Product Approval

Approval number:

Customer:

Manufacturer: Chengdu HercuLux Photoelectric Technology Co.,Ltd

PN	Code	Product
HK-72@33-12-D9-20-1g-1	1. 01. 6914	HK 72@33-12° lens



	Supplier confirmat	ion	Client 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, 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, 501-

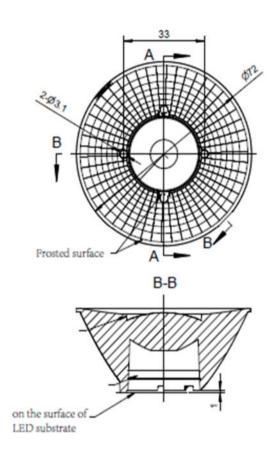
TEL: 0755-2937 1541 FAX: 0755-2907 5140

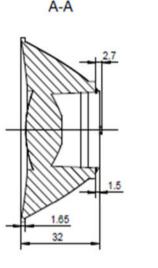
*Approval In duplicate, for both supplier and customer.

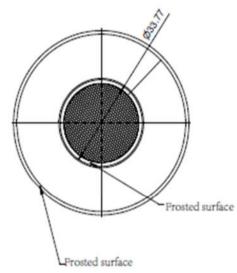


TEL: 0755-2937 1541 FAX: 0755-2907 5140 www.hkoptics.com Date updated: 2020/7/7

Product Picture:	
PN:	HK-72@33-12-D9-20-1g-1
Size(L*W*H/Φ*H):	Ф:72mm; H:32mm
Material:	PMMA
Effiency:	\
Temperature(Topr):	-40°C to +80°C
FWHM:	12°
Matched LES:	D9





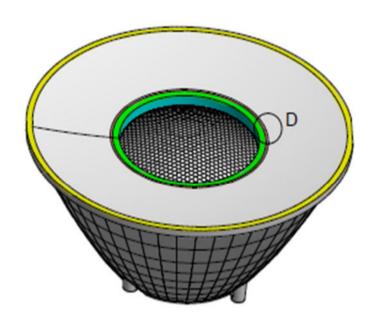


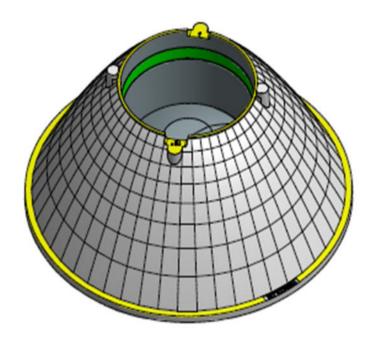
- 1. The 3D map is not indicated for rounded corners and draft angle.
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.

Optical design					HK-72@33-12-D9-20-1g-1					
tructure desig		HK 72	@33-12º lens		1.01.6914					
Review						qty	we	ight		
Validation	Material:			СДНК						

MT5	Basic size	<3	3∼10	24~65	65~140	140~25	0 250	~450	>45	0		
Tolerance	Dusic size	`3	5 10	2+ 05	05 140	170 23	0 230	430	,	Ü		
	aloranco valu	±0.1	±0.15	±0.35	±0.50	±0.80		1 2	±2.0	,		
table (mm)	olerance valu	±0.1	±0.15	±0.55	±0.50	±0.60		1.2	±2.0	'		

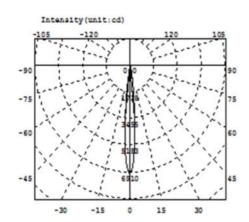


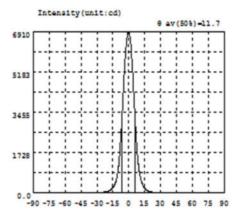




IES----







Intensity data: (deg , cd) C0-180

λ	1	λ	1	λ	1	λ	I	λ	1	λ	1
-90.0	1.412	-58.5	5.253	-27.0	19.92	4.5	4377	36.0	7.681	67.5	3.250
-88.5	1.785	-57.0	5.361	-25.5	25.89	6.0	3083	37.5	7.178	69.0	2.944
-87.0	1.921	-55.5	5.431	-24.0	35.40	7.5	1964	39.0	6.803	70.5	2.690
-85.5	2.023	-54.0	5.564	-22.5	47.66	9.0	1220	40.5	6.594	72.0	2.446
-84.0	2.079	-52.5	5.716	-21.0	60.06	10.5	761.8	42.0	6.511	73.5	2.142
-82.5	2.192	-51.0	5.872	-19.5	78.63	12.0	483.7	43.5	6.417	75.0	1.939
-81.0	2.261	-49.5	6.008	-18.0	110.4	13.5	292.2	45.0	6.311	76.5	1.705
-79.5	2.373	-48.0	6.140	-16.5	160.0	15.0	191.2	46.5	6.153	78.0	1.545
-78.0	2.397	-46.5	6.314	-15.0	233.4	16.5	129.4	48.0	6.017	79.5	1.362
-76.5	2.473	-45.0	6.400	-13.5	344.6	18.0	90.77	49.5	5.900	81.0	1.158
-75.0	2.532	-43.5	6.527	-12.0	529.7	19.5	66.01	51.0	5.859	82.5	1.008
-73.5	2.819	-42.0	6.688	-10.5	859.1	21.0	50.98	52.5	5.768	84.0	0.9166
-72.0	3.024	-40.5	6.996	-9.0	1453	22.5	38.57	54.0	5.673	85.5	0.8600
-70.5	3.227	-39.0	7.455	-7.5	2414	24.0	28.19	55.5	5.532	87.0	0.8361
-69.0	3.489	-37.5	8.033	-6.0	3629	25.5	20.89	57.0	5.365	88.5	0.6850
-67.5	3.761	-36.0	8.670	-4.5	4940	27.0	16.64	58.5	5.115	90.0	0.5919
-66.0	4.043	-34.5	9.570	-3.0	6032	28.5	13.73	60.0	4.838		
-64.5	4.333	-33.0	10.68	-1.5	6714	30.0	11.66	61.5	4.529		
-63.0	4.662	-31.5	11.74	0.0	6899	31.5	10.14	63.0	4.249		
-61.5	4.850	-30.0	13.35	1.5	6491	33.0	9.106	64.5	3.920		
-60.0	5.105	-28.5	16.09	3.0	5585	34.5	8.314	66.0	3.578		

