



HERCULUX
恒坤光电

Chengdu HercuLux Photoelectric
Technology Co.,Ltd
Product Approval

Approval number :

Customer :

PN	Code	Product
HK-70@19-24-D9-20-1g-1	1. 01. 6735	SX 70@19-24° Lens
HK-70@19-36-D9-20-1g-1	1. 01. 6736	SX 70@19-36° Lens
HK-70@19-15-D9-20-1g-1	1. 01. 6837	SX 70@19-15° Lens
HK-70@19-60-D9-20-1g-1	1. 01. 81365	SX 70@19-60° Lens

Manufacturer : Chengdu HercuLux Photoelectric Technology Co.,Ltd



Supplier confirmation				Client confirmation			
Proposed		DATE		Qualified ☐		DATE	
Project manager		DATE		Unqualified ☐		DATE	
Audit		DATE		Audit		DATE	
Approved		DATE		Approved		DATE	
Stamp		DATE		Stamp		DATE	

(Confirmation of acceptance by both parties must be signed and sealed)

Factory: Chengdu Shuangliu District, Iot industrial park 2 road HercuLux Photoelectric Park

Phone : 028-85887727 (801) 028-85887990 (801)

Fax : 028-85887730

www.hkoptics.com

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

TEL: 0755-2937 1541

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*Approval In duplicate , for both supplier and customer.



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Date updated: 2019/5/31

Product Picture:



PN:

HK-70@19-24-D9-20-1g-1

Size(L*W*H/ Φ *H):

Φ :70mm; H:18.5mm

Material:

PC

Effiency:

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Temperature(Topr):

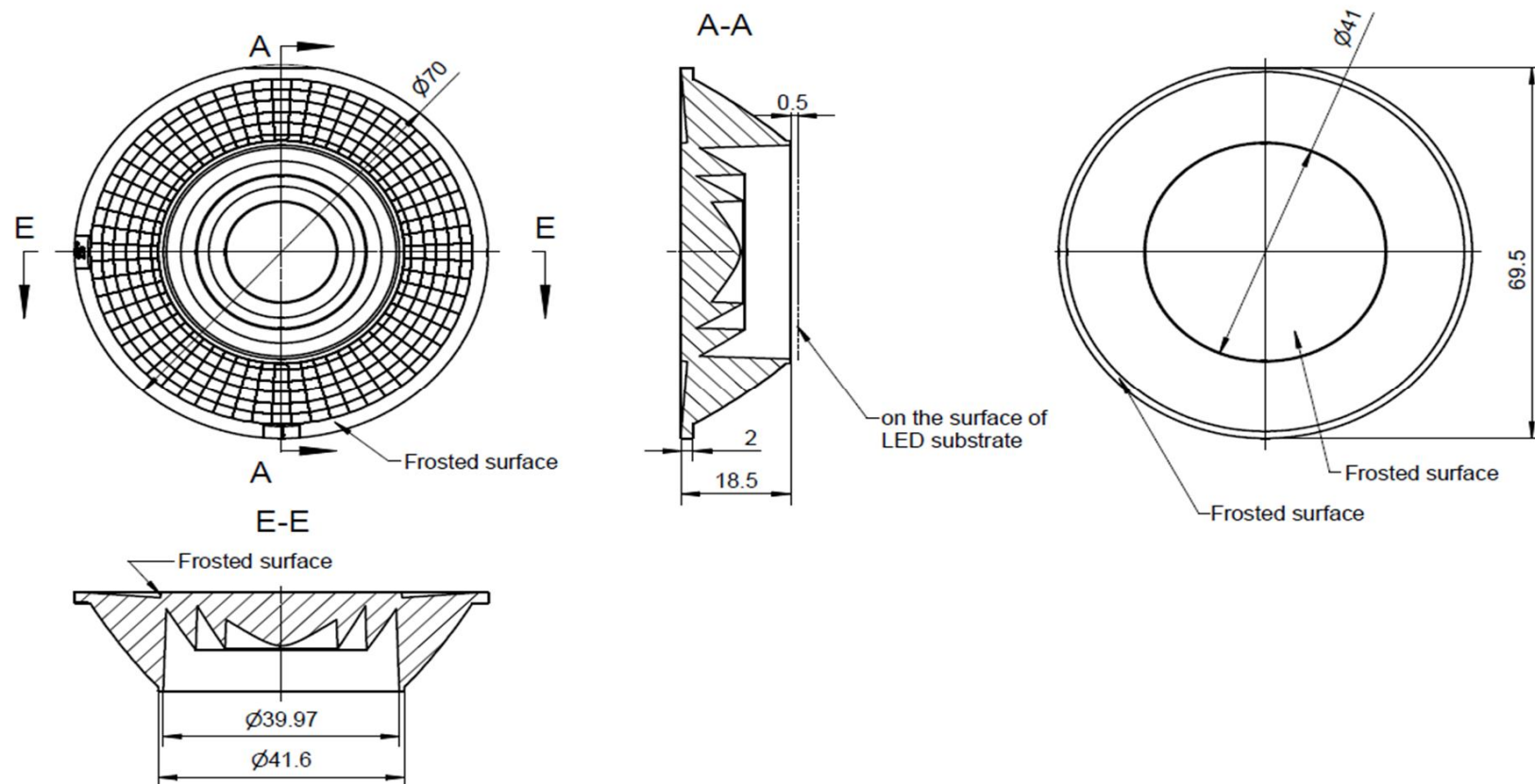
-40°C to +120°C

FWHM:

15°/24°/36°/60°

Matched LES:

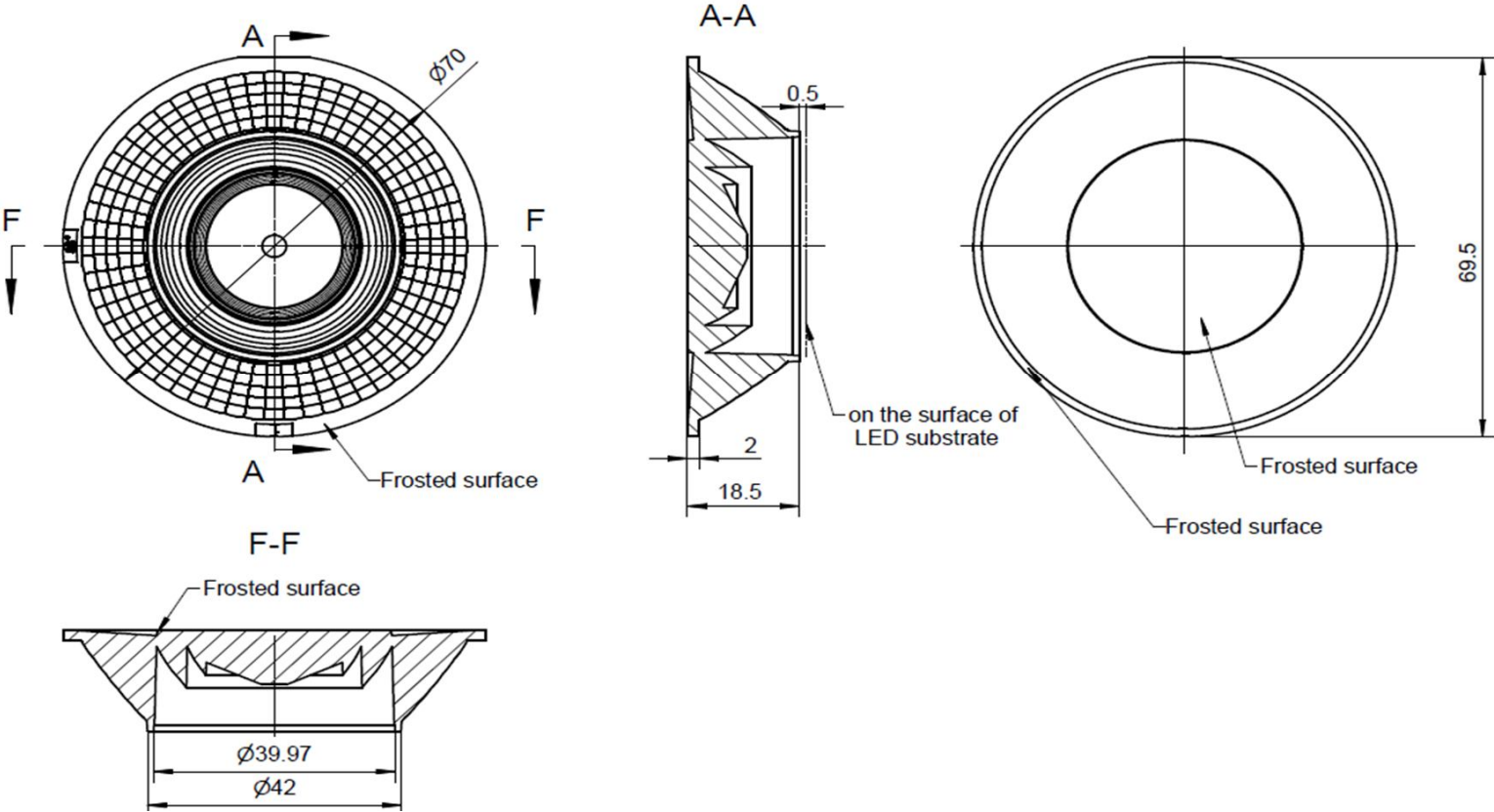
D9

**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			SX 70@19-24°Lens		HK-70@19-24-D9-20-1g-1		
Structure design					1.01.6735		
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		

