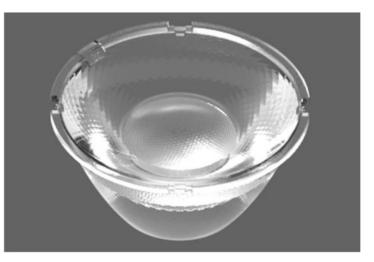


Approval number :

Customer :

Manufacturer : Chengdu HercuLux Photoelectric Technology Co.,Ltd								
PN	Code	Product						

	PN
HK-69@30-15-D10-21-1g-1 1.01.91834 HK 69@30-15° lens	HK-69@30-15-D10-21-1g-1
HK-69@30-24-D10-21-1g-1 1.01.91842 HK 69@30-24° lens	HK-69@30-24-D10-21-1g-1
HK-69@30-36-D10-21-1g-1 1.01.91888 HK 69@30-36° lens	HK-69@30-36-D10-21-1g-1
HK-69@30-60-D10-21-1g-1 1.01.02346 HK 69@30-60° lens	HK-69@30-60-D10-21-1g-1



	Supplier co	onfirmation	Client confirmation				
Proposed		DATE	Qualified□		D 4 75		
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 ParkPhone : 028-85887727 ( 801 )028-85887990 ( 801 )Fax : 028-85887730www.hkoptics.comSales Dept: Shenzhen NanshanDistrict Nanshan Cloud Valley Innovation Industrial Park Comprehensive Service Building,TEL: 0755-2937 1541FAX: 0755-2907 5140

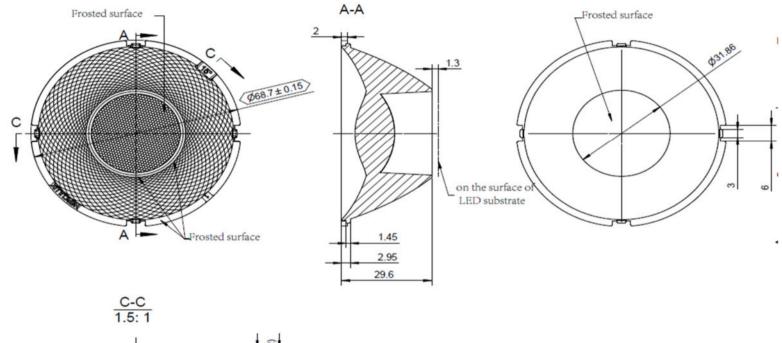
\*Approval In duplicate, for both supplier and customer.

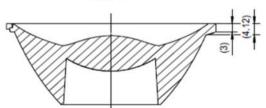


TEL: 0755-2937 1541	FAX: 0755-2907 5140 www.hkoptics.com Date updated: 2021/4/17
Product Picture:	
PN:	HK-69@30-15-D10-21-1g-1
Size(L*W*H/Φ*H):	Ф:68.7mm; Н:29.6mm
Material:	ΡΜΜΑ
Effiency:	λ
Temperature(Topr):	-40°C to +80°C
FWHM:	15°、24°、36°、60°
Matched LES:	D10

#### 2D drawing







3~10

±0.15

24~65

±0.35

#### Technical remark:

MT5

Tolerance

table (mm) olerance valu

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.

<3

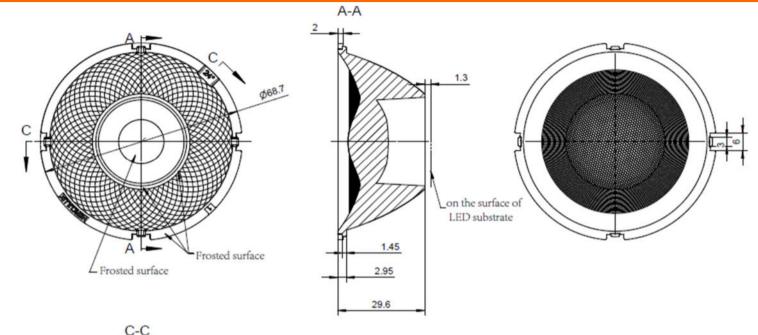
±0.1

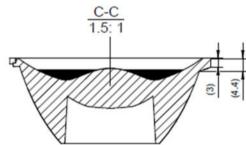
Basic size

		Optical	design							HK-69@30-15-D10-21-1g-1				
2008 MT5.	. HK 69@30-15º lens		1.01.91834											
		Rev	riew						umber of	f drawin	qty	weight		
		Valid	ation				Material: PMMA		CDHK					
65~140	140~	~250	250~	~450	>4	450								
±0.50	±0	.80	±1	2	±2	2.0								

#### 2D drawing







3~10

±0.15

24~65

±0.35

#### Technical remark:

MT5

Tolerance

table (mm) olerance valu

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.

