

Approval number :

Customer :

Manufacturer : Chengdu HercuLux Photoelectric Technology Co.,Lt	d
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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 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 )

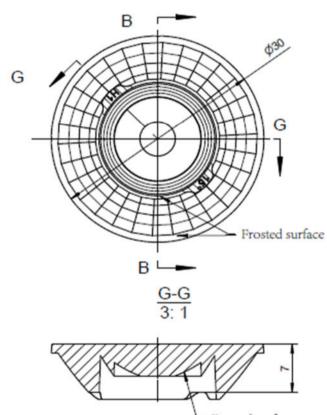
Factory: Chengdu Shuangliu District, Iot industrial park 2 road HercuLux Photoelectric ParkPhone : 028-85887727 ( 801 )028-85887990 ( 801 )Fax : 028-85887730www.hkoptics.comSales Dept: Shenzhen NanshanDistrict Nanshan Cloud Valley Innovation Industrial Park Comprehensive Service Building,TEL: 0755-2937 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: 2021/1/20
Product Picture:			
PN:		HK-GZ-30@08-15-D6-22	?-1g-1
Size(L*W*H/Φ*H):		Ф:30mm; Н:08mm	
Material:		PC	
Effiency:		λ	
Temperature(Topr):		-40°C to +120°C	
FWHM:		15°、24°、36°、50°	, 
Matched LES:		D6	





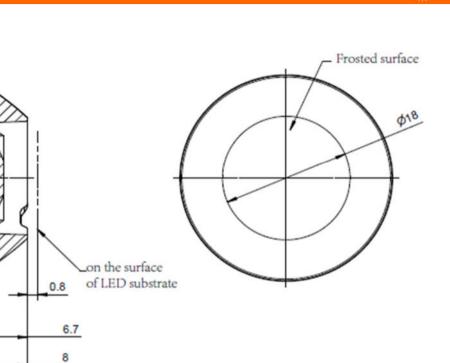
Frosted surface

24~65

±0.35

3~10

±0.15



#### 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

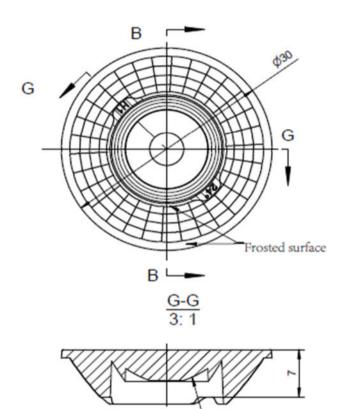
±0.1

Basic size

		Optical	design							HK-GZ-3	30@08-15-D6-2	2-1g-1
2008 MT5.		tructur	e desig				HK Photor	n 30@08-15º lens	1.01.02523			
-	Rev	view					umber of draw		qty	weight		
		Valid	ation				Material:	PC			CDHK	
65~140	140~	~250	250~	~450	>/	450			-			
±0.50	.80	±1	2	2 ±2.0								

<u>B-B</u> 3: 1







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.

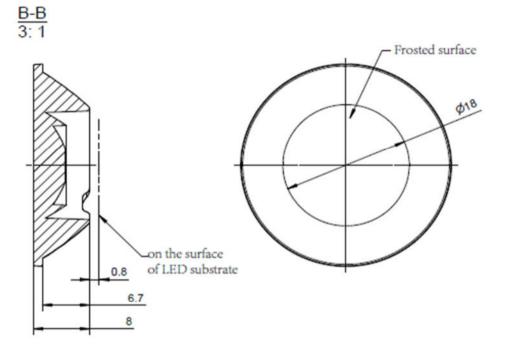
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT
- 3, The surface has no flash, shrinkage, bubbles and other defects.

<3

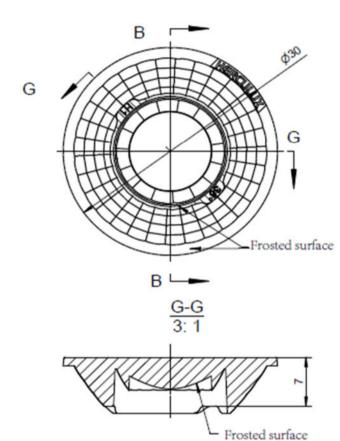
±0.1

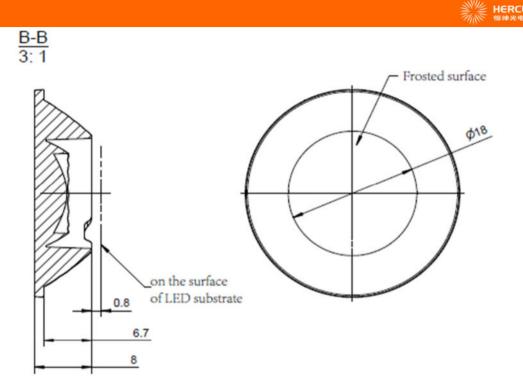
Basic size

		Optical	design							HK-GZ-3	0@08-24-D6-2	22-1g-1
2008 MT5.		itructur	e desig				HK Photor	n 30@08-24º lens	1.01.02524			
	Rev	iew					umber of drawin		qty	weight		
		Valid	ation				Material:	PC			CDHK	
65~140	140~	~250	250~	~450	>	450						
±0.50 ±0.8		.80	±1	.2	±2	2.0						









