



深圳市创威时代光电有限公司  
Shenzhen ChuangWei Seculens CO., Ltd.

## 产品规格书 Product Specification

型号:  
(Model Name) : 10162-3MP+IR0603

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编码:  
(Part No.) : 01.10162.008.03

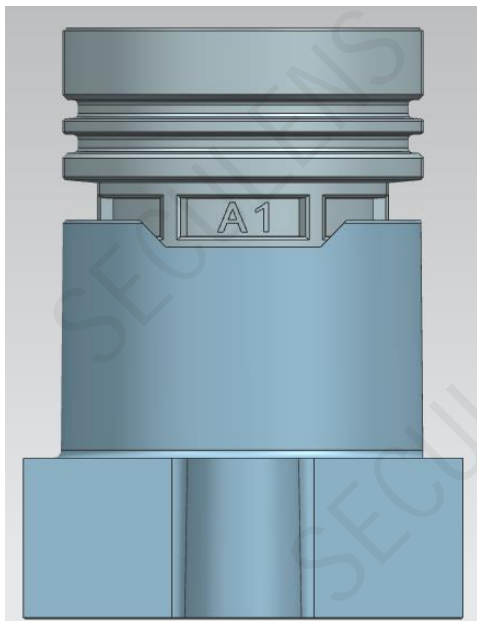
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客户名称:  
(Customer Name):

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客户编码:  
(Customer Part No.):

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图片仅供参考  
(picture only for your reference)

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## 3 变更履历 (Revision History) 变更符号标记 (Mark revised): ○

版本 (REV.)	变更日期 (DATE)	变更内容 (Revision content)	作成 (Prepared by)	备注 (Remark)
1.0	22.05.20	新规作成 (New Spec Document prepared)	ZZY	
1.1	22.12.15	更新外形尺寸图	ZYQ	
1.2				
1.3				

## 4. 概要 (Outline)

### 4.1 应用范围 (Application)

适用于我司向贵司提供的镜头产品(The below datasheet is only suit to CWZK products.)