<3

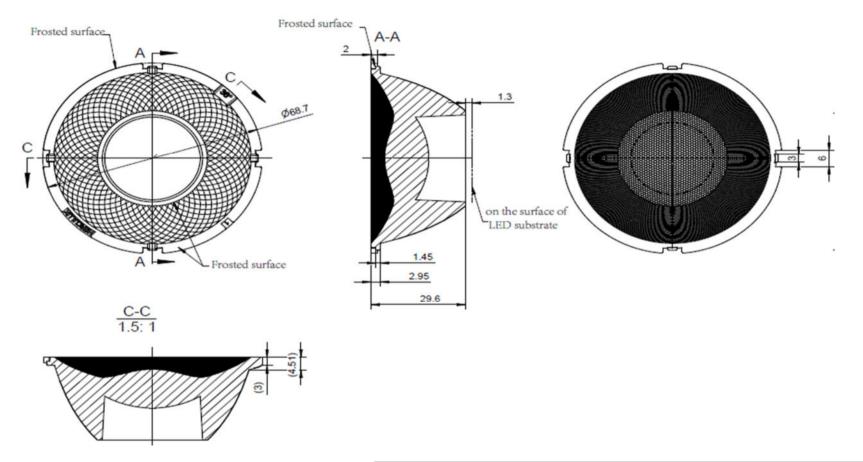
±0.1

Basic size

		Optical	l design						HK-69@30-24-D10-21-1g-1				
2008 MT5.		tructur	re desig HK 69@30-24º lens				1.01.91842						
		Rev	view				-		umber o	f drawin	qty	weig	ght
		Valid	ation				Material: PMMA		СДНК				
65~140	140~	~250	250~	~450	>	450							
±0.50	±0	.80	±1	1.2	±2	2.0							

#### 2D drawing





#### Technical remark:

MT5

Tolerance

table (mm) olerance valu

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 MTS

3~10

±0.15

24~65

±0.35

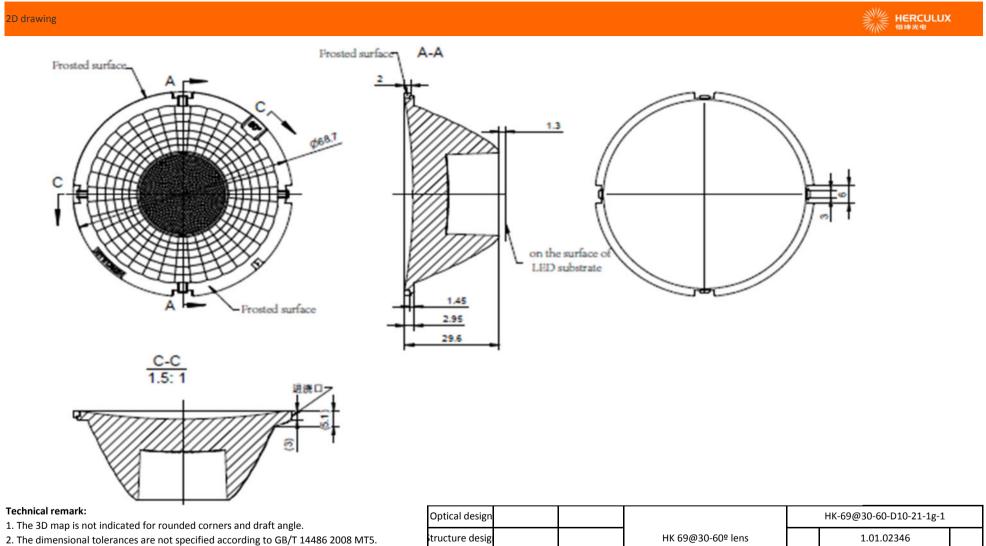
3, The surface has no flash, shrinkage, bubbles and other defects.

<3

±0.1

Basic size

		Optical	design								HK-69@30-36-D10-21-1g-1				
2008 MT5.	008 MT5. tructure desig HK 69@30-36		@30-36º lens			1.01.91888									
		Rev	riew					Material: PMMA		umber of drawin qty wei		weig	ht		
		Valid	ation								СДНК				
65~140	140~	~250	250~	~450	>/	450									
±0.50	±0	.80	±1	1.2	±2	2.0									



3, The surface has no flash, shrinkage, bubbles and other defects.

