

# Chengdu HercuLux Photoelectric Technology Co.,Ltd **Product Approval**

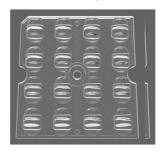
# Approval number:

# Customer:

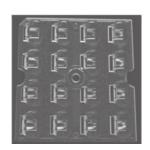
PN	Code	Product
HK-50@05-140X70-3030-#0-1g-16_PC	1. 02. 81524_PC	HK 16in1-TYPE1 Road lam Lens
HK-50@05-70X150-3030-#0-1g-16_PC	1. 02. 81599_PC	HK 16in1-TYPE2 Road lam Lens
HK-50@04-150X80-3030-#0-1g-16_PC	1. 02. 81542_PC	HK 16in1-TYPE3 Road lam Lens
HK-50@04-50X140-3030-#0-1g-16_PC	1. 02. 81598_PC	HK 16in1-TYPE4 Road lam Lens
HK-50@04-140X140-3030-#0-1g-16_PC	1. 02. 81525_PC	HK 16in1-TYPE5 Road lam Lens

Manufacturer: Chengdu HercuLux Photoelectric Technology Co.,Ltd





81599



81524

81542



81598

81525

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

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

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

Phone: 028-85887727 (801) 028-85887990 (801) Fax: 028-8588730 http://www.herculux.cn/Sales Dept: Shenzhen Nanshan District Nanshan Cloud Valley Innovation Industrial Park Comprehensive Service Building, 501-505

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

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

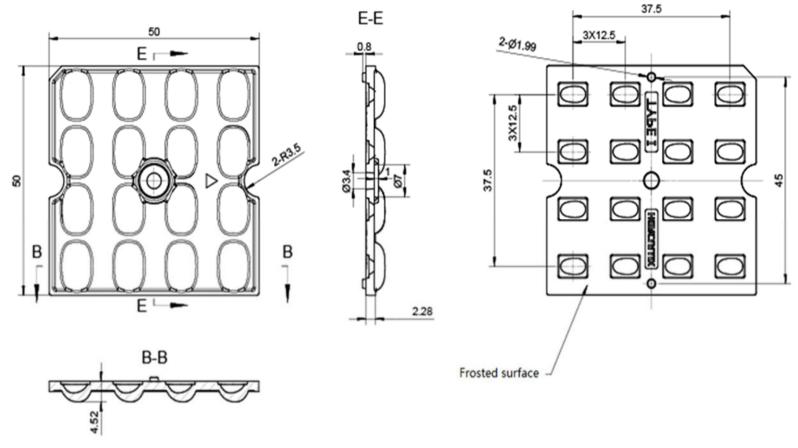


# HERCULUX Basic product information

TEL: 0755-2937 1541 FAX: 0755-2907 5140 Date updated: 2022/11/7 http://www.herculux.cn/

Product Picture:	
PN:	HK-50@XX-XX-3030-#0-1g-16_PC
Size(L*W*H/Φ*H):	L:50mm; W:50mm; H:XXmm
Material:	PC
Effiency:	\
Temperature(Topr):	Material extreme temperature resistance: -40℃ to +120℃ long-term use temperature: -40℃ to +100℃
FWHM:	140X70/140X140/150X80/50X140/70X150
Matched LES:	3030



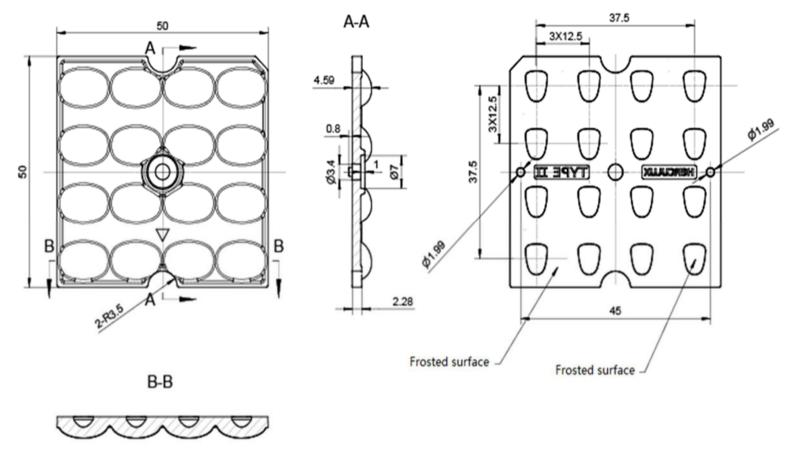


- 1. The 3D map is not indicated for rounded corners and draft angle.
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.

Ор	tical	design					HK-5	0@05-1	L40X70-3030-#	0-1g-1	6_PC
itru	cture	e desig			HK 16in1-T\	PE1 Road lam Lens		, ,	1.02.81524_PC		
	Revi	iew					umber o	f drawin	qty	we	ight
٧	Validation		Material: PC CDHK								

										<u> </u>
MT5	Basic size	<3	3~10	24~65	65~140	140~250	250~	450	>450	450
Tolerance table (mm)	olerance valu	±0.1	±0.15	±0.35	±0.50	±0.80	±1.2	2	±2.0	2.0



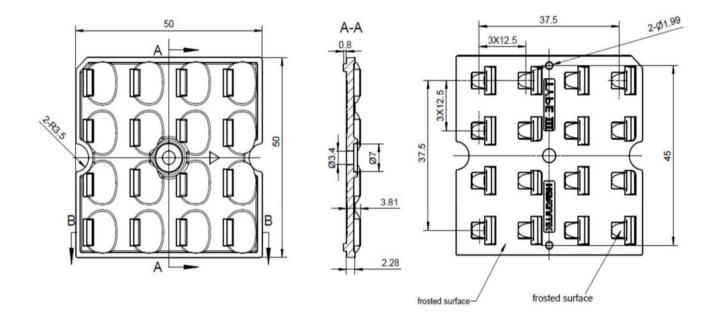


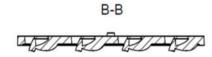
- 1. The 3D map is not indicated for rounded corners and draft angle.
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.