## 5 主要参数 (Main Items)

### 5.1 光学参数规格 (Optical Specifications)

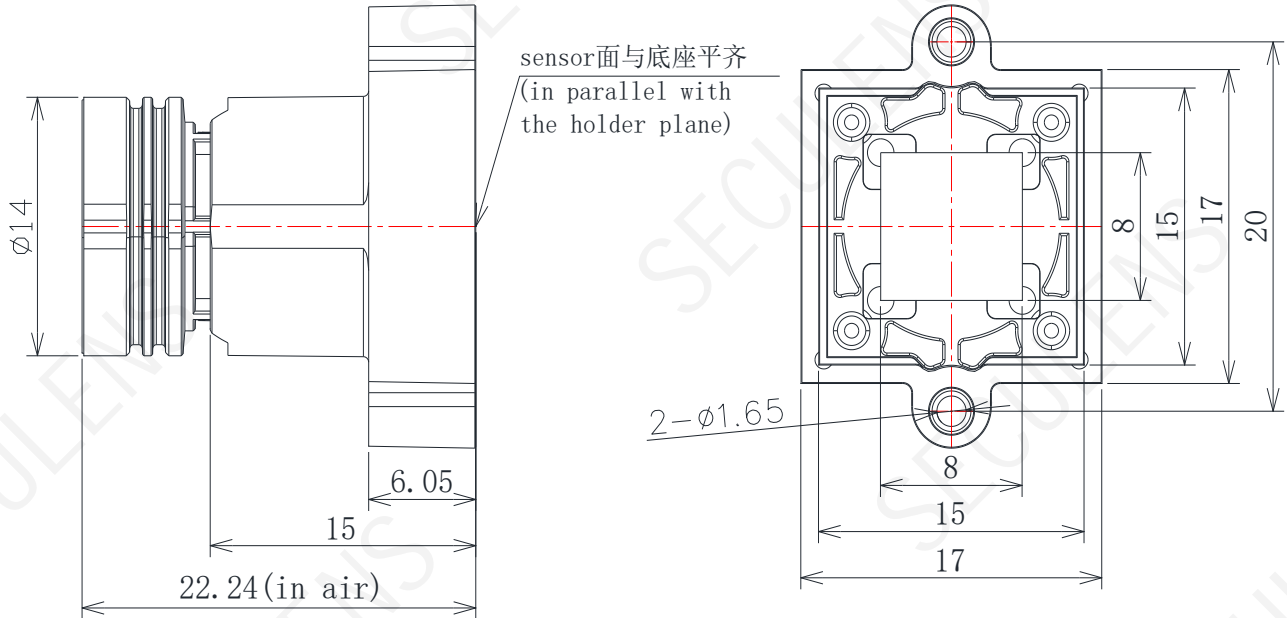
NO.	项目 (Items)		具体规格 (Specification)						
1	F No.		2.2±10%						
2	焦距(Focal-Length)		3.97±5%						
3	光学后焦 (Optical Back Focal Length)		5.39±0.2 (in air)						
4	机械后焦 (Mechanical Back Focal Length)		5.06±0.2 (in air)						
5	镜头总长(TTL)		22.24±0.2 (in air)						
6	像面大小 (Image circle)		Φ7.0 (max)						
7	镜片构成 (Lens structure)		1G3P (第一枚镜片为塑胶镜片时, 仅可使用酒精擦拭3次) (The first optical lens is plastic lens, could only be wiped with alcohol 3 times)						
8	接口 (Mount)		M12*P0.5						
9	镜头与底座螺纹配合扭力 (Clamp Force)		60-600gf.cm						
10	视场角 (FOV)	sensor型号		H(水平)		V(垂直)		D(对角)	
		1/2.7"	5.76*3.24*6.609	86.0°		46.1°		104.3°	
		1/2.8"	5.568*3.132*6.388	82.4°		44.6°		99.0°	
		1/2.9"	5.376*3.024*6.168	79.0°		43.0°		94.2°	
11	光学畸变 (Optical Distortion)		1/2.7"	-35.2%	1/2.8"	-31.3%	1/2.9"	-27.7%	
12	TV畸变 (TV Distortion)		1/2.7"	-11.3%	1/2.8"	-10.3%	1/2.9"	-9.3%	
13	相对亮度 (Relative Illumination)		1/2.7"	40%	1/2.8"	42%	1/2.9"	44%	
14	最大主光线夹角 (CRA)		1/2.7"	15.3°	1/2.8"	14.8°	1/2.9"	14.2°	
15	近摄距 (M.O.D)		2m						
16	解像标准 (Resolution)		分辨率 (Resolution): 2048*1536 (3MP)						
17	建议芯片封装倾斜规格 (tilt tolerance of sensor packaging)		<3.6'						
18	重量 (Weight)		/						
19	操作方法 (Operation)		聚焦 (Focus)			手动 (Manual)			
			光圈 (Iris)			固定 (Fixed)			
20	环保&安全 (HSF&Safety)		RoHS						

备注: 以上参数均为理论值, 仅供参考

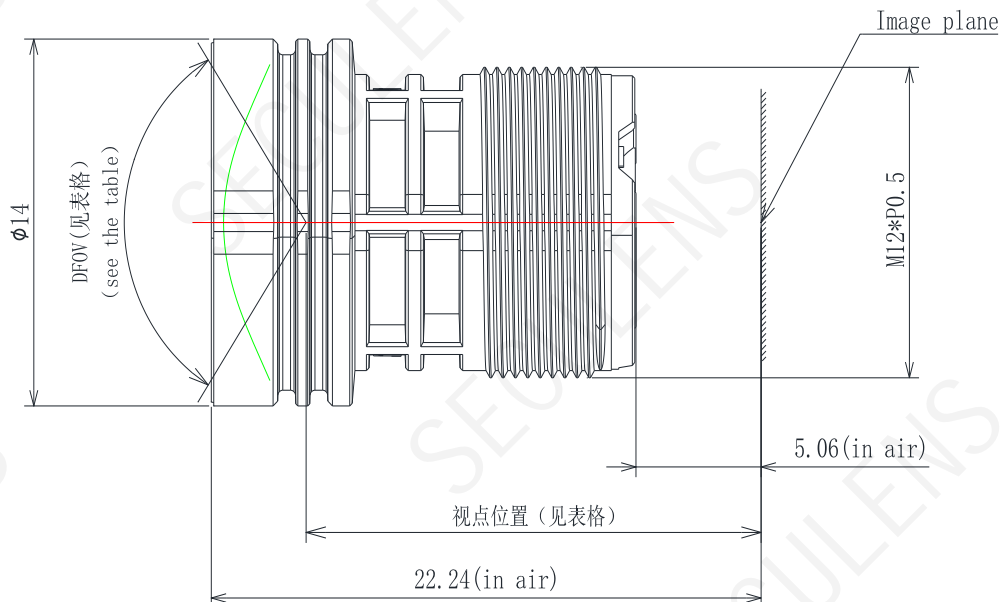
NOTE:The above parameters are theoretical values, for reference only