### Technical remark:

MT5

Tolerance

table (mm) olerance valu

1. The 3D map is not indicated for rounded corners and draft angle.

3~10

±0.15

24~65

±0.35

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

<3

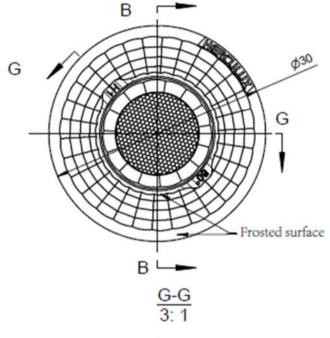
±0.1

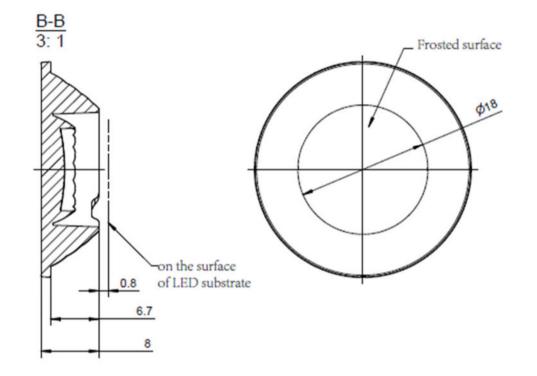
Basic size

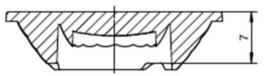
		Optical	design							HK-GZ-3	30@08-36-D6-	22-1g-1
2008 MT5.		tructur	e desig				HK Photor	n 30@08-36º lens			1.01.02525	
-	Rev	riew					umber o	f drawin	qty	weight		
		Valid	ation				Material:	PC			CDHK	
65~140	140~	~250	250~	~450	>2	450						
±0.50	.80	±1	2	±2	2.0							

<sup>2.</sup> The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.









#### 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.

3~10

±0.15

24~65

±0.35

65~140

±0.50

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

<3

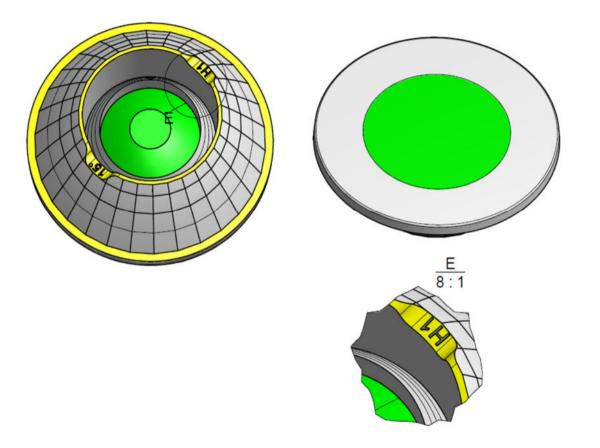
±0.1

Basic size

	Optical	design						HK-GZ-	HK-GZ-30@08-60-D6-22-1g-1				
	structur	e desig				HK Photor	n 30@08-60º lens	1.01.02526					
	Rev	view						umber of drawir	weight				
	Valid	ation				Material:	Material: PC		СДНК				
140~	~250	250~	~450 >450			•							
±0	.80	±1	2	±2	2.0								

Image illustration

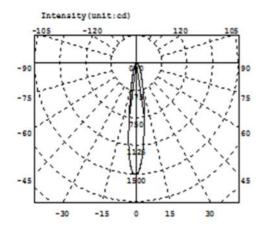


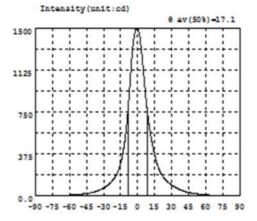


IES——

CREE 1304







Intensity data: (deg , cd) CO-180

λ	I	λ	I	λ	I	λ	I	λ	I	λ	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

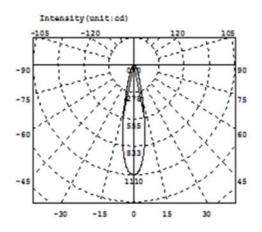
Optical Parameter (Distance=2.410m):

