

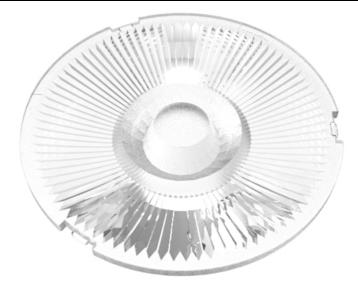
Technology Co.,Ltd Product Approval

Approval number:

Customer:

Manufacturer: Chengdu HercuLux Photoelectric Technology Co.,Ltd

PN	Code	Product	materials
HK-CY-90@18-15-D14-20-1g-1_DL	1. 01. 23264	HK Filmy 90@18-15° aluminizing lens	PC+Local aluminium plating
HK-CY-90@18-24-D14-20-1g-1	1. 01. 23263	HK Filmy 90@18-24° lens	PC
HK-CY-90@18-36-D14-20-1g-1	1. 01. 23251	HK Filmy 90@18-36° lens	PC



	Supplier	r confirmatio	n		Clier	nt confirmation	
Proposed		DATE		Qualified□			
Project manager		DATE		Unqualified□		DATE	
Audit		DATE		Audit		DATE	
Approved		DATE		Approved		DATE	
Stamp		DATE		Stamp		DATE	

(Confirmation of acceptance by both parties must be signed and sealed)

Factory: Chengdu Shuangliu District, lot industrial park 2 road HercuLux Photoelectric Park

Phone: 028-85887727 (801) 028-85887990 (801) Fax: 028-85887730 http://www.herculux.cn/

Sales Dept: Shenzhen Nanshan District Nanshan Cloud Valley Innovation Industrial Park Comprehensive Service Building, 501-505

TEL: 0755-2937 1541 FAX: 0755-2907 5140

*Approval In duplicate, for both supplier and customer.

Disclaimer



Please use this product within the permitted range and environment according to the structure and material of the product. If the usage exceeds the recommended value, please test and verify by yourself. If the product is damaged due to out-of-range use, our company will not be responsible for the warranty.

Product material:

Customized products: The specifications and models of materials used are subject to the agreement between the two parties.

Conventional products: As a product that we continuously research and improve, under the premise of ensuring the quality and availability of the product, our company reserves the right to change the material. If the material specification and model change, without prior notice.

product data:

The measurement data and dimensional tolerances of the 2D drawings in the product data sheet of this acknowledgement are for reference only, and the final size shall prevail in kind.

The measurement data presented in this acknowledgment is a performance test of the product based on our company's internal test conditions and quality requirements, and the reported data is a typical value of the average results of multiple measurements. Therefore, in some cases, the actual product may deviate from the data provided. We reserve the right to notify you in advance of this data.

Product changes and improvements:

Changes and improvements of customized products are subject to the agreement between the two parties in the contract or technical documents.

As the conventional products that we continue to research and improve, our company reserves the right to make technical changes to its products, and reserves the right to make changes to data resulting from improvements without prior notice.

Operation cautions:

- 1. Please wear clean gloves during product assembly to prevent product surface contamination.
- 2. Try to avoid touching the optical surface of the lens when taking the lens.
- 3. When the surface of the product is polluted, please wipe it gently with a soft cotton cloth dipped in analytically pure neutral solvent. It is forbidden to use industrial solvents (alcohol, isopropanol, acetone, ether, toluene, xylene, carbon tetrachloride, MMA monomerm, etc.) wipe.

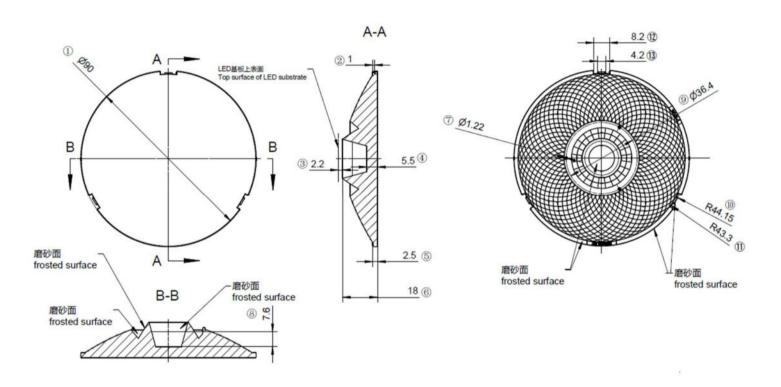


HERCULUX Product Approval

TEL: 0755-2937 1541 Date updated: 2023/2/16 FAX: 0755-2907 5140 http://www.herculux.cn/

