

HERCULUX Chengdu HercuLux Photoelectric 恒坤光电 Technology Co. 11 1 Technology Co.,Ltd

Product Approval

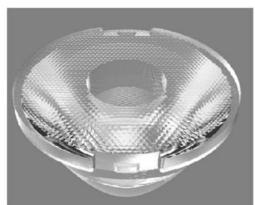
Approval number:

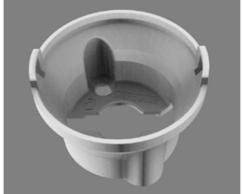
Customer:

Manufacturer: Chengdu HercuLux Photoelectric Technology Co.,Ltd

PN	Code	Product
HK-30@15-15-D4-01-1g-1	1. 01. 91816	HK 30@15-15°lens
HK-30@15-24-D6-01-1g-1	1. 01. 91817	HK 30@15-24°1ens
HK-30@15-36-D6-01-1g-1	1. 01. 91818	HK 30@15-36°lens
HK-30@15-50-D6-01-1g-1	1. 01. 91979	HK 30@15-50°lens

Synthetic information: 1.07.81418_HK-166@03-0223-S





	Supplier co	onfirmation		Client confirmation						
Proposed		DATE		Qualified□		D.A.T.F.				
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 http://www.herculux.cn/ Sales Dept: Shenzhen Nanshan District Nanshan Cloud Valley Innovation Industrial Park Comprehensive Service Building,

TEL: 0755-2937 1541 FAX: 0755-2907 5140

*Approval In duplicate, for both supplier and customer.

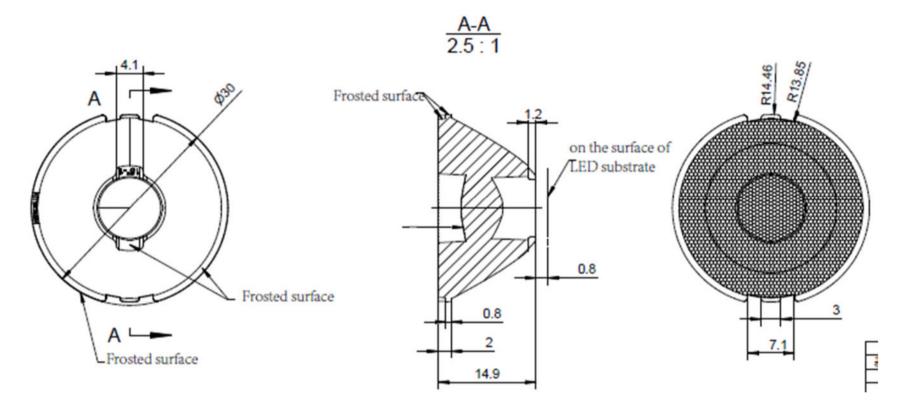


HERCULUX 恒坤光电 Product Approval

TEL: 0755-2937 1541 Date updated: 2020/12/22 FAX: 0755-2907 5140 http://www.herculux.cn/

Product Picture:	
PN:	HK-30@15-15-D4-01-1g-1
Size(L*W*H/Φ*H):	Ф:30mm; H:14.9mm
Material:	PC
Effiency:	\
Temperature(Topr):	-40°C to +120°C
FWHM:	15°、24°、36°、50°
Matched LES:	15°-LED D4 24°、36°、50°LED D6



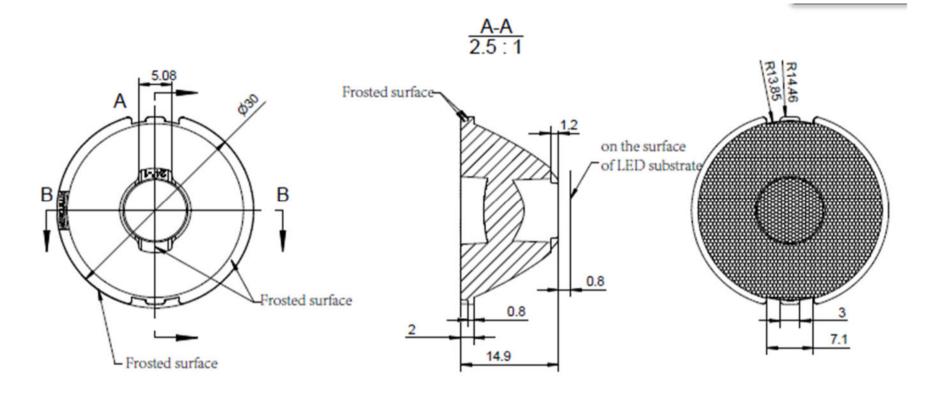


- 1. The 3D map is not indicated for rounded corners and draft angle.
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.

Optical design								HK-30@15-15-D4-01-1g-1						
tructure desig	1				HK 30	HK 30@15-15ºlens			1.01.91816					
Review	Review						umber o	f drawin	qty	we	ight			
Validation					Material:	PC			CDHK					

MT5	Basic size	<3	3~10	24~65	65~140	140~250	250~450	>450
erance (mm)	olerance valu	±0.1	±0.15	±0.35	±0.50	±0.80	±1.2	±2.