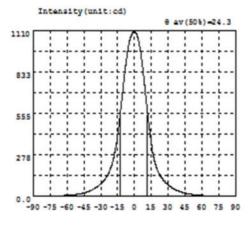
Equivalent Luminous	flux: 4	eff= 327.31m	Efficiency: Eff=92	2.741m/W
Diffuse angle:	응 (25왕) :	27.9deg (850%):	17.1deg @ (75%): 10.	9deg @ (50%): 17.1deg
Diffuse angle:	은 (25원) :	28.0 deg (8 (50%) :	17.1deg @ (75%): 10.	9deg @ (50%): 17.1deg
Imax=1493cd (C=0.00	leg,G=-1.0	0deg)	CO-180Plane Imax=	= 1493cd (G=-1.0deg)
			CO-180Plane IO= 1	488cd

IES——









Intensity data: (deg , cd) CO-180

λ	1	λ	I	λ	1	λ	1	λ	I	λ	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

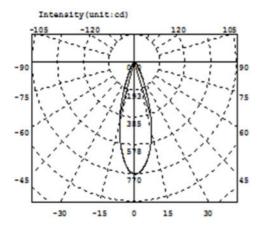
## Optical Parameter (Distance=2.410m):

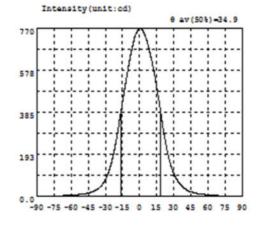
Equivalent Luminous	s flux: 4 eff= 321.51m	Efficiency: Eff=90.611m/W
Diffuse angle:	@(25%): 34.5deg@(50%)	: 24.3deg @ (75%): 16.3deg @ (50%): 24.3deg
Diffuse angle:	@ (25%): 34.5deg @ (50%)	: 24.3deg @ (75%) : 16.3deg @ (50%) : 24.3deg
Imax=1103cd (C=0.0d	leg,G=-0.5deg)	CO-180Plane Imax= 1103cd(G=-0.5deg)
		CO-180Plane IO= 1103cd

IES——









Intensity data: (deg , cd) CO-180

λ	1	λ	I	λ	I	λ	I	λ	I	λ	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:

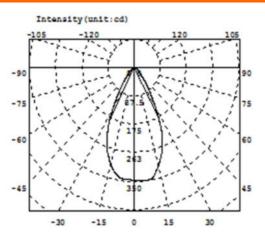
Current I:	0.1000A	Power:	3.550W
Voltage V:	35.50V	PF:	1.000

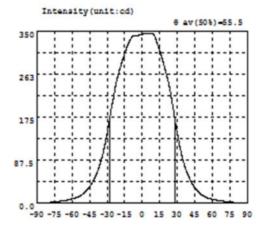
## Optical Parameter (Distance=2.410m):

Equivalent Luminous	s flux: 4	eff= 337.71m	Efficiency:	Eff=95.141m/W
Diffuse angle:	응 (25왕) :	47.8deg @ (50%):	34.9deg @ (75%)	: 22.6deg @(50%): 34.9deg
Diffuse angle:	응 (25응) :	47.8deg @ (50%):	35.0deg @ (75%)	: 22.6deg @(50%): 35.0deg
Imax=768.8cd (C=0.0	0deg,G=0.	5deg)	CO-180Plane	Imax= 768.8cd(G=0.5deg)
			CO-180Plane	I0= 768.3cd

### Intensity data. (deg , cd) co-it

HK Photon 30@08-60° lens





CREE 1304

HERCULUX 恒坤光电

Intensity data: (deg , cd) CO-180

λ	I	A	I	λ	I	λ	I	λ	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: 4	eff= 316.51m	Efficiency: Eff=89.211m/W	
Diffuse angle:	@ (25왕) :	70.1deg @ (50%):	55.5deg @ (75%): 41.7deg @ (50%): 55.5deg	ſ
Diffuse angle:	@ (25응) :	70.1deg @ (50%):	55.6deg @ (75%): 42.0deg @ (50%): 55.6deg	I
Imax=345.6cd (C=0.0	deg,G=6.	5deg)	C0-180Plane Imax= 345.6cd(G=6.5deg)	
			C0-180Plane IO= 343.5cd	

