

MAX 创鑫激光



MFSC 12000

使用手册

版权说明

“ ”

引 语

MFSC

MFSC

公司简介

2004

<http://www.maxphotonics.com>



深圳市创鑫激光股份有限公司

:
: <http://www.maxphotonics.com>
: 400-900-9588
: +86-755-36869371
: info@maxphotonics.com

	.....	1
	.....	4
	.....	5
1 -	.....	5
2-	.....	6
3-	.....	6
4-	.....	8
5-	.....	11
	.....	12
1-	.....	12
2-	.....	12
3-	.....	12
4-	.....	13
5-	.....	13
6-	.....	13
7-	.....	14
	.....	15
1-	.....	15
2-	.....	16
3-	.....	16
4-LOE&QBH	.....	17
5-	.....	18
6-	.....	19






	.....	20
1-	.....	20
2-	.....	20
3-	.....	20
4-	.....	22
5-	.....	23
6-	.....	24
7-	.....	29
	.....	32
1-	.....	32
2-	.....	33
3-	.....	34
4-LOE	.....	38
	.....	40
1-	.....	40
2-	.....	44
	.....	45
1-	.....	45
2-	.....	46
	.....	48
1-	.....	48
2-	.....	48

第一章 特性说明

MFSC
MFSC
>33%
MFSC
1060nm 1100 nm
Class 4

第二章 安全信息

1 - 安全规定

MFSC
20KW

1060nm 1100 nm

2- 激光防护

1

2

LaserVision USA Kentek Corporation Rochwell Laser
Industries

3- 引用标准

电磁兼容与抗干扰性：

EN IEC 61000-6-4:2019

CISPR 16-2-1

CISPR 16-2-3

EN IEC 61000-6-2:2019

EN 61000-4-2:2009

EN 61000-4-3:2020

EN 61000-4-4:2012

EN 61000-4-5:2014+A1:2017

EN 61000-4-6:2014

EN 61000-4-11:2020

激光安全：

EN 60825-1:2014+A11:2021

CDRH 21 CFR 1040.10

电气安全：

EN 60204-1:2018

	MFSC		CE EMC	
" EMC Directive"		EMC	" EMC"	EN 61000-6-4
EN 61000-6-2				
	MFSC		Class 4	21 CFR
J 1040.10 d				
		Class 4	EN 60825-1	9

4- 一般安全指示

2

MFSC

3

1

2

3

4

5

6

7

8

9

10

11

12

"

"

4

1

360-440VAC, 3P+PE

2

3

4

360-440VAC, 3P+PE

5

5- 更多安全信息

Laser Institute of America(LIA)

13501 Ingenuity Drive, Suite 128

Orlando,Florida 32826

Phone:407 380 1553,Fax: 407 380 5588

Toll Free:1 800 34 LASER

American National Standards Institute

ANSI Z136.1, American National Standard for the Safe Use of Lasers

(Available through LIA)

International Electro-technical Commission

IEC 60825-1, Edition 1.2

Center for Devices and Radiological Health

21 CFR 1040.10 - Performance Standards for Light-Emitting Products

US Department of Labor - OSHA

Publication 8-1.7 - Guidelines for Laser Safety and Hazard Assessment.