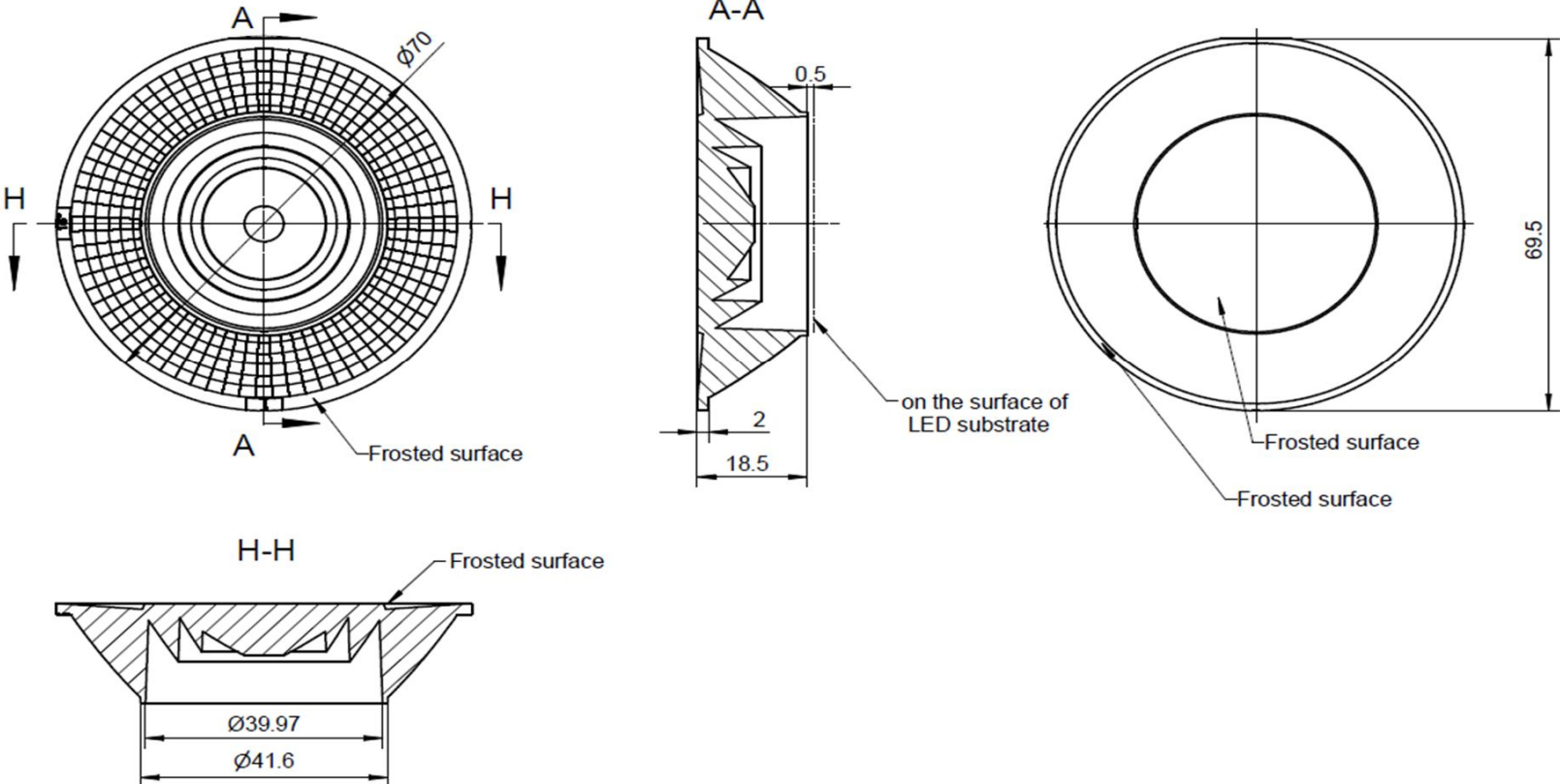


Technical remark:

- 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			SX 70@19-36°Lens		HK-70@19-36-D9-20-1g-1		
Structure design					1.01.6736		
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		

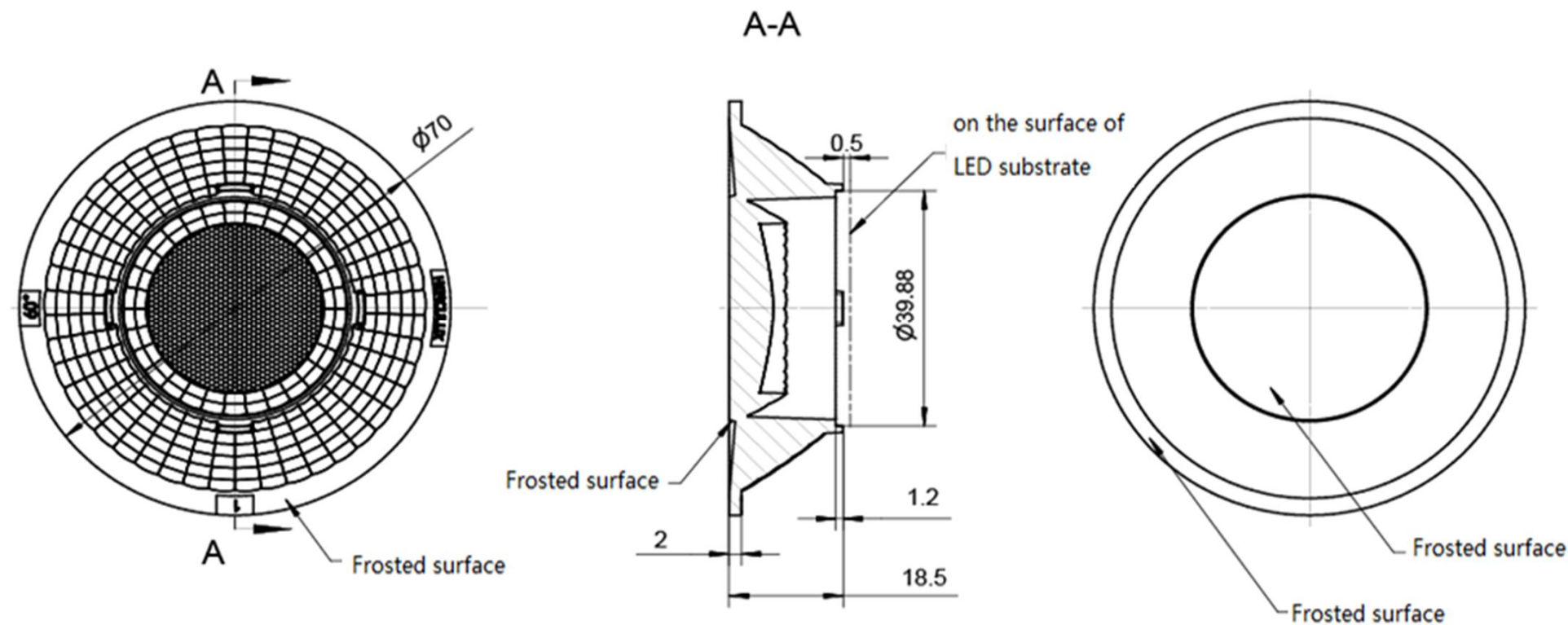


Technical remark:

- 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			SX 70@19-15°Lens		HK-70@19-15-D9-20-1g-1		
Structure design					1.01.6837		
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		

