



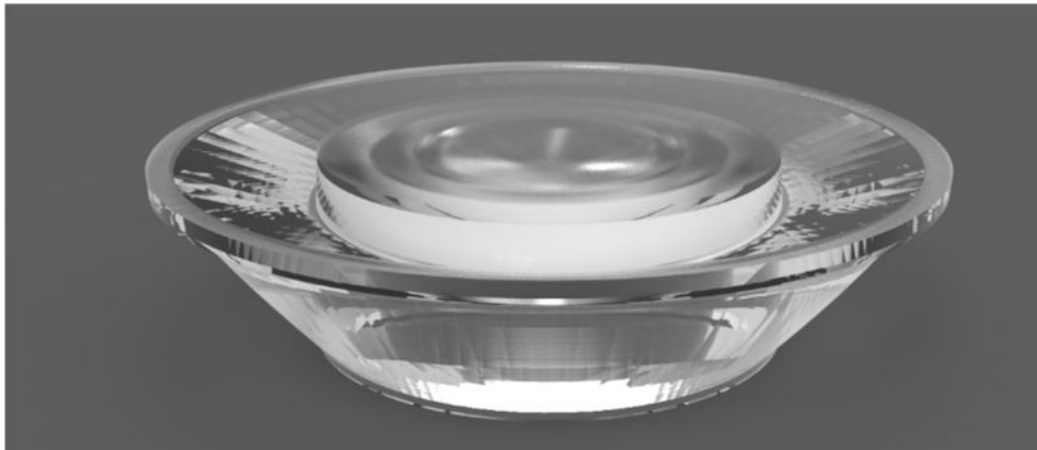
HERCULUX Chengdu HercuLux Photoelectric
恒坤光电 Technology Co.,Ltd
Product Approval

Approval number :

Customer :

PN	Code	Product
HK-90@22-12-D12-20-1g-1	1. 01. 6598	HK 90@22-12° Lens
HK-90@22-24-D12-20-1g-1	1. 01. 6642	HK 90@22-24° Lens
HK-90@22-36-D12-20-1g-1	1. 01. 6645	HK 90@22-36° Lens
HK-90@22-65-D19-20-1g-1	1. 01. 7992	HK 90@22-65° Lens

Manufacturer : Chengdu HercuLux Photoelectric Technology Co.,Ltd



Supplier confirmation				Client confirmation			
Proposed		DATE		Qualified <input type="checkbox"/>		DATE	
Project manager		DATE		Unqualified <input type="checkbox"/>		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

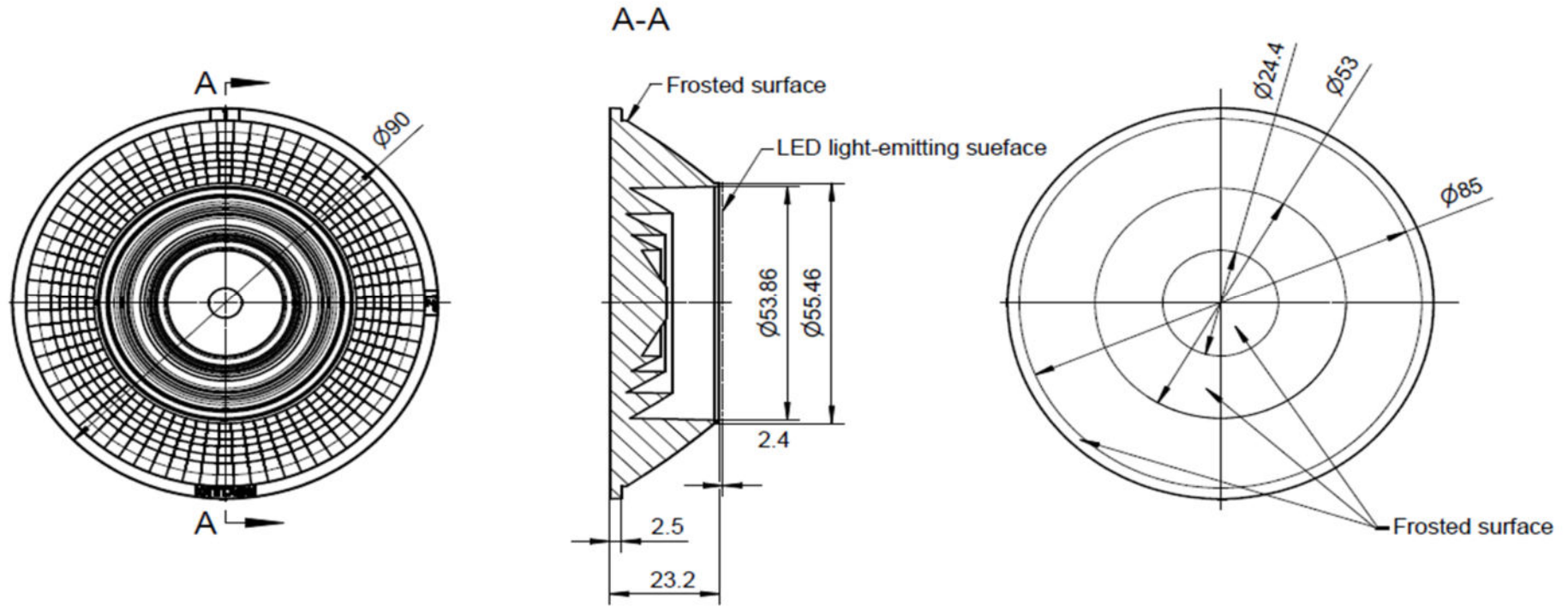
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www.hkoptics.com