Laser Safety Equipment

Laurin Publishing

Laser safety equipment and Buyer' s Guides

第三章 产品描述

1- 特性简介

MFSC

1
2
3
4
5

1
2

2- 模块配置

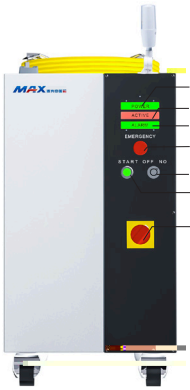
3- 激光器型号编码

M - F - S - C - XXX - XXXX
1 - 2 - 3 - 4 - 5 - 6

1		M	Maxphotonics
2		F	Fiber Laser
3		S	Single-Mode ()
4		C	ContinueWave
5	XXXX		XXXX W
6			

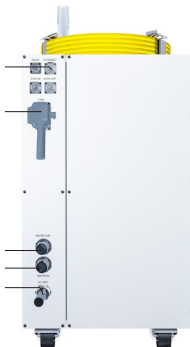
4- 合格证

5- 前面板说明



		400VAC
	START	
	ALARM	
	ACTIVE	
	POWER	

6- 后面板说明



	CTRL	
	ETHERNET	
	WATER OUT	(1.25)
	WATER IN	(1.25)
	AC 400V	360-440VAC

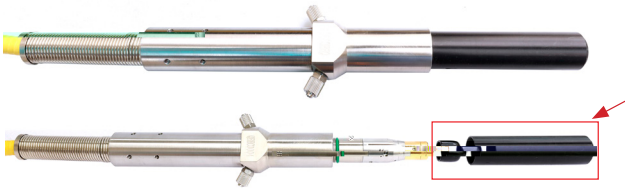
7- 光输出端子

1

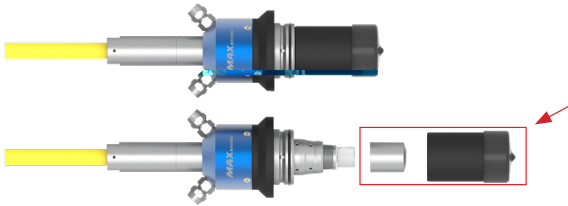
QBH

LOE

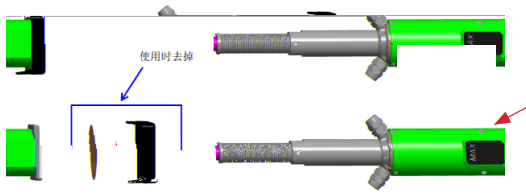
QBH



LOE2.0



LOE3.1



第四章 详细规格

1- 光学特性参数表

	/				
MFSC-12000	100%		12000		W
		10		100	%
	100%	1070	1080	1090	nm
3dB	100%		5	7	nm
	100% >1h		± 1	± 2	%
	100% >24h		± 2	± 3	%
BPP	50um	1.2		2.2	mm x mrad
	100um	2.8		3.8	
			150	200	μs
			150	200	μs
	100%			5	KHz
	100%	200			uW
			25	35	m
	100 50/150/200				μm
		200			mm
	LOE				

2- 一般特性参数

		360	400	440	VAC
	MFSC-12000 100%			40	KW
		10	25	40	
		10		80	%
		0	/	0	
		-10	25	60	
		* * =480*950*780 /			mm
	MFSC-12000	290(± 10)			kg

3- 激光器水冷条件

1			
2		24	20
3		4	bar
4	MFSC-12000	100	L/min
5	MFSC-12000	28	KW

40

22

;

p 0.5bar

;

0

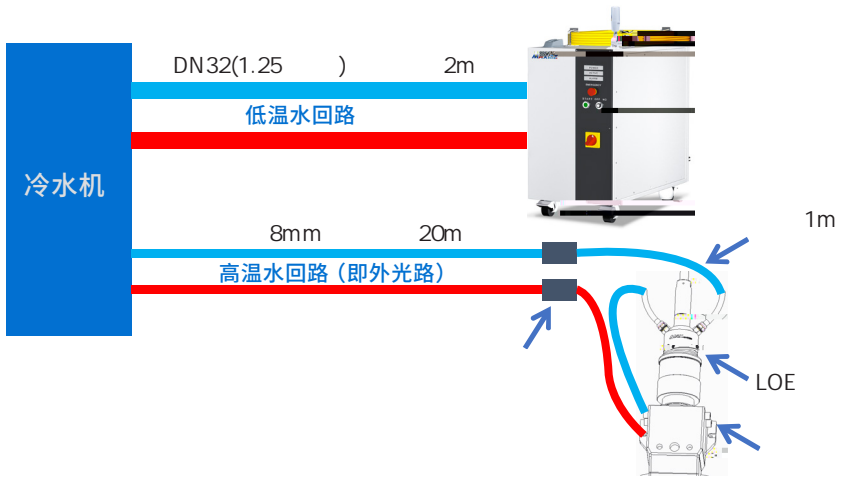
20%

()

4-LOE&QBH 水冷条件

			L/min	bar	
QBH		6	4	4	28-30
LOE		8	4	4	

	8mm	20m;		
QBH/LOE	6	LOE	8	1m;
QBH				p 1.5bar
LOE				p 3bar



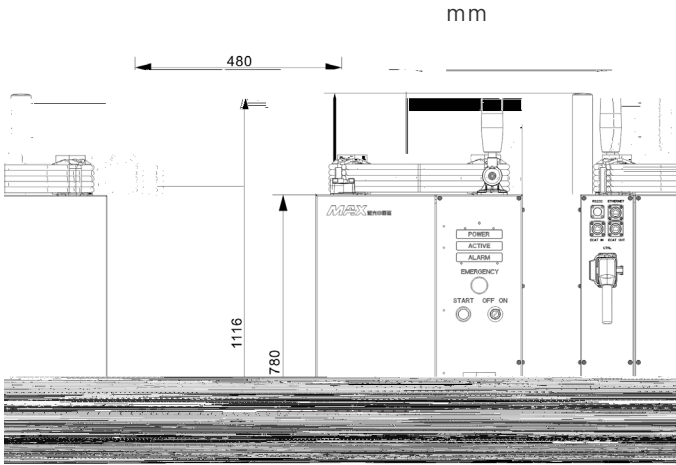
5- 安装环境需求

- 1 1000
- 2 10 - 40
- 3 10% - 85%
- 4 :

