

HERCULUX Chengdu HercuLux Photoelectric 恒坤光电 Technology Co.,Ltd

Product Approval

Approval number : Effective date of approval :

Customer:

Product: HK 4 degree-Indoor lens

Material Code 1.01.6723

PN: HK-40@15-4-3535-20-1g-1 (SN)

Manufacturer: Chengdu HercuLux Photoelectric Technology Co.,Ltd



	Supplier confirmation			Client confirmation			
Proposed		DATE		Qualified□	DATE		
Project manager		DATE		Unqualified□			
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, Iot industrial park 2 road HercuLux Photoelectric Park

Phone: 028-85887727 (801) 028-85887990 (801) Fax: 028-85887730 www.hkoptics.com Sales Dept: Shenzhen Nanshan District Nanshan Cloud Valley Innovation Industrial Park Comprehensive Service Building,

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

*Approval In duplicate, for both supplier and customer.

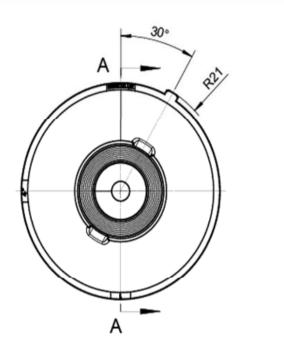


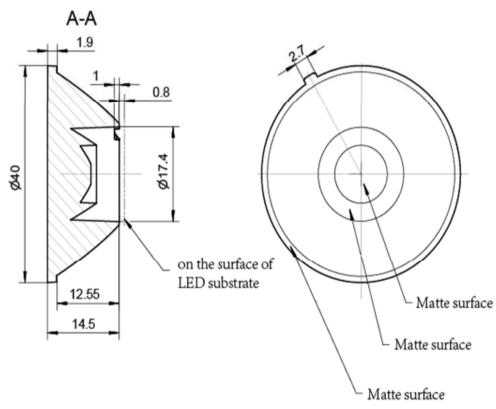
HERCULUX Product Approval

TEL: 0755-2937 1541 Date updated: 2018/12/25 FAX: 0755-2907 5140 www.hkoptics.com

Product Picture:					
PN:	HK-40@15-4-3535-20-1g-1 (SN)				
Size(L*W*H/Φ*H):	Ф:40mm; H:14.5mm				
Material:	PC				
Effiency:	-40°C to +120°C				
Temperature(Topr):	/				
FWHM:	4°				
Matched LES:	3535				



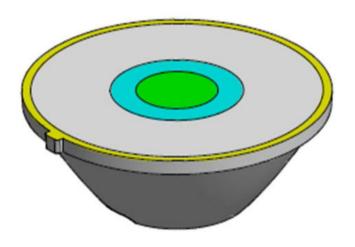




- 1. The surface don't have any defects of flash, shrink and bubble.
- 2. The uncharted fillet and pattern draft subject to the 3D drawing.
- 3. The uncharted dimensional tolerance subject to the 3D drawing.

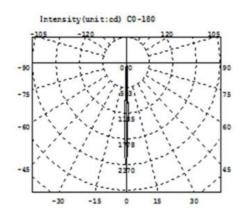
Optical Design			HK-40@15-4-35	35-20-1g-1 (SN	1.01.6723	
Structure Design		HK 4 degree-Indoor lens	Pages	Qty	Weight	
Assess			2			
Authorized		Material:PC		CDHK		

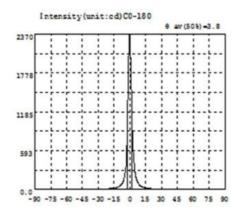












Intensity data: (deg , cd) CO-180

λ	I	λ	I	λ	I	λ	I	λ	I	λ	1
-90.0	0.4459	-58.5	0.8193	-27.0	2.982	4.5	298.2	36.0	1.662	67.5	0.6725
-88.5	0.4711	-57.0	0.8683	-25.5	3.429	6.0	173.8	37.5	1.526	69.0	0.6242
-87.0	0.3818	-55.5	0.9216	-24.0	4.067	7.5	109.1	39.0	1.432	70.5	0.5987
-85.5	0.3688	-54.0	0.9473	-22.5	4.944	9.0	71.62	40.5	1.350	72.0	0.5732
-84.0	0.3818	-52.5	0.9753	-21.0	6.128	10.5	49.75	42.0	1.278	73.5	0.5455
-82.5	0.3944	-51.0	1.026	-19.5	7.822	12.0	36.00	43.5	1.244	75.0	0.5012
-81.0	0.4071	-49.5	1.100	-18.0	10.10	13.5	26.79	45.0	1.201	76.5	0.4820
-79.5	0.4331	-48.0	1.151	-16.5	13.14	15.0	20.36	46.5	1.155	78.0	0.4459
-78.0	0.4466	-46.5	1.154	-15.0	16.97	16.5	15.62	48.0	1.136	79.5	0.4204
-76.5	0.4841	-45.0	1.200	-13.5	22.04	18.0	12.15	49.5	1.048	81.0	0.4058
-75.0	0.5105	-43.5	1.206	-12.0	29.13	19.5	9.342	51.0	0.9884	82.5	0.3491
-73.5	0.5371	-42.0	1.292	-10.5	40.13	21.0	7.209	52.5	0.9718	84.0	0.3678
-72.0	0.5732	-40.5	1.363	-9.0	57.37	22.5	5.628	54.0	0.9427	85.5	0.3312
-70.5	0.6000	-39.0	1.436	-7.5	86.63	24.0	4.538	55.5	0.9172	87.0	0.3312
-69.0	0.6255	-37.5	1.545	-6.0	137.5	25.5	3.752	57.0	0.8790	88.5	0.4532
-67.5	0.6624	-36.0	1.711	-4.5	247.4	27.0	3.169	58.5	0.8408	90.0	0.4598
-66.0	0.6655	-34.5	1.879	-3.0	558.5	28.5	2.747	60.0	0.8153		
-64.5	0.6912	-33.0	1.961	-1.5	1715	30.0	2.443	61.5	0.7898		
-63.0	0.7168	-31.5	2.204	0.0	2318	31.5	2.179	63.0	0.7546		
-61.5	0.7425	-30.0	2.430	1.5	1407	33.0	2.001	64.5	0.7290		
-60.0	0.7771	-28.5	2.668	3.0	637.7	34.5	1.799	66.0	0.6879		

Current I: 0.1000A Power: 0.2890W Voltage V: 2.900V PF: 1.000

Optical Parameter (Distance=2.559m):

