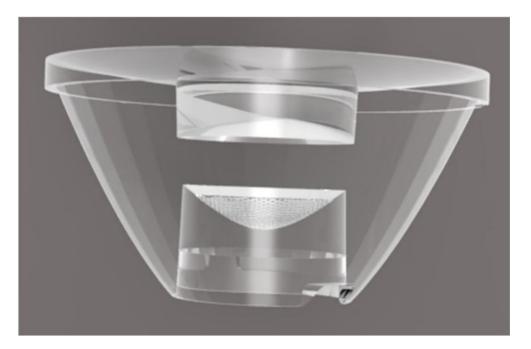
HERCULUX Chengdu HercuLux Photoelectric 恒坤光电 Technology Co.,Ltd **Product Approval**

Approval number :

Customer : Product : HK KA35 series -10 degree lens Material Code : 1.01.91863 PN : HK-35@16-10-XHP35-22-1g-1 Synthetic information:1.07.81402_HK-257@02-0221-S Manufacturer : Chengdu HercuLux Photoelectric Technology Co.,Ltd



Supplier confirmation				Client confirmation			
Proposed		DATE		Qualified□		DATE	
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 ParkPhone : 028-85887727 (801)028-85887990 (801)Fax : 028-85887730www.hkoptics.comSales Dept: Shenzhen NanshanDistrict Nanshan Cloud Valley Innovation Industrial Park Comprehensive Service Building,TEL: 0755-2937 1541FAX: 0755-2907 5140

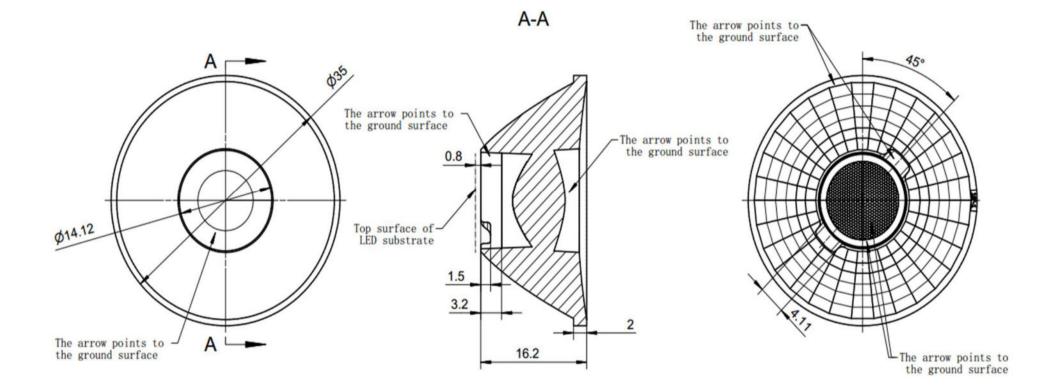
*Approval In duplicate, for both supplier and customer.



TEL: 0755-2937 1541	FAX: 0755-2907 5140	www.hkoptics.com	Date updated: 2020/3/11
Product Picture:			
PN:		HK-35@16-10-XHP35-22	-1g-1
Size(L*W*H/Φ*H):		Ф:35mm*H:16mm	
Material:		PMMA	
Effiency:		≥80%	
Temperature(Topr):		-40°C to +80°C	
FWHM:		10°	
Matched LES:		XHP35	

第2页





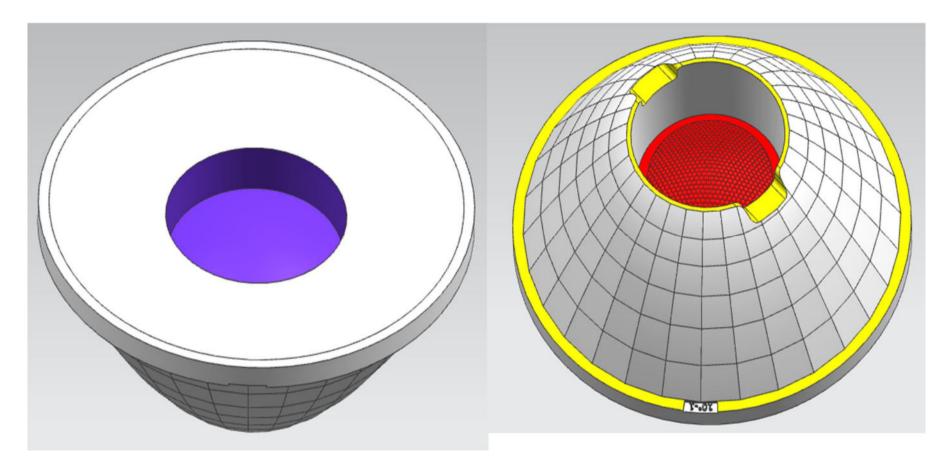
Technical Requirement:

- 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	n		HK-35@16-10-X	HP35-22-1g-1	1.01.91863
ructure Desig	gn	HK KA35 series -10 degree lens	Pages	Qty	Weight
Assess			2		
Authorized		Material:PC		CDHK	