Product Picture:	
Size(L*W*H/Φ*H):	4.00
Size(L"W"H/Ψ"H).	Ф:90mm; H:18mm
Size(L*W*Η/Φ*Η). Material:	Φ:90mm; H:18mm PC
Material:	PC
Material: Effiency:	PC \ Material extreme temperature resistance: -40°C to +120°C
Material: Effiency: Temperature(Topr):	PC \ Material extreme temperature resistance: -40°C to +120°C long-term use temperature: -40°C to +100°C





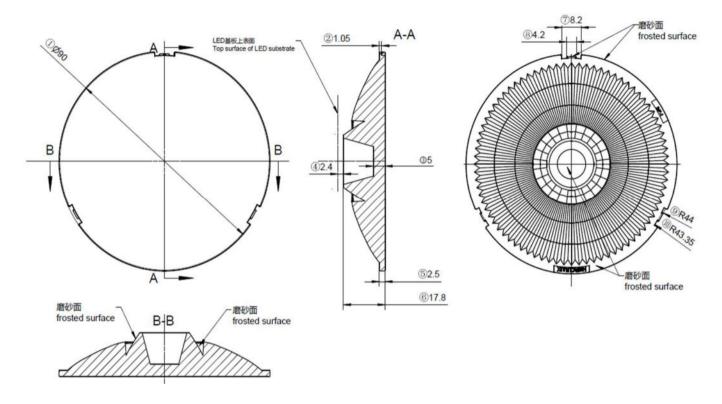
Technical remark:

- 1. The 3D map is not indicated for rounded corners and draft angle.
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.
- *4. When the lamp adopts rubber ring for waterproofing: the roughness of the contact surface between the radiator and the rubber ring is required: $Ra<3.2\mu m$

Optical	design						HK-CY-90	@18-15-D14-20)-1g-1_[DL
tructur	ucture desig		HK Filmy 90	@18-15°aluminizing lens		1.01.23264				
Rev	Review						umber of drawin	qty	wei	ght
Valid	Validation				Material:	PC+Local aluminium plating		CDHK		
~250	250~	~450	>	450						

							ľ	anuation				iviateriai:	r e · Locar arammam pracing	CDIIK	
MT5 Tolerance	Basic size	<3	3∼10	10~24	24~65	65~140	140~25	50 250	~450	>45	50				
	olerance valu	±0.1	±0.15	±0.2	±0.35	±0.50	±0.80		L.2	±2.0)				





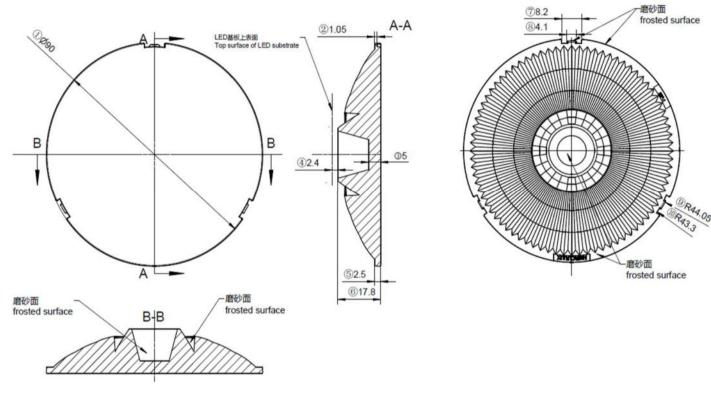
Technical remark:

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- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.
- *4. When the lamp adopts rubber ring for waterproofing: the roughness of the contact surface between the radiator and the rubber ring is required: $Ra<3.2\mu m$

	Optical	ptical design ucture desig						H	HK-CY-9	00@18-24-D14-	·20-1g-1	ī
	tructur	ructure desig				HK Filmy	90@18-24°lens			1.01.23263		
ı	Review					umber o	f drawin	qty	wei	ight		
L	hev	iew										
	Validation			Material:	PC			CDHK				
<u> </u>	~250	250^	~450	>4	450							

