

CRYSTAL-OPTECH

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Submitted to: MG

APPROVAL SPECIFICATION OF OPTICAL LOW PASS FILTER

(光学低通滤波器规格书)

CUSTOMER CODE (客户编号): MG81033-P2MHS

(CRYSTAL-OPTECH CODE: 水晶光电产品号): LF1650-88 82 033-516

Customer's Approval By: _____

客户签字:



Checked by: _____

核对:

Issued by: _____ 何海华

编制:

Date: _____ 2012.06.14

日期:

ZHEJIANG CRYSTAL-OPTECH CO., LTD.
SPECIFICATION OF OPTICAL LOW PASS FILTER

1. Scope

This Specification applies to optical low pass filter type No. LF1650-8882033-516 which supplied from ZHEJIANG CRYSTAL-OPTECH CO., LTD.

目的：此规格书适用于浙江水晶光电科技有限公司生产的光学低通滤波器，型号为 LF1650-8882033-516

2. Material

The low pass filter consists of one double refractive plates (see Fig.1). The double refractive plate shall be made from optically high quality synthetic quartz.

材质：光学低通滤波器由一片双折射板的人工水晶制成，双折射板由高品质的光学级水晶合成。（如图 1）。

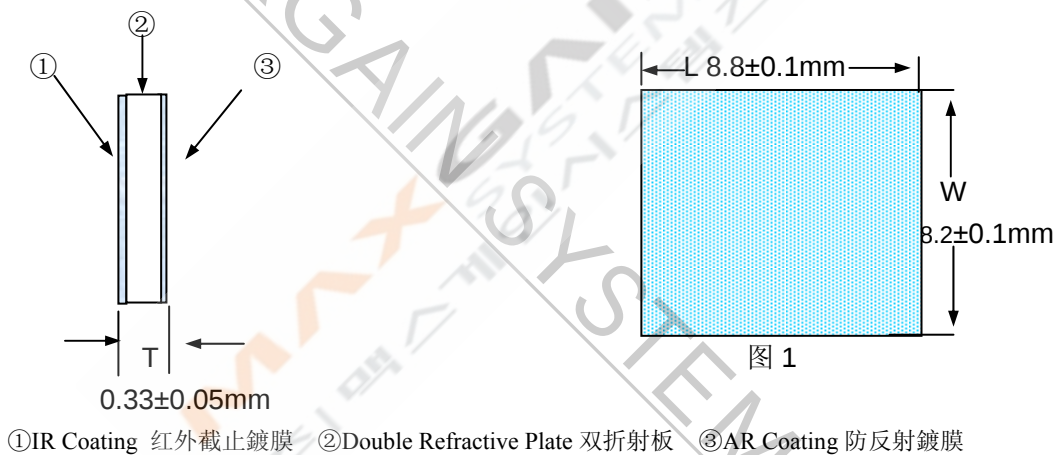


Fig.1. Optical Low Pass Filter（No Beveling 无倾斜）

3. Optical Characteristics: 光学特性

3.1 Composition (see table 1)：组成

Table1. Each part specification

Part No.	Part Name	Dimension (mm)			Orientation Angle θ	Rotation Angle ϕ	Flatness	Para.
		L	W	T				
②	Double Refractive Plate	8.8	8.2	0.33±0.05	45°00'±60'	0°00'±60'	3N	2'
Tolerance		±0.1	±0.1	±0.05	±60'	±60'		

3.2.1 Reflection of AR coating (See table 2)

防反射镀膜反射率

Table2. Transmission of AR Coating

Wave Length(nm)	Reflection (%)
420-680	$\leq 1.5\%$

3.2.2 Fig.2 Effective Area

光学低通滤波器有效区域

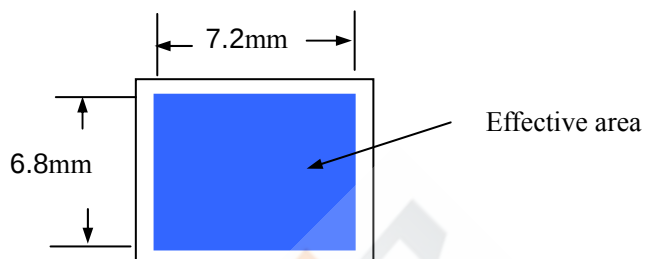


Fig.2 Effective area

3.2.3 Transmission Characteristics

分光特性

See Table 3

Table3. Spectral transmission

Wave Length(nm)	Transmission (%)
380±10	= 50 %
420-600	$T \geq 93\%$
650±10	50 %
700-1000	$\leq 5\%$
1000-1100	≤ 10

4. Defect limits

缺陷限制

4.1 Material defect (inclusion, bubble)

缺陷规格 (包裹体、气泡)

No defect are permitted where the maximum size is more than 60μm within the effective area (such as inclusion and bubble) .