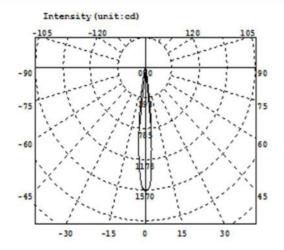
Image illustration

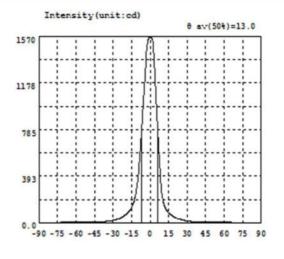




IES— XHP35







Intensity data: (deg , cd) CO-180

A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.9152	-58.5	4.385	-27.0	28.28	4.5	1138	36.0	8.150	67.5	2.443
-88.5	1.017	-57.0	4.536	-25.5	33.84	6.0	829.7	37.5	7.257	69.0	2.334
-87.0	1.164	-55.5	4.683	-24.0	40.54	7.5	537.2	39.0	6.575	70.5	2.189
-85.5	1.289	-54.0	4.859	-22.5	48.84	9.0	313.1	40.5	6.053	72.0	2.087
-84.0	1.481	-52.5	5.065	-21.0	58.56	10.5	190.5	42.0	5.649	73.5	1.945
-82.5	1.639	-51.0	5.307	-19.5	70.01	12.0	132.2	43.5	5.381	75.0	1.838
-81.0	1.742	-49.5	5.599	-18.0	83.74	13.5	101.6	45.0	5.155	76.5	1.732
-79.5	1.854	-48.0	5.896	-16.5	101.4	15.0	83.24	46.5	4.958	78.0	1.630
-78.0	1.980	-46.5	6.161	-15.0	126.6	16.5	69.88	48.0	4.751	79.5	1.538
-76.5	2.161	-45.0	6.411	-13.5	163.8	18.0	59.15	49.5	4.589	81.0	1.451
-75.0	2.351	-43.5	6.938	-12.0	223.4	19.5	49.91	51.0	4.424	82.5	1.347
-73.5	2.504	-42.0	7.805	-10.5	322.1	21.0	42.06	52.5	4.288	84.0	1.300
-72.0	2.695	-40.5	8.467	-9.0	467.8	22.5	35.23	54.0	4.139	85.5	1.211
-70.5	2.899	-39.0	9.020	-7.5	669.2	24.0	29.53	55.5	4.014	87.0	1.011
-69.0	3.091	-37.5	9.757	-6.0	926.6	25.5	24.77	57.0	3.867	88.5	0.9978
-67.5	3.271	-36.0	10.83	-4.5	1175	27.0	20.92	58.5	3.759	90.0	0.8733
-66.0	3.531	-34.5	12.29	-3.0	1410	28.5	17.64	60.0	3.606		
-64.5	3.690	-33.0	14.21	-1.5	1536	30.0	14.91	61.5	3.434	() 1	
-63.0	3.881	-31.5	16.73	0.0	1566	31.5	12.64	63.0	3.229		
-61.5	4.007	-30.0	19.82	1.5	1550	33.0	10.83	64.5	2.998		
-60.0	4.200	-28.5	23.68	3.0	1438	34.5	9.332	66.0	2.693		

Electricity Parameter:

Current	I:	0.1000A	Power:	1.100W
Voltage	V:	11.00V	PF:	1.000

Optical Parameter (Distance=2.410m):

Equivalent Luminou	as flux: Φ eff= 143.3lm	Efficiency: Eff=130.28lm/W
Diffuse angle:	@(25%): 18.1deg@(50%):	13.0deg@(75%): 8.8deg @(50%): 13.0deg
Diffuse angle:	@(25%): 18.1deg@(50%):	13.0deg@(75%): 8.8deg @(50%): 13.0deg
Imax=1566cd (C=0.0)deg,G=0.0deg)	CO-180Plane Imax= 1566cd(G=0.0deg)

CO-180Plane IO= 1566cd

Sample size test report HK KA35 series -10 degree lens



											امدرا		
			Standard size	Upper Size limit	Lo\ size	ver limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks	
	Outer diamet		35	35.1	34.	65	34.85	34.76	34.82	34.82	ОК	l est environment:	
1.Size	highl		16.2	16.55	16	.1	16.27	16.36	16.36	16.44	ОК	In 20 ℃ -25 ℃	
	The thickness of the		2	2.35	1.	95	2.06	2.16	2.15	2.26	ок	environment to achieve thermal equilibrium	
	Gate shear can not affect the appearance of the lamp												
	See attachment "Appearance Inspection Standards"												
2.Appear	ance		See achment	E		Ν	lo burr	No burr	No burr	No bu	rr	OK	
Quality		"Appearance Inspection Standards"		E No st		o stains	No stains	No stains	No stains		ОК		
3.Materia	al			PMMA	A			Color	Tra	nsparent		ОК	
	Testing I	ED						XHP35	-			-	
	FWH	N					See light	distribution	curve				
4.Optica	Angle	;		$13^{\circ} \pm 2^{\circ}$			13.3°	13°	12.5°	13. 2°		OK	
l index	Effiend	су		≥83%			84.62%	86.07%	87.27%	86.73%		OK	
	к			≥8.5			9.97	10.92	11.16	10.85		OK	
	Facula	See t	he signatu	re sample			•						
-	ehensive ment							Q	ualified				
]9							du at at a a			una tabla	0		
				Length		A pro	duct size c	nanges wit	h temperat	ture table			
Remarks				changes						Size	50mm		
	Number: V D-Quadra		nier	(mm)	0.0				_	- Size			
Height G	auge M-To	ool			0.6	-				Size:			
	pe P-Need				0.5 0.4					-Size			
Thick Gauge R-Radius Gauge E-Visual. 0.4 					m								
the size o	2. Ambient temperature on the size of the product refer 0.1					m							
		ignt			0	0	10	20 30					
<u> </u>									J°)	,			

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.

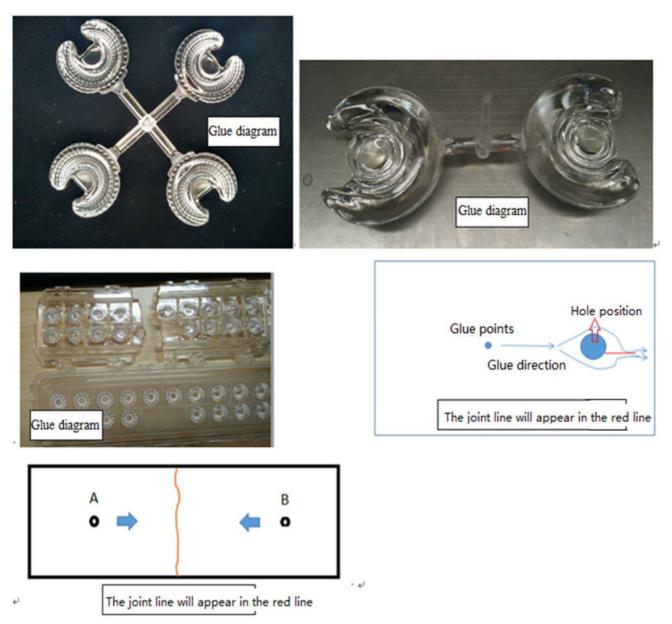
Packaging Information



P	N	HK-35@16-10-XHP35-2	2-1g-1	Product Name	HK KA35 series -1	0 degre	e lens
Product	material	PMMA		Customer			
Package diagram			Box pa	ckage	>		
Product	packing	27	A/box	4	Box/layer		
		17	Layer/the box	1836	A/the box		
	NO.	Material Code	Item name	Specification	Single box usage	Unit	Remarks
	1	2.07.0011	Blister box	23cm*21cm	68	PCS	
Deskesis	2	2.08.0001	PE film	25cm*27cm	68	PCS	
Packagin g Materials	3	2.06.0005	Reel label paper	62mm*42mm	68	PCS	
materials	4	2.06.0005	Box label paper	62mm*70mm	1	PCS	
	4	2.06.0003	big plate	46cm*42cm	18	PCS	
	4	2.06.0011	big carton	48cm*44cm*37cm	1	PCS	
Remarks	Scattered packaging is not restricted by this specification, the customer has the requirements of the customer 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:



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, 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	ludeing atop doud	Inspection equipment	Defec	Defect level		
Test items	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	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			V	
	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.					

	Ι			1	1
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		v	
Fingerprint	Fingerprints are not allowed on all products	Visual		V	
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. 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		V	
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		V	
Flow marks、Welding line	1 : Product does not allow the presence of flow marks and welding lines unless the structure can not be avoided;	Visual		√	
line	2: The remaining flow marks shall not appear in the optical surface, a single L \leq 10mm, no more than two				
Bubble	No bubbles are allowed	Visual		√	
Foreign objects, black spots, white spots	Not obvious or $D \le 0.3$ mm 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	\checkmark		
	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			V
	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 $D \le 1 \text{ mm}$ and no more than 1 area within a 50x50 mm area	Visual		V	

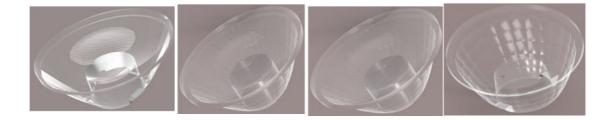


Approval number :

Customer :

Manufacturer : Chengdu HercuLux Photoelectric Technology Co.,Ltd

PN	Code	Product
HK- 35@16- 15- D6- 21- 1g- 1	1.01.81566	KA35-15ºl ens
HK- 35@16- 24- D6- 21- 1g- 1	1.01.81567	KA35-24ºl ens
HK- 35@16- 36- D6- 21- 1g- 1	1.01.81568	KA35-36ºlens
HK- 35@16- 60- D6- 20- 1g- 1	1.01.81581	KA35-60ºlens



	Supplier co	nfirmation	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, lot 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

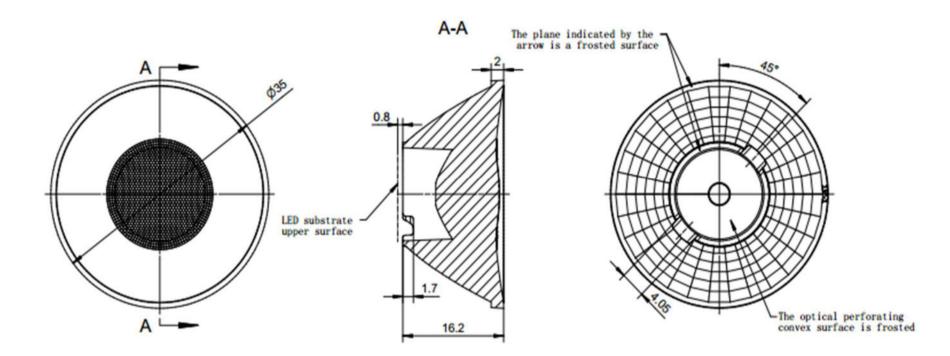
*Approval In duplicate, for both supplier and customer.



TEL: 0755-2937 1541	FAX: 0755-2907 5140	www.hkoptics.com	Date updated: 2019/7/8
Product Picture:			
PN :		HK-35@16-15-D6-21-1g	-1
Size(L*W*H/Φ*H):		Ф:35mm; Н:16mm	
Material:		PMMA	
Effiency:		≥88%	
Temperature(Topr):		-40°C to +80°C	
FWHM:		15°、24°、36°、60°	
Matched LES:		D6	

2D drawing





Technical remark:

MT5

Tolerance

table (mm) olerance valu

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 M

3~10

±0.15

24~65

±0.35

3, The surface has no flash, shrinkage, bubbles and other defects.

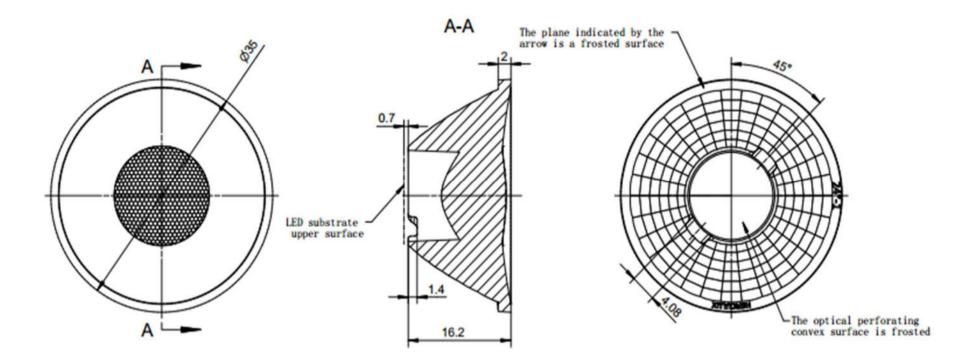
<3

±0.1

		Optical	design						HK-35@16-15-D6-21-1g-1					
2008 MT5.		tructur	e desig					KA35-15ºlens				1.01.81566		
		Rev	iew							umber o	f drawin	qty	wei	ght
		Valid	ation							СДНК				
65~140	140~	~250	250~	~450	>	450								
±0.50	±0	.80	±1	2	±2	2.0								

2D drawing





Technical remark:

MT5

Tolerance

table (mm) olerance valu

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

3~10

±0.15

24~65

±0.35

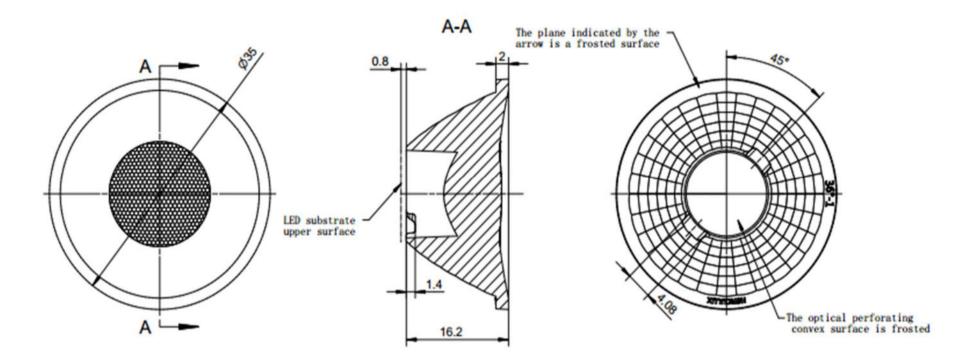
3, The surface has no flash, shrinkage, bubbles and other defects.

<3

±0.1

		Optical	design						HK-35@16-24-D6-21-1g-1					
2008 MT5.		tructur	e desig					KA35-24ºlens				1.01.81567		
		Rev	iew							umber o	f drawin	qty	wei	ght
		Valid	ation							CDHK				
65~140	140~	~250	250~	~450	>4	450								
±0.50	±0	.80	±1	2	±2	2.0								

HERCULUX ^{但坤光电}



Technical remark:

MT5

Tolerance

table (mm) olerance valu

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

3~10

±0.15

24~65

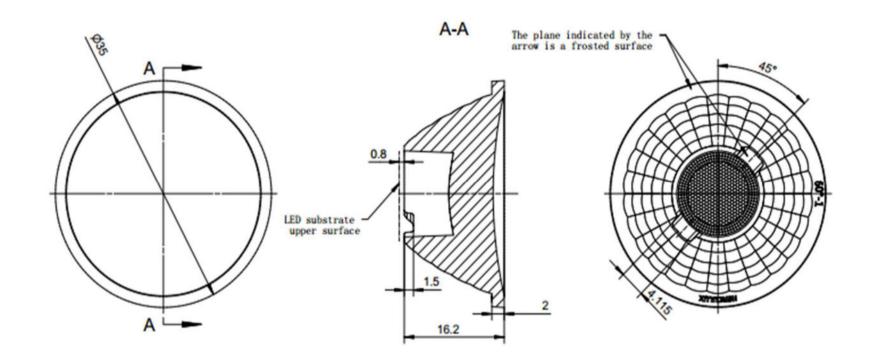
±0.35

3, The surface has no flash, shrinkage, bubbles and other defects.

<3

±0.1

		Optical	design							HK-35@16-36-D6-21-1g-1			
2008 MT5.		tructur	e desig				KAS	KA35-36ºlens		1.01.81568			
		Rev	view						umber o	f drawin	qty	wei	ght
		Valid	Validation				Material:	PMMA			CDHK		
65~140	140~	~250	250~	~450	>4	450							
±0.50	±0	.80	±1	2	±2	2.0							



Technical remark:

MT5

Tolerance

table (mm) olerance valu

1. The 3D map is not indicated for rounded corners and draft angle.



3~10

±0.15

24~65

±0.35

3, The surface has no flash, shrinkage, bubbles and other defects.

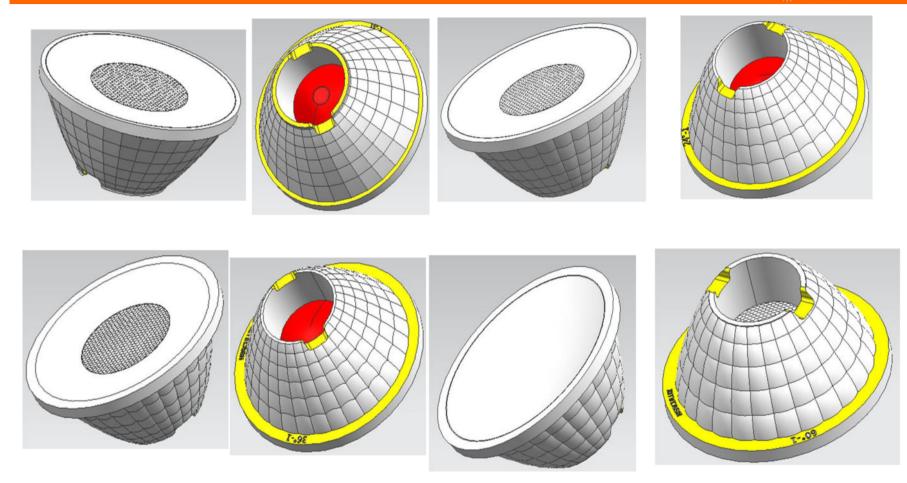
<3

±0.1

		Optical	l design								HK-35@16-60-D6-20-1g-1			
2008 MT5.		tructur	e desig					KA35-60ºlens				1.01.81581		
		Rev	view							umber o	f drawin	qty	wei	ght
		Valid	ation					Material:	PMMA			CDHK		
65~140	140~	~250	250~	~450	>4	450								
±0.50	±0	.80	±1	L.2	±2	2.0								

