



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-30@08-15-D6-22-1g-1	1. 01. 02523	HK Photon 30@08-15° lens
HK-GZ-30@08-24-D6-22-1g-1	1. 01. 02524	HK Photon 30@08-24° lens
HK-GZ-30@08-36-D6-22-1g-1	1. 01. 02525	HK Photon 30@08-36° lens
HK-GZ-30@08-60-D6-22-1g-1	1. 01. 02526	HK Photon 30@08-60° lens



Supplier confirmation				Client confirmation			
Proposed		DATE		Qualified ☐		DATE	
Project manager		DATE		Unqualified ☐			
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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www.hkoptics.com

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: 2021/1/20

Product Picture:



PN:

HK-GZ-30@08-15-D6-22-1g-1

Size(L*W*H/ Φ *H):

Φ :30mm; H:08mm

Material:

PC

Efficiency:

\

Temperature(Topr):

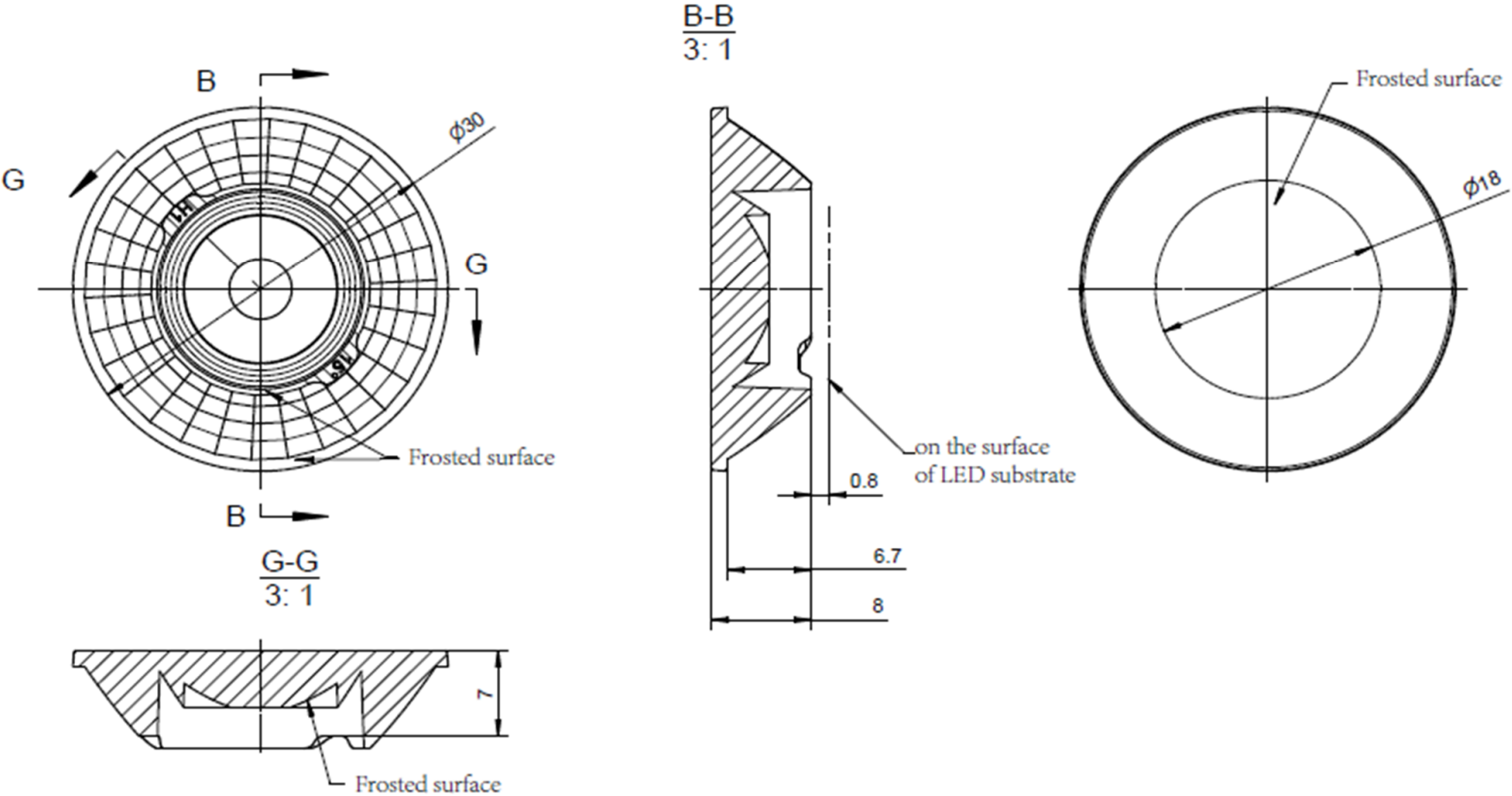
-40°C to +120°C

FWHM:

15°、24°、36°、50°

Matched LES:

D6

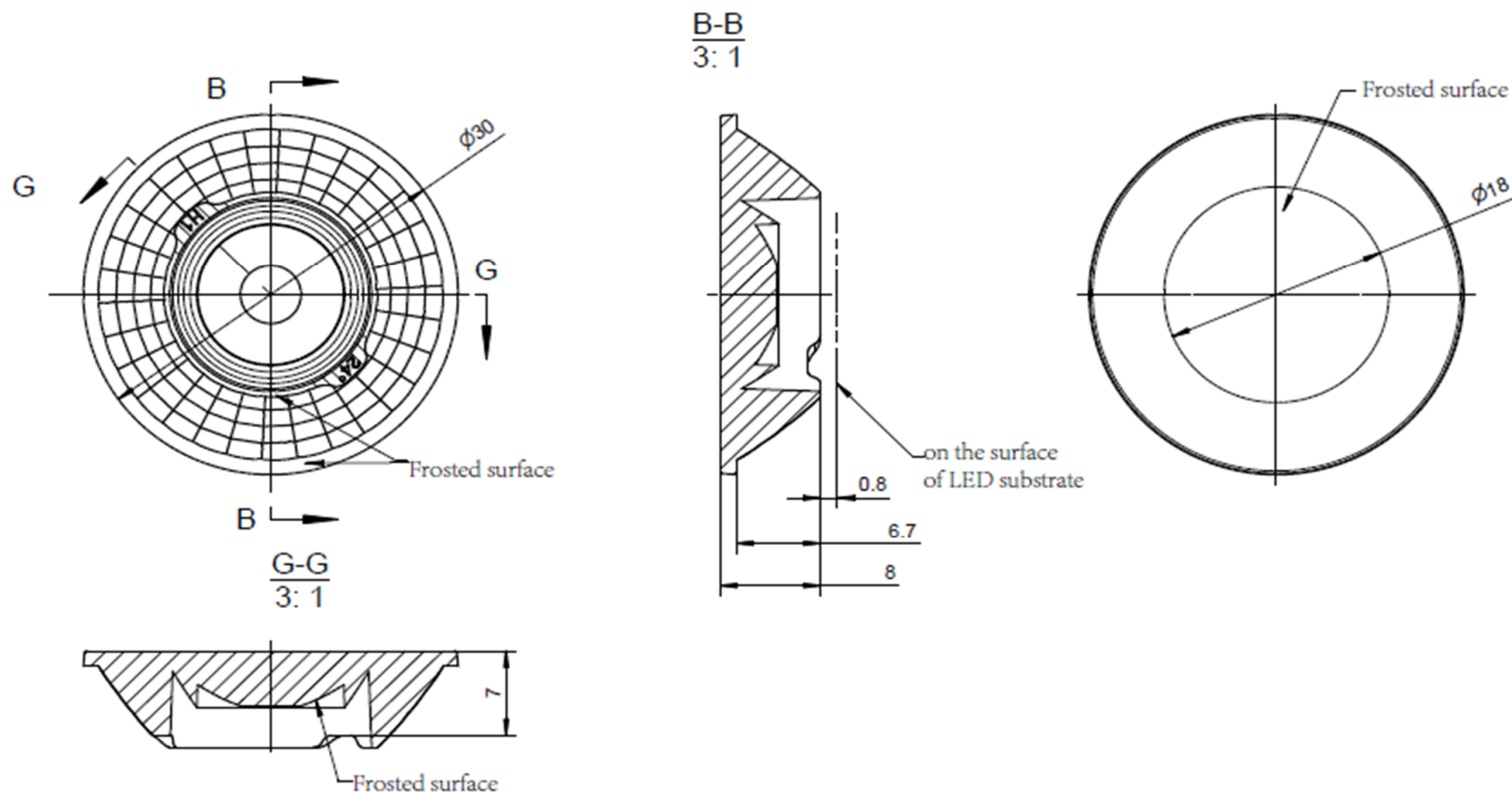


Technical remark:

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 Photon 30@08-15° lens		HK-GZ-30@08-15-D6-22-1g-1		
structure design					1.01.02523		
Review					umber of drawin	qty	weight
Validation			Material:	PC	CDHK		

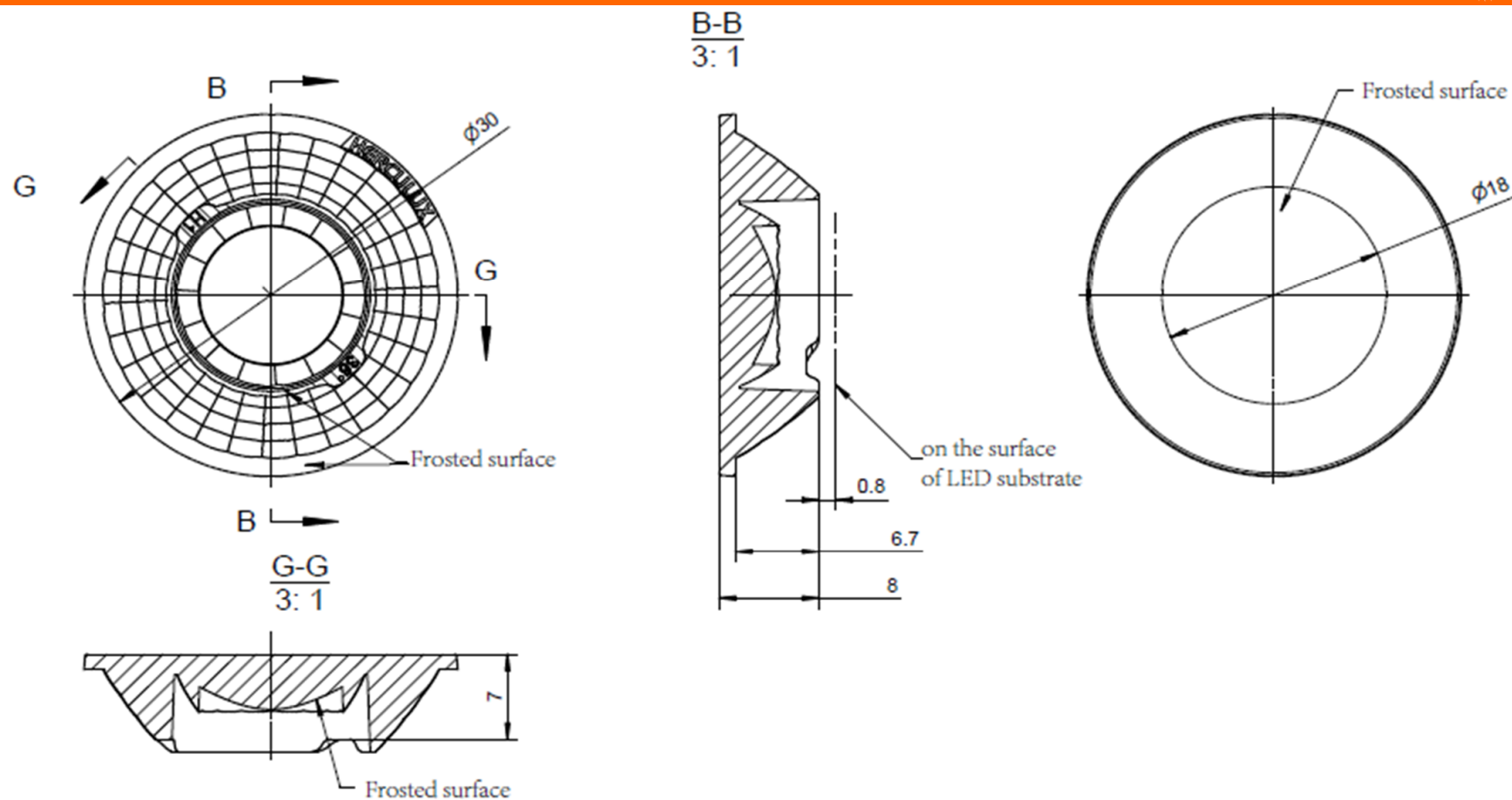
MT5 Tolerance table (mm)	Basic size	<3	3~10	24~65	65~140	140~250	250~450	>450		
	olerance valu	±0.1	±0.15	±0.35	±0.50	±0.80	±1.2	±2.0		