CO-180Plane IO= 2318cd



			Standard size	Upper Size limit	Lower size	Test result1	Test result2	Test result3	Test result4	Judg men t	Remarks	
	external o	diameter	40	40. 15	39. 85	39. 88	39. 9	39. 89	39. 89	ок	Test environment: In	
1.Size	height Optical height		14. 5	14. 65	14. 35	14. 45	14. 43	14. 4	14. 4	ОК	20 °C -25 °C environment to achieve thermal	
			1. 9	2. 05	1. 75	1.92	1.9	1. 94	1.94	ок	equilibrium after the test.	
				Gate sl	near can no	t affect the	appearance	of the lamp				
				See at	tachment "/	Appearance	Inspection	Standards"				
2.Appea	See attachment 2.Appearance Quality See attachment "Appearance Inspection Standards"			E	1	No burr	No burr	No burr	No bu	rr	OK	
Quality					N	o stains	No stains	No stains	No stains		OK	
3.Materia	al			PC	PC Color			Tra	insparent		ОК	
	Testing	J LED					CREE XPE					
	FWI	-IM		See light distribution curve								
4.Optica I index	Anç	gle		3.8°			3.8°	3.8°	3.6°		OK	
	K Va	lue		64.19			64.19	67.09	79. 18		OK	
	Facula	See the	signature s	ample		`						
	ehensive Jment						Qualified	I				
Remarks: 1. Tool Number: V-Vernier Caliper 2D-Quadratic H-Height Gauge M-Tool Microscope P- Needle T-Thick Gauge R-Radius Gauge E-Visual. 2. Ambient temperature on the size of the product refer to the table on the right			adius the	Length changes (mm)	0.9		nges with to		Size: Size: Size: Size: Size: Size:	100mm 150mm 200mm 250mm		

Precautions:

- 1. Wear clean gloves during lens assembly to prevent contamination of the lens surface.
- 2. Take the lens try to avoid touching the total reflection surface.
- 3. When the lens surface contamination, you can only gently wipe with soft cotton sticky neat neutral solvent, not allowed to wipe with industrial solvents.

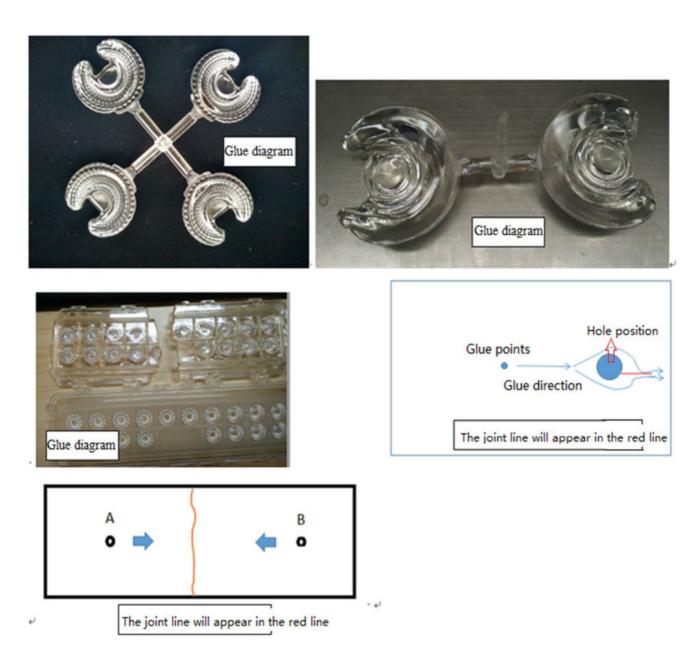


Pl	N	HK-40@15-4-3535-20-1g	;-1 (SN)	Product Name HK	4 degree-Ind	oor]	ens
Product	material	PC		Customer			
Package diagram		単件产品	(型盒封装	抵销量	i k		
Product	nacking	18	Packet	4	BAG/LAYER		
Troduct	packing	18	Floor/Carton	1296	Piece/Box		
	NO.	Material Code	Item name	Specification	Single box usage	Unit	Remarks
	1	2. 07. 0062	Blister box	23cm*21cm	72	PCS	
		2. 08. 0001	PE film	30cm*30cm	72	PCS	
Packagin	2	2. 06. 0005	Box label paper	6. 2cm*4. 2cm	72	PCS	
g	3	2. 06. 0005	Box label paper	7.6cm*6.2cm	1	PCS	
Materials	4	2. 06. 0003	Large partition	42cm*46.8cm	19	PCS	
	7	2. 06. 0001	Large carton	42. 8cm*46. 8cm*36cm	1	PCS	
Remarks	Scattered packaging is not subject to this specification						



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:



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 description	Unit	Code	Code description	Unit
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, chip should be from the lens surface 500-550mm, in order to make the bad appearance can be correctly found, the illumination should not be less than 500Lux;
- 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	ludging standard	Inspection equipment	Defect level		
restitems	Judging standard	Testing method	МІ	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	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			√
	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		√	



					Week aman
Fingerprint	Fingerprints are not allowed on all products	Visual		√	
Foreign things, impurities	The product may not be attached to foreign objects, including oil, fiber, dregs of water gap and so on				V
Deformation	Insufficient filling shall not affect the appearance of the assembly and the exposed surfaces.	Visual, feeler			V
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.	Visual, point card		√	
	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.				
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 matter、Dark 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	√		
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	√		
	Do not affect the product size, shall not penetrate the optical surface, the cut should be smooth;				
Bad incision	Laser cutting products, the optical surface burns shall not occur after the processing is completed. Beading must not affect product installation Three molds and hot runner gate shall not	Visual			√
	appear residue.				
Scrub	Scrub surface should be uniform, off the scrub phenomenon should not be obvious , A single off scrub imprint requires $D \le 1$ mm and no more than 1 area within a 50x50 mm area	Visual		V	



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Product Approval

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Customer:

PN	Material Code	Product
HK-43@04-4X36-XPE_35-01-1g-1	1.01.7960	Linear Lens (4°X36°)
HK-43@04-10X25-XPE_35-01-1g-1	Elliptical spot Lens (10°X25°)	
HK-43@04-10X36-XPE_35-01-1g-1	1.01.7962	Elliptical spot Lens (10°X36°)
HK-43@04-25-XPE_35-01-1g-1	1.01.7963	Circular spot Lens (25°)
HK-43@04-25X25-XPE_35-01-1g-1	1.01.7964	Square spot Lens (25°X25°)
HK-43@04-25X36-XPE_35-01-1g-1 1.01.7965 Rectanguiar Lens (Rectanguiar Lens (25°X36°)
HK-43@04-36-XPE_35-01-1g-1	1.01.7966	Circular spot Lens (36°)
HK-43@04-36X36-XPE_35-01-1g-1	1.01.7967	Square spot Lens (36°X36°)

Manufacturer: Chengdu HercuLux Photoelectric Technology Co.,Ltd



	Supplier confirmation			Client confirmation			
Proposed		DATE		Qualified□		5.4.75	
Project manager		DATE		Unqualified□		DATE	
Audit		DATE		Audit		DATE	
Approved		DATE		Approved		DATE	
Stamp		DATE		Stamp		DATE	

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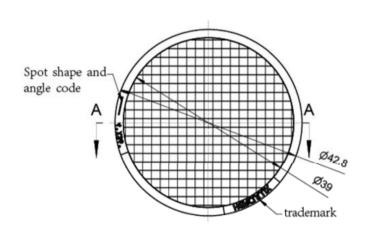