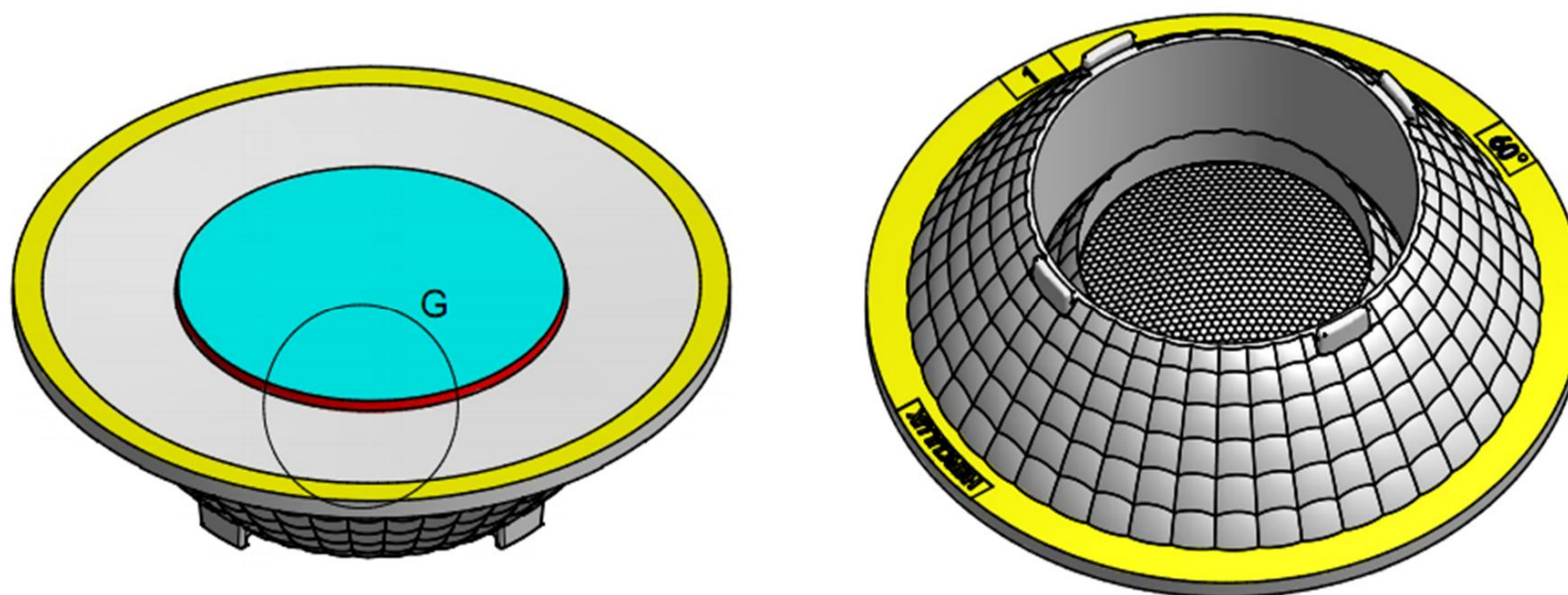


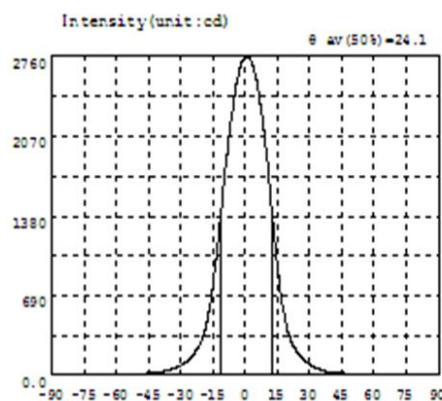
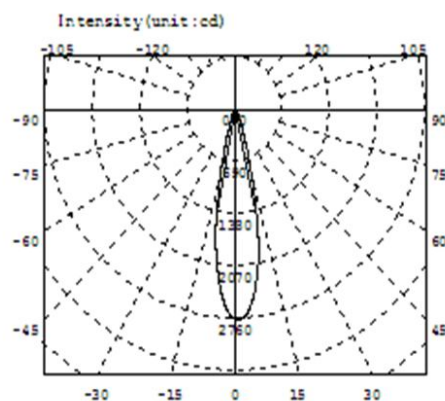
Technical remark:

- 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			SX 70@19-60°Lens		HK-70@19-60-D9-20-1g-1		
Structure design					1.01.81365		
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

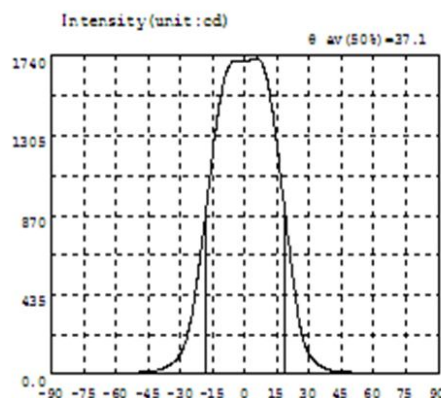
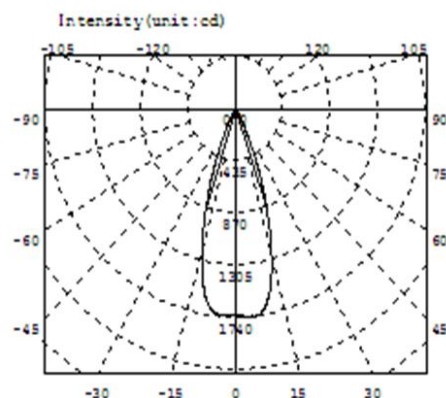
A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.3439	-58.5	9.584	-27.0	124.6	4.5	2632	36.0	47.08	67.5	6.554
-88.5	0.3439	-57.0	10.22	-25.5	149.6	6.0	2496	37.5	39.64	69.0	5.977
-87.0	0.3316	-55.5	10.92	-24.0	180.6	7.5	2317	39.0	33.72	70.5	5.400
-85.5	0.3312	-54.0	11.77	-22.5	217.4	9.0	2098	40.5	29.11	72.0	4.746
-84.0	0.3436	-52.5	12.72	-21.0	266.6	10.5	1835	42.0	25.44	73.5	3.941
-82.5	0.3312	-51.0	13.81	-19.5	339.5	12.0	1545	43.5	22.37	75.0	3.296
-81.0	0.3706	-49.5	15.08	-18.0	436.0	13.5	1242	45.0	19.66	76.5	2.778
-79.5	0.4861	-48.0	16.53	-16.5	579.8	15.0	964.0	46.5	17.87	78.0	2.257
-78.0	0.6979	-46.5	18.23	-15.0	769.2	16.5	730.7	48.0	16.20	79.5	1.438
-76.5	1.431	-45.0	20.22	-13.5	999.8	18.0	551.9	49.5	14.80	81.0	0.7316
-75.0	2.579	-43.5	22.67	-12.0	1259	19.5	420.2	51.0	13.61	82.5	0.5784
-73.5	3.253	-42.0	25.46	-10.5	1536	21.0	319.2	52.5	12.61	84.0	0.5207
-72.0	3.892	-40.5	28.84	-9.0	1804	22.5	255.6	54.0	11.72	85.5	0.5686
-70.5	4.556	-39.0	32.94	-7.5	2052	24.0	208.2	55.5	10.92	87.0	0.5973
-69.0	5.230	-37.5	38.06	-6.0	2274	25.5	170.6	57.0	10.21	88.5	0.6141
-67.5	5.803	-36.0	44.61	-4.5	2466	27.0	140.8	58.5	9.602	90.0	0.6727
-66.0	6.357	-34.5	52.83	-3.0	2613	28.5	117.0	60.0	9.012		
-64.5	7.005	-33.0	62.71	-1.5	2708	30.0	97.50	61.5	8.460		
-63.0	7.810	-31.5	74.13	0.0	2753	31.5	80.99	63.0	7.965		
-61.5	8.420	-30.0	87.79	1.5	2755	33.0	67.34	64.5	7.499		
-60.0	8.992	-28.5	104.4	3.0	2718	34.5	56.15	66.0	7.011		