环境温度、相对湿度、露点对照表

相对湿度%	30	35	40	45	50	55	60	65	70	75	80	85	90	95
环境温度(°C)	露点Td (°C)													
10	-7.0	-5.0	-3.0	-1.3	0.0	1.5	2.5	3.6	4.8	5.8	6.7	7.6	8.4	9.2
11	-6.5	-4.0	-2.0	-0.5	1.0	2.5	3.5	4.5	5.8	6.7	7.7	8.6	9.4	10.2
12	-5.0	-3.0	-1.0	0.5	2.0	3.3	4.4	5.5	6.7	7.7	8.7	9.5	10.9	11.2
13	-4.5	-2.0	-0.2	1.4	2.8	4.1	5.3	6.6	7.7	8.7	9.6	10.5	11.4	12.2
14	-3.2	-1.0	0.7	2.2	3.5	5.1	6.4	7.5	8.6	9.6	10.6	11.5	12.4	13.2
15	-2.3	-0.3	1.5	3.1	4.6	6.0	7.3	8.4	9.6	10.6	11.6	12.5	13.4	14.2
16	-1.3	0.5	2.4	4.0	5.6	7.0	8.3	9.5	10.6	11.6	12.6	13.4	14.3	15.2
17	-0.5	1.5	3.2	5.0	6.5	8.0	9.2	10.2	11.5	12.5	13.5	14.5	15.3	16.2
18	0.2	2.3	4.0	5.8	7.4	9.0	10.2	11.3	12.5	13.5	14.5	15.4	16.4	17.2
19	1.0	3.2	5.0	7.2	8.4	9.8	11.0	12.2	13.4	14.5	15.4	16.5	17.3	18.2
20	2.0	4.0	6.0	7.8	9.4	10.7	12.0	13.2	14.4	15.4	16.5	17.4	18.3	19.2
21	2.8	5.0	7.0	8.6	10.2	11.0	12.9	14.2	15.3	16.4	17.4	18.4	19.3	20.2
22	3.5	5.8	7.8	9.5	11.0	12.5	13.8	15.2	16.3	17.3	18.4	19.4	20.3	21.2
23	4.4	6.8	8.7	10.4	12.0	13.5	14.8	16.2	17.3	18.3	19.4	20.4	21.3	22.2
24	5.3	7.7	9.7	11.4	13.0	14.5	15.8	17.0	18.2	19.3	20.4	21.4	22.3	23.1
25	6.2	8.6	10.5	12.3	14.0	15.4	16.8	18.0	19.1	20.3	21.3	22.3	23.2	23.9
26	7.0	9.4	11.4	13.2	14.8	16.3	17.7	19.0	20.1	21.5	22.3	23.3	24.2	25.1
27	8.0	10.3	12.2	14.0	15.8	17.3	18.7	19.9	21.1	22.2	23.2	24.3	25.2	26.1
28	8.8	11.2	13.2	15.0	16.7	18.0	19.6	20.8	22.0	23.0	24.2	25.2	26.2	27.1
29	9.7	12.0	14.0	15.9	17.6	19.2	20.5	21.3	23.0	24.1	25.2	26.2	27.2	28.1
30	10.5	12.9	14.9	16.8	18.5	20.0	21.4	22.8	23.9	25.1	26.2	27.2	28.2	29.1
31	11.4	13.8	15.9	17.8	19.4	20.9	22.4	23.0	24.8	26.0	26.9	28.2	29.2	30.1
32	12.2	14.7	16.8	18.6	20.3	21.9	23.3	24.6	25.8	27.0	28.1	29.2	30.1	31.1
33	13.0	15.6	17.6	19.6	21.3	22.9	24.2	25.6	26.8	28.0	29.0	30.1	32.1	32.1
34	13.9	16.5	18.6	20.5	22.2	23.8	25.2	26.5	27.7	29.0	29.5	31.1	32.1	33.1
35	14.9	17.4	19.5	21.4	23.0	24.6	26.2	27.5	28.7	29.9	31.0	32.1	33.1	34.1
36	15.7	18.1	20.3	22.2	24.0	25.0	27.0	28.4	29.0	30.9	32.0	33.1	34.1	35.2
37	16.6	19.2	21.2	23.2	24.9	26.5	27.9	29.5	30.7	31.8	33.0	34.1	35.2	36.2
38	17.5	19.9	22.0	23.9	25.8	27.4	28.9	30.3	31.5	32.0	33.9	35.1	36.0	37.0
39	18.1	20.8	23.0	24.9	26.6	28.3	29.8	31.2	32.5	33.8	34.9	36.2	36.8	38.1
40	19.2	21.6	23.8	25.8	27.6	29.2	30.7	32.1	33.5	34.7	35.8	36.8	38.1	39.1

6- 结构布局



第五章 使用指南

1- 注意事项

2- 电源连接

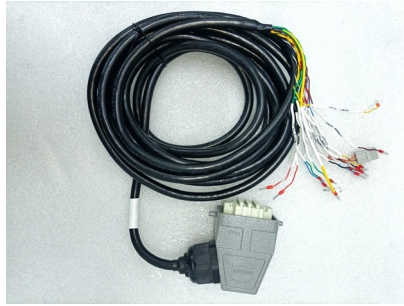
360-440VAC

机器型号 /W	电压 /VAC	额定电流 /A	断路器 /A	稳压器功率 /kW
MFSC-12000	400V± 10%, 3P+PE	59	100	50

3- 扩展接口

CTRL

55P



CTRL				
1		EX_LOCK_-	-	ON/OFF (ON- ,OFF-)
2		EX_LOCK_+	+	
7		CONTROL-	-	ON/OFF (ON- ,OFF-)
8		CONTROL+	+	
31		ERROR2	2	ON- OFF-
32		ERROR1	1	
10		EX_DA+	0-10V +	(1V-10% 10V-100%)
11		EX_DA-	0-10V -	
13		EX_M-	-	HIGH:20VDC V 24VDC LOW:0VDC V 5VDC 5mA I 15mA
14		EX_M+	+	
15		EX_EN-	-	HIGH:20VDC V 24VDC LOW:0VDC V 5VDC 5mA I 15mA (:HIGH :LOW)
16		EX_EN+	+	
27		EMGERNCY1_ INPUT-	1-	HIGH:20VDC V 24VDC LOW:0VDC V 5VDC 5mA I 15mA (:HIGH :LOW)
28		EMGERNCY1_ INPUT+	1+	