Image illustration



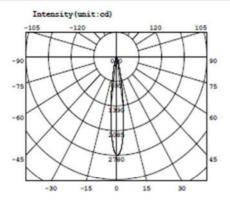


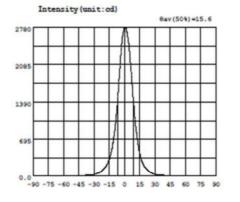
IES——

HERCULUX 但坤光电

EVERFINE。远方

GO1900L GONIOPHOTOMETER Test Report Page 1 Of 2





Intensity data: (deg , cd) C0-180

λ	I	λ	I	λ	I	λ	I	λ	I	A	I
-90.0	1.231	-58.5	8.645	-27.0	53.38	4.5	2404	36.0	22.89	67.5	4.356
-88.5	1.321	-57.0	9.117	-25.5	65.28	6.0	2087	37.5	20.39	69.0	3.722
-87.0	1.265	-55.5	9.565	-24.0	80.77	7.5	1703	39.0	18.48	70.5	3.201
-85.5	1.265	-54.0	9.964	-22.5	101.6	9.0	1331	40.5	16.93	72.0	2.836
-84.0	1.265	-52.5	10.40	-21.0	128.0	10.5	1022	42.0	15.57	73.5	2.510
-82.5	1.221	-51.0	10.84	-19.5	160.8	12.0	775.0	43.5	14.46	75.0	2.170
-81.0	1.277	-49.5	11.33	-18.0	199.0	13.5	578.9	45.0	12.47	76.5	1.849
-79.5	1.335	-48.0	11.90	-16.5	251.7	15.0	431.5	46.5	12.23	78.0	1.531
-78.0	1.483	-46.5	12.64	-15.0	323.3	16.5	317.6	48.0	11.28	79.5	1.285
-76.5	1.779	-45.0	13.56	-13.5	423.3	18.0	243.0	49.5	10.57	81.0	1.134
-75.0	2.132	-43.5	14.59	-12.0	558.7	19.5	191.0	51.0	10.01	82.5	1.095
-73.5	2.496	-42.0	15.61	-10.5	737.8	21.0	151.3	52.5	9.526	84.0	1.059
-72.0	2.883	-40.5	16.72	-9.0	967.6	22.5	120.1	54.0	9.110	85.5	1.052
-70.5	3.340	-39.0	18.10	-7.5	1264	24.0	95.31	55.5	8.733	87.0	1.023
-69.0	3.897	-37.5	19.73	-6.0	1636	25.5	75.56	57.0	8.340	88.5	0.9955
-67.5	4.524	-36.0	21.71	-4.5	2056	27.0	60.75	58.5	7.949	90.0	1.126
-66.0	5.237	-34.5	24.44	-2.0	2421	28.5	49.40	60.0	7.484		
-64.5	5.981	-33.0	27.87	-1.5	2661	30.0	41.03	61.5	6.960		
-63.0	6.682	-31.5	32.12	0.0	2764	31.5	34.73	63.0	6.302		
-61.5	7.392	-30.0	37.37	1.5	2747	33.0	29.94	64.5	5.628		
-60.0	8.128	-28.5	44.30	3.0	2625	34.5	26.07	66.0	4.993		

Electricity Parameter:

Current	I:	0.1000A	Power:	3.460W
Voltage	V:	34.59V	PF:	1.000

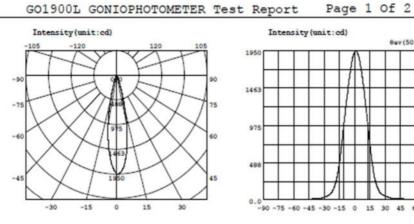
Optical Parameter(Distance=2.410m):

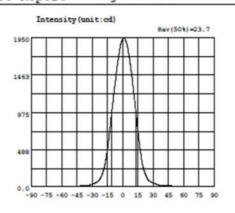
Equivalent Luminous	s flux: teff = 354.81m	Efficiency: Eff=102.551m/W
Diffuse angle:	@(25%): 23.3deg@(50%):	15.6deg@(75%): 10.4deg@(50%): 15.6deg
Diffuse angle:	@(25%): 23.4deg@(50%):	15.6deg@(75%): 10.4deg@(50%): 15.6deg
Imax=2772cd (C=0.0d	deg,G=0.5deg)	CO-180Plane Imax= 2772cd(G=0.5deg)
		C0-180Plane IO= 2764cd

IES-----

HERCULUX 但坤光电

EVERFINE。远方





Intensity data: (deg , cd) CO-180

λ	I	λ	I	λ	I	λ	I	λ	I	λ	I
-90.0	0.8917	-58.5	7.304	-27.0	52.92	4.5	1838	36.0	26.00	67.5	5.414
-88.5	0.9555	-57.0	7.615	-25.5	65.77	6.0	1733	37.5	22.92	69.0	4.558
-87.0	1.019	-55.5	7.917	-24.0	83.47	7.5	1599	39.0	20.51	70.5	3.797
-85.5	1.069	-54.0	8.258	-22.5	109.8	9.0	1445	40.5	18.71	72.0	3.230
-84.0	1.030	-52.5	8.699	-21.0	148.2	10.5	1272	42.0	17.50	73.5	2.717
-82.5	1.018	-51.0	9.148	-19.5	201.1	12.0	1089	43.5	16.36	75.0	2.300
-81.0	1.023	-49.5	9.628	-18.0	272.3	13.5	901.7	45.0	15.20	76.5	1.934
-79.5	1.200	-48.0	10.17	-16.5	368.9	15.0	720.9	46.5	14.25	78.0	1.629
-78.0	1.342	-46.5	10.80	-15.0	498.6	16.5	556.5	48.0	13.36	79.5	1.282
-76.5	1.536	-45.0	11.56	-13.5	656.1	18.0	416.5	49.5	12.55	81.0	1.202
-75.0	1.843	-43.5	12.40	-12.0	831.0	19.5	200.0	51.0	11.75	82.5	1.089
-73.5	2.085	-42.0	13.38	-10.5	1014	21.0	221.6	52.5	11.04	84.0	1.071
-72.0	2.485	-40.5	14.38	-9.0	1192	22.5	165.0	54.0	10.42	85.5	1.095
-70.5	3.081	-39.0	15.50	-7.5	1364	24.0	125.0	55.5	9.977	87.0	1.132
-69.0	3.626	-37.5	17.08	-6.0	1525	25.5	96.81	57.0	9.523	88.5	1.136
-67.5	4.246	-36.0	19.14	-4.5	1671	27.0	76.79	58.5	9.093	90.0	1.134
-66.0	4.838	-34.5	21.75	-3.0	1791	28.5	62.13	60.0	8.674		
-64.5	5.425	-33.0	25.10	-1.5	1881	30.0	50.60	61.5	8.141		
-63.0	5.974	-31.5	29.38	0.0	1934	31.5	41.50	63.0	7.579	į	
-61.5	6.474	-30.0	35.14	1.5	1943	33.0	34.85	64.5	6.947		
-60.0	6.963	-28.5	42.96	3.0	1910	34.5	29.83	66.0	6.242		