Date updated: 2020/3/16

Product Picture:	
PN:	HK-90@22-12-D12-20-1g-1
Size(L*W*H/ Φ *H):	Φ :90mm; H:23.2mm
Material:	PC
Effiency:	\
Temperature(Topr):	-40°C to +120°C
FWHM:	12°/24°/36°/65°
Matched LES:	D12

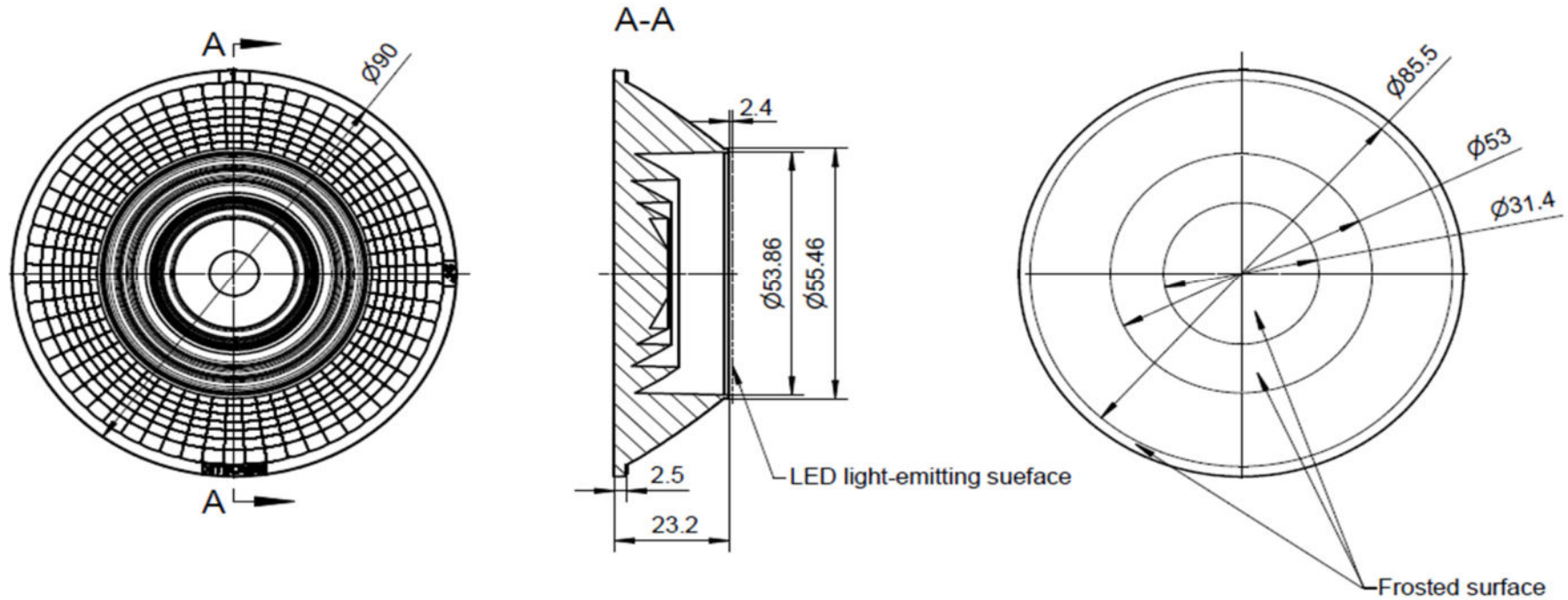


Technical remark:

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

Optical design			HK 90@22-12°Lens		HK-90@22-12-D12-20-1g-1		
Structure design			HK 90@22-12°Lens		1.01.6598		
Review					Number of drawing	qty	weight
Validation			Material:	PC	CDHK		

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

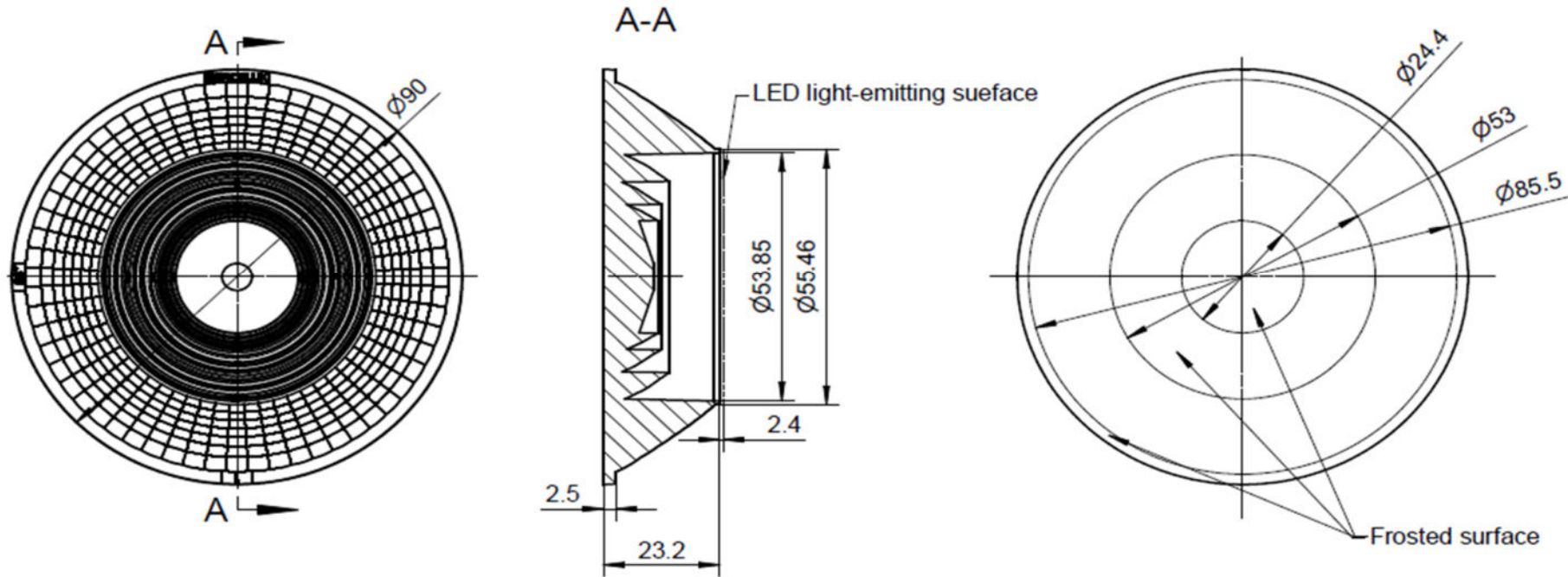


Technical remark:

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

Optical design			HK 90@22-24°Lens		HK-90@22-24-D12-20-1g-1		
Structure design					1.01.6642		
Review					Number of drawing	qty	weight
Validation			Material:	PC	CDHK		

MT5 Tolerance table (mm)	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	±2.0	

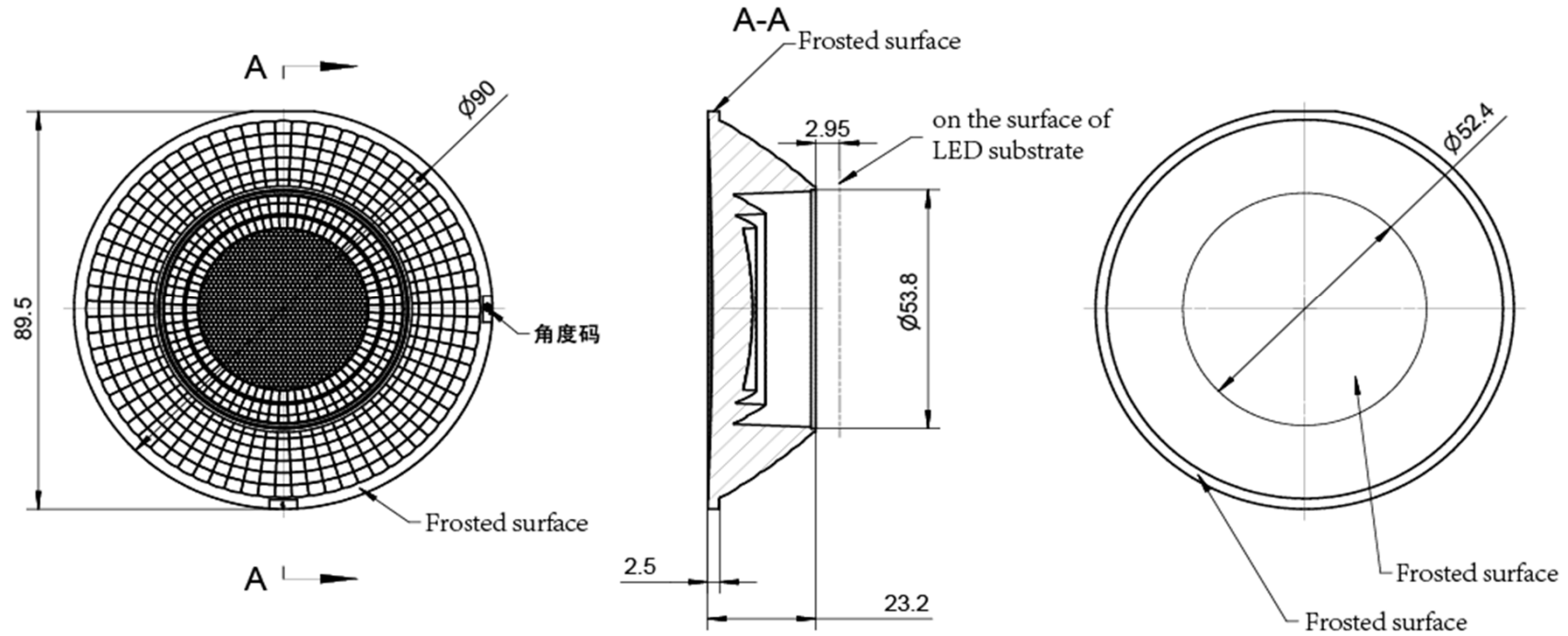


Technical remark:

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

Optical design			HK 90@22-36°Lens		HK-90@22-36-D12-20-1g-1		
Structure design			HK 90@22-36°Lens		1.01.6645		
Review					Number of drawing	qty	weight
Validation			Material:	PC	CDHK		

MT5 Tolerance table (mm)	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	± 2.0	

