



# 版权说明

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## 引 语

MFSC

MFSC 2000W-3000W( )

## 公司简介

2004

<http://www.maxphotonics.com>



深圳市创鑫激光股份有限公司

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# 第一章 MFSC- 系列激光器 特性说明

## 第二章 安全信息

### 1 - 安全规定

安全标识	描述
	
	
	

MFSC

1060nm~1100 nm

## 2 - 激光防护

### 1. 激光防护要求

### 2. 激光防护设备商

LaserVision USA   Kentek Corporation   Rochwell Laser Industries

## 3- 引用标准

电磁兼容抗干扰性:

EN 61000-6-4:2007 + A1:2011

EN 61000-6-2:2005 + AC: 2005

EN 61000-3-2:2014

EN 61000-3-3:2013

供电安全:

EN 61010-1:2010

EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013

激光安全：

EN 60825-1:2014

CDRH 21 CFR 1040.10

		MFSC	Class 4	EN
60825-1	8			

## 4 - 一般安全指示

### 1. 镜面反射

### 2. 配件安全须知

MFSC

### 3、光学操作须知

#### 4、电气操作须知

创鑫强烈建议您阅读下述操作要点后再行操作激光器：

#### 5、激光器操作环境要求

创鑫推荐您按照如下的措施操作，以期延长激光器的使用寿命：

0

## 5- 更多安全信息

如果您需要获取更多的激光器安全方面的信息，请参考：

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

主要特性：

- 1
- 2
- 3
- 4
- 5

应用领域：

- 1
- 2

### 2- 模块配置

6

6.3-6.6

### 3- 激光器型号说明

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



名称	功能说明
(OFF/ON)	
(EMERGENCY STOP)	
START	
ALARM	
ACTIVE	
POWER	

## 6- 后面板说明



名称	功能说明
CTRL	
RS232	RS232
ETHERNET	
AC 380V	360-440VAC
POWER	360-440VAC
WATER OUT	3/4
WATER IN	3/4
OPTICAL OUTPUT	

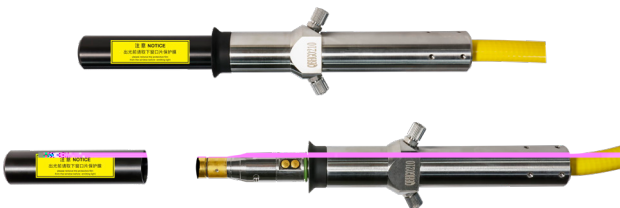
## 7- 光输出端子

### 1. 光纤输出头

QBH

"

QBH



## 第四章 详细规格

### 1- 光学特性参数表

序号	特性参数	测试条件	最小值	典型值	最大值	单位
1		/				
2						
3	MFSC-2000W	100%		2000		W
	MFSC-3000W	100%		3000		W
4			10		100	%
5		100%	1070	1080	1090	nm
6	3dB	100%		3	5	nm
7		100% >1h		± 1	± 2	%
8		100% >24h		± 3	± 5	%
9	BPP	50um-QBH		1.1	1.5	mm x mrad
		100um-QBH		2.8	3.6	mm x mrad
10				100	150	μs
11				100	150	μs
12		100%			5	KHz
13		100%	200			μW
14	MFSC-2000W	50um-QBH		15		m
	MFSC-3000W	50um-QBH		20		m
15			50	100/200		μm
16			200			mm
17		QBH LOC				

## 2- 一般特性参数表

序号	特性参数	测试条件	最小值	典型值	最大值	单位
1			360	400	440	VAC
2	MFSC-2000W	100%			6.5	KW
	MFSC-3000W	100%			10	KW
3			10		40	
4			10		85	%
5						
6			-10		60	
7		482.6*850*172 W*D*H				mm
8	MFSC-2000W	72 ± 3				kg
	MFSC-3000W	80 ± 3				kg