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

Review

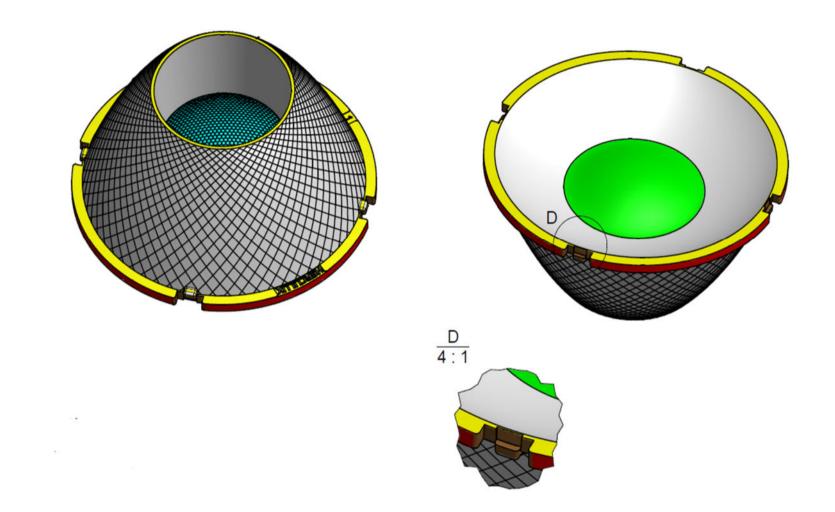
umber of drawin

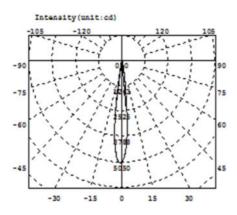
qty

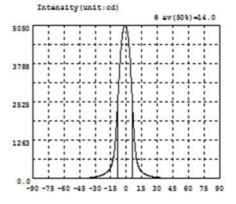
weight

### Image illustration









#### Intensity data: (deg , cd) CO-180

λ	1	λ	I	λ	I	λ	1	λ	I	λ	I
-90.0	1.796	-58.5	9.291	-27.0	74.80	4.5	3388	36.0	23.12	67.5	5.058
-88.5	2.124	-57.0	9.848	-25.5	90.23	6.0	2383	37.5	20.85	69.0	4.531
-87.0	2.385	-55.5	10.39	-24.0	109.1	7.5	1459	39.0	19.00	70.5	4.055
-85.5	2.599	-54.0	10.98	-22.5	132.5	9.0	862.2	40.5	17.43	72.0	3.536
-84.0	2.769	-52.5	11.64	-21.0	160.8	10.5	538.2	42.0	16.13	73.5	3.054
-82.5	2.916	-51.0	12.33	-19.5	194.4	12.0	379.1	43.5	14.96	75.0	2.588
-81.0	2.985	-49.5	13.10	-18.0	237.0	13.5	279.4	45.0	13.94	76.5	2.174
-79.5	3.179	-48.0	13.93	-16.5	294.8	15.0	226.2	46.5	13.07	78.0	1.823
-78.0	3.460	-46.5	14.91	-15.0	383.5	16.5	186.8	48.0	12.27	79.5	1.563
-76.5	3.735	-45.0	16.02	-13.5	524.6	18.0	154.9	49.5	11.56	81.0	1.320
-75.0	4.065	-43.5	17.34	-12.0	781.1	19.5	128.0	51.0	10.91	82.5	1.071
-73.5	4.405	-42.0	18.86	-10.5	1264	21.0	106.1	52.5	10.35	84.0	0.8010
-72.0	4.846	-40.5	20.68	-9.0	2046	22.5	88.17	54.0	9.758	85.5	0.5618
-70.5	5.269	-39.0	22.96	-7.5	2980	24.0	73.50	55.5	9.234	87.0	0.3453
-69.0	5.720	-37.5	25.62	-6.0	3864	25.5	61.39	57.0	8.702	88.5	0.2860
-67.5	6.178	-36.0	28.87	-4.5	4515	27.0	51.76	58.5	8.181	90.0	0.2723
-66.0	6.709	-34.5	32.93	-3.0	4904	28.5	44.17	60.0	7.662		
-64.5	7.241	-33.0	38.01	-1.5	5042	30.0	38.05	61.5	7.101		
-63.0	7.728	-31.5	44.35	0.0	4990	31.5	33.06	63.0	6.557		
-61.5	8.285	-30.0	52.21	1.5	4741	33.0	29.07	64.5	6.020	0	
-60.0	8.780	-28.5	62.28	3.0	4227	34.5	25.82	66.0	5.530		

#### Electricity Parameter:

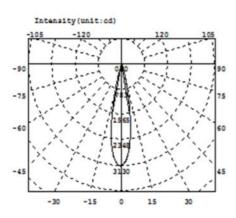
Current	I:	1.000A	Power:	3.400W
Voltage	V:	34.00V	PF:	1.000

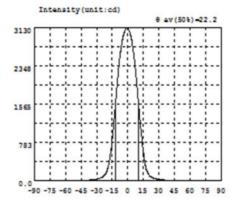
### Optical Parameter (Distance=2.410m):

