.0	0.6~0.9	2000	5000	100	
	10	1.2~1.4	2~3	1.5	O2	Dual layer:3.0	0.6~0.9	2000	5000	100	
	12	1~1.1	2~3	1.5	O2	Dual layer:3.0	0.6~0.9	2000	5000	100	
	14	0.9~1.0	2~3	1.5	O2	Dual layer:4.0	0.6~0.9	2000	5000	100	Frosting surfac
	16	0.8~0.85	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2000	5000	100	
	18	0.7~0.75	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2000	5000	100	
	20	0.55~0.6	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2000	5000	100	
	1	45~48	0	0.5	N2	Single layer: 1.0	12~16	2000	5000	100	
	2	14~15	0~-0.5	0.5	N2	Single layer: 1.5	12~16	2000	5000	100	
	3	6.5~7	-1~-1.5	0.5	N2	Single layer: 2.0	12~16	2000	5000	100	No slag
SUS304	4	3.5~4	-2~-2.5	0.5	N2	Single layer:3.0	12~16	2000	5000	100	ino siag
505304	5	2~2.2	-3~-3.5	0.5	N2	Single layer: 3.5	12~16	2000	5000	100	
	6	1.3~1.5	-4.5~-5	0.5	N2	Single layer: 3.5	12~16	2000	5000	100	
	8	0.7~0.8	-6~-7	0.5	N2	Single layer:4.0	16~18	2000	5000	100	Small Amount
	10	0.55~0.6	-7~-8	0.5	N2	Single layer: 5.0	16~18	2000	5000	100	of hanging slag
	1	40~42	0	0.5	AIR	Single layer:1.0/1.2	12~16	2000	5000	100	
	2	12~13	0~-0.5	0.5	AIR	Single layer:1.5	12~16	2000	5000	100	
	3	5.5~6	-1~-1.5	0.5	AIR	Single layer:2.0	12~16	2000	5000	100	
L (6061)	4	2.5~3	-2~-2.5	0.5	AIR	Single layer:2.5	12~16	2000	5000	100	
	5										
	6	0.9~1.1	-3.5~-4	0.5	AIR	Single layer:3.5	12~16	2000	5000	100	
	8										
	1										
	2										
	3	5.5~6	-1~-1.5	0.5	AIR	Single layer:2.0/2.5	12~16	2000	5000	100	
Brass	4	2.5~3	-2~-2.5	0.5	AIR	Single layer:2.5/3.0	12~16	2000	5000	100	
	5										
	6	0.9~1.1	-3.5~-4	0.5	AIR	Single layer:3.5	12~16	2000	5000	100	
	8										
	Green color indi	cate that the mater	ila under such	thickness is usitable for	long tir	ne processing.					
				ekness can be used for ba est to use higer power la			e material temperatu	re going on, the	e cutting presure fluctuating	g and material comp	ponents uneven
	Red color indica	te that the material	under this thic	ckness can be cut, but ca	n't be u	sed for long time pro	ocessing.				

2. Above cutting data based on Precited cutting nead. Focusing/Collimating lens spec: 100/125;
3. Cutting GAS: Liquid Oxygen (Purity 99.99%), Liquid Nitrogen(Purity 99.999%);
4. Considering the difference of equipment configuration (for example, Cutting bed, Water chiller, Environment, Nozzle, Gas pressure etc.) and cutting technology, above Cutting Data Sheet for reference of equipment configuration (for example, Cutting bed, Water chiller, Environment, Nozzle, Gas pressure etc.) and cutting technology, above Cutting Data Sheet for reference of equipment configuration (for example, Cutting bed, Water chiller, Environment, Nozzle, Gas pressure etc.) and cutting technology, above Cutting Data Sheet for reference of equipment configuration (for example, Cutting bed, Water chiller, Environment, Nozzle, Gas pressure etc.) and cutting technology, above Cutting Data Sheet for reference of equipment configuration (for example, Cutting bed, Water chiller, Environment, Nozzle, Gas pressure etc.)