Electricity Parameter:

Current I: 0.1000A Power: 3.269W
Voltage V: 32.70V PF: 1.000

Optical Parameter(Distance=2.559m):

Equivalent Luminous flux: $\Phi_{\text{eff}} = 611.3\text{lm}$ Efficiency: $\text{Eff} = 187.01\text{lm/W}$
Diffuse angle: $\theta(25\%) : 32.3\text{deg} \theta(50\%) : 24.1\text{deg} \theta(75\%) : 16.4\text{deg} \theta(90\%) : 12.1\text{deg}$
Diffuse angle: $\theta(25\%) : 32.3\text{deg} \theta(50\%) : 24.1\text{deg} \theta(75\%) : 16.6\text{deg} \theta(90\%) : 12.1\text{deg}$
 $\text{Imax} = 2759\text{cd}$ ($C = 0.0\text{deg}, G = 1.0\text{deg}$) $\text{C0-180Plane Imax} = 2759\text{cd}(G = 1.0\text{deg})$
 $\text{C0-180Plane I0} = 2753\text{cd}$



Intensity data:(deg , cd) C0-180

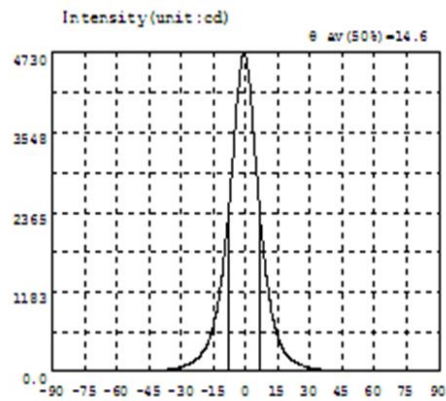
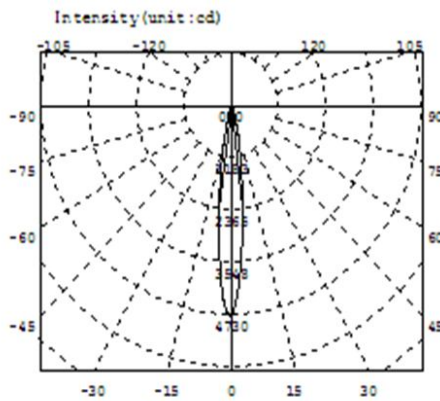
A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.3185	-56.5	7.270	-27.0	198.7	4.5	1727	36.0	41.68	67.5	4.602
-88.5	0.3618	-57.0	7.734	-25.5	270.7	6.0	1732	37.5	33.72	69.0	4.099
-87.0	0.3059	-55.5	8.256	-24.0	368.9	7.5	1715	39.0	27.85	70.5	3.652
-85.5	0.3819	-54.0	8.956	-22.5	487.2	9.0	1677	40.5	23.45	72.0	3.251
-84.0	0.3447	-52.5	9.721	-21.0	616.4	10.5	1608	42.0	20.26	73.5	2.804
-82.5	0.3689	-51.0	10.63	-19.5	750.3	12.0	1514	43.5	17.84	75.0	2.416
-81.0	0.3938	-49.5	11.53	-18.0	894.0	13.5	1399	45.0	15.86	76.5	1.999
-79.5	0.4492	-48.0	12.68	-16.5	1044	15.0	1260	46.5	14.29	78.0	1.608
-78.0	0.7129	-46.5	14.44	-15.0	1194	16.5	1112	48.0	12.95	79.5	1.227
-76.5	1.498	-45.0	16.14	-13.5	1336	18.0	961.5	49.5	11.86	81.0	0.6624
-75.0	1.883	-43.5	17.86	-12.0	1456	19.5	814.3	51.0	10.87	82.5	0.5003
-73.5	2.345	-42.0	20.66	-10.5	1555	21.0	671.5	52.5	10.01	84.0	0.3982
-72.0	2.789	-40.5	24.42	-9.0	1635	22.5	531.4	54.0	9.288	85.5	0.3949
-70.5	3.235	-39.0	29.02	-7.5	1684	24.0	398.5	55.5	8.527	87.0	0.3949
-69.0	3.697	-37.5	34.85	-6.0	1707	25.5	283.0	57.0	7.894	88.5	0.3835
-67.5	4.113	-36.0	42.69	-4.5	1715	27.0	204.6	58.5	7.328	90.0	0.3949
-66.0	4.564	-34.5	53.13	-3.0	1716	28.5	149.6	60.0	6.840		
-64.5	5.236	-33.0	66.83	-1.5	1713	30.0	112.0	61.5	6.329		
-63.0	5.862	-31.5	85.21	0.0	1714	31.5	85.29	63.0	5.872		
-61.5	6.309	-30.0	110.7	1.5	1716	33.0	66.33	64.5	5.425		
-60.0	6.761	-28.5	148.2	3.0	1724	34.5	52.24	66.0	5.015		

Electricity Parameter:

Current I: 0.1000A Power: 3.319W
Voltage V: 33.20V PF: 0.000

Optical Parameter(Distance=2.559m):

Equivalent Luminous flux: $\Phi_{eff}=705.9lm$ Efficiency: $E_{ff}=212.71lm/W$
Diffuse angle: @ (25%): 46.7deg @ (50%): 37.1deg @ (75%): 28.5deg @ (50%): 37.1deg
Diffuse angle: @ (25%): 46.8deg @ (50%): 37.3deg @ (75%): 28.7deg @ (50%): 37.3deg
Imax=1732cd (C=0.0deg, G=5.5deg) C0-180Plane Imax= 1732cd (G=5.5deg)
C0-180Plane I0= 1714cd