MT5 Tolerance	Basic size	<3	3∼10	10~24	24~65	65~140	140~250	250~450	>450	
	olerance valu	±0.1	±0.15	±0.2	±0.35	±0.50	±0.80	±1.2	±2.0	





Technical remark:

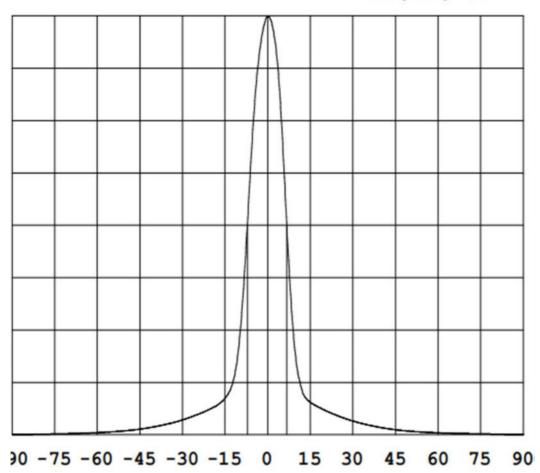
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- 3, The surface has no flash, shrinkage, bubbles and other defects.
- *4. When the lamp adopts rubber ring for waterproofing: the roughness of the contact surface between the radiator and the rubber ring is required: $Ra<3.2\mu m$

	Optical	design						ŀ	IK-CY-9	90@18-36-D14-	·20-1g-1	1
	tructur	tructure desig				HK Filmy	90@18-36°lens			1.01.23251		
ı	Review				ĺ		umber of	f drawin	qty	we	ight	
ı	hev	iew			<u> </u>							
	Validation				Material:	PC			CDHK			
)^	~250	250^	~450	>4	450							

							Vai	aation			Widterial.	 CDTIK
MT5 Tolerance	Basic size	<3	3~10	10~24	24~65	65~140	140~250	250~	450	>450		
	olerance valu	±0.1	±0.15	±0.2	±0.35	±0.50	±0.80	±1	.2	±2.0		

