



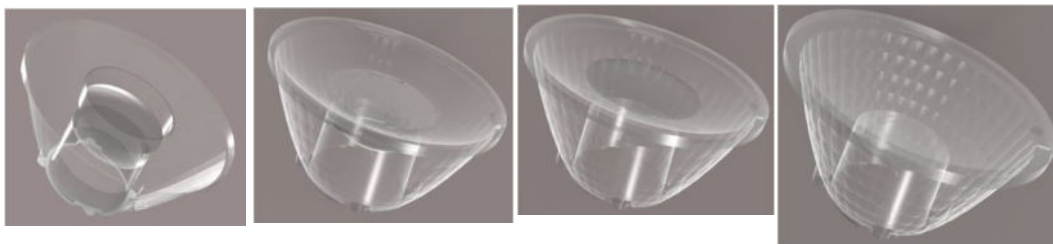
**HERCULUX** Chengdu HercuLux Photoelectric  
**恒坤光电** Technology Co.,Ltd  
**Product Approval**

Approval number :

Customer :

Manufacturer : Chengdu HercuLux Photoelectric Technology Co.,Ltd

PN	Code	Product
HK-50@25-12-D6-22-1g-1	1. 01. 81640	50@25-12° lens
HK-50@25-24-D6-22-1g-1	1. 01. 81641	50@25-24° lens
HK-50@25-36-D6-20-1g-1	1. 01. 81642	50@25-36° lens
HK-50@25-60-D6-20-1g-1	1. 01. 91671	50@25-60° lens



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

<http://www.herculux.cn/>

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

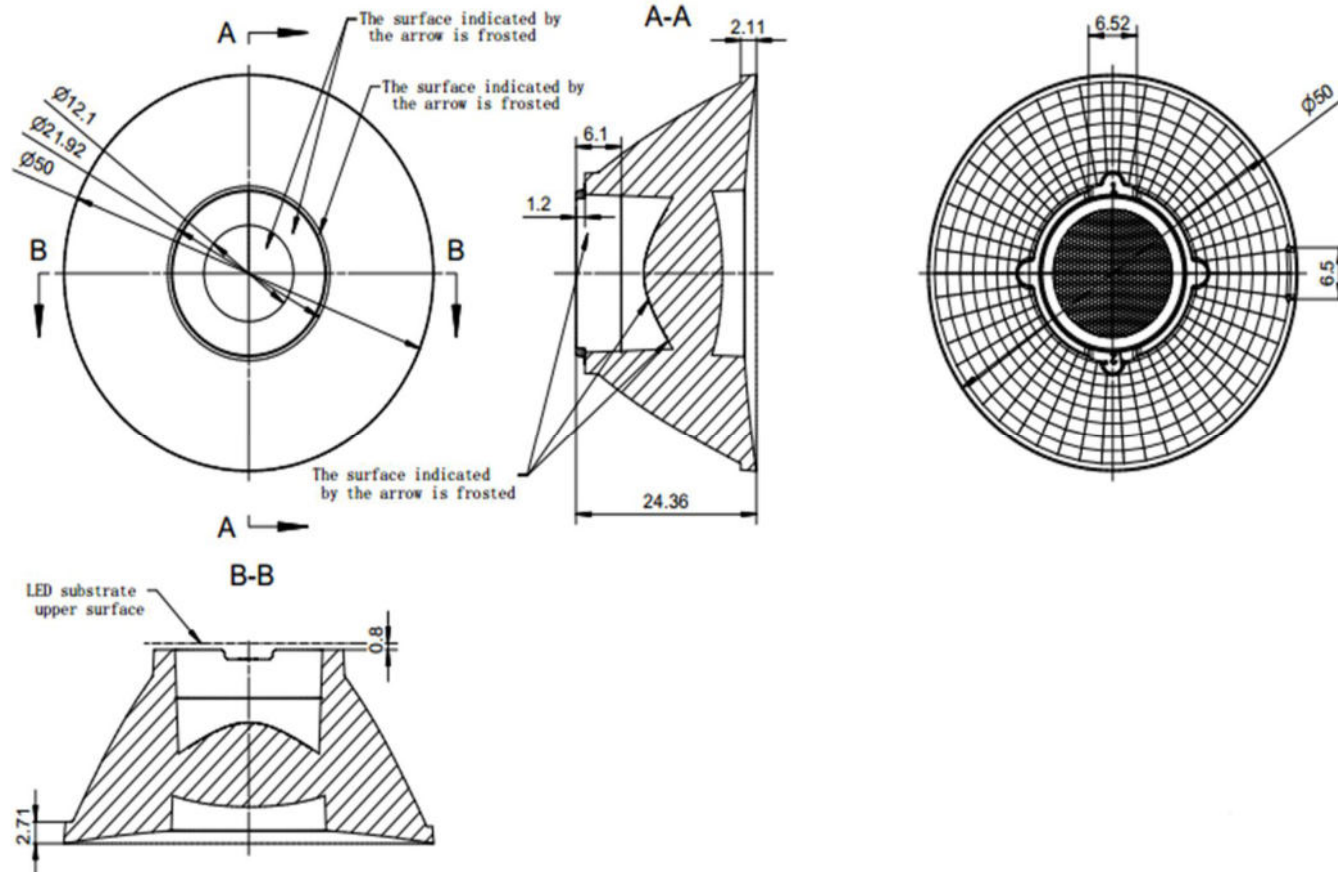
TEL: 0755-2937 1541

FAX: 0755-2907 5140

<http://www.herculux.cn/>

Date updated: 2021/6/18

Product Picture:	
PN:	HK-50@25-12-D6-22-1g-1
Size(L*W*H/Φ*H):	Φ:50mm; H:25mm
Material:	PMMA
Efficiency:	≥88%
Temperature(Topr):	-40°C to +80°C
FWHM:	12°、24°、36°、60°
Matched LES:	D6

