



HERCULUX
恒坤光电

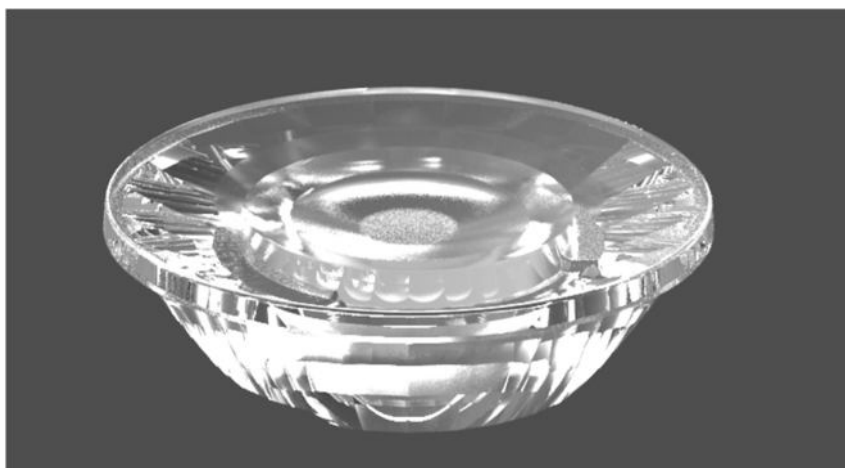
Chengdu HercuLux Photoelectric
Technology Co.,Ltd
Product Approval

Approval number :

Customer :

Manufacturer : Chengdu HercuLux Photoelectric Technology Co.,Ltd

PN	Code	Product
HK-GZ-25@07-15-D4-22-1g-1	1. 01. 02505	HK 25@07-15° lens
HK-GZ-25@07-24-D6-22-1g-1	1. 01. 02506	HK 25@07-24° lens
HK-GZ-25@07-36-D6-22-1g-1	1. 01. 02507	HK 25@07-36° lens
HK-GZ-25@07-60-D6-22-1g-1	1. 01. 02508	HK 25@07-60° lens



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

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Sales Dept: Shenzhen Nanshan District Nanshan Cloud Valley Innovation Industrial Park Comprehensive Service Building,

TEL: 0755-2937 1541

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*Approval In duplicate , for both supplier and customer.



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Date updated: 2020/12/1

Product Picture:



PN:

HK-GZ-25@07-15-D4-22-1g-1

Size(L*W*H/ Φ *H):

Φ :25mm; H:6.7mm

Material:

PC

Efficiency:

\

Temperature(Topr):

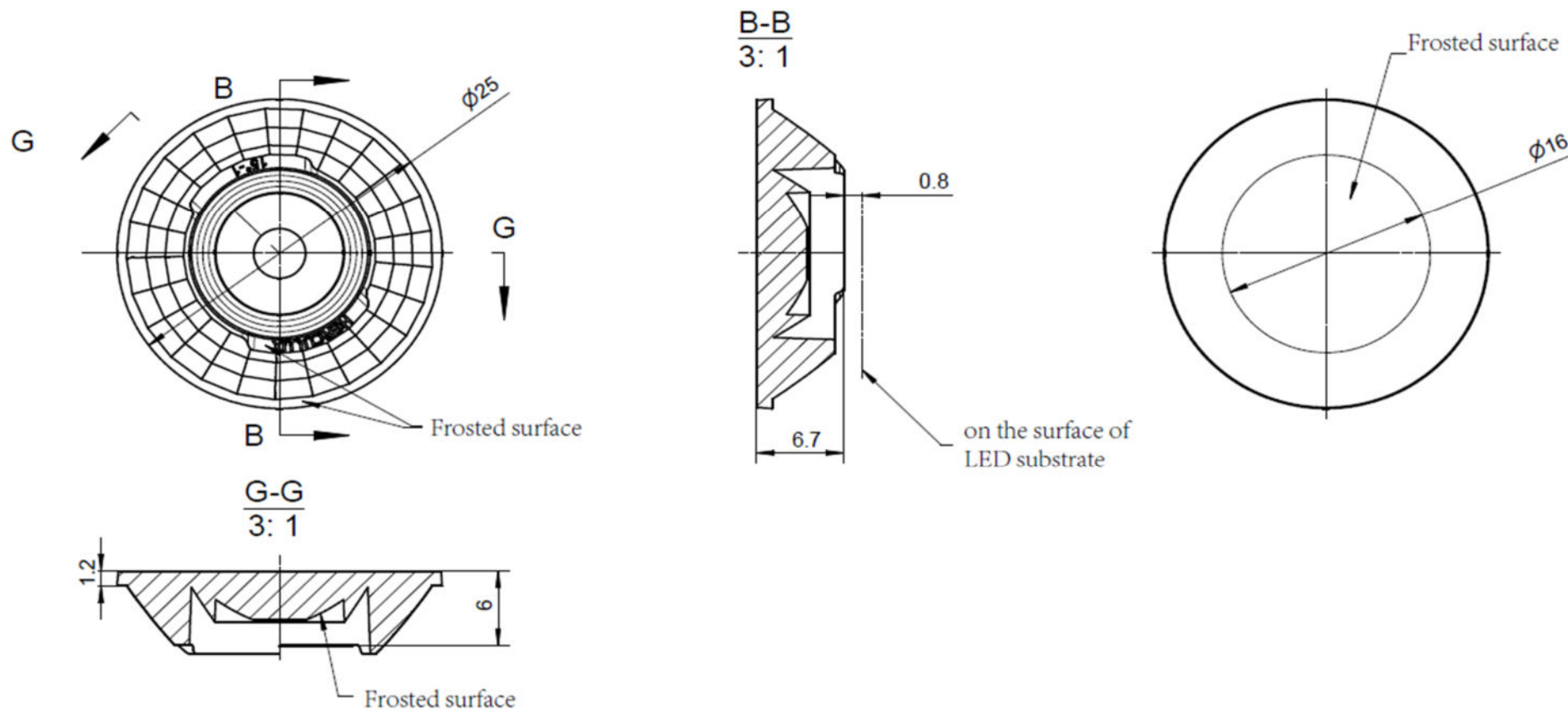
-40°C to +120°C

FWHM:

15°、24°、36°、50°

Matched LES:

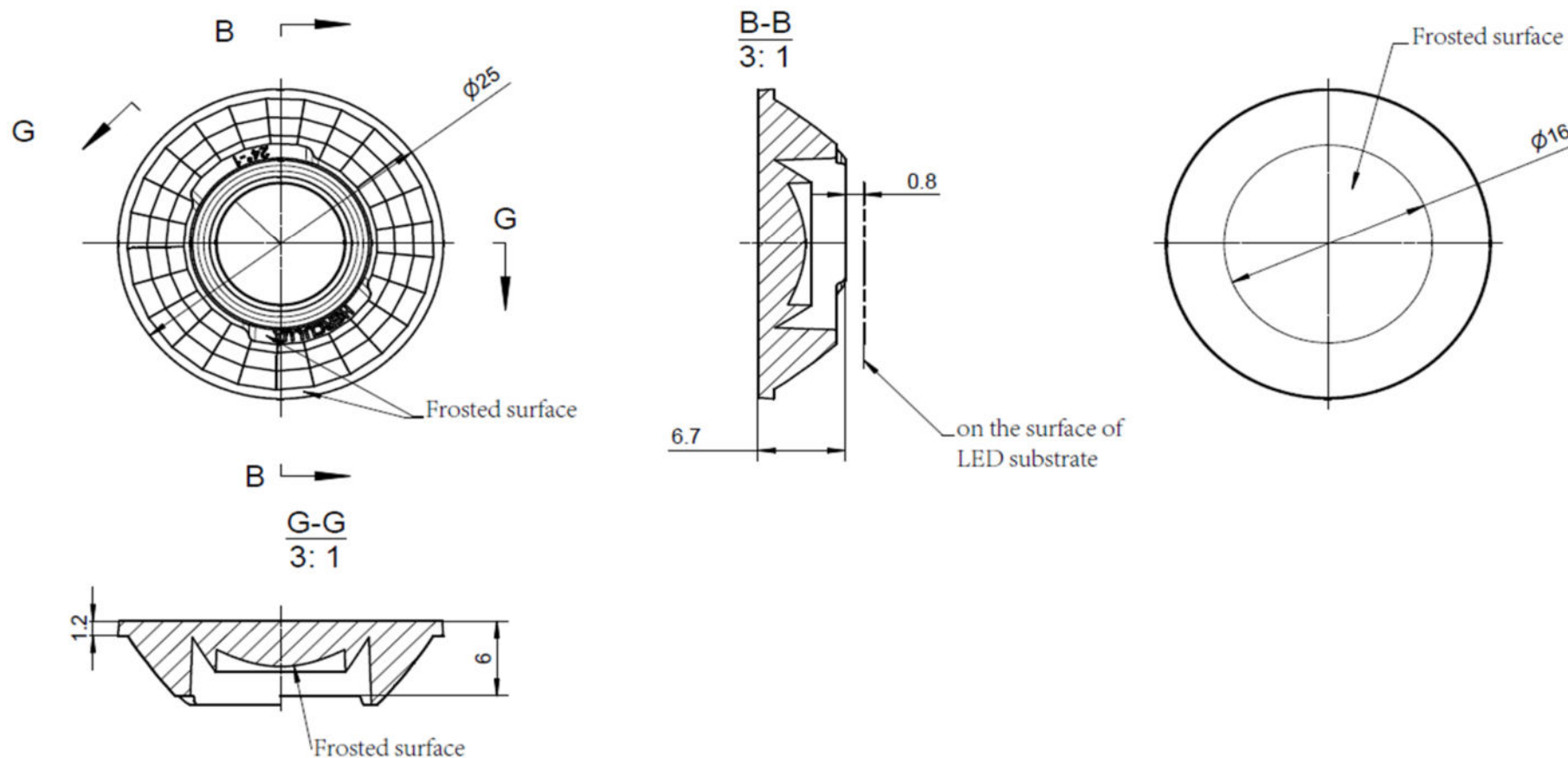
D6

**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			HK 25@07-15° lens		HK-GZ-25@07-15-D4-22-1g-1		
Structure design					1.01.02505		
Review					Number of drawing	qty	weight
Validation			Material:	PC	CDHK		