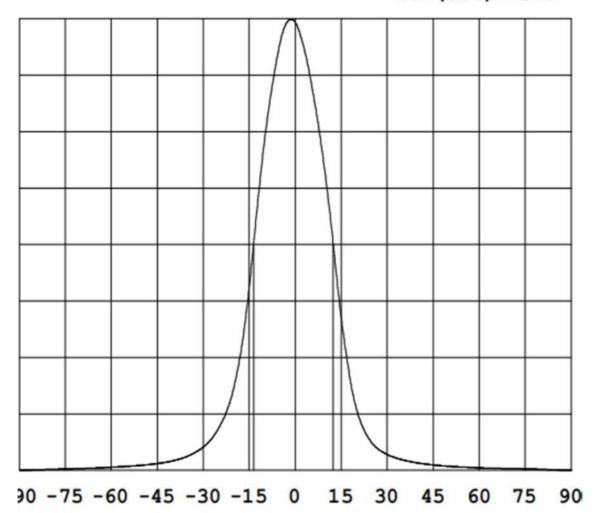


 θ av (50%) = 13.8





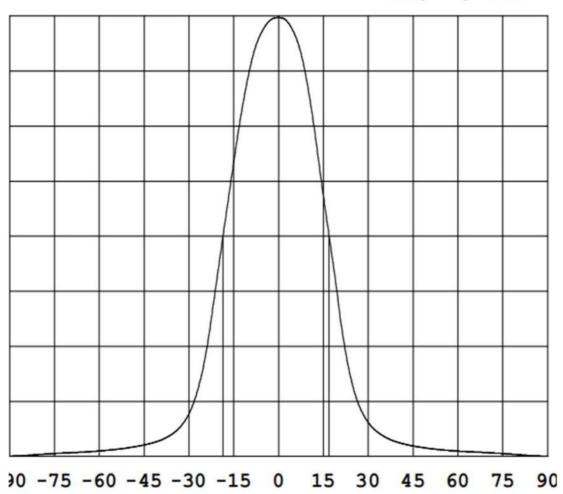
 θ av (50%) = 25.9





 $\theta av(50\%) = 35.5$

CREE 1830





			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	diame	ter	90			89. 97	90.02				Test environment: In 20 °C -25 °C
1.Size	heigh	nt	18			17. 92	18. 03				environment to achieve thermal
	thickn	ess	2.5			2.62	2.64				equilibrium after the test.
		•	•	-	Gate s	hear can not aff	ect the appeara	nce of the lamp			
					See a	ttachment "Appe	earance Inspecti	on Standards"			
2.Appea	rance		See achment bearance	E		No burr	No burr	No burr	No burr		OK
Quality		Ins	spection andards"			No stains	No stains	No stains	No stains		
3.Materia	al		PC	+Local alur	minium pla	ting	Color	Tra	nsparent		OK
	Testing	LED		CREE 1830							
	of the te	est, if envir	it is require	ed to be ou	t of range.	According to the tested and test	urce recommend the heat dissipation and to prevent the	n capability of the lens life.			
4.Optica	FWH	М				Se	ee light distribution	on curve		_	
I index	angl					13.8	13. 3				
	K-val (CD/L					7. 4	7.8				
	Effici	ency				84.00%	83.00%				
		See t	he signatu	re sample		•					
Comprel judgn							Qualified				
Remarks 1、Tool Vernier C Quadrati M-Tool N Needle T Radius C 2、Amb on the si: refer to tl right	Number: Caliper 2 ic H-Heig Microsco I-Thick C Gauge E- pient tem ze of the	D- ght Ga pe P- Gauge Visua perat prod	e R- al. ure luct	Lengt chang (mm	h _{0.8} —	product size o	changes with to	emperature ta	Size: 50m Size: 100 Size: 150 Size: 200 Size: 250 Size: 300	mm mm mm	

- 1. Please wear clean gloves during the lens assembly process to prevent the lens surface from being contaminated.
- Try to avoid touching the total reflection surface when taking the lens.
 The lens surface is contaminated. Only use a soft cotton cloth dipped in analytically pure neutral solvent to wipe gently. Do not wipe with industrial solvents (alcohol, isopropanol, acetone, ether, toluene, xylene, carbon tetrachloride, MMA Body, etc.).
- 4. The working temperature of the lens should be within the temperature resistance limit of the lens material. Exceeding the temperature resistance limit will cause the lens to crack or melt and affect the service life of the lens. It is recommended that the upper surface temperature of the LED colloid should be less than 120 degrees.



1											
			Standar d size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	diame	ter	90			89. 94	89. 95				lest environment: In 20 °C -25
1.Size	heig	ht	17.8			17. 78	17.75				© environment
	thick	ness	2.5			2. 61	2.6				to achieve thermal
					Gate s	hear can not aff	fect the appeara	nce of the lamp			
					See a	ttachment "App	earance Inspect	ion Standards"			
2.Appea	rance	atta	See chment earance	E		No burr	No burr	No burr	No burr		ОК
Quality		Ins	pection ndards"	L		No stains	No stains	No stains	No stains		ÖK
3.Materi	al			Р	С		Color	Tra	nsparent		OK
	Testing	LED					CREE 1830	0			
	source	of the	e test, if it	is require	d to be o	ut of range. Acc ment, the lens s		at dissipation ca sted and tested t	pability of the lar	np an	d the actual
4.Optic	conditions of the use environm FWHM					Se	ee light distributi	on curve		_	
al index	ang					25. 9	23.8				
	K-va (CD/I			<u></u>		3.5	3.8				
	Effici	ency				87.00%	86.00%				
	Facula	See t	the signat	ture sampl	е	,	•	•	•		
Compre e judg						<u>.</u>	Qualifie	ed			
Remarks 1、Tool Vernier (Quadrat Gauge I Microsco Thick Ga Gauge E 2、Amb on the si refer to t	Numbe Caliper : ic H-Hei I-Tool ope P-N auge R- E-Visual bient ten ize of th	2D- ight eedle Radiu npera e proo	ture duct				e changes with		Table Size: 50mm Size: 100mm Size: 150mm Size: 200mm Size: 250mm Size: 300mm		