			1			(100 µ m) Cu					
Material Type	Thicknes(mm)	Speed(m/min)	Focus Point	Cutting Height (mm)	Gas	Nozzle Type	Air Pressure (bar)	Power (W)	Cutting frequency (Hz)	Duty Ratio (%)	Cutting effect
	1										
	3	3~3.2	4.5~5.5	0.0	O2	Dual lavaril 0	0.6~0.9	2000	5000	100	Chinin
	4	<i>5</i> ∼ <i>5</i> .2	4.5~5.5	0.8	02	Dual layer:1.0	0.6~0.9	2000	5000	100	Shining surface
	6	2.3~2.4	4.5~5.5	0.8	O2	Dual layer:1.0	0.6~0.9	2000	5000	100	
	8	1.3~1.5	4.5~5.5 2~3	1.5	02	Dual layer:1.0 Dual layer:3.0	0.6~0.9	2000	5000	100	
Q235B	10	0.9~1.0	2~3	1.5	02	Dual layer:3.0	0.6~0.9	2000	5000	100	
	12	0.9~1.0	2~3	1.5	02	Dual layer:3.0	0.6~0.9	2000	5000	100	
	14	0.5~0.9	2~3	1.5	02	Dual layer:4.0	0.6~0.9	2000	5000	100	Frosting surface
	16	0.6~0.7	2.5~3.5	1.5	02	Dual layer:4.0	0.6~0.9	2000	5000	100	1 TOSHING SULTA
	18	0.5~0.6	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2000	5000	100	
	20	0.4~0.5	2~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2000	5000	100	
	1	30~32	0	0.5	N2	Single Layer:1.0/1.2/1.5	12~16	2000	5000	100	
	2	10~11	0~-0.5	0.5	N2	Single Layer:1.5/2.0	12~16	2000	5000	100	
	3	5~6	-1~-1.5	0.5	N2	Single Layer:2.0/2.5/3.0	12~16	2000	5000	100	No slag
SUS304	4	3~3.5	-2~-2.5	0.5	N2	Single Layer:3.0	12~16	2000	5000	100	
505001	6	1.3~1.5	-3.5~-4	0.5	N2	Single Layer:3.5/4.0	12~16	2000	5000	100	
	8	0.5~0.6	-5~-6	0.5	N2	Single Layer:4.0	16~18	2000	5000	100	Small Amour
	10	0.0				sangue anny arrang					of hanging sla
	1	18~20	0	0.5	AIR	Single Layer:1.0/1.2/1.5	12~16	2000	5000	100	
	2	6~7	0~-0.5	0.5	AIR	Single Layer: 1.5/2.0	12~16	2000	5000	100	
	3	3~4	-1~-1.5	0.5	AIR	Single Layer:2.0/2.5/3.0	12~16	2000	5000	100	
AL (6061)	4	1.6~1.9	-2~-2.5	0.5	AIR	Single Layer:3.0	12~16	2000	5000	100	
	6	0.5~0.6	-3.5~-4	0.5	AIR	Single Layer:3.5/4.0	12~16	2000	5000	100	
	8					,					
	1										
	2										
	3	2.8~3.2	-1~-1.5	0.5	AIR	Single Layer:2.0/2.5/3.0	12~16	2000	5000	100	
Brass	4	1.5~1.7	-2~-2.5	0.5	AIR	Single Layer:3.0	12~16	2000	5000	100	
	5										
	6										
	8										
	Green color indi	cate that the mat	erila under suc	th thickness is usitable for	or long	time processing.					
	Yellow color ind	icate the materia	ıl under such t	hickness can be used for	batch p	processing. But with the	material temperature	going on, the	cutting presure fluctuating	and material com	ponents uneven
				ggest to use higer power							
	Red color indica	te that the materi	al under this t	hickness can be cut, but	can't be	used for long time proc	essing.				
	1. Above cutting	data sheet based	l on MAX 200	00W fiber laser with 100	um fibe	r core diameter;					
C	2. Above cutting	data based on P	recitec cutting	head. Focusing/collimat	ing len	s spec:100/125;			<u> </u>		
Comments	3. Cutiing GAS:	Liquid Oxygen	(Purity 99.99	%), Liquid Nitrogen(Pur	ity 99.9	999%);					
	4.Consideirng th										

				MFSC-	-300	U(5Uµm)	Cutting D	ata			
Material Type	Thicknes(mm)	Speed(m/min)	Focus Point	Cutting Height (mm)	Gas	Nozzle Type	Air Pressure (bar)	Power (W)	Cutting frequency (Hz)	Duty Ratio (%)	Cutting effect
	1	59	0	0.5	N2	Single Layer:1.0	12~16	3000	5000	100	
	2	28	0~-0.5	0.5	N2	Single Layer:1.5	12~16	3000	5000	100	
	3	4	4.5~5.5	0.8	O2	Dual layer:1.0	0.6~0.9	3000	5000	100	Shining surface
	4	3.5	4.5~5.5	0.8	O2	Dual layer:1.0	0.6~0.9	3000	5000	100	Similing surface
	6	2.7	4.5~5.5	0.8	O2	Dual layer:1.2	0.6~0.9	3000	5000	100	
	8	2.2	4.5~5.5	0.8	O2	Dual layer:1.2	0.6~0.9	3000	5000	100	
Q235B	10	1.5	2~3	1.5	O2	Dual layer:3.0	0.6~0.9	2200~2400	5000	100	
4	12	1	2~3	1.5	O2	Dual layer:3.0	0.6~0.9	2200~2400	5000	100	
	14	0.95	2~3	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2400	5000	100	
	16	0.85	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2400	5000	100	Frosting surface
	18	0.72	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2400	5000	100	
	20	0.65	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2400	5000	100	
	22	0.55	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2400	5000	100	
	25	0.5	2.5~4	1.5	O2	Dual layer:5.0	0.6~0.9	2200~2500	5000	100	
	1	60	0	0.5	N2	Single Layer:1.5	12~16	3000	5000	100	
	2	24	0~-0.5	0.5	N2	Single Layer:2.0	12~16	3000	5000	100	
	3	10	-1~-1.5	0.5	N2	Single Layer:3.0	12~16	3000	5000	100	No slag
SUS304	4	7	-2~-2.5	0.5	N2	Single Layer:3.0	12~16	3000	5000	100	· ·
	6	3.2	-3.5~-4	0.5		Single Layer:3.0	12~16	3000	5000	100	
	8	1.3	-5~-6	0.5		Single Layer:3.0	16~18	3000	5000	100	
	10 12	0.8	-6.5~-7 -7.5~-8.5	0.5 0.5	N2	Single Layer:4.0 Single Layer:4.0	16~18 16~18	3000 3000	5000 5000	100	Small Amount of hanging slag
	Green color indi	cate that the mate	rila under such	thickness is usitable for	r long ti	me processing.					
	cutting process v	vill be not so stab	le. We suggest	to use higer power laser	r source	t		ature going on, tr	ne cutting presure fluctuati	ng and material con	nponents uneven, ti
	Red color indica	te that the materia	l under this th	ickness can be cut, but c	an't be	used for long time	e processing.				