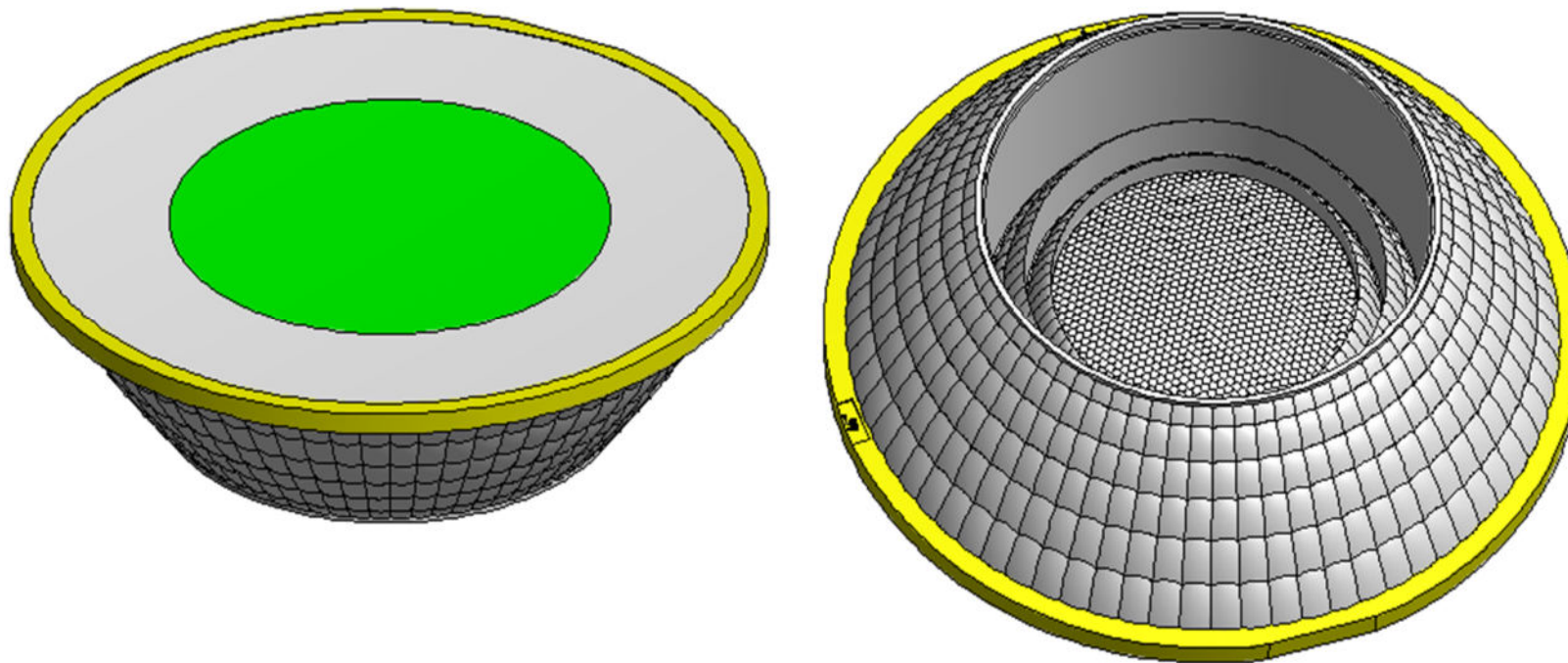


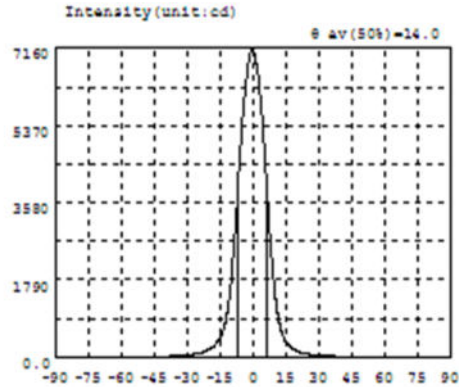
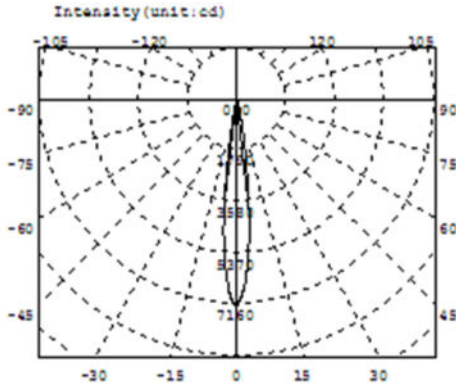
Technical remark:

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

Optical design			HK 90@22-65°Lens		HK-90@22-65-D19-20-1g-1		
Structure design					1.01.7992		
Review					Number of drawing	qty	weight
Validation			Material:	PC	CDHK		

MT5 Tolerance table (mm)	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	±2.0





Intensity data: (deg , cd) CO-180

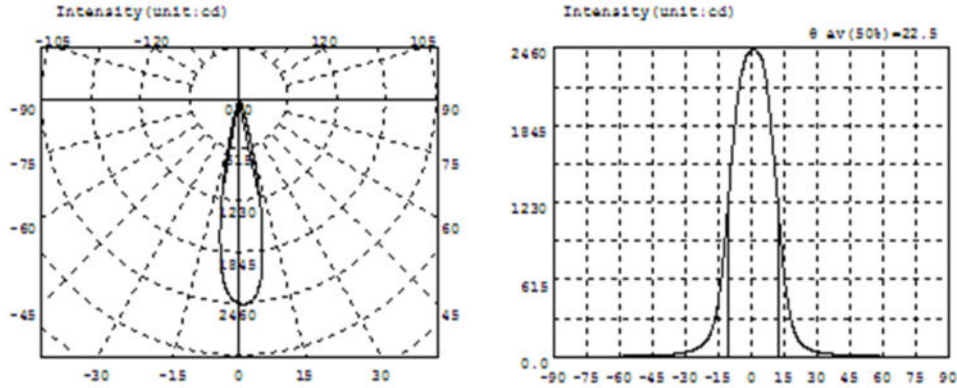
A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.6115	-58.5	8.036	-27.0	62.13	4.5	5310	36.0	21.09	67.5	5.550
-88.5	0.7525	-57.0	8.538	-25.5	77.01	6.0	4180	37.5	18.85	69.0	5.172
-87.0	1.059	-55.5	9.128	-24.0	96.43	7.5	2978	39.0	16.95	70.5	4.801
-85.5	1.404	-54.0	9.748	-22.5	121.4	9.0	1982	40.5	15.71	72.0	4.457
-84.0	1.814	-52.5	10.51	-21.0	152.9	10.5	1244	42.0	14.82	73.5	4.084
-82.5	2.285	-51.0	11.10	-19.5	194.0	12.0	780.9	43.5	14.07	75.0	3.692
-81.0	2.694	-49.5	11.59	-18.0	248.4	13.5	517.9	45.0	13.49	76.5	3.311
-79.5	3.076	-48.0	12.31	-16.5	326.0	15.0	345.4	46.5	13.05	78.0	2.895
-78.0	3.462	-46.5	13.00	-15.0	445.8	16.5	256.5	48.0	12.72	79.5	2.505
-76.5	3.858	-45.0	13.56	-13.5	631.0	18.0	197.3	49.5	12.36	81.0	2.118
-75.0	4.252	-43.5	14.31	-12.0	945.2	19.5	154.5	51.0	11.62	82.5	1.731
-73.5	4.646	-42.0	15.15	-10.5	1495	21.0	122.5	52.5	10.63	84.0	1.401
-72.0	5.015	-40.5	16.26	-9.0	2349	22.5	97.29	54.0	9.848	85.5	1.031
-70.5	5.375	-39.0	17.88	-7.5	3420	24.0	77.46	55.5	9.063	87.0	0.7715
-69.0	5.777	-37.5	20.09	-6.0	4655	25.5	62.33	57.0	8.477	88.5	0.5417
-67.5	6.080	-36.0	22.54	-4.5	5648	27.0	51.10	58.5	7.921	90.0	0.4841
-66.0	6.449	-34.5	25.79	-3.0	6453	28.5	42.57	60.0	7.458		
-64.5	6.898	-33.0	30.08	-1.5	6999	30.0	36.33	61.5	7.113		
-63.0	7.202	-31.5	35.31	0.0	7141	31.5	31.18	63.0	6.758		
-61.5	7.341	-30.0	41.82	1.5	6798	33.0	26.89	64.5	6.355		
-60.0	7.619	-28.5	50.62	3.0	6215	34.5	23.56	66.0	5.948		