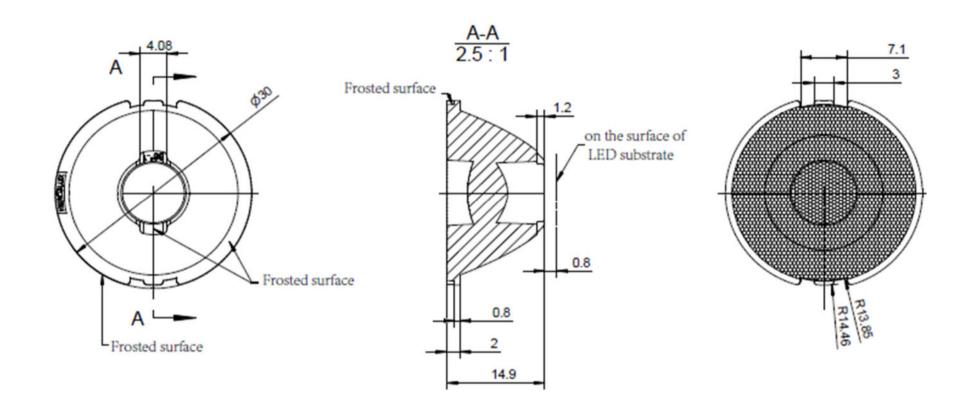


- 1. The 3D map is not indicated for rounded corners and draft angle.
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.

Optical desig	n							HK-30@15-24-D6-01-1g-1						
tructure des	g				HK 30			1.01.91817						
Review	Review						umber of	f drawin	qty	we	ight			
Validation	Validation					Material: PC CDHK								

MT5 Tolerance	Basic size	<3	3∼10	24~65	65~140	140~250	250~	~450	>45	50		
	olerance valu	±0.1	±0.15	±0.35	±0.50	±0.80	±1	.2	±2.0	0		



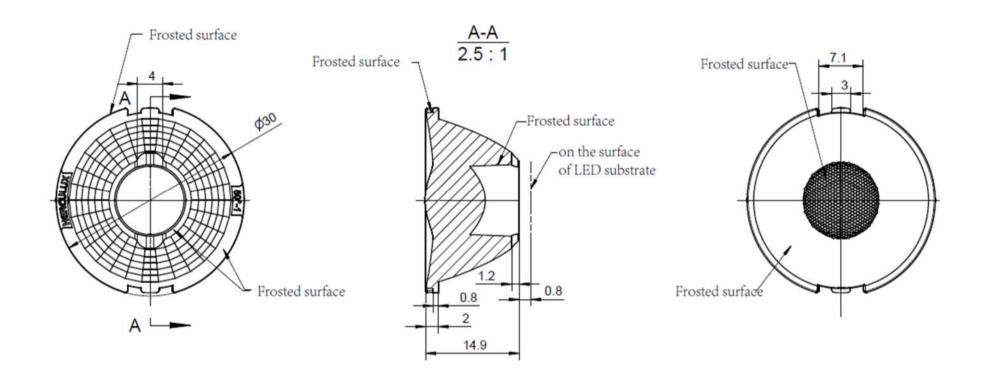


- 1. The 3D map is not indicated for rounded corners and draft angle.
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.

Optical design	n							HK-30@15-36-D6-01-1g-1						
tructure desig	gl				HK 30			1.01.91818						
Review	Review						umber of	f drawin	qty	we	ight			
Validation	Validation					Material: PC CDHK								

MT5	Basic size	< 3	3∼10	24~65	65~140	140~250	250~	~450	>450	
Tolerance	Dusic size	,	3 10	2+ 05	05 140	140 250	250	430	/ 430	
	oloranco valu	±0.1	±0.15	±0.35	±0.50	±0.80	⊥1	2	±2.0	
table (mm)	olerance valu	±0.1	±0.15	±0.55	±0.50	±0.60	±1.	.2	±2.0	



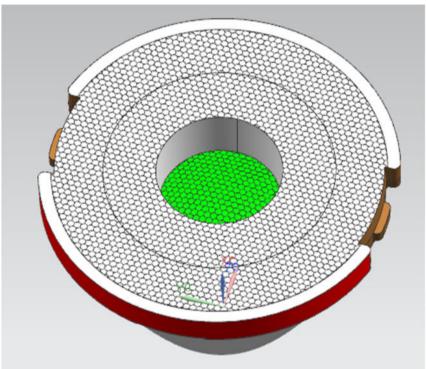


- 1. The 3D map is not indicated for rounded corners and draft angle.
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.

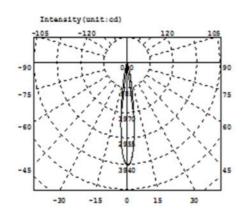
Optical design			Н	HK-30@15-50-D6-01-1g-1						
tructure desig	HK 30	HK 30@15-50ºlens			1.01.91979					
Review	1		umber of dr	awin	qty	we	ight			
Validation	Material:	#N/A		CDHK						

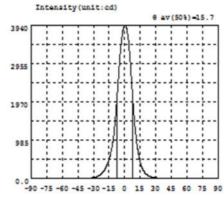












Intensity data: (deg , cd) C0-180

Α	1	λ	1	λ	I	λ	I	λ	1	A	1
-90.0	0.3057	-58.5	3.577	-27.0	51.38	4.5	3292	36.0	14.54	67.5	1.447
-88.5	0.2931	-57.0	4.231	-25.5	68.47	6.0	2744	37.5	12.95	69.0	1.294
-87.0	0.3055	-55.5	4.920	-24.0	92.26	7.5	2157	39.0	11.64	70.5	1.189
-85.5	0.3312	-54.0	5.593	-22.5	124.9	9.0	1617	40.5	10.49	72.0	1.085
-84.0	0.3698	-52.5	6.265	-21.0	168.0	10.5	1172	42.0	9.623	73.5	0.9542
-82.5	0.4209	-51.0	6.824	-19.5	220.4	12.0	838.5	43.5	8.823	75.0	0.8623
-81.0	0.4476	-49.5	7.409	-18.0	288.8	13.5	593.9	45.0	8.125	76.5	0.7685
-79.5	0.5243	-48.0	7.935	-16.5	380.5	15.0	420.4	46.5	7.487	78.0	0.7047
-78.0	0.5875	-46.5	8.456	-15.0	497.4	16.5	289.8	48.0	6.852	79.5	0.6752
-76.5	0.6888	-45.0	8.944	-13.5	648.0	18.0	209.2	49.5	6.321	81.0	0.6260
-75.0	0.7672	-43.5	9.509	-12.0	847.8	19.5	151.9	51.0	5.819	82.5	0.6097
-73.5	0.8811	-42.0	10.15	-10.5	1131	21.0	111.8	52.5	5.346	84.0	0.5860
-72.0	0.9959	-40.5	10.98	-9.0	1531	22.5	83.09	54.0	4.839	85.5	0.5620
-70.5	1.113	-39.0	12.10	-7.5	2041	24.0	62.76	55.5	4.385	87.0	0.5718
-69.0	1.215	-37.5	13.48	-6.0	2595	25.5	48.36	57.0	3.855	88.5	0.6101
-67.5	1.333	-36.0	15.24	-4.5	3148	27.0	38.18	58.5	3.338	90.0	0.6369
-66.0	1.485	-34.5	17.59	-3.0	3572	28.5	31.04	60.0	2.840		
-64.5	1.688	-33.0	20.66	-1.5	3830	30.0	25.79	61.5	2.400		
-63.0	1.977	-31.5	24.92	0.0	3936	31.5	21.93	63.0	2.026		
-61.5	2.420	-30.0	30.76	1.5	3887	33.0	18.86	64.5	1.765		
-60.0	2.935	-28.5	39.23	3.0	3664	34.5	16.46	66.0	1.575		