4- 启动步骤

启动流程如下所示：

1

2

3

4

5 (MAIN SWITCH) ON

6 "ON"

7 START

8

3

3

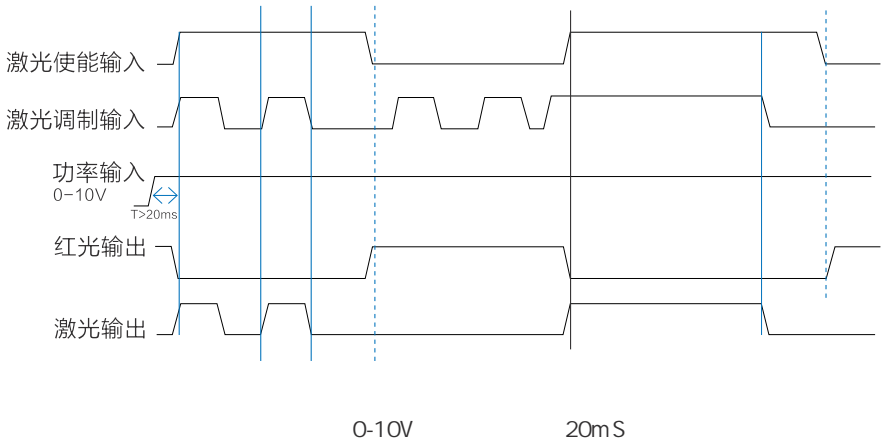
5- 模式说明

1

2

3

外控信号时序图如下：



6- 软件安装及使用说明

1

U

名称	修改日期	类型	大小
 G3-Series(Maxphotonics) - 1.0.0.86.rar	2021/8/5 14:10	WinRAR 压缩文件	23,406 KB
 NET4.6.rar	2021/6/30 15:03	WinRAR 压缩文件	63,911 KB

2

NET4.6.rar

NET46-x86-x64-AllOS-ENU.exe

Win10

.NET 4.6



NET46-x86-x64-AllOS-ENU.exe

3

G3-Series(Maxphotonics) - 1.0.0.86.rar

G3-

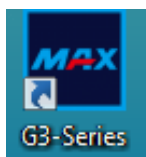
Series(Maxphotonics) - 1.0.0.86.exe

" zh"

" en"

名称	修改日期	类型	大小
 G3-Series(Maxphotonics) - 1.0.0.86.exe	2021/3/29 10:18	应用程序	25,639 KB