IES——

### Sample parameter test rep HK Photon 30@08-15° lens

# 

			Standard size	Upper Size limit	Lower size limit	Test resul t1		resu					resu		Remarks		
	diamet	er	30			29.9	29.8	29.9	29.9	29.9	30	29.9	29.9	$\setminus$	Test en úrsenset la		
1.Size	thickne	ess	1.3	$\geq$	1.28	1.29	1.28	1.31	1.29	1.27	1.28	1.3	$\sum$	Test environment: In 20 °C -25 °C environment to			
	heigh	t	8	$\sum$	$\sum$	8	7.97	7.97	7.96	7.97	7.97	8.01	8.03	$\sum$	achieve thermal equilibrium after the test.		
	heigh	t	7	$\searrow$			6.93						6. 97	$\setminus$			
				Gate	shear can	not aff	ect th	e app	earar	nce of	the la	amp					
				See	attachmen	t "App	earan	ce Ins	spection	on Sta	andar	ds"					
2.Appear	ance		See achment pearance	E		No bur	r	No	burr	No	burr	Ν	lo bu	rr	ОК		
Quality		Ins	spection andards"							No s	tains	N	o stai	ns	ÖK		
3.Materia	al			PC Color Transparent							rent	ОК					
	Testing I	ED						CRE	E 130	)4							
	to the so and the a	ource actua	of the test,	if it is requ	ired to be o	out of r ent, the	ange. e lens	Acco shoul	ording d be t	to the fully te	e hea ested	t dissi	patio	n capa	uld be comparable ability of the lamp event the lens life.		
4.Optica	FWH	N				5	See lig			1							
l index	angle	<b>)</b>				5	3	16	. 9	17	. 2	16	. 9				
	K-val	ue				4.	57	4.	69	4.	56	4.	60				
	Efficie	ncy				86.	74%	86.	21%	88.	06%	85.	94%				
		Seet	the signatu	re sample			•										
	ehensive ment								Qu	alifie	b						
Remarks	: Number: V	′-Verr		changes	PC prod	luct si	ze ch	ange	s wit	h ten	npera	ture			ze: 50mm		
	D-Quadra			(mm) <sup>0.8</sup>									X		ze: 100mm		
	auge M-To pe P-Neeo			0.0											ze: 150mm		
	uge R-Ra			0.4	1										ze: 200mm ze: 250mm		
Gauge E				0.2	2										ze: 300mm		
	ient tempe of the prod			(		-		-					_	• 51	20. 3001111		
	ole on the i				0	10		20		3	0		40				
												(	°)				
			ves during						he ler	ns sur	face	from k	being	conta	minated.		