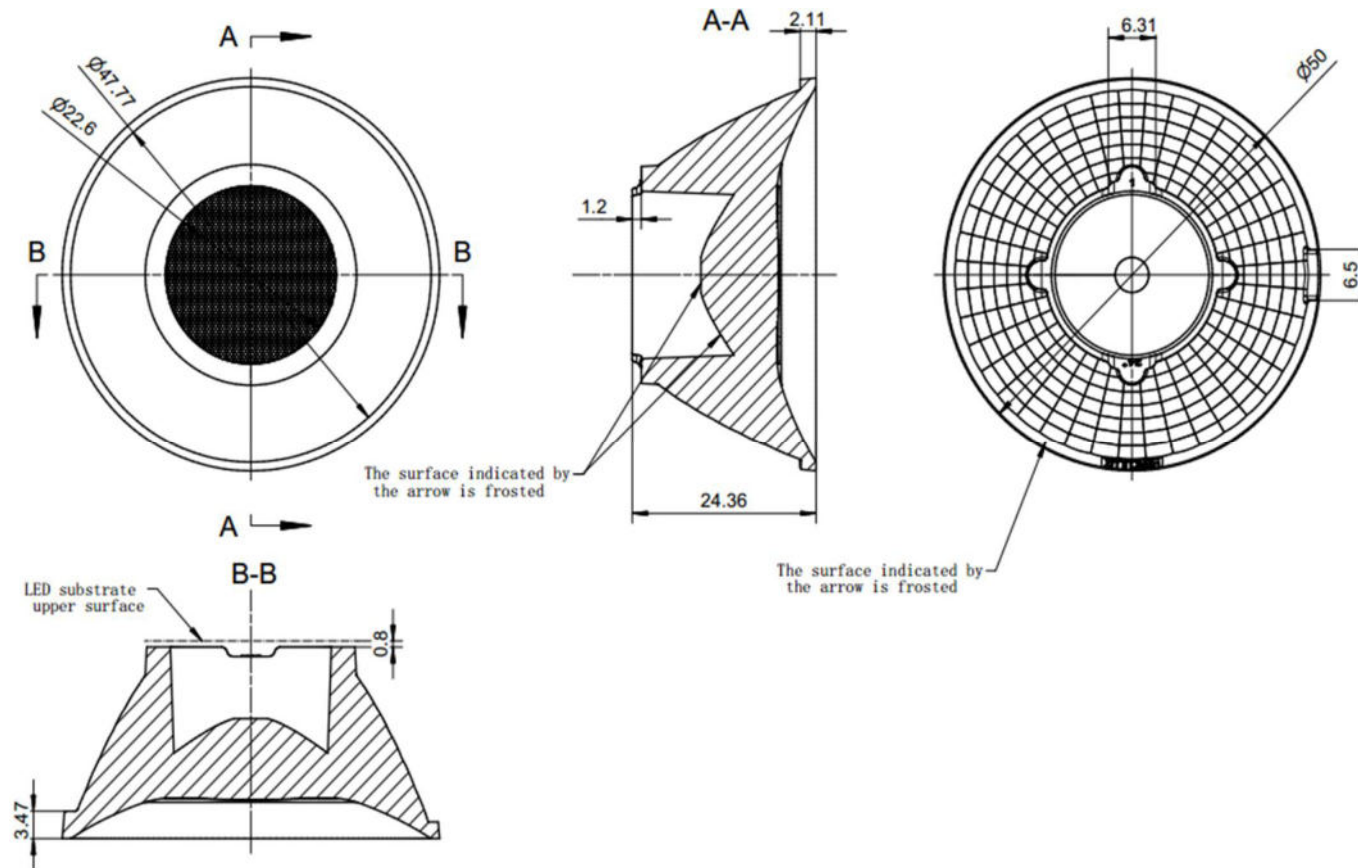


**Technical remark:**

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			50@25-12@lens		HK-50@25-12-D6-22-1g-1		
Structure design			50@25-12@lens		1.01.81640		
Review					number of drawing	qty	weight
Validation					CDHK		
			Material:	PMMA			