Electricity Parameter:

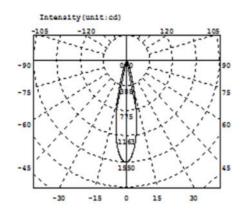
Current I: 0.1000A Power: 3.210W Voltage V: 32.09V PF: 1.000

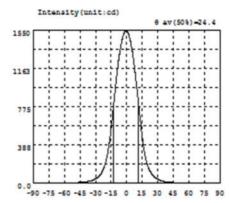
Optical Parameter (Distance=2.559m):

CO-180Plane IO= 3936cd

IES----







Intensity data: (deg , cd) C0-180

λ	I	λ	I	λ	I	λ	1	λ	I	λ	1
-90.0	0.3312	-58.5	4.091	-27.0	71.16	4.5	1386	36.0	19.72	67.5	1.679
-88.5	0.3313	-57.0	4.632	-25.5	88.83	6.0	1290	37.5	17.04	69.0	1.546
-87.0	0.3441	-55.5	5.219	-24.0	111.8	7.5	1171	39.0	14.93	70.5	1.398
-85.5	0.3949	-54.0	5.807	-22.5	144.1	9.0	1034	40.5	13.18	72.0	1.250
-84.0	0.4462	-52.5	6.418	-21.0	188.9	10.5	886.6	42.0	11.81	73.5	1.138
-82.5	0.4982	-51.0	7.068	-19.5	247.8	12.0	736.6	43.5	10.61	75.0	1.010
-81.0	0.5877	-49.5	7.850	-18.0	326.1	13.5	592.8	45.0	9.584	76.5	0.9087
-79.5	0.7026	-48.0	8.649	-16.5	431.5	15.0	463.6	46.5	8.640	78.0	0.8320
-78.0	0.8041	-46.5	9.506	-15.0	558.7	16.5	344.1	48.0	7.849	79.5	0.7319
-76.5	0.9317	-45.0	10.44	-13.5	702.9	18.0	262.9	49.5	7.082	81.0	0.6806
-75.0	1.071	-43.5	11.55	-12.0	855.0	19.5	200.9	51.0	6.381	82.5	0.6276
-73.5	1.201	-42.0	12.86	-10.5	1006	21.0	155.3	52.5	5.730	84.0	0.5987
-72.0	1.343	-40.5	14.52	-9.0	1146	22.5	122.1	54.0	5.117	85.5	0.5875
-70.5	1.508	-39.0	16.50	-7.5	1269	24.0	97.45	55.5	4.535	87.0	0.6228
-69.0	1.674	-37.5	19.03	-6.0	1371	25.5	78.10	57.0	4.001	88.5	0.6497
-67.5	1.867	-36.0	22.22	-4.5	1451	27.0	62.87	58.5	3.465	90.0	0.6752
-66.0	2.074	-34.5	26.36	-3.0	1507	28.5	50.71	60.0	3.015		
-64.5	2.333	-33.0	31.61	-1.5	1538	30.0	41.11	61.5	2.616		
-63.0	2.681	-31.5	38.31	0.0	1541	31.5	33.55	63.0	2.301		
-61.5	3.100	-30.0	46.76	1.5	1515	33.0	27.70	64.5	2.045		
-60.0	3.566	-28.5	57.56	3.0	1462	34.5	23.19	66.0	1.845		

Electricity Parameter:

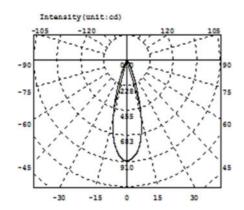
Current I: 0.1000A Power: 3.550W Voltage V: 35.50V PF: 1.000

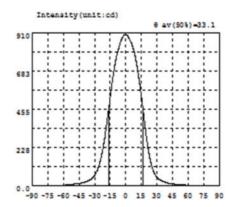
Optical Parameter (Distance=2.559m):

Diffuse angle: @(25%): 33.0deg@(50%): 24.4deg@(75%): 16.4deg@(50%): 24.4deg
Diffuse angle: @(25%): 33.0deg@(50%): 24.4deg@(75%): 16.4deg@(50%): 24.4deg
Imax=1543cd (C=0.0deg,G=-0.5deg)
C0-180Plane Imax= 1543cd(G=-0.5deg)