Optical design							HK-5	0@05-7	'0X150-3030-#	0-1g-1	6_PC
tructure desig					HK 16in1-TY	PE2 Road lam Lens		1	02.81599_PC		
Review	Review						umber o	f drawin	qty	we	ight
Validation			Material:	PC	CDHK						

										<u> </u>
MT5	Basic size	<3	3~10	24~65	65~140	140~250	250~	450	>450	450
Tolerance table (mm)	olerance valu	±0.1	±0.15	±0.35	±0.50	±0.80	±1.2	2	±2.0	2.0





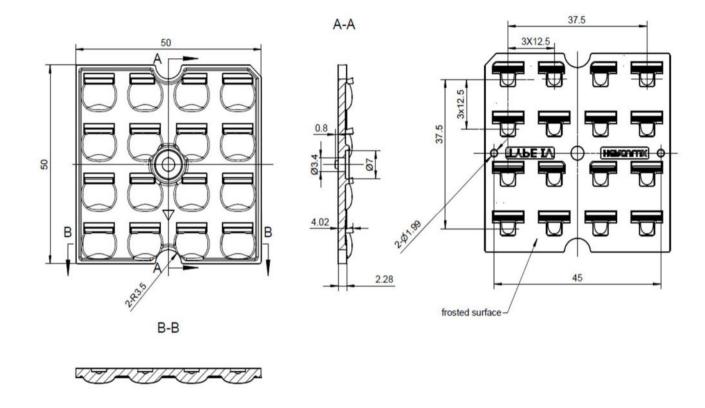


- 1. The 3D map is not indicated for rounded corners and draft angle.
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.

	design						HK-5	50@04-1	150X80-3030-#	0-1g-16	6_PC
tructure	e desig				HK 16in1-T\	PE3 Road lam Lens		1	1.02.81542_PC		
Review						umber o	f drawin	qty	we	ight	
Validation				Material:	PC			CDHK			

MT5 Tolerance	Basic size	<3	3~10	24~65	65~140	140~250	250~450	>450
	olerance valu	±0.1	±0.15	±0.35	±0.50	±0.80	±1.2	±2.0



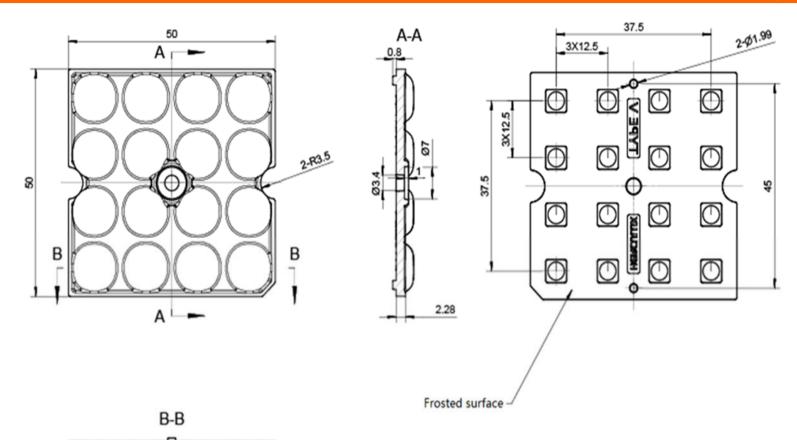


- 1. The 3D map is not indicated for rounded corners and draft angle.
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.

Optical design	ı						HK-5	0@04-	50X140-3030-#	0-1g-16	6_PC
tructure desig	9				HK 16in1-T\	PE4 Road lam Lens		:	1.02.81598_PC		
Review						umber o	f drawin	qty	we	ight	
Validation			Material:	PC			CDHK				
250 250	-						-				

MT5	Basic size	<3	3∼10	24~65	65~140	140~250	250~45		450
Tolerance table (mm)	olerance valu	±0.1	±0.15	±0.35	±0.50	±0.80	±1.2	±2	2.0

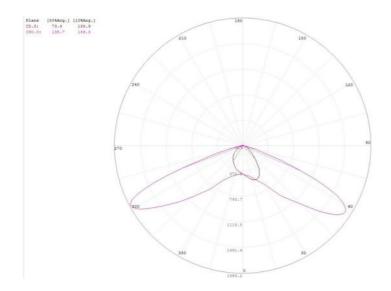


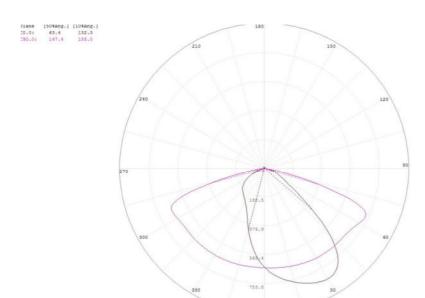


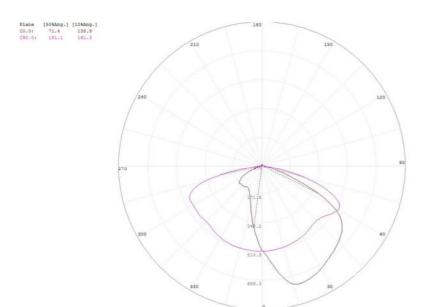
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- 3, The surface has no flash, shrinkage, bubbles and other defects.

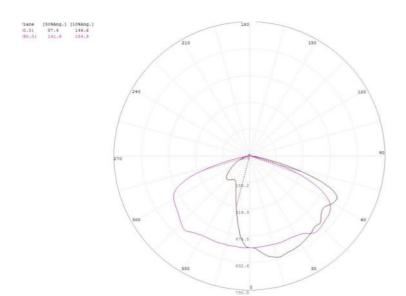
Optical design				HK-50	0@04-1	40X140-3030-#	‡0-1g-1	.6_PC
tructure desig		HK 16in1-T	YPE5 Road lam Lens		1	02.81525_PC		
Review				umber of	fdrawin	qty	we	ight
Validation		Material:	PC			CDHK		

MT5	Basic size	ν,	3∼10	24~65	65~140	140~250	250~	~450	>450		
Tolerance	Dasic size	\3	3 10	24 03	65 <sup>~</sup> 140	140 230	230	430	× 430		
	aloranco valu	±0.1	±0.15	±0.35	±0.50	±0.80	±1	2	±2.0		
table (mm)	derance valu	±0.1	10.15	±0.55	±0.50	±0.60	1 11	.2	±2.0		

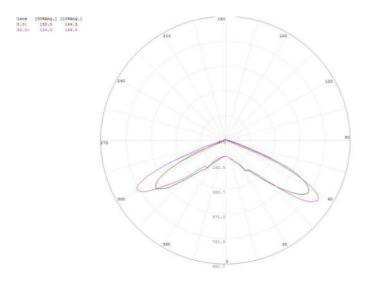








3030





			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	lengt	h	50			50. 17	50. 2	50. 18	50. 23		
	widtl		50			50. 18	50. 23	50. 17	50. 22		Test environment: In 20 ℃ -25 ℃
1.Size	Locati colum spacir	n	45			45	44. 98	45. 02	45		environment to achieve thermal equilibrium after the
	Locati post	_	1.99			1.98	1. 97	1.98	1.98		test.
	thickne	ess	2. 28			2. 47	2. 48	2. 46	2.48		
							ne appearar				
				See	attachmen	i "Appearar	ice Inspecti	on Standar	ds"		
2.Appear	ance		See achment bearance	E	1	No burr	No burr	No burr	No bu	ırr	OK
Quality		Ins	spection indards"	_	N	o stains	No stains	No stains	No sta	ins	
3.Materia	al			PC	•		Color	Tra	nsparent		ОК
	Testing I	_ED					3030				
4.Optica	to the so	ource actual	of the test,	if it is requ	ired to be o	out of range ent, the lens	. According	to the heat fully tested	t dissipatio	n capa	ald be comparable ability of the lamp event the lens life.
I index	angle	,									
	K-val					$\overline{}$			$\overline{}$		
	Efficie					90.00%			$\overline{}$	Non	luminaire test
	Facula		he signatu	re sample		,					
	ehensive ment					<u> </u>	Qı	ualified			
Caliper 2 Height Good Microsco Thick Ga Gauge Eo Company Compa	Number: V D-Quadra auge M-To pe P-Need uge R-Ra	tic H- col dle T- dius erature uct re	e on	_	h 0.9 es 0.8	product size	ze changes	s with tem	perature	Siz	ze: 50mm ze: 100mm ze: 150mm ze: 200mm ze: 250mm ze: 300mm