	1. Above cutting	data sheet based	on MAX 3000	W fiber laser with 50un	n fiber o	ore diameter;					
Comments				head. Focusing/collimat							
	Cuting GAS:	Liquid Oxygen	(Purity 99.99%), Liquid Nitrogen(Puri	ty 99.99	99%);					
	4.0 111 4	1: cc		guration (for example, C							

					00(1	00 μm) Cutti					
Material Type	Thicknes(mm)	Speed(m/min)	Focus Point	Cutting Height (mm)	Gas	Nozzle Type	Air Pressure (bar)	Power (W)	Cutting frequency (Hz)	Duty Ratio (%)	Cutting effect
	1	38~40	0	0.5	N2	Single Layer:1.0	12~16	3000	5000	100	
	2										
	3	4~4.2	4.5~5.5	0.8	O2	Dual layer:1.0	0.6~0.9	3000	5000	100	Shining surface
	4	3.3~3.5	4.5~5.5	0.8	O2	Dual layer:1.0	0.6~0.9	3000	5000	100	January Surray
	6	2.3~2.5	4.5~5.5	0.8	O2	Dual layer:1.2	0.6~0.9	3000	5000	100	
	8	2.1~2.2	4.5~5.5	0.8	O2	Dual layer:1.2	0.6~0.9	3000	5000	100	
Q235B	10	1.4~1.6	2~3	1.5	O2	Dual layer:3.0	0.6~0.9	2200~2400	5000	100	
Q	12	1.0~1.1	2~3	1.5	O2	Dual layer:3.0	0.6~0.9	2200~2400	5000	100	
	14	0.9~1.0	2~3	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2400	5000	100	
	16	0.85~0.9	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2400	5000	100	Frosting surface
	18	0.7~0.75	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2400	5000	100	
	20	0.6~0.65	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2400	5000	100	
	22	0.5~0.55	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2400	5000	100	
	25	0.45~0.5	2.5~4	1.5	O2	Dual layer:5.0	0.6~0.9	2200~2500	5000	100	
	1	35~37	0	0.5	N2	Single Layer:1.0/1.2/1.5	12~16	3000	5000	100	
	2	13~15	0~-0.5	0.5	N2	Single Layer:1.5/2.0	12~16	3000	5000	100	
	3	7~8	-1~-1.5	0.5	N2	Single Layer:2.0/2.5/3.0	12~16	3000	5000	100	No slag
SUS304	4	4.5~5.5	-2~-2.5	0.5	N2	Single Layer:3.0	12~16	3000	5000	100	
50500.	6	2.0~2.3	-3.5~-4	0.5	N2	Single Layer:3.5/4.0	12~16	3000	5000	100	
	8	1.0~1.2	-5~-6	0.5	N2	Single Layer:4.0	16~18	3000	5000	100	
	10	0.6~0.7	-6.5~-7	0.5	N2	Single Layer:4.0	16~18	3000	5000	100	Small Amoun of hanging sla
	1	30~33	0	0.5	AIR	Single Layer:1.0/1.2/1.5	12~16	3000	5000	100	
	2	10~12	0~-0.5	0.5	AIR	Single Layer:1.5/2.0	12~16	3000	5000	100	
17 ((0(1)	3	5.5~5.9	-1~-1.5	0.5	AIR	Single Layer:2.0/2.5/3.0	12~16	3000	5000	100	
AL (6061)	4	2.8~3.2	-2~-2.5	0.5	AIR	Single Layer:3.0	12~16	3000	5000	100	
	6	0.7~0.8	-3.5~-4	0.5	AIR	Single Layer:3.5/4.0	12~16	3000	5000	100	
	8	0.5~0.6	-5~-6	0.5	AIR	Single Layer:4.0	16~18	3000	5000	100	
	1										
	2										
	3	4.5~5	-2~-2.5	0.5	AIR	Single Layer:2.0/2.5/3.0	12~16	3000	5000	100	
Brass	4	3~3.5	-3~-3.5	0.5	AIR	Single Layer:3.0	12~16	3000	5000	100	
	5										
	6	1~1.2	-5~-5.5	0.5	AIR	Single Layer:3.5/4.0	16~18	3000	5000	100	
	8	1771.2	25/22/2	0.5	AIR	Single Layer.5.5/4.0	10-10	3000	3000	100	
	Green color indic	ate that the mate	rila under such	thickness is usitable for	long time	processing.					
