

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

Product Approval

Approval number:

Customer:

Product: HK 6合1-TYPEⅢ_M Street lamp lens

Material Code: 1.02.91827

PN: HK-50@07-96X155-5050-#0-1g-6

Synthetic information: 1.07.81402_HK-257@02-0221-S

Manufacturer: Chengdu HercuLux Photoelectric Technology Co.,Ltd



	Supplier co	onfirmation	Client confirmation			
Proposed		DATE	Qualified□			
Project manager		DATE	Unqualified□		DATE	
Audit		DATE	Audit		DATE	
Approved		DATE	Approved		DATE	
Stamp		DATE	Stamp		DATE	

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

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

Phone: 028-85887727 (801) 028-85887990 (801) Fax: 028-85887730 www.hkoptics.com
Sales Dept: Shenzhen Nanshan District Nanshan Cloud Valley Innovation Industrial Park Comprehensive Service Building,

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

*Approval In duplicate, for both supplier and customer.

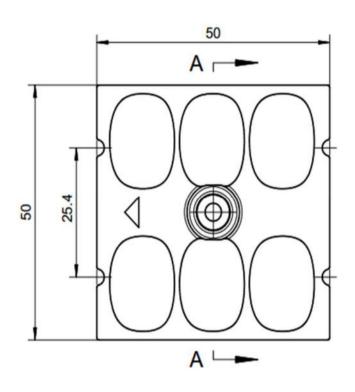


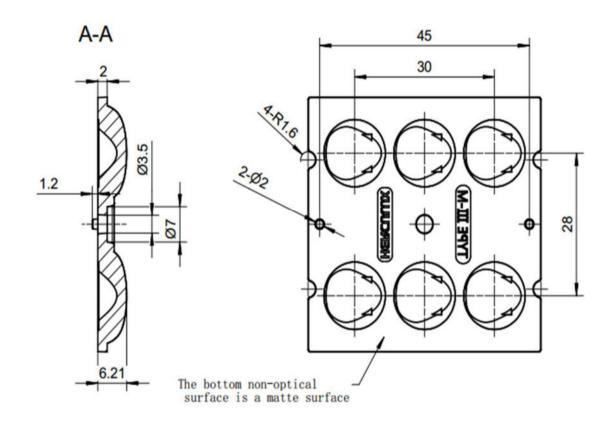
HERCULUX 恒坤光电 Product Approval

TEL: 0755-2937 1541 Date updated: 2019/11/19 FAX: 0755-2907 5140 www.hkoptics.com

Product Picture:	
PN:	HK-50@07-96X155-5050-#0-1g-6
Size(L*W*H/Φ*H):	L:50mm*W:50mm*H:07mm
Material:	PC
Effiency:	≥88%
Temperature(Topr):	-40°C to +120°C
FWHM:	102°X155°





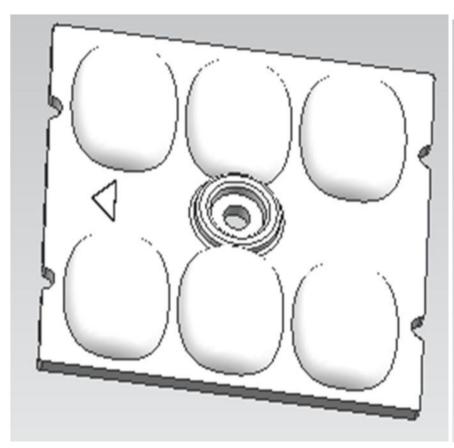


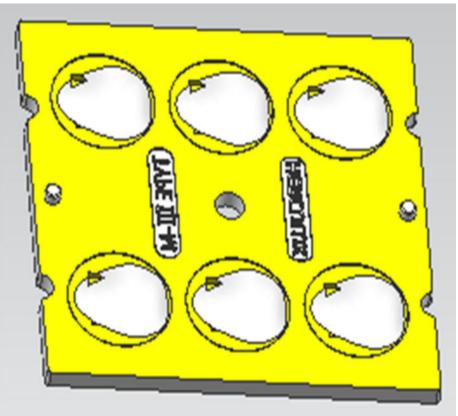
Technical Requirement:

- 1. The surface don't have any defects of flash, shrink and bubble.
- 2. The uncharted fillet and pattern draft subject to the 3D drawing.
- 3. The uncharted dimensional tolerance subject to the 3D drawing.