CO-180Plane IO= 1541cd







Intensity data: (deg , cd) C0-180

λ	1	λ	I	λ	1	λ	1	λ	I	λ	1
-90.0	1.057	-58.5	5.570	-27.0	100.0	4.5	858.8	36.0	26.40	67.5	2.283
-88.5	1.044	-57.0	6.390	-25.5	127.4	6.0	836.9	37.5	22.95	69.0	2.076
-87.0	0.9681	-55.5	7.254	-24.0	163.1	7.5	807.8	39.0	19.96	70.5	1.905
-85.5	0.9690	-54.0	8.210	-22.5	207.2	9.0	769.1	40.5	17.53	72.0	1.729
-84.0	1.056	-52.5	9.200	-21.0	258.5	10.5	718.5	42.0	15.59	73.5	1.555
-82.5	1.084	-51.0	10.24	-19.5	318.9	12.0	659.1	43.5	13.92	75.0	1.384
-81.0	1.149	-49.5	11.38	-18.0	386.3	13.5	593.2	45.0	12.55	76.5	1.216
-79.5	1.249	-48.0	12.55	-16.5	458.1	15.0	523.5	46.5	11.36	78.0	1.050
-78.0	1.353	-46.5	13.84	-15.0	530.2	16.5	453.1	48.0	10.32	79.5	0.8631
-76.5	1.504	-45.0	15.27	-13.5	600.3	18.0	373.7	49.5	9.392	81.0	0.7461
-75.0	1.620	-43.5	16.86	-12.0	664.0	19.5	302.5	51.0	8.553	82.5	0.6404
-73.5	1.762	-42.0	18.76	-10.5	719.4	21.0	238.0	52.5	7.748	84.0	0.5367
-72.0	1.902	-40.5	21.17	-9.0	766.5	22.5	182.3	54.0	6.971	85.5	0.4601
-70.5	2.069	-39.0	23.99	-7.5	804.6	24.0	138.2	55.5	6.240	87.0	0.4459
-69.0	2.250	-37.5	27.32	-6.0	837.3	25.5	104.8	57.0	5.550	88.5	0.4599
-67.5	2.444	-36.0	31.47	-4.5	864.3	27.0	80.84	58.5	4.883	90.0	0.4841
-66.0	2.701	-34.5	36.80	-3.0	885.2	28.5	63.68	60.0	4.289		
-64.5	3.036	-33.0	43.63	-1.5	897.1	30.0	51.48	61.5	3.721		
-63.0	3.551	-31.5	52.43	0.0	899.4	31.5	42.57	63.0	3.207		
-61.5	4.123	-30.0	63.88	1.5	890.9	33.0	35.85	64.5	2.815		
-60.0	4.811	-28.5	79.36	3.0	876.7	34.5	30.61	66.0	2.493		

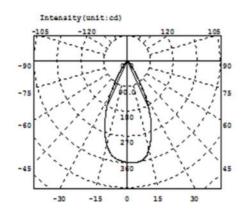
Electricity Parameter:

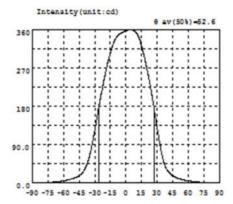
Current I: 0.1000A Power: 4.138W Voltage V: 41.40V PF: 1.000

Optical Parameter (Distance=2.559m):

CO-180Plane IO= 899.4cd







Intensity data: (deg , cd) C0-180

A	1	λ	1	λ	1	λ	1	λ	1	λ	1
-90.0	0.2938		6.242	-27.0	166.2	4.5	359.1	36.0	51.83	67.5	2.895
-88.5	0.3047	-57.0	7.004	-25.5	187.1	6.0	358.6	37.5	40.85	69.0	2.508
-87.0	0.3155	-55.5	7.808	-24.0	206.7	7.5	357.3	39.0	32.94	70.5	2.168
-85.5	0.3261	-54.0	8.665	-22.5	223.7	9.0	354.7	40.5	27.15	72.0	1.857
-84.0	0.3383	-52.5	9.618	-21.0	243.4	10.5	350.1	42.0	22.85	73.5	1.561
-82.5	0.3954	-51.0	10.69	-19.5	260.1	12.0	343.6	43.5	19.53	75.0	1.303
-81.0	0.5351	-49.5	11.94	-18.0	276.6	13.5	333.7	45.0	16.96	76.5	1.080
-79.5	0.6839	-48.0	13.39	-16.5	291.8	15.0	319.7	46.5	14.91	78.0	0.9039
-78.0	0.8668	-46.5	15.20	-15.0	305.5	16.5	306.5	48.0	13.22	79.5	0.7440
-76.5	1.071	-45.0	17.44	-13.5	317.2	18.0	291.5	49.5	11.78	81.0	0.5972
-75.0	1.328	-43.5	20.27	-12.0	327.7	19.5	274.9	51.0	10.58	82.5	0.4422
-73.5	1.632	-42.0	23.87	-10.5	335.9	21.0	257.2	52.5	9.484	84.0	0.3320
-72.0	1.988	-40.5	28.71	-9.0	341.9	22.5	238.5	54.0	8.526	85.5	0.2780
-70.5	2.253	-39.0	35.07	-7.5	346.4	24.0	218.4	55.5	7.639	87.0	0.2449
-69.0	2.583	-37.5	43.52	-6.0	349.6	25.5	196.6	57.0	6.831	88.5	0.2432
-67.5	2.939	-36.0	54.55	-4.5	352.2	27.0	173.9	58.5	6.099	90.0	0.2191
-66.0	3.340	-34.5	68.52	-3.0	354.1	28.5	150.7	60.0	5.442		
-64.5	3.804	-33.0	85.01	-1.5	355.9	30.0	127.8	61.5	4.837		
-63.0	4.339	-31.5	103.6	0.0	357.4	31.5	105.3	63.0	4.285		
-61.5	4.819	-30.0	123.5	1.5	358.5	33.0	84.49	64.5	3.785		
-60.0	5.551	-28.5	144.9	3.0	358.9	34.5	66.30	66.0	3.321		