				ckness can be used for be We suggest to use higer		essing. But with the mate	rial temperature goi	ng on, the cu	tting presure fluctuating	g and material con	nponents
						d for long time processin	σ				
				W fiber laser with 100un			·p·				
	2. Above cutting	data based on Ra	ytools cutting	head. Focusing/collimati	ng lens sp	pec:100/125;					
Comments	3. Cutiing GAS:	Liquid Oxygen (Purity 99.99%), Liquid Nitrogen(Purity	y 99.999%	6);					
F				guration (for example, Cu							

				MFSC-4	4000) (50 µ m)	Cutting Da	ıta			
Material Type	Thicknes(mm)	Speed(m/min)	Focus Point	Cutting Height (mm)	Gas	Nozzle Type	Air Pressure (bar)	Power (W)	Cutting frequency (Hz)	Duty Ratio (%)	Cutting effect
	1	63~65	0	0.5	N2	Single Layer:1.0	12~16	4000	5000	100	
	3	10~11	-1~-1.5	0.5	N2	Single Layer:2.0	12~16	4000	5000	100	
	6	2.8~2.9	4.5~5.5	0.8	O2	Dual layer:1.2	0.6~0.9	4000	5000	100	Shining surface
	8	2.3~2.4	4.5~5.5	0.8	O2	Dual layer:1.2	0.6~0.9	4000	5000	100	
	10	1.8~1.9	4.5~5.5	0.8	O2	Dual layer:1.2	0.6~0.9	4000	5000	100	
O225B	12	1.3~1.5	2~3	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2500	5000	100	
Q235B	14	0.9~1.0	2~3	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2500	5000	100	
	16	0.8~0.9	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2500	5000	100	
	18	0.7~0.8	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2500	5000	100	Frosting surface
	20	0.6~0.65	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2500	5000	100	
	22	0.55~0.6	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2500	5000	100	
	25	0.5~0.55	2.5~4	1.5	O2	Dual layer:5.0	0.6~0.9	2200~2500	5000	100	
	1	75	0	0.5	N2	Single Layer:1.0	12~16	4000	5000	100	
	2	32	0~-0.5	0.5	N2	Single Layer:2.0	12~16	4000	5000	100	
	3	12	-1~-1.5	0.5	N2	Single Layer:2.0	12~16	4000	5000	100	No slag
SUS304	6	4.3	-3.5~-4	0.5	N2	Single Layer:3.5	12~16	4000	5000	100	NO Stag
505504	8	1.8	-5~-6	0.5	N2	Single Layer:3.5	16~18	4000	5000	100	
	10	1.2	-6.5~-7	0.5	N2	Single Layer:3.5	16~18	4000	5000	100	
	12	0.9	-7.5~-8.5	0.5	N2	Single Layer:3.5	16~18	4000	5000	100	Small Amount
	14	0.4	-9~-10	0.5	N2	Single Layer:4.0	16~20	4000	5000	100	of hanging slag
				thickness is usitable for		, ,	h the material temnera	ture going on the	cutting presure fluctuating a	nd material compo	ments uneven
	the cutting proces	ss will be not so st	able. We sugg	gest to use higer power la	aser sou	irce.		ture going on, the t	atting presure fractiating a	na material compo	ments une ven,
				ickness can be cut, but ca			processing.				
				W fiber laser with 50um							
Comments				ead. Focusing/collimating	_						
			•), Liquid Nitrogen(Purit	•						
	Considering the	difference of equ	ipment config	guration (for example, C	utting b	ed, Water chiller	Environment, Nozzle,	Gas pressure etc.)	and cutting technology, abo	ove Cutting Data Si	heet for reference

Material Type	Thicknes(mm)	Speed(m/min)	Focus Point	Cutting Height (mm)	Gas	Nozzle Type	Air Pressure (bar)	Power (W)	utting frequency (Hz)	Duty Ratio (%)	Cutting effect
	1	43~45	0	0.5	N2	Single Layer:1.0	12~16	4000	5000	100	
	2	21~23	0~-0.5	0.5	N2	Single Layer:1.5	12~16	4000	5000	100	
	3	4.0~4.3	4.5~5.5	0.8	O2	Dual layer:1.0	0.6~0.9	4000	5000	100	
	4	3.3~3.6	4.5~5.5	0.8	O2	Dual layer:1.0	0.6~0.9	4000	5000	100	Shining surfac
	6	2.8~2.9	4.5~5.5	0.8	O2	Dual layer:1.2	0.6~0.9	4000	5000	100	Ü
	8	2.3~2.4	5.5~6	0.8	O2	Dual layer:1.2	0.6~0.9	4000	5000	100	
	10	1.8~1.9	5.5~6	0.8	O2	Dual layer:1.2	0.6~0.9	4000	5000	100	
Q235B	12	1.3~1.5	2~3	1.5	O2	Dual layer:3.0	0.6~0.9	2200~2400	5000	100	
	14	0.9~1.0	2~3	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2400	5000	100	
	16	0.8~0.9	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2400	5000	100	
	18	0.7~0.8	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2400	5000	100	Frosting surface
	20	0.6~0.65	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2400	5000	100	
	22	0.55~0.6	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.9	2200~2400	5000	100	
	25	0.5~0.55	2.5~4	1.5	O2	Dual layer:5.0	0.6~0.9	2200~2500	5000	100	
	1	40~43	0	0.5	N2	Single Layer: 1.0/1.2/1.5	12~16	4000	5000	100	
	2	19~21	0~-0.5	0.5	N2	Single Layer: 1.5/2.0	12~16	4000	5000	100	
	3	10~11	-1~-1.5	0.5	N2	Single Layer: 2.0/2.5/3.0	12~16	4000	5000	100	
	4	6.5~7	-2~-2.5	0.5	N2	Single Layer:3.0	12~16	4000	5000	100	No slag
SUS304	6	2.8~3.2	-3.5~-4	0.5	N2	Single Layer:3.5/4.0	12~16	4000	5000	100	_
	8	1.5~1.7	-5~-6	0.5	N2	Single Layer:4.0	16~18	4000	5000	100	
	10	0.8~0.9	-6.5~-7	0.5	N2	Single Layer:4.0	16~18	4000	5000	100	
	12										Small Amoun
	14										of hanging sla
	1	35~37	0	0.5	AIR	Single Layer: 1.0/1.2/1.5	12~16	4000	5000	100	
	2	15~17	0~-0.5	0.5	AIR	Single Layer: 1.5/2.0	12~16	4000	5000	100	
	3	6.5~7	-1~-1.5	0.5	AIR	Single Layer: 2.0/2.5/3.0	12~16	4000	5000	100	
AL (6061)	4	4.5~4.8	-2~-2.5	0.5	AIR	Single Layer:3.0	12~16	4000	5000	100	
	6	2~2.2	-3.5~-4	0.5	AIR	Single Layer:3.5/4.0	12~16	4000	5000	100	
	8	1~1.2	-5~-6	0.5	AIR	Single Layer:4.0	16~18	4000	5000	100	
	10	0.5~0.6	-6.5~-7	0.5	AIR	Single Layer:4.0	16~18	4000	5000	100	
	1										
	2										
	3	6.5~6.8	-1~-1.5	0.5	AIR	Single Layer: 2.0/2.5/3.0	16~20	4000	5000	100	
Brass	4	4.5~4.7	-2~-2.5	0.5	AIR	Single Layer:3.0	16~20	4000	5000	100	
Drass	5										
	6	1.3~1.5	-3.5~-4	0.5	AIR	Single Layer:3.5/4.0	16~20	4000	5000	100	
	8	0.7~0.8	-5~-6	0.5	AIR	Single Layer:4.0	16~20	4000	5000	100	
	10										
	Green color indi	cate that the ma	terila under s	such thickness is usita	ble for	long time processing.					