**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 Photon 30@08-24 ^g lens			HK-GZ-30@08-24-D6-22-1g-1		
Structure design							1.01.02524	
Review			Material: PC			Number of drawing	qty	weight
Validation								
						CDHK		

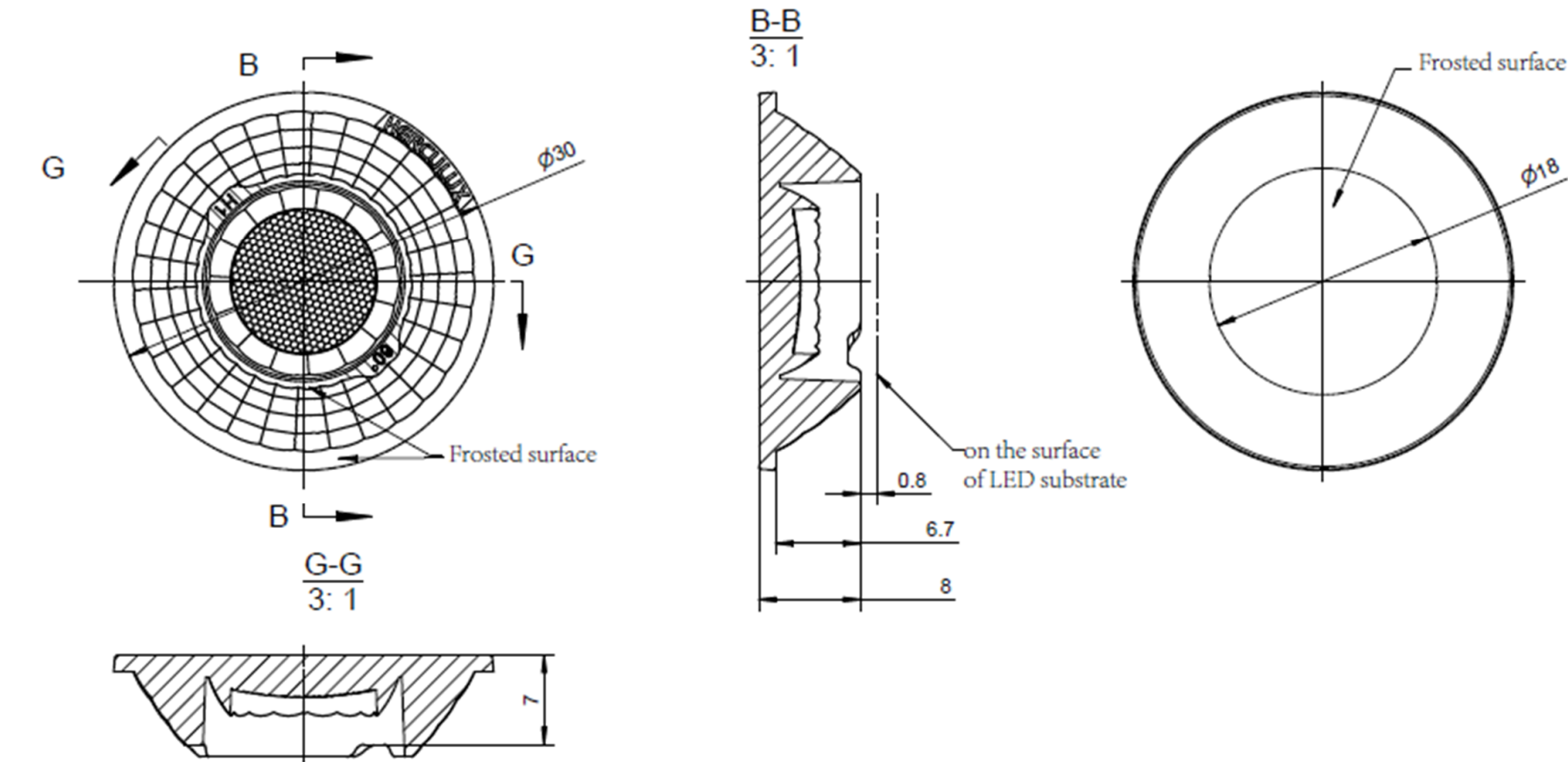
MT5 Tolerance table (mm)	Basic size	<3	3~10	24~65	65~140	140~250	250~450	>450		
	tolerance value	±0.1	±0.15	±0.35	±0.50	±0.80	±1.2	±2.0		

**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 Photon 30@08-36° lens			HK-GZ-30@08-36-D6-22-1g-1		
Structure design							1.01.02525	
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		