Equivalent Luminous flux:  $\Phi$  eff= 445.4lm Efficiency: Eff=131.02lm/W Diffuse angle: 0(25%): 18.4deg0(50%): 14.0deg0(75%): 9.9deg0(50%): 14.0deg Diffuse angle: 0(25%): 18.4deg0(50%): 14.0deg0(75%): 10.1deg0(50%): 14.0deg Imax=5043cd (C=0.0deg,G=-1.0deg) C0-180Plane Imax= 5043cd (G=-1.0deg) C0-180Plane I0= 4990cd

第8页







Intensity data: (deg , cd) CO-180

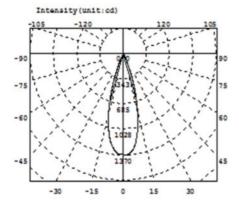
λ	I	λ	I	λ	I	λ	I	λ	1	λ	I
-90.0	0.6752	-58.5	7.026	-27.0	56.49	4.5	2755	36.0	17.92	67.5	4.138
-88.5	0.7775	-57.0	7.373	-25.5	69.13	6.0	2517	37.5	16.02	69.0	3.768
-87.0	0.9436	-55.5	7.754	-24.0	86.75	7.5	2222	39.0	14.49	70.5	3.400
-85.5	1.148	-54.0	8.127	-22.5	114.2	9.0	1887	40.5	13.23	72.0	3.086
-84.0	1.327	-52.5	8.578	-21.0	161.6	10.5	1523	42.0	12.17	73.5	2.780
-82.5	1.531	-51.0	9.076	-19.5	246.3	12.0	1169	43.5	11.26	75.0	2.461
-81.0	1.748	-49.5	9.618	-18.0	381.5	13.5	842.1	45.0	10.44	76.5	2.154
-79.5	2.005	-48.0	10.22	-16.5	587.3	15.0	570.6	46.5	9.792	78.0	1.848
-78.0	2.336	-46.5	10.92	-15.0	860.9	16.5	357.2	48.0	9.243	79.5	1.527
-76.5	2.642	-45.0	11.76	-13.5	1184	18.0	223.0	49.5	8.691	81.0	1.259
-75.0	2.936	-43.5	12.71	-12.0	1543	19.5	148.8	51.0	8.219	82.5	1.027
-73.5	3.243	-42.0	13.77	-10.5	1916	21.0	108.3	52.5	7.797	84.0	0.8234
-72.0	3.601	-40.5	15.13	-9.0	2259	22.5	84.20	54.0	7.423	85.5	0.6079
-70.5	3.948	-39.0	16.74	-7.5	2556	24.0	67.61	55.5	7.075	87.0	0.4163
-69.0	4.294	-37.5	18.76	-6.0	2787	25.5	54.77	57.0	6.756	88.5	0.2856
-67.5	4.676	-36.0	21.21	-4.5	2948	27.0	44.96	58.5	6.449	90.0	0.2688
-66.0	5.059	-34.5	24.34	-3.0	3054	28.5	37.51	60.0	6.076		
-64.5	5.484	-33.0	28.08	-1.5	3118	30.0	31.64	61.5	5.766		
-63.0	5.944	-31.5	32.87	0.0	3109	31.5	27.10	63.0	5.363		
-61.5	6.374	-30.0	38.97	1.5	3047	33.0	23.38	64.5	4.916		
-60.0	6.705	-28.5	46.58	3.0	2934	34.5	20.37	66.0	4.524		

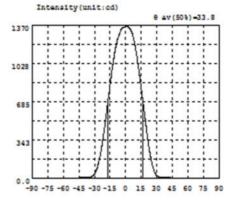
#### Electricity Parameter:

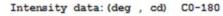
Current I:	0.1000A	Power:	3.240W
Voltage V:	32.40V	PF:	1.000

### Optical Parameter (Distance=2.559m):

Equivalent Luminous flux: **4** eff= 513.71m Efficiency: Eff=158.561m/W Diffuse angle: (25%): 29.2deg(50%): 22.2deg(75%): 15.5deg(50%): 22.2deg Diffuse angle: (25%): 29.2deg(50%): 22.2deg(75%): 15.5deg(50%): 22.2deg Imax=3123cd (C=0.0deg,G=-1.0deg) C0-180Plane Imax= 3123cd(G=-1.0deg) C0-180Plane I0= 3109cd