						atch processing. But we to use higer power lase		erature going	g on, the cutting presure	e fluctuating and n	naterial
			•			in't be used for long tim					
						n fiber core diameter;					
				ng head. Focusing/col							
Comments				99%), Liquid Nitroger		* '					

Aaterial Type		Smood (m/min)	Econo Boint	Cutting Height (mm)	Gas	Nozzle Type	Cutting Da		utting frequency (Hz)	Dutu Batia (9/)	Cutting effec
nateriai Type	Thicknes(mm)	45~47	0	O.5	N2	Single Layer:2.0	12~16	6000	5000	100	Cutting ener
	2	28~32	0~-0.5	0.5	N2	Single Layer:2.0	12~16	6000	5000	100	
	2	4.2~4.5	4.0~5.5		-						
	4	3.5~3.7		0.6~0.8	O2	Dual layer:1.0/1.2	0.6~0.8	3000~3500	5000 5000	100 100	
	5	3.2~3.3	4.0~5.5 4.0~5.5	0.6~0.8	O2	Dual layer:1.0/1.2	0.6~0.8	3000~3500 4000~4500	5000	100	Chinin
	6	7.7 7.17			O2	Dual layer:1.0/1.2			5000	100	Shining surfa
	8	2.6~2.8	4.0~5.5	0.6~0.8		Dual layer:1.0/1.2	0.6~0.8	4000~4500			
	Ü	2.5~2.6	5.5~6.5	0.6~0.8	O2	Dual layer:1.2	0.6~0.8	4500~5000	5000	100	
Q235B	10	2.2~2.3	5.5~6.5	0.6~0.8	O2	Dual layer:1.2	0.6~0.8	6000	5000	100	
	12	1.8~2.0	6~7	0.6~0.8	O2	Dual layer:1.2	0.6~0.8	6000	5000	100	
	14	0.9~1.0	2.5~3.5	1.5	O2	Dual layer:3.0	0.6~0.8	2200~2600	5000	100	
	16	0.8~0.9	2.5~3.5	1.5	O2	Dual layer:3.0/3.5	0.6~0.8	2200~2600	5000	100	
	18	0.7~0.8	2.5~3.5	1.5	O2	Dual layer:3.5/4.0	0.6~0.8	2200~2600	5000	100	Frosting surfa
	20	0.6~0.65	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.8	2200~2600	5000	100	110501116 50111
	22	0.55~0.6	2.5~3.5	1.5	O2	Dual layer:4.0	0.6~0.8	2200~2600	5000	100	
	25	0.5~0.55	2.5~4	1.5	O2	Dual layer:5.0	0.6~0.8	2200~2600	5000	100	
	1	45~47	0	0.5	N2	Single Layer:1.5	12~16	6000	5000	100	
	2	28~32	0~-0.5	0.5	N2	Single Layer:2.0	12~16	6000	5000	100	
	3	15~17	-1~-1.5	0.5	N2	Single Layer:2.0	12~16	6000	5000	100	
	4	11~13	-2~-2.5	0.5	N2	Single Layer:2.5	12~16	6000	5000	100	
	5	8~10	-2.5~-3	0.5	N2	Single Layer:3.5	12~16	6000	5000	100	
	6	6~6.5	-3.5~-4	0.5	N2	Single Layer:3.5	12~16	6000	5000	100	No slag
SUS304	8	3.5~4	-5~-6	0.5	N2	Single Layer:3.5	16~18	6000	5000	100	
	10	1.8~2.0	-6.5~-7	0.5	N2	Single Layer:4.0	16~18	6000	5000	100	
	12	1.1~1.3	-7.5~-8.5	0.5	N2	Single Layer:4.0	16~18	6000	5000	100	
	14	0.9~1.0	-9~-10	0.5	N2	Single Layer:5.0	16~20	6000	5000	100	
	16	0.8~0.85	-10~-11	0.5	N2	Single Layer:5.0	16~20	6000	5000	100	Caroll Amou
	20	0.5~0.6	-11~-13	0.5	N2	Single Layer:5.0	16~20	6000	5000	100	Small Amou of hanging sl
	1	45~47	0	0.5	AIR	Single Layer:1.5	12~16	6000	5000	100	***************************************
	2	28~29	0~-0.5	0.5	AIR	Single Layer:2.0	12~16	6000	5000	100	
	3	15~17	-1~-1.5	0.5	AIR	Single Layer:2.0	12~16	6000	5000	100	
	4	9~10	-2~-2.5	0.5	AIR		12~16	6000	5000	100	
	5	9~10 6~6.5	-2.5~-3	0.5	AIR	Single Layer:2.0	12~16	6000	5000	100	
						Single Layer:2.5					
AL (6061)	6	4.5~5	-3.5~-4	0.5	AIR	Single Layer:2.5	12~16	6000	5000	100	
	8	2.8~2.9	-5~-6 -6.5~-7	0.5	AIR	Single Layer:3.0 Single Layer:3.5	16~18	6000	5000	100 100	
	1.0			0.5	AIR		16~18	6000	5000		
	10	1.7~1.8									
	12	1.0~1.2	-7.5~-8.5	0.5	AIR	Single Layer:3.5	16~20	6000	5000	100	
	12 14	1.0~1.2 0.7~0.9	-7.5~-8.5 -9~-10	0.5	AIR	Single Layer:3.5 Single Layer:4.0	16~20 16~20	6000	5000 5000	100 100	
	12 14 16	1.0~1.2 0.7~0.9 0.5~0.6	-7.5~-8.5 -9~-10 -9~-10	0.5 0.5	AIR AIR	Single Layer:3.5 Single Layer:4.0 Single Layer:4.0	16~20 16~20 16~20	6000 6000	5000 5000 5000	100 100 100	