Electricity Parameter:

Current I: 0.1000A Power: 3.440W Voltage V: 34.40V PF: 1.000

Optical Parameter (Distance=2.410m):

Diffuse angle: @(25%): 16.4deg@(50%): 11.7deg@(75%): 7.7deg @(50%): 11.7deg

Diffuse angle: @(25%): 16.4deg@(50%): 11.7deg@(75%): 7.7deg @(50%): 11.7deg

Imax=6902cd (C=0.0deg,G=-0.5deg)

CO-180Plane Imax= 6902cd(G=-0.5deg)

CO-180Plane IO= 6899cd



			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	diamet	er	72			71. 98	71.96				Test environment: In 20 °C -25 °C
1.Size	heigh	t	32			32. 23	32. 25				environment to achieve thermal equilibrium after the
	thickne	ess	1.65			1. 72	1.7				test.
				Gate shear can not affect the appearance of the lamp					amp		
				See	attachment	: "Appearan	ce Inspecti	on Standar	ds"		
	See attachr 2.Appearance "Appear			E	1	No burr	No burr	No burr	No bui	rr	OK
Quality	Inspec		pection ndards"	_	N	o stains	No stains	No stains	No stai	ns	Ö.K
3.Materia	al			PMM	4		Color	Tra	nsparent		OK
	Testing	ED					D9				
4.Optica	to the so	ource o	of the test,	if it is requ	ired to be c	out of range ent, the lens	. According	to the heat fully tested	t dissipatio	n capa	ald be comparable ability of the lamp event the lens life.
I index	angle	9				11.5	11. 4				
	K-val	ue				17.82	17.58				
	Efficie	ency				87. 54	89. 13				
	Facula	See th	he signatu	re sample		`					
	ehensive ment						Qı	ualified			
				Length		1A produc	t size chan	ges with t	emperatu	ıre ta	able
Caliper 2 Height Ga Microsco Thick Ga Gauge E- 2、Ambi	Number: V D-Quadra auge M-To pe P-Need luge R-Ra -Visual. ient tempe	tic H- pol dle T- dius erature	e on	change (mm	0.8 0.8 0.7 0.6 0.5 0.4 0.3 0.2				*	Siz Siz Siz	ze: 50mm ze: 100mm ze: 150mm ze: 200mm ze: 250mm
	of the prod		fer		0.1	10	20	30	40 (°C)		

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.
- 4. The working temperature of the lens should be within the temperature limit of the lens material. Exceeding the temperature limit will cause damage to the lens and affect the service life of the lens.



P	N	HK-72@33-12-D9-20-	1g-1	Product Name	HK 72@33-	-12º lens	3		
Product	material	PMMA		Customer					
Package	diagram	Single Vacuum package Box package							
Product	packing	8	A/ Box	4	pcs/Layer				
	3	4	Layer/Box	128	A/ Carton				
	NO.	Part No	Part name	Size	Dosage	Unit	Remarks		
	1	2.07.0080	Blister box	23cm*21cm	16	BAG			
Dealessin	2	2.08.0001	PE film	30cm*30cm	16	PCS			
Packagin g	3	2.06.0005	Reel label paper	6.2cm*8cm	16	PCS			
Materials	4	2.06.0005	Box label paper	6.2cm*9.2cm	1	PCS			
	5	2.06.0003	big plate	46.8cm*42.8cm	5	PCS			
	6	2.06.0015	big flat carton	48cm*44cm*19cn	1 1	PCS			
Remarks		The loose packing is not subject	ct to this specif	ïcation. Customer's	requirements shall _l	orevail			



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.

The joint line will appear in the red line



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	Ι	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	ludging atondard	Inspection equipment	Defec		
restitems	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		Ī	Ī	
	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	 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	✓	

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	√		
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		√	



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

Approval number:

Customer:

PN	Code	Product
HK-72@33-20-1820-20-1g-1	1. 01. 5435	SX-20° (1820) Lens
HK-72@33-15-1820-20-1g-1	1. 01. 5436	SX-15° (1820) Lens
HK-72@33-24-D9-20-1g-1	1. 01. 6771	SX-24° (D9) Lens
HK-72@33-36-D9-20-1g-1	1. 01. 6878	SX-36° (D9) Lens
HK-72@33-60-D9-20-1g-1	1. 01. 81460	HK-60° (D9) Lens

Manufacturer: Chengdu HercuLux Photoelectric Technology Co.,Ltd



	Supplier co	onfirmation		Client cor	nfirmation	
Proposed		DATE	Qualified□		D.4.TF	
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, 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.

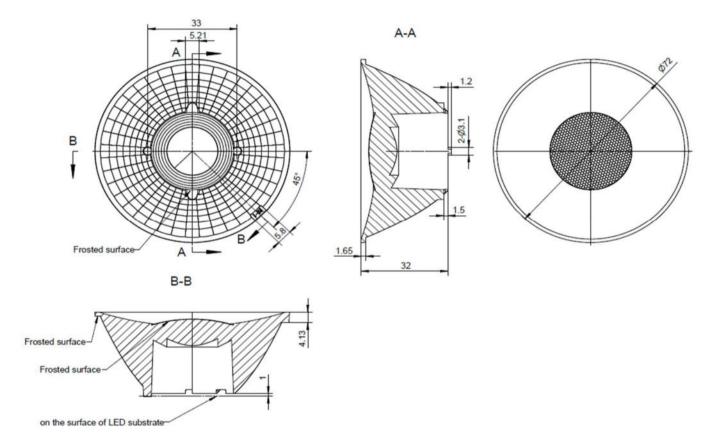


HERCULUX 恒坤光电 Product Approval

TEL: 0755-2937 1541 Date updated: 2019/2/15 FAX: 0755-2907 5140 www.hkoptics.com

Product Picture:	
PN:	HK-72@33-20-1820-20-1g-1
Size(L*W*H/Φ*H):	Ф:72mm; H:33.2mm
1.07.81418_HK-166@03-0223-S	PMMA
Effiency:	\
Temperature(Topr):	-40°C to +80°C
FWHM:	15°/20°/24°/36°/60°
Matched LES:	CREE1820