2. Try to avoid touching the total reflection surface when taking the lens.

## Sample parameter test rep HK Photon 30@08-24° lens

# 

		Standard size	Upper Size limit	Lower size limit			resu	resu		resu		resu	gme	Remarks
diamet	er	30			29.8	29.9	29.9	29.9	29.9	29.9	29.9	29.9	$\setminus$	
thickne	ess	1.3		1.25	1.29	1.32	1.31	1.3	1.28	1.33	1.29	$\sum$	Test environment: In 20 ℃ -25 ℃ environment to	
heigh	t	8	$\geq$	$\geq$	8.01	8.02	8.02	8.05	8.06	8	8.02	8.06	$\sum$	achieve thermal equilibrium after the test.
heigh	t	7	$\overline{}$	$\overline{}$	7.03	7.02	7.03	7	7.05	7.01	7.02	7.06	$\setminus$	
			Gate	shear can	not aff	ect th	e app	earar	nce of	the la	amp			
			See	attachmen	t "Appe	earan	ce Ins	specti	on Sta	andar	ds"			
rance			F		No bur	r	No	burr	No	burr	Ν	lo bui	rr	ОК
	Ins	spection		Ν	lo stair	าร	No s	tains	No s	tains	N	o staii	ns	
al			PC Color Transparent							ent	ОК			
Testing I	ED		CREE 1304											
to the so	ource	of the test,	if it is requ	ired to be	out of r	ange.	Acco	ording	to the	e hea	t dissi	patior	n capa	ability of the lamp
FWH	N				S	See lig	ht dis	tribut	ion cu	rve				
angle	)				24	. 9	24	.3	23	.6	22	.4		
K-val	ue				3.	31	3.	44	3.	53	3.	65		
Efficie	ncy				89.	64%	89.	92%	88.	24%	87.	68%		
Facula	See	the signatu	re sample			•								
ehensive Iment								Qı	ualifie	b				
				•	uct siz	e cha	anges	with	n tem	pera	ture	table	9	
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 Length 1 changes (mm) 0.8 0.6 0.4 0.2 0 10 20 30 40 (°C)														
	thicknee heigh heigh rance al Testing I The reco to the so and the a FWHI angle K-val Efficie Facula ehensive ment S: Number: V D-Quadra auge M-To pe P-Neeo uuge R-Rae -Visual. ient tempe of the prod ole on the n	ance "Ap Ins Sta al Testing LED The recomme to the source and the actua FWHM angle K-value Efficiency Facula See Phensive ment Sec Number: V-Verr D-Quadratic H- auge M-Tool pe P-Needle T- auge M-Tool pe P-Needle T- auge R-Radius -Visual. ient temperature of the product re ole on the right	diameter       size         diameter       30         thickness       1.3         height       8         height       7         a       7         Testing LED       See         The recommended size at to the source of the test, and the actual conditions         FWHM       angle         K-value       Efficiency         Facula       See the signatu         Phensive ment       See the signatu         See Number: V-Vernier       Compare the source of the test, and the actual conditions         FWHM       angle       Compare the source of the test, and the actual conditions         FWHM       angle       Compare the source of the test, and the actual conditions         FWHM       angle       Compare the source of the test, and the actual conditions         FWHM       angle       Compare the source of the test, and the actual conditions         Facula       See the signatu       Compare the source of the test, and the actual conditions         Functional sectors       Compare the source of the test, and the actual conditions         Functional sectors       Sectors       Compare the source of the test, and the actual conditions         Sectors       Facula sectors       Sectors       Compare the source of the test, and the actual	size Size limit diameter 30 thickness 1.3 height 8 height 7 Gate See attachment "Appearance Inspection Standards" E Testing LED The recommended size and power r to the source of the test, if it is requ and the actual conditions of the use FWHM angle K-value Efficiency Facula See the signature sample ehensive ment See the signature sample changes (mm) 0.8 0.6 0.6 0.2 0 the product refer ole on the right	size Size limit size limit diameter 30 thickness 1.3 height 8 height 7 Gate shear can See attachment "Appearance Inspection Standards" Al PC Testing LED The recommended size and power rating of the to the source of the test, if it is required to be of and PC Testing LED The recommended size and power rating of the to the source of the test, if it is required to be of and the actual conditions of the use environment FWHM angle K-value Efficiency Facula See the signature sample ehensive ment See Attachment Changes (mm) 0.8 0.6 0.4 0.2 0 0 0 0 0 0 0 0 0 0 0 0 0	Standard Opper Size Imit Size Imit 1.25 height A 1.25 height A 29.8 A 01 height 7 Cate shear can not aff See attachment "Appearance Inspection Standards" A See attachment "Appearance Inspection Standards" A PC Testing LED The recommended size and power rating of the LED to the source of the test, if it is required to be out of r and the actual conditions of the use environment, the FWHM Sangle A See the signature sample Sensive ment A See A A A A A A A A A A A A A A	Standard       Opper       Lower       resul       resul <thr></thr> <thr></thr> <thr></thr> <th< td=""><td>Standard       Upper       Lower       resul       <thr></thr><thr></thr><thr></thr><th< td=""><td>Standard Opper Size limit size limit resu resu resu resu ti li liz li liz li li</td><td>Standard       Opper       Lower       resul       result       result</td><td>Standard Upper Size limit size limit size limit tit liss limit tit limit tits limit t</td><td>Statuard         Upper size         Lower size limit         resul tit         resul tit</td><td>Standards Upper size Size limit size limit resul results and results an</td><td>size         Size limit         size limit         fesu         fesu</td></th<></td></th<>	Standard       Upper       Lower       resul       resul <thr></thr> <thr></thr> <thr></thr> <th< td=""><td>Standard Opper Size limit size limit resu resu resu resu ti li liz li liz li li</td><td>Standard       Opper       Lower       resul       result       result</td><td>Standard Upper Size limit size limit size limit tit liss limit tit limit tits limit t</td><td>Statuard         Upper size         Lower size limit         resul tit         resul tit</td><td>Standards Upper size Size limit size limit resul results and results an</td><td>size         Size limit         size limit         fesu         fesu</td></th<>	Standard Opper Size limit size limit resu resu resu resu ti li liz li liz li	Standard       Opper       Lower       resul       result       result	Standard Upper Size limit size limit size limit tit liss limit tit limit tits limit t	Statuard         Upper size         Lower size limit         resul tit         resul tit	Standards Upper size Size limit size limit resul results and results an	size         Size limit         size limit         fesu         fesu