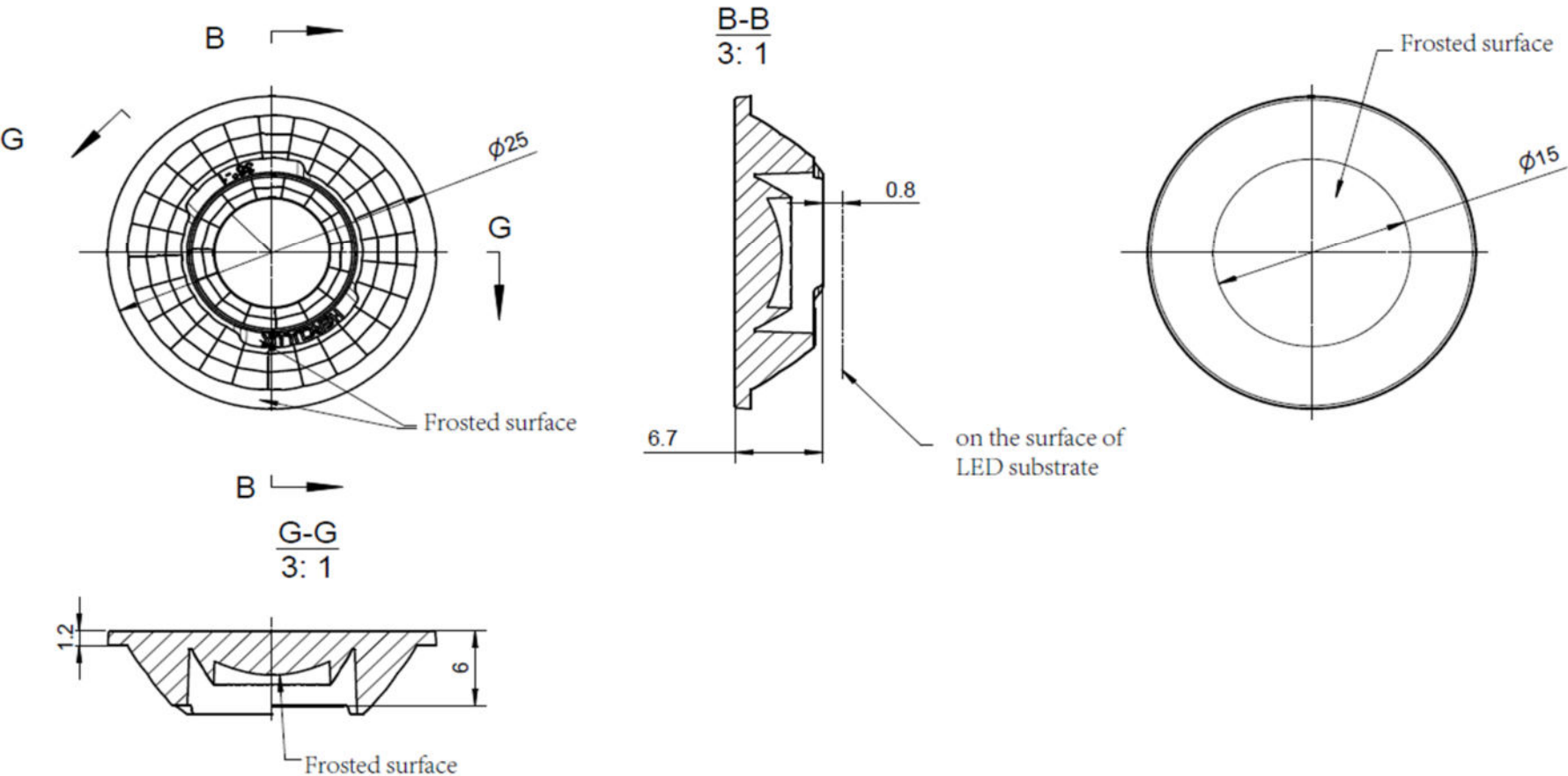
MT5 Tolerance table (mm)	Basic size	<3	3~10	24~65	65~140	140~250	250~450	>450		
	tolerance value	±0.1	±0.15	±0.35	±0.50	±0.80	±1.2	±2.0		

**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 25@07-24 ^g lens		HK-GZ-25@07-24-D6-22-1g-1		
Structure design					1.01.02506		
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		

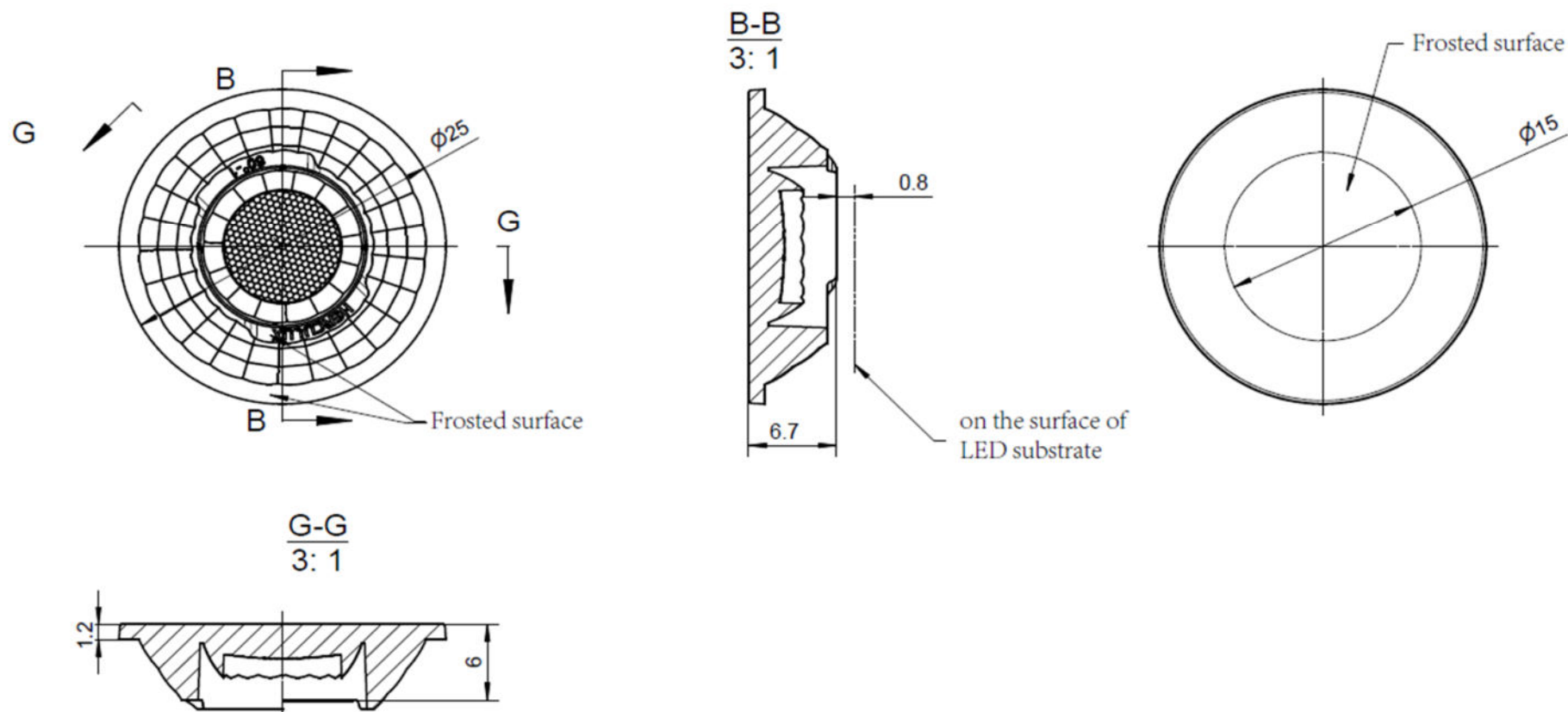


Technical remark:

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 25@07-36° lens		HK-GZ-25@07-36-D6-22-1g-1		
Structure design					1.01.02507		
Review					umber of drawin	qty	weight
Validation			Material:	PC	CDHK		

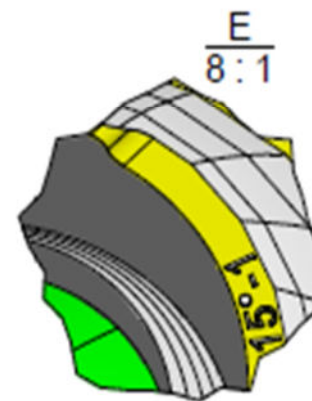
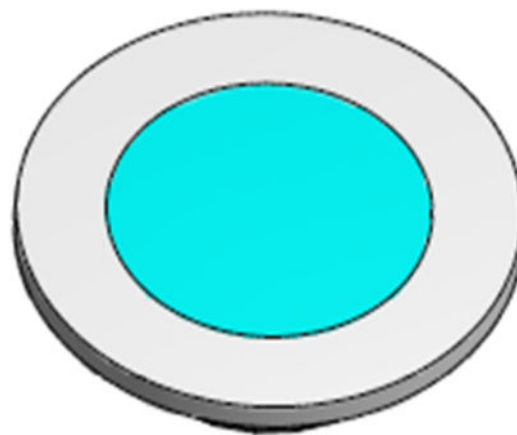
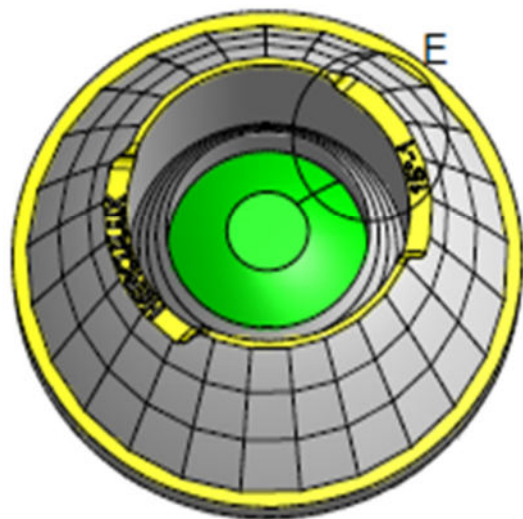
MT5 Tolerance table (mm)	Basic size	<3	3~10	24~65	65~140	140~250	250~450	>450		
	olerance valu	±0.1	±0.15	±0.35	±0.50	±0.80	±1.2	±2.0		

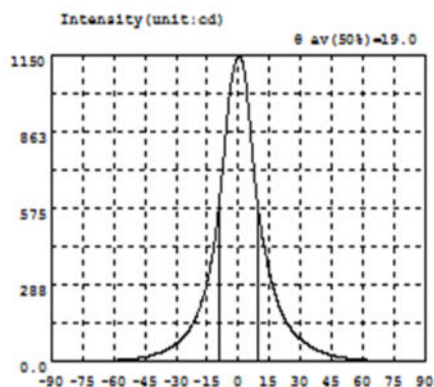
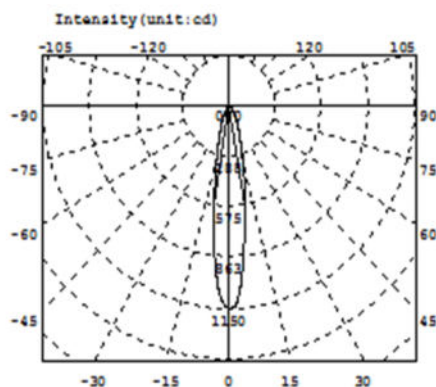
**Technical remark:**

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 25@07-60° lens		HK-GZ-25@07-60-D6-22-1g-1		
Structure design					1.01.02508		
Review					umber of drawin	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) C0-180