4



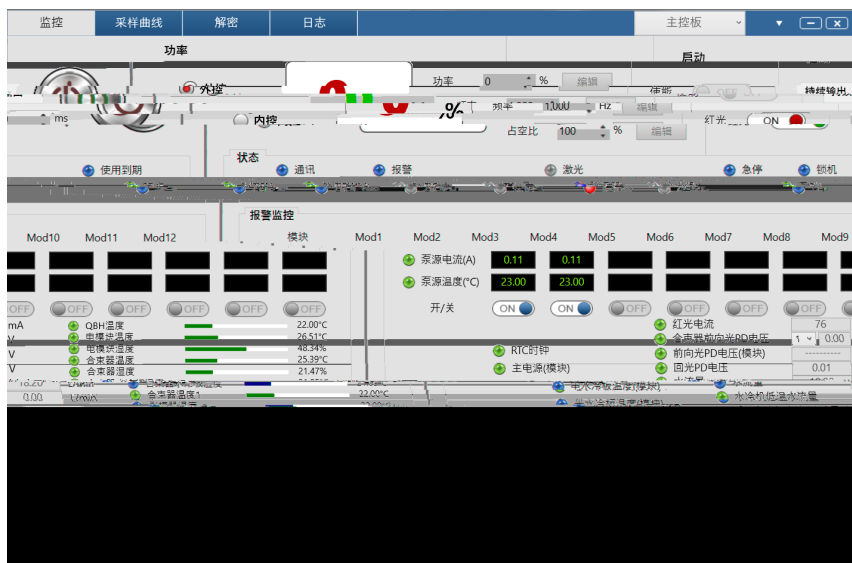
5



6

PC

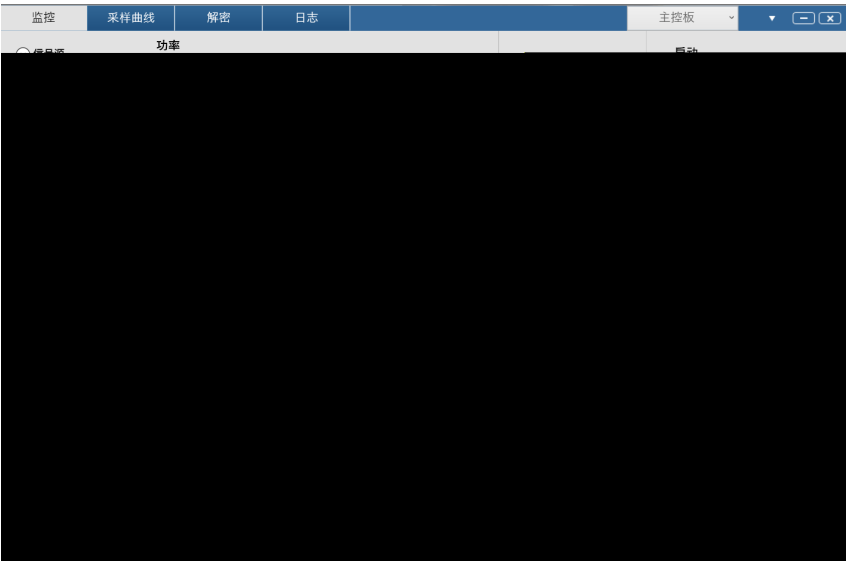
/ /DA



7



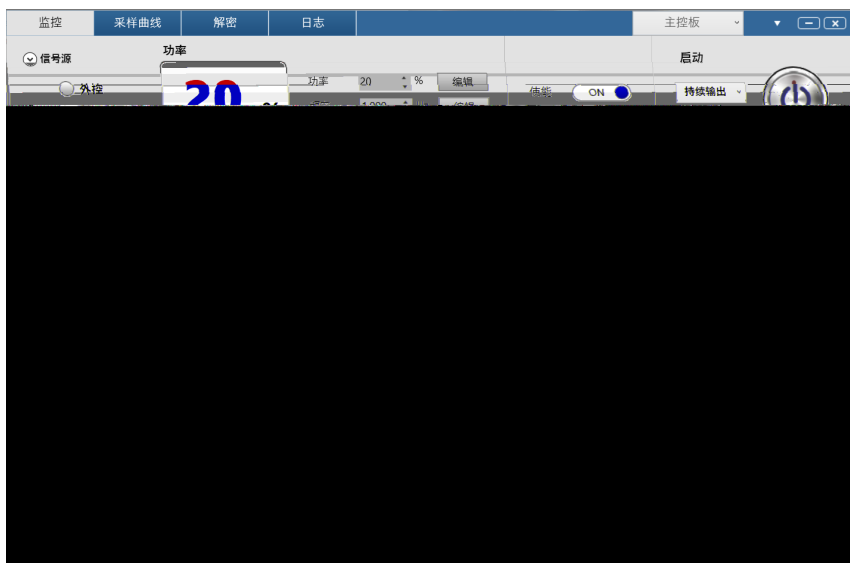
8 & / /



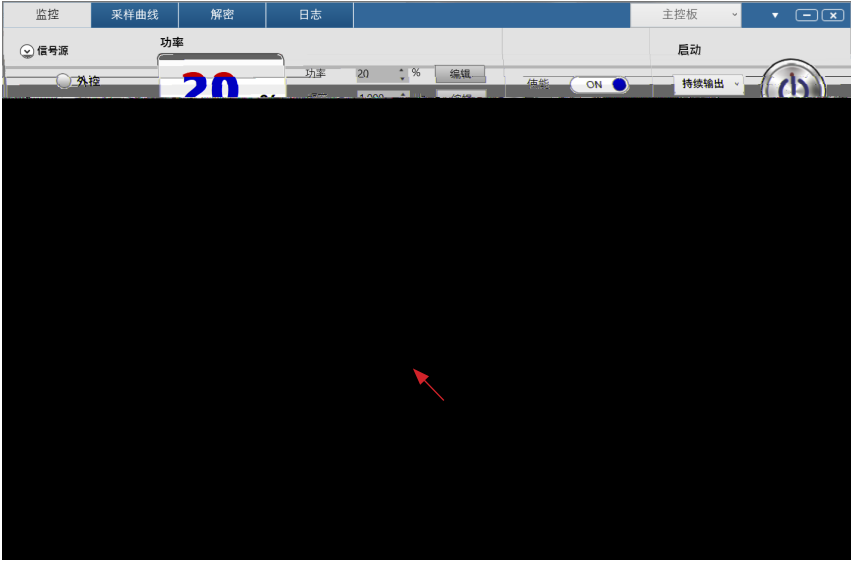
9



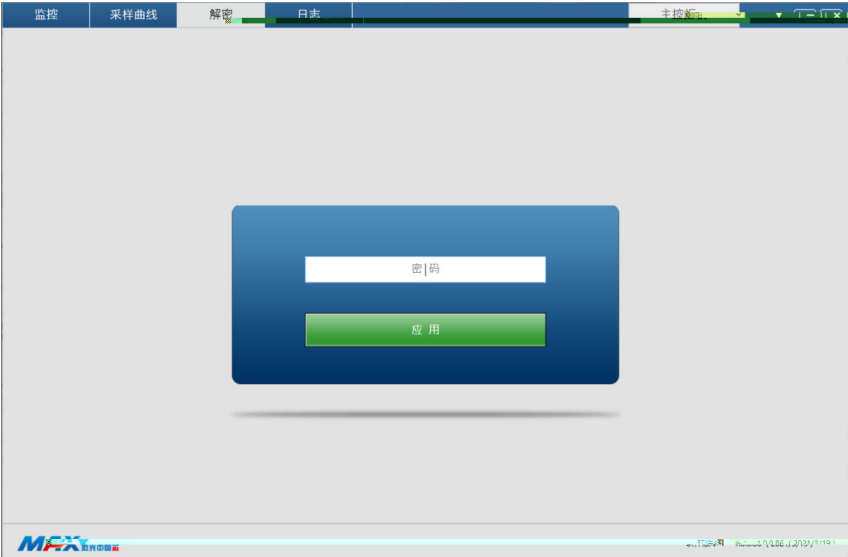
10






11



12



7- 故障列表

		/ /	
1		<p>保护措施:</p> <p>可能原因: PD</p> <p>解决办法:</p> <ol style="list-style-type: none"> 1. 2. 	<p>PD</p>
2		<p>保护措施:</p> <p>可能原因:</p> <p>解决办法:</p> <ol style="list-style-type: none"> 1. 2. 3. 4. 5. 	<p>3-5</p>
3		<p>保护措施:</p> <p>可能原因:</p> <p>解决办法:</p>	



4

QBH

保护措施:

可能原因:

QBH

解决办法:

QBH



5

保护措施:

可能原因:

解决办法:

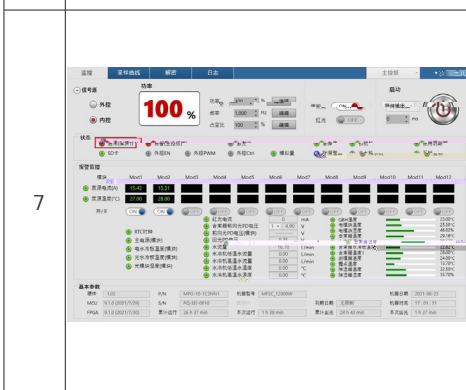