Electricity Parameter:

Current I: 0.1000A Power: 3.210W
Voltage V: 32.09V PF: 1.000

Optical Parameter (Distance=2.559m):

Equivalent Luminous flux: Φ_{eff} = 584.2lm Efficiency: Eff = 182.02lm/W
Diffuse angle: @ (25%) : 19.2deg @ (50%) : 14.0deg @ (75%) : 9.3deg @ (50%) : 14.0deg
Diffuse angle: @ (25%) : 19.2deg @ (50%) : 14.0deg @ (75%) : 9.3deg @ (50%) : 14.0deg
Imax=7150cd (C=0.0deg, C=-0.5deg) CO-180Plane Imax= 7150cd (C=-0.5deg)
CO-180Plane IO= 7141cd



Intensity data:(deg , cd) CO-180

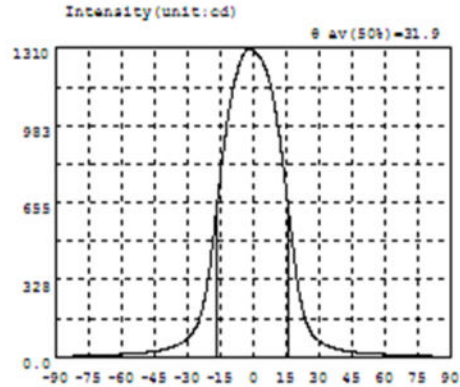
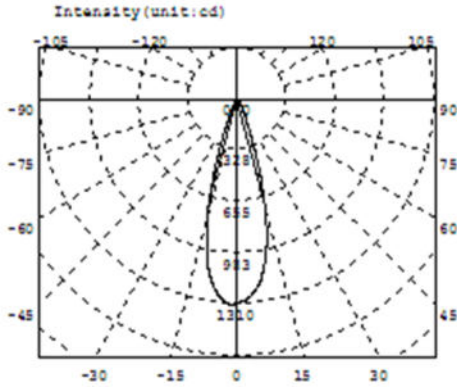
A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.2289	-58.5	6.408	-27.0	51.81	4.5	2390	36.0	23.42	67.5	4.335
-88.5	0.3440	-57.0	6.867	-25.5	60.03	6.0	2284	37.5	20.20	69.0	4.039
-87.0	0.5099	-55.5	7.320	-24.0	70.79	7.5	2120	39.0	17.50	70.5	3.748
-85.5	0.7140	-54.0	8.209	-22.5	87.22	9.0	1845	40.5	15.94	72.0	3.478
-84.0	0.9812	-52.5	11.44	-21.0	113.8	10.5	1563	42.0	14.89	73.5	3.174
-82.5	1.261	-51.0	14.18	-19.5	152.6	12.0	1263	43.5	14.10	75.0	2.853
-81.0	1.530	-49.5	11.74	-18.0	208.8	13.5	941.6	45.0	13.31	76.5	2.558
-79.5	1.798	-48.0	11.51	-16.5	294.6	15.0	655.3	46.5	12.49	78.0	2.254
-78.0	2.066	-46.5	12.28	-15.0	436.4	16.5	455.5	48.0	11.80	79.5	1.957
-76.5	2.385	-45.0	12.68	-13.5	641.5	18.0	303.2	49.5	10.85	81.0	1.640
-75.0	2.691	-43.5	13.11	-12.0	904.6	19.5	210.5	51.0	9.811	82.5	1.361
-73.5	2.997	-42.0	13.72	-10.5	1216	21.0	147.9	52.5	9.157	84.0	1.081
-72.0	3.318	-40.5	14.67	-9.0	1544	22.5	110.4	54.0	8.567	85.5	0.8008
-70.5	3.661	-39.0	16.08	-7.5	1832	24.0	85.99	55.5	7.439	87.0	0.5682
-69.0	4.019	-37.5	17.94	-6.0	2081	25.5	70.05	57.0	6.616	88.5	0.3628
-67.5	4.349	-36.0	20.21	-4.5	2248	27.0	58.92	58.5	6.391	90.0	0.2556
-66.0	4.709	-34.5	23.53	-3.0	2348	28.5	50.74	60.0	6.108		
-64.5	5.188	-33.0	27.74	-1.5	2413	30.0	43.49	61.5	6.015		
-63.0	5.782	-31.5	32.51	0.0	2439	31.5	37.07	63.0	5.739		
-61.5	6.053	-30.0	38.05	1.5	2458	33.0	31.44	64.5	5.155		
-60.0	6.116	-28.5	44.45	3.0	2428	34.5	27.01	66.0	4.669		