- 1、Wear clean gloves during lens assembly to prevent contamination of the lens surface.
- 2. Take the lens try to avoid touching the total reflection surface.
  3. When the lens surface contamination, you can only gently wipe with soft cotton sticky neat neutral solvent, not allowed to wipe with industrial solvents.
- 4. The working temperature of the lens should be within the temperature limit of the lens material. Exceeding the temperature limit will cause damage to the lens and affect the service life of the lens.



			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	lengt	h	50			49. 9	49. 92	49. 9	49. 94		
	widtl		50			49. 94	49. 9	49. 9	49. 92		Test environment: In 20 °C -25 °C
1.Size	Locati colum	n	45			44.9	44. 92	44. 9	44. 92		environment to achieve thermal equilibrium after the
	Locati post	U	1.99			1.9	1.94	1.92	1.9		test.
	thickne	ess	2. 28			2. 33	2. 35	2. 34	2. 34		
						not affect th					
				See	attachmen	t "Appearan	ice inspecti	on Standar	as"		
2.Appear	ance		See achment pearance	E		No burr	No burr	No burr	No bu	rr	OK
Quality		Ins	spection andards"	_	N	lo stains	No stains	No stains	No stai	ns	
3.Materia	ıl			PC	<u> </u>		Color	Tra	nsparent		ОК
	Testing I	_ED					3030				
	to the so	ource actua	of the test,	if it is requ	ired to be o	out of range ent, the lens	. According should be	to the heat fully tested	t dissipatio	n capa	ald be comparable ability of the lamp event the lens life.
4.Optica Lindex	FWH					See IIQ	ght distribut	ion curve			
	angle								$\overline{}$		
	K-val					90.00%			$\overline{}$	N	1
	Efficie Facula		the signatu	re sample		90.00%				Non	luminaire test
	ehensive ment	000	ine signatu	ic sample			Qı	ualified			
Caliper 2 Height Gamicrosco Thick Ga Gauge Each 2 Ambithe size of	Number: V D-Quadra auge M-To pe P-Neeo uge R-Ra	tic H- pol dle T- dius erature luct re	e on	Length change (mm)	0.9	roduct size	e changes	with temp	40	Size: Size: Size: Size:	50mm 100mm 150mm 200mm 250mm 300mm
Precautic									(℃)		

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			Standard size	Upper Size limit	Lower size limit	Test result		Test result2	Test result3	Test result4	Jud gme nt	Remarks
	lengt	h	50			49. 93	3	49. 91	49. 92	49.9		
	widtl		50			49. 92	2	49.9	49. 93	49. 9		Test environment: In 20 ℃ -25 ℃
1.Size	Locati colum spacir	n	45			49. 96	5	49.94	49. 93	49.96		environment to achieve thermal equilibrium after the
	Locati: post	ng	1.99			1. 93		1.94	1.94	1.92		test.
	thickne	ess	2. 28			2. 33		2. 35	2. 28	2. 35		
				Gate shear can not affect the appearance of the lamp  See attachment "Appearance Inspection Standards"								
				See	attachmen	i "Appea	ranc	e inspecti	on Standard	us"		
2.Appear	ance	atta	See schment searance	E	1	No burr		No burr	No burr	No bu	ırr	OK
Quality		Ins	pection ndards"	_	N	lo stains		No stains	No stains	No sta	ins	OK .
3.Materia	aterial			PC				Color	Tra	nsparent		OK
	Testing I	.ED						3030				
	to the so	ource o	of the test,	if it is requ	ired to be o	out of ran	ıge.	According	to the heat	t dissipatio	n capa	ald be comparable ability of the lamp event the lens life.
4.Optica	FWH	И				See	e ligl	ht distribut	ion curve	_		
I index	angle	9										
	K-val	ue										
	Efficie	ncy				89.009	%				Non	luminaire test
	Facula	See th	he signatu	re sample		,						
Compre judgi								Qι	ıalified			
	: Number: V D-Quadra		ier	Length change (mm	0.9 s 0.8 0.7	roduct	size	changes	with temp	perature	<b>◆</b> Size	e: 50mm e: 100mm
Height Ga	ht Cours M Tool							e: 150mm				
	nne P-Needle I-   I				0.3					<u> </u>	_	e: 200mm
Gauge E		uius			0.3					<u>-</u>		e: 250mm
2、Ambi	ient tempe				0.2							e: 300mm
	of the prod		fer		0.1			-				
to the tab	le on the r	ignt			0	10		20	30	40		
										(℃)		

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			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	lengt	h	50			49.96	49. 93	49. 94	49. 96		
	widtl		50			49. 96	49. 94	49. 96	49. 95		Test environment: In 20 ℃ -25 ℃
1.Size	Locati colum	n	45			44. 96	44. 98	44. 95	44. 97		environment to achieve thermal equilibrium after the
	Locati post	0	1.99			1.91	1.9	1.92	1.9		test.
	thickne	ess	2. 28			2. 28	2. 32	2. 3	2.33		
						not affect th					
				See	attachmen	t "Appearan	ice inspecti	on Standar	as"		
2.Appear	ance		See achment pearance	E		No burr	No burr	No burr	No bu	rr	OK
Quality		Inspection		No stains							
3.Materia	ıl			PC	L.		Color	Tra	nsparent		ОК
	Testing I	_ED					3030	I.			
	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	uld be comparable ability of the lamp event the lens life.
4.Optica	FWH	M				See liç	ght distribut	ion curve			
I index	angle	9									
	K-val	ue									
	Efficie	ncy				89.00%				Non	luminaire test
	Facula	See t	the signatu	re sample		`					
	hensive ment					-	Qı	ualified			
				Length	<del>-</del>	roduct size	changes v	with temp	erature t	able	
Remarks	: Number: V	/ \/orr	vior	change					<b>→</b>	-Size	: 50mm
	vumber: v D-Quadra			(mm)	0.7				* -		: 100mm
	auge M-To				0.5					Size	: 150mm
	pe P-Need uge R-Ra				0.4				<b>→</b>	Size	: 200mm
Gauge E	-Visual.				0.3				<del>-</del>	Size	: 250mm
	ient tempe of the prod				0.1			-	<b>→ →</b>	-Size	: 300mm
	le on the				0 📂	10	20	30	40		
					U	10	20	30	(℃)		
									(0)		
Precautio	ne.										