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

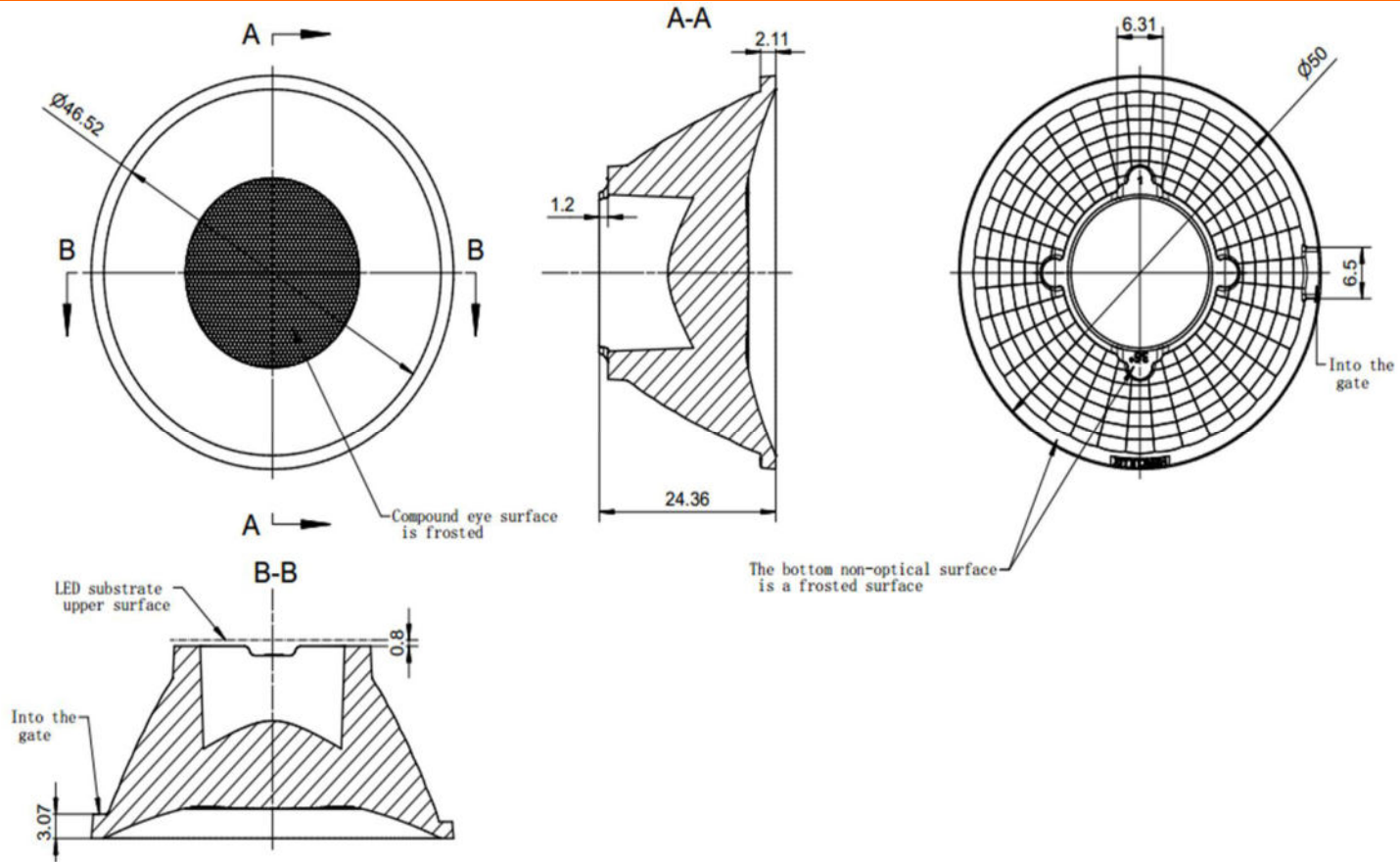


**Technical remark:**

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			50@25-24@lens		HK-50@25-24-D6-22-1g-1		
Structure design			50@25-24@lens		1.01.81641		
Review					number of drawing	qty	weight
Validation					CDHK		
			Material:	PMMA			

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

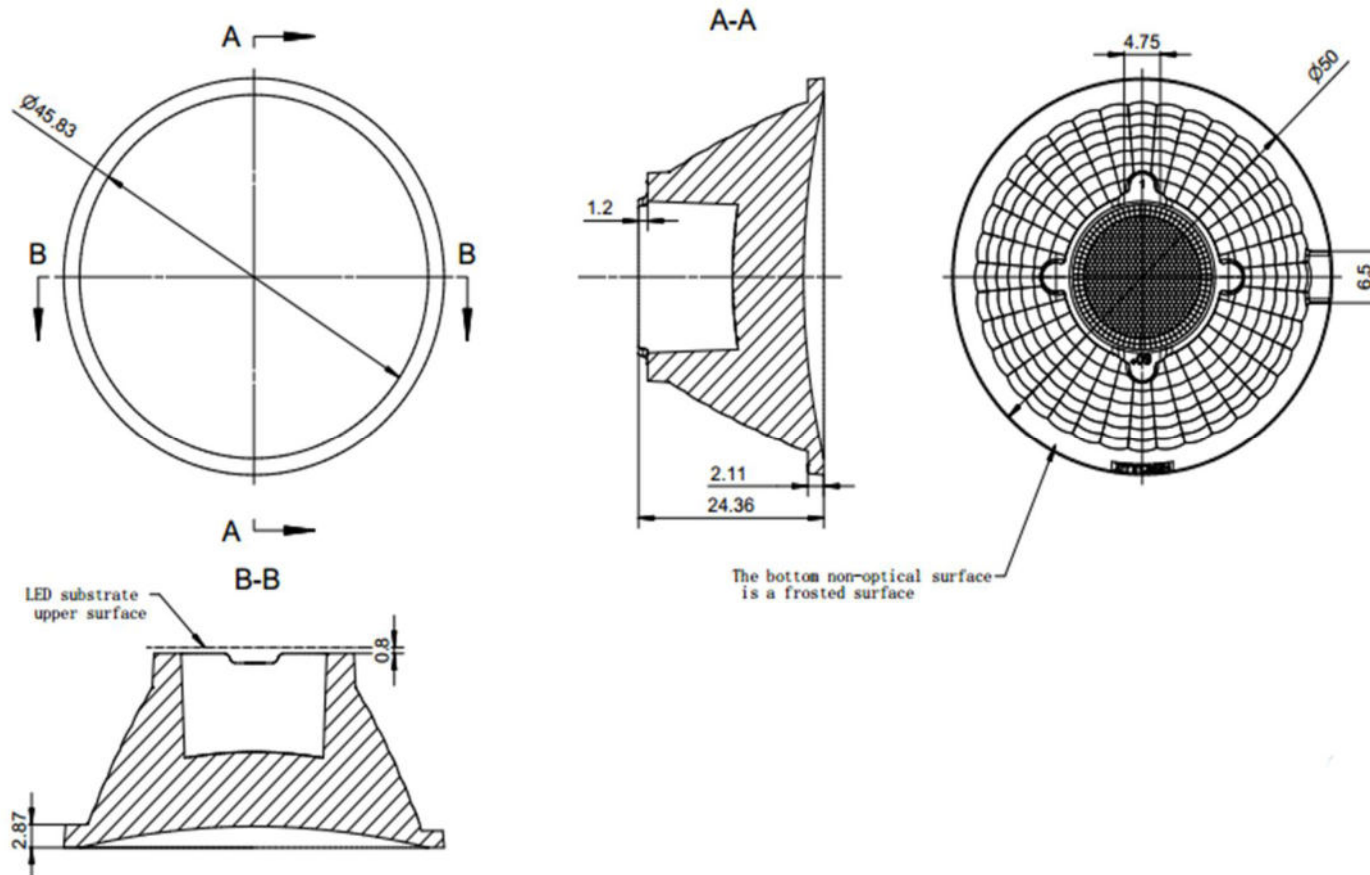


**Technical remark:**

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			50@25-36@lens		HK-50@25-36-D6-20-1g-1		
Structure design					1.01.81642		
Review					Number of drawing	qty	weight
Validation					CDHK		
			Material:		PMMA		