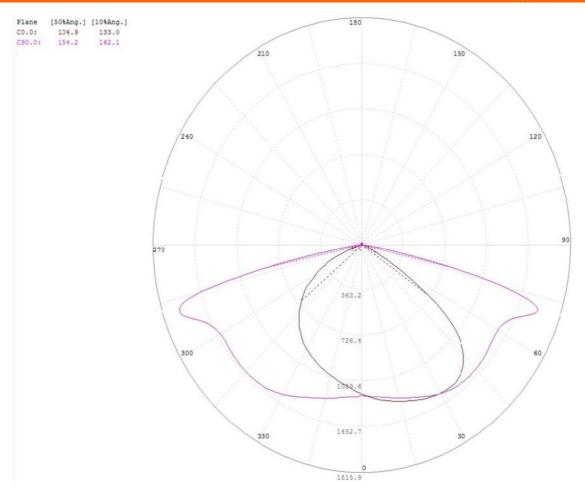
ptical Design				HK-50@07-96X1	55-5050-#0-1g-6	1. 02. 91827
ructure Design			HK 6合1-TYPEIII_M Street lamp lens	Pages	Qty	Weight
Assess				2		
Authorized			Material:PC		CDHK	













			G				- .	Ι	- .	- .	Jud		
			Standard size	Upper Size limit	Lov size	-	Test result1	Test result2	Test result3	Test result4		Remarks	
	width	1	50	50. 1	49.	. 7	49.99	49.92	49.93	49.84	OK		
	The thicknes	s of	2	2. 25	1.	95	2.01	2.06	2.07	2.13	OK	Test	
	The aper		3.5	3. 65	3.	35	3.55	3.53	3.56	3.51	OK	environment:	
	Positi		1.2	1. 35	0.	85	1.01	1.01	0.98	1.08	OK	In 20 ℃ -25 ℃	
1.Size	colum positi colum diamet	on n	2	2. 1	1. 85		1.95	1.94	1.96	1.96	ок	environment to achieve thermal equilibrium	
	positi colum spacin	on n	45	45. 2	2 44.8		45.01	45.02	45	45	ОК	after the test.	
				Gate she	ar car	not a	affect the a	ppearance	of the lamp)			
	See attachment "Appearance Inspection Standards"												
I Annearance			See achment pearance			١	lo burr	No burr	No burr	No burr		OK	
Ins		Ins	spection andards"	n		No stains		No stains	No stains	No stains No stains			
3.Materia	al			PC				Color	Tra	nsparent		ОК	
	Testing	LED						5050				•	
_	FWHI	M		See light distribution curve									
4.Optica	Angle	9		104. 9°					$\overline{}$		OK		
I index	Effiend						X154. 2° 90%			$\overline{}$		OK	
	Facula		the signatu	nature sample						_		OIC	
Compre	ehensive	366 1	ine signatu	ie sample									
	ment							Q	ualified				
					PC	prod	uct size ch	nanges wit	h temperat	ture table			
Caliper 2 Height G Microsco Thick Ga Gauge E 2、 Amb the size o	Number: \ D-Quadra auge M-To pe P-Nee auge R-Ra	e on	Lengti change (mm	0.9		10	20	30 40	-■-Si -■-Si -■-Si -■-Si	ze: 5 ze: 1 ze: 1 ze: 2 ze: 2 ze: 3	00mm 50mm 00mm 50mm		
						•				(°C)			
Precautio										1 7 5			

Precautions:

- 1、Wear clean gloves during lens assembly to prevent contamination of the lens 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.