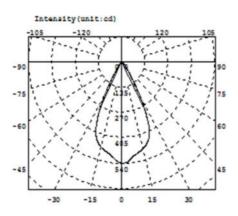
λ	I	λ	1	λ	I	λ	1	λ	I	λ	I
-90.0	0.4406	-58.5	6.478	-27.0	111.0	4.5	1331	36.0	11.18	67.5	4.496
-88.5	0.4643	-57.0	6.699	-25.5	167.2	6.0	1301	37.5	10.34	69.0	4.138
-87.0	0.5553	-55.5	6.919	-24.0	234.4	7.5	1252	39.0	9.699	70.5	3.726
-85.5	0.7020	-54.0	7.116	-22.5	318.6	9.0	1185	40.5	9.131	72.0	3.375
-84.0	0.8368	-52.5	7.342	-21.0	414.4	10.5	1101	42.0	8.737	73.5	3.007
-82.5	1.048	-51.0	7.527	-19.5	516.5	12.0	1007	43.5	8.470	75.0	2.636
-81.0	1.230	-49.5	7.728	-18.0	623.7	13.5	901.8	45.0	8.236	76.5	2.231
-79.5	1.551	-48.0	7.925	-16.5	734.5	15.0	796.6	46.5	7.991	78.0	1.846
-78.0	1.916	-46.5	8.163	-15.0	842.0	16.5	690.3	48.0	7.768	79.5	1.475
-76.5	2.306	-45.0	8.426	-13.5	945.9	18.0	579.0	49.5	7.463	81.0	1.120
-75.0	2.709	-43.5	8.713	-12.0	1041	19.5	474.0	51.0	7.298	82.5	0.8944
-73.5	3.135	-42.0	9.178	-10.5	1127	21.0	365.2	52.5	7.079	84.0	0.7460
-72.0	3.567	-40.5	9.676	-9.0	1199	22.5	266.1	54.0	6.889	85.5	0.6255
-70.5	4.014	-39.0	10.35	-7.5	1254	24.0	188.8	55.5	6.718	87.0	0.5699
-69.0	4.456	-37.5	11.12	-6.0	1294	25.5	124.1	57.0	6.544	88.5	0.5203
-67.5	4.844	-36.0	12.26	-4.5	1327	27.0	75.83	58.5	6.329	90.0	0.4090
-66.0	5.163	-34.5	14.14	-3.0	1347	28.5	44.11	60.0	6.322		
-64.5	5.474	-33.0	17.56	-1.5	1351	30.0	26.00	61.5	5.858		
-63.0	5.745	-31.5	25.40	0.0	1356	31.5	17.55	63.0	5.571		
-61.5	6.005	-30.0	41.18	1.5	1361	33.0	14.13	64.5	5.224		
-60.0	6.212	-28.5	68.38	3.0	1350	34.5	12.35	66.0	4.862		

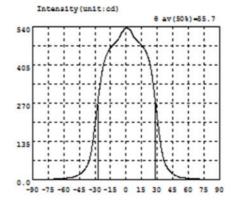
### Electricity Parameter:

Current I:	0.1000A	Power:	3.358W
Voltage V:	33.59V	PF :	1.000

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

Equivalent Luminou	s flux: $\Phi$ eff= 454.21m	Efficiency: Eff=135.271m/W
Diffuse angle:	@(25%): 43.4deg@(50%):	33.8deg @ (75%): 24.0deg @ (50%): 33.8deg
Diffuse angle:	@ (25%): 43.4deg @ (50%):	33.8deg @ (75%): 24.1deg @ (50%): 33.8deg
Imax=1361cd (C=0.0	deg,G=1.5deg)	CO-180Plane Imax= 1361cd(G=1.5deg)
		CO-180Plane IO= 1356cd