Electricity Parameter:

Current I: 0.1000A Power: 3.220W
 Voltage V: 32.20V PF: 0.000

Optical Parameter (Distance=2.559m):

Equivalent Luminous flux: $\Phi_{eff} = 434.01lm$ Efficiency: $Eff = 134.80lm/W$
 Diffuse angle: @ (25%): 28.8deg @ (50%): 22.5deg @ (75%): 16.4deg @ (50%): 22.5deg
 Diffuse angle: @ (25%): 28.9deg @ (50%): 22.6deg @ (75%): 16.5deg @ (50%): 22.6deg
 Imax=2459cd (C=0.0deg, G=1.0deg) CO-180Plane Imax= 2459cd (G=1.0deg)
 CO-180Plane IO= 2439cd



Intensity data: (deg , cd) CO-180

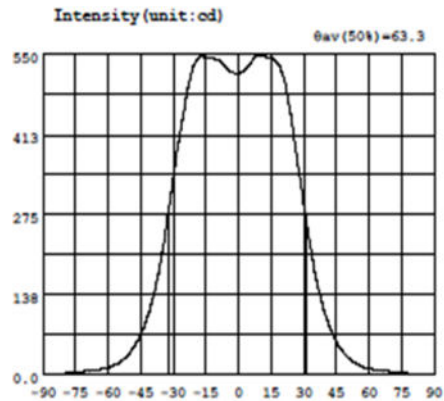
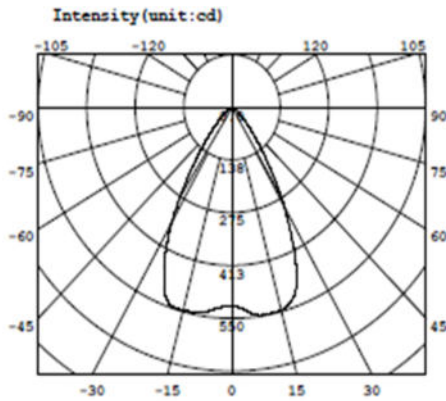
A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.3180	-58.5	12.60	-27.0	109.8	4.5	1249	36.0	40.71	67.5	8.423
-88.5	0.5738	-57.0	13.71	-25.5	136.1	6.0	1215	37.5	36.13	69.0	7.827
-87.0	1.186	-55.5	14.91	-24.0	175.0	7.5	1168	39.0	32.51	70.5	7.305
-85.5	1.787	-54.0	16.06	-22.5	229.1	9.0	1102	40.5	29.68	72.0	6.725
-84.0	2.598	-52.5	17.23	-21.0	303.0	10.5	1026	42.0	27.24	73.5	6.146
-82.5	3.259	-51.0	18.52	-19.5	397.8	12.0	934.4	43.5	24.96	75.0	5.567
-81.0	3.772	-49.5	19.98	-18.0	510.6	13.5	828.6	45.0	22.93	76.5	5.078
-79.5	4.182	-48.0	21.62	-16.5	636.4	15.0	708.3	46.5	21.21	78.0	4.551
-78.0	4.740	-46.5	23.41	-15.0	763.2	16.5	592.0	48.0	19.63	79.5	4.047
-76.5	5.285	-45.0	25.42	-13.5	877.1	18.0	478.7	49.5	18.25	81.0	3.463
-75.0	5.859	-43.5	27.53	-12.0	984.2	19.5	361.3	51.0	17.01	82.5	2.905
-73.5	6.351	-42.0	30.00	-10.5	1074	21.0	270.0	52.5	15.99	84.0	2.362
-72.0	6.832	-40.5	32.91	-9.0	1146	22.5	203.5	54.0	15.02	85.5	1.599
-70.5	7.436	-39.0	36.42	-7.5	1202	24.0	153.5	55.5	14.02	87.0	1.000
-69.0	7.969	-37.5	40.45	-6.0	1248	25.5	119.3	57.0	12.90	88.5	0.6225
-67.5	8.564	-36.0	45.42	-4.5	1282	27.0	95.80	58.5	12.04	90.0	0.4042
-66.0	9.070	-34.5	51.34	-3.0	1302	28.5	80.38	60.0	11.32		
-64.5	9.723	-33.0	57.87	-1.5	1307	30.0	68.65	61.5	10.70		
-63.0	10.39	-31.5	65.59	0.0	1300	31.5	59.01	63.0	10.02		
-61.5	11.01	-30.0	76.34	1.5	1288	33.0	51.71	64.5	9.485		
-60.0	11.76	-28.5	90.26	3.0	1273	34.5	45.93	66.0	8.936		

Electricity Parameter:

Current I: 0.1000A Power: 3.240W
 Voltage V: 32.40V PF: 0.000

Optical Parameter (Distance=2.559m):