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

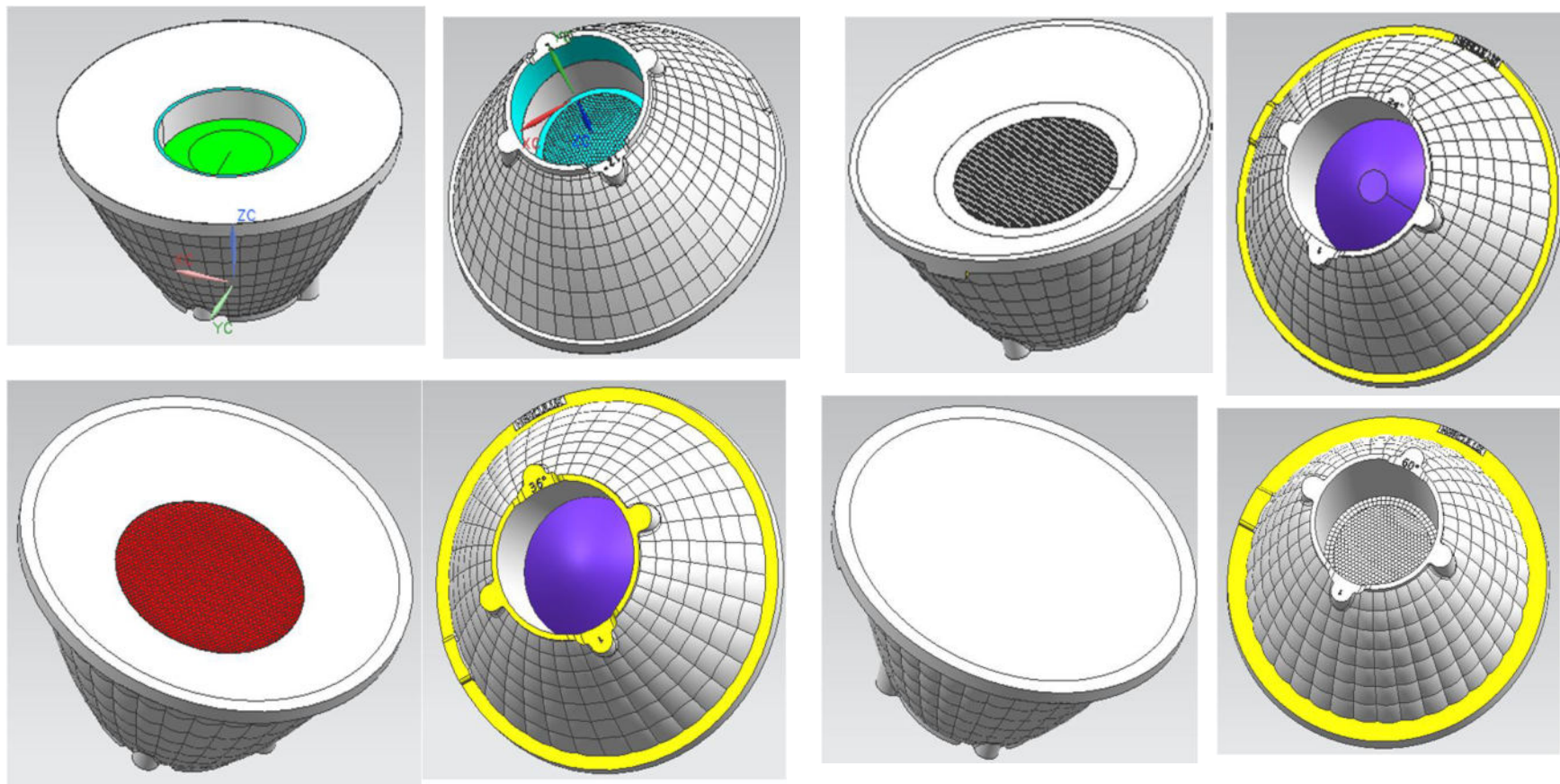


**Technical remark:**

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.

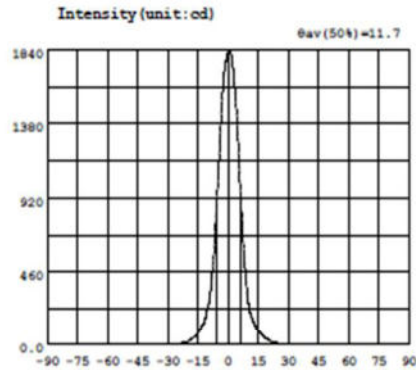
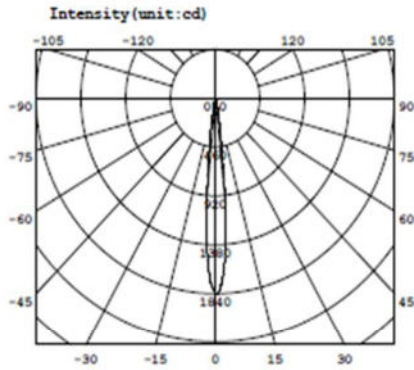
Optical design			HK-50@25-60-D6-20-1g-1	
Structure design			50@25-60@lens	
Review			1.01.91671	
Validation			number of drawing	qty
				weight
			Material:	PMMA
				CDHK

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





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Intensity data:(deg , cd) C0-180