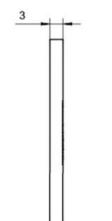
HERCULUX Product Approval

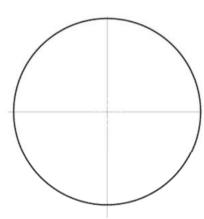
TEL: 0755-2937 1541 Date updated: 2018/3/27 FAX: 0755-2907 5140 www.hkoptics.com

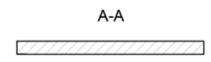
Product Picture;	
PN:	HK-43@04-4X36-XPE_35-01-1g-1
Size(L*W*H/Φ*H):	Ф:43mm; H:3mm
Material:	PC
Effiency:	90%
Temperature(Topr):	-40°C to +120°C
FWHM:	36°X4°/25°X10°/36°X10°/25° /25X25°25°X36°/36°/36X36°
Matched LES:	CREE XPE_35







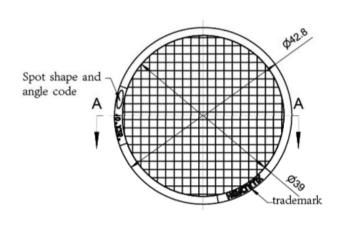




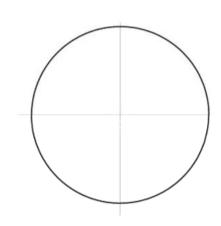
- 1. The surface don't have any defects of flash, shrink and bubble.
- 2. The uncharted fillet and pattern draft subject to the 3D drawing.
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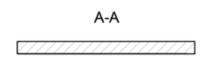
ptical Design	l				HK-43@04-4X36	-XPE_35-01-1g-1	1.01.7960
ructure Design			Linear Lens (4° X36°)		Pages Qty		Weight
Assess			, A50 /		1		
Authorized	horized Material PC		PC		CDHK		







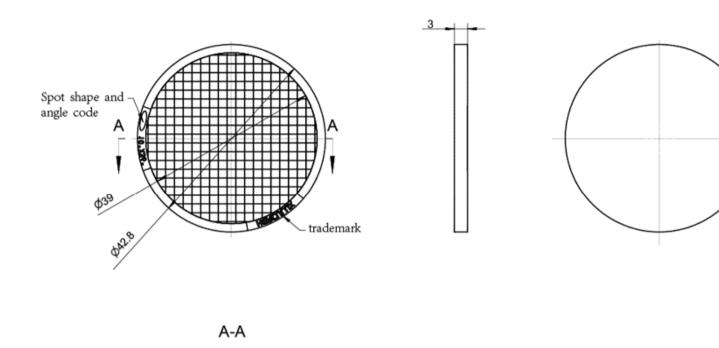




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ptical Design	1	D111		HK-43@04-10	X25-XPE_35-01-1g-1	1.01.7961
ructure Design		-	Elliptical spot Lens (10° X25°)		Qty	Weight
Assess		Zens (10	,	1		
Authorized	Authorized		PC		CDHK	

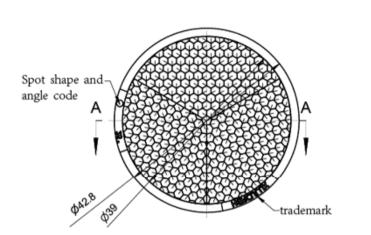




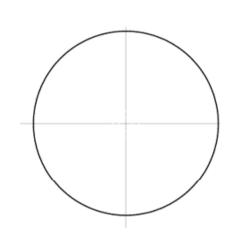
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Optical Design		Elliptical	spot	HK-43@04-10	X36-XPE_35-01-1g-1	1.01.7962
ructure Design		Lens (10° X36		Pages	Qty	Weight
Assess		°)		1		
Authorized		Material	PC		CDHK	







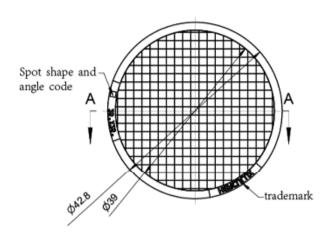


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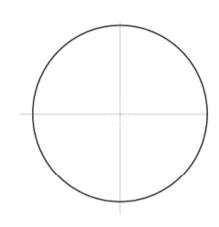
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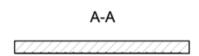
ptical Design	1			HK-43@04-2	25-XPE_35-01-1g-1	1. 01. 7963
ructure Design		Circular Lens (2	-	Pages	Qty	Weight
Assess		20110 (20	,	1		
Authorized		Material	PC		CDHK	







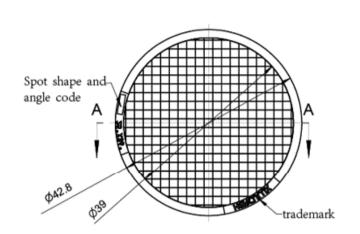


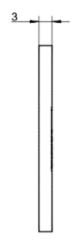


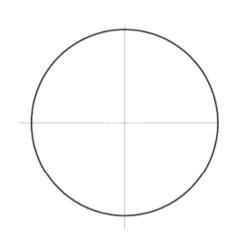
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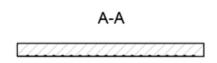
ptical Design	gn Square spot				HK-43@04-25	X25-XPE_35-01-1g-1	1. 01. 7964
ructure Design			Lens (25	° X25	Pages	Qty	Weight
Assess			°)		1		
Authorized			Material PC			CDHK	







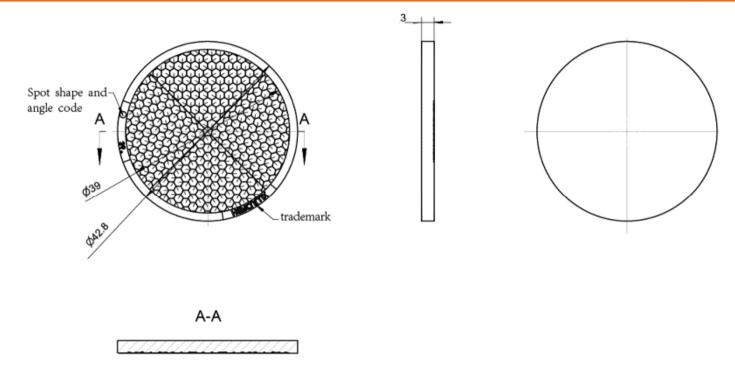




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ptical	ptical Design					HK-43@04-25	X36-XPE_35-01-1g-1	1. 01. 7965
ructure Design		gn		Rectanguian (25° X36		Pages	Qty	Weight
Ass	ess			(20 No.	, ,	1		
Autho	rized			Material	PC		CDHK	

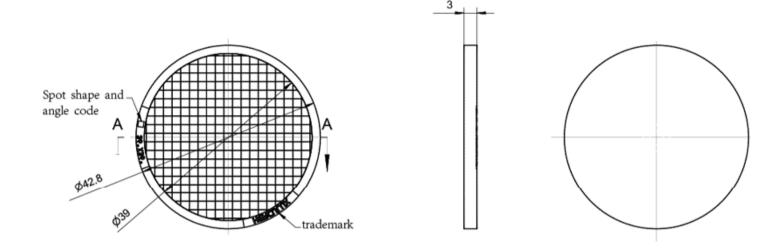


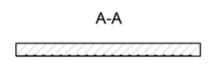


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Į(Optical Design Tructure Design Assess Authorized					HK-43@04-3	86-XPE_35-01-1g-1	1.01.7966
;]				Circular spot Lens (36°)		Pages	Qty	Weight
						1		
			Material	PC		CDHK		