	12 14	1.0~1.2 0.7~0.9 0.5~0.6 43~45	-7.5~-8.5 -9~-10 -9~-10	0.5 0.5 0.5	AIR AIR AIR	Single Layer:4.0 Single Layer:4.0 Single Layer:4.0 Single Layer:1.5	16~20 16~20 16~20 12~16	6000 6000 6000	5000 5000 5000 5000	100 100 100 100	
	12 14 16	1.0~1.2 0.7~0.9 0.5~0.6	-7.5~-8.5 -9~-10 -9~-10	0.5 0.5	AIR AIR	Single Layer:3.5 Single Layer:4.0 Single Layer:4.0	16~20 16~20 16~20	6000 6000	5000 5000 5000	100 100 100	
	12 14 16	1.0~1.2 0.7~0.9 0.5~0.6 43~45	-7.5~-8.5 -9~-10 -9~-10	0.5 0.5 0.5	AIR AIR AIR	Single Layer:4.0 Single Layer:4.0 Single Layer:4.0 Single Layer:1.5	16~20 16~20 16~20 12~16	6000 6000 6000	5000 5000 5000 5000	100 100 100 100	
	12 14 16 1 2	1.0~1.2 0.7~0.9 0.5~0.6 43~45 25~27	-7.5~8.5 -9~-10 -9~-10 0 0~-0.5	0.5 0.5 0.5 0.5	AIR AIR AIR	Single Layer: 4.0 Single Layer: 4.0 Single Layer: 4.0 Single Layer: 1.5 Single Layer: 2.0	16~20 16~20 16~20 12~16 12~16	6000 6000 6000	5000 5000 5000 5000 5000	100 100 100 100 100	
	12 14 16 1 2 3	1.0~1.2 0.7~0.9 0.5~0.6 43~45 25~27 13~15 8~9 5.5~6	-7.5~8.5 -9~10 0 0~0.5 -1~1.5 -2~2.5 -2.5~3	0.5 0.5 0.5 0.5 0.5 0.5 0.5	AIR AIR AIR AIR AIR	Single Layer:3.5 Single Layer:4.0 Single Layer:4.0 Single Layer:1.5 Single Layer:2.0 Single Layer:2.0	16-20 16-20 16-20 12-16 12-16	6000 6000 6000 6000	5000 5000 5000 5000 5000 5000	100 100 100 100 100 100	
Brass	12 14 16 1 2 3 4	1.0~1.2 0.7~0.9 0.5~0.6 43~45 25~27 13~15 8~9	-7.5~8.5 -9~-10 0 0~-0.5 -1~-1.5 -2~-2.5	0.5 0.5 0.5 0.5 0.5 0.5	AIR AIR AIR AIR AIR AIR AIR	Single Layer:3.5 Single Layer:4.0 Single Layer:4.0 Single Layer:1.5 Single Layer:2.0 Single Layer:2.0 Single Layer:2.0	16-20 16-20 16-20 12-16 12-16 12-16 12-16	6000 6000 6000 6000 6000	5000 5000 5000 5000 5000 5000 5000	100 100 100 100 100 100 100	
Brass	12 14 16 1 2 3 4 5	1.0~1.2 0.7~0.9 0.5~0.6 43~45 25~27 13~15 8~9 5.5~6	-7.5~8.5 -9~10 0 0~0.5 -1~1.5 -2~2.5 -2.5~3	0.5 0.5 0.5 0.5 0.5 0.5 0.5	AIR AIR AIR AIR AIR AIR AIR AIR	Single Layer:4.0 Single Layer:4.0 Single Layer:4.0 Single Layer:1.5 Single Layer:2.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.0	16-20 16-20 16-20 12-16 12-16 12-16 12-16 12-16	6000 6000 6000 6000 6000 6000	5000 5000 5000 5000 5000 5000 5000 5000	100 100 100 100 100 100 100 100	
Brass	12 14 16 1 2 3 4 5	1.0~1.2 0.7~0.9 0.5~0.6 43~45 25~27 13~15 8~9 5.5~6 4~4.5	-7.5~8.5 -9~10 0 0~0.5 -1~1.5 -2~2.5 -2.5~3 -3.5~4	0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	AIR AIR AIR AIR AIR AIR AIR AIR AIR	Single Layer: 3.5 Single Layer: 4.0 Single Layer: 1.5 Single Layer: 1.5 Single Layer: 2.0 Single Layer: 2.0 Single Layer: 2.0 Single Layer: 2.5 Single Layer: 2.5	16-20 16-20 16-20 12-16 12-16 12-16 12-16 12-16 12-16	6000 6000 6000 6000 6000 6000 6000	\$000 \$000 \$000 \$000 \$000 \$000 \$000 \$00	100 100 100 100 100 100 100 100 100	
Brass	12 14 16 1 2 3 4 5 6	1.0-1.2 0.7-0.9 0.5-0.6 43-45 25-27 13-15 8-9 5.5-6 4-4.5 2.7-2.8	-7.5~8.5 -9~10 0 0~0.5 -1~1.5 -2~2.5 -2.5~3 -3.5~4 -5~6	0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	AIR	Single Layer: 3.5 Single Layer: 4.0 Single Layer: 4.0 Single Layer: 1.5 Single Layer: 2.0 Single Layer: 2.0 Single Layer: 2.0 Single Layer: 2.5 Single Layer: 2.5 Single Layer: 3.0	16-20 16-20 16-20 12-16 12-16 12-16 12-16 12-16 12-16 12-16	6000 6000 6000 6000 6000 6000 6000 600	\$000 \$000 \$000 \$000 \$000 \$000 \$000 \$00	100 100 100 100 100 100 100 100 100 100	