6

保护措施:

可能原因:

解决办法:



7

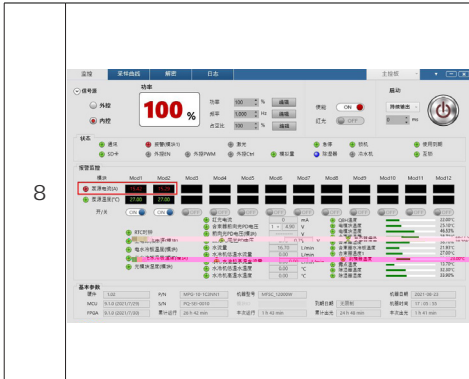
保护措施:

可能原因:

解决办法:

1.

2.



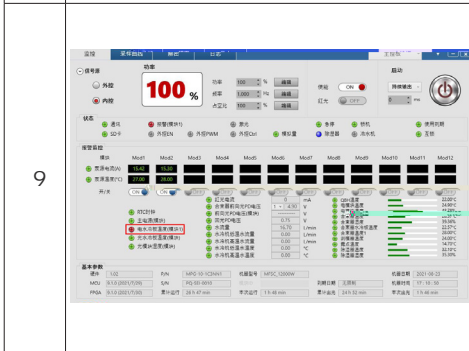
保护措施:

可能原因:

解决办法:

- 1.
- 2.

MOS



保护措施:

可能原因:

解决办法:



保护措施:

可能原因:

解决办法:

第六章 光纤连接器检查和清洁指南

1- 维修须知

1

2



3

>99.5%

4

5

20



显微镜

酒精

清洁布

棉签

橡胶指套

2- 外观检查

1

LOE

1000



2

1

" OFF"

2

20

2.2.5

3

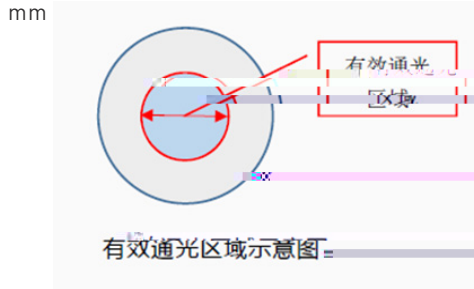
4

3

5

:

	(3mm)	(3mm)
4000W-20KW		0.1 0.005
2000W-4000W	0.05 0.002	0.1 0.005
2000W ()	0.1 0.005	0.1 0.01



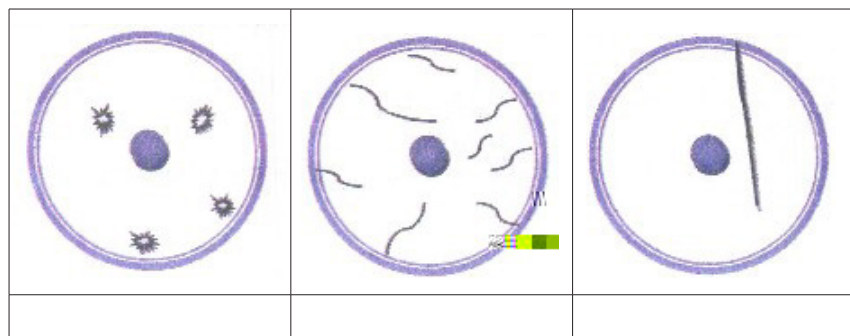
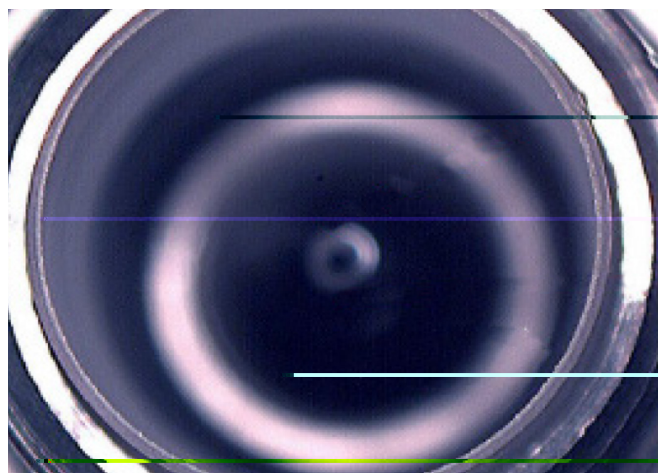
3- 清洁步骤