A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.3616	-58.5	6.994	-27.0	88.56	4.5	976.3	36.0	52.86	67.5	4.769
-88.5	0.3383	-57.0	7.692	-25.5	101.7	6.0	845.2	37.5	46.87	69.0	4.334
-87.0	0.3607	-55.5	8.481	-24.0	117.2	7.5	716.4	39.0	41.51	70.5	4.145
-85.5	0.4183	-54.0	9.382	-22.5	136.0	9.0	606.2	40.5	36.53	72.0	3.563
-84.0	0.5793	-52.5	10.47	-21.0	158.6	10.5	519.6	42.0	32.19	73.5	3.150
-82.5	0.5380	-51.0	11.69	-19.5	185.9	12.0	448.5	43.5	28.29	75.0	2.750
-81.0	1.173	-49.5	13.13	-18.0	216.3	13.5	388.0	45.0	24.90	76.5	2.329
-79.5	1.491	-48.0	14.83	-16.5	255.5	15.0	329.2	46.5	21.93	78.0	1.971
-78.0	1.826	-46.5	16.82	-15.0	302.5	16.5	283.1	48.0	19.29	79.5	1.591
-76.5	2.152	-45.0	19.01	-13.5	356.9	18.0	243.9	49.5	17.00	81.0	1.173
-75.0	2.497	-43.5	21.60	-12.0	421.9	19.5	209.8	51.0	15.05	82.5	0.8386
-73.5	2.802	-42.0	24.45	-10.5	506.4	21.0	181.4	52.5	13.36	84.0	0.5678
-72.0	3.074	-40.5	27.84	-9.0	611.4	22.5	157.5	54.0	11.92	85.5	0.4311
-70.5	3.371	-39.0	31.61	-7.5	732.3	24.0	137.8	55.5	10.67	87.0	0.3665
-69.0	3.663	-37.5	35.87	-6.0	861.0	25.5	121.1	57.0	9.584	88.5	0.3140
-67.5	4.008	-36.0	40.69	-4.5	983.4	27.0	107.2	58.5	8.636	90.0	0.4839
-66.0	4.398	-34.5	46.28	-3.0	1072	28.5	95.16	60.0	7.710		
-64.5	4.830	-33.0	52.59	-1.5	1119	30.0	84.73	61.5	7.024		
-63.0	5.302	-31.5	59.85	0.0	1140	31.5	75.20	63.0	6.344		
-61.5	5.818	-30.0	67.90	1.5	1131	33.0	66.91	64.5	5.784		
-60.0	6.368	-28.5	77.45	3.0	1079	34.5	59.52	66.0	5.227		

Electricity Parameter:

Current I: 0.1000A Power: 3.580W
Voltage V: 35.79V PF: 1.000

Optical Parameter (Distance=2.410m):

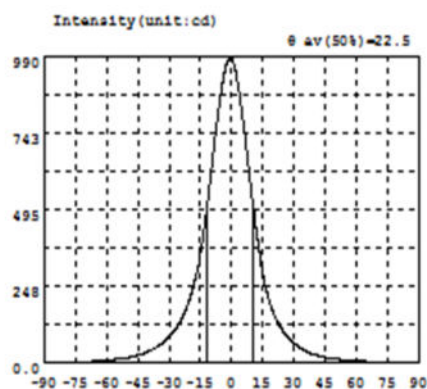
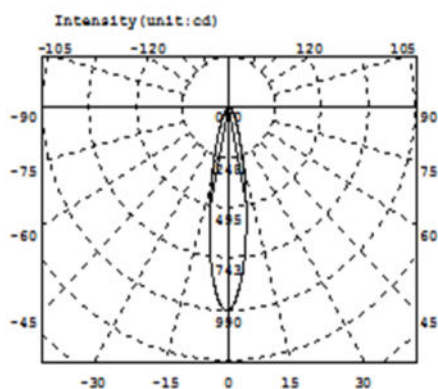
Equivalent Luminous flux: $\Phi_{\text{eff}} = 286.4\text{lm}$ Efficiency: $\text{Eff} = 80.02\text{lm/W}$

Diffuse angle: @ (25°): 31.9deg @ (50°): 19.0deg @ (75°): 11.8deg @ (50°): 19.0deg

Diffuse angle: @ (25°): 31.9deg @ (50°): 19.0deg @ (75°): 11.8deg @ (50°): 19.0deg

$I_{\text{max}} = 1141\text{cd}$ (C=0.0deg, G=0.5deg) C0-180Plane $I_{\text{max}} = 1141\text{cd}$ (G=0.5deg)

C0-180Plane $I_{\text{0}} = 1140\text{cd}$



Intensity data:(deg , cd) C0-180

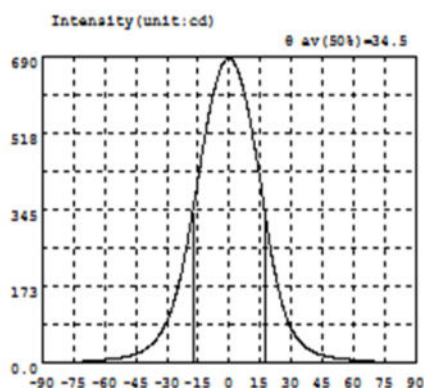
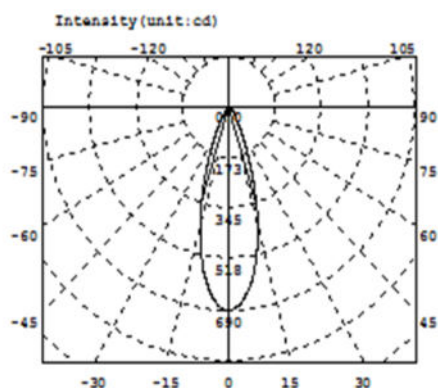
A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.2825	-58.5	10.69	-27.0	108.9	4.5	829.9	36.0	36.62	67.5	5.043
-88.5	0.3388	-57.0	11.70	-25.5	123.8	6.0	752.5	37.5	34.05	69.0	4.578
-87.0	0.4172	-55.5	12.80	-24.0	141.9	7.5	667.6	39.0	30.19	70.5	4.204
-85.5	0.5064	-54.0	14.03	-22.5	164.0	9.0	580.6	40.5	26.86	72.0	3.678
-84.0	0.7450	-52.5	15.32	-21.0	190.6	10.5	496.3	42.0	23.96	73.5	3.259
-82.5	1.042	-51.0	17.03	-19.5	220.2	12.0	419.6	43.5	21.44	75.0	2.816
-81.0	1.444	-49.5	18.88	-18.0	257.3	13.5	347.0	45.0	19.27	76.5	2.400
-79.5	1.912	-48.0	21.01	-16.5	300.8	15.0	283.8	46.5	17.39	78.0	1.979
-78.0	2.403	-46.5	23.43	-15.0	352.8	16.5	238.3	48.0	15.76	79.5	1.567
-76.5	2.934	-45.0	26.16	-13.5	417.7	18.0	201.1	49.5	14.33	81.0	1.173
-75.0	3.473	-43.5	29.23	-12.0	495.6	19.5	170.9	51.0	13.08	82.5	0.8187
-73.5	4.001	-42.0	32.67	-10.5	581.3	21.0	146.6	52.5	11.98	84.0	0.5580
-72.0	4.500	-40.5	36.80	-9.0	668.1	22.5	126.4	54.0	10.99	85.5	0.4050
-70.5	4.996	-39.0	41.39	-7.5	753.3	24.0	109.9	55.5	10.06	87.0	0.2877
-69.0	5.500	-37.5	46.79	-6.0	830.5	25.5	95.87	57.0	9.204	88.5	0.2414
-67.5	6.042	-36.0	52.86	-4.5	898.8	27.0	83.76	58.5	8.430	90.0	0.3593
-66.0	6.611	-34.5	59.65	-3.0	951.6	28.5	73.45	60.0	7.645		
-64.5	7.278	-33.0	67.02	-1.5	980.3	30.0	64.69	61.5	7.061		
-63.0	8.065	-31.5	75.53	0.0	982.1	31.5	56.63	63.0	6.481		
-61.5	8.793	-30.0	84.86	1.5	951.8	33.0	49.77	64.5	5.982		
-60.0	9.741	-28.5	95.98	3.0	899.1	34.5	43.75	66.0	5.500		

Electricity Parameter:

Current I:	0.1000A	Power:	3.410W
Voltage V:	34.09V	PF:	1.000

Optical Parameter(Distance=2.410m) :

Equivalent Luminous Flux: $\Phi_{\text{eff}} = 286.41\text{lm}$ Efficiency: $\text{Eff} = 84.01\text{lm/W}$
 Diffuse angle: @ (25%): 34.6deg @ (50%): 22.5deg @ (75%): 13.9deg @ (50%): 22.5deg
 Diffuse angle: @ (25%): 34.6deg @ (50%): 22.5deg @ (75%): 14.0deg @ (50%): 22.5deg
 $I_{\text{max}} = 984.7\text{cd}$ ($C = 0.0\text{deg}$, $G = -0.5\text{deg}$) $C0-180\text{Plane } I_{\text{max}} = 984.7\text{cd}$ ($G = -0.5\text{deg}$)
 $C0-180\text{Plane } I_0 = 982.1\text{cd}$



Intensity data: (deg , cd) C0-180

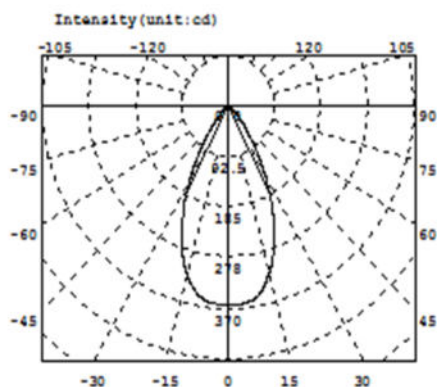
A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.2599	-58.5	8.975	-27.0	132.8	4.5	652.3	36.0	39.97	67.5	4.967
-88.5	0.2606	-57.0	9.782	-25.5	156.9	6.0	630.1	37.5	34.36	69.0	4.555
-87.0	0.3408	-55.5	10.71	-24.0	184.7	7.5	603.6	39.0	29.80	70.5	4.107
-85.5	0.4884	-54.0	11.73	-22.5	214.4	9.0	571.2	40.5	26.08	72.0	3.667
-84.0	0.7601	-52.5	12.90	-21.0	250.8	10.5	533.7	42.0	23.06	73.5	3.236
-82.5	1.142	-51.0	14.27	-19.5	289.5	12.0	493.2	43.5	20.53	75.0	2.831
-81.0	1.526	-49.5	15.75	-18.0	330.4	13.5	450.5	45.0	18.43	76.5	2.442
-79.5	1.899	-48.0	17.35	-16.5	373.6	15.0	407.0	46.5	16.57	78.0	2.045
-78.0	2.264	-46.5	19.24	-15.0	416.4	16.5	361.4	48.0	15.16	79.5	1.719
-76.5	2.659	-45.0	21.31	-13.5	459.4	18.0	311.1	49.5	13.79	81.0	1.394
-75.0	3.065	-43.5	24.19	-12.0	501.1	19.5	267.9	51.0	12.59	82.5	1.087
-73.5	3.476	-42.0	27.54	-10.5	541.2	21.0	228.1	52.5	11.54	84.0	0.8149
-72.0	3.929	-40.5	31.72	-9.0	577.5	22.5	192.5	54.0	10.57	85.5	0.5988
-70.5	4.395	-39.0	36.73	-7.5	608.3	24.0	161.0	55.5	9.702	87.0	0.3818
-69.0	4.878	-37.5	42.78	-6.0	634.6	25.5	133.6	57.0	8.944	88.5	0.2706
-67.5	5.390	-36.0	49.98	-4.5	657.7	27.0	110.8	58.5	8.210	90.0	0.4216
-66.0	5.877	-34.5	58.64	-3.0	674.2	28.5	92.14	60.0	7.541		
-64.5	6.429	-33.0	68.80	-1.5	683.1	30.0	77.10	61.5	6.923		
-63.0	6.999	-31.5	80.89	0.0	685.6	31.5	64.74	63.0	6.371		
-61.5	7.576	-30.0	95.21	1.5	680.6	33.0	54.79	64.5	5.891		
-60.0	8.251	-28.5	112.5	3.0	669.4	34.5	46.61	66.0	5.446		

Electricity Parameter:

Current I: 0.1000A Power: 3.640W
Voltage V: 36.40V PF: 1.000

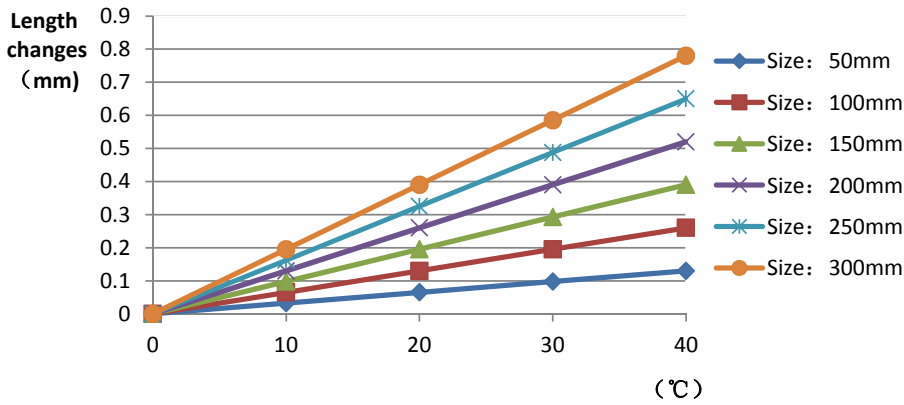
Optical Parameter (Distance=2.410m):

Equivalent Luminous flux: $\Phi_{\text{eff}} = 310.21\text{lm}$ Efficiency: $\text{Eff} = 85.23\text{lm/W}$
Diffuse angle: @ (25%): 48.0deg @ (50%): 34.5deg @ (75%): 22.7deg @ (50%): 34.5deg
Diffuse angle: @ (25%): 48.0deg @ (50%): 34.5deg @ (75%): 22.7deg @ (50%): 34.5deg
Imax=685.6cd (C=0.0deg, C=0.0deg) C0-180Plane Imax= 685.6cd (C=0.0deg)
C0-180Plane IO= 685.6cd



1.Size		Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Test result5	Test result6	Test result7	Test result8	Judgment	Remarks
	diameter	25			25	25	25	25	25	25	25	25		Test environment: In 20 ℃ -25 ℃ environment to achieve thermal equilibrium after the test.
	thickness	1.2			1.26	1.28	1.27	1.25	1.23	1.25	1.22	1.24		
	height	6			6.07	6.07	6.04	6.05	6.03	6.06	6.06	6.1		
	height	6.7			6.72	6.71	6.72	6.76	6.72	6.72	6.77	6.73		
	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		
				No stains		No stains		No stains		No stains				
3.Material		PC					Color		Transparent				OK	
4.Optical index	Testing LED		CREE 1304											
	The recommended size and power rating of the LED light source recommended for this lens should be comparable to the source of the test, if it is required to be out of range. According to the heat dissipation capability of the lamp and the actual conditions of the use environment, the lens should be fully tested and tested to prevent the lens life.													
	FWHM		See light distribution curve											
	angle				19		18.7		19.2		18.4			
	K-value				3.98		4.04		4.04		4.00			
	Efficiency				85.06%		84.85%		83.13%		82.77%			
	Facula		See the signature sample											
Comprehensive judgment		Qualified												
Remarks:			<div><div>1、Tool Number: V-Vernier Caliper 2D-Quadratic H-Height Gauge M-Tool Microscope P-Needle T-Thick Gauge R-Radius Gauge E-Visual.</div><div>2、Ambient temperature on the size of the product refer to the table on the right</div></div> <div><div>PC product size changes with temperature table</div><div><div><div>Length changes (mm)</div><div><div><div>0.9</div><div>0.8</div><div>0.7</div><div>0.6</div><div>0.5</div><div>0.4</div><div>0.3</div><div>0.2</div><div>0.1</div><div>0</div></div><div><div>0</div><div>10</div><div>20</div><div>30</div><div>40</div></div></div><div><div>Size: 50mm</div><div>Size: 100mm</div><div>Size: 150mm</div><div>Size: 200mm</div><div>Size: 250mm</div><div>Size: 300mm</div></div></div></div></div>											

1. Please wear clean gloves during the lens assembly process to prevent the lens surface from being contaminated.
2. Try to avoid touching the total reflection surface when taking the lens.
3. The lens surface is contaminated. Only use a soft cotton cloth dipped in analytically pure neutral solvent to wipe gently. Do not wipe with industrial solvents (alcohol, isopropanol, acetone, ether, toluene, xylene, carbon tetrachloride, MMA Body, etc.).
4. The working temperature of the lens should be within the temperature resistance limit of the lens material. Exceeding the temperature resistance limit will cause the lens to crack or melt and affect the service life of the lens. It is recommended that the upper surface temperature of the LED colloid should be less than 120 degrees.

1.Size		Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Test result5	Test result6	Test result7	Test result8	Judgment	Remarks																																										
	diameter	25			24.9	24.9	24.9	24.9	24.9	24.9	25	25		Test environment: In 20 ℃ -25 ℃ environment to achieve thermal equilibrium after the test.																																										
	thickness	1.2			1.16	1.2	1.23	1.2	1.2	1.21	1.2	1.22																																												
	height	6			6.03	6.04	6.01	6	5.97	6	6.01	6.04																																												
	height	6.7			6.69	6.7	6.7	6.68	6.69	6.71	6.72	6.71																																												
	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																																												
				No stains		No stains		No stains		No stains																																														
3.Material		PC						Color		Transparent				OK																																										
4.Optical index	Testing LED		CREE 1304																																																					
	The recommended size and power rating of the LED light source recommended for this lens should be comparable to the source of the test, if it is required to be out of range. According to the heat dissipation capability of the lamp and the actual conditions of the use environment, the lens should be fully tested and tested to prevent the lens life.																																																							
	FWHM		See light distribution curve																																																					
	angle				22.5		23.4		23.5		22.8																																													
	K-value				3.44		3.31		3.35		3.42																																													
	Efficiency				86.29%		84.81%		84.14%		85.09%																																													
	Facula		See the signature sample																																																					
Comprehensive judgment		Qualified																																																						
Remarks: 1、Tool Number: V-Vernier Caliper 2D-Quadratic H-Height Gauge M-Tool Microscope P-Needle T-Thick Gauge R-Radius Gauge E-Visual. 2、Ambient temperature on the size of the product refer to the table on the right			<div>PC product size changes with temperature table</div>  <table><thead><tr><th>Temperature (℃)</th><th>Size: 50mm</th><th>Size: 100mm</th><th>Size: 150mm</th><th>Size: 200mm</th><th>Size: 250mm</th><th>Size: 300mm</th></tr></thead><tbody><tr><td>0</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>10</td><td>0.02</td><td>0.05</td><td>0.08</td><td>0.12</td><td>0.15</td><td>0.20</td></tr><tr><td>20</td><td>0.04</td><td>0.10</td><td>0.16</td><td>0.24</td><td>0.32</td><td>0.40</td></tr><tr><td>30</td><td>0.06</td><td>0.15</td><td>0.24</td><td>0.36</td><td>0.48</td><td>0.60</td></tr><tr><td>40</td><td>0.08</td><td>0.20</td><td>0.32</td><td>0.48</td><td>0.64</td><td>0.80</td></tr></tbody></table>												Temperature (℃)	Size: 50mm	Size: 100mm	Size: 150mm	Size: 200mm	Size: 250mm	Size: 300mm	0	0.00	0.00	0.00	0.00	0.00	0.00	10	0.02	0.05	0.08	0.12	0.15	0.20	20	0.04	0.10	0.16	0.24	0.32	0.40	30	0.06	0.15	0.24	0.36	0.48	0.60	40	0.08	0.20	0.32	0.48	0.64	0.80
Temperature (℃)	Size: 50mm	Size: 100mm	Size: 150mm	Size: 200mm	Size: 250mm	Size: 300mm																																																		
0	0.00	0.00	0.00	0.00	0.00	0.00																																																		
10	0.02	0.05	0.08	0.12	0.15	0.20																																																		
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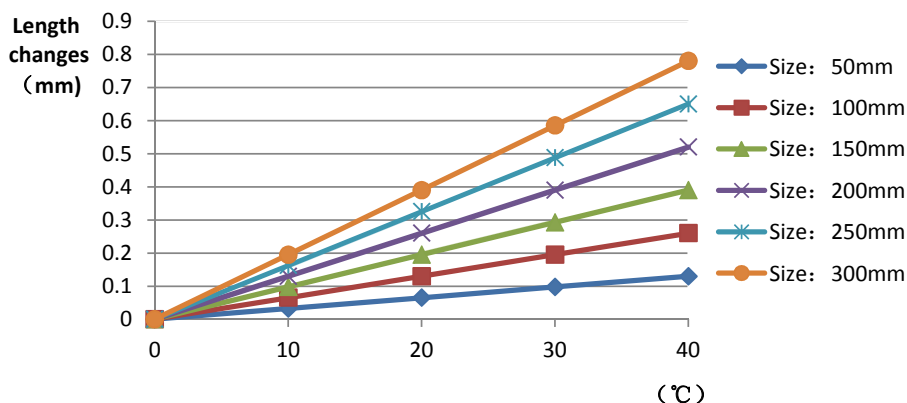
1. Please wear clean gloves during the lens assembly process to prevent the lens surface from being contaminated.
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4. The working temperature of the lens should be within the temperature resistance limit of the lens material. Exceeding the temperature resistance limit will cause the lens to crack or melt and affect the service life of the lens. It is recommended that the upper surface temperature of the LED colloid should be less than 120 degrees.

1.Size		Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Test result5	Test result6	Test result7	Test result8	Judgment	Remarks
	diameter	25			24.9	24.9	25	24.9	25	25	25	25		Test environment: In 20 ℃ -25 ℃ environment to achieve thermal equilibrium after the test.
	thickness	1.2			1.1	1.14	1.2	1.2	1.1	1.2	1.2	1.1		
	height	6			5.94	5.97	5.9	5.9	6	5.9	6	6		
	height	6.7			6.71	6.7	6.7	6.7	6.7	6.7	6.7	6.7		
	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		
				No stains		No stains		No stains		No stains				
3.Material		PC					Color		Transparent				OK	
4.Optical index	Testing LED		CREE 1304											
	The recommended size and power rating of the LED light source recommended for this lens should be comparable to the source of the test, if it is required to be out of range. According to the heat dissipation capability of the lamp and the actual conditions of the use environment, the lens should be fully tested and tested to prevent the lens life.													
	FWHM		See light distribution curve											
	angle				34.5		35.4		35.3		35.8			
	K-value				2.21		2.12		2.17		2.06			
	Efficiency				86.62%		86.62%		85.78%		86.06%			
	Facula		See the signature sample											
Comprehensive judgment		Qualified												
Remarks:			<div><div>1、Tool Number: V-Vernier Caliper 2D-Quadratic H-Height Gauge M-Tool Microscope P-Needle T-Thick Gauge R-Radius Gauge E-Visual.</div><div>2、Ambient temperature on the size of the product refer to the table on the right</div></div> <div><div>PC product size changes with temperature table</div><div><div><div>Length changes (mm)</div><div>0.9</div><div>0.8</div><div>0.7</div><div>0.6</div><div>0.5</div><div>0.4</div><div>0.3</div><div>0.2</div><div>0.1</div><div>0</div></div><div><div>0</div><div>10</div><div>20</div><div>30</div><div>40</div></div><div><div>Size: 50mm</div><div>Size: 100mm</div><div>Size: 150mm</div><div>Size: 200mm</div><div>Size: 250mm</div><div>Size: 300mm</div></div></div></div>											