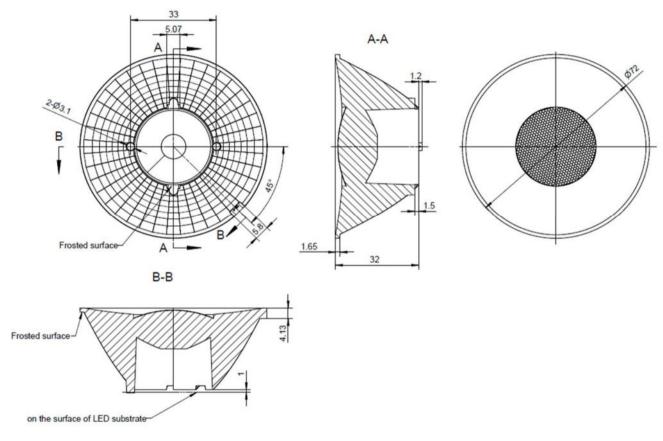




- 1. The 3D map is not indicated for rounded corners and draft angle.
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.

(Optical	design							HK-72@33-20-1820-20-1g-1						
it	tructure desig						SX-20°	SX-20° (1820) Lens			1.01.5435				
	Review						umber o	f drawin	qty	we	ight				
	Validation						Material:	PMMA			CDHK				



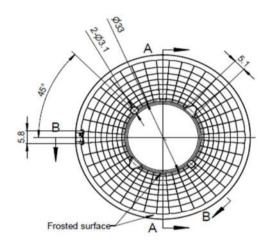


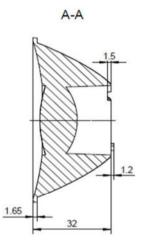
- 1. The 3D map is not indicated for rounded corners and draft angle.
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.

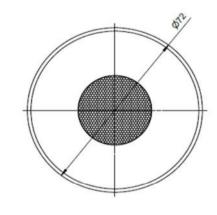
Optical design			ŀ	HK-72@	33-15-1820-2	0-1g-1			
tructure desig	SX-15°	SX-15° (1820) Lens			1.01.5436				
Review	7				qty	we	ight		
Validation	Material:	PMMA		CDHK					

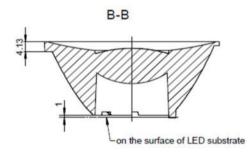
MT5	Basic size	<3	3~10	24~65	65~140	140~250	250~450	>450
Tolerance table (mm)	olerance valu	±0.1	±0.15	±0.35	±0.50	±0.80	±1.2	±2.0









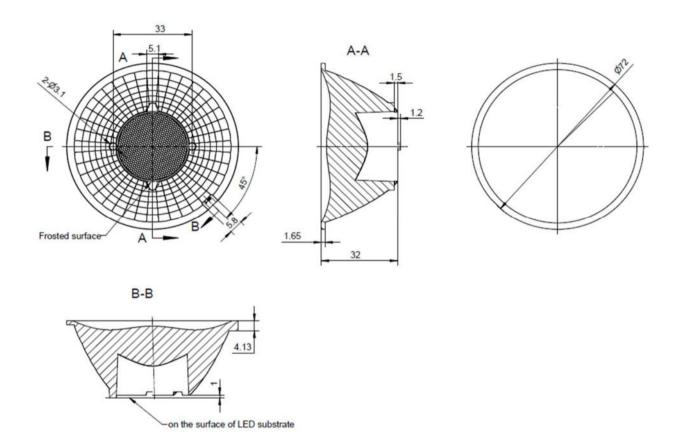


- 1. The 3D map is not indicated for rounded corners and draft angle.
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.

Optical design					HK-72	@33-24-D9-20)-1g-1			
tructure desig		SX-24	SX-24° (D9) Lens			1.01.6771				
Review			umber of	drawin	qty	we	ight			
Validation		Material:	PMMA	CDHK						

MT5	Basic size	<3	3∼10	24~65	65~140	140~250	250~45) >2	450
Tolerance		_							
		. 0 1	10.45	.0.25	.0.50	10.00	11.2		
table (mm)	olerance valu	±0.1	±0.15	±0.35	±0.50	±0.80	±1.2	±Z	2.0



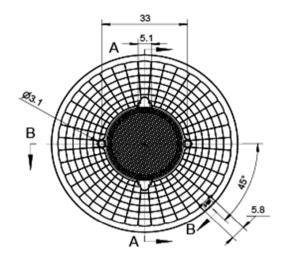


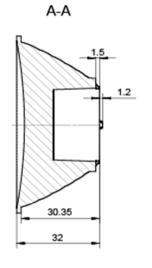
- 1. The 3D map is not indicated for rounded corners and draft angle.
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.