## 3- 水冷条件

序号	特性	参数		单位
1				
2		30	30	
		26	22	
3		4		bar
4	MFSC-2000W	20		L/min
	MFSC-3000W	25		
5	MFSC-2000W	6.5		kw
	MFSC-3000W	7.5		

40

22

;

p 0.5bar

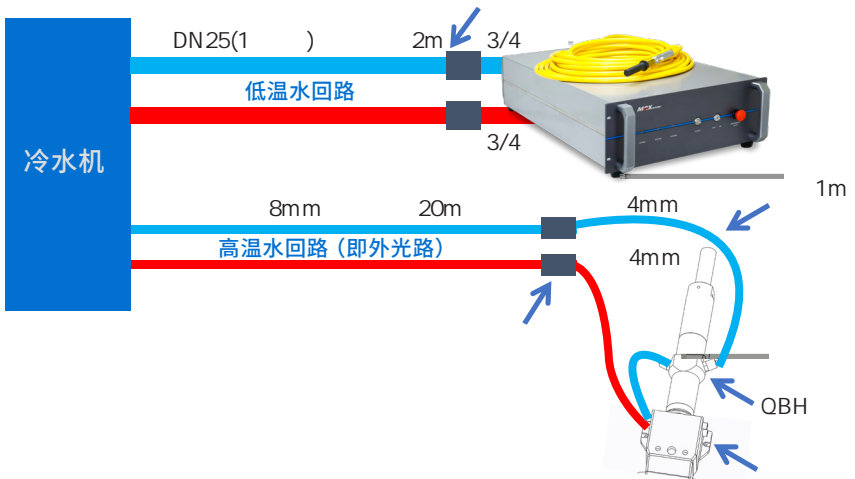
;

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## 4-QBH 水冷条件

冷却方式	水管尺寸要求	水流量 (L/min)	水压 (bar)	冷却水温 (°C)
	* = 6* 4	2	3	28-30

QBH 8mm 20m ;  
QBH 6 1m ;  
QBH ;  
p 1.5bar



## 5- 安装环境需求

2 10 - 40

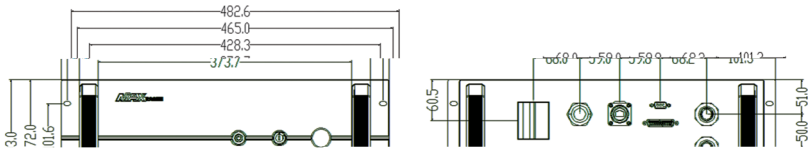
3 10% - 85%

4 :