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			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	lengt	h	50			50.06	50.04	50. 11	50. 1		
	widt		50			50.06	50.05	50.08	50.08		Test environment: In 20 °C -25 °C
1.Size	Locati colum	n	45			45	44. 98	44. 97	45. 01		environment to achieve thermal equilibrium after the
	Locati post	ng	1.99			1.95	1.95	1.96	1.95		test.
	thickne	ess	2. 28			2. 47	2. 48	2. 44	2. 43		
					Gate shear can not affect the appearance of the lamp						
				See	attachmen	t "Appearan	ice Inspecti	on Standar	ds"		
2.Appear	rance		See achment pearance	E	!	No burr	No burr	No burr	No bu	rr	OK
Quality		Ins	spection andards"		N	lo stains	No stains	No stains	No stai	ins	
3.Materia	al			PC	•		Color	Tra	insparent		OK
	Testing I	_ED					3030				
	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	uld be comparable ability of the lamp event the lens life.
4.Optica	FWHI	M				See lig	ght distributi	ion curve			
I index	angle	9									
	K-val	ue									
	Efficie	ncy				90.00%				Non	luminaire test
	Facula	See t	the signatu	re sample		`					
	ehensive ment						Qı	ıalified			
Caliper 2 Height Gamicrosco Thick Ga Gauge Each 2 Ambithe size of	Number: V D-Quadra auge M-To pe P-Need uge R-Ra	tic H- col dle T- dius erature uct re	e on	Length change (mm)	0.9 s 0.8	roduct size	e changes v	with temp		Size: Size: Size: Size:	: 50mm : 100mm : 150mm : 200mm : 250mm : 300mm

- 1、Wear clean gloves during lens assembly to prevent contamination of the lens surface.
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PI	N	HK-50@05-140X70-3030-#0	-1g-16_PC	Product Name	HK 16in1-TYPE1	Road la	m Lens		
Product	material	PC		Customer					
Package	diagram	Single Vacuum package Box package							
Product	packing	24	A/ Box	4	Box/Layer				
		15	Layer/Box	1440	A/ Carton				
	NO.	Part No	Part name	Size	Dosage	Unit	Remarks		
	1	2.07.0042	Blister box	23cm*21cm	60	BAG			
Deeleerin	2	2.08.0001	PE film	30cm*30cm	60	PCS			
Packagin g	3	2.06.0005	Reel label paper	6.2cm*8cm	60	PCS			
Materials	4	2.06.0005	Box label paper	6.2cm*9.2cm	1	PCS			
	5	2.06.0003	big plate	46.8cm*42.8cn	n 16	PCS			
	6	2.06.0015	big flat carton	48cm*44cm*19c	cm 1	PCS			
Remarks		The loose packing is not subjec	ct to this specif	ication. Customer'	s requirements shall	prevail			



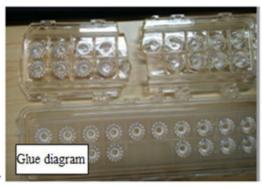
# Special notice

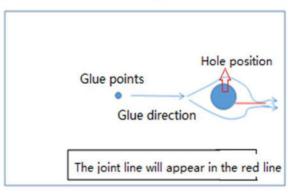
When gule pass through holes, columns and other structures, or part of the thin structure, will form a weld line. The product which uses multi-point injection welding line will appear because of the combination of sol, as shown below:

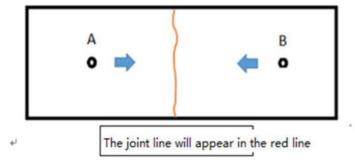
# Syntneti











# 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	Unit	Code	Code	Unit
	description			description	
N	Amount/pcs	pcs	D	Diameter	mm
L	Length	mm	Ħ	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	Defect level		
reschems	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			√

1		1	Ī	1	
	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		<b>√</b>	
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		<b>√</b>	
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				<b>√</b>
Deformation	Insufficient filling shall not affect the appearance of the assembly and the exposed surfaces.	Visual, feeler			<b>√</b>
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		<b>√</b>	
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	<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		٧	

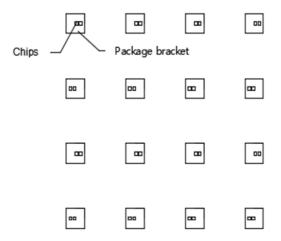
Bubble	No bubbles are allowed	Visual		√	
Foreign objects, black spots, white spots	Not obvious or D ≤ 0.3mm black spots and foreign bodies in the area of 100x100mm not more than 1; Exceeded foreign matter black spots is judged bad.	Visual, point card	V		
Damaged	No damage is allowed	Visual			√
Cold glue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



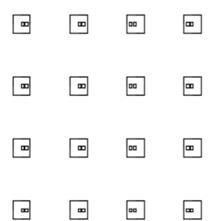
Description on the arrangement of light source suitable for SMD 3030 light source and body lens:

The chip position of most SMD 3030 light source packages in the market is not in the middle position. When fitting the body lens, it will affect the light distribution of the lens and cause the optical shape to shift. Therefore, when the light source plate is designed and arranged, the eccentric direction of the chip is arranged symmetrically, which can effectively reduce its influence on the light distribution. Sample layout proposal:

Example 1: as shown in the figure below, 16 chips in rows 1 and 3 are eccentric to the right, while those in rows 2 and 4 are eccentric to the left.



Example 2: as shown in the figure below, 16 chips in the first and second columns are eccentric to the right, while those in the third and fourth columns are eccentric to the left.





# **IES**—— Actual measurement plus glass

# Approval number:

# Customer:

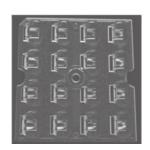
PN	Code	Product
HK-50@05-140X70-3030-#0-1g-16_PMMA	1.02.81524_PMMA	HK 16in1-TYPE1 Road lam Lens
HK-50@05-70X150-3030-#0-1g-16_PMMA	1.02.81599_PMMA	HK 16in1-TYPE2 Road lam Lens
HK-50@04-150X80-3030-#0-1g-16_PMMA	1.02.81542_PMMA	HK 16in1-TYPE3 Road lam Lens
HK-50@04-50X140-3030-#0-1g-16_PMMA	1.02.81598_PMMA	HK 16in1-TYPE4 Road lam Lens
HK-50@04-140X140-3030-#0-1g-16_PMMA	1.02.81525_PMMA	HK 16in1-TYPE5 Road lam Lens