Electricity Parameter:

Current	I:	0.1000A	Power:	3.460W
Voltage	V:	34.59V	PF:	1.000

Optical Parameter(Distance=2.559m):

Equivalent Lumino	us flux: ‡eff = 404.31m	Efficiency: Eff=116.881m/W
Diffuse angle:	@(25%): 32.3deg@(50%):	23.7deg@(75%): 15.4deg@(50%): 23.7deg
Diffuse angle:	@(25%): 32.3deg@(50%):	23.7deg@(75%): 15.6deg@(50%): 23.7deg
Imax=1945cd (C=0.)	Odeg,G=1.Odeg)	CO-180Plane Imax= 1945cd(G=1.0deg)
		C0-180Plane IO= 1934cd

HERCULUX 但坤光电 IES----D6 KA35-36ºlens EVERFINE。远方 GO1900L GONIOPHOTOMETER Test Report Page 1 Of 2 Intensity (unit:cd) Intensity (unit: cd) 0av(50%)=33.7 -105 -120 1050 -90 788 -75 75 525 -60 60 263 -45 0.0 -90 -75 -60 -45 -30 -15 0 15 30 45 60 75 90 -30 -15 0 15 30 Intensity data: (deg , cd) CO-180

λ	I	λ	I	λ	I	λ	I	λ	I	A	I
-90.0	0.9378	-58.5	7.534	-27.0	93.90	4.5	1005	36.0	12.49	67.5	3.666
-88.5	1.050	-57.0	8.027	-25.5	130.9	6.0	983.8	37.5	10.70	69.0	3.337
-87.0	1.038	-55.5	8.431	-24.0	177.3	7.5	952.8	39.0	9.759	70.5	2.821
-85.5	0.9596	-54.0	8.774	-22.5	232.9	9.0	907.4	40.5	9.063	72.0	2.292
-84.0	0.9142	-52.5	9.060	-21.0	300.3	10.5	851.6	42.0	8.538	73.5	1.905
-82.5	0.8951	-51.0	9.311	-19.5	378.7	12.0	787.2	43.5	8.259	75.0	1.539
-81.0	1.087	-49.5	9.407	-18.0	462.1	12.5	709.1	45.0	8.240	76.5	1.257
-79.5	1.198	-48.0	9.509	-16.5	549.4	15.0	625.3	46.5	8.087	78.0	1.037
-78.0	1.234	-46.5	9.810	-15.0	635.7	16.5	540.1	48.0	7.652	79.5	0.9768
-76.5	1.395	-45.0	10.05	-13.5	719.0	18.0	453.4	49.5	7.322	81.0	0.9749
-75.0	1.714	-43.5	10.23	-12.0	793.5	19.5	361.8	51.0	7.133	82.5	0.8504
-73.5	2.100	-42.0	10.44	-10.5	859.5	21.0	274.8	52.5	6.785	84.0	0.7880
-72.0	2.606	-40.5	10.96	-9.0	916.9	22.5	206.1	54.0	6.507	85.5	0.8008
-70.5	3.362	-39.0	11.83	-7.5	962.5	24.0	149.5	55.5	6.316	87.0	0.8674
-69.0	3.869	-37.5	13.26	-6.0	995.1	25.5	104.9	57.0	6.028	88.5	0.9455
-67.5	4.289	-36.0	15.52	-4.5	1018	27.0	72.87	58.5	5.774	90.0	0.9593
-66.0	4.761	-34.5	18.90	-3.0	1033	28.5	50.64	60.0	5.527		
-64.5	5.162	-33.0	24.36	-1.5	1042	30.0	35.17	61.5	5.198		
-63.0	5.669	-31.5	32.91	0.0	1041	31.5	25.09	63.0	4.824		
-61.5	6.499	-30.0	46.24	1.5	1033	33.0	18.90	64.5	4.438		
-60.0	7.015	-28.5	66.16	3.0	1022	34.5	15.01	66.0	3.917		

Electricity Parameter:

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

Optical Parameter(Distance=2.410m):

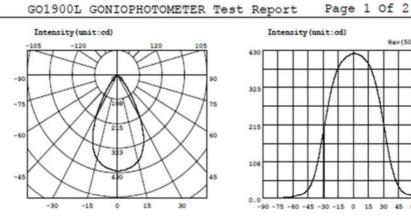
Equivalent Luminou	us flux: ‡eff = 359.11m	Efficiency: Eff=104.411m/W
Diffuse angle:	@(25%): 43.0deg@(50%):	33.7deg@(75%): 24.3deg@(50%): 33.7deg
Diffuse angle:	@(25%): 43.1deg@(50%):	33.7deg@(75%): 24.3deg@(50%): 33.7deg
Imax=1042cd (C=0.0	Odeg,G=-1.0deg)	CO-180Plane Imax= 1042cd(G=-1.0deg)
		C0-180Plane I0= 1041cd