2. Try to avoid touching the total reflection surface when taking the lens.

### Sample parameter test rep HK Photon 30@08-36° lens

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		Standard size	Upper Size limit	Lower size limit			resu	resu	resu	resu		resu	gme	Remarks
diamet	er	30			29.8	29. 9	29.9	29.9	29. 9	29.9	29.9	29.9		Test en insenset la
thickne	ess	1.3				1.29	1.32	1.31	1.3	1.28	1.33	1.29	$\sum$	Test environment: In 20 ℃ -25 ℃ environment to
heigh	t	8	$\geq$	$\sum$	8.01	8.02	8.02	8.05	8.06	8	8.02	8.06	$\sum$	achieve thermal equilibrium after the test.
heigh	t	7	$\searrow$	$\searrow$	7.03	7.02	7.03	7	7.05	7.01	7.02	7.06	$\setminus$	
			Gate	shear can	not aff	ect th	e app	earar	nce of	the la	amp			
			See	attachmen	t "Appe	earan	ce Ins	pection	on Sta	andar	ds"			
rance			F	1	No bur	r	No I	burr	No	burr	Ν	lo bu	r	ОК
	Ins	spection	ı	N	lo stair	าร	No s	tains	No s	tains	N	o stai	ns	ÖN
al			PC Color Tra						Tra	inspai	rent		ОК	
Testing I	ED						CRE	E 130	)4					
to the so and the a	ource actua	of the test,	if it is requ	ired to be o	out of r ent, the	ange. e lens	Acco shoul	ording d be t	to the fully te	e heat ested	t dissi	patio	n capa	ability of the lamp
FVVH	VI				1						1			
angle	9				34	. 9	35	. 9	35	. 2	34	. 5		
K-val	ue				2.1	28	2.	12	2.	26	2.	29		
Efficie	ncy				88.	92%	89.	18%	88.	13%	89.	97%		
Facula	See 1	the signatu	re sample			`								
ehensive Iment								Qu	alifie	b				
			ength	-	uct siz	e cha	anges	with	n tem	pera	ture	table	9	
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 Length 1 changes (mm) 0.8 0.6 0.4 0.2 0 10 20 30 40 (°C)											re: 100mm re: 150mm re: 200mm re: 250mm			
	thicknee heigh heigh heigh rance al Testing I The reco to the so and the a FWH angle K-val Efficie Facula ehensive ment S: Number: V 2D-Quadra auge R-Rae auge R-Rae c-Visual. ient tempe of the prod	rance       "Ap         In:       Standard         In:       Standard         Testing LED       The recomme         The recomme       to the source         and the actual       FWHM         angle       K-value         Efficiency       Facula         Facula       See         ehensive       Ment         S:       Number: V-Verr         D-Quadratic H-       See         auge M-Tool       See         pe P-Needle T-       See         -Visual.       ient temperature         of the product reference       See	diameter       30         diameter       30         thickness       1.3         height       8         height       7         rance       See attachment "Appearance Inspection Standards"         al       Testing LED         The recommended size a to the source of the test, and the actual conditions         FWHM       angle         k-value       Efficiency         Facula       See the signatu         ehensive ment       See the signatu         S:       Number: V-Vernier 2D-Quadratic H- auge M-Tool ope P-Needle T- auge R-Radius -Visual. ient temperature on of the product refer       Image Notes of the product refer	size Size limit diameter 30 thickness 1.3 height 8 height 7 Gate Gate See rance See attachment "Appearance Inspection Standards" E Testing LED The recommended size and power r to the source of the test, if it is required and PC Testing LED The recommended size and power r to the source of the test, if it is required and the actual conditions of the use FWHM angle K-value Efficiency Facula See the signature sample ehensive ment S: Number: V-Vernier D-Quadratic H- auge M-Tool ope P-Needle T- auge R-Radius -Visual. ient temperature on of the product refer 0	size Size limit size limit diameter 30 thickness 1.3 height 8 height 7 Gate shear can See attachment "Appearance Inspection Standards" E N al PC Testing LED The recommended size and power rating of the to the source of the test, if it is required to be of and the actual conditions of the use environment FWHM angle K-value Efficiency Facula See the signature sample ehensive ment S: Number: V-Vernier D-Quadratic H- auge M-Tool ope P-Needle T- auge R-Radius -Visual. ient temperature on of the product refer	Standard     Opper     Lower     result til       diameter     30     29.8       thickness     1.3     1.25       height     8     8.01       height     7     7.03       Gate shear can not aff       See attachment "Appearance Inspection Standards"       No bur       Testing LED       The recommended size and power rating of the LED to the source of the test, if it is required to be out of r and the actual conditions of the use environment, the FWHM       See the signature sample       PC product size sample       PC product size in temperature on of the product refer	Standard       Opper Size       Lower size limit       resul tit       resul tit         diameter       30       29.8       29.9         thickness       1.3       1.25       1.29         height       8       8.01       8.02         height       7       7.03       7.02         Gate shear can not affect th See attachment "Appearance Inspection Standards"         See attachment       No burr         No stains       No stains         al       PC         Testing LED       No stains         The recommended size and power rating of the LED light s to the source of the test, if it is required to be out of range. and the actual conditions of the use environment, the lens         FWHM       See lig         angle       34.9         K-value       2.28         Efficiency       88.92%         Facula       See the signature sample         Number: V-Vernier D-Quadratic H- auge M-Tool ppe P-Needle T- nuge R-Radius -Visual.       0.8         0.4       0.2         0       0.4         0.4       0.2         0       0	Standard       Upper       Lower       resul       resul <thr></thr> <tt>resul</tt>	Standard       Opper       Lower       resul       result       result	Standard       Opper       Lower       resul       resule       resule	Standard       Opper       resul result results and results	Standard       Opper       Lower       resul       resulit       result       result	Size         Size limit         Lower size limit         resul til         til         til <thtil< th=""> <thtil< th="">         til</thtil<></thtil<>	size size size limit size limit fesu fesu fesu fesu fesu fesu fesu fesu