环境温度、相对湿度、露点对照表														
相对湿度% 环境温度(°C)	30	35	40	45	50	55	60	65	70	75	80	85	90	95
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	4.8	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	16.1	17.2
18.2	19	10	32	50	72	84	98	110	122	134	145	154	165	173
19.2	20	20	40	60	78	94	107	120	132	144	154	165	174	183
20.2	21	28	5.0	7.0	8.6	10.2	11.0	12.9	14.2	15.3	16.4	17.4	18.4	19.3
21.2	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
22.2	23	4.4	6.8	8.7	10.4	12.0	13.5	14.8	16.2	17.3	18.4	19.4	20.4	21.3
23.1	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
23.9	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
25.1	26	7.0	9.4	11.4	13.2	14.8	16.3	17.7	19.0	20.1	21.2	22.3	23.3	24.2
26.1	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
27.1	28	8.8	11.2	13.2	15.0	16.7	18.0	19.6	20.9	22.0	23.0	24.2	25.2	26.2
28.1	29	9.7	12.0	14.0	15.9	17.6	19.2	20.5	21.8	23.0	24.1	25.2	26.2	27.2
29.1	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
30.1	31	11.4	13.8	15.9	17.8	19.4	20.9	22.4	23.0	24.8	25.0	26.9	28.2	29.2
31.1	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
32.1	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	31.1
33.1	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
34	14.8	17.4	19.6	21.5	23.2	24.9	26.4	27.8	29.1	30.3	31.5	32.5	33.5	34.5
35	15.7	18.3	20.6	22.5	24.2	25.9	27.4	28.8	30.1	31.3	32.5	33.5	34.5	35.5
36	16.6	19.2	21.6	23.5	25.2	26.9	28.4	29.8	31.1	32.3	33.5	34.5	35.5	36.5
37	17.5	20.1	22.6	24.5	26.2	27.9	29.4	30.8	32.1	33.3	34.5	35.5	36.5	37.5
38	18.4	21.0	23.6	25.5	27.2	28.9	30.4	31.8	33.1	34.3	35.5	36.5	37.5	38.5
39	19.3	21.9	24.6	26.5	28.2	29.9	31.4	32.8	34.1	35.3	36.5	37.5	38.5	39.5
40	20.2	22.8	25.6	27.5	29.2	30.9	32.4	33.8	35.1	36.3	37.5	38.5	39.5	40.5
41	21.1	23.7	26.6	28.5	30.2	31.9	33.4	34.8	36.1	37.3	38.5	39.5	40.5	41.5
42	22.0	24.6	27.6	29.5	31.2	32.9	34.4	35.8	37.1	38.3	39.5	40.5	41.5	42.5
43	22.9	25.5	28.6	30.5	32.2	33.9	35.4	36.8	38.1	39.3	40.5	41.5	42.5	43.5
44	23.8	26.4	29.6	31.5	33.2	34.9	36.4	37.8	39.1	40.3	41.5	42.5	43.5	44.5
45	24.7	27.3	30.6	32.5	34.2	35.9	37.4	38.8	40.1	41.3	42.5	43.5	44.5	45.5
46	25.6	28.2	31.6	33.5	35.2	36.9	38.4	39.8	41.1	42.3	43.5	44.5	45.5	46.5
47	26.5	29.1	32.6	34.5	36.2	37.9	39.4	40.8	42.1	43.3	44.5	45.5	46.5	47.5
48	27.4	29.9	33.6	35.5	37.2	38.9	40.4	41.8	43.1	44.3	45.5	46.5	47.5	48.5
49	28.3	30.8	34.6	36.5	38.2	39.9	41.4	42.8	44.1	45.3	46.5	47.5	48.5	49.5
50	29.2	31.7	35.6	37.5	39.2	40.9	42.4	43.8	45.1	46.3	47.5	48.5	49.5	50.5
51	30.1	32.6	36.6	38.5	40.2	41.9	43.4	44.8	46.1	47.3	48.5	49.5	50.5	51.5
52	31.0	33.5	37.6	39.5	41.2	42.9	44.4	45.8	47.1	48.3	49.5	50.5	51.5	52.5
53	31.9	34.4	38.6	40.5	42.2	43.9	45.4	46.8	48.1	49.3	50.5	51.5	52.5	53.5
54	32.8	35.3	39.6	41.5	43.2	44.9	46.4	47.8	49.1	50.3	51.5	52.5	53.5	54.5
55	33.7	36.2	40.6	42.5	44.2	45.9	47.4	48.8	50.1	51.3	52.5	53.5	54.5	55.5
56	34.6	37.1	41.6	43.5	45.2	46.9	48.4	49.8	51.1	52.3	53.5	54.5	55.5	56.5
