

产品规格书

Specification For Approval

产品名称: 4.0mm 1/2.7" 镜头
Product Name: 4.0mm 1/2.7" Lens

型号: 4mm 1067
Model: 4mm 1067

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NOTE:

1 Taking lens

1.1 Part number:C244A2

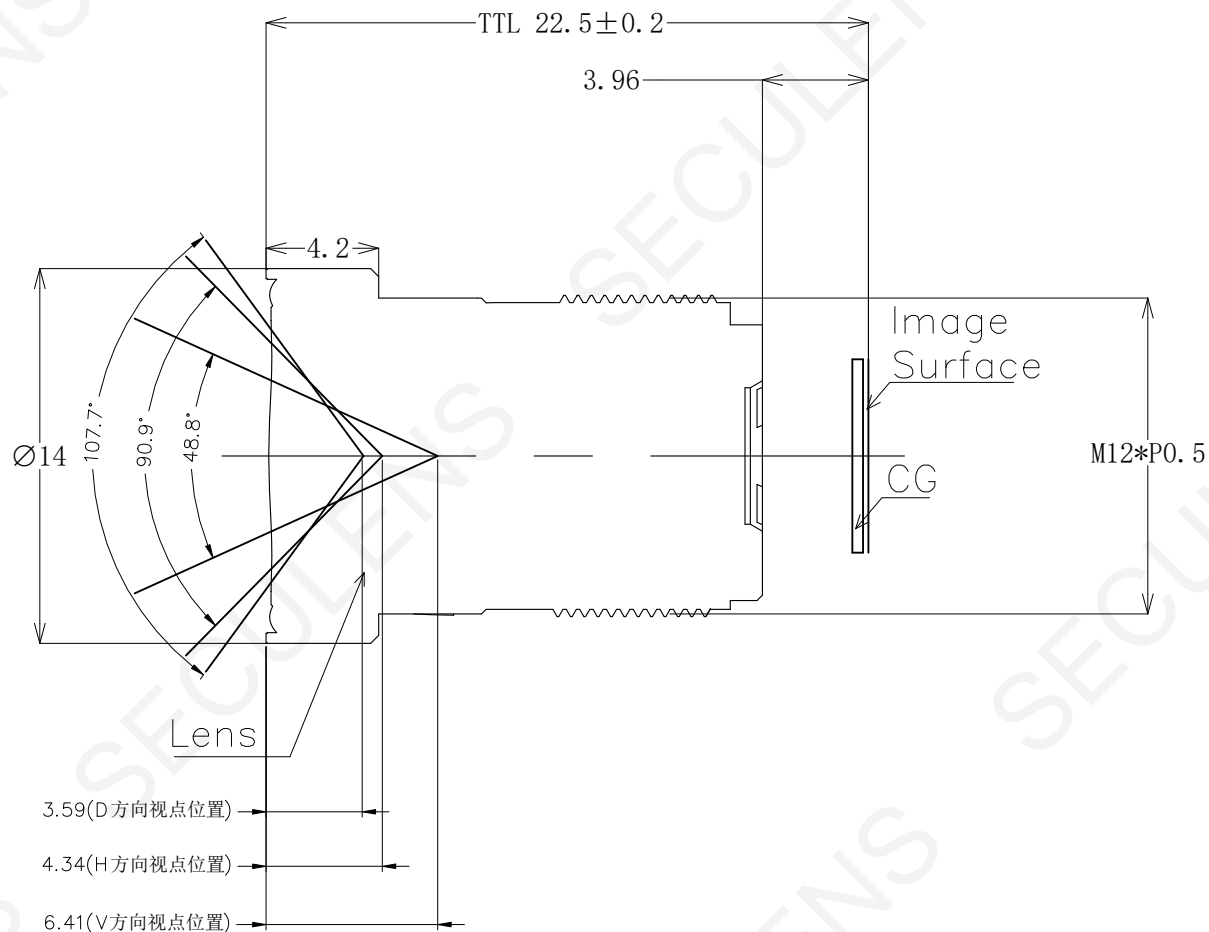
1.2 IR TYPE:IR Filter $650 \pm 10\text{nm}$ @50%