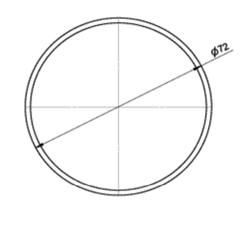
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tructure desig		SX-36	° (D9) Lens		1.01.6878					
Review				umber of drawin	qty	weight				
Validation		Material:	PMMA	CDHK						

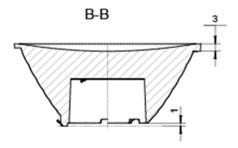
MT5 Tolerance	Basic size	<3	3∼10	24~65	65~140	140~250	250~	450 >	450				
	olerance valu	±0.1	±0.15	±0.35	±0.50	±0.80	±1.2	2 ±	2.0				











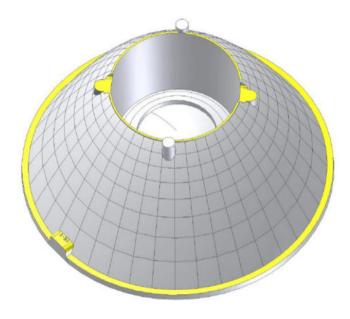
- 1. The 3D map is not indicated for rounded corners and draft angle.
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.

	Optical o	lesign								HK-72@33-60-D9-20-1g-1						
,	tructure desig						HK-60			1.01.81460						
	Review						umber o	f drawin	qty	we	ight					
	Valida					Material:	PMMA		CDHK							

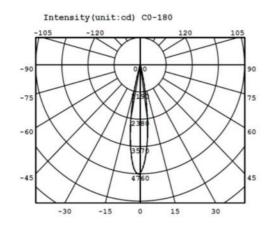
	MT5	Basic size	<3	3~10	24~65	65~140	140~250	250~	~450	>450)		
$\frac{1}{100}$ blerance value $\frac{1}{100}$ \frac	olerance ble (mm)	olerance valu	±0.1	±0.15	±0.35	±0.50	±0.80	±1	.2	±2.0			

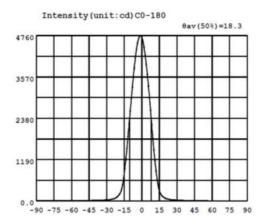












Intensity data: (deg , cd) C0-180

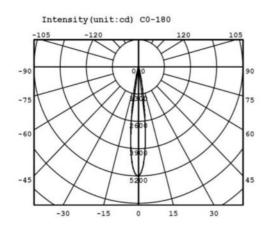
A	I	A	I	A	I	A	I	A	I	A	I
-90.0	13.34	-58.5	13.52	-27.0	40.61	4.5	3732	36.0	16.06	67.5	5.199
-88.5	12.90	-57.0	13.75	-25.5	50.22	6.0	3206	37.5	15.07	69.0	4.947
-87.0	12.68	-55.5	14.00	-24.0	61.26	7.5	2625	39.0	14.20	70.5	4.710
-85.5	12.80	-54.0	14.19	-22.5	83.25	9.0	1982	40.5	13.38	72.0	4.409
-84.0	12.67	-52.5	14.35	-21.0	119.7	10.5	1414	42.0	12.59	73.5	3.853
-82.5	12.49	-51.0	14.49	-19.5	171.9	12.0	916.7	43.5	11.85	75.0	3.173
-81.0	12.32	-49.5	14.62	-18.0	258.7	13.5	539.9	45.0	11.21	76.5	0.4586
-79.5	12.32	-48.0	14.84	-16.5	434.2	15.0	289.1	46.5	10.75	78.0	0.3758
-78.0	12.29	-46.5	15.15	-15.0	779.4	16.5	185.3	48.0	10.44	79.5	0.2984
-76.5	12.28	-45.0	15.55	-13.5	1234	18.0	124.8	49.5	10.11	81.0	0.2707
-75.0	12.28	-43.5	16.02	-12.0	1760	19.5	88.24	51.0	9.715	82.5	0.2610
-73.5	12.24	-42.0	16.59	-10.5	2333	21.0	65.04	52.5	9.314	84.0	0.2511
-72.0	12.16	-40.5	17.18	-9.0	2926	22.5	52.00	54.0	8.915	85.5	0.2694
-70.5	12.10	-39.0	17.82	-7.5	3469	24.0	43.62	55.5	8.466	87.0	0.3008
-69.0	12.10	-37.5	18.57	-6.0	3957	25.5	35.44	57.0	8.007	88.5	0.2731
-67.5	12.23	-36.0	19.41	-4.5	4364	27.0	29.66	58.5	7.600	90.0	0.2718
-66.0	12.39	-34.5	20.60	-3.0	4637	28.5	25.28	60.0	7.176		
-64.5	12.57	-33.0	22.64	-1.5	4749	30.0	22.04	61.5	6.682		
-63.0	12.81	-31.5	25.27	0.0	4717	31.5	19.87	63.0	6.233		
-61.5	13.02	-30.0	28.77	1.5	4518	33.0	18.14	64.5	5.857		
-60.0	13.26	-28.5	33.60	3.0	4169	34.5	17.05	66.0	5.473		

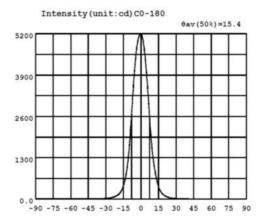
Current I: 0.2000A Power: 3.339W Voltage V: 33.40V PF: 1.000

Optical Parameter (Distance=2.410m):