## 5.2 机构参数规格 (Mechanical Specifications)

### 5.2.1 外形尺寸图 (Dimension Figure)



### 5.2.2 视点图 (Viewpoint Figure)



未注公差 (Unmarked Tolerance):  $\Phi \pm 0.1$ ,  $L \pm 0.15$

本规格书未注单位 (Unit is not indicated in the document.): mm

**5.2.3 视点信息 (Viewpoint table):**

全像高 full image	视场角 FOV	视点 viewpoint	备注 remark	全像高 full image	视场角 FOV	视点 viewpoint	备注 remark
2.1	30.0°	14.28		6.9	112.1°	18.64	
2.2	31.4°	14.43		7	115.0°	18.78	
2.3	32.8°	14.58		7.1			
2.4	34.2°	14.72		7.2			
2.5	35.6°	14.84		7.3			
2.6	37.0°	14.96		7.4			
2.7	38.5°	15.07		7.5			
2.8	39.9°	15.18		7.6			
2.9	41.3°	15.28		7.7			
3	42.7°	15.38		7.8			
3.1	44.1°	15.47		7.9			
3.2	45.5°	15.56		8			
3.3	47.0°	15.64		8.1			
3.4	48.4°	15.73		8.2			
3.5	49.8°	15.81		8.3			
3.6	51.3°	15.89		8.4			
3.7	52.7°	15.96		8.5			
3.8	54.2°	16.04		8.6			
3.9	55.7°	16.11		8.7			
4	57.1°	16.19		8.8			
4.1	58.6°	16.26		8.9			
4.2	60.1°	16.33		9			
4.3	61.6°	16.40		9.1			
4.4	63.2°	16.47		9.2			
4.5	64.7°	16.55		9.3			
4.6	66.3°	16.62		9.4			
4.7	67.8°	16.69		9.5			
4.8	69.4°	16.76		9.6			
4.9	71.0°	16.83		9.7			
5	72.7°	16.91		9.8			
5.1	74.3°	16.98		9.9			
5.2	76.0°	17.05		10			
5.3	77.7°	17.13		10.1			
5.4	79.5°	17.20		10.2			
5.5	81.2°	17.28		10.3			
5.6	83.0°	17.36		10.4			
5.7	84.9°	17.44		10.5			
5.8	86.8°	17.52		10.6			
5.9	88.7°	17.61		10.7			
6	90.7°	17.69		10.8			
6.1	92.8°	17.78		10.9			
6.2	94.9°	17.87		11			
6.3	97.1°	17.97		11.1			
6.4	99.3°	18.07		11.2			
6.5	101.6°	18.17		11.3			
6.6	104.1°	18.28		11.4			
6.7	106.6°	18.39		11.5			
6.8	109.2°	18.51		11.6			