A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.2920	-58.5	1.248	-27.0	5.251	4.5	1356	26.0	2.491	67.5	1.072
-88.5	0.2920	-57.0	1.262	-25.5	6.925	6.0	972.7	27.5	2.295	69.0	1.001
-87.0	0.3212	-55.5	1.252	-24.0	9.746	7.5	629.3	29.0	2.132	70.5	0.9249
-85.5	0.3442	-54.0	1.276	-22.5	13.93	9.0	374.9	40.5	1.975	72.0	0.7970
-84.0	0.3698	-52.5	1.292	-21.0	19.82	10.5	232.7	42.0	1.851	73.5	0.6716
-82.5	0.4081	-51.0	1.340	-19.5	28.79	12.0	162.4	43.5	1.749	75.0	0.5649
-81.0	0.4325	-49.5	1.380	-18.0	41.52	13.5	119.3	45.0	1.660	76.5	0.5265
-79.5	0.4465	-48.0	1.444	-16.5	58.91	15.0	90.28	46.5	1.570	78.0	0.4988
-78.0	0.4848	-46.5	1.511	-15.0	79.86	16.5	68.49	48.0	1.489	79.5	0.4722
-76.5	0.5104	-45.0	1.591	-13.5	107.6	18.0	51.08	49.5	1.425	81.0	0.4586
-75.0	0.5487	-43.5	1.688	-12.0	149.8	19.5	37.06	51.0	1.361	82.5	0.4094
-73.5	0.6274	-42.0	1.789	-10.5	217.5	21.0	25.99	52.5	1.319	84.0	0.3965
-72.0	0.7550	-40.5	1.920	-9.0	324.5	22.5	18.26	54.0	1.268	85.5	0.3598
-70.5	0.8585	-39.0	2.060	-7.5	522.0	24.0	12.65	55.5	1.261	87.0	0.3226
-69.0	0.9266	-37.5	2.222	-6.0	822.5	25.5	8.616	57.0	1.248	88.5	0.3057
-67.5	1.012	-36.0	2.406	-4.5	1187	27.0	6.240	58.5	1.245	90.0	0.2920
-66.0	1.085	-34.5	2.648	-3.0	1529	28.5	4.870	60.0	1.267		
-64.5	1.138	-33.0	2.924	-1.5	1739	30.0	4.052	61.5	1.264		
-63.0	1.202	-31.5	3.292	0.0	1828	31.5	3.450	63.0	1.251		
-61.5	1.229	-30.0	3.764	1.5	1802	32.0	3.042	64.5	1.200		
-60.0	1.250	-28.5	4.427	3.0	1641	34.5	2.728	66.0	1.152		

Electricity Parameter:

Current I: 0.1000A Power: 0.8200W  
Voltage V: 8.200V PF: 1.000

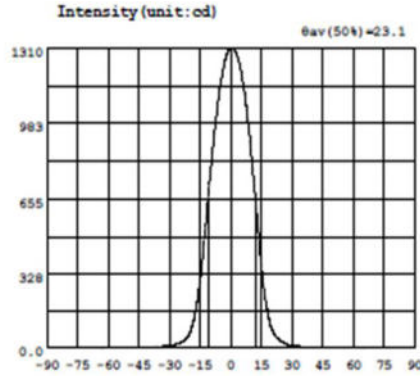
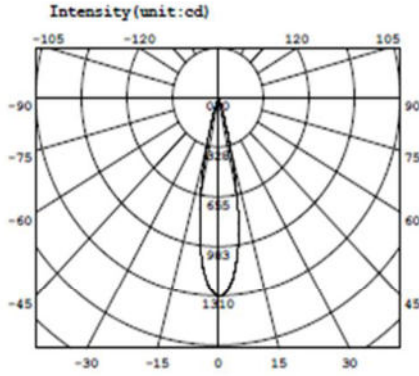
Optical Parameter(Distance=2.559m):

Equivalent Luminous flux:  $\Phi_{eff} = 113.4lm$  Efficiency:  $Eff=138.35lm/W$   
Diffuse angle: @ (25%) : 16.3deg @ (50%) : 11.7deg @ (75%) : 8.1deg @ (50%) : 11.7deg  
Diffuse angle: @ (25%) : 16.3deg @ (50%) : 11.8deg @ (75%) : 8.1deg @ (50%) : 11.8deg  
 $I_{max}=1835cd$  (C=0.0deg, G=0.5deg) C0-180Plane  $I_{max}= 1835cd$ (G=0.5deg)  
C0-180Plane  $I_0= 1828cd$





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Intensity data:(deg , cd) C0-180

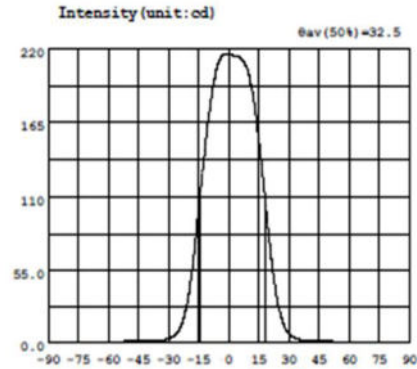
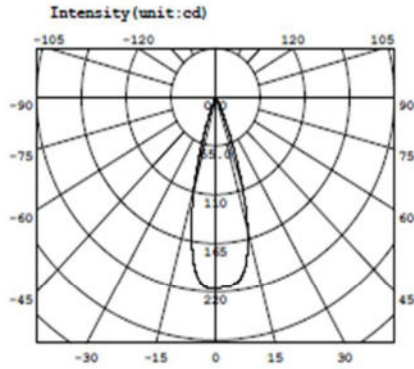
A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.2803	-58.5	2.655	-27.0	18.46	4.5	1226	36.0	7.220	67.5	1.898
-88.5	0.3187	-57.0	2.757	-25.5	23.18	6.0	1152	37.5	6.435	69.0	1.704
-87.0	0.3698	-55.5	2.849	-24.0	29.10	7.5	1055	39.0	5.757	70.5	1.485
-85.5	0.4461	-54.0	3.019	-22.5	38.67	9.0	924.5	40.5	5.229	72.0	1.275
-84.0	0.5223	-52.5	3.095	-21.0	55.22	10.5	798.0	42.0	4.765	73.5	1.083
-82.5	0.5869	-51.0	3.176	-19.5	85.07	12.0	648.8	43.5	4.356	75.0	0.9576
-81.0	0.6620	-49.5	3.271	-18.0	135.1	13.5	503.0	45.0	4.027	76.5	0.9066
-79.5	0.7275	-48.0	3.386	-16.5	208.6	15.0	353.8	46.5	3.742	78.0	0.8575
-78.0	0.7786	-46.5	3.586	-15.0	304.7	16.5	237.9	48.0	3.521	79.5	0.7809
-76.5	0.8544	-45.0	3.870	-13.5	425.6	18.0	155.9	49.5	3.402	81.0	0.7061
-75.0	0.8927	-43.5	4.205	-12.0	580.5	19.5	100.9	51.0	3.210	82.5	0.6514
-73.5	0.9851	-42.0	4.562	-10.5	727.2	21.0	66.76	52.5	3.217	84.0	0.5810
-72.0	1.129	-40.5	5.034	-9.0	865.6	22.5	46.27	54.0	3.140	85.5	0.4871
-70.5	1.332	-39.0	5.539	-7.5	992.0	24.0	34.39	55.5	2.997	87.0	0.4218
-69.0	1.544	-37.5	6.168	-6.0	1098	25.5	26.62	57.0	2.872	88.5	0.3480
-67.5	1.739	-36.0	6.906	-4.5	1188	27.0	21.23	58.5	2.764	90.0	0.3070
-66.0	1.907	-34.5	7.796	-3.0	1251	28.5	16.65	60.0	2.684		
-64.5	2.110	-33.0	8.906	-1.5	1291	30.0	12.42	61.5	2.576		
-63.0	2.272	-31.5	10.27	0.0	1307	31.5	11.13	63.0	2.454		
-61.5	2.422	-30.0	12.14	1.5	1304	33.0	9.472	64.5	2.291		
-60.0	2.528	-28.5	14.71	3.0	1277	34.5	8.245	66.0	2.105		