- 1
- 2

“OFF”

180°

2



2

3

1



2

20

3.2.1



3

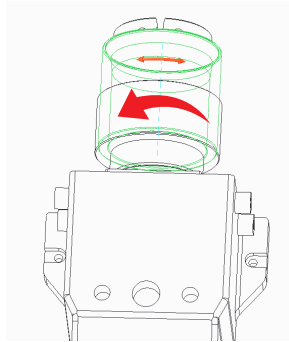
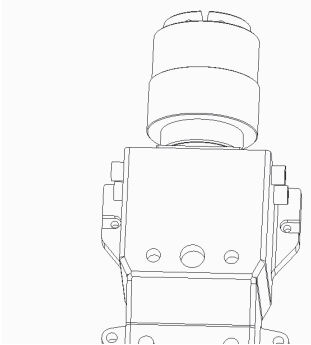


4-LOE 安装切割头及注意事项

1

1 LOE

LOE

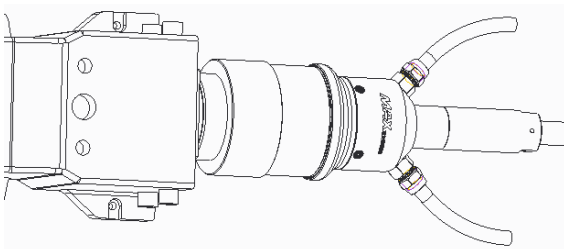
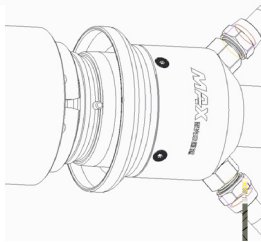
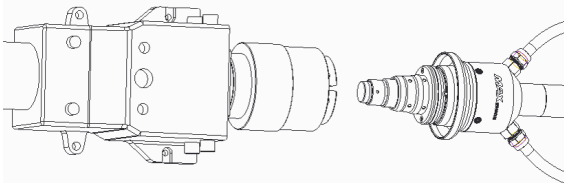


2

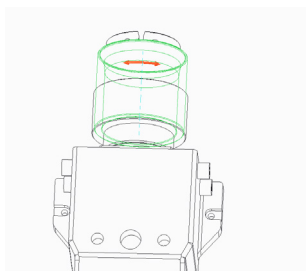
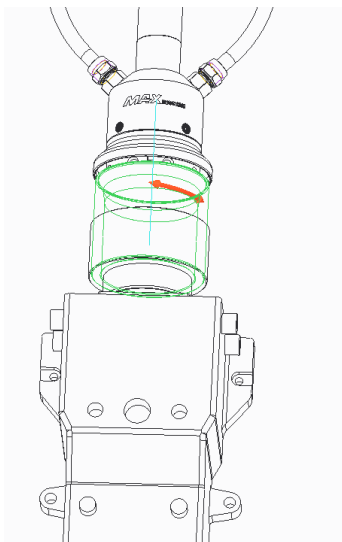
LOE

