	1	0	In .	14
	1	2	3	4
序号	物料编码+材料	产品名称(几合1-光源)	产品编号	材料
		HK-286@08-Mining lamp-60°	HK-286@08-60-3030-22-1g-33	PC
1	1.01.71001	III 200@00 MIIIIII Iamp 00	III 200@00 00 3030 22 1g 33	
				PMMA
			+	
				_
				_
			+	

6	7			Q	Q	10	11	76
U	l			O	9	10	11	10
光龙.		-	五: 1:1:1:1:1:1:1:1:1:1:1:1:1:1:1:1:1:1:1	七 华各亩.	2∓#⊒LEC+	测学记生 夕势 火海	法田以 海	m.細会
								_
>80%				60°	2835	2835	2835	
	-40°C	to	+80°C					
	6 效率: >80%	效率: >80% -40℃	效率: >80% -40℃ to	效率: 耐温(Topr):	效率: 耐温(Topr): 标准角度: >80% -40℃ to +120℃ 60°	效率: 耐温(Topr): 标准角度: 适配LES: 2835	数率: 耐温(Topr): 标准角度: 适配LES: 测试报告-名称-光源	数率: 耐温(Topr): 标准角度: 适配LES: 测试报告-名称-光源 使用光源 2835 2835 2835

77		78	79	80
		10	10	00
	包装信息	•		
1袋数量	个/层 3层40: 网层	层/箱	个/箱	中隔板
2		5	162	
<u> </u>	10	J	102	U



Product Approval

Approval number: Effective date of approval:

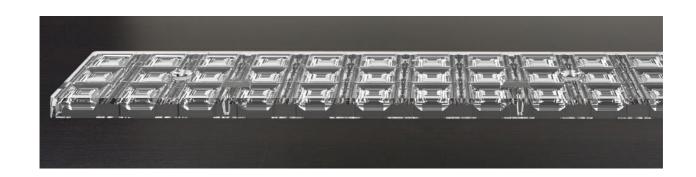
Customer:

Product: HK-286@08-Mining lamp-60°

Material Code: 1.01.71081

PN: HK-286@08-60-3030-22-1g-33

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, lot 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 Product Approval

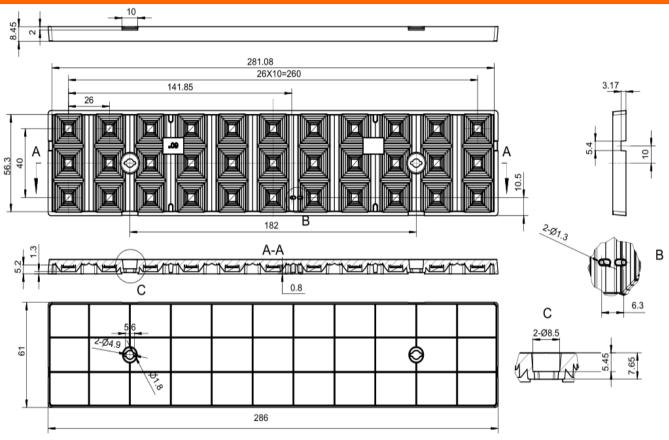
TEL: 0755-2937 1541 FAX: 0755-2907 5140 www.hkoptics.com Date updated:

Product Picture:	
PN:	HK-286@08-60-3030-22-1g-33
Size(L*W*H/Φ*H):	286mm*61mm*08mm
Material:	PMMA
Effiency:	>80%
Temperature(Topr):	/
FWHM:	60°
Matched LES:	2835

2023/9/27





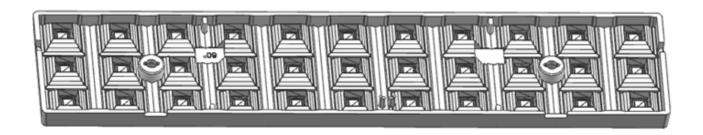


Technical Requirement:

- 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.