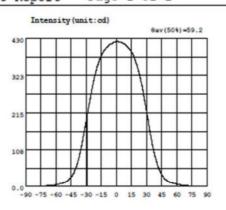
KA35-60ºlens

IES----

HERCULUX ^{但坤光电}

EVERFINE。远方





Intensity data: (deg , cd) CO-180

λ	I	λ	I	λ	I	λ	I	λ	I	A	I
-90.0	0.7006	-58.5	7.029	-27.0	237.6	4.5	418.6	36.0	119.7	67.5	4.215
-88.5	0.7648	-57.0	7.954	-25.5	264.6	6.0	416.6	37.5	99.44	69.0	3.676
-87.0	0.7896	-55.5	8.993	-24.0	286.8	7.5	414.4	39.0	82.45	70.5	3.181
-85.5	0.8164	-54.0	10.14	-22.5	308.2	9.0	411.5	40.5	67.26	72.0	2.698
-84.0	0.8809	-52.5	11.49	-21.0	327.3	10.5	407.6	42.0	54.50	73.5	2.292
-82.5	1.009	-51.0	13.21	-19.5	343.3	12.0	402.4	43.5	43.81	75.0	1.968
-81.0	1.171	-49.5	15.52	-18.0	357.4	13.5	396.7	45.0	35.63	76.5	1.766
-79.5	1.222	-48.0	18.52	-16.5	369.8	15.0	390.5	46.5	29.18	78.0	1.562
-78.0	1.310	-46.5	22.73	-15.0	379.6	16.5	382.9	48.0	23.75	79.5	1.466
-76.5	1.415	-45.0	28.15	-13.5	387.9	18.0	371.7	49.5	19.70	81.0	1.404
-75.0	1.620	-43.5	34.80	-12.0	394.9	19.5	259.5	51.0	16.63	82.5	1.375
-73.5	1.857	-42.0	42.95	-10.5	400.8	21.0	345.5	52.5	14.30	84.0	1.232
-72.0	2.216	-40.5	53.27	-9.0	406.0	22.5	329.0	54.0	12.51	85.5	1.163
-70.5	2.608	-39.0	65.95	-7.5	409.3	24.0	311.3	55.5	11.04	87.0	1.159
-69.0	3.112	-27.5	81.68	-6.0	412.9	25.5	290.8	57.0	9.719	88.5	1.159
-67.5	3.557	-36.0	99.94	-4.5	415.1	27.0	268.1	58.5	8.587	90.0	1.222
-66.0	4.045	-34.5	121.2	-3.0	417.8	28.5	243.9	60.0	7.594		
-64.5	4.543	-33.0	144.0	-1.5	420.0	30.0	218.4	61.5	6.775		
-63.0	5.114	-31.5	167.6	0.0	420.5	31.5	192.3	63.0	6.067		
-61.5	5.668	-30.0	191.9	1.5	421.0	33.0	166.7	64.5	5.476		
-60.0	6.259	-28.5	216.7	3.0	419.6	34.5	142.1	66.0	4.796		

Electricity Parameter:

Current	I:	0.1000A	Power:	3.460W
Voltage	V:	34.59V	PF:	1.000

Optical Parameter(Distance=2.559m):

Equivale	ent Luminous	s flux:	teff = 397.61m	Efficiency:	Eff=114.941m/W
Diffuse	angle:	@(25%):	72.6deg@(50%):	59.2deg@(75%)	: 45.5deg@(50%): 59.2deg
Diffuse	angle:	@(25%):	72.6deg@(50%):	59.2deg@(75%)	: 45.5deg@(50%): 59.2deg
Imax=421	0cd (C=0.)	Odeg,G=1	.5deg)	CO-180Plane	Imax= 421.0cd(G=1.5deg)
				CO-180Plane	I0= 420.5cd

Sample parameter test rep KA35-15ºlens



			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	Di amet	er	35	35. 3	34. 9	35.14	35.13	35.14	\backslash	ОК	Test environment: Ir 20 ℃ -25 ℃
1.Size	hei gh	t	16.2	16. 4	16. 1	16.28	16.29	16.27	\backslash	OK	environment to achieve thermal
	t hi ckne	ess	2	2. 15	1. 95	2.04	2.06	2.08	\backslash	ОК	equilibrium after the test.
				Gate	shear can i	not affect th	e appearan	nce of the la	amp		
				See	attachment	t "Appearan	ce Inspectio	on Standar	ds"		
2.Appear Quality	ance	atta "App	See chment earance	Е —		No burr	No burr	No burr	No burr		ОК
Quanty		Inspection Standards"		1		o stains	No stains	No stains	No stains		
3.Material				PMM	4		Color	Tra	nsparent		OK
	Testing l	ED					D6				
4.Optica	to the so	ource o actual	of the test,	size and power rating of the LED light source recommended for this lens should be co test, if it is required to be out of range. According to the heat dissipation capability of tions of the use environment, the lens should be fully tested and tested to prevent the See light distribution curve						ability of the lamp	
lindex	Angl e	•		14° - 18°		15. 6°	15. 7°	15. 6°	15. 5°		СК
	K val ι	le		≥6.3		7. 81	7. 72	7. 83	7. 87		OK
	efficie	ency		≥88%		90. 20%	91.00%	90. 30%	89. 80%		СК
	Facula	See th	ne signatu	re sample		`					
•	hensive ment						Qu	alified			
					PMN	1A product	t size chan	ges with t	emperatu	ıre ta	able
					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. 4. The working temperature of the lens should be within the temperature limit of the lens material. Exceeding the temperature

Sample parameter test rep KA35-24ºlens



		:	Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	Di amet	er	35	35. 3	34. 9	35.15	35.13	35.08	/	ОК	Test environment: Ir 20 ℃ -25 ℃
1.Size	hei gh	t	16.2	16. 4	16. 1	16.23	16.26	16.27	\backslash	OK	environment to achieve thermal
	t hi ckne	ess	2	2. 15	1. 95	2.04	2.07	2.08	\backslash	ОК	equilibrium after the test.
				Gate	shear can i	not affect th	e appearan	nce of the la	amp		
				See	attachment	t "Appearan	ce Inspectio	on Standar	ds"		
2.Appear Quality	ance	atta	See chment earance			No burr	No burr	No burr	No bu	rr	ОК
Quanty		Inspection Standards"			N	o stains	No stains	No stains	No stains		
3.Material				PMM	4		Color	Tra	nsparent		OK
	Testing I	ED					D6				
4.Optica		actual		size and power rating of the LED light source recommended for this lens should be con test, if it is required to be out of range. According to the heat dissipation capability of t itions of the use environment, the lens should be fully tested and tested to prevent the See light distribution curve							
l index	angl e)		19° - 25°		20. 2°	20. 5°	23. 7°	23. 3°		СК
	K- val	ue		≥ 4		5.96	5. 87	4. 81	4. 84		OK
	Efficie	ency		≥88%		92. 10%	91. 70%	91. 90%	92. 60%		OK
	Facula	See th	ne signatu	re sample		`					
	hensive ment						Qu	alified			
					PMN	1A product	t size chan	ges with t	emperatu	ire ta	able

 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. 4. The working temperature of the lens should be within the temperature limit of the lens material. Exceeding the temperature