有效区内点状缺陷不得大于 60μm。

Note: The size is defined as follows: (Length + Width)/2

瑕疵尺寸大小: (长+宽)/2

4.2 Scratches: 刮伤

No scratches are permitted where the maximum width is more than 20 μ m within the effective area.

有效区之内刮伤宽度不得大于 20 μ m。

4.3 Edge Chips:崩边

No edge chips are permitted where both of the thickness and width are more than 0.5mm and the length is more than 2mm.

崩边宽度、深度均不大于 0.5mm，长度不大于 2mm。

4.4 Dust:灰尘

Dust can be wiped out is acceptable.

可以吹去的灰尘允许有。

5. Durability:

耐久性

5.1 Requirement:

规范要求

It shall be free of any visual defect and comply with transmission rate specification.

An object the limit: effective area (center 7.2*6.8)

不得含有目视可见的瑕疵，而且产品必须符合分光规格：（有效区域 7.2*6.8）

5.2 Storage in high temperature

高温中的储藏

It shall conform 5.1, after 500Hs at 85 $^{\circ}$ C then 24Hs at room temperature.

高温+85 $^{\circ}$ C贮存环境中放置 500 小时，移至室温 24 小时后仍符合 5.1 规范。

5.3 Storage in low temperature

低温中的储藏

It shall conform 5.1, after 500Hs at -40 $^{\circ}$ C then 24Hs at room temperature.

低温贮存-40 $^{\circ}$ C环境中放置 500 小时，移至室温 24 小时后仍符合 5.1 规范。

5.4 Temperature cycle

温度循环

It shall conform 5.1, after 10 cycles of -40 $^{\circ}$ C (2.5 Hs) and +85 $^{\circ}$ C (2.5 Hs) and then 24Hs at room temperature.

低温-40 $^{\circ}$ C (2.5 小时) 及+85 $^{\circ}$ C (2.5 小时) 温度环境中循环 10 次，至室温 24 小时后仍符合 5.1 规范。

5.5 Humidity 湿度

It shall conform 5.1, after 500Hs at +65°C, 90% relative humidity, then 24Hs at room temperature.

于+65°C, 90%相对湿度环境中放置 500 小时后移至室温 24 小时后仍符合 5.1 规范。

6. Packing 包装

Packing shall be made using a special package which does not touch the main surface of OLPF. Each tray contains 100pcs covered by lid. Each five trays shall be lapped and labeled with air cushion lapping.

(See figure 3.)

包装需使用特殊包装方式不接触到产品主要表面, 每层装载盒可承载 100 片, 用防静电包装袋包裹。每五个装载盒再用防静电包装袋包裹, 并于袋上贴上标识, 在运输中以气泡垫包裹。