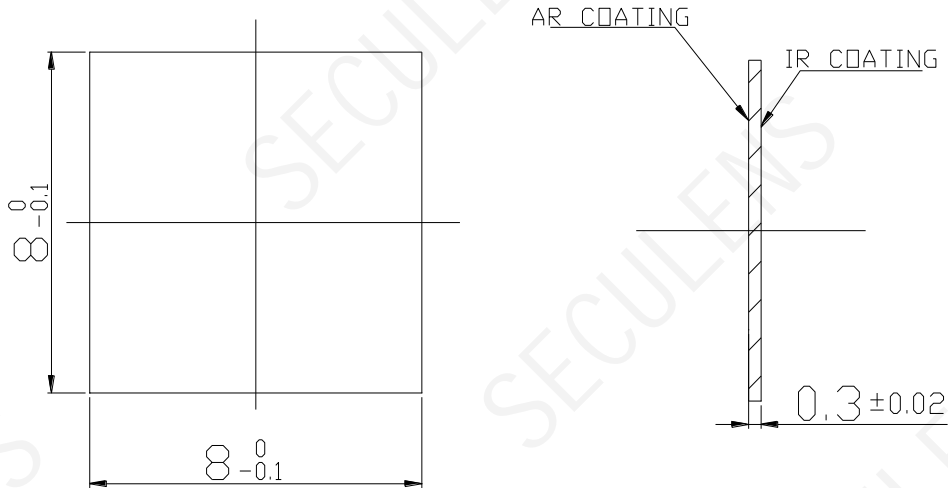
**备注:**

1. 最大像高提供至镜头支持的最大靶面 (通用产品相对照度按照20%, 特殊产品根据需求再联络)
2. 视点深度一律按照空气中尺寸计算; 并且以镜头像面为起始位置;
3. 模拟参数时, 物距暂定按照无穷远计算——此时镜头距离前窗玻璃最远, 干涉风险最大;
4. 各数据的公差按照: 视场角精确到0.1度, 视点精确到0.01mm;

**NOTE:**

1. The max image height is the largest format that the lens can support (general RI is 20%);
2. It is in air depth of viewpoint; counting from lens image .
3. Simulated object distance is infinite.
4. tolerance: FOV 0.1° ; viewpoint 0.01mm.

### 5.3 IR-FILTER规格 (IR-FILTER Specification)(模组滤光片)



镀膜要求:

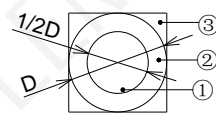
	Wave Length(nm)	Transmission(%)
IR面	350~380	Tave<3%
	415±10	T=50% ;斜率10%-90% <20nm
	440~600	T>85% ,Tave>93%
	646.5±10	T=50% ;斜率10%-90% <20nm
	680	T<5%
	700~1050	T<3% ,Tave<2%
	1050~1100	不作要求
	850±20	T<1%
AR面	430~630	R<0.8%

信赖性要求

阶段	温度	相对湿度	保温时间
1	+85°C	85%	48小時
2	+100°C	0%	24小時
3	-20°C	0%	24小時
4	室温	室内状态	24小時

要求: 实验前后分光特性不允许出现变化, 实验后膜层不能出现剥落及裂纹。

5.4 光学检测标准 (Optical Performance)

No.	检测项目 (Items)	描述 (Description)
1	解像力 (Resolution)	<p>1.1: MTF测量设备 A: 仪器: MTF测量仪 1.2: 检测标准(Criteria) 3MP: 100 lp/mm 中心: 0.5; 0.5视场: S/0.35 T/0.2; 0.7视场: S/0.3 T/0.18</p>
2	外观标准 (Appearance Standards)	<p>2.1 镜头内污 (LENS DUST) A: 规格 60-40 (27W台灯目视检查) 伤痕: 宽度 &lt;60um, 长度和 &lt;D/2, ≤15um 不计; 脏污: 单点直径 &lt;400um, 200~400um 点 ≤3个。</p> <p>2.2 IR-CUT 外观 (IR-CUT appearance) A: 滤光片油污、异色、欠膜、破裂、溢胶、水纹、白雾, 不可; B: 表面不可移动脏污, 尘点范围要求: 如右图所示: ① 区 0.1mm 以下不可超过3个; ② 区 0.1~0.15mm 不可超过5个; ③ 区 0.1~0.2mm 以下不可超过10个。图中①和②区划伤长度 1mm, 宽度 0.1mm ≤3个。 C: 可移动尘点的全区依照中心位置不可移动尘点标准判定 D: 丝印不良不可</p> <p>2.3 其他外观 (Other appearance) 外表面颜色均匀, 无明显缺陷、污渍、异物伸出、明显划伤和收缩; 胶水不得溢入有效透光内。</p>  <p>2.1 LENS DUST A: Specification 60-40 (Visual inspection of the 27W desk lamp) Scratch: width &lt;60um, total length &lt;D/2, ≤15um ignored; Smudge: Single dot diameter &lt;400um, 200~400um dot ≤3 pcs</p> <p>2.2 IR-CUT appearance A: Oil on filter, color failure, coat cracks, coating missing, glue overflow, liquid pattern are not acceptable. B: Standard for immovable dirt-spot on surface, Referring the image on the right side: 1) Area &lt;0.1mm, spot ≤3; 2) Area 0.1~0.15mm, spot ≤5; 3) Area 0.1~0.2mm, spot ≤10; 4) Area 1) and 2)'s spot, with length is around 1mm and width around 0.1mm, ≤3</p> <p>C: Movable dirt-spot's standard is following the immovable standard D: Printed letter's failure is not acceptable</p> <p>2.3 Other visual standard Color on surface is even, not obvious defect, dirt, dislocation, scratch, shrink; glue is not allowed to enter the effective diameter range.</p>