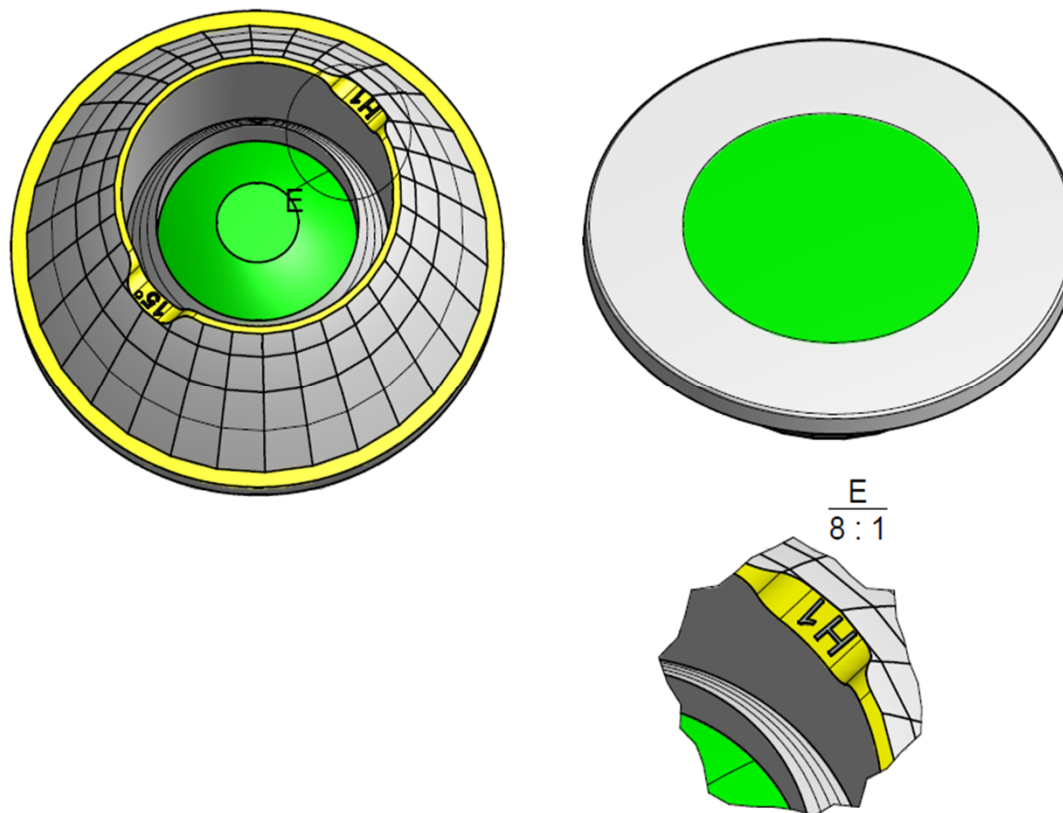


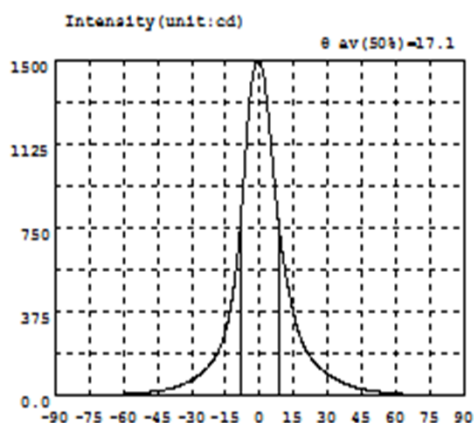
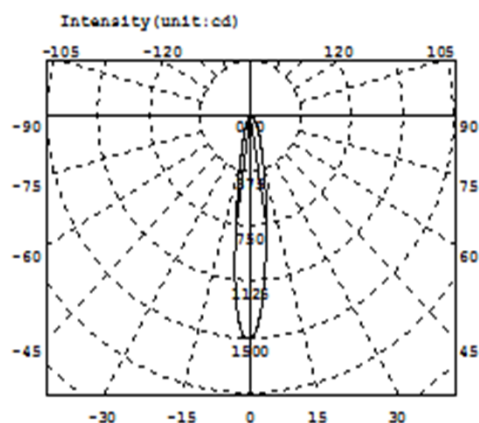
Technical remark:

- 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 Photon 30@08-60° lens		HK-GZ-30@08-60-D6-22-1g-1		
structure design					1.01.02526		
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

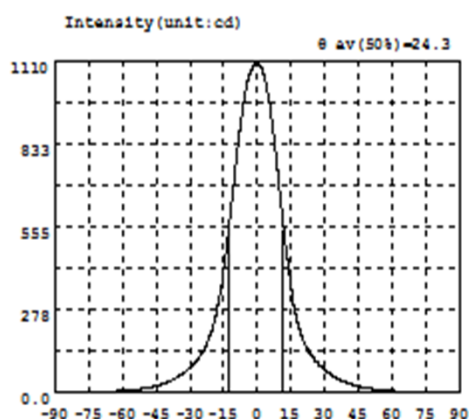
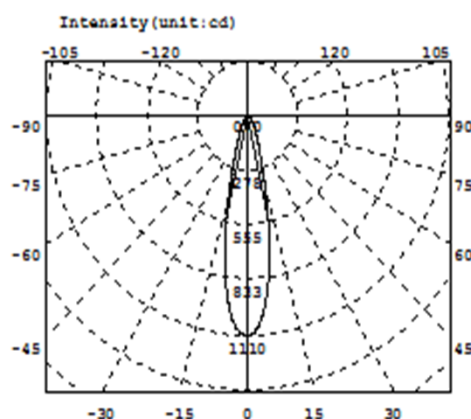
A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.3051	-58.5	9.544	-27.0	91.46	4.5	1172	36.0	63.37	67.5	6.836
-88.5	0.2939	-57.0	10.47	-25.5	103.3	6.0	1001	37.5	56.61	69.0	6.129
-87.0	0.3295	-55.5	11.47	-24.0	116.7	7.5	842.3	39.0	50.56	70.5	5.446
-85.5	0.4681	-54.0	12.35	-22.5	132.5	9.0	708.2	40.5	45.10	72.0	4.818
-84.0	0.7631	-52.5	13.52	-21.0	151.6	10.5	600.3	42.0	40.25	73.5	4.251
-82.5	1.148	-51.0	14.98	-19.5	175.4	12.0	510.0	43.5	35.90	75.0	3.716
-81.0	1.587	-49.5	16.60	-18.0	202.9	13.5	431.9	45.0	32.03	76.5	3.242
-79.5	2.034	-48.0	18.37	-16.5	243.3	15.0	364.1	46.5	28.61	78.0	2.718
-78.0	2.418	-46.5	20.40	-15.0	294.7	16.5	300.8	48.0	25.62	79.5	2.245
-76.5	2.792	-45.0	22.63	-13.5	361.1	18.0	257.6	49.5	22.93	81.0	1.694
-75.0	3.146	-43.5	25.33	-12.0	447.6	19.5	222.1	51.0	20.66	82.5	1.157
-73.5	3.515	-42.0	28.28	-10.5	560.1	21.0	194.0	52.5	18.64	84.0	0.7729
-72.0	3.910	-40.5	31.75	-9.0	707.4	22.5	171.4	54.0	16.87	85.5	0.4597
-70.5	4.377	-39.0	35.65	-7.5	899.4	24.0	152.5	55.5	15.19	87.0	0.3029
-69.0	4.888	-37.5	40.03	-6.0	1124	25.5	136.0	57.0	13.45	88.5	0.2593
-67.5	5.438	-36.0	44.97	-4.5	1317	27.0	121.9	58.5	12.28	90.0	0.2326
-66.0	6.021	-34.5	50.82	-3.0	1434	28.5	109.4	60.0	11.12		
-64.5	6.621	-33.0	56.94	-1.5	1489	30.0	98.32	61.5	10.08		
-63.0	7.246	-31.5	64.05	0.0	1488	31.5	88.17	63.0	9.162		
-61.5	7.941	-30.0	72.06	1.5	1440	33.0	79.01	64.5	8.334		
-60.0	8.686	-28.5	81.16	3.0	1323	34.5	70.78	66.0	7.556		

Electricity Parameter:

Current I: 0.1000A Power: 3.530W
Voltage V: 35.29V PF: 1.000

Optical Parameter(Distance=2.410m):

Equivalent Luminous flux: $\Phi_{\text{eff}} = 327.3\text{lm}$ Efficiency: $\text{Eff} = 92.74\text{lm/W}$
Diffuse angle: $\theta(25\%) : 27.9\text{deg}$ $\theta(50\%) : 17.1\text{deg}$ $\theta(75\%) : 10.9\text{deg}$ $\theta(50\%) : 17.1\text{deg}$
Diffuse angle: $\theta(25\%) : 28.0\text{deg}$ $\theta(50\%) : 17.1\text{deg}$ $\theta(75\%) : 10.9\text{deg}$ $\theta(50\%) : 17.1\text{deg}$
 $\text{Imax} = 1493\text{cd}$ ($C = 0.0\text{deg}$, $G = -1.0\text{deg}$) $\text{C0-180Plane Imax} = 1493\text{cd}$ ($G = -1.0\text{deg}$)
 $\text{C0-180Plane I0} = 1488\text{cd}$



Intensity data: (deg , cd) C0-180

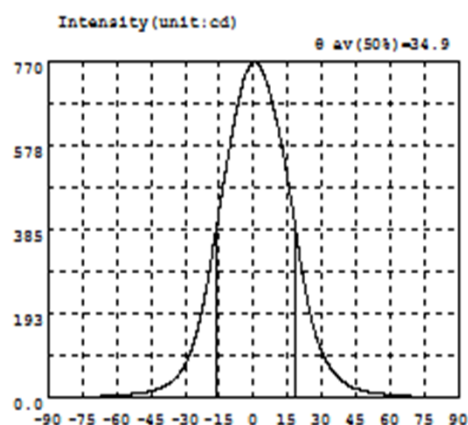
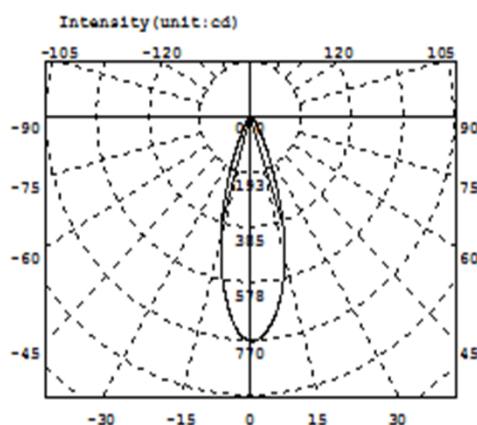
A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.2486	-58.5	8.464	-27.0	109.7	4.5	1004	36.0	47.10	67.5	4.618
-88.5	0.2610	-57.0	9.309	-25.5	124.7	6.0	931.9	37.5	41.60	69.0	4.178
-87.0	0.3634	-55.5	10.30	-24.0	142.8	7.5	844.1	39.0	36.74	70.5	3.743
-85.5	0.5780	-54.0	11.46	-22.5	165.4	9.0	741.4	40.5	32.39	72.0	3.328
-84.0	0.8042	-52.5	12.86	-21.0	192.8	10.5	630.9	42.0	28.59	73.5	2.949
-82.5	1.165	-51.0	14.38	-19.5	229.2	12.0	526.3	43.5	25.15	75.0	2.634
-81.0	1.514	-49.5	16.19	-18.0	277.2	13.5	431.6	45.0	22.15	76.5	2.286
-79.5	1.842	-48.0	18.29	-16.5	338.5	15.0	348.1	46.5	19.61	78.0	1.905
-78.0	2.067	-46.5	20.82	-15.0	414.2	16.5	277.5	48.0	17.35	79.5	1.552
-76.5	2.485	-45.0	23.67	-13.5	502.9	18.0	229.2	49.5	15.33	81.0	1.168
-75.0	2.839	-43.5	26.98	-12.0	600.9	19.5	192.1	51.0	13.60	82.5	0.8499
-73.5	3.205	-42.0	30.71	-10.5	704.0	21.0	164.4	52.5	12.13	84.0	0.5443
-72.0	3.600	-40.5	35.02	-9.0	804.8	22.5	143.0	54.0	10.89	85.5	0.2983
-70.5	4.052	-39.0	39.83	-7.5	895.9	24.0	125.7	55.5	9.833	87.0	0.2726
-69.0	4.486	-37.5	45.28	-6.0	976.3	25.5	110.8	57.0	8.874	88.5	0.2747
-67.5	4.955	-36.0	51.31	-4.5	1038	27.0	98.14	58.5	8.060	90.0	0.2009
-66.0	5.408	-34.5	58.29	-3.0	1076	28.5	86.96	60.0	7.431		
-64.5	5.910	-33.0	66.14	-1.5	1097	30.0	76.98	61.5	6.789		
-63.0	6.453	-31.5	75.05	0.0	1103	31.5	68.01	63.0	6.170		
-61.5	7.064	-30.0	85.06	1.5	1090	33.0	60.14	64.5	5.650		
-60.0	7.717	-28.5	96.63	3.0	1058	34.5	53.31	66.0	5.111		

Electricity Parameter:

Current I: 0.1000A Power: 3.549W
Voltage V: 35.50V PF: 1.000

Optical Parameter (Distance=2.410m) :

Equivalent Luminous flux: $\Phi_{\text{eff}} = 321.51\text{lm}$ Efficiency: $\text{Eff} = 90.61\text{lm/W}$
Diffuse angle: @ (25%): 34.5deg @ (50%): 24.3deg @ (75%): 16.3deg @ (50%): 24.3deg
Diffuse angle: @ (25%): 34.5deg @ (50%): 24.3deg @ (75%): 16.3deg @ (50%): 24.3deg
 $I_{\text{max}} = 1103\text{cd}$ (C=0.0deg, G=-0.5deg) C0-180Plane $I_{\text{max}} = 1103\text{cd}$ (G=-0.5deg)
C0-180Plane $I_0 = 1103\text{cd}$