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		Standard	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	diamet	er 90			89. 88	89. 92				Test environment: In 20 °C -25 °C
1.Size	heigh	t 17.8			17.82	17.82				environment to achieve thermal
	thickn	ess 2.5			2.6	2.61				equilibrium after the test.
		•	•	Gate	shear can not a	ffect the appear	ance of the lamp)		•
				See	attachment "Ap	pearance Inspec	tion Standards"			,
2.Appear	rance	See attachment "Appearance	E		No burr	No burr	No burr	No burr		OK
Quality		Inspection Standards"	_		No stains	No stains	No stains	No stains		OK .
3.Materia	al		P	С		Color	Tra	nsparent		OK
	Testing	LED				CREE 183	0			
	of the te	est, if it is requent,	ired to be o	ut of range	. According to the y tested and tes	ne heat dissipation ted to prevent the fee light distribut	on capability of t le lens life.		•	ole to the source al conditions of
4.Optica I index					35. 5	37. 8	Non-ourve			
Tilluex	angl K-val						$\overline{}$		/	$\overline{}$
	(CD/LI Efficie				2. 29 85. 00%	2. 1 86. 00%			_	
		See the signat	ure sample		00.00%	80.00%				
Comprel e judgr	hensiv					Qualified				
Remarks 1、Tool I Vernier C Quadrati Gauge M Microsco Thick Ga Gauge E 2、Amb on the siz refer to th	S: Number: Caliper 2 c H-Heig I-Tool ope P-Ne ouge R-F i-Visual. ient tem ze of the	D- ght eedle T- Radius perature product	chan	th 0.8	PC product size	e changes with	30	Size: Size: Size: Size: Size: Size: (°C)	100n 150n 200n 250n	nm nm nm nm

- 1. Please wear clean gloves during the lens assembly process to prevent the lens surface from being contaminated.
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PN		HK-CY-90@18-15-D14-20-1g-1_DL		Product Name	HK Filmy 90@18-15°aluminizing lens			
Product material		PC+Local aluminium plating		Customer				
Package diagram		Single Vacuum package Box package						
Product	packing	4	A/ Box	4	pcs/Layer			
	Ü	13	Layer/Box	208	A/ Carton			
	NO.	Part No	Part name	Size	Dosage	Unit	Remarks	
	1	2. 07. 0115	Blister box	23cm*21cm	52	BAG		
Dookogin	2	2. 08. 0001	PE film	25cm*27cm	52	PCS		
Packagin g	3	2. 06. 0005	Reel label paper	62mm*42mm	52	PCS		
Materials	4	2. 06. 0005	Box label paper	62mm*70mm	1	PCS		
	5	2. 06. 0003	big plate	46cm*42cm	14	PCS		
	6	2. 06. 0011	big flat carton	48cm*44cm*37	cm 1	PCS		
Remarks		The loose packing is not subje	ct to this specit	ïcation. Customer	's requirements shall	prevail		

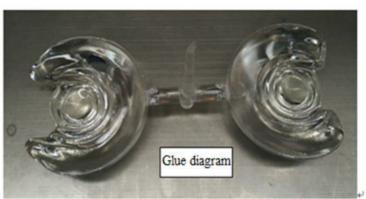


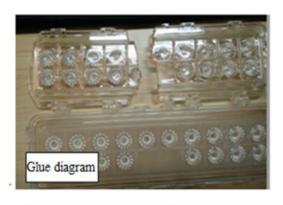
Special notice

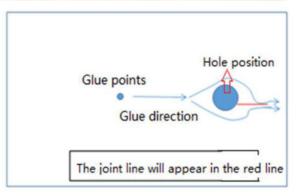
When gule pass through holes, columns and other structures, or part of the thin structure, will form a weld line. The product which uses multi-point injection welding line will appear because of the combination of sol, as shown below:

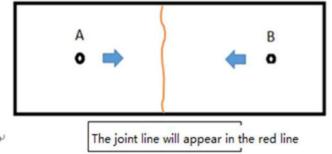
Syntneti











Please note:

The appearance of lines in the structure of the product as well as at the screw hole is a normal phenomenon, will not affect the actual use of the product, and can not be avoided at this stage.