Manufacturer: Chengdu HercuLux Photoelectric Technology Co.,Ltd





81599



81524

81542



81598

81525

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

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

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

Phone: 028-85887727 (801) 028-85887990 (801) Fax: 028-8588730 http://www.herculux.cn/ Sales Dept: Shenzhen Nanshan District Nanshan Cloud Valley Innovation Industrial Park Comprehensive Service Building, 501-505

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

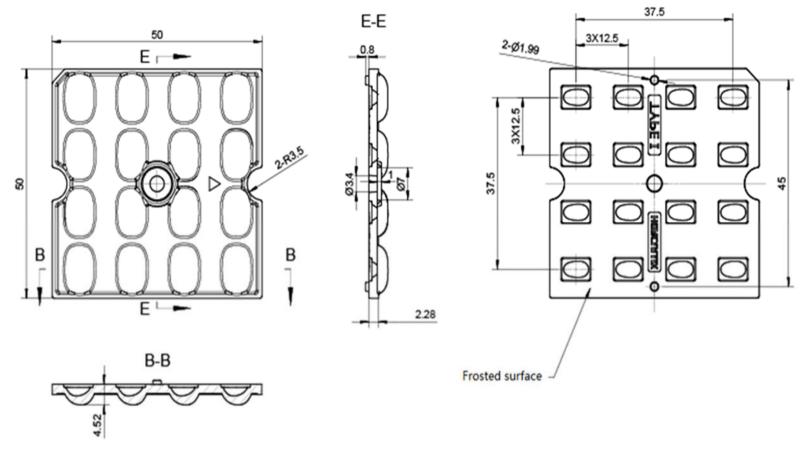
\*Approval In duplicate, for both supplier and customer.



TEL: 0755-2937 1541 FAX: 0755-2907 5140 http://www.herculux.cn/ Date updated: 2022/7/7

Product Picture:	
PN:	HK-50@XX-XX-3030-#0-1g-16_PC
Size(L*W*H/Φ*H):	L:50mm; W:50mm; H:XXmm
Material:	PMMA
Effiency:	\
Temperature(Topr):	Material extreme temperature resistance: -40°C to +100°C long-term use temperature: -40°C to +80°C
FWHM:	140X70/140X140/150X80/50X140/70X150
Matched LES:	3030



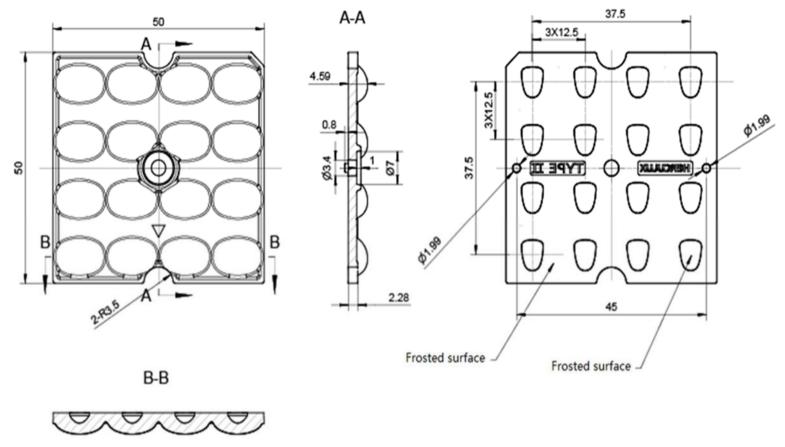


- 1. The 3D map is not indicated for rounded corners and draft angle.
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.

Optical design	า				HK-50	@05-140	0X70-3030-#0	-1g-16_	PMMA
tructure desi	g		HK 16in1-T\	/PE1 Road lam Lens		1.0	)2.81524_PMN	ΛA	
Review					umber o	f drawin	qty	we	ight
Validation			Material:	PMMA			CDHK		

MT5	Pacic cizo	<b>/</b> 2	3∼10	24~65	65~140	140~250	250~4	50 >	450	
Tolerance	Basic size	<b>\</b> 3	2, 10	24 503	$65^{\sim}140$	140, 3250	250 4	50   <i>-</i>	450	
			. 0 . 1 =							7
table (mm)	olerance valu	±0.1	±0.15	±0.35	±0.50	±0.80	±1.2	1 1	2.0	



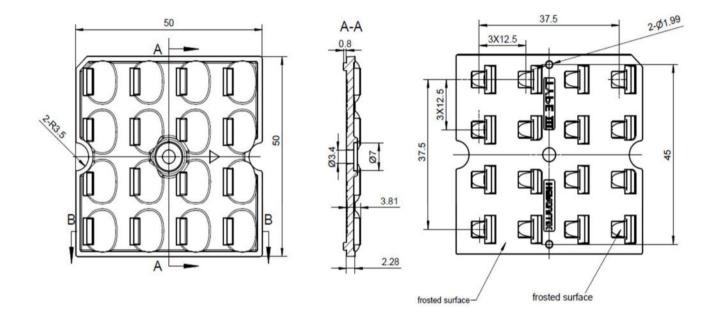


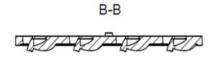
- 1. The 3D map is not indicated for rounded corners and draft angle.
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.

Optical design				HK-50	@05-70X	150-3030-#0	-1g-16_	PMMA
tructure desig		HK 16in1-TY	PE2 Road lam Lens		1.02	2.81599_PMN	ИΑ	
Review				umber o	f drawin	qty	we	ight
Validation		Material:	PMMA			CDHK	-	

MT5	Basic size	<3	3∼10	24~65	65~140	140~250	250~450	>450
Tolerance								
		10.4	10.45	10.25	10.50	10.00	14.2	120
table (mm)	olerance valu	±0.1	±0.15	±0.35	±0.50	±0.80	±1.2	±2.0





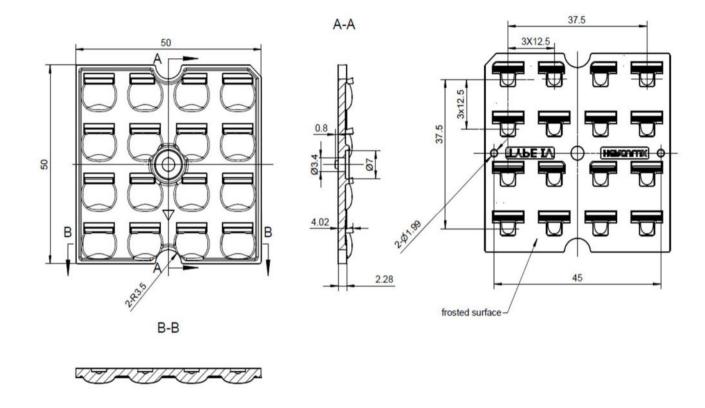


- 1. The 3D map is not indicated for rounded corners and draft angle.
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.