LOE

LOE



3



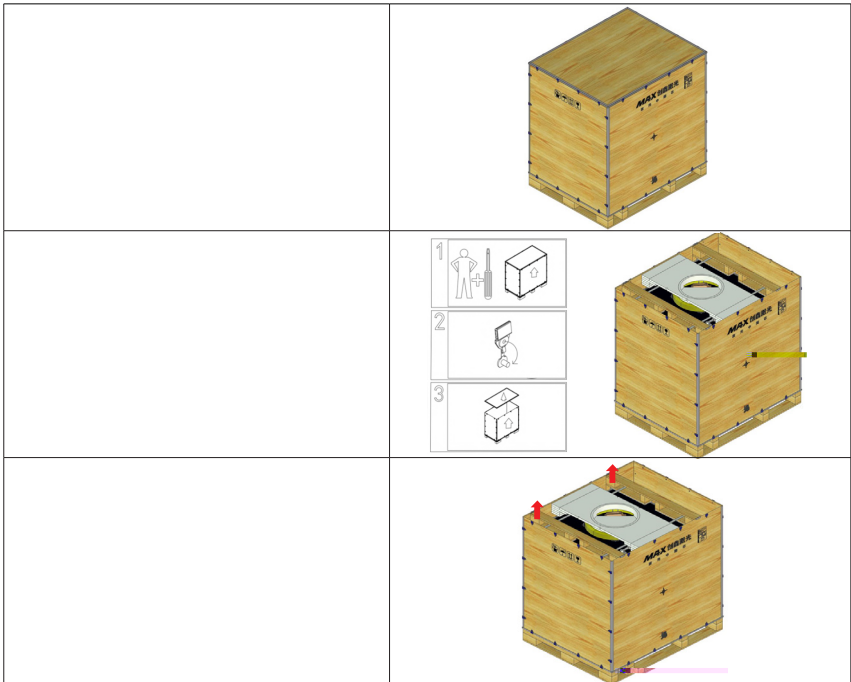
2


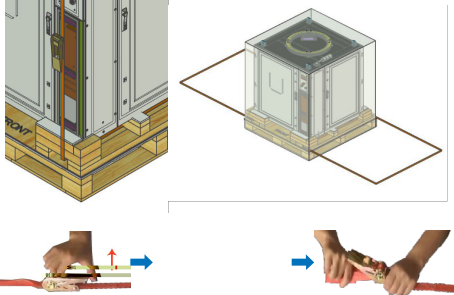
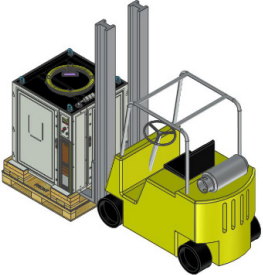
LOE

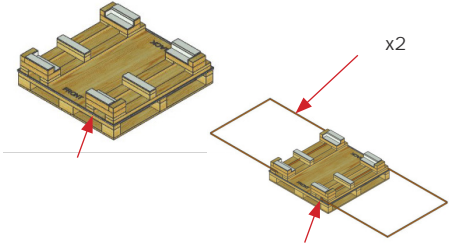
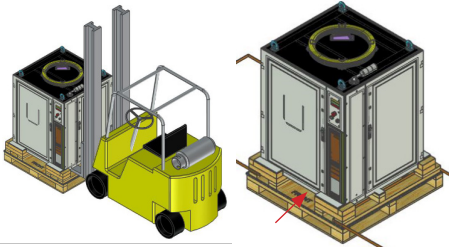
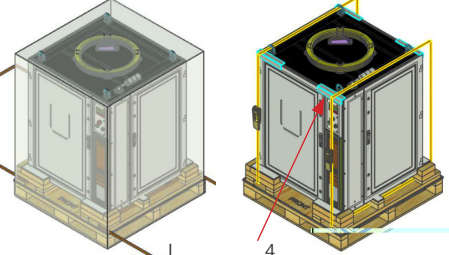
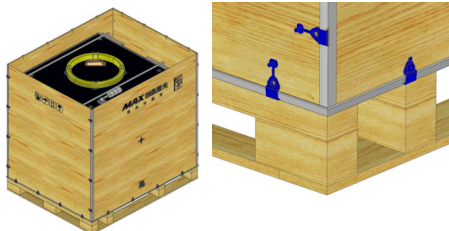
LOE

第七章 拆装指南

1- 拆装步骤



	
<p>-> -> -></p>	
<p>1. 2. 3.</p> <p>PE</p> <p>180°</p>	
	

	 <p>x2</p>
	
<p>PE</p> <p>4</p> <p>1. 2. 3. 4.</p>	 <p>L</p> <p>4</p>
<p>-> -> -></p>	



30

)

(

2- 装箱清单

1		MFSC-XXX		1
2	USB	RS232		1
3				1
4				2
5	U			1
6				2
7	RS232()			1
8				1
9				1
10		PCBA		1
11		2*2		6
12	QBH			1
13				1
14				1
15				1

第八章 服务与维修

1- 维修须知

18682447838

2- 服务声明

1

1 7X24

400-900-9588

1 -> 2

-> 3

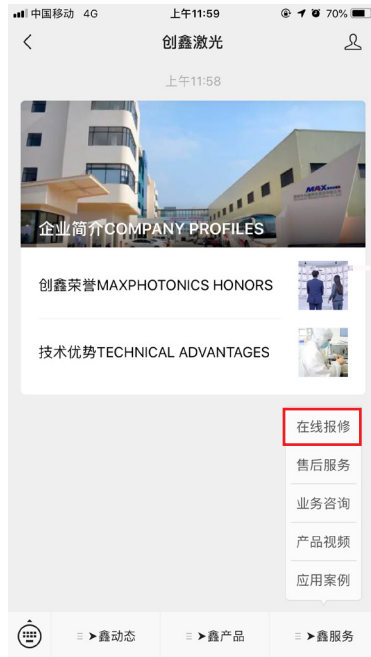
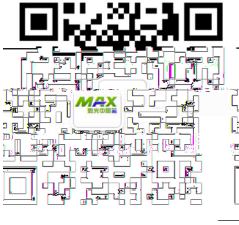
-> 4

-> 5

18682446878

18682447838

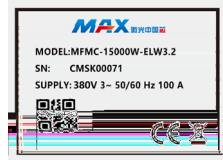
2



3

2

- 1 PN
- 2 SN
- 3
- 4



第九章 保修声明

1- 综合条款

2- 保修限制

1
2
3
4
5
6