Electricity Parameter:

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

Optical Parameter (Distance=2.410m):

CO-180Plane IO= 357.4cd



		Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks	
diamet	er	30			30	29. 95	29. 95	30		Test environment: In	
thickne	ess	2			2. 02	2. 02	2. 01	2. 01		20 °C -25 °C environment to achieve thermal equilibrium after the	
heigh	t	14.9			14. 93	14. 91	14. 93	14. 93		test.	
			Gate	shear can	not affect th	ne appearar	nce of the la	amp			
			See	attachmen	t "Appearar	ce Inspecti	on Standar	ds"			
rance			E	ı	No burr	No burr	No burr	No bu	rr	OK	
	Ins	pection	١	N	lo stains	No stains	No stains	No stai	No stains		
al			PC Color Transparent OI						ОК		
_											
to the so and the a FWHI	ource actual M	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	dissipatio	n capa	ability of the lamp	
K-val	ue				9. 29	9. 62	9. 48	9. 36			
Efficie	ncy				84. 80%	80.60%	84. 60%	85. 60%			
Facula	See t	he signatu	re sample		,						
ehensive ment					,	Qı	ualified				
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 0.9 changes 0.8 (mm) 0.7 0.6 0.5 0.5 0.4 0.3 0.2 0.4 0.3 0.2 0.7 0.6 0.5 0.5 0.7 0.6 0.7 0.6 0.7 0.6 0.5 0.7 0.7 0.6 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7							Omm Omm Omm				
	thicknee heigh Testing L The reco to the so and the so	Testing LED The recomment to the source and the actual FWHM angle K-value Efficiency Facula See tenensive ment Send M-Tool pe P-Needle Tuge R-Radius-Visual. ident temperature of the product resistant in the product resis	diameter 30 thickness 2 height 14.9 See attachment "Appearance Inspection Standards" al Testing LED The recommended size ato the source of the test, and the actual conditions FWHM angle K-value Efficiency Facula See the signature enemt ENUMBER: V-Vernier D-Quadratic H-auge M-Tool pe P-Needle T-uge R-Radius-Visual. ident temperature on of the product refer	size Size limit diameter 30 thickness 2 height 14.9 Gate See attachment "Appearance Inspection Standards" PC Testing LED The recommended size and power into the source of the test, if it is requand the actual conditions of the use FWHM angle K-value Efficiency Facula See the signature sample enensive ment Enensive ment Length change (mm) Length change (mm) Length change (mm) size limit	size Size limit size limit diameter 30 thickness 2 height 14.9 Gate shear can See attachment "Appearance Inspection Standards" The recommended size and power rating of the to the source of the test, if it is required to be and the actual conditions of the use environment FWHM angle K-value Efficiency Facula See the signature sample shensive ment PC pr Length 0.9 changes 0.8 (mm) 0.7 Length 0.9 changes 0.8 (mm) 0.7 Jene P-Needle T- uge R-Radius Visual. Jene temperature on of the product referole on the right	size Size limit size limit result1 diameter 30 30 thickness 2 2.02 height 14.9 14.93 Gate shear can not affect the See attachment "Appearance Inspection Standards" No burr Testing LED The recommended size and power rating of the LED light 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 light angle 15.7 K-value 99.29 Efficiency 84.80% Facula See the signature sample PC product size PC	size Size limit size limit result1 result2 diameter 30 30 29.95 thickness 2 2.02 2.02 height 14.9 14.93 14.91 Gate shear can not affect the appearar See attachment "Appearance Inspection Standards" No burr No burr No burr No burr No stains See light distribut actual conditions of the use environment, the lens should be FWHM See light distribut angle 15.7 14.8 K-value 9.29 9.62 Efficiency 84.80% 80.60% PC product size changes vote the result of the product refer on the right of the product refer on the right on th	size Size limit size limit result1 result2 result3 diameter 30 30 29.95 29.95 thickness 2 2.02 2.02 2.01 height 14.9 14.93 14.91 14.93 Gate shear can not affect the appearance of the lets see attachment "Appearance Inspection Standards" No burr No burr No burr No burr No burr Inspection Standards No stains of the example of the LED light source recommended to the source of the test, if it is required to be out of range. According to the heat and the actual conditions of the use environment, the lens should be fully tested FWHM See light distribution curve angle 15.7 14.8 15.2 K-value 9.29 9.62 9.48 Efficiency 84.80% 80.60% 84.60% Facula See the signature sample PC product size changes with temporal per P-Needle T-uge R-Radius Visual. Eength 0.9 Length 0.9 Cale shear can not affect the appearance of the lead shear can not affect the appearance of the	Size Size Imit size Imit result1 result2 result3 result4	Standard size Size limit Size limit result1 result2 result3 result4 resu	