2. Try to avoid touching the total reflection surface when taking the lens.

### Sample parameter test rep HK Photon 30@08-60° lens

# 

		Standard size	Upper Size limit		rosul		resu	resu				resu	gme	Remarks
diamet	er	30	$\mathbb{Z}$		29.9	29.9	29.9	29.9	29.9	29.9	29.9	30	$\sum$	Test environment: In
thickne	SS	1.3			1. 22	1.27	1.27	1.27	1.26	1.29	1.25	1.27	$\setminus$	20 °C -25 °C environment to
heigh	t	8		$\backslash \backslash$	8	7.99	7.99	7. 98	7.97	7.99	7.97	7.99	$\setminus$	achieve thermal equilibrium after the test.
heigh	t	7			7	6.99	6.98	7.01	6.96	7.01	6.98	7.03		
			Gate	shear ca	n not afl	fect th	e app	earar	nce of	the la	amp			
			See	attachme	ent "App	earan	ce Ins	specti	on Sta	andar	ds"			
rance			burr	No	burr	٢	lo bu	rr	ОК					
	Ins	spection	L	No stai	ns	No s	tains	No s	tains	N	o stai	ns	ÖN	
al			PC				Co	olor		Tra	inspai	rent		OK
Testing I	.ED	CREE 1304												
to the so	ource	of the test,	if it is requ	ired to be	e out of	range	Acco	ording	to the	e heat	t dissi	patio	n capa	ability of the lamp
FWH	Л				9	See lig	ht dis	tribut	ion cu	irve				
angle	9				56	. 3	55. 4 55. 5				59. 2			
K-val	ue						/		/		/		/	
Efficie	ncy				90.	34%	90.	91%	89.	77%	89.	77%		
Facula	See t	the signatu	re sample			•								
ehensive Iment								Qı	alifie	b				
				PC pr	oducts	size cl	nange	es wi	th te	mper	ature	e tab	le	
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 Length 1 changes (mm) 0.8 0.6 0.4 0.2 0 10 20 30 40 (°C)										ze: 100mm ze: 150mm ze: 200mm ze: 250mm				
	thicknee heigh heigh heigh ance al Testing L The reco to the so and the a FWHM angle K-val Efficie Facula ehensive ment S: Number: V D-Quadrat auge M-To pe P-Neec uuge R-Rac -Visual. ient tempe of the prod	al       "Ap         Ins       Sta         al       Testing LED         The recomment       The recomment         The recomment       angle         K-value       Efficiency         Facula       See the source         ehensive ment       See the source         See the source       See the source         to the source       See the source         Facula       See the source         See the source       See the source	diameter       size         diameter       30         thickness       1.3         height       8         height       7         height       7         ance       See attachment "Appearance Inspection Standards"         an	size Size limit diameter 30 thickness 1.3 height 8 height 7 Gate ance See attachment "Appearance Inspection Standards" E The recommended size and power r to the source of the test, if it is requ and the actual conditions of the use FWHM angle K-value Efficiency Facula See the signature sample ehensive ment Length changes (mm) 0 pe P-Needle T- uge R-Radius -Visual. ient temperature on of the product refer	size       Size limit       size limit         diameter       30         thickness       1.3         height       8         height       7         Gate shear ca         See         attachment         "Appearance         Inspection         Standards"         al         PC         Testing LED         The recommended size and power rating of t         to the source of the test, if it is required to be         and the actual conditions of the use environm         FWHM         angle         K-value         Efficiency         Facula       See the signature sample         PC pr         Size Notedle T-         uge R-Radius         -Visual.         ient temperature on         of the product refer	Standard Upper Size limit resul till diameter 30 29.9 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Standard Upper Size limit size limit tit lt2 diameter 30 29.9 29.9 thickness 1.3 1.22 1.27 height 8 8 8 7.99 height 7 7 7 6.99 Gate shear can not affect th See attachment "Appearance Inspection Standards" E No burr Testing LED The recommended size and power rating of the LED light s to the source of the test, if it is required to be out of range. and PC Testing LED The recommended size and power rating of the LED light s to the source of the test, if it is required to be out of range. and the actual conditions of the use environment, the lens FWHM See lig angle 56.3 K-value Efficiency 90.34% Facula See the signature sample 1 See Auge M-Tool pe P-Needle T- uge R-Radius Visual. Visual. Visual. Visual. Visual.	Standard sizeUpper Size limitLower size limitresu resu It1resu It2resu It3diameter3029.929.929.929.9thickness1.31.221.271.27height887.997.99height776.996.98Gate shear can not affect the appSee attachment "Appearance Inspection Standards"No burrNoNo burrNoanceSee attachment "Appearance Inspection Standards"PCCccCREThe recommended size and power rating of the LED light source to the source of the test, if it is required to be out of range. Acc and the actual conditions of the use environment, the lens shoulFWHMSee light dis angle56.355K-value90.34%90.FaculaSee the signature sample*Standards:0.60.4O-Quadratic H- auge M-Tool pe P-Needle T- uge R-Radius -Visual.0.4O0.40.2O0.40.2O00	Standard size       Opper Size limit       Lower size limit       resul tit       resul tit2       resul tit3       resul tit2       resul tit3       resul tit2       resul tit3       resul tit3 <th< td=""><td>Standard sizeOpper Size limitLower size limitresu r</td><td>Standard sizeUpper Size limitLower size limitresu resu resu resuresu resu resuresu resu resuresu resu resuresu resu resuresu resu resuresu res</td><td>Standard sizeOpper Size limitLower size limitresu resu resu resu ttiresu resu resu resu resu ttiresu resu resu resu resu ttiresu resu resu resu resu ttiresu resu resu resu resu ttiresu resu resu resu resu ttiresu resu resu resu resu ttiresu resu resu resu resu ttiresu resu resu resu resu resu resu resu resu resu resu ttiresu r</td><td><math display="block">\begin{array}{ c c c c c c c c c c c c c c c c c c c</math></td><td><math display="block">\begin{array}{ c c c c c c c c c c c c c c c c c c c</math></td></th<>	Standard sizeOpper Size limitLower size limitresu r	Standard sizeUpper Size limitLower size limitresu resu resu resuresu resu resuresu resu resuresu resu resuresu resu resuresu resu resuresu res	Standard sizeOpper Size limitLower size limitresu resu resu resu ttiresu resu resu resu resu ttiresu resu resu resu resu ttiresu resu resu resu resu ttiresu resu resu resu resu ttiresu resu resu resu resu ttiresu resu resu resu resu ttiresu resu resu resu resu ttiresu resu resu resu resu resu resu resu resu resu resu ttiresu r	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$