Intensity data: (deg , cd) C0-180

A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.3277	-58.5	7.286	-27.0	114.3	4.5	739.4	36.0	53.45	67.5	5.218
-88.5	0.3722	-57.0	7.856	-25.5	139.7	6.0	716.5	37.5	45.44	69.0	4.755
-87.0	0.4057	-55.5	8.557	-24.0	170.3	7.5	689.7	39.0	38.78	70.5	4.342
-85.5	0.5205	-54.0	9.279	-22.5	202.9	9.0	658.5	40.5	33.28	72.0	3.903
-84.0	0.7816	-52.5	10.09	-21.0	243.3	10.5	623.5	42.0	28.72	73.5	3.517
-82.5	1.079	-51.0	11.00	-19.5	287.2	12.0	584.6	43.5	24.93	75.0	3.133
-81.0	1.387	-49.5	12.11	-18.0	334.9	13.5	542.2	45.0	21.84	76.5	2.750
-79.5	1.728	-48.0	13.45	-16.5	384.8	15.0	497.3	46.5	19.30	78.0	2.294
-78.0	2.091	-46.5	15.01	-15.0	433.5	16.5	449.2	48.0	17.17	79.5	1.872
-76.5	2.473	-45.0	16.67	-13.5	480.7	18.0	400.6	49.5	15.34	81.0	1.467
-75.0	2.807	-43.5	18.64	-12.0	527.4	19.5	347.8	51.0	13.85	82.5	1.026
-73.5	3.164	-42.0	21.03	-10.5	573.0	21.0	296.2	52.5	12.54	84.0	0.6248
-72.0	3.480	-40.5	23.92	-9.0	615.4	22.5	251.4	54.0	11.40	85.5	0.3783
-70.5	3.809	-39.0	27.48	-7.5	656.0	24.0	211.3	55.5	10.47	87.0	0.3676
-69.0	4.167	-37.5	31.89	-6.0	692.9	25.5	176.6	57.0	9.606	88.5	0.3158
-67.5	4.504	-36.0	37.20	-4.5	724.6	27.0	147.9	58.5	8.825	90.0	0.2180
-66.0	4.882	-34.5	44.50	-3.0	746.8	28.5	124.2	60.0	8.143		
-64.5	5.285	-33.0	53.21	-1.5	761.5	30.0	104.6	61.5	7.483		
-63.0	5.739	-31.5	63.93	0.0	768.3	31.5	88.13	63.0	6.874		
-61.5	6.209	-30.0	77.08	1.5	766.2	33.0	74.30	64.5	6.306		
-60.0	6.736	-28.5	93.72	3.0	756.0	34.5	62.89	66.0	5.543		

Electricity Parameter:

Current I: 0.1000A Power: 3.550W
Voltage V: 35.50V PF: 1.000

Optical Parameter (Distance=2.410m):

Equivalent Luminous flux: Φ_{eff} = 337.7lm Efficiency: Eff = 95.14lm/W

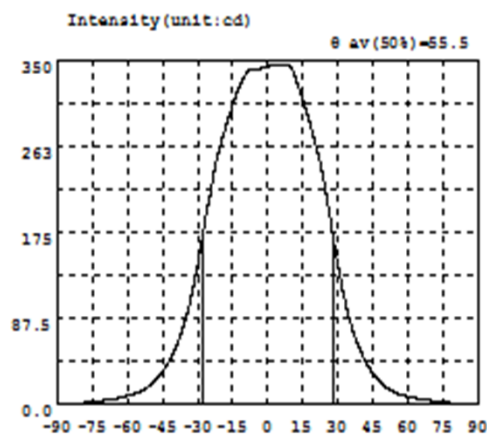
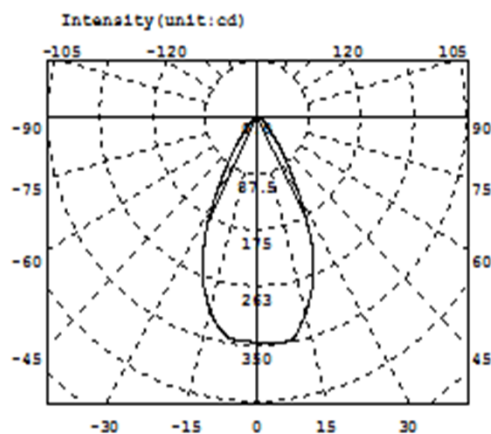
Diffuse angle: @ (25%): 47.8deg @ (50%): 34.9deg @ (75%): 22.6deg @ (50%): 34.9deg

Diffuse angle: @ (25%): 47.8deg @ (50%): 35.0deg @ (75%): 22.6deg @ (50%): 35.0deg

I_{max} = 768.8cd (C=0.0deg, G=0.5deg)

C0-180Plane I_{max} = 768.8cd (G=0.5deg)

C0-180Plane I_0 = 768.3cd



Intensity data: (deg , cd) C0-180

A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.3841	-58.5	10.18	-27.0	185.0	4.5	344.6	36.0	77.85	67.5	5.121
-88.5	0.3944	-57.0	11.32	-25.5	205.0	6.0	345.1	37.5	67.15	69.0	4.601
-87.0	0.4061	-55.5	12.65	-24.0	222.5	7.5	345.4	39.0	57.97	70.5	4.073
-85.5	0.4640	-54.0	14.33	-22.5	242.1	9.0	344.2	40.5	49.93	72.0	3.582
-84.0	0.6467	-52.5	16.33	-21.0	257.4	10.5	339.8	42.0	42.93	73.5	3.163
-82.5	0.8676	-51.0	18.69	-19.5	270.3	12.0	330.2	43.5	36.59	75.0	2.765
-81.0	1.254	-49.5	21.55	-18.0	282.0	13.5	319.5	45.0	31.38	76.5	2.432
-79.5	1.695	-48.0	24.93	-16.5	293.4	15.0	309.2	46.5	26.83	78.0	2.092
-78.0	2.144	-46.5	28.97	-15.0	304.7	16.5	297.4	48.0	23.13	79.5	1.646
-76.5	2.568	-45.0	33.64	-13.5	314.9	18.0	284.8	49.5	19.88	81.0	1.304
-75.0	2.973	-43.5	39.03	-12.0	323.9	19.5	272.2	51.0	17.22	82.5	0.9695
-73.5	3.380	-42.0	45.17	-10.5	331.3	21.0	258.9	52.5	15.05	84.0	0.6952
-72.0	3.801	-40.5	52.27	-9.0	336.6	22.5	243.8	54.0	13.22	85.5	0.4425
-70.5	4.252	-39.0	60.35	-7.5	339.8	24.0	226.0	55.5	11.68	87.0	0.3229
-69.0	4.747	-37.5	69.62	-6.0	341.1	25.5	205.2	57.0	10.37	88.5	0.2795
-67.5	5.270	-36.0	80.23	-4.5	340.6	27.0	183.4	58.5	9.079	90.0	0.1194
-66.0	5.893	-34.5	92.75	-3.0	341.5	28.5	161.2	60.0	8.348		
-64.5	6.600	-33.0	107.0	-1.5	342.8	30.0	140.4	61.5	7.565		
-63.0	7.382	-31.5	124.0	0.0	343.5	31.5	121.3	63.0	6.855		
-61.5	8.223	-30.0	143.0	1.5	344.1	33.0	104.4	64.5	6.240		
-60.0	9.146	-28.5	164.0	3.0	344.0	34.5	90.09	66.0	6.115		