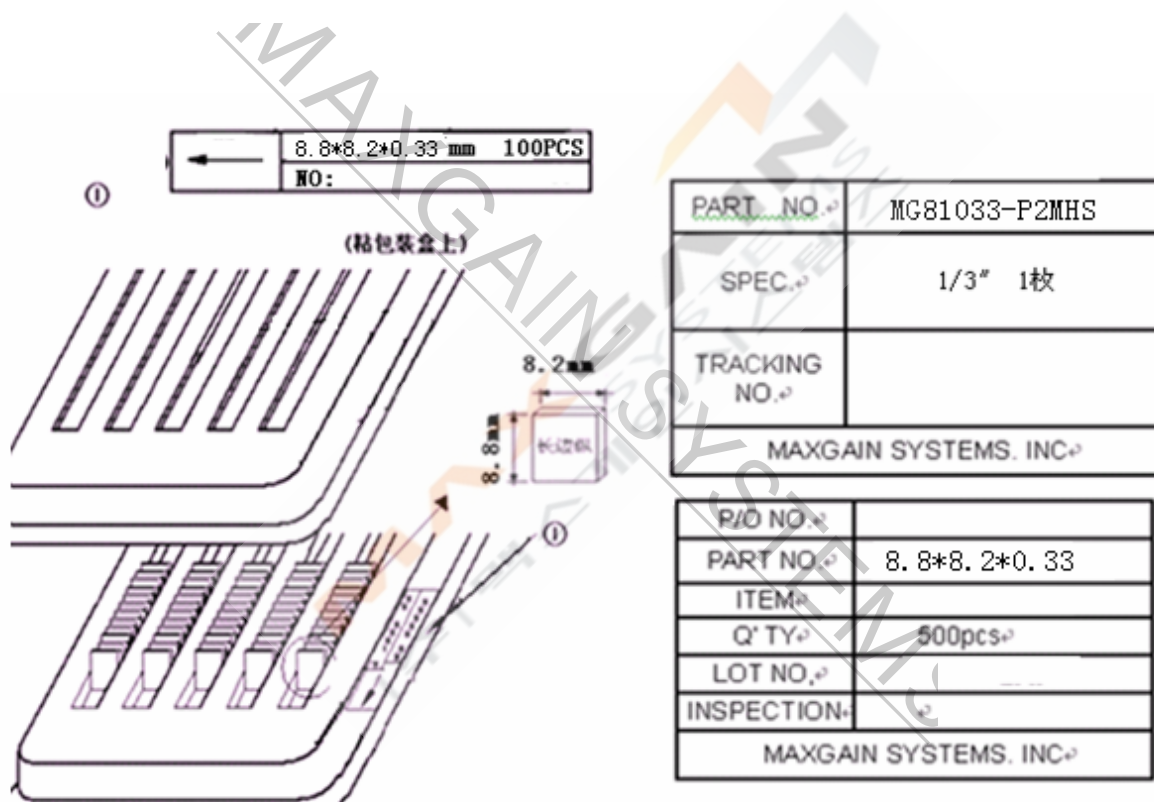


图3 (Fig.3)



水晶光电

浙江水晶光电科技股份有限公司
ZHEJIANG CRYSTAL-OPTECH CO., LTD

光学特性曲线图
Optical characteristic curve

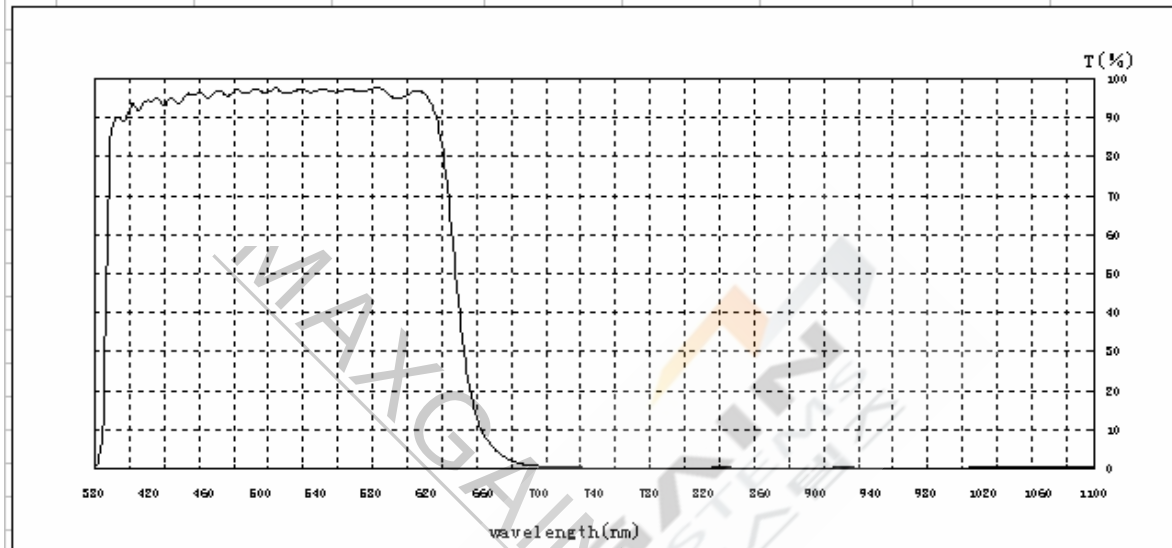
ZL-B12-01

客户:

MG

生产批号: 12053008LFA

检验时间: 2012-6-7



NO.	λ (nm)	T (%)	λ (nm)	T (%)	λ (nm)	T (%)	λ (nm)	T (%)
1	380	0.62	630	83.29	880	0.02	640	50.34
2	390	76.65	640	50.34	890	0.03	641	46.88
3	400	89.36	650	20.67	900	0.06	642	43.24
4	410	92.39	660	8.75	910	0.19	643	39.71
5	420	94.24	670	4.37	920	0.53	644	36.36
6	430	93.32	680	2.05	930	0.16	645	33.19
7	440	93.61	690	1.03	940	0.07	646	30.19
8	450	95.79	700	0.66	950	0.04	647	27.53
9	460	95.44	710	0.54	960	0.04	648	25.10
10	470	97.01	720	0.42	970	0.04	649	22.75
11	480	96.82	730	0.24	980	0.04	650	20.67
12	490	96.30	740	0.15	990	0.07	651	18.81
13	500	96.71	750	0.13	1000	0.11	652	17.14
14	510	97.68	760	0.15	1010	0.23	653	15.63
15	520	96.20	770	0.21	1020	0.48	654	14.33
16	530	97.13	780	0.18	1030	0.64	655	13.15
17	540	96.99	790	0.10	1040	0.48	656	12.03
18	550	96.75	800	0.07	1050	0.36	657	11.06
19	560	97.17	810	0.08	1060	0.30	658	10.21
20	570	96.79	820	0.14	1070	0.31	659	9.45
21	580	97.46	830	0.40	1080	0.35	660	8.75
22	590	96.32	840	0.19	1090	0.46		
23	600	95.05	850	0.06	1100	0.61		
24	610	96.74	860	0.03				
25	620	95.06	870	0.02				