tructure desig HK 16in1-TYPE3 Road lam Lens 1.02.81542_  Review 1.02.81542_		ical design				HK-50(	@04-150	0X80-3030-#0-	1g-16_	PMMA
Review umber of drawin qty	truct	ture desig		HK 16in1-T	YPE3 Road lam Lens		1.0	2.81542_PMN	ΛA	
	R	Review				umber o	f drawin	qty	we	ight
Validation Material: PMMA CDHK	Val	alidation		Material:	PMMA			CDHK		

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



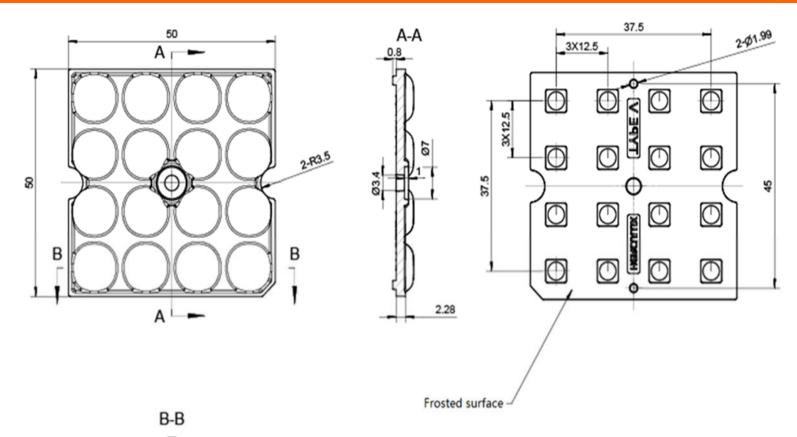


- 1. The 3D map is not indicated for rounded corners and draft angle.
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.

	T			ı		1				-
Optical de	esign					HK-50	@04-50	X140-3030-#0-	·1g-16_	PMMA
tructure o	desig			HK 16in1-T\	PE4 Road lam Lens		1.0	02.81598_PMN	ЛΑ	
Reviev	w					umber o	f drawin	qty	we	ight
Validati	ion			Material:	PMMA			CDHK		
250	250. 450	_	450							

MT5 Tolerance	Basic size	<3	3~10	24~65	65~140	140~250	250~450	>450
	olerance valu	±0.1	±0.15	±0.35	±0.50	±0.80	±1.2	±2.0

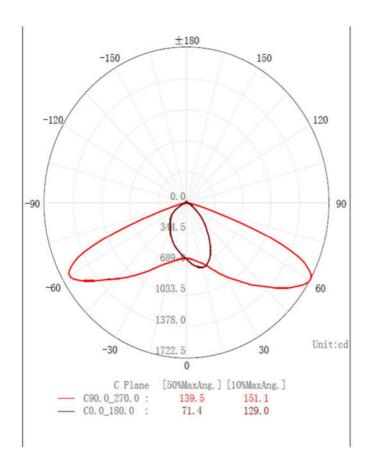


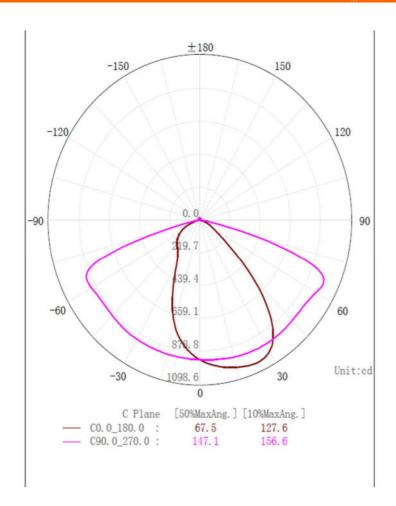


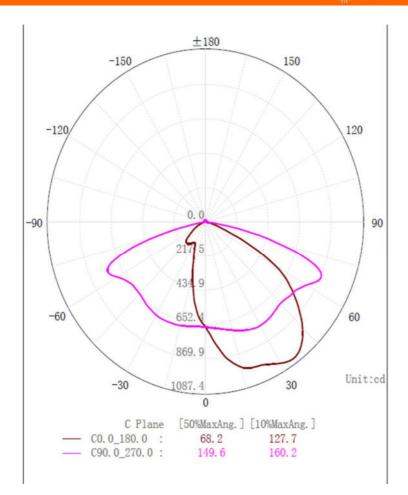
- 1. The 3D map is not indicated for rounded corners and draft angle.
- 2. The dimensional tolerances are not specified according to GB/T 14486 2008 MT5.
- 3, The surface has no flash, shrinkage, bubbles and other defects.

Optical design				HK	(-50@0 <sup>2</sup>	1-140X140-30 16 PMMA	30-#0-1	Lg-
tructure desig		HK 16in1-T\	PE5 Road lam Lens		1.0	2.81525_PMN	MΑ	
Review				umber of	drawin	qty	we	ight
Validation		Material:	PMMA		-	CDHK		

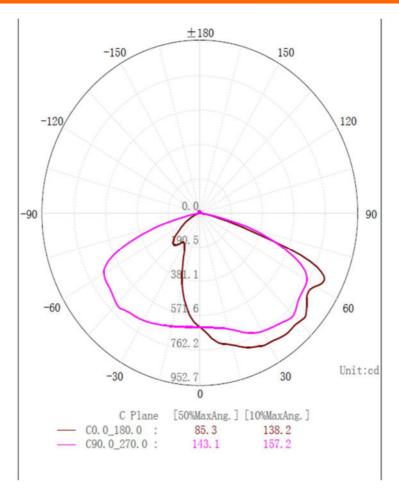
MT5	Basic size	ν,	3∼10	24~65	65~140	140~250	250~	~450	>450		
Tolerance	Dasic size	\3	3 10	24 03	65 <sup>~</sup> 140	140 230	230	430	× 430		
	aloranco valu	±0.1	±0.15	±0.35	±0.50	±0.80	±1	2	±2.0		
table (mm)	derance valu	±0.1	10.15	±0.55	±0.50	±0.60	1 11	.2	±2.0		