57	35.5	38.0	42.6	44.5	46.2	47.9	49.4	50.8	52.1	53.3	54.5	55.5	56.5	57.5
58	36.4	38.9	43.6	45.5	47.2	48.9	50.4	51.8	53.1	54.3	55.5	56.5	57.5	58.5
59	37.3	39.8	44.6	46.5	48.2	50.0	51.4	52.8	54.1	55.3	56.5	57.5	58.5	59.5
60	38.2	40.7	45.6	47.5	49.2	50.9	52.4	53.8	55.1	56.3	57.5	58.5	59.5	60.5
61	39.1	41.6	46.6	48.5	50.2	51.9	53.4	54.8	56.1	57.3	58.5	59.5	60.5	61.5
62	40.0	42.5	47.6	49.5	51.2	52.9	54.4	55.8	57.1	58.3	59.5	60.5	61.5	62.5
63	40.9	43.4	48.6	50.5	52.2	53.9	55.4	56.8	58.1	59.3	60.5	61.5	62.5	63.5
64	41.8	44.3	49.6	51.5	53.2	54.9	56.4	57.8	59.1	60.3	61.5	62.5	63.5	64.5
65	42.7	45.2	50.6	52.5	54.2	55.9	57.4	58.8	60.1	61.3	62.5	63.5	64.5	65.5
66	43.6	46.1	51.6	53.5	55.2	56.9	58.4	59.8	61.1	62.3	63.5	64.5	65.5	66.5
67	44.5	47.0	52.6	54.5	56.2	57.9	59.4	60.8	62.1	63.3	64.5	65.5	66.5	67.5
68	45.4	47.9	53.6	55.5	57.2	58.9	60.4	61.8	63.1	64.3	65.5	66.5	67.5	68.5
69	46.3	48.8	54.6	56.5	58.2	60.0	61.4	62.8	64.1	65.3	66.5	67.5	68.5	69.5
70	47.2	49.7	55.6	57.5	59.2	60.9	62.4	63.8	65.1	66.3	67.5	68.5	69.5	70.5
71	48.1	50.6	56.6	58.5	60.2	61.9	63.4	64.8	66.1	67.3	68.5	69.5	70.5	71.5
72	49.0	51.5	57.6	59.5	61.2	62.9	64.4	65.8	67.1	68.3	69.5	70.5	71.5	72.5
73	49.9	52.4	58.6	60.5	62.2	63.9	65.4	66.8	68.1	69.3	70.5	71.5	72.5	73.5
74	50.8	53.3	59.6	61.5	63.2	64.9	66.4	67.8	69.1	70.3	71.5	72.5	73.5	74.5
75	51.7	54.2	60.6	62.5	64.2	65.9	67.4	68.8	70.1	71.3	72.5	73.5	74.5	75.5
76	52.6	55.1	61.6	63.5	65.2	66.9	68.4	69.8	71.1	72.3	73.5	74.5	75.5	76.5
77	53.5	56.0	62.6	64.5	66.2	67.9	69.4	70.8	72.1	73.3	74.5	75.5	76.5	77.5
78	54.4	56.9	63.6	65.5	67.2	68.9	70.4	71.8	73.1	74.3	75.5	76.5	77.5	78.5
79	55.3	57.8	64.6	66.5	68.2	70.0	71.4	72.8	74.1	75.3	76.5	77.5	78.5	79.5
80	56.2	58.7	65.6	67.5	69.2	70.9	72.4	73.8	75.1	76.3	77.5	78.5	79.5	80.5
81	57.1	59.6	66.6	68.5	70.2	71.9	73.4	74.8	76.1	77.3	78.5	79.5	80.5	81.5
82	58.0	60.5	67.6	69.5	71.2	72.9	74.4	75.8	77.1	78.3	79.5	80.5	81.5	82.5
83	58.9	61.4	68.6	70.5	72.2	73.9	75.4	76.8	78.1	79.3	80.5	81.5	82.5	83.5
84	59.8	62.3	69.6	71.5	73.2	74.9	76.4	77.8	79.1	80.3	81.5	82.5	83.5	84.5
85	60.7	63.2	70.6	72.5	74.2	75.9	77.4	78.8	80.1	81.3	82.5	83.5	84.5	85.5
86	61.6	64.1	71.6	73.5	75.2	76.9	78.4	79.8	81.1	82.3	83.5	84.5	85.5	86.5
87	62.5	65.0	72.6	74.5	76.2	77.9	79.4	80.8	82.1	83.3	84.5	85.5	86.5	87.5
88	63.4	65.9	73.6	75.5	77.2	78.9	80.4	81.8	83.1	84.3	85.5	86.5	87.5	88.5
89	64.3	66.8	74.6	76.5	78.2	80.0	81.4	82.8	84.1	85.3	86.5	87.5	88.5	89.5
90	65.2	67.7	75.6	77.5	79.2	80.9	82.4	83.8	85.1	86.3	87.5	88.5	89.5	90.5
91	66.1	68.6	76.6	78.5	80.2	81.9	83.4	84.8	86.1	87.3	88.5	89.5	90.5	91.5
92	67.0	69.5	77.6	79.5	81.2	82.9	84.4	85.8	87.1	88.3	89.5	90.5	91.5	92.5
93	67.9	70.4	78.6	80.5	82.2	83.9	85.4	86.8	88.1	89.3	90.5	91.5	92.5	93.5
94	68.8	71.3	79.6	81.5	83.2	84.9	86.4	87.8	89.1	90.3	91.5	92.5	93.5	94.5
95	69.7	72.2	80.6	82.5	84.2	85.9	87.4	88.8	90.1	91.3	92.5	93.5	94.5	95.5
96	70.6	73.1	81.6	83.5	85.2	86.9	88.4	89.8	91					