- 1、Wear clean gloves during lens assembly to prevent contamination of the lens surface.
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							1			
			Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
diamet	er 3	0			29. 94	29. 94	29. 96	30		Test environment: In
thickne	ess 2	2			2. 02	2. 01	2	2.02		20 °C -25 °C environment to achieve thermal equilibrium after the
heigh	t 14	.9			14. 82	14. 86	14. 88	14. 87		test.
			Gate	shear can	not affect th	e appearar	nce of the la	ımp		
			See	attachmen	t "Appearan	ce Inspecti	on Standard	ds"		
rance		hment		1	No burr	No burr	No burr	No bu	rr	OK
	Inspecti	tion		lo stains	No stains	No stains	No stai	ns	ÖK	
al			PC			Color	Tra	nsparent		OK
Testing LED						24°-LED	D6			
and the FWHI	actual cond M				ent, the lens	should be	fully tested			
Efficie					81.60%	79. 66%	80. 15%	81.11%		
Facula	See the sig	gnatur	e sample		,					
ehensive Iment						Qι	ualified			
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 0.9 changes 0.8 (mm) 0.7 0.6 0.5 0.5 0.2 0.3 0.2 0.1 0.1							*	Size: Size: Size: Size: Size:	50mm 100m 150m 200m 250m	im im im
	thicknet height	diameter 3 thickness 2 height 14 Testing LED The recommended to the source of the and the actual cond FWHM angle K-value Efficiency Facula See the sign ehensive ment S: Number: V-Vernier PD-Quadratic Hauge M-Tool ope P-Needle Tauge R-Radius P-Visual. iient temperature on of the product refer	thickness 2 height 14.9 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 signature enent See The signature energy and the source of the test, and the actual conditions FWHM angle K-value Efficiency Facula See the signature energy and the source of the signature energy and the signature energy an	size Size limit diameter 30 thickness 2 height 14.9 Gate See attachment "Appearance Inspection Standards" al PC Testing LED The recommended size and power restriction to the source of the test, if it is requand the actual conditions of the use FWHM angle K-value Efficiency Facula See the signature sample enensive ment S: Number: V-Vernier PD-Quadratic H-lauge M-Tool poe P-Needle T-lauge R-Radius Polysual. ieint temperature on of the product refer	size Size limit size limit diameter 30 thickness 2 height 14.9 Gate shear can See attachment "Appearance Inspection Standards" The recommended size and power rating of the to the source of the test, if it is required to be and the actual conditions of the use environment FWHM angle K-value Efficiency Facula See the signature sample chensive ment PC procupadratic H- auge M-Tool ope P-Needle T- auge R-Radius Length 0.9 changes 0.8 (mm) 0.7 0.6 0.5 0.5 0.7 0.9 Changes 0.8 (mm) 0.7 0.6 0.7 0.9 Changes 0.8 (mm) 0.7 0.6 0.7 0.7 0.9 Changes 0.8 (mm) 0.7 0.7 0.7 0.9 Changes 0.8 (mm) 0.7 0.7 0.9 Changes 0.8 (mm) 0.7 0.6 0.7 0.7 0.9 Changes 0.8 (mm) 0.7 0.7 0.7 0.9 Changes 0.8 (mm) 0.7 0.7 0.7 0.9 Changes 0.8 (mm) 0.7 0.7 0.9 Changes 0.8 (mm) 0.7 0.9 Changes 0.8 (mm) 0.7 0.6 0.7 0.7 0.9 Changes 0.8 (mm) 0.7 0.6 0.7 0.7 0.9 Changes 0.8 (mm) 0.7 0.7 0.9 Changes 0.8 (mm) 0.7 0.9 Changes 0.8 (mm) 0.7 0.6 0.7 0.9 Changes 0.8 (mm) 0.7 0.6 0.7 0.7 0.9 Changes 0.8 (mm) 0.7 0.7 0.9 Changes 0.8 (mm) 0.7 0.6 0.7 0.7 0.9 Changes 0.8 (mm) 0.7 0.6 0.7 0.7 0.8 0.9 Changes 0.8 (mm) 0.7 0.7 0.7 0.8 0.9 Changes 0.8 (mm) 0.7 0.6 0.7 0.7 0.8 0.9 Changes 0.8 (mm) 0.7 0.6 0.7 0.7 0.8 0.8 0.9 Changes 0.8 (mm) 0.7 0.6 0.7 0.7 0.8 Changes 0.8 (mm) 0.7 0.7 0.8 Changes 0.8 (mm) 0.7 0.8 Changes 0.8 (mm) 0.7 0.6 0.7 0.8 Changes 0.8 (mm) 0.7 0.6 0.7 0.7 0.8 Changes 0.8 (mm) 0.7 0.8 Changes 0.8 (mm) 0.7 0.8 Changes 0.8 (mm) 0.7 0.6 0.7 0.8 Changes 0.8 (mm) 0.7 0.8 Changes 0.8 Changes 0.8 Changes 0.8 Changes 0.8 Changes 0.8	size Size limit size limit result1 diameter 30 29.94 thickness 2 2.02 height 14.9 14.82 Gate shear can not affect the See attachment "Appearance Inspection Standards" No burr Testing LED The recommended size and power rating of the LED light 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 light angle 24.4 K-value 4.58 Efficiency 81.60% Facula See the signature sample PC product size chensive ment O.5 Changes 0.8 Cmm) 0.7 Cmm) 0.7	diameter 30 29.94 29.94 thickness 2 2.02 2.01 height 14.9 14.82 14.86 Gate shear can not affect the appearar See attachment "Appearance Inspection Standards" No stains No stains No stains No stains No stains Standards" No stains and the actual conditions of the use environment, the lens should be FWHM See light distribut angle 24.4 23.8 K-value 4.58 4.86 Efficiency Roberts Associated See the signature sample Senensive ment PC Quadratic H-auge M-Tool page P-Needle T-buge R-Radius No stains No stain	size Size limit size limit result1 result2 result3 diameter 30 29.94 29.94 29.96 thickness 2 2.02 2.01 2 height 14.9 14.82 14.86 14.88 Gate shear can not affect the appearance of the late See attachment "Appearance Inspection Standards" No burr No burr No burr No burr No burr Standards" Testing LED 24°-LED D6 The recommended size and power rating of the LED light source recommended to the source of the test, if it is required to be out of range. According to the heat and the actual conditions of the use environment, the lens should be fully tested FWHM See light distribution curve angle	size Size limit size limit result1 result2 result3 result4 diameter 30 29,94 29,94 29,94 29,96 30 thickness 2 2,02 2,01 2 2,02 height 14,9 14,82 14,86 14,88 14,87 Gate shear can not affect the appearance of the lamp See attachment "Appearance Inspection Standards" Testing LED No burr No burr No burr No burr No stains No stains	Size Size limit size limit result1 result2 result3 result4 result4 result3 result4 res