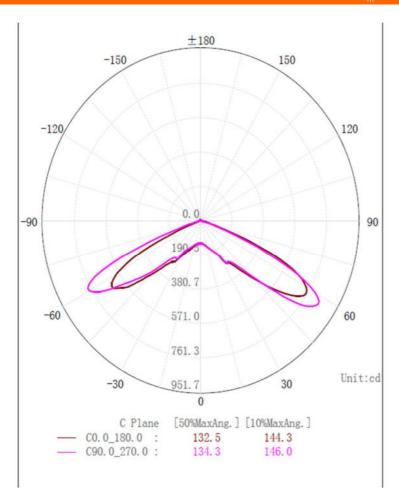








3030





			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks	
	lengt	h	50			50. 17	50. 2	50. 18	50. 23			
		width				50. 18	50. 23	50. 17	50. 22		Test environment: In 20 °C -25 °C	
1.Size	colum	Locating column spacing				45	44. 98	45. 02	45		environment to achieve thermal equilibrium after the	
		Locating post				1.98	1. 97	1.98	1. 98		test.	
	thickn		2.28			2. 47	2. 48	2.46	2. 48			
				Gate	shear can r	not affect th	e appearar	nce of the la	amp			
				See	attachment	"Appearan	ce Inspecti	on Standar	ds"			
2.Appear	rance		See achment pearance	E	N	No burr	No burr	No burr	No bu	rr	OK	
Quality		Ins	spection andards"	_	N	o stains	No stains	No stains	No stai	ns	OK	
3.Materia	al			PMM	A		Color	Tra	nsparent		OK	
	Testing	LED		3030								
4.Optica	to the so	ource actua	of the test,	I size and power rating of the LED light source recommended for this lens should be test, if it is required to be out of range. According to the heat dissipation capability additions of the use environment, the lens should be fully tested and tested to prevent to See light distribution curve						ability of the lamp		
I index	angle											
	K-val	ue										
	Efficie	ency										
	Facula	See t	the signatu	ignature sample								
	ehensive ment			Qualified								
Remarks:  1. Tool Number: V-Vernier Caliper 2D-Quadratic H- Height Gauge M-Tool Microscope P-Needle T- Thick Gauge R-Radius Gauge E-Visual.  2. Ambient temperature on the size of the product refer to the table on the right				Length changes (mm)		A product	size chang	res with te		Size Size Size Size Size Size Size	:: 50mm :: 100mm :: 150mm :: 200mm :: 250mm :: 300mm	
Precaution	ons:											

- 1、Wear clean gloves during lens assembly to prevent contamination of the lens surface.
- 2. Take the lens try to avoid touching the total reflection surface.
- 3. When the lens surface contamination, you can only gently wipe with soft cotton sticky neat neutral solvent, not allowed to wipe with industrial solvents.4. The working temperature of the lens should be within the temperature limit of the lens material. Exceeding the temperature
- 4. The working temperature of the lens should be within the temperature limit of the lens material. Exceeding the temperature limit will cause damage to the lens and affect the service life of the lens.



			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks	
	lengt	h	50			49. 9	49. 92	49. 9	49. 94			
	widt]		50			49. 94	49. 9	49. 9	49. 92		Test environment: In 20 °C -25 °C	
1.Size	colum	n	45			44. 9	44. 92	44. 9	44. 92		environment to achieve thermal equilibrium after the	
	Locati post	-	1. 99			1.9	1.94	1.92	1.9		test.	
	thickn		2. 28			2. 33	2. 35	2. 34	2. 34			
				Gate	shear can r	not affect th	e appearar	nce of the la	amp			
				See	attachment	"Appearan	ce Inspecti	on Standar	ds"			
2.Appear	rance		See achment pearance	Ш	N	lo burr	No burr	No burr	No bu	rr	OK	
Quality		Ins	spection andards"	_	N	o stains	No stains	No stains	No stai	ns		
3.Materia	al			PMMA			Color	Tra	nsparent		ОК	
	Testing I	LED		3030								
4 Ontino	to the so	ource actual	of the test,	if it is requ	ired to be o	ut of range nt, the lens	. According	to the heat fully tested	t dissipatio	n capa	uld be comparable ability of the lamp event the lens life.	
4.Optica I index							The distribution					
	angle					$\overline{}$			$\overline{}$			
		value				$\overline{}$			$\overline{}$			
	Efficie											
	Facula	See t	the signatu	signature sample `								
	ehensive ment						Qı	ıalified				
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						product siz	e changes	30	* ***	Size: Size: Size: Size: Size:	50mm 100mm 150mm 200mm 250mm 300mm	
Precautio	nns.		1									

- 1、Wear clean gloves during lens assembly to prevent contamination of the lens surface.
- 2. Take the lens try to avoid touching the total reflection surface.
- 3. When the lens surface contamination, you can only gently wipe with soft cotton sticky neat neutral solvent, not allowed to
- wipe with industrial solvents.

  4. The working temperature of the lens should be within the temperature limit of the lens material. Exceeding the temperature limit will cause damage to the lens and affect the service life of the lens.



			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	1engt	h	50			49. 93	49. 91	49. 92	49. 9		
		width				49. 92	49.9	49. 93	49.9		Test environment: In 20 °C -25 °C
1.Size	Locati colum	n	45			49. 96	49. 94	49. 93	49. 96		environment to achieve thermal equilibrium after the
	Locati post	-	1. 99			1.93	1.94	1.94	1.92		test.
	thickne		2. 28			2. 33	2.35	2. 28	2.35		
				Gate	shear can ı	not affect th	e appearar	nce of the la	amp		
				See	attachment	"Appearan	ce Inspecti	on Standar	ds"		
2.Appear	rance		See achment pearance	E	1	lo burr	No burr	No burr	No bu	rr	OK
Quality		Ins	spection andards"	_	N	o stains	No stains	No stains	No stai	ns	
3.Materia	al			PMM	4		Color	Tra	nsparent		ОК
	Testing	LED		3030							
4 Ontion	to the so	ource actua	of the test,	if it is requ	ired to be c	ut of range nt, the lens	. According	to the heat fully tested	t dissipatio	n capa	ald be comparable ability of the lamp event the lens life.
4.Optica I index	-	angle									
	_					$\overline{}$				_	
	K-val					$\overline{}$			$\overline{}$	_	
	Efficie										
	Facula	See	the signature sample `								
	ehensive Iment		•				Qı	ıalified			
Damada				Length	PMMA	oproduct s	size chang	es with te	mperatur	e tab	ole
Remarks	ն։ Number։ ∖	/-Verr	nier	changes	0.8				<b>→</b>	-Size	: 50mm
Caliper 2	2D-Quadra	tic H-		(mm)	0.7						: 100mm
	auge M-T				0.6			N			: 150mm
	Microscope P-Needle T- Thick Gauge R-Radius				0.4			*			: 200mm
Gauge E-Visual.					0.3		*				: 250mm
2. Ambient temperature on				0.2						: 300mm	
	the size of the product refer to the table on the right				0.1	10	20	30	40 (℃)	3126	: 30011111
Precaution	ons:										

- 1、Wear clean gloves during lens assembly to prevent contamination of the lens surface.
- 2. Take the lens try to avoid touching the total reflection surface.
- 3. When the lens surface contamination, you can only gently wipe with soft cotton sticky neat neutral solvent, not allowed to wipe with industrial solvents.4. The working temperature of the lens should be within the temperature limit of the lens material. Exceeding the temperature
- 4. The working temperature of the lens should be within the temperature limit of the lens material. Exceeding the temperature limit will cause damage to the lens and affect the service life of the lens.