Intensity data:(deg , cd) C0-180

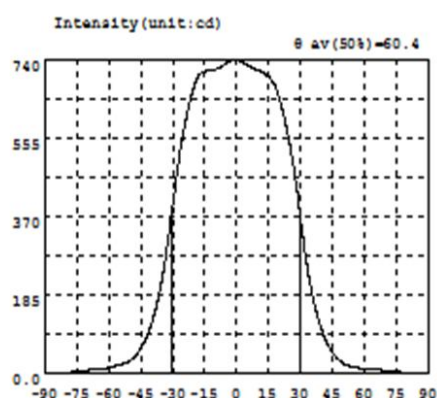
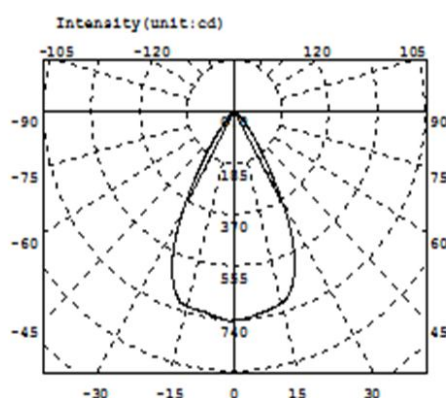
A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.4512	-58.5	6.263	-27.0	109.7	4.5	3262	36.0	27.63	67.5	3.382
-88.5	0.5079	-57.0	6.762	-25.5	131.8	6.0	2654	37.5	23.01	69.0	3.039
-87.0	0.5985	-55.5	7.263	-24.0	159.5	7.5	2107	39.0	19.25	70.5	2.765
-85.5	0.7107	-54.0	7.831	-22.5	193.2	9.0	1632	40.5	16.49	72.0	2.496
-84.0	0.7326	-52.5	8.507	-21.0	241.8	10.5	1247	42.0	14.28	73.5	2.365
-82.5	0.6647	-51.0	9.293	-19.5	303.3	12.0	936.0	43.5	12.64	75.0	2.168
-81.0	0.6460	-49.5	10.11	-18.0	387.1	13.5	701.6	45.0	11.35	76.5	1.413
-79.5	0.8716	-48.0	10.95	-16.5	504.8	15.0	525.4	46.5	10.47	78.0	1.234
-78.0	1.228	-46.5	11.90	-15.0	669.3	16.5	403.8	48.0	9.751	79.5	1.187
-76.5	1.911	-45.0	13.02	-13.5	880.3	18.0	305.0	49.5	9.130	81.0	1.047
-75.0	2.124	-43.5	14.58	-12.0	1169	19.5	240.1	51.0	8.561	82.5	1.115
-73.5	2.307	-42.0	16.88	-10.5	1547	21.0	191.6	52.5	8.054	84.0	1.246
-72.0	2.567	-40.5	19.96	-9.0	2007	22.5	157.0	54.0	7.556	85.5	1.389
-70.5	2.886	-39.0	23.95	-7.5	2498	24.0	129.1	55.5	7.073	87.0	1.570
-69.0	3.213	-37.5	28.56	-6.0	3096	25.5	106.0	57.0	6.597	88.5	1.794
-67.5	3.488	-36.0	34.22	-4.5	3743	27.0	86.44	58.5	6.207	90.0	2.076
-66.0	3.940	-34.5	41.32	-3.0	4310	28.5	71.42	60.0	5.814		
-64.5	4.752	-33.0	50.24	-1.5	4661	30.0	58.81	61.5	5.472		
-63.0	5.159	-31.5	60.57	0.0	4697	31.5	48.23	63.0	5.059		
-61.5	5.466	-30.0	73.68	1.5	4390	33.0	39.67	64.5	4.261		
-60.0	5.842	-28.5	89.95	3.0	3850	34.5	33.15	66.0	3.679		

Electricity Parameter:

Current I: 0.1000A Power: 3.269W
Voltage V: 32.70V PF: 1.000

Optical Parameter(Distance=2.410m):

Equivalent Luminous flux: $\Phi_{\text{eff}} = 540.3\text{lm}$ Efficiency: $\text{Eff} = 165.30\text{lm/W}$
Diffuse angle: $\theta(25\%): 22.6\text{deg} \theta(50\%): 14.6\text{deg} \theta(75\%): 8.6\text{deg} \theta(50\%): 14.6\text{deg}$
Diffuse angle: $\theta(25\%): 22.7\text{deg} \theta(50\%): 14.7\text{deg} \theta(75\%): 8.8\text{deg} \theta(50\%): 14.7\text{deg}$
 $\text{Imax} = 4724\text{cd}$ ($C = 0.0\text{deg}, G = -0.5\text{deg}$) C0-180Plane $\text{Imax} = 4724\text{cd}$ ($G = -0.5\text{deg}$)
C0-180Plane $\text{I0} = 4697\text{cd}$



Intensity data: (deg , cd) C0-180

A	I	A	I	A	I	A	I	A	I	A	I
-90.0	0.7516	-58.5	16.61	-27.0	509.8	4.5	728.3	36.0	172.7	67.5	9.157
-88.5	0.9692	-57.0	19.36	-25.5	555.0	6.0	723.9	37.5	142.1	69.0	8.110
-87.0	1.365	-55.5	21.88	-24.0	594.6	7.5	718.9	39.0	116.2	70.5	7.165
-85.5	1.826	-54.0	23.45	-22.5	630.0	9.0	714.9	40.5	94.86	72.0	6.471
-84.0	2.336	-52.5	25.24	-21.0	660.1	10.5	713.1	42.0	77.17	73.5	5.801
-82.5	2.871	-51.0	28.54	-19.5	683.1	12.0	709.6	43.5	62.19	75.0	5.204
-81.0	3.358	-49.5	33.60	-18.0	699.7	13.5	704.9	45.0	50.02	76.5	4.621
-79.5	3.958	-48.0	40.45	-16.5	708.6	15.0	698.5	46.5	40.37	78.0	4.115
-78.0	4.508	-46.5	49.32	-15.0	712.2	16.5	690.0	48.0	32.85	79.5	3.664
-76.5	5.161	-45.0	60.29	-13.5	714.5	18.0	676.1	49.5	27.05	81.0	3.253
-75.0	5.850	-43.5	73.71	-12.0	715.8	19.5	655.5	51.0	22.75	82.5	2.910
-73.5	6.543	-42.0	90.13	-10.5	715.8	21.0	630.0	52.5	19.68	84.0	2.587
-72.0	7.432	-40.5	110.2	-9.0	718.8	22.5	598.2	54.0	17.40	85.5	2.231
-70.5	8.516	-39.0	134.8	-7.5	723.1	24.0	561.7	55.5	15.79	87.0	1.946
-69.0	9.544	-37.5	164.8	-6.0	727.5	25.5	522.3	57.0	14.45	88.5	1.763
-67.5	10.69	-36.0	200.3	-4.5	732.9	27.0	474.9	58.5	13.37	90.0	1.647
-66.0	11.55	-34.5	239.3	-3.0	737.5	28.5	423.0	60.0	12.51		
-64.5	12.15	-33.0	287.5	-1.5	738.4	30.0	359.4	61.5	11.88		
-63.0	12.91	-31.5	341.9	0.0	738.0	31.5	301.7	63.0	11.23		
-61.5	13.74	-30.0	399.9	1.5	736.9	33.0	251.2	64.5	10.44		
-60.0	14.92	-28.5	456.3	3.0	733.2	34.5	208.7	66.0	9.905		