C0-180Plane I0= 4717cd







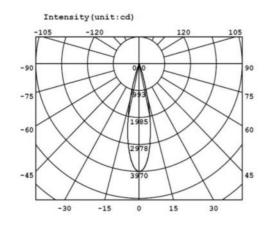
Intensity data: (deg , cd) C0-180

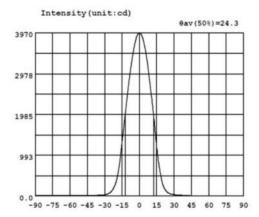
A	I	A	I	A	I	A	I	A	I	A	I
-90.0	12.05	-58.5	11.61	-27.0	32.39	4.5	4097	36.0	10.43	67.5	4.383
-88.5	11.70	-57.0	11.58	-25.5	43.08	6.0	3363	37.5	9.696	69.0	3.991
-87.0	11.42	-55.5	11.48	-24.0	57.33	7.5	2529	39.0	9.194	70.5	3.634
-85.5	11.17	-54.0	11.41	-22.5	75.69	9.0	1782	40.5	8.929	72.0	3.336
-84.0	10.90	-52.5	11.28	-21.0	100.6	10.5	1257	42.0	8.746	73.5	3.011
-82.5	10.70	-51.0	11.20	-19.5	136.4	12.0	876.5	43.5	8.674	75.0	2.726
-81.0	10.59	-49.5	11.11	-18.0	191.0	13.5	599.3	45.0	8.567	76.5	2.407
-79.5	10.54	-48.0	11.04	-16.5	274.8	15.0	391.3	46.5	8.379	78.0	2.146
-78.0	10.50	-46.5	10.97	-15.0	416.2	16.5	264.3	48.0	8.137	79.5	1.949
-76.5	10.45	-45.0	10.85	-13.5	618.6	18.0	183.4	49.5	7.930	81.0	1.865
-75.0	10.45	-43.5	10.74	-12.0	931.2	19.5	129.7	51.0	7.769	82.5	1.782
-73.5	10.46	-42.0	10.76	-10.5	1416	21.0	93.93	52.5	7.616	84.0	1.720
-72.0	10.52	-40.5	11.02	-9.0	2137	22.5	68.93	54.0	7.508	85.5	1.693
-70.5	10.63	-39.0	11.42	-7.5	2944	24.0	49.26	55.5	7.403	87.0	1.729
-69.0	10.72	-37.5	11.97	-6.0	3765	25.5	35.01	57.0	7.221	88.5	1.779
-67.5	10.90	-36.0	12.78	-4.5	4436	27.0	25.87	58.5	6.970	90.0	1.830
-66.0	11.05	-34.5	13.91	-3.0	4899	28.5	20.69	60.0	6.657		
-64.5	11.23	-33.0	15.44	-1.5	5138	30.0	17.14	61.5	6.285		
-63.0	11.40	-31.5	17.47	0.0	5191	31.5	14.59	63.0	5.847		
-61.5	11.55	-30.0	20.22	1.5	5040	33.0	12.71	64.5	5.249		
-60.0	11.58	-28.5	24.69	3.0	4672	34.5	11.43	66.0	4.799		

Current I: 0.1000A Power: 3.240W Voltage V: 32.40V PF: 1.000

Optical Parameter (Distance=2.559m):







Intensity data: (deg , cd) C0-180

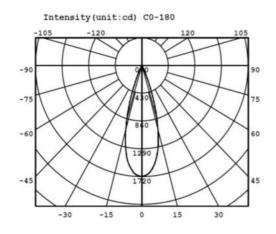
A	I	A	I	A	I	A	I	A	I	A	I
-90.0	18.65	-58.5	17.52	-27.0	57.27	4.5	3656	36.0	22.10	67.5	7.292
-88.5	18.13	-57.0	17.35	-25.5	82.98	6.0	3425	37.5	19.53	69.0	6.685
-87.0	17.67	-55.5	17.07	-24.0	123.3	7.5	3127	39.0	17.50	70.5	6.132
-85.5	17.30	-54.0	16.75	-22.5	184.0	9.0	2774	40.5	16.03	72.0	5.608
-84.0	16.86	-52.5	16.39	-21.0	276.9	10.5	2415	42.0	14.81	73.5	5.176
-82.5	16.45	-51.0	16.06	-19.5	416.4	12.0	2035	43.5	13.82	75.0	4.818
-81.0	16.21	-49.5	15.85	-18.0	625.0	13.5	1630	45.0	12.98	76.5	4.470
-79.5	16.09	-48.0	15.73	-16.5	928.3	15.0	1214	46.5	12.46	78.0	4.209
-78.0	16.08	-46.5	15.70	-15.0	1307	16.5	860.4	48.0	12.19	79.5	4.015
-76.5	16.04	-45.0	15.82	-13.5	1671	18.0	582.2	49.5	12.16	81.0	3.891
-75.0	16.08	-43.5	16.12	-12.0	2042	19.5	367.5	51.0	12.21	82.5	3.937
-73.5	16.09	-42.0	16.53	-10.5	2422	21.0	229.6	52.5	12.14	84.0	4.160
-72.0	16.20	-40.5	17.18	-9.0	2791	22.5	150.8	54.0	11.98	85.5	4.426
-70.5	16.30	-39.0	18.18	-7.5	3109	24.0	101.4	55.5	11.70	87.0	4.585
-69.0	16.53	-37.5	19.38	-6.0	3392	25.5	71.44	57.0	11.40	88.5	4.836
-67.5	16.89	-36.0	20.99	-4.5	3633	27.0	53.97	58.5	11.06	90.0	5.165
-66.0	17.08	-34.5	23.22	-3.0	3820	28.5	44.34	60.0	10.60		
-64.5	17.29	-33.0	26.19	-1.5	3927	30.0	37.55	61.5	9.959		
-63.0	17.45	-31.5	29.33	0.0	3969	31.5	32.61	63.0	9.239		
-61.5	17.55	-30.0	33.51	1.5	3940	33.0	28.77	64.5	8.615		
-60.0	17.58	-28.5	41.39	3.0	3839	34.5	25.23	66.0	7.986		

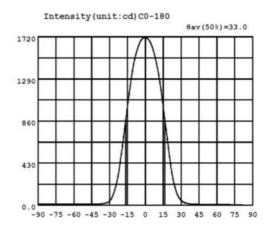
Current I: 0.1000A Power: 3.319W Voltage V: 33.20V PF: 1.000

Optical Parameter (Distance=2.559m):