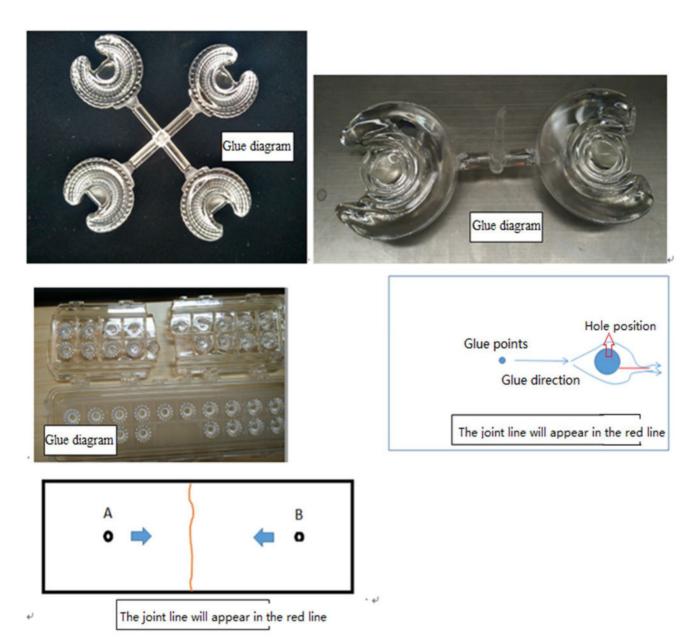


P	N	HK-50@07-96X155-5050)-#0-1g-6	Product Name	HK 6合1-TYPEIII_M	Street I	amp lens
Product	material	PC		Customer			
Package	diagram	Single Vacu	um package	Box	package	>	
Product	packing	24	A/box	4	Box/layer		
		14	Layer/the box	1344	A/the box		
	NO.	Material Code	Item name	Specification	Single box usage	Unit	Remarks
	1	2. 07. 0049	Blister box	23cm*21cm	56	PCS	
	2	2. 08. 0001	PE film	25cm*27cm	56	Block	
Packagin g Materials	3	2. 06. 0005	inside the	62mm*42mm	56	Piece	
ivialeriais	4	2. 06. 0005	inside the	62mm*70mm	1	Piece	
	4	2. 06. 0003	large clapboard	46cm*42cm	15	PCS	
	4	2. 06. 0011	large carton	48cm*44cm*37c	em 1	PCS	
Remarks	Scattere	d packaging is not restricted by	this specification shall p		as the requirements o	of the cu	ustomer



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:



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	hidrian standard	Inspection equipment	Defec		
restitems	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	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			√
	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.				

		1.0	I		
Raw edge	Not allowed to affect the size and assembly	Visual, point card		√	
Scratch	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		√	
Foreign things, impurities	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		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		v	
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	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	V		
	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 \leq 1 mm and no more than 1 area within a 50x50 mm area	Visual		V	



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Product Approval

Approval number:

Customer:

Product: HK 6合1-TYPEⅢ_M Street lamp lens

Material Code: 1.02.91827

PN: HK-50@07-96X155-5050-#0-1g-6

Synthetic information: 1.07.81402_HK-257@02-0221-S

Manufacturer: Chengdu HercuLux Photoelectric Technology Co.,Ltd



	Supplier co	onfirmation	Client confirmation			
Proposed		DATE	Qualified□			
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

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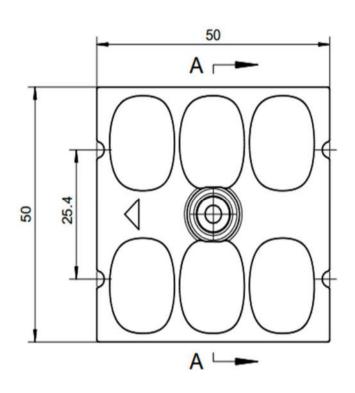


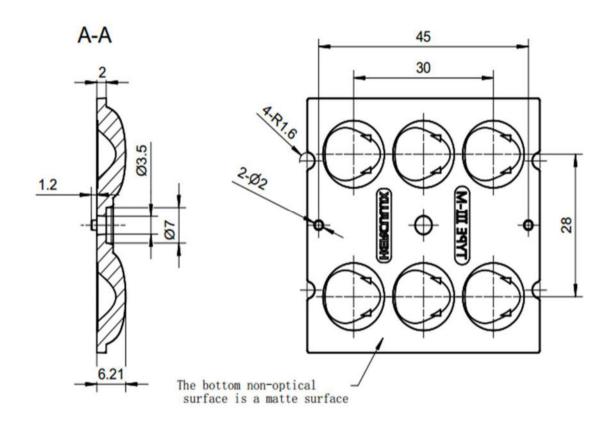
HERCULUX Product Approval

TEL: 0755-2937 1541 Date updated: 2021/8/21 FAX: 0755-2907 5140 www.hkoptics.com

Product Picture:	
PN:	HK-50@07-96X155-5050-#0-1g-6
Size(L*W*H/Φ*H):	L:50mm*W:50mm*H:07mm
Material:	PMMA
Effiency:	≥88%
Temperature(Topr):	Material limit temperature resistance: -40°C to +100°C Long-term use temperature: -40°C to +80°C
FWHM:	102°X155°