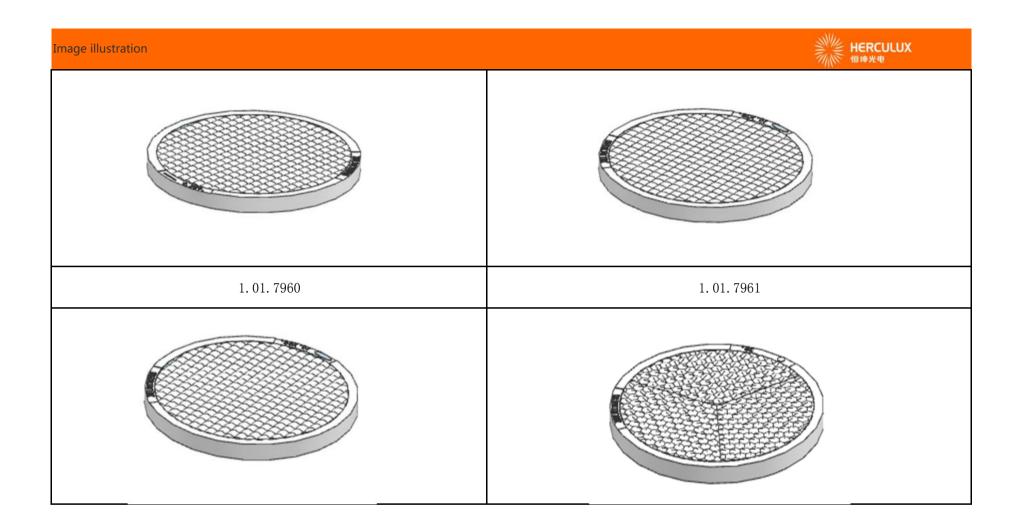


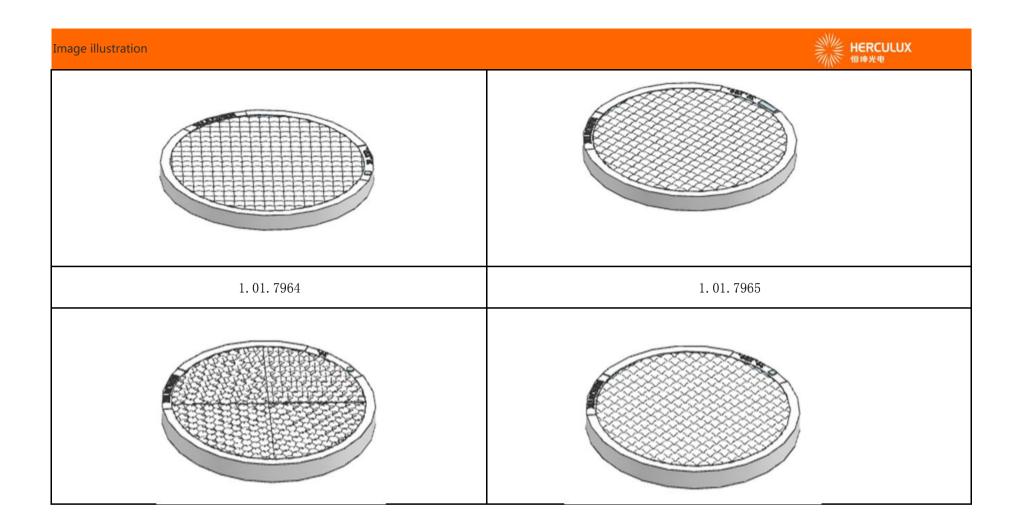




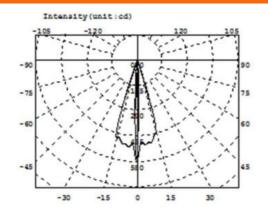
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- 2. The uncharted fillet and pattern draft subject to the 3D drawing.
- 3. The uncharted dimensional tolerance subject to the 3D drawing.

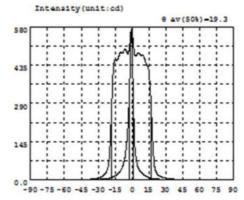
ptical Design	ı	_		HK-43@04-36	X36-XPE_35-01-1g-1	1. 01. 7967
ructure Desig	n	Square spot Lens (36° X36°)		Pages	Qty	Weight
Assess				1		
Authorized		Material	PC		CDHK	











Intensity data: (deg , cd) C0-180

λ	I	λ	1	A	I	λ	I	λ	I	λ	I
-90.0	0.3949	-58.5	1.252	-27.0	12.81	4.5	476.8	36.0	3.522	67.5	0.9809
-88.5	0.4335	-57.0	1.354	-25.5	16.73	6.0	480.4	37.5	3.026	69.0	0.9325
-87.0	0.4843	-55.5	1.482	-24.0	22.18	7.5	472.1	39.0	2.718	70.5	0.8585
-85.5	0.4589	-54.0	1.594	-22.5	32.66	9.0	472.7	40.5	2.467	72.0	0.8153
-84.0	0.4972	-52.5	1.694	-21.0	57.13	10.5	467.4	42.0	2.301	73.5	0.7643
-82.5	0.5105	-51.0	1.686	-19.5	129.8	12.0	446.2	43.5	2.195	75.0	0.7388
-81.0	0.5489	-49.5	1.696	-18.0	280.1	13.5	432.3	45.0	2.105	76.5	0.6879
-79.5	0.5753	-48.0	1.753	-16.5	423.3	15.0	410.5	46.5	2.012	78.0	0.6497
-78.0	0.6250	-46.5	1.878	-15.0	456.0	16.5	327.1	48.0	2.006	79.5	0.6006
-76.5	0.6752	-45.0	2.036	-13.5	452.0	18.0	181.0	49.5	1.905	81.0	0.5496
-75.0	0.7143	-43.5	2.158	-12.0	464.9	19.5	72.22	51.0	1.721	82.5	0.4875
-73.5	0.7516	-42.0	2.244	-10.5	481.3	21.0	34.84	52.5	1.552	84.0	0.4841
-72.0	0.8002	-40.5	2.394	-9.0	480.9	22.5	22.17	54.0	1.450	85.5	0.5895
-70.5	0.8408	-39.0	2.592	-7.5	486.9	24.0	15.93	55.5	1.341	87.0	0.9965
-69.0	0.8535	-37.5	2.816	-6.0	494.9	25.5	12.56	57.0	1.286	88.5	0.8857
-67.5	0.8720	-36.0	3.165	-4.5	483.9	27.0	10.51	58.5	1.213	90.0	0.7681
-66.0	0.9442	-34.5	3.787	-3.0	482.6	28.5	9.220	60.0	1.175		
-64.5	0.9953	-33.0	4.795	-1.5	540.1	30.0	7.672	61.5	1.133		
-63.0	1.022	-31.5	6.162	0.0	568.1	31.5	6.177	63.0	1.075		
-61.5	1.091	-30.0	7.913	1.5	499.9	33.0	5.046	64.5	1.047		
-60.0	1.175	-28.5	10.15	3.0	469.6	34.5	4.103	66.0	1.001		