5.5 环境参数规格 (Environment Specifications)

No.	环境描述 (Items)	条件 (Description)
1	存放环境 (Storage condition)	-30℃~+80℃; 10-90%RH (No condensing)
2	工作环境 (Operation condition)	-20℃~+60℃; 10-90%RH (No condensing)



**6 信赖性测试( Reliability Test)**

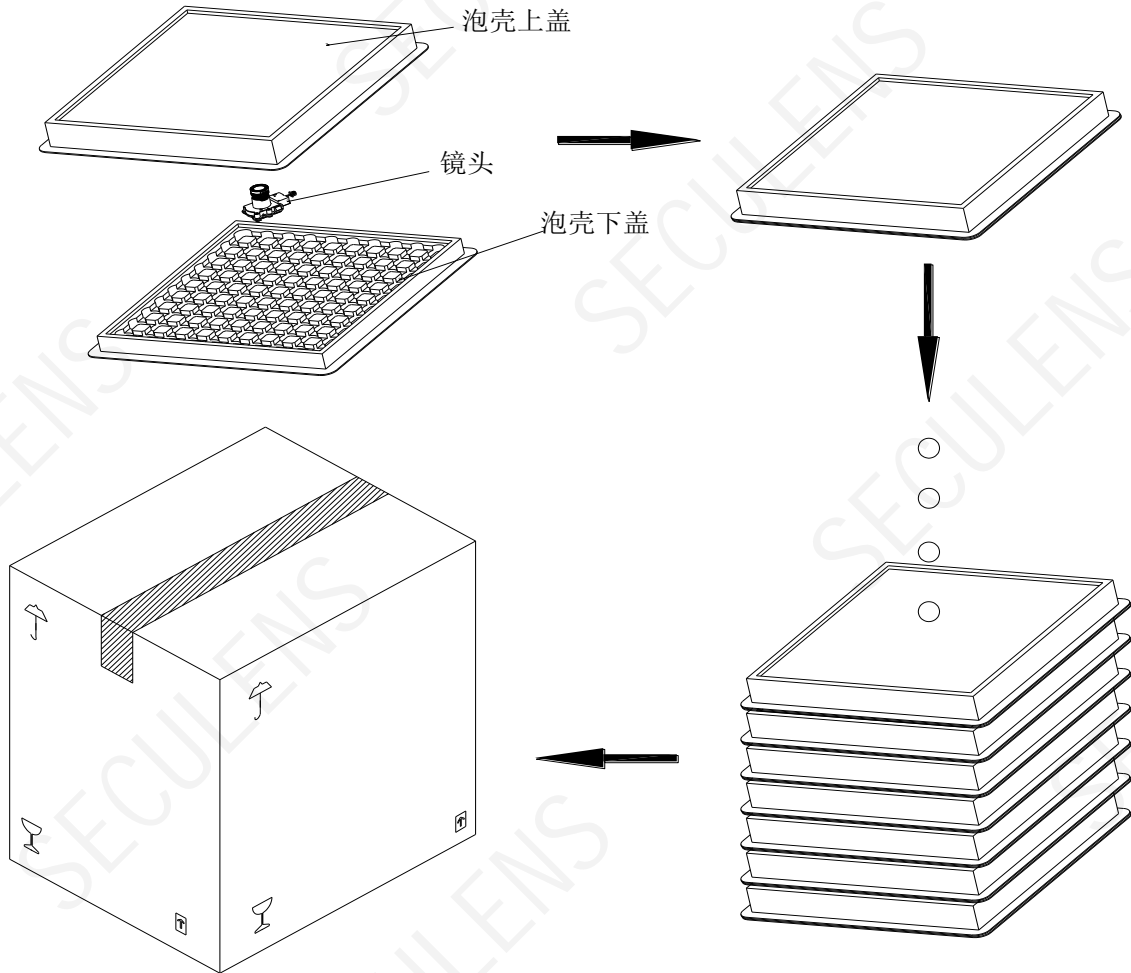
No.	项目 (ITEM)	测试条件 (CONDITION)	判定标准 (standard of criterion)
1	高温存放试验 Storage Test At High Temperature	镜头在80℃温度中存放48小时，之后再存放在常温常湿环境中恢复6小时后，所有规格满足规定要求 All specification are to be satisfied after lens is exposed to 80℃ for 48 hours and then to normal temperature/humidity for 6 hours	变化20%以内；回常温中心变化50本，周边100本以内 after test, resolution change $\leq 20\%$ ; resolution change $\leq 50$ lines when lens temperature return to room temperature
2	低温存放试验 Storage Test At Low Temperature	镜头在-30℃温度中存放48小时，之后再存放在常温常湿环境中恢复6小时后，所有规格满足规定要求 All specification are to be satisfied after lens is exposed to -30℃ for 48 hours and then to normal temperature/humidity for 6 hours	变化20%以内；回常温中心变化50本，周边100本以内 after test, resolution change $\leq 20\%$ ; resolution change $\leq 50$ lines when lens temperature return to room temperature
3	冷热冲击试验 Temperature Cycle Test	镜头在-30℃条件下保持30分钟，然后升温至+80℃，稳定后保持30分钟作为一个周期，共10个周期。之后再存放在常温常湿环境中恢复6小时后，所有规格满足规定要求 All specification are to be satisfied after lens is exposed to -30℃ for 30 min, Tank temperature change +80℃ for 30 min as one cycle, 10 cycle shall be performed. And then to normal temperature/humidity for 6 hours	变化20%以内；回常温中心变化50本，周边100本以内 after test, resolution change $\leq 20\%$ ; resolution change $\leq 50$ lines when lens temperature return to room temperature
4	振动试验 Vibration Test	频率：加速度谱密度 1Hz 0.00072 g <sup>2</sup> /Hz; 3.0Hz 0.018 g <sup>2</sup> /Hz; 4.0Hz 0.018 g <sup>2</sup> /Hz; 5.0Hz 0.01 g <sup>2</sup> /Hz; 100.0 Hz 0.01 g <sup>2</sup> /Hz; 135.0 Hz 0.00148 g <sup>2</sup> /Hz; 200.0 Hz 0.001 g <sup>2</sup> /Hz; 201.0 Hz 0.00012 g <sup>2</sup> /Hz; 300.0 Hz 0.00001 g <sup>2</sup> /Hz; 总均方根加速度：1.087Grms 试验轴向：3轴向。 试验时间：Z方向60min, X和Y方向30min 对于A类包装（包装件重量 $\leq 45$ KG）：起始频率点为5Hz	变化20%以内； after test, resolution change $\leq 20\%$ ;