C0-180Plane I0= 3969cd







Intensity data: (deg , cd) C0-180

A	I	A	I	A	I	A	I	A	I	A	I
-90.0	14.11	-58.5	12.13	-27.0	107.4	4.5	1657	36.0	16.80	67.5	6.576
-88.5	13.82	-57.0	11.65	-25.5	161.6	6.0	1609	37.5	14.33	69.0	6.326
-87.0	13.70	-55.5	11.27	-24.0	231.2	7.5	1548	39.0	12.37	70.5	6.002
-85.5	13.41	-54.0	10.94	-22.5	321.2	9.0	1471	40.5	11.09	72.0	5.668
-84.0	12.95	-52.5	10.70	-21.0	444.3	10.5	1382	42.0	10.07	73.5	5.185
-82.5	12.68	-51.0	10.57	-19.5	579.9	12.0	1273	43.5	9.126	75.0	4.622
-81.0	12.68	-49.5	10.51	-18.0	720.9	13.5	1146	45.0	8.405	76.5	4.069
-79.5	12.75	-48.0	10.54	-16.5	861.5	15.0	1003	46.5	7.848	78.0	3.626
-78.0	12.83	-46.5	10.64	-15.0	1009	16.5	865.6	48.0	7.394	79.5	3.670
-76.5	13.10	-45.0	10.92	-13.5	1147	18.0	725.7	49.5	6.999	81.0	3.088
-75.0	13.34	-43.5	11.38	-12.0	1276	19.5	579.8	51.0	6.704	82.5	2.654
-73.5	13.51	-42.0	11.88	-10.5	1395	21.0	438.5	52.5	6.539	84.0	2.693
-72.0	13.61	-40.5	12.48	-9.0	1491	22.5	315.4	54.0	6.464	85.5	2.828
-70.5	13.68	-39.0	13.34	-7.5	1561	24.0	227.0	55.5	6.472	87.0	2.423
-69.0	13.65	-37.5	14.39	-6.0	1618	25.5	157.9	57.0	6.596	88.5	2.148
-67.5	13.61	-36.0	15.99	-4.5	1664	27.0	106.6	58.5	6.816	90.0	2.185
-66.0	13.58	-34.5	18.18	-3.0	1695	28.5	73.19	60.0	6.966		
-64.5	13.39	-33.0	21.83	-1.5	1710	30.0	50.42	61.5	7.036		
-63.0	13.18	-31.5	28.77	0.0	1713	31.5	35.34	63.0	7.033		
-61.5	12.92	-30.0	42.45	1.5	1707	33.0	25.82	64.5	6.955		
-60.0	12.59	-28.5	67.16	3.0	1688	34.5	20.40	66.0	6.729		

Current I: 0.1000A Power: 3.310W Voltage V: 33.09V PF: 1.000

Optical Parameter (Distance=2.559m):

Diffuse angle: @(25%): 42.2deg@(50%): 33.0deg@(75%): 23.6deg@(50%): 33.0deg

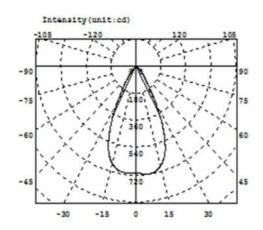
Diffuse angle: @(25%): 42.2deg@(50%): 33.0deg@(75%): 23.6deg@(50%): 33.0deg

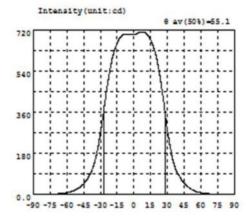
Imax=1714cd (C=0.0deg,G=-0.5deg)

C0-180Plane Imax= 1714cd(G=-0.5deg)

C0-180Plane I0= 1713cd







Intensity data: (deg , cd) C0-180

λ	I	Α	I	λ	I	A	I	A	1	λ	I
-90.0	0.4180	-58.5	11.05	-27.0	368.8	4.5	707.4	36.0	128.4	67.5	4.170
-88.5	0.5313	-57.0	12.90	-25.5	421.7	6.0	709.6	37.5	109.0	69.0	3.735
-87.0	0.6902	-55.5	14.95	-24.0	470.3	7.5	711.9	39.0	94.33	70.5	3.336
-85.5	0.8374	-54.0	17.60	-22.5	515.7	9.0	710.4	40.5	81.95	72.0	2.988
-84.0	0.9501	-52.5	20.77	-21.0	556.6	10.5	706.2	42.0	70.41	73.5	2.628
-82.5	1.007	-51.0	24.57	-19.5	592.5	12.0	699.1	43.5	59.05	75.0	2.341
-81.0	1.142	-49.5	28.97	-18.0	621.5	13.5	688.5	45.0	49.63	76.5	2.103
-79.5	1.279	-48.0	34.09	-16.5	644.0	15.0	674.1	46.5	42.09	78.0	1.897
-78.0	1.508	-46.5	40.42	-15.0	661.8	16.5	657.2	48.0	35.45	79.5	1.714
-76.5	1.803	-45.0	47.61	-13.5	676.6	18.0	636.9	49.5	29.76	81.0	1.589
-75.0	2.182	-43.5	55.91	-12.0	687.9	19.5	611.4	51.0	24.95	82.5	1.517
-73.5	2.610	-42.0	66.45	-10.5	695.3	21.0	578.6	52.5	20.74	84.0	1.502
-72.0	3.074	-40.5	79.61	-9.0	699.4	22.5	536.6	54.0	17.19	85.5	1.504
-70.5	3.552	-39.0	92.24	-7.5	701.7	24.0	491.4	55.5	14.23	87.0	1.407
-69.0	4.075	-37.5	107.9	-6.0	702.3	25.5	440.7	57.0	11.90	88.5	1.281
-67.5	4.700	-36.0	127.7	-4.5	702.0	27.0	387.9	58.5	10.09	90.0	1.210
-66.0	5.334	-34.5	153.7	-3.0	702.1	28.5	327.6	60.0	8.563		
-64.5	6.096	-33.0	185.6	-1.5	700.0	30.0	277.4	61.5	7.258		60 10
-63.0	7.075	-31.5	223.7	0.0	700.0	31.5	231.3	63.0	6.194		
-61.5	8.218	-30.0	268.6	1.5	701.9	33.0	190.3	64.5	5.377		
-60.0	9.541	-28.5	316.9	3.0	705.1	34.5	155.4	66.0	4.713		