## 6- 结构布局

mm



## 第五章 拆装指南

### 1- 拆装步骤

激光器属于精密贵重物品，创鑫推荐您按如下步骤拆装包装箱。

请依据以下步骤进行：

1

2

3

“ ”

4

QBH

>200mm

5

1

6

## 2- 装箱清单

序号	名称	规格型号	单位	数量
1		MFSC-xxxx		1
2				1
3				2
4				4
5		19.1* 29mm		1
6	QBH	6x4mm		1
7		10m		1
8		26- 38		2

## 第六章 使用指南

### 1- 注意事项

" "

" "

### 2- 电源连接

32A

" "

### 3- 扩展接口

CTRL

DB25

## 2000W-3000W DB25

CTRL 接口 插孔序号	接线颜色	功能	说明
18		+	HIGH:20VDC V 24VDC LOW:0VDC V 5VDC
5		-	5mA I 15mA
17		+	HIGH:20VDC V 24VDC LOW:0VDC V 5VDC
4		-	5mA I 15mA
16		+	HIGH:20VDC V 24VDC LOW:0VDC V 5VDC
3		-	5mA I 15mA
15		DA 0-10V +	1V-10% 10V-100%
2		DA 0-10V -	
14		1	ON- OFF- V 30VDC, I 100mA
1		2	
8		+	± ±
19		-	

## 4- 启动步骤

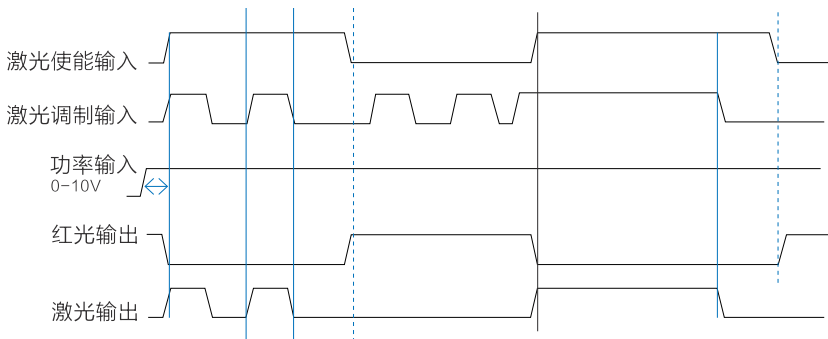
启动流程如下所示：

- 1
- 2
- 3
- 4
- 5 (POWER) ON
- 6 " ON"
- 7 START

## 5- 模式说明

激光器工作模式如下：

- 1
- 2
- 3



## 6- 软件安装及使用说明

1 “ ” “ \_” “ \_” “ ” “ G3 -  
“ ” NET 4.6” “ G3-Series-n.n.n.n”