Current I: 0.1000A Power: 0.2900W Voltage V: 2.900V PF: 0.000

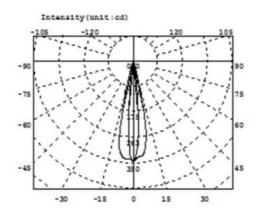
Optical Parameter (Distance=2.559m):

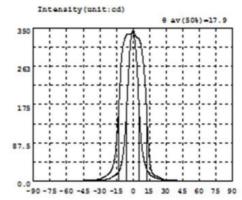
Equivalent Luminous flux: \$\phi\$ eff= 89.08lm Efficiency: Eff=307.19lm/W

Diffuse angle: @(25%): 22.3deg@(50%): 19.3deg@(75%): 16.2deg@(50%): 19.3deg
Diffuse angle: @(25%): 22.4deg@(50%): 19.4deg@(75%): 16.6deg@(50%): 19.4deg
Imax=572.4cd (C=0.0deg,G=-0.5deg)
C0-180Plane Imax= 572.4cd (G=-0.5deg)

CO-180Plane IO= 568.1cd







Intensity data: (deg , cd) C0-180

A	I	λ	I	λ	1	λ	1	λ	1	λ	1
-90.0	0.3822	-58.5	1.112	-27.0	8.178	4.5	326.0	36.0	2.294	67.5	0.7616
-88.5	0.4329	-57.0	1.148	-25.5	10.42	6.0	322.3	37.5	2.179	69.0	0.7388
-87.0	0.4331	-55.5	1.214	-24.0	13.19	7.5	306.8	39.0	2.014	70.5	0.7006
-85.5	0.4586	-54.0	1.280	-22.5	15.58	9.0	279.6	40.5	1.834	72.0	0.6497
-84.0	0.4713	-52.5	1.327	-21.0	19.32	10.5	241.8	42.0	1.762	73.5	0.6242
-82.5	0.5350	-51.0	1.403	-19.5	25.76	12.0	181.5	43.5	1.677	75.0	0.5882
-81.0	0.5483	-49.5	1.477	-18.0	36.12	13.5	103.9	45.0	1.595	76.5	0.5541
-79.5	0.5746	-48.0	1.546	-16.5	54.00	15.0	50.41	46.5	1.489	78.0	0.5243
-78.0	0.6362	-46.5	1.626	-15.0	84.52	16.5	26.60	48.0	1.417	79.5	0.4771
-76.5	0.6624	-45.0	1.753	-13.5	135.5	18.0	17.10	49.5	1.375	81.0	0.4513
-75.0	0.6516	-43.5	1.871	-12.0	207.0	19.5	13.37	51.0	1.303	82.5	0.4331
-73.5	0.7144	-42.0	2.021	-10.5	274.5	21.0	12.34	52.5	1.255	84.0	0.4220
-72.0	0.7632	-40.5	2.292	-9.0	308.5	22.5	11.08	54.0	1.232	85.5	0.3822
-70.5	0.7541	-39.0	2.659	-7.5	323.7	24.0	8.544	55.5	1.122	87.0	0.3567
-69.0	0.7911	-37.5	2.742	-6.0	332.3	25.5	6.711	57.0	1.003	88.5	0.3795
-67.5	0.8408	-36.0	2.852	-4.5	335.4	27.0	5.180	58.5	0.9619	90.0	0.3809
-66.0	0.9253	-34.5	3.277	-3.0	335.0	28.5	4.138	60.0	0.9139		
-64.5	0.9028	-33.0	3.908	-1.5	336.2	30.0	3.497	61.5	0.8754		
-63.0	0.9589	-31.5	4.580	0.0	342.5	31.5	3.025	63.0	0.8437		
-61.5	0.9718	-30.0	5.416	1.5	336.9	33.0	2.729	64.5	0.8153		
-60.0	1.044	-28.5	6.506	3.0	328.5	34.5	2.482	66.0	0.7926		

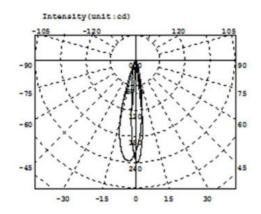
Current I: 0.1000A Power: 0.2890W Voltage V: 2.900V PF: 0.000

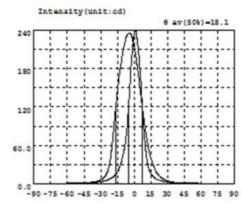
Optical Parameter (Distance=2.559m):

Equivalent Luminous flux: # eff= 45.61lm Efficiency: Eff=157.83lm/W

CO-180Plane IO= 342.5cd







Intensity data: (deg , cd) C0-180

λ	I	λ	1	λ	1	λ	I	λ	1	λ	1
-90.0	0.4713	-58.5	1.328	-27.0	10.41	4.5	160.5	36.0	2.966	67.5	0.9226
-88.5	0.4716	-57.0	1.367	-25.5	13.57	6.0	138.1	37.5	2.744	69.0	0.8943
-87.0	0.5099	-55.5	1.422	-24.0	18.76	7.5	117.4	39.0	2.528	70.5	0.8432
-85.5	0.5608	-54.0	1.522	-22.5	28.02	9.0	97.51	40.5	2.340	72.0	0.8153
-84.0	0.5987	-52.5	1.687	-21.0	43.46	10.5	79.90	42.0	2.208	73.5	0.7539
-82.5	0.6365	-51.0	1.923	-19.5	65.38	12.0	64.17	43.5	2.033	75.0	0.7411
-81.0	0.6630	-49.5	2.002	-18.0	92.96	13.5	51.00	45.0	1.897	76.5	0.7027
-79.5	0.6765	-48.0	1.973	-16.5	119.6	15.0	40.96	46.5	1.791	78.0	0.6731
-78.0	0.7037	-46.5	1.977	-15.0	144.2	16.5	32.71	48.0	1.698	79.5	0.6389
-76.5	0.7516	-45.0	2.062	-13.5	165.8	18.0	26.11	49.5	1.629	81.0	0.5860
-75.0	0.7908	-43.5	2.221	-12.0	184.9	19.5	20.41	51.0	1.587	82.5	0.5605
-73.5	0.8174	-42.0	2.394	-10.5	201.0	21.0	15.96	52.5	1.548	84.0	0.5128
-72.0	0.8558	-40.5	2.604	-9.0	214.7	22.5	12.70	54.0	1.462	85.5	0.4983
-70.5	0.9184	-39.0	2.812	-7.5	225.9	24.0	10.44	55.5	1.386	87.0	0.4586
-69.0	0.9454	-37.5	3.087	-6.0	232.6	25.5	8.667	57.0	1.293	88.5	0.4358
-67.5	0.9852	-36.0	3.451	-4.5	234.8	27.0	7.234	58.5	1.210	90.0	0.4943
-66.0	1.036	-34.5	3.934	-3.0	233.4	28.5	6.139	60.0	1.127		
-64.5	1.100	-33.0	4.565	-1.5	225.6	30.0	5.191	61.5	1.073		
-63.0	1.184	-31.5	5.429	0.0	213.1	31.5	4.349	63.0	1.037		
-61.5	1.222	-30.0	6.564	1.5	198.2	33.0	3.734	64.5	0.9895		
-60.0	1.275	-28.5	8.182	3.0	180.7	34.5	3.250	66.0	0.9510		