Brass	12 14 16 1 2 3 4 5 6 8	1.0-1.2 0.7-0.9 0.5-0.6 43-45 25-27 13-15 8-9 5.5-6 4-4.5 2.7-2.8 1.6-1.7	-7.5~8.5 -9~10 0 0~0.5 -1~1.5 -2~2.5 -2.5~3 -3.5~4 -5~6 -6.5~7	0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	AIR	Single Layer:3.5 Single Layer:4.0 Single Layer:4.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.5 Single Layer:3.0 Single Layer:3.0 Single Layer:3.5	16-20 16-20 16-20 12-16 12-16 12-16 12-16 12-16 12-16 12-16 12-16	6000 6000 6000 6000 6000 6000 6000 600	\$000 \$000 \$000 \$000 \$000 \$000 \$000 \$00	100 100 100 100 100 100 100 100 100 100	
Brass	12 14 16 1 2 2 3 4 5 6 8 10	1.0-1.2 0.7-0.9 0.5-0.6 43-45 25-27 13-15 8-9 5.5-6 4-4.5 2.7-2.8 1.6-1.7 1.0-1.2	-7.5~8.5 -9~10 0 0~0.5 -1~1.5 -2~2.5 -2.5~3 -3.5~4 -5~6 -6.5~7 -7.5~8.5	0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	AIR	Single Layer:3.5 Single Layer:4.0 Single Layer:4.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.5 Single Layer:2.5 Single Layer:3.0 Single Layer:3.5 Single Layer:3.5	16-20 16-20 16-20 12-16 12-16 12-16 12-16 12-16 12-16 12-18 16-18	6000 6000 6000 6000 6000 6000 6000 6000 6000 6000	\$000 \$000 \$000 \$000 \$000 \$000 \$000 \$00	100 100 100 100 100 100 100 100 100 100	
Brass	12 14 16 1 1 2 3 4 5 6 8 10 12 14	1.0-1.2 0.7-0.9 0.5-0.6 43-45 25-27 13-15 8-9 5.5-6 4-4.5 2.7-2.8 1.6-1.7 1.0-1.2 0.7-0.9	-7.5~8.5 -9~10 0 0~0.5 -1~1.5 -2~2.5 -3.5~4 -5~6 -6.5~7 -7.5~8.5 -9~10 -9~10	0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	AIR	Single Layer:3.5 Single Layer:4.0 Single Layer:4.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.5 Single Layer:2.5 Single Layer:2.5 Single Layer:3.5 Single Layer:3.5 Single Layer:3.5 Single Layer:3.5	16-20 16-20 12-16 12-16 12-16 12-16 12-16 12-16 12-16 16-18 16-18 16-20 16-20	6000 6000 6000 6000 6000 6000 6000 600	\$000 \$000 \$000 \$000 \$000 \$000 \$000 \$00	100 100 100 100 100 100 100 100 100 100	
Brass	12 14 16 1 2 3 4 5 6 8 10 12 14 16 Green color indice	1.0–1.2 0.7–0.9 0.5–0.6 43–45 25–27 13–15 8–9 5.5–6 4-4.5 2.7–2.8 1.6–1.7 1.0–1.2 0.7–0.9 0.5–0.6 ate that the material	-7.58.5 -910 0 00.5 -11.5 -22.5 -2.53 -3.54 -56 -6.7-58.5 -910 -910 Is under such thick	0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	AIR	Single Layer:3.5 Single Layer:4.0 Single Layer:4.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.5 Single Layer:2.5 Single Layer:3.5 Single Layer:3.5 Single Layer:3.5 Single Layer:4.0 Single Layer:4.0 Single Layer:4.0	16-20 16-20 12-16 12-16 12-16 12-16 12-16 12-16 12-16 16-18 16-18 16-20 16-20	6000 6000 6000 6000 6000 6000 6000 600	\$000 \$000 \$000 \$000 \$000 \$000 \$000 \$00	100 100 100 100 100 100 100 100 100 100	ts uneven, the