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1.Size		Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Test result5	Test result6	Test result7	Test result8	Judgment	Remarks																																										
	diameter	25			25.1	25	25	25	25	25	25.1	25		Test environment: In 20 ℃ -25 ℃ environment to achieve thermal equilibrium after the test.																																										
	thickness	1.2			1.23	1.21	1.21	1.21	12.4	1.22	1.23	1.25																																												
	height	6			6.05	6.09	5.98	5.96	5.96	5.99	6.05	6.02																																												
	height	6.7			6.74	6.73	6.72	6.7	6.71	6.73	6.74	6.74																																												
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	FWHM		See light distribution curve																																																					
	angle				54.7		58.7		58.8		57.3																																													
	K-value																																																							
	Efficiency				86.91%		88.00%		86.91%		88.17%																																													
Facula		See the signature sample																																																						
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Temperature (℃)	Size: 50mm	Size: 100mm	Size: 150mm	Size: 200mm	Size: 250mm	Size: 300mm																																																		
0	0.00	0.00	0.00	0.00	0.00	0.00																																																		
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40	0.12	0.25	0.38	0.52	0.65	0.78																																																		

PC product size changes with temperature table



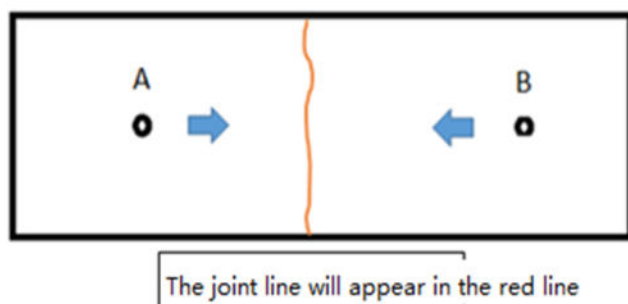
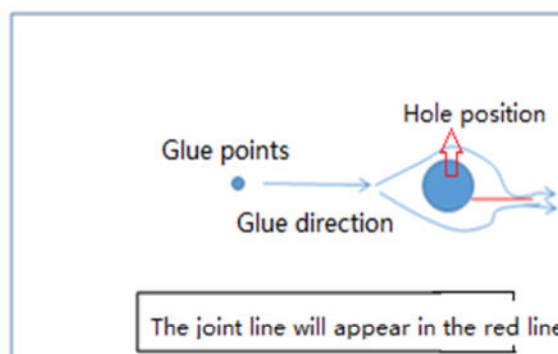
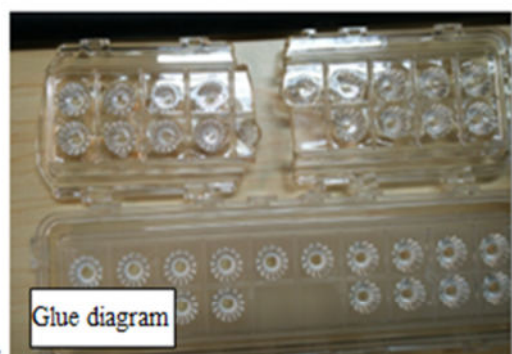
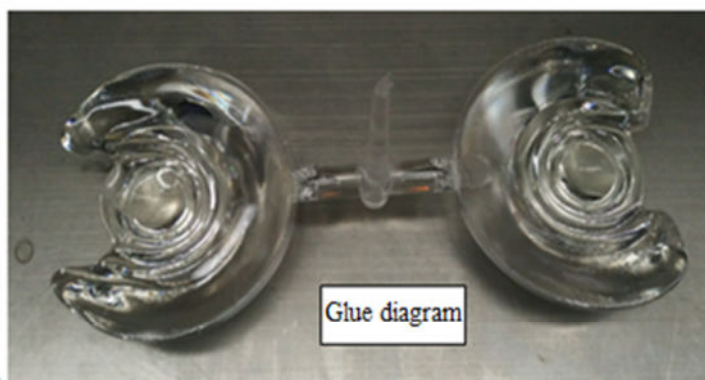
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PN		HK-GZ-25@07-15-D4-22-1g-1		Product Name	HK 25@07-15° lens				
Product material		PC		Customer					
Package diagram		<div><p>Single Vacuum package Box package</p></div>							
Product packing				A/ Box			pcs/Layer		
				Layer/Box			A/ Carton		
Packaging Materials	NO.	Part No	Part name	Size	Dosage	Unit	Remarks		
	1		Blister box	23cm*21cm		BAG			
	2	2.08.0001	PE film	30cm*30cm		PCS			
	3	2.06.0005	Reel label paper	6.2cm*8cm		PCS			
	4	2.06.0005	Box label paper	6.2cm*9.2cm		PCS			
	5	2.06.0003	big plate	46.8cm*42.8cm		PCS			
	6	2.06.0015	big flat carton	48cm*44cm*19cm		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:

Synthesis



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 $L \leq 10\text{mm}$, 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		√	



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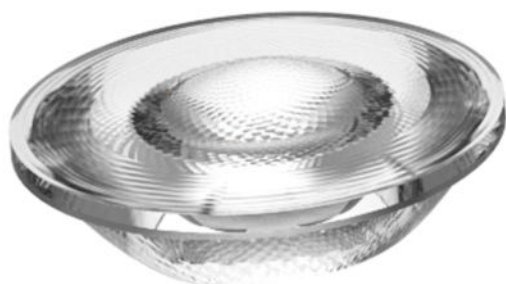
Chengdu HercuLux Photoelectric
Technology Co.,Ltd
Product Approval

Approval number :

Customer :

Manufacturer : Chengdu HercuLux Photoelectric Technology Co.,Ltd

PN	Code	Product
HK-GZ-25@07-24-D6-22-1g-1_YX	1. 01. 12972	HK Photon 25@07-24° lens (YX)
HK-GZ-25@07-36-D6-22-1g-1_YX	1. 01. 23086	HK Photon 25@07-36° lens (YX)
HK-GZ-25@07-60-D6-22-1g-1_YX	1. 01. 23203	HK Photon 25@07-60° lens (YX)



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

Sales Dept: Shenzhen Nanshan District Nanshan Cloud Valley Innovation Industrial Park Comprehensive Service Building, 501-

TEL: 0755-2937 1541

FAX: 0755-2907 5140

*Approval In duplicate , for both supplier and customer.



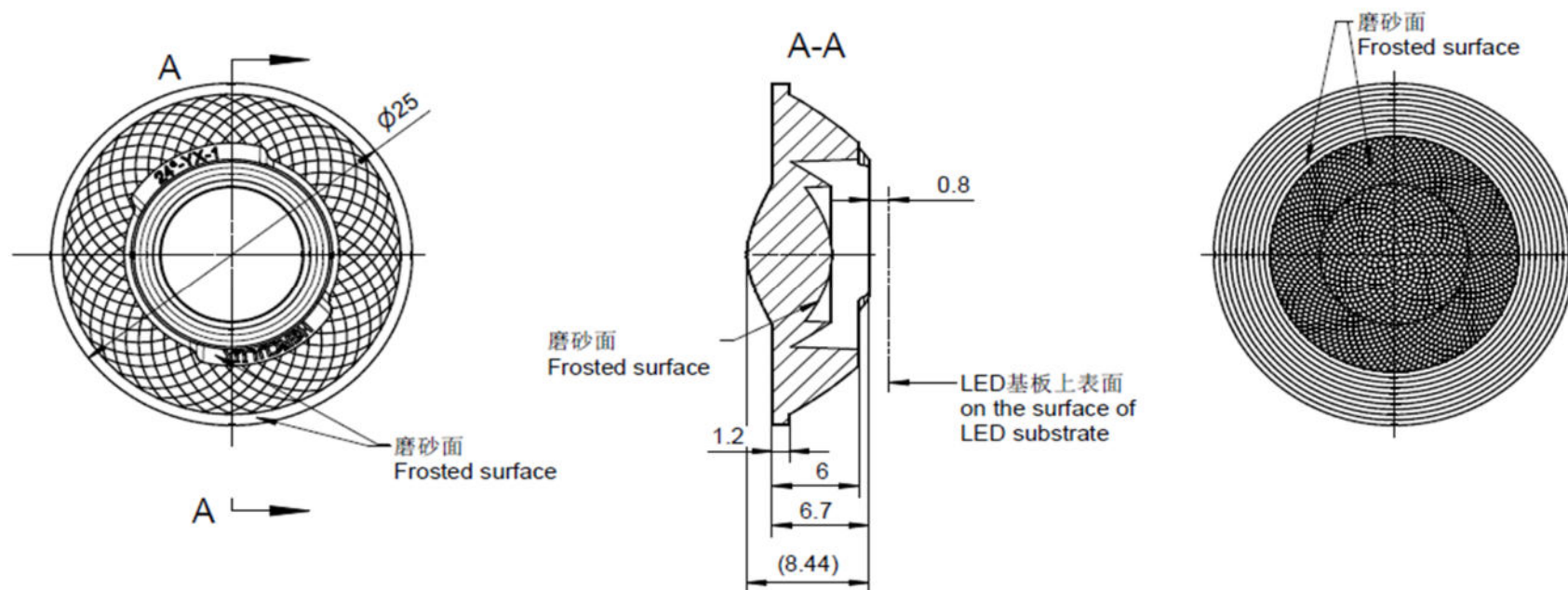
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Basic product information

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

Date updated: 2022/11/14

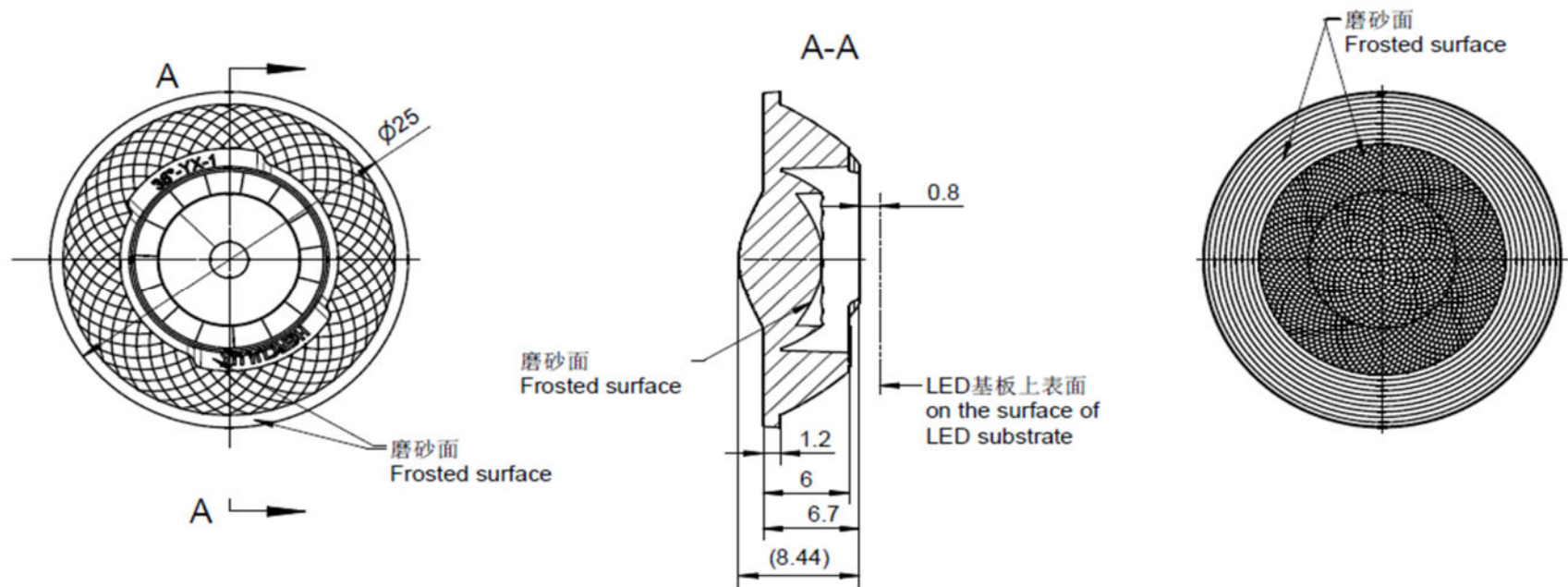
Product Picture:	
Size(L*W*H/Φ*H):	Φ:25mm; H:8.4mm
Material:	PC
Effiency:	\
Temperature(Topr):	Material extreme temperature resistance : -40°C to +120°C long-term use temperature : -40°C to +90°C
FWHM:	24°、36°、60°
Matched LES:	LED D6
Recommended MAX power:	\