1.3 All surfaces are AR coated

2 Material tallied with RoHS standard

3 Clamp force $100\text{--}500 \text{ gf} \cdot \text{cm}$

4 Unmarked tolerance: $\varnothing \pm 0.1, L \pm 0.15$



Specification

Lens Structure	1G3P		
EFL	4.0mm ±5%		
FNO	F1.4±5%		
Total Length	22.5mm ±0.2		
Mechanical BFL	3.96mm ±0.2		
Max Image Circle	≥6.8mm		
Sensor Type	1/2.7"	1/2.8"	1/3"
D-FOV	107.7±3°	103.2±3°	93.1±3°
H-FOV	90.9±2°	87.5±2°	79.5±2°
V-FOV	48.8±2°	47.2±2°	43.3±2°
Relative Illumination	>42.0%	>44.1%	>51.7%
TV_Distortion	-24.1%	-22.4%	-18.59%
MAX_CRA	15.0°	14.2°	12.6°

3									
2									
1									
22.05.30	新规作成	V0	薛雷涛	付涛					
REV.	DATE	Discription	VERSION	REVISED	APPR				

3RD ANGLE

SCALE 1:1

5 测试标准 (Test standard)

No.	检测项目 (Items)	描述 (Description)
5.1	解像力 (Resolution)	1.1: 逆投影解像条件 (Condition) A: Chart: 1/2.7" B: 投影距离: 0.8M 1.0: 解像方法 (Method) A: 旋转解像机台接口得到最清晰的像面中心 1.3: 解像标准 (Criteria) 中心 : 250 lp/mm Ø5.0 : 100 lp/mm
5.2	外观标准 (Appearance Standards)	1 镜头内污 (Lens Dust) A: 规格 60-40 伤痕 : 宽度 <60um, 长度和 <D/2, ≤15um 不计 ; 脏污 : 单点直径 <400um, 200~400um 点 ≤3个 。 2 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, 胶水不得溢入有效通光内。 1 Lens Dust A: Specification 60-40 Scratch: width <60um, total length <D/2, ≤15um ignored Smudge: Single dot diameter <400um, 200~400um dot ≤3 pcs 2 Other Appearance Outside surface uniform color; no visible flaws, stains, foreign, bodies extended, obvious scratch or contraction; no glue spill into the effective aperture.

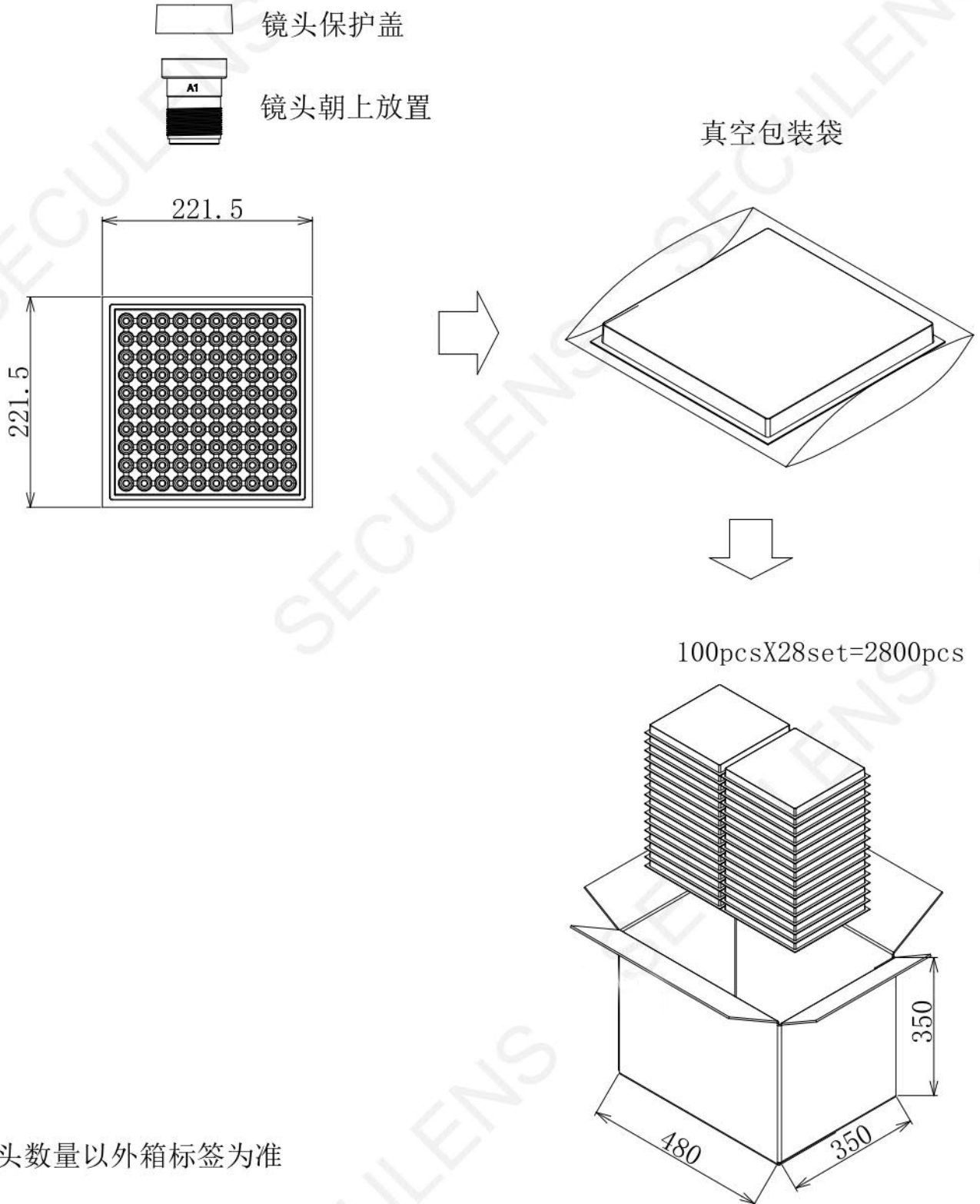
5.3 环境参数规格 (Environment Specifications)