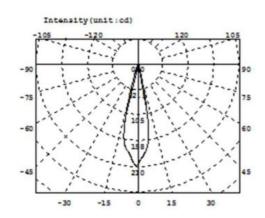
Electricity Parameter:

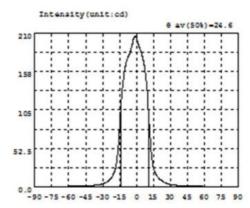
Current I: 0.1000A Power: 0.2890W Voltage V: 2.900V PF: 0.000

Optical Parameter (Distance=2.559m):

CO-180Plane IO= 213.1cd







Intensity data: (deg , cd) C0-180

λ	I	λ	1	λ	I	Α	I	λ	I	λ	1
-90.0	0.4459	-58.5	1.228	-27.0	6.332	4.5	181.2	36.0	2.545	67.5	0.8334
-88.5	0.4713	-57.0	1.301	-25.5	7.878	6.0	172.5	37.5	2.391	69.0	0.8051
-87.0	0.4964	-55.5	1.350	-24.0	9.925	7.5	158.7	39.0	2.251	70.5	0.7746
-85.5	0.5345	-54.0	1.459	-22.5	12.45	9.0	139.0	40.5	2.085	72.0	0.7261
-84.0	0.5354	-52.5	1.541	-21.0	15.88	10.5	106.2	42.0	1.953	73.5	0.6902
-82.5	0.5855	-51.0	1.903	-19.5	20.86	12.0	68.00	43.5	1.855	75.0	0.6541
-81.0	0.5877	-49.5	1.742	-18.0	30.08	13.5	40.53	45.0	1.732	76.5	0.6284
-79.5	0.5994	-48.0	1.735	-16.5	49.05	15.0	26.61	46.5	1.647	78.0	0.5773
-78.0	0.6504	-46.5	1.807	-15.0	79.38	16.5	19.60	48.0	1.561	79.5	0.5732
-76.5	0.6760	-45.0	1.932	-13.5	114.4	18.0	15.63	49.5	1.494	81.0	0.5332
-75.0	0.7143	-43.5	2.066	-12.0	140.7	19.5	12.73	51.0	1.446	82.5	0.5096
-73.5	0.7526	-42.0	2.171	-10.5	159.2	21.0	10.55	52.5	1.366	84.0	0.4968
-72.0	0.7898	-40.5	2.286	-9.0	170.1	22.5	8.724	54.0	1.293	85.5	0.4586
-70.5	0.8050	-39.0	2.414	-7.5	176.6	24.0	7.106	55.5	1.251	87.0	0.4374
-69.0	0.8434	-37.5	2.573	-6.0	181.9	25.5	5.818	57.0	1.216	88.5	0.4345
-67.5	0.8720	-36.0	2.759	-4.5	190.1	27.0	4.854	58.5	1.111	90.0	0.4101
-66.0	0.9330	-34.5	3.032	-3.0	199.6	28.5	4.225	60.0	1.028		
-64.5	0.9698	-33.0	3.413	-1.5	205.7	30.0	3.739	61.5	0.9901		
-63.0	1.009	-31.5	4.005	0.0	203.5	31.5	3.349	63.0	0.9486		
-61.5	1.082	-30.0	4.814	1.5	194.9	33.0	3.027	64.5	0.9201		
-60.0	1.139	-28.5	5.435	3.0	188.4	34.5	2.759	66.0	0.8718		

Current I: 0.100QA Power: 0.2890W Voltage V: 2.900V PF: 0.000

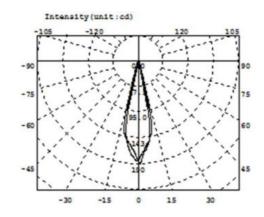
Optical Parameter (Distance=2.559m):

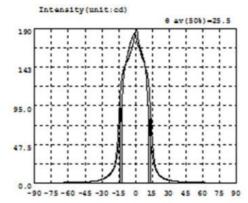
Equivalent Luminous flux: \$\phi\$ eff= 42.261m Efficiency: Eff=146.25lm/W

@(25%): 29.0deg@(50%): 24.6deg@(75%): 18.7deg@(50%): 24.6deg Diffuse angle: @(25%): 29.1deg@(50%): 24.6deg@(75%): 19.0deg@(50%): 24.6deg Diffuse angle: Imax=205.9cd (C=0.0deg,G=-1.0deg) CO-180Plane Imax= 205.9cd(G=-1.0deg)

C0-180Plane I0= 203.5cd







Intensity data: (deg , cd) C0-180

λ	I	λ	I	λ	I	λ	1	λ	1	λ	1
-90.0	0.4586	-58.5	1.230	-27.0	7.049	4.5	160.7	36.0	2.730	67.5	0.8434
-88.5	0.4588	-57.0	1.331	-25.5	8.378	6.0	153.2	37.5	2.481	69.0	0.8077
-87.0	0.5094	-55.5	1.380	-24.0	9.995	7.5	150.4	39.0	2.314	70.5	0.7718
-85.5	0.5098	-54.0	1.471	-22.5	11.13	9.0	139.8	40.5	2.174	72.0	0.7285
-84.0	0.5482	-52.5	1.541	-21.0	14.37	10.5	113.3	42.0	2.042	73.5	0.7006
-82.5	0.5615	-51.0	1.731	-19.5	18.03	12.0	80.27	43.5	1.885	75.0	0.6602
-81.0	0.5993	-49.5	1.816	-18.0	26.30	13.5	50.82	45.0	1.770	76.5	0.6242
-79.5	0.6128	-48.0	1.732	-16.5	42.78	15.0	34.00	46.5	1.668	78.0	0.6007
-78.0	0.6504	-46.5	1.842	-15.0	72.83	16.5	24.26	48.0	1.612	79.5	0.5624
-76.5	0.6896	-45.0	1.840	-13.5	107.9	18.0	17.96	49.5	1.549	81.0	0.5496
-75.0	0.7398	-43.5	1.969	-12.0	131.0	19.5	13.53	51.0	1.463	82.5	0.5113
-73.5	0.7771	-42.0	2.117	-10.5	138.8	21.0	10.64	52.5	1.363	84.0	0.5079
-72.0	0.8164	-40.5	2.289	-9.0	145.0	22.5	8.735	54.0	1.302	85.5	0.4825
-70.5	0.8408	-39.0	2.452	-7.5	154.5	24.0	7.419	55.5	1.242	87.0	0.4459
-69.0	0.8676	-37.5	2.606	-6.0	164.4	25.5	6.401	57.0	1.171	88.5	0.4331
-67.5	0.8734	-36.0	2.833	-4.5	172.6	27.0	5.524	58.5	1.102	90.0	0.3859
-66.0	0.9457	-34.5	3.134	-3.0	177.4	28.5	4.803	60.0	1.073		
-64.5	0.9809	-33.0	3.606	-1.5	182.6	30.0	4.213	61.5	1.009		
-63.0	1.031	-31.5	4.112	0.0	181.8	31.5	3.698	63.0	0.9681		
-61.5	1.048	-30.0	4.912	1.5	173.3	33.0	3.317	64.5	0.9328		
-60.0	1.124	-28.5	5.884	3.0	167.5	34.5	3.014	66.0	0.8718		