<http://www.maxphotonics.com/Cn/Software.html>

MAX 创鑫激光 产品 应用 服务 销售 联系 CN / EN 400-900-9588 快速链接 Q

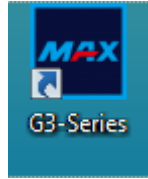
下载中心  
说明书 安装视频 安装软件

G3系列-软件安装指南书 v1.2 Updated:2020-06-15	↓	G3-Series(Custom)-zh- 1.0.0.B1 Updated:2020-09-24	↓
NET 4.0 安装包 Updated:2020-04-17	↓	NET 4.6 Updated:2020-04-17	↓
G2-Series及G3-300W-500W-1.0.0.12 Updated:2020-06-02	↓	MOPA智能机-MPS-20-V2.5.6 Updated:2020-04-16	↓
MOPA智能机-MPS-20-V2.5.5 Updated:2020-04-17	↓	MOPA智能机-MPS-20-V2.4.0 Updated:2020-04-17	↓

2 NET.4.6 G3 - Win10  
.NET 4.6 G3-Series-n.n.n.n NET 4.6

3

" G3-Series"



4

RS232

EtherNet

5

" G3-Series"



6

RS232

COM

COM

COM

" "

7

EtherNet

IP2

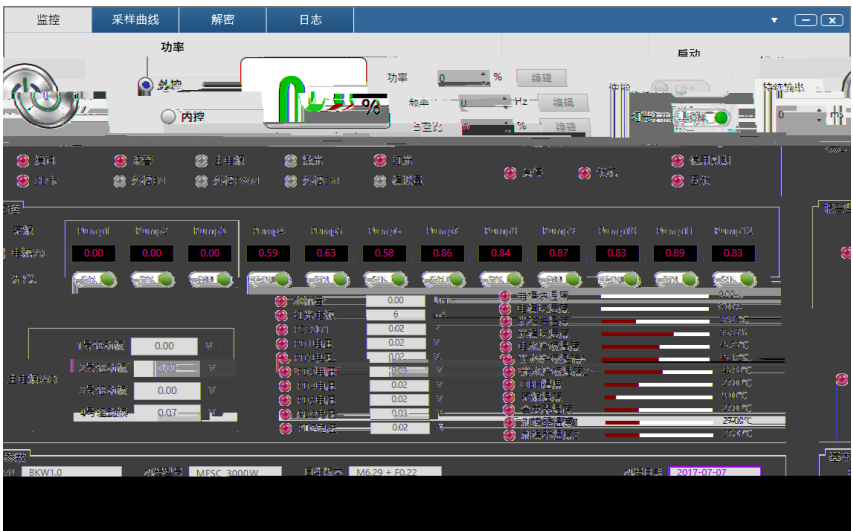
IP

192.168.0.178

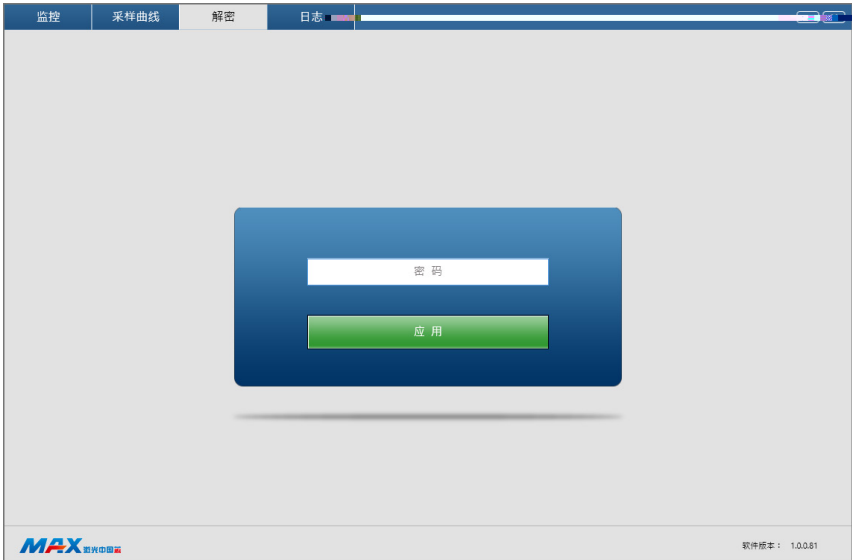
" "