2. Try to avoid touching the total reflection surface when taking the lens.

Packaging Information

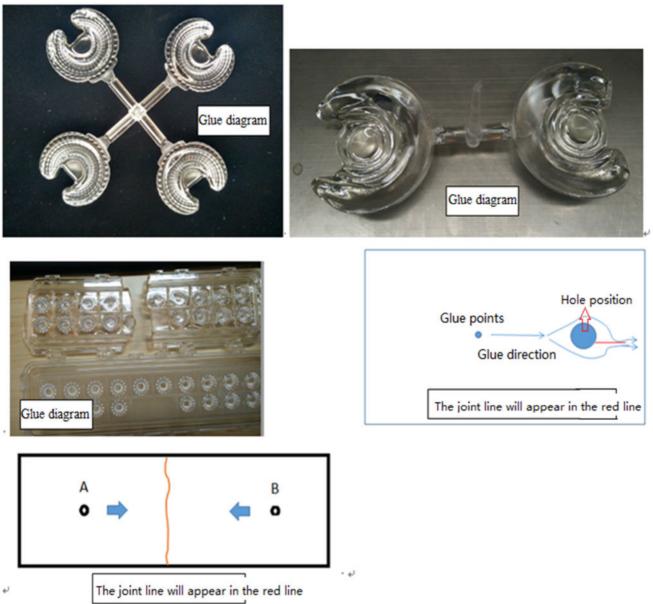


PN		HK-GZ-30@08-15-D6-22-1g-1		Product Name	HK Photon 30@08-15° lens		lens	
Product material		PC		Customer				
Package diagram		Single Vacuum package Box package						
Product packing		27	A/ Box	4	pcs/Layer			
		16	Layer/Box	1728	A/ Carton			
	NO.	Part No	Part name	Size	Dosage	Unit	Remarks	
	1	2.07.0097	Blister box	23cm*21cm	64	BAG		
Dookoain	2	2.08.0001	PE film	30cm*30cm	64	PCS		
Packagin g	3	2.06.0005	Reel label paper	6.2cm*8cm	64	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	ו 17	PCS		
	6	2.06.0015	big flat carton	48cm*44cm*19c	m 1	PCS		
Remarks	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		Inspection equipment	Defect level		
reschems	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		
	1: Do not affect the product size, shall not penetrate the optical surface, the cut should be smooth;	Visual			
Bad incision	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	