Electricity Parameter:

Current I: 0.2000A Power: 1.679W  
 Voltage V: 8.399V PF: 1.000

Optical Parameter(Distance=2.559m):

Equivalent Luminous flux:  $\Phi_{eff} = 223.81m$  Efficiency:  $Eff=133.35lm/W$   
 Diffuse angle: @ (25%): 29.9deg@ (50%): 23.1deg@ (75%): 16.0deg@ (50%): 23.1deg  
 Diffuse angle: @ (25%): 29.9deg@ (50%): 23.1deg@ (75%): 16.0deg@ (50%): 23.1deg  
 I<sub>max</sub>=1308cd (C=0.0deg,G=0.5deg) C0-180Plane I<sub>max</sub>= 1308cd(C=0.5deg)  
 C0-180Plane I<sub>0</sub>= 1307cd



Intensity data:(deg , cd) C0-180

A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.3729	-58.5	1.165	-27.0	6.092	4.5	214.1	36.0	2.731	67.5	0.9425
-88.5	0.4068	-57.0	1.239	-25.5	8.523	6.0	212.6	37.5	2.378	69.0	0.8926
-87.0	0.3729	-55.5	1.361	-24.0	12.73	7.5	210.1	39.0	2.144	70.5	0.8882
-85.5	0.3962	-54.0	1.425	-22.5	19.42	9.0	205.2	40.5	1.974	72.0	0.9152
-84.0	0.4619	-52.5	1.477	-21.0	29.03	10.5	197.0	42.0	1.826	73.5	0.9470
-82.5	0.4067	-51.0	1.550	-19.5	42.52	12.0	185.2	43.5	1.743	75.0	0.9097
-81.0	0.4057	-49.5	1.592	-18.0	59.65	13.5	169.8	45.0	1.671	76.5	0.8078
-79.5	0.4873	-48.0	1.620	-16.5	80.11	15.0	151.6	46.5	1.619	78.0	0.7267
-78.0	0.6221	-46.5	1.660	-15.0	101.9	16.5	130.9	48.0	1.604	79.5	0.6717
-76.5	0.6923	-45.0	1.672	-13.5	124.0	18.0	108.7	49.5	1.573	81.0	0.6472
-75.0	0.8269	-43.5	1.697	-12.0	144.9	19.5	86.76	51.0	1.539	82.5	0.6990
-73.5	0.8267	-42.0	1.728	-10.5	164.0	21.0	65.66	52.5	1.502	84.0	0.4635
-72.0	0.9172	-40.5	1.765	-9.0	181.4	22.5	47.54	54.0	1.452	85.5	0.4420
-70.5	0.9232	-39.0	1.827	-7.5	195.4	24.0	33.35	55.5	1.415	87.0	0.4406
-69.0	0.8261	-37.5	1.940	-6.0	205.9	25.5	22.66	57.0	1.378	88.5	0.5276
-67.5	0.7896	-36.0	2.079	-4.5	212.2	27.0	15.22	58.5	1.316	90.0	0.4756
-66.0	0.8049	-34.5	2.273	-3.0	215.1	28.5	10.26	60.0	1.248		
-64.5	0.8955	-33.0	2.548	-1.5	216.2	30.0	7.162	61.5	1.157		
-63.0	0.9830	-31.5	2.952	0.0	216.1	31.5	5.226	63.0	1.081		
-61.5	1.021	-30.0	3.591	1.5	215.3	33.0	4.048	64.5	1.021		
-60.0	1.089	-28.5	4.582	3.0	214.7	34.5	3.271	66.0	0.9854		

**Electricity Parameter:**

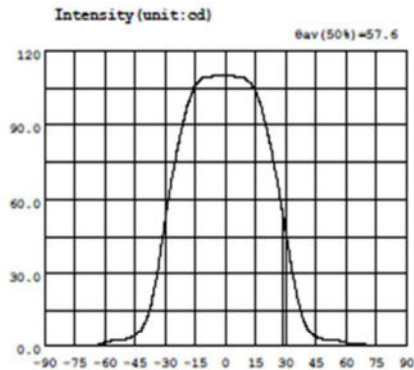
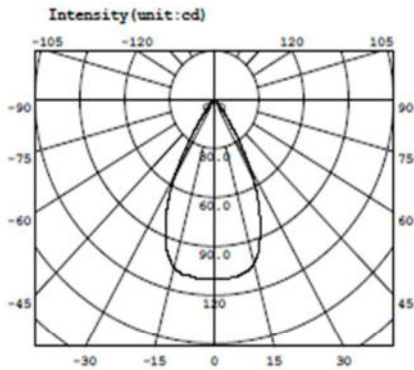
Current I: 0.1000A Power: 0.8190W  
 Voltage V: 8.199V PF: 1.000

**Optical Parameter(Distance=2.410m):**

Equivalent Luminous flux:  $\theta_{eff} = 69.24lm$  Efficiency:  $Eff=84.54lm/W$   
 Diffuse angle:  $\theta(25\%): 40.3deg \theta(50\%): 32.5deg \theta(75\%): 24.7deg \theta(50\%): 32.5deg$   
 Diffuse angle:  $\theta(25\%): 40.3deg \theta(50\%): 32.5deg \theta(75\%): 24.7deg \theta(50\%): 32.5deg$   
 $I_{max}=216.2cd (C=0.0deg, G=-1.5deg)$  C0-180Plane  $I_{max}= 216.2cd(G=-1.5deg)$   
 C0-180Plane  $I_0= 216.1cd$