Intensity data: (deg , cd) CO-180

λ	1	λ	1	λ	1	λ	1	λ	I	λ	I
-90.0	0.5084	-58.5	6.125	-27.0	280.9	4.5	524.5	36.0	74.13	67.5	3.972
-88.5	0.8366	-57.0	6.628	-25.5	323.5	6.0	512.9	37.5	57.91	69.0	3.658
-87.0	0.9044	-55.5	7.238	-24.0	361.5	7.5	502.9	39.0	46.57	70.5	3.319
-85.5	1.005	-54.0	7.961	-22.5	392.7	9.0	496.8	40.5	38.12	72.0	2.992
-84.0	1.139	-52.5	8.899	-21.0	416.3	10.5	491.3	42.0	31.57	73.5	2.748
-82.5	1.275	-51.0	10.12	-19.5	433.4	12.0	485.2	43.5	26.14	75.0	2.411
-81.0	1.457	-49.5	11.73	-18.0	446.0	13.5	479.9	45.0	21.73	76.5	2.180
-79.5	1.664	-48.0	13.93	-16.5	456.9	15.0	473.5	46.5	18.16	78.0	1.946
-78.0	1.902	-46.5	16.63	-15.0	465.5	16.5	466.7	48.0	15.19	79.5	1.741
-76.5	2.100	-45.0	19.87	-13.5	472.4	18.0	458.1	49.5	12.65	81.0	1.515
-75.0	2.361	-43.5	23.73	-12.0	477.3	19.5	447.1	51.0	10.68	82.5	1.310
-73.5	2.612	-42.0	28.38	-10.5	483.0	21.0	433.2	52.5	9.393	84.0	1.152
-72.0	2.916	-40.5	34.14	-9.0	489.1	22.5	414.0	54.0	8.289	85.5	1.008
-70.5	3.241	-39.0	41.36	-7.5	496.4	24.0	388.1	55.5	7.470	87.0	0.8789
-69.0	3.552	-37.5	50.66	-6.0	505.2	25.5	351.9	57.0	6.796	88.5	0.7915
-67.5	3.891	-36.0	63.85	-4.5	515.9	27.0	306.2	58.5	6.266	90.0	0.8441
-66.0	4.217	-34.5	83.71	-3.0	525.0	28.5	262.6	60.0	5.804		
-64.5	4.559	-33.0	112.6	-1.5	531.4	30.0	217.3	61.5	5.390		
-63.0	4.896	-31.5	150.7	0.0	534.6	31.5	171.6	63.0	4.981		
-61.5	5.255	-30.0	190.7	1.5	534.3	33.0	130.4	64.5	4.656		
-60.0	5.705	-28.5	236.2	3.0	531.1	34.5	97.50	66.0	4.320		

### Electricity Parameter:

Current I:	0.1000A	Power:	3.230W
Voltage V:	32.29V	PF:	1.000

Optical Parameter (Distance=2.410m):

Equivalent Luminous flux:  $\Phi$  eff= 424.41m Efficiency: Eff=131.411m/W Diffuse angle: 0(25%): 64.9deg 0(50%): 55.7deg 0(75%): 45.2deg 0(50%): 55.7degDiffuse angle: <math>0(25%): 64.9deg 0(50%): 55.7deg 0(75%): 45.3deg 0(50%): 55.7degImax=535.1cd (C=0.0deg,C=1.0deg) C0-180Plane Imax= 535.1cd (C=1.0deg) C0-180Plane IO= 534.6cd

### Sample parameter test rep HK 69@30-15° lens

## 

			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	diamet	er	68.7			68.72	68.81	68.81	<b>68.</b> 84	$\sum$	Test environment: In 20 ℃ -25 ℃
1.Size	heigh	t	29.6	$\geq$	$\geq$	29.675	29. 675	29.65	29.6	$\sum$	environment to achieve thermal equilibrium after the
	thickne	ess	2.95			3	3	3	3.04	$\backslash$	test.
				Gate	shear can	not affect th	e appearar	nce of the la	amp		
				See	attachment	t "Appearan	ce Inspecti	on Standar	ds"		
2.Appear	ance		See achment pearance	ent		No burr	No burr	No burr	No burr		ОК
Quality	Standa		spection andards"	on		o stains	No stains	No stains	No stai	ns	U.V.
3.Materia	I			PMM	Ą		Color	Tra	nsparent		ОК
	Testing I	ED					D10				
	to the so and the a	ource actua	of the test,	ded size and power rating of the LED light source recommended for this lens should be compar if the test, if it is required to be out of range. According to the heat dissipation capability of the la conditions of the use environment, the lens should be fully tested and tested to prevent the lens See light distribution curve							
4.Optica I index	FWH					-		1		<u> </u>	
Tindex	angle	9				14	13.9	13.9	13.9		
	K-val	ue				11.33	11.37	11.49	11.53		
	Efficie	ncy				92.52%	91.48%	91.68%	91.06%		
	Facula	See	the signatu	e signature sample							
Compre judgi	hensive ment						Qı	ualified			
				Length		1A product	t size chan	ges with t	emperatu	ıre ta	able
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				(mm	es 0.8	10	20	30		Siz	ee: 50mm ee: 100mm ee: 150mm ee: 200mm ee: 250mm ee: 300mm
Precautic		ves d	uring lens a	assembly to	prevent co	ontaminatio	n of the len	s 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.