8 “ ”



9



## 7- 故障列表

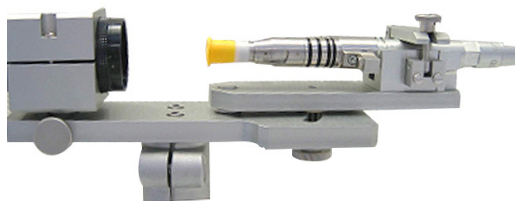
序号	故障名称	故障原因	备注
	PD		
	QBH		

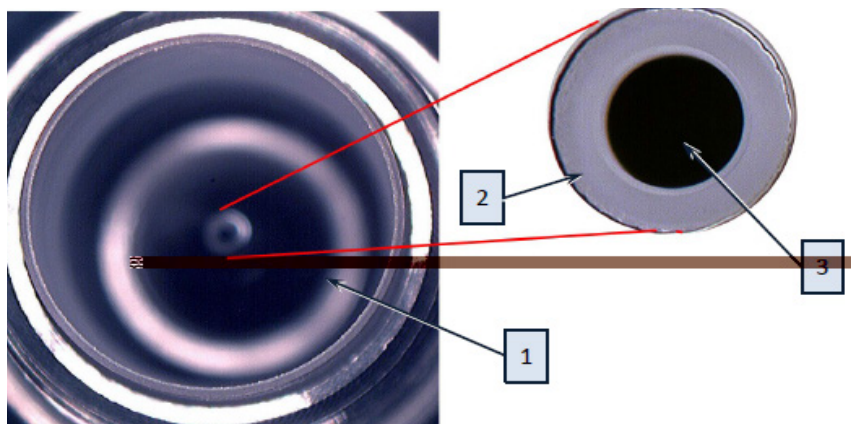
## 第七章 光纤连接器检查和清洁指南

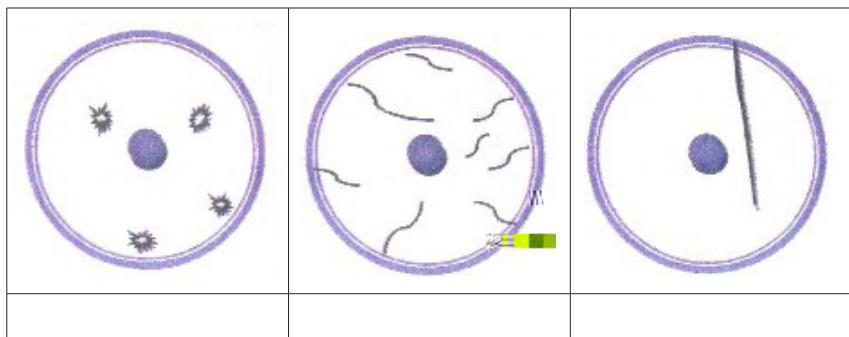
### 1- 维修须知

清洁光纤连接器，您需要如下器材：

## 2- 操作步骤







## 第八章 服务与维修

### 1- 维修须知

### 2- 服务声明

## 第九章 保修声明

### 1- 综合条款

### 2- 保修限制