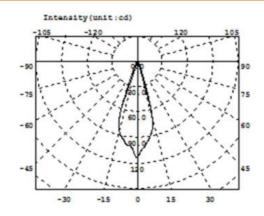
Electricity Parameter:

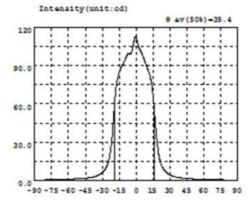
Current I: 0.1000A Power: 0.2890W Voltage V: 2.900V PF: 0.000

Optical Parameter (Distance=2.559m):

CO-180Plane IO= 181.8cd







Intensity data: (deg , cd) C0-180

λ	I	A	I	λ	I	λ	I	λ	1	λ	1
-90.0	0.4713	-58.5	1.320	-27.0	9.741	4.5	100.6	36.0	2.783	67.5	0.8917
-88.5	0.4715	-57.0	1.403	-25.5	12.32	6.0	97.32	37.5	2.520	69.0	0.8662
-87.0	0.4974	-55.5	1.461	-24.0	16.82	7.5	93.96	39.0	2.324	70.5	0.8203
-85.5	0.5353	-54.0	1.561	-22.5	24.82	9.0	90.31	40.5	2.170	72.0	0.7795
-84.0	0.5609	-52.5	1.622	-21.0	37.81	10.5	86.77	42.0	2.029	73.5	0.7434
-82.5	0.5874	-51.0	1.981	-19.5	55.21	12.0	82.78	43.5	1.897	75.0	0.7134
-81.0	0.6242	-49.5	1.954	-18.0	71.02	13.5	76.98	45.0	1.817	76.5	0.6730
-79.5	0.6617	-48.0	1.854	-16.5	79.33	15.0	66.99	46.5	1.702	78.0	0.6369
-78.0	0.7006	-46.5	1.865	-15.0	84.40	16.5	51.26	48.0	1.656	79.5	0.5879
-76.5	0.7151	-45.0	1.973	-13.5	88.00	18.0	35.93	49.5	1.531	81.0	0.5714
-75.0	0.7634	-43.5	2.123	-12.0	90.16	19.5	24.34	51.0	1.472	82.5	0.5350
-73.5	0.7792	-42.0	2.289	-10.5	93.06	21.0	16.44	52.5	1.404	84.0	0.4890
-72.0	0.8431	-40.5	2.448	-9.0	96.20	22.5	12.07	54.0	1.366	85.5	0.4871
-70.5	0.8917	-39.0	2.659	-7.5	98.88	24.0	9.483	55.5	1.268	87.0	0.4459
-69.0	0.8944	-37.5	2.934	-6.0	99.18	25.5	7.763	57.0	1.219	88.5	0.4358
-67.5	0.9554	-36.0	3.344	-4.5	99.77	27.0	6.524	58.5	1.159	90.0	0.4089
-66.0	1.006	-34.5	3.920	-3.0	103.9	28.5	5.431	60.0	1.114		
-64.5	1.057	-33.0	4.540	-1.5	110.5	30.0	4.641	61.5	1.076		
-63.0	1.106	-31.5	5.352	0.0	111.8	31.5	4.010	63.0	0.9996		
-61.5	1.135	-30.0	6.462	1.5	106.9	33.0	3.464	64.5	0.9710		
-60.0	1.210	-28.5	7.901	3.0	102.9	34.5	3.079	66.0	0.9255		

Current I: 0.1000A Power: 0.2890W Voltage V: 2.900V PF: 0.000

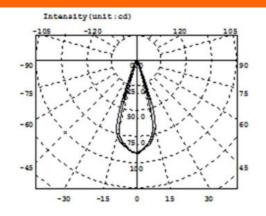
Optical Parameter (Distance=2.559m):

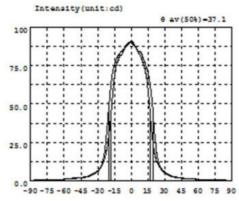
Equivalent Luminous flux: # eff= 41.85lm Efficiency: Eff=144.84lm/W

Diffuse angle: @(25%): 40.9deg@(50%): 35.4deg@(75%): 26.4deg@(50%): 35.4deg
Diffuse angle: @(25%): 40.9deg@(50%): 35.4deg@(75%): 26.7deg@(50%): 35.4deg
Imax=112.4cd (C=0.0deg,G=-0.5deg)
C0-180Plane Imax= 112.4cd (G=-0.5deg)

CO-180Plane IO= 111.8cd







Intensity data: (deg , cd) C0-180

λ	I	λ	1	λ	I	λ	I	λ	I	λ	I
-90.0	0.4713	-58.5	1.386	-27.0	9.475	4.5	86.22	36.0	3.258	67.5	0.9454
-88.5	0.4715	-57.0	1.430	-25.5	12.57	6.0	83.93	37.5	2.907	69.0	0.9096
-87.0	0.4850	-55.5	1.507	-24.0	17.84	7.5	82.16	39.0	2.655	70.5	0.8482
-85.5	0.5350	-54.0	1.571	-22.5	26.76	9.0	80.00	40.5	2.501	72.0	0.7994
-84.0	0.5609	-52.5	1.790	-21.0	39.22	10.5	76.98	42.0	2.293	73.5	0.7875
-82.5	0.5615	-51.0	2.277	-19.5	52.24	12.0	73.14	43.5	2.144	75.0	0.7388
-81.0	0.6242	-49.5	2.206	-18.0	63.49	13.5	68.05	45.0	2.025	76.5	0.6921
-79.5	0.6745	-48.0	2.085	-16.5	71.15	15.0	59.58	46.5	1.871	78.0	0.6752
-78.0	0.7014	-46.5	1.980	-15.0	75.47	16.5	47.70	48.0	1.740	79.5	0.6389
-76.5	0.7406	-45.0	2.079	-13.5	78.19	18.0	34.74	49.5	1.638	81.0	0.5678
-75.0	0.7771	-43.5	2.206	-12.0	80.83	19.5	24.45	51.0	1.532	82.5	0.5495
-73.5	0.8046	-42.0	2.359	-10.5	82.63	21.0	17.54	52.5	1.454	84.0	0.5223
-72.0	0.8523	-40.5	2.573	-9.0	83.79	22.5	13.38	54.0	1.392	85.5	0.5096
-70.5	0.8802	-39.0	2.844	-7.5	84.98	24.0	10.87	55.5	1.331	87.0	0.4586
-69.0	0.9313	-37.5	3.275	-6.0	85.92	25.5	9.226	57.0	1.271	88.5	0.4459
-67.5	0.9823	-36.0	3.706	-4.5	87.36	27.0	7.890	58.5	1.248	90.0	0.3859
-66.0	1.009	-34.5	4.213	-3.0	89.14	28.5	6.748	60.0	1.171		
-64.5	1.060	-33.0	4.740	-1.5	90.17	30.0	5.826	61.5	1.111		
-63.0	1.098	-31.5	5.535	0.0	89.56	31.5	4.945	63.0	1.082		
-61.5	1.155	-30.0	6.321	1.5	88.87	33.0	4.289	64.5	1.028		
-60.0	1.277	-28.5	7.587	3.0	87.67	34.5	3.774	66.0	1.009		