### Sample parameter test rep HK 69@30-24° lens

# HERCULUX

			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	diamet	er	68.7			69.92	68.85	69	68.84	$\geq$	Test environment: In 20 ℃ -25 ℃
1.Size	heigh	t	29.6	$\geq$	$\geq$	29.74	29.68	29.68	29.7	$\sum$	environment to achieve thermal equilibrium after the
	thickne	SS	2.95	$\searrow$	$\searrow$	3.09	3.11	3. 12	3.12	$\backslash$	test.
				Gate	shear can	not affect th	ie appearar	nce of the la	mp		
				See	attachment	t "Appearan	ce Inspection	on Standar	ds"		
2.Appear	ance		See achment pearance	nt		No burr	No burr	No burr	No bu	rr	ОК
Quality	Quality Inspe Stand		spection andards"	on		o stains	No stains	No stains	No stai	ns	ÖR
3.Materia	al			PMM	Ą		Color	Tra	nsparent		ОК
	Testing I	ED					D10				
	to the so	ource actual	of the test,	if it is requ	ired to be o	out of range ent, the lens	. According should be f	to the heat fully tested	dissipation	n capa	uld be comparable ability of the lamp event the lens life.
4.Optica I index				_			ght distributi			_	
TINUEX	angle	,				22.2	22.3	22.2	24.5		
	K-val	ue	6			6.09	6.19	6.14	5.33		
	Efficie	ncy				93.27%	92.91%	91.64%	93.09%		
	Facula	See t	he signatu	re sample		•					
	ehensive ment						Qu	alified			
						1A produc	t size chan	ges with t		← Siz ← Siz ← Siz ← Siz × Siz × Siz	able e: 50mm e: 100mm e: 150mm e: 200mm e: 250mm e: 300mm

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.

### Sample parameter test rep HK 69@30-36° lens

# 

			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks		
	diamet	er	68.7			68.96	68.9	68.9	68.95	$\sim$	Test environment: In 20 ℃ -25 ℃		
1.Size	heigh	t	29.6			29.61	29. 55	29.63	29. 59	$\backslash$	environment to achieve thermal		
	thickne	ess	2.95	/		3.07	2.99	2.95	3.09	$\setminus$	equilibrium after the test.		
				Gate	shear can	not affect th	ie appearar	nce of the la	amp				
				See	attachment	t "Appearan	ce Inspection	on Standar	ds"				
2.Appear	ance		See achment			No burr	No burr	No burr	No bu	rr	OK		
Quality		Ins	pearance spection andards"	on		lo stains	No stains	No stains	No stai	ns	OK		
3.Materia	ıl			PMM	4		Color	Tra	nsparent		OK		
	Testing I	ED					D10						
4 Option	to the so	ource actual	of the test,	ed size and power rating of the LED light source recommended for this lens should be comparable the test, if it is required to be out of range. According to the heat dissipation capability of the lamp onditions of the use environment, the lens should be fully tested and tested to prevent the lens life. See light distribution curve									
4.Optica I index						33. 8	34.2	33.8	33.5				
	angle									-			
	K-val					2.99	2.9	2.94	3				
	Efficie		1			91.60%	90.67%	91.62%	90. 59%				
		Seet	he signatu	signature sample									
	hensive ment						Qu	alified					
						1A produc	t size chan	ages with t		← Siz ← Siz ← Siz ← Siz × Siz × Siz	able 2e: 50mm 2e: 100mm 2e: 150mm 2e: 200mm 2e: 250mm 2e: 300mm		
		ves di	uring lens a	assembly to	prevent co	ontaminatio	n of the lens	s surface.					

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.

### Sample parameter test rep HK 69@30-60° lens

# HERCULUX 恒坤光电

			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	diamet	er	68.7			68.72	68.7	68.71	68.72	$\sum$	Test environment: In 20 ℃ -25 ℃
1.Size	heigh	t	29.6	$\geq$	$\sum$	29.67	29.68	29.67	29.67	$\sum$	environment to achieve thermal equilibrium after the
	thickne	ess	2.95	$\overline{}$	$\searrow$	3.25	3.15	3.11	3.14	$\sum$	test.
				Gate	shear can	not affect th	e appearar	nce of the la	amp		
				See	attachment	t "Appearan	ce Inspecti	on Standar	ds"		
2.Appear	ance		See achment pearance			No burr	No burr	No burr	No bu	rr	ОК
Quality		In	spection andards"	ח   או		o stains	No stains	No stains	No stai	ns	ÖN
3.Materia	al			PMM	A		Color	Tra	nsparent		ОК
	Testing I	ED					D10				
	to the so and the a	ource actua	of the test,	if it is requ	ired to be o	out of range ent, the lens	. According should be	to the heat fully tested	t dissipatio	n capa	uld be comparable ability of the lamp event the lens life.
4.Optica	FWH	M				See lig	pht distributi	ion curve			
l index	angle	Э				55.7	53.6	57	54.9		
	K-val	ue									
	Efficie	ency	91.80% 90.90% 91.40% 90.90%								
	Facula	See	the signatu	e signature sample							
	ehensive ment						Qı	ualified			
				Length		1A produc	t size chan	iges with t	emperatu	ıre ta	able
	: Number: V D-Quadra			change (mm	es 0.8						ze: 50mm ze: 100mm
Height G	auge M-To	loc			0.6				<u> </u>	📥 Siz	ze: 150mm
	pe P-Nee				0.4			*			ze: 200mm
Gauge E	uge R-Ra -Visual.	uius			0.3						ze: 250mm
2、Amb	ient tempe				0.2				_	-Siz	ze: 300mm
	of the prod		erer		0	10	20	30	40		
									(°C)		
Precautio	ons:										
1、Wear	clean glov	ves d	uring lens a	ssembly to	prevent co	ontaminatio	n of the len	s surface.			