Appearance inspection standards

1 Operating procedures

1.1.1Sampling standards, sampling plan and AQL

Test level: GB/T2828.1-2012The first part is according to the acceptance quality limit (AQL) retrieval batch inspection sampling plan, general inspection level Π level, CR class defect coefficient 0, MA defect rejection level AQL = 0.65, MI class defect rejection level AQL = 1.0; defect level please see 5.4.

2 Code table

Code	Code	Unit	Code	Code	Unit
	description			description	
N	Amount/pcs	pcs	D	Diameter	mm
L	Length	mm	Н	Depth	mm
W	Width	mm	DS	Distance	mm
S	Proportion	mm²	SS	Offset	mm

3 Test conditions

- 3.1 Sight distance and working hours: Sight distance should be 30-35cm, each side of the inspection time does not exceed 12s, the visual angle of 45-135 degrees;
- 3.2 Light: 2x40w cool white fluorescent lamp, the light source is 500-550mm away from the lens surface; in order to make the appearance defect can be correctly recognized, the illumination should be 500-1000Lux, and the observation time is 10 seconds.
 - 3.3 Visual inspection staff should be 1.0 (including corrected visual acuity) above, no color blindness, color weakness.

4 Appearance inspection standards

Test items	Judging standard	Inspection equipment	Defect level		
restitems		Testing method	MI	MA	CR
	When start the machine and process, all products have to check the appearance of the sample, the appearance of the sample is divided into qualified samples and limited samples.				
Check the sample	1: Qualified sample refers to the appearance and structure standard of the product which recognized by the client, the sample size should be confirmed before mass production;	Sample comparison , visual			√

1	<u> </u>	Ī	_	1	
	2: The limited sample refers to the limit of a particular exceptionally developed sample. Limit the sample only for its specific point of exception to confirm; The priority is higher than the other criteria in this table. When there is a limited sample, the limit sample shall prevail.				
Raw edge	Not allowed to affect the size and assembly	Visual, point card		√	
Scratch	1: Non-optical surface and non-exposed surface scratches should be visually insignificant and the length is less than 1/10 of the maximum surface size.	Visual, point card, calipers		√	
Fingerprint	Fingerprints are not allowed on all products	Visual		√	
Foreign objects, black spots, white spots	The product may not be attached to foreign objects, including oil, fiber, dregs of water gap and so on				√
Deformation	Insufficient filling shall not affect the appearance of the assembly and the exposed surfaces.	Visual, feeler			√
Poor ejection	Products may not appear bad ejection, including no convex top, thimble printed on the assembly surface shall not be higher than the product surface, non-assembled surface thimble height should not exceed the product size tolerances; thimble printing should be less than the product surface and no more than 0.3; thimble surface treatment should be consistent with the product side. Ejection strain: the optical surface and the appearance of the exposed surface after assembly are not allowed to have a strain, and the structural surface does not allow visual obvious strain.	Visual, point card		√	
Insufficient filling	Insufficient filling shall not affect the appearance of the assembly and the exposed surfaces, The signature sample shall prevail.	Visual, point card		√	
Shrink	When the entire surface of the product shrinks, the optical properties and dimensions must meet the requirements, and the visual will not significantly affect the appearance.Part shrink reference point defects	Visual, point card		√	
Flow marks、Welding line	 Product does not allow the presence of flow marks and welding lines unless the structure can not be avoided; The remaining flow marks shall not appear in the optical surface, a single L ≤ 10mm, no more than two 	Visual		√	

Bubble	No bubbles are allowed	Visual		√	
Foreign objects, black spots, white spots	Not obvious or D ≤ 0.3mm black spots and foreign bodies in the area of 100x100mm not more than 1; Exceeded foreign matter black spots is judged bad.	Visual, point card	V		
Damaged	No damage is allowed	Visual			√
Cold glue	Optical surface may not have cold glue, non- optical surface cold glue should meet the visual is not obvious.	Visual	√		
	1: Do not affect the product size, shall not penetrate the optical surface, the cut should be smooth;	Visual			
Bad incision	2: Laser cutting products, the optical surface burns shall not occur after the processing is completed. Beading must not affect product installation				√
	3: Three molds and hot runner gate shall not appear residue.				
Scrub	Scrub surface should be uniform, off the scrub phenomenon should not be obvious, A single off scrub imprint requires D ≤ 1 mm and no more than 1 area within a 50x50 mm area	Visual		√	