Equivalent Luminous flux: Φ_{eff} = 459.6lm Efficiency: Eff=141.88lm/W
 Diffuse angle: @ (25%): 40.5deg @ (50%): 31.9deg @ (75%): 23.2deg @ (50%): 31.9deg
 Diffuse angle: @ (25%): 40.6deg @ (50%): 32.0deg @ (75%): 23.4deg @ (50%): 32.0deg
 Imax=1307cd (C=0.0deg, G=-1.5deg) CO-180Plane Imax= 1307cd(G=-1.5deg)
 CO-180Plane I0= 1300cd



Intensity data:(deg , cd) C0-180

A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.5250	-58.5	14.38	-27.0	414.2	4.5	520.7	36.0	161.1	67.5	6.297
-88.5	0.7295	-57.0	16.77	-25.5	446.5	6.0	528.5	37.5	126.4	69.0	5.684
-87.0	0.9566	-55.5	19.75	-24.0	478.4	7.5	545.1	39.0	115.2	70.5	5.092
-85.5	1.250	-54.0	23.55	-22.5	506.4	9.0	548.2	40.5	97.29	72.0	4.558
-84.0	1.596	-52.5	28.22	-21.0	527.2	10.5	548.5	42.0	81.97	73.5	4.044
-82.5	1.978	-51.0	34.19	-19.5	540.2	12.0	547.2	43.5	68.80	75.0	3.559
-81.0	2.275	-49.5	41.00	-18.0	546.2	13.5	545.5	45.0	57.60	76.5	3.102
-79.5	2.770	-48.0	49.07	-16.5	546.8	15.0	545.4	46.5	48.12	78.0	2.710
-78.0	3.181	-46.5	58.76	-15.0	545.6	16.5	542.0	48.0	40.18	79.5	2.312
-76.5	3.668	-45.0	70.02	-13.5	544.7	18.0	524.9	49.5	32.41	81.0	1.941
-75.0	4.166	-43.5	82.26	-12.0	544.2	19.5	524.2	51.0	27.72	82.5	1.607
-73.5	4.702	-42.0	98.62	-10.5	542.2	21.0	507.5	52.5	23.12	84.0	1.262
-72.0	5.240	-40.5	117.1	-9.0	529.8	22.5	480.9	54.0	19.47	85.5	0.9772
-70.5	5.850	-39.0	138.5	-7.5	534.9	24.0	446.9	55.5	16.56	87.0	0.7857
-69.0	6.468	-37.5	162.4	-6.0	529.0	25.5	410.9	57.0	14.21	88.5	0.6269
-67.5	7.146	-36.0	192.5	-4.5	522.2	27.0	369.5	58.5	12.25	90.0	0.5618
-66.0	7.898	-34.5	225.2	-3.0	519.9	28.5	321.8	60.0	10.87		
-64.5	8.802	-32.0	261.4	-1.5	518.2	30.0	295.1	61.5	9.642		
-62.0	9.818	-21.5	300.4	0.0	518.5	31.5	258.1	63.0	8.650		
-61.5	10.98	-20.0	340.6	1.5	519.6	32.0	222.2	64.5	7.780		
-60.0	12.46	-28.5	379.8	3.0	524.4	34.5	189.6	66.0	6.972		

Electricity Parameter:

Current I: 0.1000A Power: 3.220W
Voltage V: 32.20V PF: 1.000

Optical Parameter (Distance=2.559m):

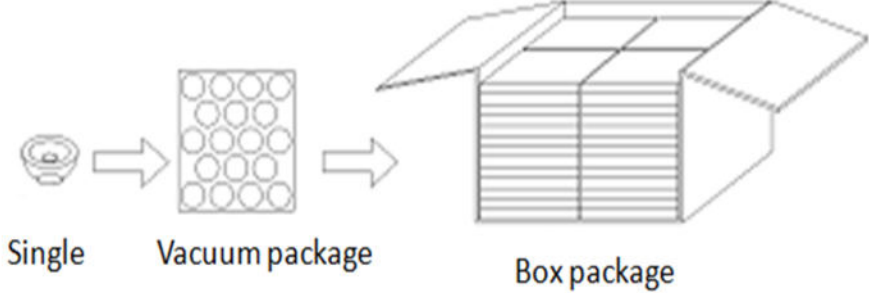
Equivalent Luminous flux: $\Phi_{eff} = 611.3lm$ Efficiency: $Eff=189.87lm/W$
Diffuse angle: @ (25%): 76.4deg @ (50%): 63.3deg @ (75%): 52.5deg @ (50%): 63.3deg
Diffuse angle: @ (25%): 77.4deg @ (50%): 64.4deg @ (75%): 54.4deg @ (50%): 64.4deg
Imax=548.5cd (C=0.0deg,G=10.5deg) C0-180Plane Imax= 548.5cd(G=10.5deg)
C0-180Plane I0= 518.5cd

	Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Judgment	Remarks																																										
1.Size	diameter	90		89.96	89.86	89.99			Test environment: In 20 °C -25 °C environment to achieve thermal equilibrium after the test.																																										
	height1	23.2		23.3	23.34	23.32																																													
	height2	20.7		20.7	20.68	20.75																																													
	Gate shear can not affect the appearance of the lamp																																																		
See attachment "Appearance Inspection Standards"																																																			
2.Appearance Quality	See attachment "Appearance Inspection Standards"	E	No burr	No burr	No burr	No burr	OK																																												
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3.Material	PC			Color	Transparent			OK																																											
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	FWHM	See light distribution curve																																																	
	angle		14°	13.5°																																															
	K-value		12.23	12.45																																															
	Efficiency		85.74%	86.17%																																															
Facula	See the signature sample																																																		
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	FWHM	See light distribution curve																																																	
	angle		22.5°	23																																															
	K-value		5.66	5.55																																															
	Efficiency		87.55%	88.35%																																															
Facula	See the signature sample																																																		
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1.Size	diameter	90		90.04	90.06	90.04			Test environment: In 20 °C -25 °C environment to achieve thermal equilibrium after the test.																																										
	height1	23.2		23.43	23.5	23.46																																													
	height2	20.7		20.84	20.92	20.93																																													
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	FWHM	See light distribution curve																																																	
	angle		31.9°	30.9°																																															
	K-value		2.93	2.92																																															
	Efficiency		81.83%	81.70%																																															
Facula	See the signature sample																																																		
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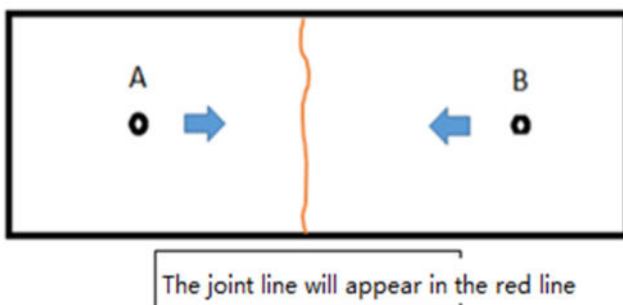
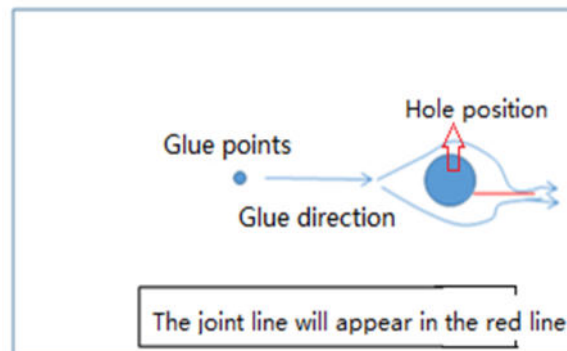
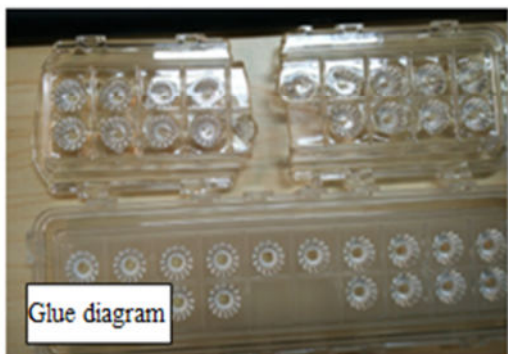
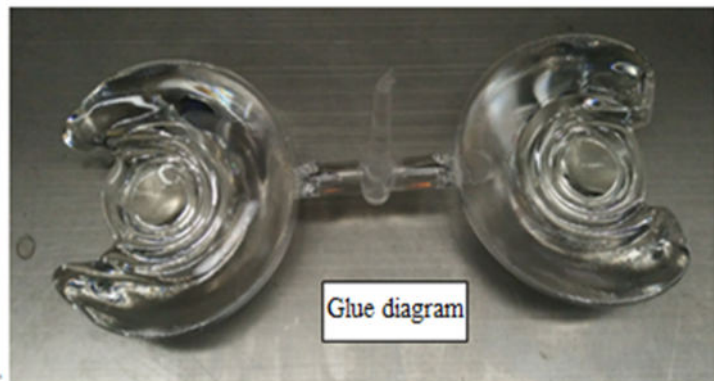
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	height1	23.2		23.44	23.58	23.44	23.58																																												
	height2	20.7		20.86	20.98	20.86	20.98																																												
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	K-value																																																		
	Efficiency		88.68%	88.21%	88.68%	88.21%																																													
Facula	See the signature sample																																																		
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PN		HK-90@22-12-D12-20-1g-1		Product Name		HK 90@22-12°Lens	
Product material		PC		Customer			
Package diagram		 <p style="text-align: center;"> Single Vacuum package Box package </p>					
Product packing		5		A/ Box		4	
		12		Layer/Box		240	
				Box/Layer			
				A/ Carton			
Packaging Materials	NO.	Part No	Part name	Size	Dosage	Unit	Remarks
	1	2.07.0065	Blister box	23cm*21cm	48	BAG	
	2	2.08.0001	PE film	30cm*30cm	48	PCS	
	3	2.06.0005	Reel label paper	6.2cm*8cm	48	PCS	
	4	2.06.0005	Box label paper	6.2cm*9.2cm	1	PCS	
	5	2.06.0003	big plate	46.8cm*42.8cm	13	PCS	
	6	2.06.0015	big flat carton	48cm*44cm*19cm	1	PCS	
Remarks	The loose packing is not subject to this specification. Customer's requirements shall prevail						

Special notice

When glue 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:

Syntner



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

1.1.1 Sampling standards, sampling plan and AQL

Test level : GB/T2828.1-2012 The 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	H		Depth	mm
W	Width	mm	DS		Distance	mm
S	Proportion	mm ²	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	MI	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.	Sample comparison , 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;				

	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.	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	1 : Product does not allow the presence of flow marks and welding lines unless the structure can not be avoided;	Visual		√	
	2: The remaining flow marks shall not appear in the optical surface, a single L ≤ 10mm, no more than two				

Bubble	No bubbles are allowed	Visual		√	
Foreign objects, black spots, white spots	Not obvious or $D \leq 0.3\text{mm}$ 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	√		
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	√		
Bad incision	1: Do not affect the product size, shall not penetrate the optical surface, the cut should be smooth;	Visual			√
	2: Laser cutting products, the optical surface burns shall not occur after the processing is completed. Beading must not affect product installation				
	3: Three molds and hot runner gate shall not appear residue.				
Scrub	Scrub surface should be uniform, off the scrub phenomenon should not be obvious , A single off scrub imprint requires $D \leq 1\text{ mm}$ and no more than 1 area within a 50x50 mm area	Visual		√	