**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.
- *4. When the lamp adopts rubber ring for waterproofing: the roughness of the contact surface between the radiator and the rubber ring is required: $Ra < 3.2\mu m$

Optical design			HK Photon 25@07-24 ^g lens(YX)	HK-GZ-25@07-24-D6-22-1g-1_YX		
Structure design				1.01.12972		
Review				number of draw	qty	weight
Validation			Material:	PC		CDHK

MT5 Tolerance table	Basic size	<3	3~10	10~24	24~65	65~140	140~250	250~450	>450		
	olerance val	±0.1	±0.15	±0.2	±0.35	±0.50	±0.80	±1.2	±2.0		

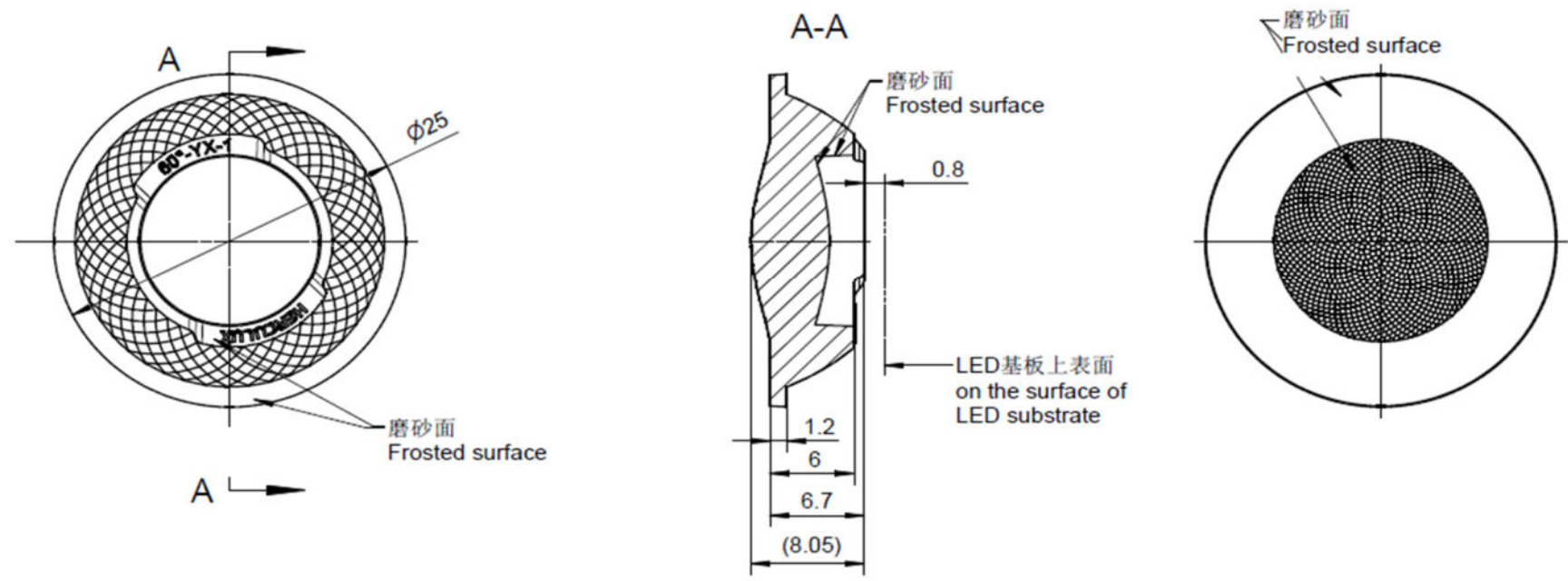


Technical remark:

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Optical design			HK Photon 25@07-36° lens(YX)		HK-GZ-25@07-36-D6-22-1g-1_YX		
Structure design					1.01.23086		
Review					number of draw	qty	weight
Validation			Material:	PC	CDHK		

MT5 Tolerance table	Basic size	<3	3~10	10~24	24~65	65~140	140~250	250~450	>450		
	olerance val	±0.1	±0.15	±0.2	±0.35	±0.50	±0.80	±1.2	±2.0		

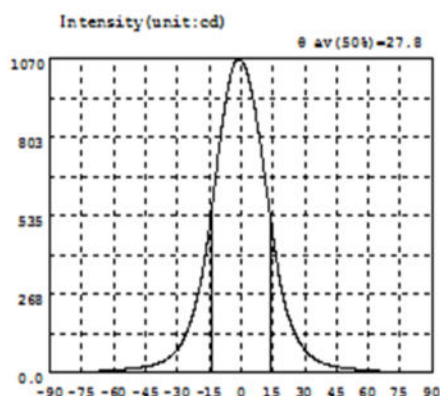
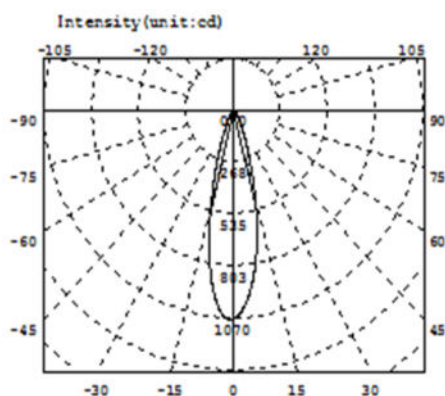


Technical remark:

- 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.
- *4. When the lamp adopts rubber ring for waterproofing: the roughness of the contact surface between the radiator and the rubber ring is required: $Ra < 3.2\mu m$

Optical design			HK Photon 25@07-60° lens(YX)		HK-GZ-25@07-60-D6-22-1g-1_YX		
Structure design					1.01.23203		
Review					number of draw	qty	weight
Validation			Material:	PC	CDHK		

MT5 Tolerance table	Basic size	<3	3~10	10~24	24~65	65~140	140~250	250~450	>450		
	lerance val	±0.1	±0.15	±0.2	±0.35	±0.50	±0.80	±1.2	±2.0		



Intensity data:(deg , cd) C0-180

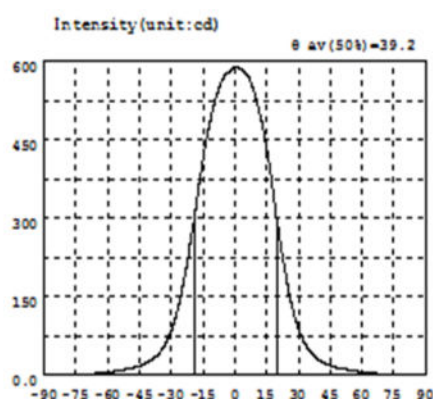
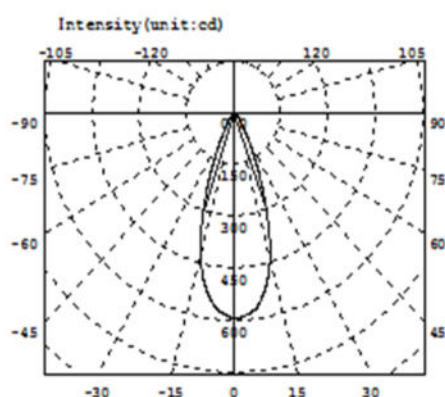
A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.4519	-58.5	7.584	-27.0	114.2	4.5	971.3	36.0	40.10	67.5	3.140
-88.5	0.5084	-57.0	8.514	-25.5	138.7	6.0	916.7	37.5	34.60	69.0	2.694
-87.0	0.5422	-55.5	9.513	-24.0	168.2	7.5	852.7	39.0	30.13	70.5	2.206
-85.5	0.5744	-54.0	10.75	-22.5	201.3	9.0	780.5	40.5	26.55	72.0	1.788
-84.0	0.6105	-52.5	11.99	-21.0	243.5	10.5	702.7	42.0	23.56	73.5	1.573
-82.5	0.7114	-51.0	13.21	-19.5	292.1	12.0	623.2	43.5	21.00	75.0	1.367
-81.0	0.8268	-49.5	14.40	-18.0	349.0	13.5	542.0	45.0	18.83	76.5	1.248
-79.5	0.9764	-48.0	15.80	-16.5	417.3	15.0	464.7	46.5	17.00	78.0	1.120
-78.0	1.157	-46.5	17.44	-15.0	494.3	16.5	392.0	48.0	15.34	79.5	0.9734
-76.5	1.361	-45.0	19.25	-13.5	578.4	18.0	321.5	49.5	13.91	81.0	0.8409
-75.0	1.623	-43.5	21.34	-12.0	669.1	19.5	266.6	51.0	12.62	82.5	0.7585
-73.5	1.921	-42.0	23.93	-10.5	758.1	21.0	222.8	52.5	11.47	84.0	0.7034
-72.0	2.293	-40.5	26.87	-9.0	840.3	22.5	186.1	54.0	10.45	85.5	0.6481
-70.5	2.700	-39.0	30.42	-7.5	913.3	24.0	155.9	55.5	9.342	87.0	0.6039
-69.0	3.106	-37.5	34.80	-6.0	977.0	25.5	130.5	57.0	8.159	88.5	0.5358
-67.5	3.526	-36.0	40.23	-4.5	1026	27.0	109.5	58.5	6.999	90.0	0.4360
-66.0	3.973	-34.5	47.11	-3.0	1056	28.5	92.05	60.0	5.959		
-64.5	4.469	-33.0	55.40	-1.5	1069	30.0	77.44	61.5	5.184		
-63.0	5.071	-31.5	65.69	0.0	1064	31.5	65.15	63.0	4.621		
-61.5	5.759	-30.0	78.52	1.5	1047	33.0	55.01	64.5	4.120		
-60.0	6.579	-28.5	94.59	3.0	1015	34.5	46.78	66.0	3.624		

Electricity Parameter:

Current I: 0.1000A Power: 3.360W
Voltage V: 33.59V PF: 1.000

Optical Parameter (Distance=2.410m):

Equivalent Luminous flux: $\Phi_{\text{eff}} = 344.8\text{lm}$ Efficiency: $\text{Eff} = 102.64\text{lm/W}$
Diffuse angle: @ (25%): 39.6deg @ (50%): 27.8deg @ (75%): 18.2deg @ (50%): 27.8deg
Diffuse angle: @ (25%): 39.7deg @ (50%): 27.9deg @ (75%): 18.3deg @ (50%): 27.9deg
Imax=1069cd (C=0.0deg, G=-1.5deg) C0-180Plane Imax= 1069cd (G=-1.5deg)
C0-180Plane IO= 1064cd