Sample parameter test rep KA35-36ºlens



		ę	Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	Di amet	er	35	35. 3	34. 9	34.99	35.1	35.08	/	ОК	Test environment: Ir 20 ℃ -25 ℃
1.Size	hei gh	t	16.2	16. 4	16. 1	16.22	16.3	16.27	\backslash	OK	environment to achieve thermal
	t hi ckne	ess	2	2. 15	1. 95	2.02	2.05	2.07	\backslash	OK	equilibrium after the test.
				Gate	shear can	not affect th	ie appearar	nce of the la	amp		
				See	attachmen	t "Appearan	ce Inspecti	on Standar	ds"		
2.Appear Quality	ance	atta	See chment earance	E	1	No burr	No burr	No burr	No burr		ОК
Quality		Inspection Standards"		1		lo stains	No stains	No stains	No stains		
3.Material				PMM	4		Color	Tra	nsparent		OK
	Testing l	ED					D6				
4.Optica	to the so	ource c actual (of the test,	size and power rating of the LED light source recommended for this lens should be co test, if it is required to be out of range. According to the heat dissipation capability of itions of the use environment, the lens should be fully tested and tested to prevent the See light distribution curve						ability of the lamp	
lindex	angl e	e		30° - 38°		33. 7°	33. 6°	33. 6°	33. 8°		0K
	K- val	ue		≥2.3		2.90	2. 89	2. 87	2. 88		OK
	Efficie	ency		≥88%		90. 80%	90. 70%	91.20%	91.20%		OK
	– .			ro complo		`					
Facula See the sign Comprehensive				re sample							
•		See th	ie signatu				Qu	alified			
•	hensive	See th	ie signatu		PMN	/A produc			emperatu	ıre ta	able

 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. 4. The working temperature of the lens should be within the temperature limit of the lens material. Exceeding the temperature

Sample parameter test rep KA35-60ºlens



			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	Di amet	er	35	35. 3	34. 8	34.99	34.97	34.91	\backslash	ОК	Test environment: In 20 ℃ -25 ℃
1.Size	hei gh	t	16.2	16. 4	16. 1	16.23	16.26	16.27	/	OK	environment to achieve thermal
	t hi ckne	ess	2	2. 15	1. 95	2.05	2.06	2.03	/	OK	equilibrium after the test.
				Gate	shear can	not affect th	e appearar	nce of the la	mp		
				See	attachment	t "Appearan	ce Inspecti	on Standard	ds"		
2.Appear	ance		See achment bearance	E	1	No burr	No burr	No burr	No bu	r	ОК
Quality		Inspection Standards"				o stains	No stains	No stains	No stains		
3.Materia				PMM	4		Color	Tra	nsparent		OK
	Testing I	ED					D6				
4.Optica	to the so	ource actual	of the test	ze and power rating of the LED light source recommended for this lens should be comparable test, if it is required to be out of range. According to the heat dissipation capability of the lamp ions of the use environment, the lens should be fully tested and tested to prevent the lens life. See light distribution curve							
lindex	angl e)		55° - 65°		59. 2°	60°	59. 5°	60. 2°		0K
	K- val	ue				/	/	/	/		OK
	Efficie	ency		≥88%		90. 50%	90. 30%	90. 50%	92. 20%		OK
	Facula	See t	he signatu	re sample		`					
	hensive ment						Qı	alified			
					D1 41						
					PIVIIV	IA product	t size chan	ges with t	emperatu	re ta	able

 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. 4. The working temperature of the lens should be within the temperature limit of the lens material. Exceeding the temperature

Packaging Information

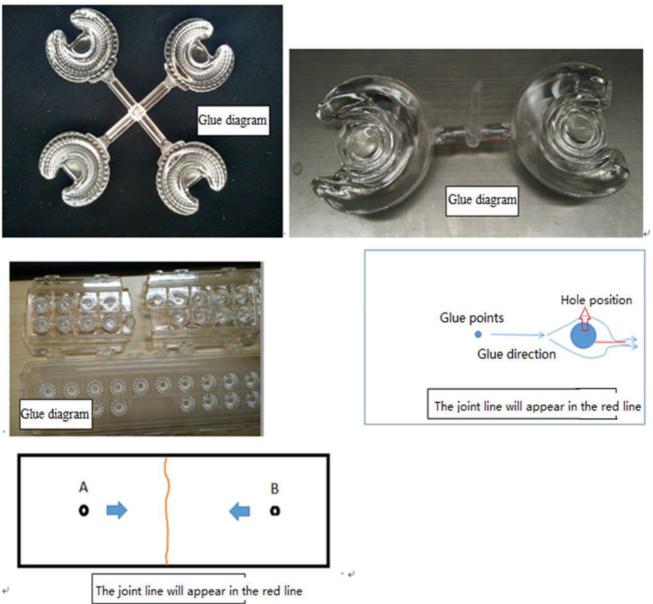


P	N	HK-35@16-15-D6-21-	1g-1	Product Name	KA35-15	5ºlens			
Product	material	PMMA		Customer					
Package	diagram	Single Vacuum package Box package							
		27	A/ Box	4	Box/Layer				
Product	packing	16	Layer/Box	1728	A/ Box				
		8	Individual net weight	17.6	Weight of the whole case				
	NO.	Part No	Part name	Size	Dosage	Unit	Remarks		
	1	2. 07. 0011	Blister box	23cm [*] 21cm	64	PCS			
	2	2. 08. 0001	PE film	25cm [*] 27cm	64	block			
Packagin g Materials	3	2. 06. 0005	Inside label paper	62mm† 42mm	64	zhang			
Materials	4	2. 06. 0005	Case label paper	62mm† 70mm	1	zhang			
	5	2. 06. 0003	The big plate	46cm 42cm	17	PCS			
	6	2. 06. 0011	The big carton	48cnt 44cnt 37ci	m 1	PCS			
Remarks	arks The loose packing is not subject to this specification. 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 II 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, 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		
		Testing method	МІ	MA	CR
Check the sample	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.	, visual			
	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;				V
	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		V	

	1			Г	,
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		V	
Fingerprint	Fingerprints are not allowed on all products	Visual		V	
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				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. 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		V	
Insufficient filling	Insufficient filling shall not affect the appearance of the assembly and the exposed surfaces, The signature sample shall prevail.	Visual, point card		v	
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		v	
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		V	
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	V		
Bad incision	 Do not affect the product size, shall not penetrate the optical surface, the cut should be smooth; 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 appear residue. 	Visual			V
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	