I	Optical Design			HK-286@08-60-	3030-22-1g-33	1. 01. 71081
	Structure Design		HK-286@08-Mining lamp-60°	Pages	Qty	Weight
	Assess			2		
	Authorized		Material:PMMA		CDHK	

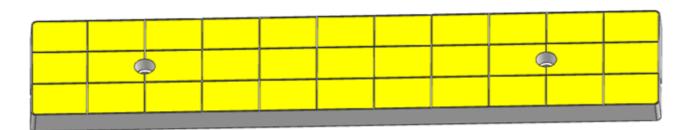




a)

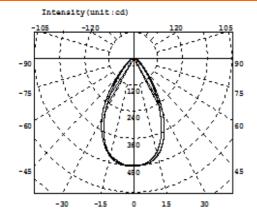
Ψ

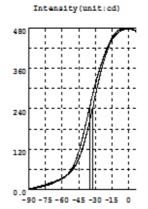
a)



IES-2835

609





Intensity data: (deg , cd) C0-180

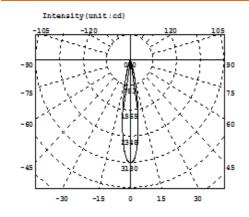
A	I	A	I	A	I	A	I	A
-90.0	1.477	-58.5	35.28	-27.0	346.1	4.5	473.9	36.0
-88.5	2.269	-57.0	38.91	-25.5	361.7	6.0	471.9	37.5
-87.0	3.189	-55.5	43.39	-24.0	376.0	7.5	468.1	39.0
-85.5	4.160	-54.0	48.72	-22.5	390.5	9.0	463.5	40.5
-84.0	5.220	-52.5	55.46	-21.0	404.4	10.5	457.5	42.0
-82.5	6.307	-51.0	63.48	-19.5	416.9	12.0	450.2	43.5
-81.0	7.456	-49.5	72.97	-18.0	428.3	13.5	441.0	45.0
-79.5	8.658	-48.0	84.14	-16.5	438.8	15.0	430.2	46.5
-78.0	9.885	-46.5	97.11	-15.0	447.9	16.5	417.8	48.0
-76.5	11.20	-45.0	111.9	-13.5	456.5	18.0	402.9	49.5
-75.0	12.50	-43.5	128.7	-12.0	462.0	19.5	387.6	51.0
-73.5	13.86	-42.0	147.1	-10.5	468.6	21.0	366.0	52.5
-72.0	15.33	-40.5	167.1	-9.0	471.8	22.5	346.9	54.0
-70.5	16.99	-39.0	187.9	-7.5	474.8	24.0	327.6	55.5
-69.0	18.98	-37.5	209.5	-6.0	475.6	25.5	307.4	57.0
-67.5	21.30	-36.0	230.9	-4.5	477.3	27.0	286.5	58.5
-66.0	23.64	-34.5	250.0	-3.0	477.5	28.5	265.5	60.0
-64.5	25.70	-33.0	272.9	-1.5	478.7	30.0	244.5	61.5
-63.0	27.68	-31.5	293.0	0.0	478.0	31.5	223.7	63.0
-61.5	29.83	-30.0	311.6	1.5	477.4	33.0	203.6	64.5
-60.0	32.37	-28.5	329.4	3.0	476.3	34.5	184.5	66.0

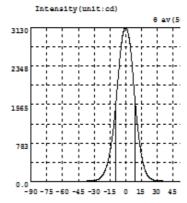
Electricity Parameter:

Current I: 0.1000A Power: 3.098W Voltage V: 31.00V PF: 0.000

Optical Parameter (Distance=2.559m):