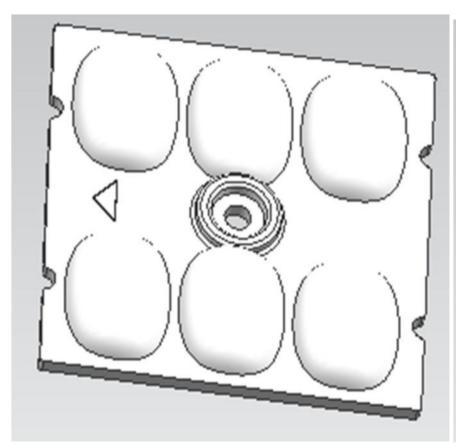


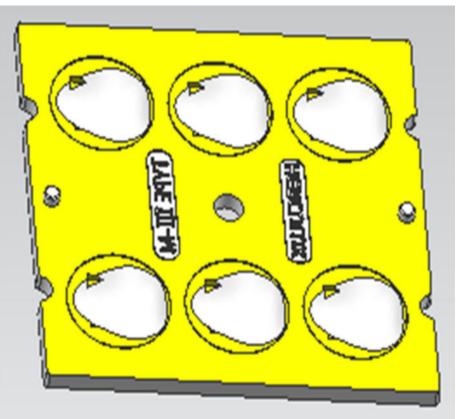
Technical Requirement:

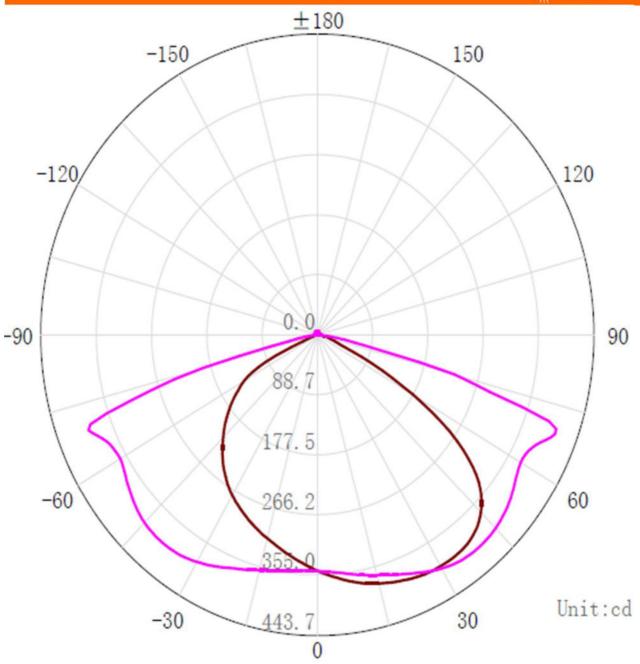
- 1. The surface don't have any defects of flash, shrink and bubble.
- 2. The uncharted fillet and pattern draft subject to the 3D drawing.
- 3. The uncharted dimensional tolerance subject to the 3D drawing.

ptical Design				HK-50@07-96X1	55-5050-#0-1g-6	1. 02. 91827
ructure Design			HK 6合1-TYPEIII_M Street lamp lens	Pages	Qty	Weight
Assess				2		
Authorized			Material:PMMA		CDHK	









C Plane [50%MaxAng.][10%MaxAng.]