Current I: 0.1000A Power: 0.2890W Voltage V: 2.900V PF: 0.000

Optical Parameter (Distance=2.559m):

Equivalent Luminous flux: Φ eff= 39.67lm Efficiency: Eff=137.27lm/W

CO-180Plane IO= 89.56cd



																_
		_	Standard size	Upper Size limit		wer ze mit	79	60	7962	7963	7964	7965	7966	7967		Judg e
1.Size	diamet	er	42.8	42. 95	42. 65		42.	79	42.9	42.9	42.8	42.8	42.9	42.9		
1.0120	thickness		3	3. 1	2.	9	3.	02	3. 06	3. 01	3. 04	2. 97	2. 99	3. 03		
				Gate shear	can n	ot affe	ect the	арре	earanc	e of t	he lan	np				
		See attachment "Appearance Inspection Standards"														
2.Appearance "Anneara		See achment pearance	E		١	No bur	r	No	ourr	No I	burr	١	No bui	۲r	OK	
Quality		In	spection andards"			N	o stair	าร	No s	tains	No s	tains	N	o stai	ns	
3.Materia	3.Material			PC					Co	lor		Tra	nspa	rent		ОК
	Testing I	LED					С	REE)	XPE_3	35						
	FWH	M				S	ee ligh	nt dist	ributio	n cur	ve					
			angle	angle trans			Judg e	lg		angle		angle			smitt nce	Judge
4.Optica			36±3° X4 ±1°	34.8° X3.8°	96.	00%		179	961	25± X10=		24. X10.		96.	00%	
I index	17962	17962 36 z X10		35.3° X12.1°	96.	30%		179	963	25±	:2°	24.	6°	96.	20%	
	17964	17964 25		25.6° X25.5°	96.	10%		179	965	25± X36=		24. X35.		96.	40%	
	17966	6	36±3°	35. 4°	96. 30%			17967 ^{36X3}		36X3	6X36±3 37° 3		X37. 2	96.	10%	
	Facula	See	the signatu	ire sample				`								
	hensive ment									Qua	alified					
Microscope P-Needle T- Thick Gauge R-Radius Gauge E-Visual. 2. Test environment: In 20 Carrot Carronment to				Length 1	5		t size	chan	ges w	vith t	empe		Size Size Size Size Size	e: 500 e: 100 e: 150 e: 200 e: 250	0mm 0mm 0mm	
Precaution	ns:															

Precautions:

- 1、Wear clean gloves during lens assembly to prevent contamination of the lens surface.
- 2. Take the lens try to avoid touching the total reflection surface.
- 3. When the lens surface contamination, you can only gently wipe with soft cotton sticky neat neutral solvent, not allowed to wipe with industrial solvents.



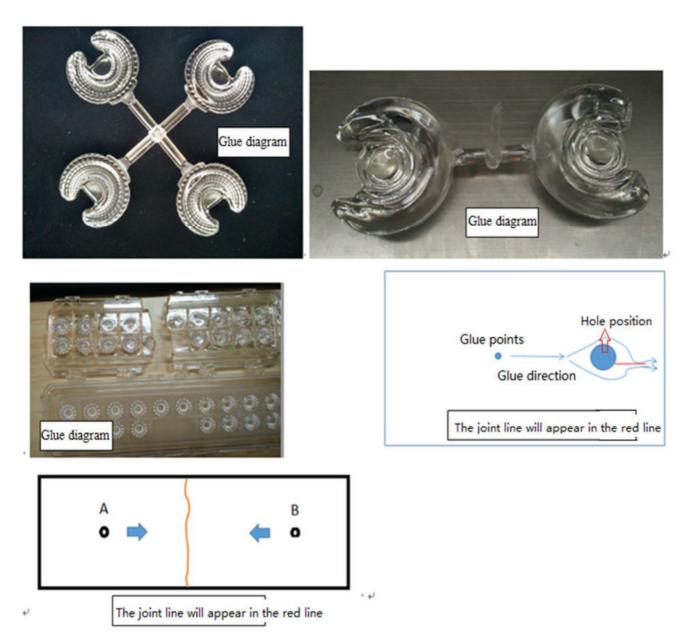
PI	N	HK-43@04-4X36-	XPE_35-01-1g-1	Product Name	Linear Lens	(4°X36°	')		
Product	material	P	<u> </u>	Customer					
Package diagram		单	↑ PE模封	→ GRANN					
Donado et		8	The number of	48	ne layer numb	ne layer number			
Product	packing	384	Floor/Carton						
	NO.	Part No	Part name	Size	Dosage	Unit	Remarks		
	1	2.08.0001	PE film	30cm*30cm	384	BAG			
Packagin	2	2.06.0005	Reel label paper	6.2cm*8cm	384	PCS			
g Materials	3	2.06.0005	Box label paper	6.2cm*9.2cm	1	PCS			
	4	2.06.0007	Middle plate	39*29cm	9	PCS			
	5	2.06.00012	Middle carton	40*30*26cm	1	PCS			
Remarks	Scattered packaging is not subject to this specification								

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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:



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	Ħ	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, chip should be from the lens surface 500-550mm, in order to make the bad appearance can be correctly found, the illumination should not be less than 500Lux;
 - 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	ludging standard	Inspection equipment	Defec	t level	
resciteriis	Judging standard	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		1	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 things, impurities	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.	Visual, point card		V	
	appearance of the exposed surface after assembly are not allowed to have a strain, and the structural surface does not allow visual obvious strain.				
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	 1 : Product does not allow the presence of flow marks and welding lines unless the structure can not be avoided; 2: The remaining flow marks shall not appear in the optical surface, a single L ≤ 10mm, no more than two 	Visual		٧	

Bubble	No bubbles are allowed	Visual		√	
Foreign matter、Dark 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;				
Bad incision	2: Laser cutting products, the optical surface burns shall not occur after the processing is completed. Beading must not affect product installation	Visual			√
	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 \leq 1 mm and no more than 1 area within a 50x50 mm area	Visual		√	