Current I: 0.1000A Power: 3.270W Voltage V: 32.70V PF: 1.000

Optical Parameter (Distance=2.410m):

Diffuse angle: @(25%): 66.7deg@(50%): 55.1deg@(75%): 44.3deg@(50%): 55.1deg

Diffuse angle: @(25%): 67.1deg@(50%): 55.4deg@(75%): 44.9deg@(50%): 55.4deg

Imax=712.1cd (C=0.0deg,C=8.0deg)

C0-180Plane Imax= 712.1cd(C=8.0deg)

CO-180Plane IO= 700.0cd



				1					ī		
			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	diamet	er	72			72.12	72.15	72.14			
	height	:1	32			31.98	32	31.99			Test environment: In 20 °C -25 °C
1.Size	height	:2	30.35			30.49	30.4	30.45			environment to achieve thermal equilibrium after the
	Registra mast		3.1			3.1	3.12	3.11			test.
	Location colum		33			33.1	33	33.05			
				Gate	shear can	not affect th	ne appearar	nce of the la	amp		
				See	attachmen	t "Appearar	nce Inspecti	on Standar	ds"		
2.Appear	ance		See achment pearance	E	ı	No burr	No burr	No burr	No bu	rr	OK
Quality		In:	spection andards"	_	N	o stains	No stains	No stains	No stai	ns	OK .
3.Materia	al			PMM	4		Color	Tra	nsparent		OK
	Testing I	LED					CREE182	0			
4.Optica	The recommended size and power rating of the LED light source recommended for th to the source of the test, if it is required to be out of range. According to the heat diss and the actual conditions of the use environment, the lens should be fully tested and totica FWHM See light distribution curve									n capa	ability of the lamp
lindex	angle	9				18.6°	18. 4°				
	K-val					8, 38	8. 43				
	Efficie	encv				84. 11%	85. 27%				
	Facula		the signatu	re sample			<u>I</u>				
	ehensive ment			•			Qı	ualified			
Caliper 2 Height G Microsco Thick Ga Gauge E 2 Ambi the size o	Number: V D-Quadra auge M-To pe P-Need uge R-Ra	tic H- ool dle T- dius erature	e on	Length change (mm	s 0.8 —	10	et size chan	ages with t	*	SizSizSizSizSizSizSiz	ze: 50mm ze: 100mm ze: 150mm ze: 200mm ze: 250mm ze: 300mm
Precautio	ne.										

- 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.



						_					
			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	diamet	er	72			71.86	71.83	72.1			
	height	:1	32			32.07	32.04	32.06			Test environment: In 20 °C -25 °C
1.Size	height	2	30.35			30.39	30.34	30.35			environment to achieve thermal equilibrium after the
	Registra mast		3.1			3.1	3.1	3.1			test.
	Location column		33			33.1	33.12	33.15			
				Gate	shear can	not affect th	ne appearar	nce of the la	amp		
				See	attachment	t "Appearar	nce Inspecti	on Standar	ds"		
2.Appear	rance		See achment pearance	E	1	No burr	No burr	No burr	No bur	r	OK
Quality		Ins	spection andards"	_	N	o stains	No stains	No stains	No stair	าร	OK .
3.Materia	al			PMM	Α		Color	Tra	nsparent		OK
	Testing	ED					CREE182	0			
4.Optica	to the so	ource actual	of the test,	if it is requ	ired to be o	out of range ent, the lens	. According	to the heat fully tested	dissipation	п сара	ald be comparable ability of the lamp event the lens life.
I index	angle					15. 4	15. 5	15. 45		_	
	K-val		_			11. 15	10.71	10. 52	//	_	$\overline{}$
	Efficie					85. 50%	86. 90%	85. 90%	/	_	$\overline{}$
	Facula		he signatu	re sample		,	00.00%	00.00%			
Compre	ehensive		o o.ga.a								
	ment						Qι	ıalified			
Caliper 2 Height G Microsco Thick Ga Gauge E 2、Amb the size o	Number: V D-Quadra auge M-To pe P-Need auge R-Ra	tic H- pol dle T- dius erature	e on	Length change (mm	s 0.8 —	10	t size chan	ges with t		Siz Siz Siz Siz	ze: 50mm ze: 100mm ze: 150mm ze: 200mm ze: 250mm ze: 300mm
Precautio	ons:										

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



			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	diamet	er	72			72.26	72.26				
	height	:1	32			32.3	32.32				Test environment: In 20 °C -25 °C
1.Size	height	2	30.35			30.49	30.44				environment to achieve thermal
	Registra mast		3.1			3.02	3.05				equilibrium after the test.
	Location colum		33			33.06	33.13				
				Gate	shear can	not affect th	ne appearar	nce of the la	ımp		
				See	attachment	t "Appearar	nce Inspecti	on Standar	ds"		
2.Appear	ance		See achment pearance	E	1	No burr	No burr	No burr	No bu	rr	OK
Quality		Ins	spection andards"	_	N	o stains	No stains	No stains	No stai	ns	O.K
3.Materia	ıl			PMM	4		Color	Tra	nsparent		ОК
	Testing I	ED					D9	ı			
	The recommended size and power rating of the LED light source recommended for this lens should be compared to the source of the test, if it is required to be out of range. According to the heat dissipation capability of the lateral and the actual conditions of the use environment, the lens should be fully tested and tested to prevent the lens										
4.Optica I index						23. 9°	24. 3°	lon curve			
	angle K-val					5, 46	6. 01		$\overline{}$	_	
									$\overline{}$	_	
	Efficie		ho olanotu			91. 14%	91. 52%				
Compre	Facula ehensive	See	the signatu	re sample							
	ment						Qı	ualified			
Caliper 2 Height Ga Microsco Thick Ga Gauge E- 2、 Ambi the size o	Number: V D-Quadra auge M-To pe P-Neeo uge R-Ra	tic H- pol dle T- dius erature	e on	Length change (mm	s 0.8 —	10	t size chan	ages with t		Siz Siz Siz Siz Siz	ze: 50mm ze: 100mm ze: 150mm ze: 200mm ze: 250mm ze: 300mm
Precautio	ns:										