-- C0. 0_180. 0 : 107. 4 134. 7 -- C90. 0_270. 0 : 150. 1 158. 8



			Standard size	Upper Size limit	Lov size		Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks	
	width	1	50	50. 1	49	. 7	49.99	49.92	49.93	49.84	OK		
	The thicknes	c of	2	2. 25	1.	95	2.01	2.06	2.07	2.13	ОК	Test	
	The aper		3.5	3. 65	3.	35	3.55	3.53	3.56	3.51	OK	environment:	
	Positi		1.2	1. 35	0.	85	1.01	1.01	0.98	1.08	ОК	In 20 ℃ -25 ℃	
1.Size	colum positi colum diamet	on n	2	2. 1	1.85		1.95	1.94	1.96	1.96	ОК	environment to achieve thermal equilibrium	
	positi colum spacir	on n	45	45. 2	44	. 8	45.01	45.02	45	45	ОК	after the test.	
	-			Gate she	ar car	not a	affect the a	ppearance	of the lamp)			
				See atta	chme	nt "Ap	pearance	Inspection	Standards"				
2.Appear	2.Appearance attachr Quality attachr "Appear		See achment	e E –		١	lo burr	No burr	No burr	No bu	rr	ОК	
Quality			spection andards"	on		N	o stains	No stains	No stains	No stains		OK .	
3.Materia	al			PMMA	4			Color	Tra	nsparent		OK	
	Testing I	LED						5050					
	FWHI	М		See light distribution curve									
4.Optica I index	Angle	e		107. 4° X150. 1°								OK	
Tilldex	Effiend	CV					91%			$\overline{}$		OK	
	Facula		the signatu	re sample									
Compre	ehensive												
-	ment							Q	ualified				
					MMA	\ pro	duct size	changes w	ith tempe	rature ta	ble		
	Number: V		nier ch	ength langes 0.8 (mm)	T					Size:			
	D-Quadra auge M-To			0.6	-				Ж	Size:			
	pe P-Nee			0.4				*		Size:			
	uge R-Ra	dius		0.4				X		→ Size:			
Gauge E	-Visual. ient tempe	eratur	e on	0.2	-					→ Size:			
the size of	of the prod	luct re		0				-		Size:	300m	ım	
to the tak	ole on the	right		U	0	1	.0 20	30	40				
								(℃)	ı				
In													

Precautions:

- 1、Wear clean gloves during lens assembly to prevent contamination of the lens 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.

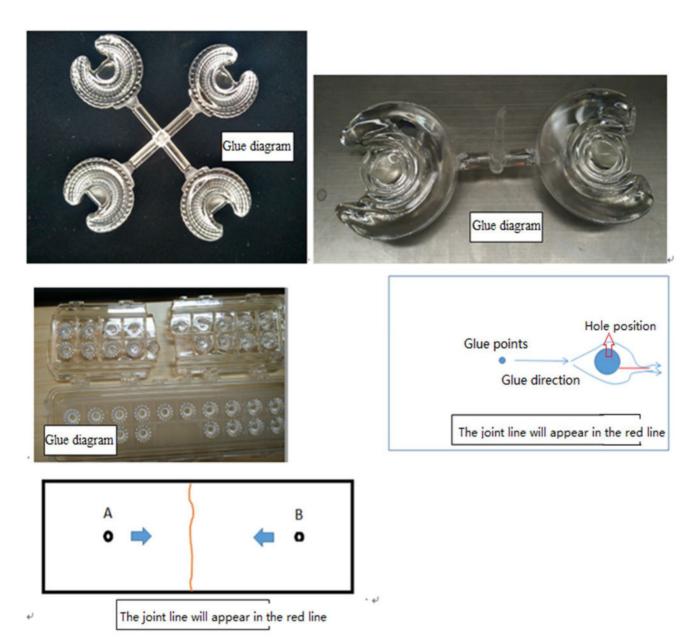


PN		HK-50@07-96X155-5050-#0-1g-6		Product Name	HK 6合1-TYPEIII_M Street lamp le		amp lens	
Product material		PMMA		Customer				
Package diagram		Single Vacuum package Box package						
Product packing		24	A/box	4	Box/layer			
		14	Layer/the box	1344	A/the box			
	NO.	Material Code	Item name	Specification	Single box usage	Unit	Remarks	
	1	2. 07. 0049	Blister box	23cm*21cm	56	PCS		
	2	2. 08. 0001	PE film	25cm*27cm	56	Block		
Packagin g Materials	3	2. 06. 0005	inside the	62mm*42mm	56	Piece		
	4	2. 06. 0005	inside the	62mm*70mm	1	Piece		
	4	2. 06. 0003	large clapboard	46cm*42cm	15	PCS		
	4	2. 06. 0011	large carton	48cm*44cm*37c	m 1	PCS		
Remarks	Scattered packaging is not restricted by this specification, the customer has the requirements of the customer 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:



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	Judging standard	Inspection equipment	Defect level		
restitems		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	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			√
	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.				

		1.0			
Raw edge	Not allowed to affect the size and assembly	Visual, point card		√	
Scratch	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		√	
Foreign things, impurities	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		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		V	
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	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	√		
	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 \leq 1 mm and no more than 1 area within a 50x50 mm area	Visual		V	