			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	lengt	h	50			49. 96	49. 93	49. 94	49. 96		
	width		50			49. 96	49. 94	49. 96	49. 95		Test environment: In 20 °C -25 °C
1.Size	Locati colum	n	45			44. 96	44. 98	44. 95	44. 97		environment to achieve thermal equilibrium after the
	Locati post	_	1.99			1.91	1.9	1.92	1.9		test.
	thicknes		2. 28			2. 28	2. 32	2.3	2. 33		
				Gate	shear can ı	not affect th	e appearar	nce of the la	amp		
				See	attachment	t "Appearan	ce Inspecti	on Standar	ds"		
2.Appea	rance		See achment pearance	E	1	No burr	No burr	No burr	No bu	rr	OK
Quality	Quality "App		spection andards"		N	o stains	No stains	No stains	No stai	ins	GIX.
3.Materia	al			PMM	4		Color	Tra	nsparent		OK
	Testing	LED		3030 size and power rating of the LED light source recommended for this lens should be compara							
4.Optica I index	to the so	ource actua M	of the test, if it is required to be out of range. According to the heat dissipation capability of the conditions of the use environment, the lens should be fully tested and tested to prevent the lens should be fully the lens should						ability of the lamp		
	K-va1					$\overline{}$					
	Efficie										
	Facula		the cianatu	ro samplo		<u> </u>					
-	ehensive	366	ine signatu	signature sample Qualified							
Remarks:  1. Tool Number: V-Vernier Caliper 2D-Quadratic H- Height Gauge M-Tool Microscope P-Needle T- Thick Gauge R-Radius Gauge E-Visual.  2. Ambient temperature on the size of the product refer to the table on the right				Length changes (mm)		product s	ize change	es with ter	**************************************	Size: Size: Size: Size:	50mm 100mm 150mm 200mm 250mm 300mm
Precaution	ons:										

- 1、Wear clean gloves during lens assembly to prevent contamination of the lens surface.
- 2. Take the lens try to avoid touching the total reflection surface.
- 3. When the lens surface contamination, you can only gently wipe with soft cotton sticky neat neutral solvent, not allowed to
- wipe with industrial solvents.

  4. The working temperature of the lens should be within the temperature limit of the lens material. Exceeding the temperature limit will cause damage to the lens and affect the service life of the lens.



			Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Test result3	Test result4	Jud gme nt	Remarks
	1engt	h	50			50.06	50.04	50. 11	50. 1		
		width				50.06	50.05	50.08	50.08		Test environment: In 20 ℃ -25 ℃
1.Size	Locati colum	n	45			45	44. 98	44. 97	45.01		environment to achieve thermal equilibrium after the
	Locati post	-	1.99			1.95	1.95	1.96	1.95		test.
	thickne		2. 28			2.47	2. 48	2. 44	2. 43		
						not affect th					
				See	attachment	: "Appearan	ce Inspecti	on Standar	ds"		
2.Appear	rance		See achment pearance	E	١	No burr	No burr	No burr	No bu	rr	OK
Quality		Ins	spection andards"	L	N	o stains	No stains	No stains	No stai	ns	OK
3.Materia	al			PMM	4		Color	Tra	nsparent		ОК
	Testing	LED					3030				
4.Optica I index	4.Optica FWHM I index angle  K-value Efficiency			if it is requ	ired to be c	out of range ont, the lens	. According	to the heat fully tested	t dissipatio	n capa	ability of the lamp event the lens life.
	ehensive ment						Qı	ıalified			
Remarks: cha				Length changes (mm)		a product s	ize change	es with ten	***	Size: Size: Size: Size: Size: Size: Size: Size:	50mm 100mm 150mm 200mm 250mm 300mm 100mm 150mm
Precautio	ons:										

- 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.

  4. The working temperature of the lens should be within the temperature limit of the lens material. Exceeding the temperature
- limit will cause damage to the lens and affect the service life of the lens.



PI	N	HK-50@05-140X70-3030-#0-1	g-16_PMMA	Product Name	HK 16in1-TYPE1	Road la	m Lens				
Product material		PMMA		Customer							
Package diagram		Single Vacuum package Box package									
Product	packing	24	A/ Box	4	Box/Layer						
	. •	15	Layer/Box	1440	A/ Carton						
	NO.	Part No	Part name	Size	Dosage	Unit	Remarks				
	1	2.07.0042	Blister box	23cm*21cm	60	BAG					
Dealcasin	2	2.08.0001	PE film	30cm*30cm	60	PCS					
Packagin g	3	2.06.0005	Reel label paper	6.2cm*8cm	60	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	n 16	PCS					
	6	2.06.0015	big flat carton	48cm*44cm*19c	cm 1	PCS					
Remarks		The loose packing is not subject	t to this specif	ication. Customer'	s requirements shall <sub>l</sub>	prevail					



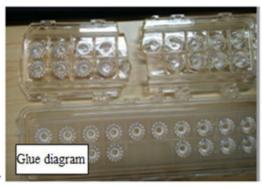
# Special notice

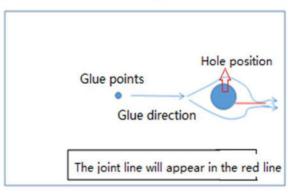
When gule pass through holes, columns and other structures, or part of the thin structure, will form a weld line. The product which uses multi-point injection welding line will appear because of the combination of sol, as shown below:

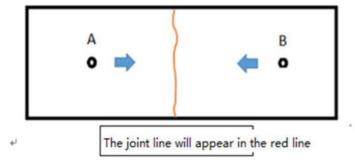
# Syntneti











# 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	ludging standard	Inspection equipment	Defect level		
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	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			√

1	<u> </u>	Ī	_	1	
	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		<b>√</b>	
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		<b>√</b>	
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				<b>√</b>
Deformation	Insufficient filling shall not affect the appearance of the assembly and the exposed surfaces.	Visual, feeler			<b>√</b>
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		<b>√</b>	
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	<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		√	

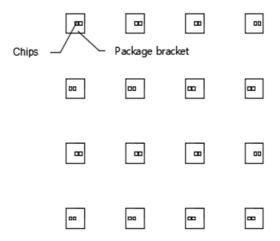
Bubble	No bubbles are allowed	Visual		√	
Foreign objects, black spots, white spots	Not obvious or D ≤ 0.3mm black spots and foreign bodies in the area of 100x100mm not more than 1; Exceeded foreign matter black spots is judged bad.	Visual, point card	V		
Damaged	No damage is allowed	Visual			√
Cold glue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



Description on the arrangement of light source suitable for SMD 3030 light source and body lens:

The chip position of most SMD 3030 light source packages in the market is not in the middle position. When fitting the body lens, it will affect the light distribution of the lens and cause the optical shape to shift. Therefore, when the light source plate is designed and arranged, the eccentric direction of the chip is arranged symmetrically, which can effectively reduce its influence on the light distribution. Sample layout proposal:

Example 1: as shown in the figure below, 16 chips in rows 1 and 3 are eccentric to the right, while those in rows 2 and 4 are eccentric to the left.



Example 2: as shown in the figure below, 16 chips in the first and second columns are eccentric to the right, while those in the third and fourth columns are eccentric to the left.