- 1、Wear clean gloves during lens assembly to prevent contamination of the lens surface.
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Standard size Cover Test				01			T 1	T 1	Test	Teel	Jud	
1.Size thickness 2 2 2.04 2.04 2.06 2.07 Testing LED See attachment "Appearance Inspection Standards" 2.Appearance Quality											gme	Remarks
1. Size thickness 2 2. 04 2. 04 2. 06 2. 07 environment to achieve thermal equilibrium after the scale 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. 4. Optica FWHM See light distribution curve 1 index Acyalue 2.77 2.77 2.69 2.69 Efficiency Facula See the signature sample Comprehensive Qualified PC product size changes with temperature table PC product size changes with temperature table PC product size changes with temperature table PC product size changes with temperature on the size of the product refer to the table on the right PC product size changes with temperature on the size of the product refer to the table on the right		diamet	er	30			29. 96	29. 97	29. 96	29. 94		Test environment: In
Gate shear can not affect the appearance of the lamp See attachment "Appearance Inspection Standards" 2.Appearance Quality See attachment "Appearance Inspection Standards" No burr No bur	1.Size	thickn	ess	2			2. 04	2. 04	2.06	2. 07		environment to
See attachment "Appearance Inspection Standards" See attachment "Appearance Inspection Standards"		heigh	ıt	14.9			14. 93	14. 97	14. 93	14. 95		test.
See attachment "Appearance Inspection Standards" E					Gate	shear can ı	not affect th	ne appearar	nce of the la	ımp		
2.Appearance Quality Comprehensive judgment Calipse 2D-Quadratic H-Height Gauge B-Radius Ga					See a	attachment	: "Appearar	ce Inspecti	on Standar	ds"		
3.Material PC Color Transparent OK Testing LED 36°-LED D6 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. 4.Optica I index		ance		achment	F	١	No burr	No burr	No burr	No bu	rr	OK
Testing LED 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 FWHM See light distribution curve See light distribution curve Facula See the signature sample Comprehensive judgment PC product size changes with temperature table Length O.9 Changes Cha	Quality		Ins	spection	J	N	o stains	No stains	No stains	No stai	ns	OK .
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 See light distribution curve I index	3.Materia	al			PC			Color	Tra	nsparent		OK
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 See light distribution curve		•										
Facula See the signature sample Comprehensive judgment PC product size changes with temperature table Length 0.9 changes 0.8 (mm) 0.7 Size: 50mm 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 Size: 50mm Size: 100mm Size: 150mm O.4 O.3 O.2 O.1 O.3 O.2 O.1 O.3 O.3 O.2 O.3 O.3 O.3 O.3 O.4 O.5 O.4 O.5 O.5 O.4 O.5 O.5		and the FWH angle K-val	actua M e ue				see lig 34. 3 2. 77	should be ght distribut 33. 1 2. 77	fully tested ion curve 33.5	33. 5 2. 69		
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 0.9 changes 0.8 (mm) 0.7 0.6 0.5 0.4 0.5 0.4 0.3 0.2 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0				the eignetu	ro comple		82. 35%	82.55%	81.06%	82. 62%		
PC product size changes with temperature table 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 0.9 changes 0.8 (mm) 0.7 0.6 0.5 0.4 0.3 0.2 0.1 0.1 0.2 0.1 0.2 0.3 0.4 0.3 0.2 0.1 0.3 0.2 0.1 0.3 0.3 0.2 0.3 0.3 0.2 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3	Compre		See	ine signatu	re sample							
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 0.9 changes 0.8 (mm) 0.7 0.6 0.5 0.4 0.3 0.2 0.1 0 10 20 30 40								Qι	ualified			
· ·	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 0.9 changes 0.8 (mm) 0.7 0.6 0.5 0.4 0.3 0.2 0.1									Siz Siz Siz Siz Siz Siz Siz Siz	ze: 50 ze: 10 ze: 15 ze: 20 ze: 25	00mm 50mm 00mm 50mm