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Intensity data:(deg , cd) C0-180

A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.2290	-58.5	1.982	-27.0	67.28	4.5	109.6	26.0	19.27	67.5	0.9852
-88.5	0.2260	-57.0	2.365	-25.5	74.00	6.0	109.5	27.5	14.46	69.0	0.8792
-87.0	0.2371	-55.5	2.562	-24.0	80.21	7.5	109.4	29.0	10.68	70.5	0.7749
-85.5	0.2481	-54.0	2.682	-22.5	86.41	9.0	108.9	40.5	8.024	72.0	0.6751
-84.0	0.2266	-52.5	2.785	-21.0	91.60	10.5	108.0	42.0	6.072	73.5	0.5822
-82.5	0.2368	-51.0	2.928	-19.5	96.22	12.0	107.1	43.5	4.891	75.0	0.5226
-81.0	0.2372	-49.5	2.172	-18.0	100.2	12.5	105.6	45.0	4.098	76.5	0.4877
-79.5	0.2260	-48.0	2.517	-16.5	102.4	15.0	102.5	46.5	3.552	78.0	0.4650
-78.0	0.2266	-46.5	2.989	-15.0	106.1	16.5	100.5	48.0	2.182	79.5	0.4526
-76.5	0.2365	-45.0	4.807	-12.5	107.7	18.0	96.52	49.5	2.992	81.0	0.4502
-75.0	0.2372	-43.5	5.894	-12.0	108.8	19.5	91.50	51.0	2.826	82.5	0.4196
-72.5	0.2260	-42.0	7.267	-10.5	109.2	21.0	86.44	52.5	2.710	84.0	0.4166
-72.0	0.2147	-40.5	9.325	-9.0	109.2	22.5	80.76	54.0	2.604	85.5	0.4207
-70.5	0.2282	-39.0	12.26	-7.5	109.5	24.0	74.49	55.5	2.492	87.0	0.4406
-69.0	0.2260	-37.5	16.52	-6.0	109.8	25.5	68.11	57.0	2.219	88.5	0.4192
-67.5	0.2372	-36.0	21.80	-4.5	110.0	27.0	61.28	58.5	1.881	90.0	0.4292
-66.0	0.2359	-34.5	28.02	-2.0	110.2	28.5	54.14	60.0	1.708		
-64.5	0.2289	-32.0	25.45	-1.5	110.2	30.0	46.48	61.5	1.507		
-62.0	0.7187	-21.5	42.71	0.0	110.0	21.5	28.82	62.0	1.229		
-61.5	1.580	-20.0	52.21	1.5	109.9	22.0	21.61	64.5	1.182		
-60.0	1.784	-28.5	60.05	2.0	110.1	24.5	25.15	66.0	1.069		

Electricity Parameter:

Current I: 0.1000A Power: 0.8200W  
Voltage V: 8.200V PF: 1.000

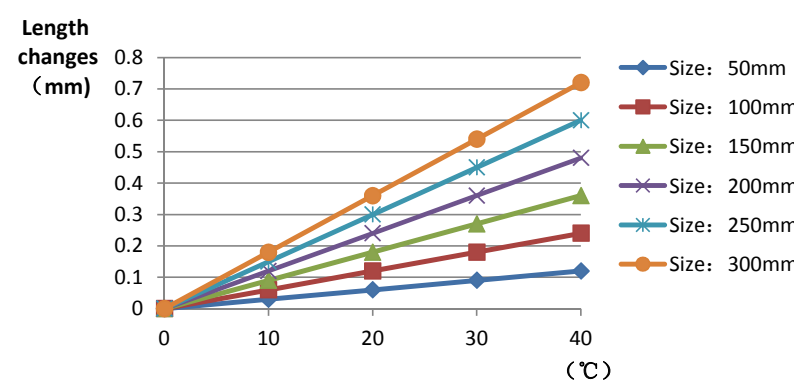
Optical Parameter(Distance=2.410m):

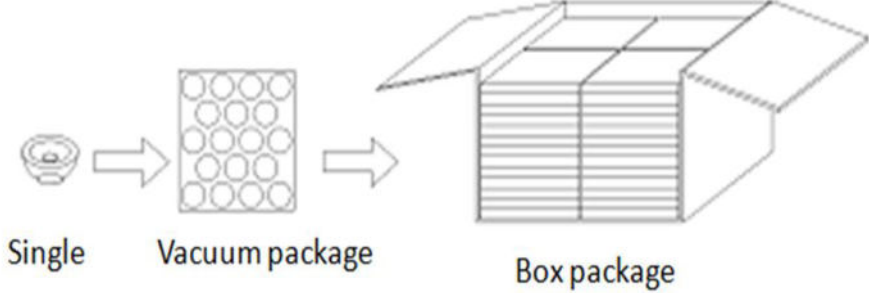
Equivalent Luminous flux:  $\Phi_{eff} = 96.04lm$  Efficiency:  $Eff=117.13lm/W$   
Diffuse angle: @ (25%): 68.5deg@ (50%): 57.6deg@ (75%): 45.2deg@ (50%): 57.6deg  
Diffuse angle: @ (25%): 68.5deg@ (50%): 57.7deg@ (75%): 45.4deg@ (50%): 57.7deg  
Imax=110.3cd (C=0.0deg,G=-2.5deg) C0-180Plane Imax= 110.3cd(G=-2.5deg)  
C0-180Plane I0= 110.0cd

	Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Judgment	Remarks																																									
1.Size	Diameter	50	50.1	49.6	49.77	49.78		OK	Test environment: In 20 °C -25 °C environment to achieve thermal equilibrium after the test.																																									
	height	24.36	24.6	24.2	24.32	24.36		OK																																										
	thickness	2.11	2.2	2	2.09	2.1		OK																																										
	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	PMMA			Color	Transparent		OK																																											
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	FWHM	See light distribution curve																																																
	Angle	10° -14°	11.7°	11.7°	11.9°	11.8°	OK																																											
	K value	≥13.30	16.18	15.72	15.84	15.88	OK																																											
	efficiency	≥88%	91.10%	91.30%	91.50%	91.80%	OK																																											
Facula	See the signature sample																																																	
Comprehensive judgment	Qualified																																																	
Remarks:	<p>1、 Tool Number: V-Vernier Caliper 2D-Quadratic H-Height Gauge M-Tool Microscope P-Needle T-Thick Gauge R-Radius Gauge E-Visual.</p> <p>2、 Ambient temperature on the size of the product refer to the table on the right</p>																																																	
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Temperature (°C)	Size: 50mm	Size: 100mm	Size: 150mm	Size: 200mm	Size: 250mm	Size: 300mm																																												
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1.Size	Diameter	50	51.2	49.7	49.95	49.93	49.98	49.91	OK	Test environment: In 20 °C -25 °C environment to achieve thermal equilibrium after the test.																																								
	height	24.36	24.6	24.2	24.42	24.38	24.46	24.39	OK																																									
	thickness	2.11	2.25	2	2.18	2.17	2.18	2.17	OK																																									
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	FWHM	See light distribution curve																																																
	angle	21° -25°	23.5°	22.7°	22.4°	23.1°	OK																																											
	K-value	≥4.90	5.69	6.00	6.14	5.84	OK																																											
	Efficiency	≥88%	92.40%	92.50%	91.30%	91.40%	OK																																											
Facula	See the signature sample																																																	
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1.Size	Diameter	50	50.4	49.8	50.06	50.22	50.18	50.14	OK	Test environment: In 20 °C -25 °C environment to achieve thermal equilibrium after the test.																																								
	height	24.36	24.7	24.3	24.54	24.5	24.54	24.54	OK																																									
	thickness	2.11	2.25	2	2.14	2.13	2.16	2.13	OK																																									
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	FWHM	See light distribution curve																																																
	angle	31° -37°	32.7	32.9	32.9	33.1		OK																																										
	K-value	≥2.60	3.11	3.09	3.09	3.04		OK																																										
	Efficiency	≥88%	91.50%	91.50%	92.10%	92.30%		OK																																										
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	height	24.36	24.7	24.3	24.52	24.48		OK																																										
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	FWHM	See light distribution curve																																																
	angle	55° -65°	57°	57.3°	57.5°	57.8°	OK																																											
	K-value						OK																																											
	Efficiency	≥88%	89.70%	91.60%	92.00%	89.80%	OK																																											
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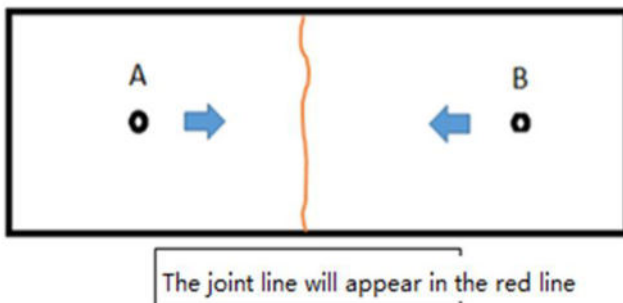
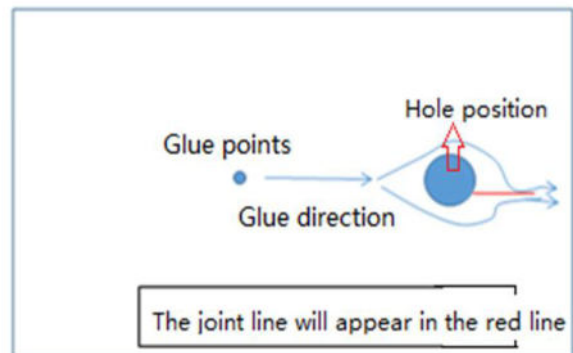
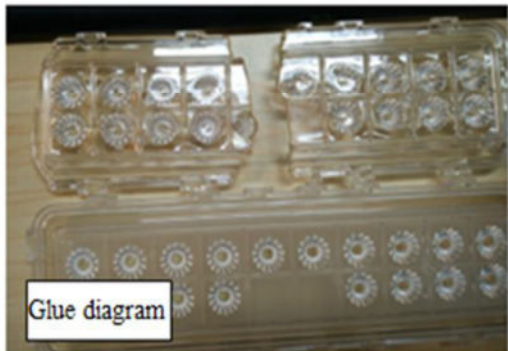
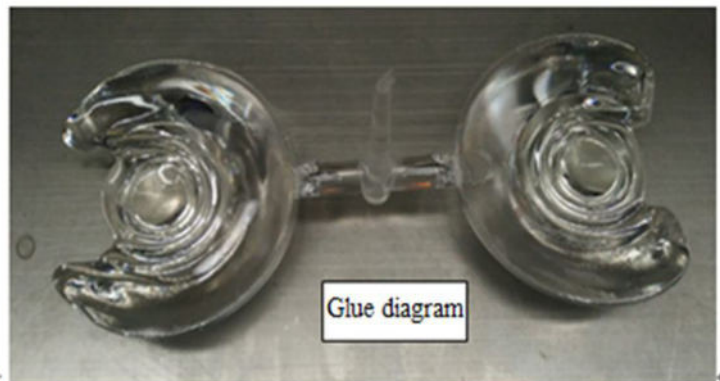
PN	HK-50@25-12-D6-22-1g-1		Product Name	50@25-12°lens			
Product material	PMMA		Customer				
Package diagram	 <p style="text-align: center;"> <span>Single</span>      <span>Vacuum package</span>      <span>Box package</span> </p>						
Product packing	14	A/ Box	4	Box/Layer			
	10	Layer/Box	560	A/ Box			
Packaging Materials	NO.	Part No	Part name	Size	Dosage	Unit	Remarks
	1	2. 07. 0024-1	Blister box	23cm*21cm	40	PCS	
	2	2. 08. 0001	PE film	25cm*27cm	40	block	
	3	2. 06. 0005	Inside label paper	62mm*42mm	40	zhang	
	4	2. 06. 0005	Case label paper	62mm*70mm	1	zhang	
	5	2. 06. 0003	The big plate	46cm*42cm	11	PCS	
	6	2. 06. 0011	The big carton	48cm*44cm*37cm	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 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 <sup>2</sup>	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 ≤ 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	√		
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 ≤ 1 mm and no more than 1 area within a 50x50 mm area	Visual		√	