Intensity data:(deg , cd) C0-180

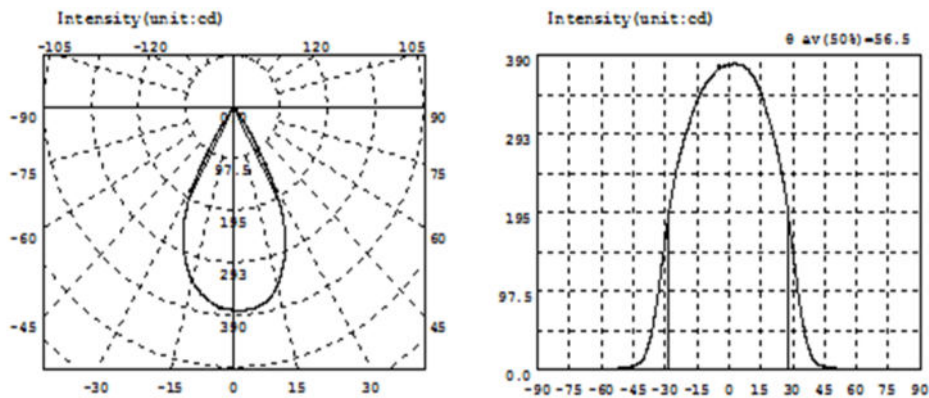
A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.3164	-58.5	4.886	-27.0	125.8	4.5	578.7	36.0	41.71	67.5	2.036
-88.5	0.2938	-57.0	5.855	-25.5	152.3	6.0	571.5	37.5	35.28	69.0	1.760
-87.0	0.2938	-55.5	7.007	-24.0	183.7	7.5	559.3	39.0	30.24	70.5	1.495
-85.5	0.3051	-54.0	8.149	-22.5	216.1	9.0	541.7	40.5	26.20	72.0	1.262
-84.0	0.3057	-52.5	9.281	-21.0	254.0	10.5	519.1	42.0	22.74	73.5	1.029
-82.5	0.3068	-51.0	10.55	-19.5	293.0	12.0	494.6	43.5	19.84	75.0	0.8272
-81.0	0.3518	-49.5	11.76	-18.0	333.9	13.5	466.1	45.0	17.36	76.5	0.6684
-79.5	0.4192	-48.0	13.14	-16.5	375.3	15.0	431.6	46.5	15.36	78.0	0.5512
-78.0	0.4759	-46.5	14.82	-15.0	414.7	16.5	393.0	48.0	13.61	79.5	0.4553
-76.5	0.5642	-45.0	16.73	-13.5	450.2	18.0	351.9	49.5	12.08	81.0	0.3858
-75.0	0.6231	-43.5	18.99	-12.0	481.3	19.5	304.3	51.0	10.76	82.5	0.3179
-73.5	0.7674	-42.0	21.70	-10.5	507.5	21.0	264.1	52.5	9.568	84.0	0.3120
-72.0	0.8515	-40.5	25.04	-9.0	529.3	22.5	225.6	54.0	8.390	85.5	0.3109
-70.5	1.052	-39.0	28.96	-7.5	547.9	24.0	190.0	55.5	7.372	87.0	0.3125
-69.0	1.417	-37.5	33.85	-6.0	563.7	25.5	157.9	57.0	6.570	88.5	0.2938
-67.5	1.791	-36.0	39.87	-4.5	573.7	27.0	130.2	58.5	5.690	90.0	0.3029
-66.0	2.150	-34.5	47.64	-3.0	578.7	28.5	106.9	60.0	4.764		
-64.5	2.525	-33.0	57.38	-1.5	586.0	30.0	87.83	61.5	3.960		
-63.0	2.981	-31.5	69.72	0.0	590.3	31.5	72.16	63.0	3.286		
-61.5	3.505	-30.0	84.89	1.5	588.0	33.0	59.76	64.5	2.749		
-60.0	4.118	-28.5	103.6	3.0	583.6	34.5	49.68	66.0	2.352		

Electricity Parameter:

Current I: 0.1000A Power: 3.660W
Voltage V: 36.59V PF: 1.000

Optical Parameter (Distance=2.410m):

Equivalent Luminous flux: $\Phi_{\text{eff}} = 298.7\text{lm}$ Efficiency: $\text{Eff} = 81.61\text{lm/W}$
Diffuse angle: @ (25%): 51.7deg @ (50%): 39.2deg @ (75%): 28.3deg @ (50%): 39.2deg
Diffuse angle: @ (25%): 51.7deg @ (50%): 39.2deg @ (75%): 28.3deg @ (50%): 39.2deg
 $I_{\text{max}} = 590.3\text{cd}$ (C=0.0deg, G=0.0deg) C0-180Plane $I_{\text{max}} = 590.3\text{cd}$ (G=0.0deg)
C0-180Plane $I_0 = 590.3\text{cd}$



Intensity data: (deg , cd) C0-180

A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.2712	-58.5	0.3919	-27.0	215.0	4.5	377.8	36.0	40.34	67.5	0.3181
-88.5	0.2710	-57.0	0.4312	-25.5	238.8	6.0	377.4	37.5	25.49	69.0	0.3118
-87.0	0.2708	-55.5	0.5938	-24.0	256.6	7.5	374.7	39.0	15.48	70.5	0.3141
-85.5	0.2599	-54.0	0.8893	-22.5	272.2	9.0	372.0	40.5	9.430	72.0	0.2959
-84.0	0.2492	-52.5	1.281	-21.0	286.0	10.5	366.8	42.0	6.195	73.5	0.3091
-82.5	0.2494	-51.0	1.648	-19.5	298.9	12.0	360.7	43.5	4.469	75.0	0.3503
-81.0	0.2609	-49.5	2.090	-18.0	311.5	13.5	352.7	45.0	3.355	76.5	0.3860
-79.5	0.2605	-48.0	2.625	-16.5	323.5	15.0	343.6	46.5	2.590	78.0	0.3859
-78.0	0.2705	-46.5	3.339	-15.0	333.4	16.5	330.8	48.0	2.029	79.5	0.3616
-76.5	0.2809	-45.0	4.318	-13.5	342.4	18.0	317.3	49.5	1.604	81.0	0.3034
-75.0	0.2799	-43.5	5.732	-12.0	348.6	19.5	304.4	51.0	1.274	82.5	0.3102
-73.5	0.2806	-42.0	8.158	-10.5	355.7	21.0	290.3	52.5	0.9297	84.0	0.2796
-72.0	0.2712	-40.5	12.83	-9.0	359.9	22.5	273.8	54.0	0.6534	85.5	0.2712
-70.5	0.2599	-39.0	21.12	-7.5	365.9	24.0	255.0	55.5	0.4807	87.0	0.2724
-69.0	0.2747	-37.5	33.81	-6.0	370.8	25.5	234.4	57.0	0.4157	88.5	0.2498
-67.5	0.2976	-36.0	51.24	-4.5	376.8	27.0	209.7	58.5	0.3957	90.0	0.2814
-66.0	0.3204	-34.5	74.13	-3.0	376.4	28.5	179.1	60.0	0.3700		
-64.5	0.3390	-33.0	101.3	-1.5	377.0	30.0	146.7	61.5	0.3697		
-63.0	0.3600	-31.5	131.2	0.0	377.9	31.5	114.3	63.0	0.3623		
-61.5	0.3680	-30.0	161.9	1.5	378.6	33.0	84.87	64.5	0.3415		
-60.0	0.4016	-28.5	192.3	3.0	380.5	34.5	60.08	66.0	0.3178		

Electricity Parameter:

Current I: 0.1000A Power: 3.190W
Voltage V: 31.89V PF: 1.000

Optical Parameter (Distance=2.410m):

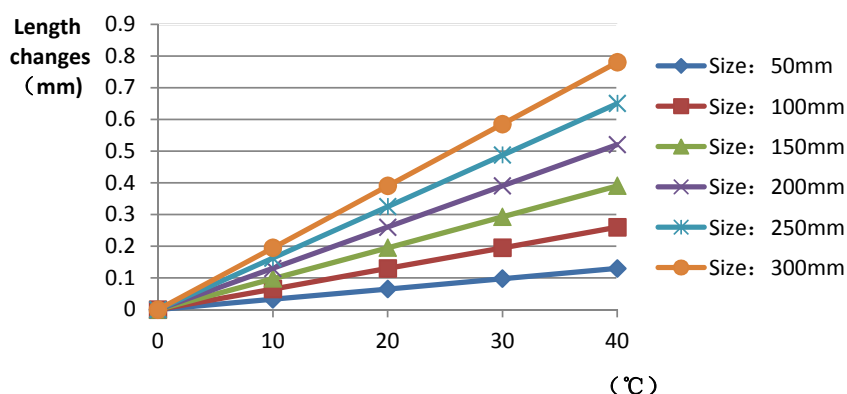
Equivalent Luminous flux: $\Phi_{\text{eff}} = 283.4\text{lm}$ Efficiency: $\text{Eff} = 88.84\text{lm/W}$
Diffuse angle: @ (25%): 65.7deg @ (50%): 56.5deg @ (75%): 42.4deg @ (50%): 56.5deg
Diffuse angle: @ (25%): 65.7deg @ (50%): 56.6deg @ (75%): 42.9deg @ (50%): 56.6deg
Imax=380.5cd (C=0.0deg, G=3.0deg) C0-180Plane Imax= 380.5cd (G=3.0deg)
C0-180Plane I0= 377.9cd

		Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Test result5	Test result6	Test result7	Test result8	Judgment	Remarks
1.Size	diameter	25			24.81	24.81	24.79	24.81	24.8	24.83	24.79	24.85		Test environment : In 20 ℃ - 25 ℃ environment to achieve thermal equilibrium after the test.
	thickness	1.2			1.28	1.25	1.26	1.28	1.27	1.26	1.28	1.27		
	height	6.7			6.79	6.77	6.75	6.77	6.76	6.73	6.78	6.76		
	Gate shear can not affect the appearance of the lamp													
	See attachment "Appearance Inspection Standards"													
2.Appearance Quality	See attachment "Appearance Inspection Standard"	E	No burr		No burr		No burr		No burr		No burr		OK	
			No stains		No stains		No stains		No stains					
3.Material	PC					Color		Transparent					OK	
4.Optical index	Testing LE	LED D6												
	The size and rated power of the light-emitting surface (LES) of the COB recommended by this lens should conform to the parameters in the product basic information table. if it is required to be out of range. According to the heat dissipation capability of the lamp and the actual conditions of the use environment, the lens should be fully tested and tested to prevent the lens life.													
	FWHM	See light distribution curve												
	angle		27.8°	28.2°	27.9°	28.3°	27.7°	27.6°	29.4°	27.9°				
	K-value (CD/LM)		3.10	3.04	3.08	3.01	3.08	3.12	2.77	3.07				
	Efficiency													
	Facula	See the signature sample												
Comprehensive judgment	Qualified													

Remarks:

1、Tool Number:
V-Vernier Caliper
2D-Quadratic H-
Height Gauge M-
Tool Microscope P-
Needle T-Thick
Gauge R-Radius
Gauge E-Visual.
2、Ambient
temperature on the
size of the product
refer to the table on
the right

PC product size changes with temperature table



Precautions:

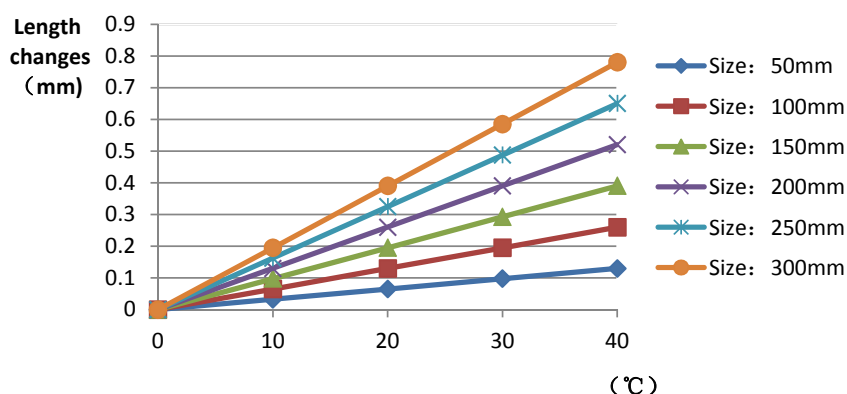
1. Please wear clean gloves during the lens assembly process to prevent the lens surface from being contaminated.
2. Try to avoid touching the total reflection surface when taking the lens.
3. The lens surface is contaminated. Only use a soft cotton cloth dipped in analytically pure neutral solvent to wipe gently. Do not wipe with industrial solvents (alcohol, isopropanol, acetone, ether, toluene, xylene, carbon tetrachloride, MMA Body, etc.).
4. The working temperature of the lens should be within the temperature resistance limit of the lens material. Exceeding the temperature resistance limit will cause the lens to crack or melt and affect the service life of the lens. It is recommended that the upper surface temperature of the LED colloid should be less than 120 degrees.

		Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Test result5	Test result6	Test result7	Test result8	Judgment	Remarks
1.Size	diameter	25			24.97	24.98	25.01	25	25.01	24.98	25	24.99		Test environment : In 20 ℃ - 25 ℃ environment to achieve thermal equilibrium after the test.
	thickness	1.2			1.24	1.22	1.25	1.25	1.3	1.3	1.28	1.34		
	height	6.7			6.73	6.76	6.77	6.77	6.77	6.76	6.74	6.81		
	Gate shear can not affect the appearance of the lamp													
	See attachment "Appearance Inspection Standards"													
2.Appearance Quality	See attachment "Appearance Inspection Standard"	E	No burr		No burr		No burr		No burr		OK			
			No stains		No stains		No stains		No stains		OK			
3.Material	PC						Color		Transparent				OK	
4.Optical index	Testing LE	LED D6												
	The size and rated power of the light-emitting surface (LES) of the COB recommended by this lens should conform to the parameters in the product basic information table. if it is required to be out of range. According to the heat dissipation capability of the lamp and the actual conditions of the use environment, the lens should be fully tested and tested to prevent the lens life.													
	FWHM	See light distribution curve												
	angle		39.2°	36°	36.7°	40°	35.9°	35.8°	39.7°	38.8°				
	K-value (CD/LM)		1.97	2.19	2.17	1.90	2.28	2.25	1.91	2.00				
	Efficiency													
	Facula	See the signature sample												
Comprehensive judgment		Qualified												

Remarks:

1、Tool Number:
V-Vernier Caliper
2D-Quadratic H-
Height Gauge M-
Tool Microscope P-
Needle T-Thick
Gauge R-Radius
Gauge E-Visual.
2、Ambient
temperature on the
size of the product
refer to the table on
the right

PC product size changes with temperature table



Precautions:

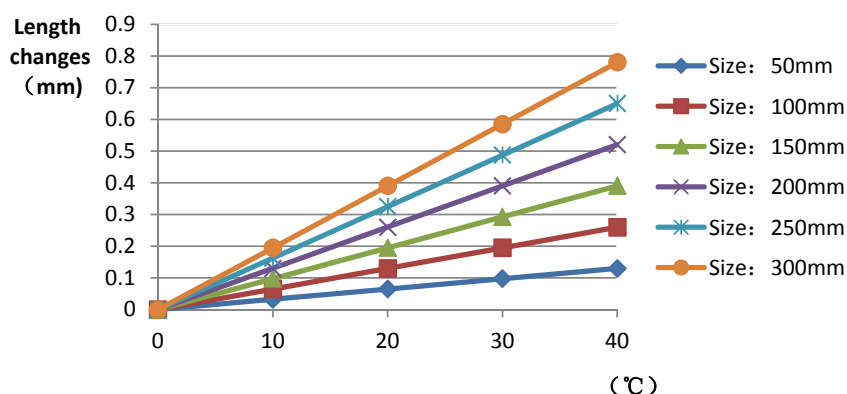
1. Please wear clean gloves during the lens assembly process to prevent the lens surface from being contaminated.
2. Try to avoid touching the total reflection surface when taking the lens.
3. The lens surface is contaminated. Only use a soft cotton cloth dipped in analytically pure neutral solvent to wipe gently. Do not wipe with industrial solvents (alcohol, isopropanol, acetone, ether, toluene, xylene, carbon tetrachloride, MMA Body, etc.).
4. The working temperature of the lens should be within the temperature resistance limit of the lens material. Exceeding the temperature resistance limit will cause the lens to crack or melt and affect the service life of the lens. It is recommended that the upper surface temperature of the LED colloid should be less than 120 degrees.

		Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Test result5	Test result6	Test result7	Test result8	Judgment	Remarks
1.Size	diameter	25			24.97	24.95	24.95	24.97	24.96	24.94	24.93	24.94		Test environment : In 20 ℃ - 25 ℃ environment to achieve thermal equilibrium after the test.
	thickness	1.2			1.23	1.24	1.25	1.24	1.24	1.24	1.24	1.24		
	height	6.7			6.73	6.77	6.75	6.75	6.72	6.74	6.77	6.78		
	Gate shear can not affect the appearance of the lamp													
	See attachment "Appearance Inspection Standards"													
2.Appearance Quality		See attachment "Appearance Inspection Standard"	E	No burr		No burr		No burr		No burr		OK		
				No stains		No stains		No stains		No stains				
3.Material		PC					Color		Transparent				OK	
4.Optical index	Testing LE		LED D6											
	The size and rated power of the light-emitting surface (LES) of the COB recommended by this lens should conform to the parameters in the product basic information table. if it is required to be out of range. According to the heat dissipation capability of the lamp and the actual conditions of the use environment, the lens should be fully tested and tested to prevent the lens life.													
	FWHM		See light distribution curve											
	angle				56.8°	58.1°	59.2°	59°	59.8°	58.8°	58.9°	59.5°		
	K-value (CD/LM)													
	Efficiency													
	Facula		See the signature sample											
Comprehensive judgment		Qualified												

Remarks:

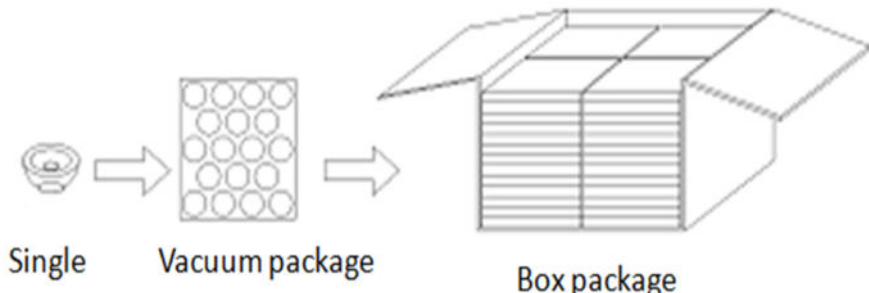
1、Tool Number:
V-Vernier Caliper
2D-Quadratic H-
Height Gauge M-
Tool Microscope P-
Needle T-Thick
Gauge R-Radius
Gauge E-Visual.
2、Ambient
temperature on the
size of the product
refer to the table on
the right

PC product size changes with temperature table



Precautions:

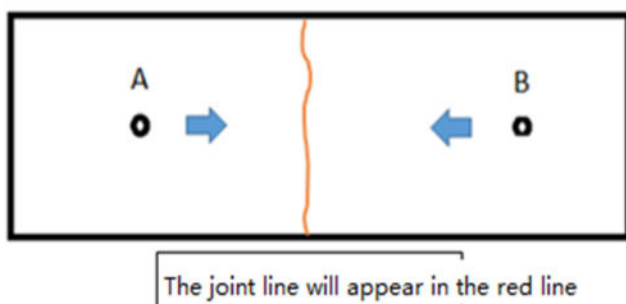
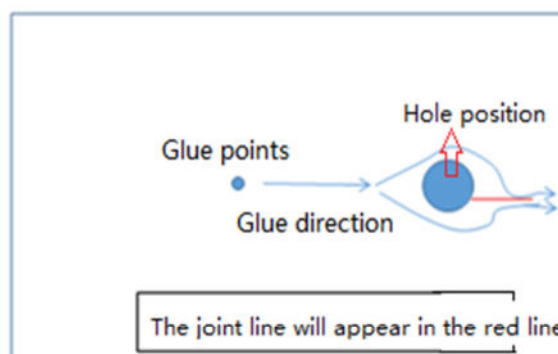
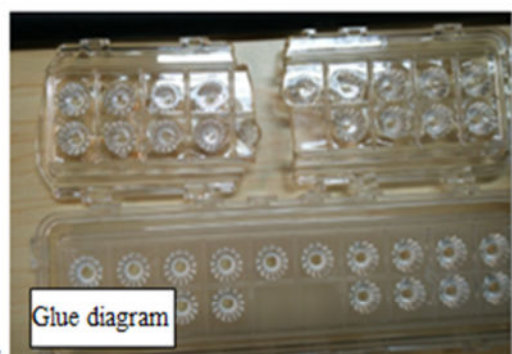
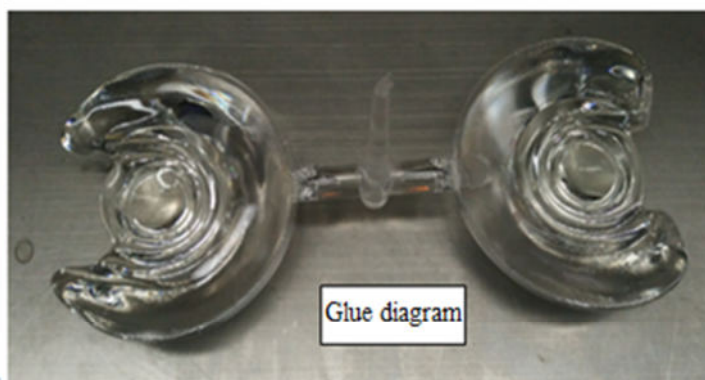
1. Please wear clean gloves during the lens assembly process to prevent the lens surface from being contaminated.
2. Try to avoid touching the total reflection surface when taking the lens.
3. The lens surface is contaminated. Only use a soft cotton cloth dipped in analytically pure neutral solvent to wipe gently. Do not wipe with industrial solvents (alcohol, isopropanol, acetone, ether, toluene, xylene, carbon tetrachloride, MMA Body, etc.).
4. The working temperature of the lens should be within the temperature resistance limit of the lens material. Exceeding the temperature resistance limit will cause the lens to crack or melt and affect the service life of the lens. It is recommended that the upper surface temperature of the LED colloid should be less than 120 degrees.

PN		HK-GZ-25@07-24-D6-22-1g-1_YX		Product Name	HK Photon 25@07-24°lens(YX)		
Product material		PC					
Package diagram		<div><p>Single Vacuum package Box package</p></div>					
Product packing		44	A/ Box	4	pcs/Layer		
		18	Layer/Box	3168	A/ Carton		
Packaging Materials	NO.	Part No	Part name	Size	Dosage	Unit	Remarks
	1	2.07.0093	Blister box	23cm*21cm	72	BAG	
	2	2.08.0001	PE film	30cm*30cm	72	PCS	
	3	2.06.0005	Reel label paper	6.2cm*8cm	72	PCS	
	4	2.06.0005	Box label paper	6.2cm*9.2cm	1	PCS	
	5	2.06.0003	big plate	46.8cm*42.8cm	19	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:

Synthesis



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 $L \leq 10\text{mm}$, 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		√	