No.	项目 (ITEM)	测试条件 (CONDITION)	判定标准 (standard of criterion)
5	耐久试验 (Durability)	<b>试验标准:</b> ▪ VCM马达: 电流: 0~90~0 mA , 持续1秒 Current : 0~90~0 mA for 1sec 方向: +Z 方向 Direction : +Z direction 周期: 1轮=0.5秒开启→ 0.5s 关闭 Cycle : 1cycle= 0.5s ON→ 0.5s OFF 温度: 23C° ±2C° Temperature : 23C° ±2C° 时间: 300,000轮 Times : 300,000cycles ▪ IR-cut filter section IN ≅ OUT 驱动100ms, 断电2500ms 往复驱动, 20000次 0.5 ~ 1.0 seconds for each reciprocating 20,000 times 测试项目:  <input type="checkbox"/> IR-cut <input type="checkbox"/> VCM马达 <input checked="" type="checkbox"/> 不涉及	试验后各项性能OK; all meet test standard after test
6	跌落试验 (drop test)	1. 高度: 包装后, 高度1m; 2. 落下方向: 一角三棱六面; 3. 次数: 各一次; 上述实验条件后作动无异常。(NO abnormalities for operation after testing with above experiment conditions) 1.Height: 1m after packaged; 2.Direction: A triangular prism with six faces; 3.NO abnormality after experiment above all.	试验后各项性能OK; all meet test standard after test

7 包装规格 (Package)

1. 镜头盖上镜头盖后，放入泡壳。

2. 盖上泡壳上盖，泡壳上贴标示票。



4. 密封胶带，箱子外面贴标示票。

3. 装满镜头的泡壳抽真空后重叠放入纸箱。

✕注：包装纸箱可根据客户订单灵活选用，以上包装以纸箱（320\*240\*490）包装示例

数量：

30 PCS/盒

17 盒/箱

510 PCS/箱