 Take the lens try to avoid touching the total reflection surface.
 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.

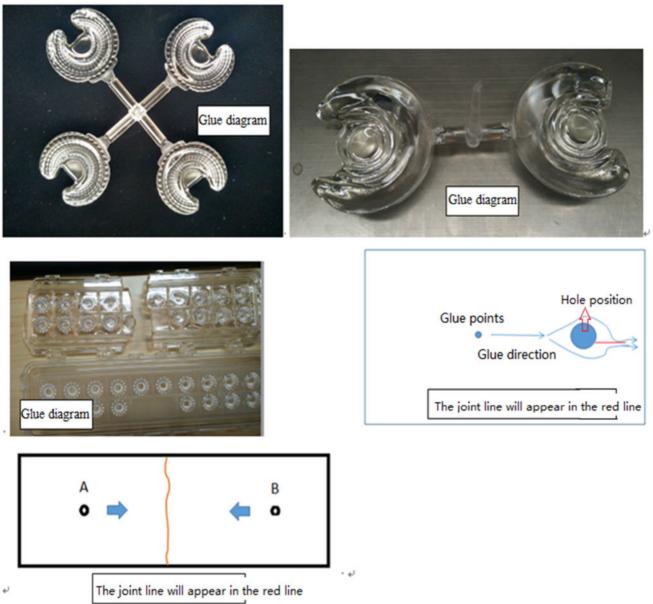


P	N	HK-69@30-15-D10-21	-1g-1	Product Name	HK 69@30	-15° lens	6		
Product	material	PMMA		Customer					
Package diagram		Single Vacuum package Box package							
Product	packing	6	A/ Box	4	pcs/Layer				
	, g	9	Layer/Box	216	A/ Carton				
	NO.	Part No	Part name	Size	Dosage	Unit	Remarks		
	1	2.07.0068	Blister box	23cm*21cm	36	BAG			
Deekerin	2	2.08.0001	PE film	30cm*30cm	36	PCS			
Packagin g Materials	3	2.06.0005	Reel label paper	6.2cm*8cm	36	PCS			
Materials	4	2.06.0005	Box label paper	6.2cm*9.2cm	1	PCS			
	5	2.06.0003	big plate	46.8cm*42.8cm	10	PCS			
	6	2.06.0015	big flat carton	48cm*44cm*19cr	n <sup>1</sup>	PCS			
Remarks	rks The loose packing is not subject to this specification. Customer's requirements shall prevail								

#### Special notice

When gule 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:

Syntneti



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

1.1.1Sampling standards, sampling plan and AQL

Test level : GB/T2828.1-2012The first part is according to the acceptance quality limit (AQL) retrieval batch inspection sampling plan, general inspection level  $\Pi$  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	Н	Depth	mm
W	Width	mm	DS	Distance	mm
S	Proportion	mm²	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	ludeing stondard	Inspection equipment	Defect level			
restitents	Judging standard	Testing method	МІ	MA	CR	
	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.					
Check the sample	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;	Sample comparison , visual			v	

	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	V	
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	V	
Fingerprint	Fingerprints are not allowed on all products	Visual	V	
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			V
Deformation	Insufficient filling shall not affect the appearance of the assembly and the exposed surfaces.	Visual, feeler		V
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. 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.	Visual, point card	V	
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	V	
Flow marks、Welding line	<ol> <li>Product does not allow the presence of flow marks and welding lines unless the structure can not be avoided;</li> <li>The remaining flow marks shall not appear in the optical surface, a single L ≤ 10mm, no more than two</li> </ol>	Visual	V	

Bubble	No bubbles are allowed	Visual		$\checkmark$	
Foreign objects, black spots, white spots	Not obvious or D ≤ 0.3mm black spots and foreign bodies in the area of 100x100mm not more than 1; Exceeded foreign matter black spots is judged bad.	Visual, point card	V		
Damaged	No damage is allowed	Visual			$\checkmark$
Cold glue	Optical surface may not have cold glue, non- optical surface cold glue should meet the visual is not obvious.	Visual	V		
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				V
	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 $D \le 1$ mm and no more than 1 area within a 50x50 mm area	Visual		V	