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		Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
diamet	er	30			29. 96	29. 97	29. 96	29. 94		Test environment: In
thickne	ess	2			2. 04	2. 04	2. 06	2. 07		20 °C -25 °C environment to achieve thermal equilibrium after the
heigh	t	14.9			14. 93	14. 97	14. 93	14. 95		test.
			Gate	shear can i	not affect th	ne appearar	nce of the la	amp		
			See	attachment	t "Appearar	ce Inspecti	on Standar	ds"		
rance			ent		No burr	No burr	No burr	No bu	rr	OK
	Ins	spection				No stains	No stains	No stai	ns	OI.
al			PC			Color	Tra	nsparent		ОК
to the so	ource	of the test,	if it is requ	ired to be o	out of range	. According	to the heat	t dissipatio	n capa	ability of the lamp
angle)				49. 4	52.6	51.5	52.6		
K-val	ue									
Efficie	ncy				81. 32%	81. 42%	80. 73%	81.71%		
Facula	See t	he signatu	re sample		,					
ehensive Iment					_	Qı	ualified			
PD-Quadra tauge M-To ope P-Need auge R-Rad E-Visual. iient tempe of the prod	tic H- pol dle T- dius rature uct re	e on	chang	h 0.9 es 0.8	roduct size			→ Si: → Si: → Si: → Si: → Si:	ze: 50 ze: 10 ze: 15 ze: 20 ze: 25	00mm 60mm 00mm 60mm
	thicknee heigh heigh Testing L The reco to the so and the a FWHM angle K-val: Efficie Facula ehensive ment S: Number: V D-Quadra auge M-To ppe P-Nece auge R-Rac -Visual. ient tempe of the prod	Testing LED The recomment to the source and the actual FWHM angle K-value Efficiency Facula See tenensive ment See Number: V-Verreport of the source and the actual see the source and the actual see the source and the actual see the source and th	diameter 30 thickness 2 height 14.9 See attachment "Appearance Inspection Standards" al Testing LED The recommended size at to the source of the test, and the actual conditions FWHM angle K-value Efficiency Facula See the signature enemy seement See Number: V-Vernier PD-Quadratic Hauge M-Tool ope P-Needle Tauge R-Radius P-Visual. iient temperature on of the product refer	size Size limit diameter 30 thickness 2 height 14.9 Gate See attachment "Appearance Inspection Standards" at PC Testing LED The recommended size and power restriction to the source of the test, if it is requand the actual conditions of the use FWHM angle K-value Efficiency Facula See the signature sample enensive ment Energy P-Needle T-auge M-Tool ope P-Needle T-auge R-Radius P-Visual. iient temperature on of the product refer	size Size limit size limit diameter 30 thickness 2 height 14.9 Gate shear can see attachment "Appearance Inspection Standards" The recommended size and power rating of the to the source of the test, if it is required to be and the actual conditions of the use environment FWHM angle K-value Efficiency Facula See the signature sample enensive ment PC pudadratic Hauge M-Tool ppe P-Needle T-auge R-Radius Ivisual per pole on the right PC pudadratic Hauge M-Tool ppe P-Needle T-auge R-Radius Ivisual point in the product reference on the right	size Size limit size limit result1 diameter 30 29.96 thickness 2 2.04 height 14.9 14.93 Gate shear can not affect the See attachment "Appearance Inspection Standards" No burr No burr No stains Testing LED No stains The recommended size and power rating of the LED light 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 light No stains Facula See the signature sample See the signature sample See P-Needle T-Buge R-Radius No stains No stains PC product size Number: V-Vernier CD-Quadratic Hauge M-Tool ope P-Needle T-Buge R-Radius No stains No st	size Size limit size limit result1 result2 diameter 30 29.96 29.97 thickness 2 2.04 2.04 height 14.9 14.93 14.97 Gate shear can not affect the appearar See attachment "Appearance Inspection Inspection Standards" No burr No burr No burr No burr No stains No stai	size Size limit size limit result1 result2 result3 diameter 30 29.96 29.97 29.96 thickness 2 2.04 2.04 2.04 2.06 height 14.9 14.93 14.97 14.93 Gate shear can not affect the appearance of the late See attachment "Appearance Inspection Standards" No burr No burr No burr No burr No burr Standards" PC Color Tra Testing LED 50°-LED D6 The recommended size and power rating of the LED light source recommended to the source of the test, if it is required to be out of range. According to the heat and the actual conditions of the use environment, the lens should be fully tested FWHM See light distribution curve angle 49.4 52.6 51.5 K-value Efficiency 81.32% 81.42% 80.73% PC product size changes with temp changes 0.8 (mm) 0.7 Changes 0.8 (mm) 0.7	size Size limit size limit result1 result2 result3 result4 diameter 30 29.96 29.97 29.96 29.94 thickness 2 2.04 2.04 2.06 2.07 height 14.9 14.93 14.97 14.93 14.95 Gate shear can not affect the appearance of the lamp See attachment "Appearance Inspection Standards" See attachment "Appearance Inspection Standards" No burr No burr No burr No burr No burr No stains Size and power rating of the LED light source recommended for this len to the source of the test, if it is required to be out of range. According to the heat dissipation and the actual conditions of the use environment, the lens should be fully tested and tested FWHM See light distribution curve angle K-value Efficiency 81.32% 81.42% 80.73% 81.71% PC product size changes with temperature to the source of the test of the signature sample See the	Standard size Size limit Size limit result1 result2 result3 result4 resu

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PI	N	HK-30@15-15-D4-01-	1g-1	Product Name	HK 30@15	-15ºlens	3
Product	material	PC		Customer			
Package	diagram	Single Vac	cuum packa	ge Bo	x package		~
Product	packing	27	A/ Box	4	pcs/Layer		
	. 3	16	Layer/Box	1728	A/ Carton		
	NO.	Part No	Part name	Size	Dosage	Unit	Remarks
	1	2.07.0011	Blister box	23cm*21cm	64	BAG	
Dookogin	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	17	PCS	
	6	2.06.0015	big flat carton	48cm*44cm*19cr	n 1	PCS	
Remarks		The loose packing is not subjec	ct to this specif	ïcation. Customer's	requirements shall	prevail	



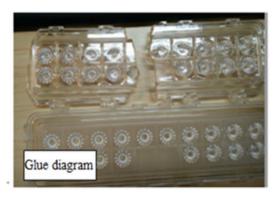
Special notice

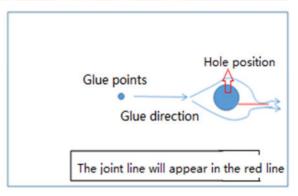
When gule pass through holes, columns and other structures, or part of the thin structure, will form a weld line. The product which uses multi-point injection welding line will appear because of the combination of sol, as shown below:

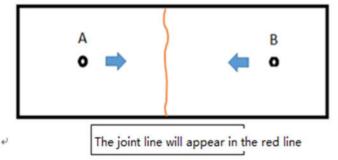
Syntneti











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 Π 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	ludging standard	Inspection equipment	Defec	Defect level			
resciteriis	Judging standard	Testing method	MI	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			√		

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	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. 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	√	
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; 2: The remaining flow marks shall not appear in the optical surface, a single L ≤ 10mm, no more than two 	Visual	✓	

Bubble	No bubbles are allowed	Visual		√	
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			√
Cold glue	Optical surface may not have cold glue, non- optical surface cold glue should meet the visual is not obvious.	Visual	√		
	1: Do not affect the product size, shall not penetrate the optical surface, the cut should be smooth;				
Bad incision	2: Laser cutting products, the optical surface burns shall not occur after the processing is completed. Beading must not affect product installation	Visual			√
	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 ≤ 1 mm and no more than 1 area within a 50x50 mm area	Visual		√	