Electricity Parameter:

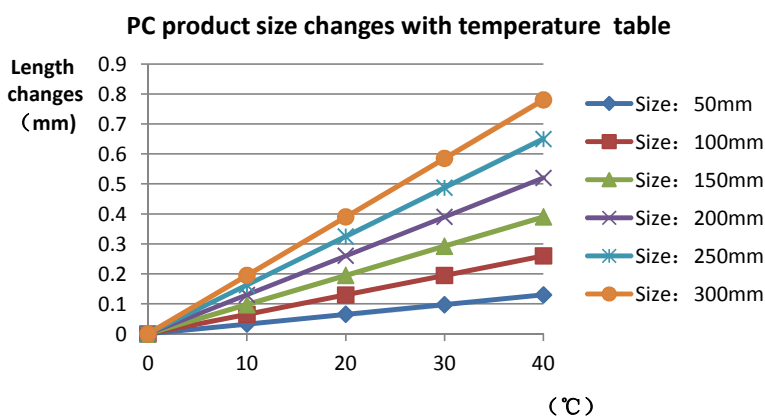
Current I: 0.0900A Power: 3.330W
Voltage V: 33.29V PF: 1.000

Optical Parameter(Distance=2.559m):

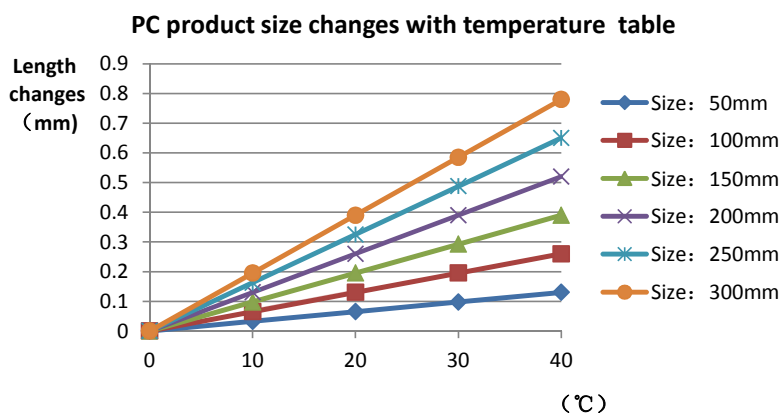
Equivalent Luminous flux: $\Phi_{\text{eff}} = 732.3\text{lm}$ Efficiency: $\text{Eff} = 219.94\text{lm/W}$
Diffuse angle: @ (25%): 72.0deg @ (50%): 60.4deg @ (75%): 49.8deg @ (50%): 60.4deg
Diffuse angle: @ (25%): 72.0deg @ (50%): 60.5deg @ (75%): 49.8deg @ (50%): 60.5deg
 $I_{\text{max}} = 738.7\text{cd}$ (C=0.0deg, G=-2.0deg) C0-180Plane $I_{\text{max}} = 738.7\text{cd}$ (G=-2.0deg)
C0-180Plane $I_0 = 738.0\text{cd}$

		Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Judgment	Remarks	
1.Size	diameter	70			69.62	69.64	69.62			Test environment: In 20℃-25℃ environment to achieve thermal equilibrium after the test.	
	height1	18.5			18.41	18.46	18.38				
	thickness	2			2.1	2.06	2.06				
	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		D9								
	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				23.4°	23.3°	23.6°				
	K-value				4.38	4.48	4.42				
	Efficiency				85.34%	85.37%	85.96%				
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) Size: 50mm Size: 100mm Size: 150mm Size: 200mm Size: 250mm Size: 300mm 0 10 20 30 40 (℃)									
Precautions:											
1、Wear clean gloves during lens assembly to prevent contamination of the lens surface.											
2、Take the lens try to avoid touching the total reflection surface.											
3、When the lens surface contamination, you can only gently wipe with soft cotton sticky neat neutral solvent, not allowed to wipe with industrial solvents.											
4. The working temperature of the lens should be within the temperature limit of the lens material. Exceeding the temperature limit will cause damage to the lens and affect the service life of the lens.											

		Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Judgment	Remarks	
1.Size	diameter	70			69.82	69.85	69.9			Test environment: In 20℃ -25℃ environment to achieve thermal equilibrium after the test.	
	height1	18.5			18.6	18.54	18.62				
	thickness	2			2.04	2.02	2.01				
	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		D9								
	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				37.4°	37.5	38.1				
	K-value				2.43	2.39	2.45				
	Efficiency				88.47%	88.59%	86.10%				
		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) 0.9 0.8 0.7 0.6 0.5 0.4 0.3 0.2 0.1 0 0 10 20 30 40 Size: 50mm Size: 100mm Size: 150mm Size: 200mm Size: 250mm Size: 300mm (℃)									
Precautions:		1、 Wear clean gloves during lens assembly to prevent contamination of the lens surface. 2、 Take the lens try to avoid touching the total reflection surface. 3、 When the lens surface contamination, you can only gently wipe with soft cotton sticky neat neutral solvent, not allowed to wipe with industrial solvents. 4. The working temperature of the lens should be within the temperature limit of the lens material. Exceeding the temperature limit will cause damage to the lens and affect the service life of the lens.									



		Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Judgment	Remarks	
1.Size	diameter	70			70.06	70.06	70.22			Test environment: In 20℃-25℃ environment to achieve thermal equilibrium after the test.	
	height1	18.5			18.67	18.66	18.71				
	thickness	2			2.12	2.14	2.18				
	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		D9								
	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			14.6°	14.7°	14.5°					
	K-value			7.59	7.49	7.48					
	Efficiency			86.34%	86.96%	85.86%					
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) 0.9 0.8 0.7 0.6 0.5 0.4 0.3 0.2 0.1 0 0 10 20 30 40 Size: 50mm Size: 100mm Size: 150mm Size: 200mm Size: 250mm Size: 300mm (℃)									
Precautions:		1、 Wear clean gloves during lens assembly to prevent contamination of the lens surface. 2、 Take the lens try to avoid touching the total reflection surface. 3、 When the lens surface contamination, you can only gently wipe with soft cotton sticky neat neutral solvent, not allowed to wipe with industrial solvents. 4. The working temperature of the lens should be within the temperature limit of the lens material. Exceeding the temperature limit will cause damage to the lens and affect the service life of the lens.									



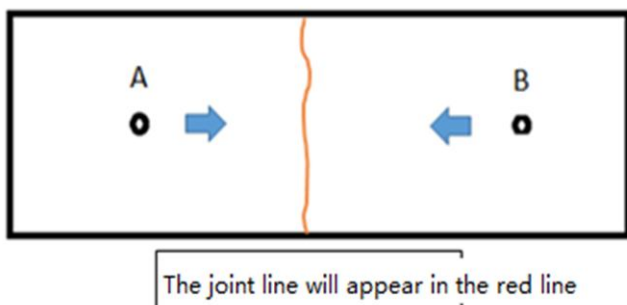
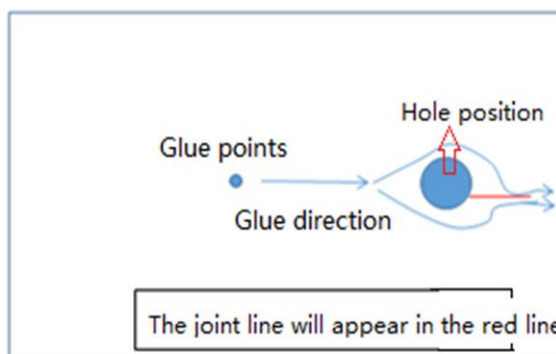
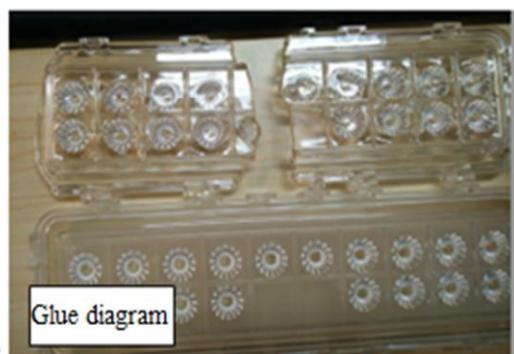
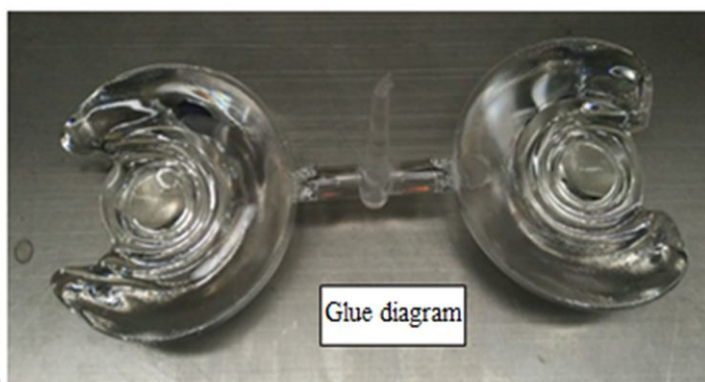
		Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Judgment	Remarks	
1.Size	diameter	70			69.94	69.93	69.95			Test environment: In 20℃ -25℃ environment to achieve thermal equilibrium after the test.	
	height1	18.5			18.54	18.63	18.55				
	thickness	2			2.04	2.08	2.07				
	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		D9								
	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				61.6°	61.5°	60.9°	61.6°			
	K-value										
	Efficiency				89.94%	90.15%	90.22%	89.64%			
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) 0.9 0.8 0.7 0.6 0.5 0.4 0.3 0.2 0.1 0 0 10 20 30 40 Size: 50mm Size: 100mm Size: 150mm Size: 200mm Size: 250mm Size: 300mm									
Precautions: 1、Wear clean gloves during lens assembly to prevent contamination of the lens surface. 2、Take the lens try to avoid touching the total reflection surface. 3、When the lens surface contamination, you can only gently wipe with soft cotton sticky neat neutral solvent, not allowed to wipe with industrial solvents. 4、The working temperature of the lens should be within the temperature limit of the lens material. Exceeding the temperature limit will cause damage to the lens and affect the service life of the lens.											

PN		HK-70@19-24-D9-20-1g-1		Product Name		SX 70@19-24°Lens	
Product material		PC		Customer			
Package diagram		Single Vacuum package Box package					
Product packing		8	A/ Box	4	Box/Layer		
		13	Layer/Box	416	A/ Carton		
Packaging Materials	NO.	Part No	Part name	Size	Dosage	Unit	Remarks
	1	2.07.0064	Blister box	23cm*21cm	52	BAG	
	2	2.08.0001	PE film	30cm*30cm	52	PCS	
	3	2.06.0005	Reel label paper	6.2cm*8cm	52	PCS	
	4	2.06.0005	Box label paper	6.2cm*9.2cm	1	PCS	
	5	2.06.0003	big plate	46.8cm*42.8cm	14	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		√	