No.	检测项目 (Items)	描述 (Description)
1	存放环境 (Storage condition)	-30° C ~ +70° C; 10-90%RH (No condensing)
2	工作环境 (Operation condition)	-20° C ~ +60° C; 10-90%RH (No condensing)

6 信赖性测试 (Reliability Test)

No.	项目 (ITEM)	测试条件 (CONDITION)
1	高温存储条件 Storage Test At High Temperature	镜头在70℃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 70℃ for 48 hours and then to normal temperature/humidity for 6 hours
2	低温存储条件 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
3	落摔试验 Drop Test	按包装式样进行包装后的镜头, 在距木质地板1.0米处, 按1角3棱6面自由落下5次, 所有规格满足规定要求 All specification are to be satisfied after the lens is packaged according to the pattern, it falls freely 5 times at 1 angle, 3 edges and 6 sides 1.0 meters away from the wooden floor
4	振动试验 Vibration Test	镜头在振幅为1.5mm、频率为10-55Hz的正弦波参数下, 在三个互相垂直的轴线上依次振动25分钟后, 镜头无松动并满足所有规格要求 All specification are to be satisfied after lens is subjected to the sine wave of 1.5mm amplitude and 10-55Hz directions for 25 minutes each

8.2 镜头(无ICR) 包装 (Lens Without ICR Package)



注:

1. 镜头数量以外箱标签为准

9 视点位置 (ViewPoint Position)

全像高/mm	视场角/°	视点距离/mm	备注	全像高/mm	视场角/°	视点距离/mm	备注
2.1	31.5	8.1		6	95.6	4.15	
2.2	33	7.89		6.1	97.6	4.06	
2.3	34.5	7.7		6.2	99.5	3.98	
2.4	36	7.52		6.3	101.5	3.9	
2.5	37.5	7.36		6.4	103.6	3.81	
2.6	39.1	7.2		6.5	105.6	3.73	
2.7	40.6	7.06		6.6	107.7	3.64	
2.8	42.1	6.92		6.7	109.8	3.55	
2.9	43.7	6.79		6.8	111.9	3.45	RI=33.6%
3	45.2	6.67					
3.1	46.7	6.55					
3.2	48.3	6.44					
3.3	49.8	6.34					
3.4	51.4	6.24					
3.5	53	6.14					
3.6	54.5	6.04					
3.7	56.1	5.95					
3.8	57.7	5.86					
3.9	59.3	5.77					
4	60.9	5.69					
4.1	62.5	5.61					
4.2	64.1	5.52					
4.3	65.8	5.44					
4.4	67.4	5.37					
4.5	69.1	5.29					
4.6	70.7	5.21					
4.7	72.4	5.13					
4.8	74.1	5.06					
4.9	75.8	4.98					
5	77.5	4.91					
5.1	79.2	4.83					
5.2	81	4.76					
5.3	82.7	4.68					
5.4	84.5	4.61					
5.5	86.3	4.53					
5.6	88.1	4.46					
5.7	90	4.38					
5.8	91.9	4.3					
5.9	93.7	4.22					

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30%, 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; 并且以镜头最前端为起始位置;
- 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
- 5, 镜头总长按照输出数据时的长度为准, 便于前后视点转化 (视点到sensor面的距离+视点距离=镜头总长)