Electricity Parameter:

Current I: 0.1000A Power: 3.549W
Voltage V: 35.50V PF: 1.000

Optical Parameter(Distance=2.410m):

Equivalent Luminous flux: $\Phi_{\text{eff}} = 316.5\text{lm}$ Efficiency: $\text{Eff} = 89.21\text{lm/W}$

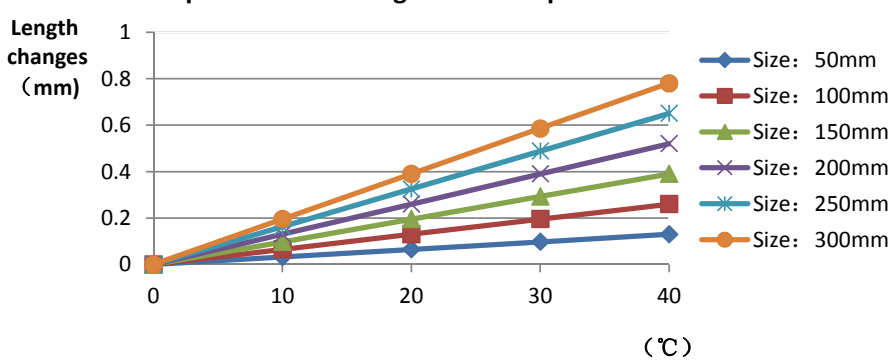
Diffuse angle: @ (25%): 70.1deg @ (50%): 55.5deg @ (75%): 41.7deg @ (50%): 55.5deg

Diffuse angle: @ (25%): 70.1deg @ (50%): 55.6deg @ (75%): 42.0deg @ (50%): 55.6deg

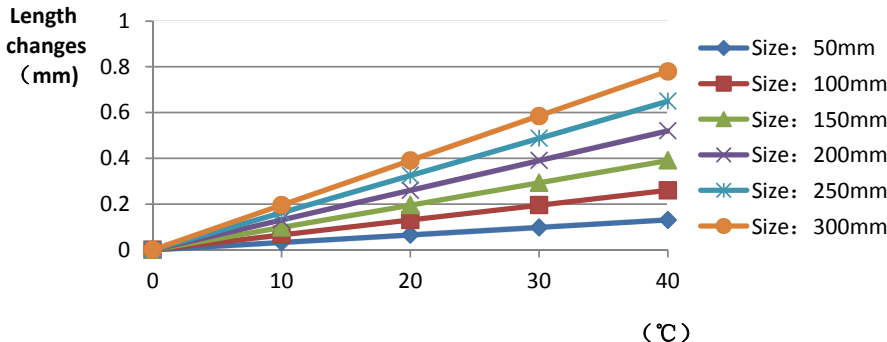
$I_{\text{max}} = 345.6\text{cd}$ (C=0.0deg, G=6.5deg)

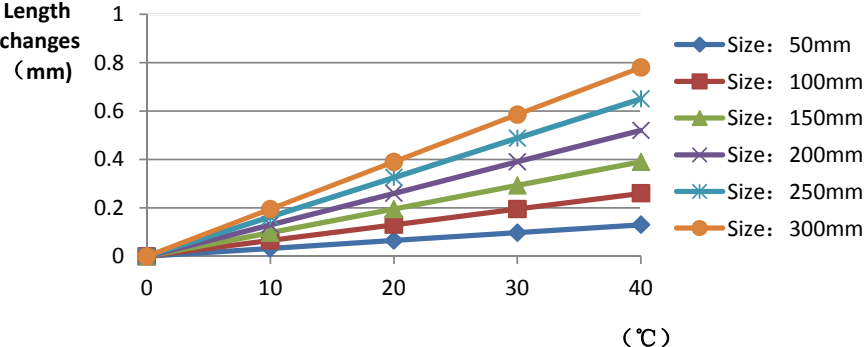
C0-180Plane $I_{\text{max}} = 345.6\text{cd}$ (G=6.5deg)