Brass	12 14 16 1 2 3 4 5 6 8 10 12 14 16 Green color indiccutting process wi	1.0–1.2 0.7–0.9 0.5–0.6 43–45 25–27 13–15 8–9 5.5–6 4–4.5 2.7–2.8 1.6–1.7 1.0–1.2 0.7–0.9 0.5–0.6 tte that the material all be not so stable	-7.5-8.5 -9-10 -9-10 0 0-0.5 -1-1.5 -2-2.5 -2.5-2 -3.5-4 -5-6 -6.5-7 -7.5-8.5 -9-10 Ja under such thic. We suggest to	0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	AIR	Single Layer:3.5 Single Layer:4.0 Single Layer:4.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.5 Single Layer:2.5 Single Layer:3.0 Single Layer:3.5 Single Layer:3.5 Single Layer:3.6 Single Layer:3.6 Single Layer:3.7 Single Layer:3.9 Single Layer:3.9 Single Layer:3.9 Single Layer:3.0 Single Layer:4.0	16-20 16-20 12-16 12-16 12-16 12-16 12-16 12-16 12-16 12-16 16-18 16-18 16-20 16-20 16-20	6000 6000 6000 6000 6000 6000 6000 600	\$000 \$000 \$000 \$000 \$000 \$000 \$000 \$00	100 100 100 100 100 100 100 100 100 100	ts uneven, the
Brass	12 14 16 1 2 3 4 5 6 8 10 12 14 16 Green color indicate Yellow color indicate Red color indicate	1.0–1.2 0.7–0.9 0.5–0.6 43–45 2.5–27 13–15 8–9 5.5–6 4–4.5 2.7–2.8 1.6–1.7 1.0–1.2 0.7–0.9 0.5–0.6 the that the material the not so stable that the material the material that	-7.5-8.5 -9-10 -9-10 0 0-0.5 -1-1.5 -2-2.5 -2.5-3 -3.5-4 -5-6 -6.5-7 -7.5-8.5 -9-10 a under such thic. We suggest t	0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	AIR	Single Layer:3.5 Single Layer:4.0 Single Layer:4.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.5 Single Layer:2.5 Single Layer:3.5 Single Layer:3.5 Single Layer:3.5 Single Layer:3.5 Single Layer:3.5 Single Layer:3.5 Single Layer:3.6 Single Layer:3.7 Single Layer:3.8 Single Layer:3.9 Single Layer:4.0	16-20 16-20 12-16 12-16 12-16 12-16 12-16 12-16 12-16 12-16 16-18 16-18 16-20 16-20 16-20	6000 6000 6000 6000 6000 6000 6000 600	\$000 \$000 \$000 \$000 \$000 \$000 \$000 \$00	100 100 100 100 100 100 100 100 100 100	ts uneven, the
Brass	12 14 16 1 2 3 4 5 6 8 10 12 14 16 Green color indicate cutting process wi	1.0–1.2 0.7–0.9 0.5–0.6 43–45 25–27 13–15 8–9 5.5–6 4–4.5 2.7–2.8 1.6–1.7 1.0–1.2 0.7–0.9 0.5–0.6 tet that the material all be not so stable that the material that sheet based of	-7.5-8.5 -9-10 -9-10 0 0-0.5 -1-1.5 -2-2.5 -2.5-3 -3.5-4 -5-6 -6.5-7 -7.5-8.5 -9-10 -9-10 la under such this . We suggest under this this n MAX 6000°	0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	AIR	Single Layer:3.5 Single Layer:4.0 Single Layer:4.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.5 Single Layer:2.5 Single Layer:3.5 Single Layer:3.5 Single Layer:3.5 Single Layer:4.0	16-20 16-20 12-16 12-16 12-16 12-16 12-16 12-16 12-16 12-16 16-18 16-18 16-20 16-20 16-20	6000 6000 6000 6000 6000 6000 6000 600	\$000 \$000 \$000 \$000 \$000 \$000 \$000 \$00	100 100 100 100 100 100 100 100 100 100	ts uneven, the
Brass	12 14 16 1 2 3 4 5 6 8 10 12 14 16 Green color indicate 1, Above cutting c 2. Above cutting c	1.0–1.2 0.7–0.9 0.5–0.6 43–45 25–27 13–15 8–9 5.5–6 4–4.5 2.7–2.8 1.6–1.7 1.0–1.2 0.7–0.9 0.5–0.6 tet that the material at the	-7.5-8.5 -9-10 -9-10 0 0-0.5 -1-1.5 -2-2.5 -3.5-4 -5-6 -6.5-7 -7.5-8.5 -9-10 -9-10 la under such thick. We suggest to under such thick t	0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	AIR	Single Layer:3.5 Single Layer:4.0 Single Layer:4.0 Single Layer:4.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.0 Single Layer:2.5 Single Layer:2.5 Single Layer:2.5 Single Layer:3.0 Single Layer:3.5 Single Layer:3.5 Single Layer:4.0	16-20 16-20 12-16 12-16 12-16 12-16 12-16 12-16 12-16 12-16 16-18 16-18 16-20 16-20 16-20	6000 6000 6000 6000 6000 6000 6000 600	\$000 \$000 \$000 \$000 \$000 \$000 \$000 \$00	100 100 100 100 100 100 100 100 100 100	ts uneven, the