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



			1					1			
			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	diamet	er	72			72.16	72.12				
	height	:1	32			32.27	32.25				Test environment: In 20 °C -25 °C
1.Size	height	2	30.35			30.54	30.53				environment to achieve thermal equilibrium after the
	Registra mast		3.1			3.08	3.08				test.
	Location colum		33			33.09	33.12				
				Gate	shear can	not affect th	ne appearar	nce of the la	ımp		
		1		See	attachmen	t "Appearar	nce Inspecti	on Standar	ds"		
2.Appear	ance		See achment pearance	E	ı	No burr	No burr	No burr	No bu	rr	OK
Quality		Ins	spection andards"	_	N	o stains	No stains	No stains	No stai	ns	OK .
3.Materia	al			PMM	4		Color	Tra	nsparent		OK
	Testing I	ED					D9	ı			
4 Optica	The recommended size and power rating of the LED light source recommended for this lens shot to the source of the test, if it is required to be out of range. According to the heat dissipation cap and the actual conditions of the use environment, the lens should be fully tested and tested to proptica FWHM See light distribution curve										ability of the lamp
l index	angle	,				32. 7°	33°				
	K-val					3. 04	3. 01	$\overline{}$	$\backslash \! /$		
	Efficie	encv				92. 90%	92. 20%	$\overline{}$	$\backslash \! /$		
	Facula		the signatu	re sample			<u>I</u>			J	
	hensive ment			•			Qı	ualified			
Caliper 2 Height Good Microsco Thick Ga Gauge Eo Ambi the size of	Number: V D-Quadra auge M-To pe P-Neeo uge R-Ra	tic H- pol dle T- dius erature	e on	Length change (mm	s 0.8 —	10	et size chan	ages with t		Siz Siz Siz Siz Siz	ze: 50mm ze: 100mm ze: 150mm ze: 200mm ze: 250mm ze: 300mm
Precautio	ne.		1								

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			1			ī					
			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	diamet	er	72			72.01	71.94	71.92	72.01		
	height	:1	32			32.33	32.4	32.4	32.44		Test environment: In 20 °C -25 °C
1.Size	height	2	30.35			30.34	30.28	30.24	30.22		environment to achieve thermal
	Registra mast		3.1			3.09	3.15	3.11	3.19		equilibrium after the test.
	Location colum		33			33.1	33.09	33.09	33.1		
				Gate	shear can	not affect th	ne appearar	nce of the la	amp		
				See	attachment	t "Appearar	nce Inspecti	on Standar	ds"		
2.Appear	ance		See achment pearance	Е	1	No burr	No burr	No burr	No bu	rr	OK
Quality		Ins	spection andards"	_	N	o stains	No stains	No stains	No stai	ns	
3.Materia	al			PMM	4		Color	Tra	nsparent		OK
	Testing I	ED					D9	1			
4.Optica	to the so	ource actua	of the test,	if it is requ	ired to be o	out of range ent, the lens	. According	to the heat fully tested	dissipatio	n capa	uld be comparable ability of the lamp event the lens life.
lindex	angle	9				55. 1°	55. 6°	56°	56. 2°		
	K-val										
	Efficie	encv				92. 63%	92. 67%	92. 95%	92. 31%		
	Facula		the signatu	re sample						<u> </u>	
	ehensive ment					l	Qı	ualified			
Caliper 2 Height Ga Microsco Thick Ga Gauge E- 2、 Ambi the size o	Number: V D-Quadra auge M-To pe P-Neeo uge R-Ra	tic H- pol dle T- dius erature	e on	Length change (mm	ı s 0.8 —	10	t size chan	iges with t		Siz Siz Siz Siz Siz	ee: 50mm ee: 100mm ee: 150mm ee: 200mm ee: 250mm ee: 300mm
Precautio	ns.										

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PI	N	HK-72@33-20-1820-20)-1g-1	Product Name	SX-20° (18	20) Len	ıs
Product	material	PMMA		Customer			
Package	diagram	Single Va	cuum packa	ge Box	package	?	>
Product	packing	8	A/ Box	4	Box/Layer		
	. 3	4	Layer/Box	128	A/ Carton		
	NO.	Part No	Part name	Size	Dosage	Unit	Remarks
	1	2.07.0080	Blister box	23cm*21cm	16	BAG	
Daalaasia	2	2.08.0001	PE film	30cm*30cm	16	PCS	
Packagin g	3	2.06.0005	Reel label paper	6.2cm*8cm	16	PCS	
Materials	4	2.06.0005	Box label paper	6.2cm*9.2cm	1	PCS	
	5	2.06.0003	big plate	46.8cm*42.8cm	5	PCS	
	6	2.06.0015	big flat carton	48cm*44cm*19cn	1	PCS	
Remarks		The loose packing is not subject	ct to this specif	ication. Customer's	requirements shall	orevail	



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:

Glue diagram

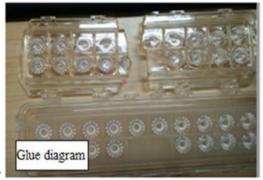
Glue direction

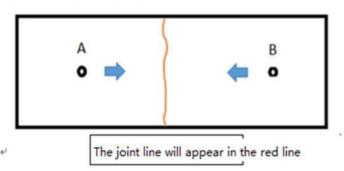
The joint line will appear in the red line

Hole position

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	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, 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		
resciteriis		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		Ī	1	Ī	
	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				√	
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	 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		✓	

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	√		
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		√	