C0-180Plane $I_0 = 343.5\text{cd}$

1.Size		Standard size	Upper Size limit	Lower size limit	Test resu lt1	Test resu lt2	Test resu lt3	Test resu lt4	Test resu lt5	Test resu lt6	Test resu lt7	Test resu lt8	Jud gme nt	Remarks																																										
	diameter	30			29.9	29.8	29.9	29.9	29.9	30	29.9	29.9		Test environment: In 20 ℃ -25 ℃ environment to achieve thermal equilibrium after the test.																																										
	thickness	1.3			1.28	1.29	1.28	1.31	1.29	1.27	1.28	1.3																																												
	height	8			8	7.97	7.97	7.96	7.97	7.97	8.01	8.03																																												
	height	7			6.95	6.93	6.95	6.95	6.94	6.95	7.03	6.97																																												
	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				s	16.9		17.2		16.9																																														
	K-value				4.57	4.69		4.56		4.60																																														
	Efficiency				86.74%	86.21%		88.06%		85.94%																																														
	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 <table><thead><tr><th>Size</th><th>0℃</th><th>10℃</th><th>20℃</th><th>30℃</th><th>40℃</th></tr></thead><tbody><tr><td>50mm</td><td>0.00</td><td>0.05</td><td>0.10</td><td>0.15</td><td>0.20</td></tr><tr><td>100mm</td><td>0.00</td><td>0.10</td><td>0.20</td><td>0.30</td><td>0.40</td></tr><tr><td>150mm</td><td>0.00</td><td>0.15</td><td>0.25</td><td>0.35</td><td>0.45</td></tr><tr><td>200mm</td><td>0.00</td><td>0.20</td><td>0.30</td><td>0.40</td><td>0.50</td></tr><tr><td>250mm</td><td>0.00</td><td>0.25</td><td>0.35</td><td>0.45</td><td>0.55</td></tr><tr><td>300mm</td><td>0.00</td><td>0.30</td><td>0.40</td><td>0.50</td><td>0.60</td></tr></tbody></table>												Size	0℃	10℃	20℃	30℃	40℃	50mm	0.00	0.05	0.10	0.15	0.20	100mm	0.00	0.10	0.20	0.30	0.40	150mm	0.00	0.15	0.25	0.35	0.45	200mm	0.00	0.20	0.30	0.40	0.50	250mm	0.00	0.25	0.35	0.45	0.55	300mm	0.00	0.30	0.40	0.50	0.60
Size	0℃	10℃	20℃	30℃	40℃																																																			
50mm	0.00	0.05	0.10	0.15	0.20																																																			
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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	30			29.8	29.9	29.9	29.9	29.9	29.9	29.9	29.9		Test environment: In 20℃-25℃ environment to achieve thermal equilibrium after the test.	
	thickness	1.3			1.25	1.29	1.32	1.31	1.3	1.28	1.33	1.29			
	height	8			8.01	8.02	8.02	8.05	8.06	8	8.02	8.06			
	height	7			7.03	7.02	7.03	7	7.05	7.01	7.02	7.06			
	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						24.9	24.3		23.6		22.4			
	K-value						3.31	3.44		3.53		3.65			
	Efficiency						89.64%	89.92%		88.24%		87.68%			
	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 Length changes (mm) 1 0.8 0.6 0.4 0.2 0 0 10 20 30 40 Size: 50mm Size: 100mm Size: 150mm Size: 200mm Size: 250mm Size: 300mm (℃) 0 10 20 30 40												
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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	30			29.8	29.9	29.9	29.9	29.9	29.9	29.9	29.9		Test environment: In 20 ℃ -25 ℃ environment to achieve thermal equilibrium after the test.
	thickness	1.3			1.25	1.29	1.32	1.31	1.3	1.28	1.33	1.29		
	height	8			8.01	8.02	8.02	8.05	8.06	8	8.02	8.06		
	height	7			7.03	7.02	7.03	7	7.05	7.01	7.02	7.06		
	Gate shear can not affect the appearance of the lamp													
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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				34.9		35.9		35.2		34.5			
	K-value				2.28		2.12		2.26		2.29			
	Efficiency				88.92%		89.18%		88.13%		89.97%			
	Facula		See the signature sample											
Comprehensive judgment		Qualified												
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		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	30			29.9	29.9	29.9	29.9	29.9	29.9	29.9	30		Test environment: In 20℃-25℃ environment to achieve thermal equilibrium after the test.																																										
	thickness	1.3			1.22	1.27	1.27	1.27	1.26	1.29	1.25	1.27																																												
	height	8			8	7.99	7.99	7.98	7.97	7.99	7.97	7.99																																												
	height	7			7	6.99	6.98	7.01	6.96	7.01	6.98	7.03																																												
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	FWHM		See light distribution curve																																																					
	angle						56.3	55.4	55.5	59.2																																														
	K-value																																																							
	Efficiency						90.34%	90.91%	89.77%	89.77%																																														
	Facula		See the signature sample																																																					
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			Temperature (°C)	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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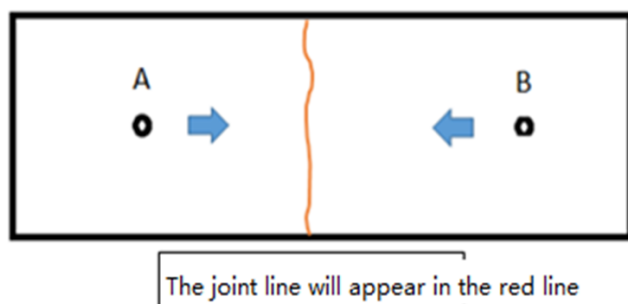
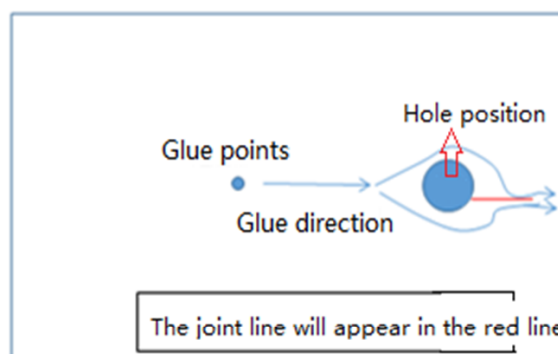
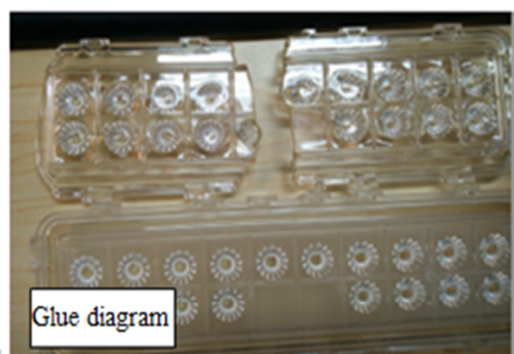
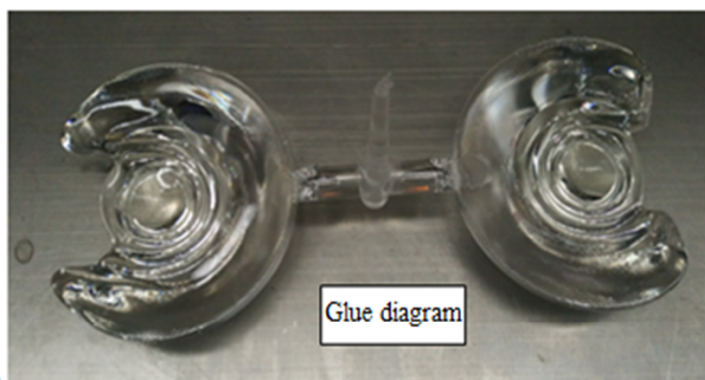


PN		HK-GZ-30@08-15-D6-22-1g-1		Product Name		HK Photon 30@08-15° lens	
Product material		PC		Customer			
Package diagram		Single Vacuum package Box package					
Product packing		27	A/ Box	4	pcs/Layer		
		16	Layer/Box	1728	A/ Carton		
Packaging Materials	NO.	Part No	Part name	Size	Dosage	Unit	Remarks
	1	2. 07. 0097	Blister box	23cm*21cm	64	BAG	
	2	2.08.0001	PE film	30cm*30cm	64	PCS	
	3	2.06.0005	Reel label paper	6.2cm*8cm	64	PCS	
	4	2.06.0005	Box label paper	6.2cm*9.2cm	1	PCS	
	5	2.06.0003	big plate	46.8cm*42.8cm	17	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		√	