IES—LUMINUS CXM-6 15°





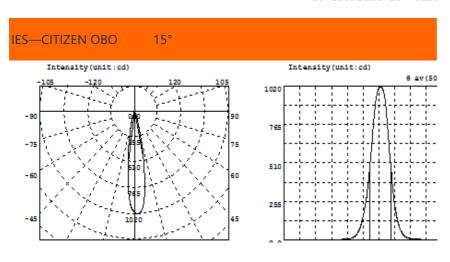
Intensity data: (deg , cd) C0-180

A	I	A	I	A	I	A	I	A	I
-90.0	0.1128	-58.5	6.971	-27.0	44.65	4.5	2739	36.0	16.01
-88.5	0.1021	-57.0	7.734	-25.5	58.14	6.0	2426	37.5	14.71
-87.0	0.1695	-55.5	8.540	-24.0	79.99	7.5	2047	39.0	13.71
-85.5	0.3171	-54.0	9.313	-22.5	116.3	9.0	1660	40.5	12.94
-84.0	0.4758	-52.5	10.18	-21.0	170.0	10.5	1327	42.0	12.29
-82.5	0.6681	-51.0	10.95	-19.5	234.6	12.0	1031	43.5	11.87
-81.0	0.8147	-49.5	11.59	-18.0	322.7	13.5	775.8	45.0	11.53
-79.5	1.006	-48.0	11.96	-16.5	439.3	15.0	566.2	46.5	11.23
-78.0	1.142	-46.5	12.25	-15.0	593.4	16.5	413.8	48.0	11.00
-76.5	1.315	-45.0	12.60	-13.5	777.2	18.0	282.8	49.5	10.63
-75.0	1.575	-43.5	12.79	-12.0	1005	19.5	194.0	51.0	10.19
-73.5	1.880	-42.0	13.23	-10.5	1290	21.0	130.0	52.5	9.619
-72.0	2.145	-40.5	13.75	-9.0	1634	22.5	90.23	54.0	8.932
-70.5	2.527	-39.0	14.66	-7.5	1990	24.0	64.91	55.5	8.222
-69.0	2.948	-37.5	15.83	-6.0	2355	25.5	48.85	57.0	7.518
-67.5	3.370	-36.0	17.19	-4.5	2681	27.0	38.00	58.5	6.896
-66.0	3.839	-34.5	18.96	-3.0	2929	28.5	30.95	60.0	6.316
-64.5	4.397	-33.0	21.30	-1.5	3070	30.0	25.81	61.5	5.708
-63.0	4.968	-31.5	24.27	0.0	3126	31.5	22.10	63.0	5.054
-61.5	5.604	-30.0	28.64	1.5	3095	33.0	19.40	64.5	4.504
-60.0	6.299	-28.5	35.09	3.0	2963	34.5	17.52	66.0	3.962

Electricity Parameter:

Current I: 0.1500A Power: 3.350W Voltage V: 33.50V PF: 0.000

Optical Parameter (Distance=2.410m):



-30 -15 0 15 30

Intensity data: (deg , cd) C0-180

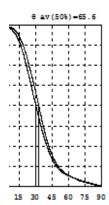
A	I	A	I	A	I	A	I	A	I	
-90.0	0.0790	-58.5	2.131	-27.0	11.89	4.5	985.3	36.0	6.567	
-88.5	0.1573	-57.0	2.334	-25.5	14.84	6.0	930.7	37.5	6.007	
-87.0	0.1472	-55.5	2.545	-24.0	19.33	7.5	832.3	39.0	5.530	
-85.5	0.1918	-54.0	2.794	-22.5	26.78	9.0	702.7	40.5	5.171	
-84.0	0.1712	-52.5	3.016	-21.0	39.05	10.5	574.5	42.0	4.952	
-82.5	0.2148	-51.0	3.169	-19.5	55.04	12.0	454.4	43.5	4.752	
-81.0	0.3507	-49.5	3.271	-18.0	77.51	13.5	336.6	45.0	4.598	
-79.5	0.4174	-48.0	3.368	-16.5	110.2	15.0	246.9	46.5	4.462	
-78.0	0.4181	-46.5	3.430	-15.0	154.7	16.5	182.7	48.0	4.315	
-76.5	0.4776	-45.0	3.523	-13.5	203.5	18.0	131.2	49.5	4.081	
-75.0	0.6343	-43.5	3.628	-12.0	263.5	19.5	91.69	51.0	3.892	
-73.5	0.7013	-42.0	3.778	-10.5	344.0	21.0	63.64	52.5	3.706	
-72.0	0.7957	-40.5	3.970	-9.0	446.0	22.5	45.40	54.0	3.496	
-70.5	0.8516	-39.0	4.264	-7.5	556.8	24.0	32.12	55.5	3.174	
-69.0	1.043	-37.5	4.624	-6.0	681.1	25.5	23.05	57.0	2.884	
-67.5	1.189	-36.0	5.029	-4.5	805.6	27.0	17.19	58.5	2.609	
-66.0	1.247	-34.5	5.536	-3.0	909.8	28.5	13.56	60.0	2.380	
-64.5	1.405	-33.0	6.273	-1.5	969.4	30.0	11.11	61.5	2.148	
-63.0	1.577	-31.5	7.160	0.0	1001	31.5	9.364	63.0	1.922	
-61.5	1.791	-30.0	8.222	1.5	1016	33.0	8.081	64.5	1.778	
-60.0	1.916	-28.5	9.767	3.0	1010	34.5	7.294	66.0	1.582	

Electricity Parameter:

Current I: 0.1500A Power: 0.8390W Voltage V: 8.399V PF: 0.000

Optical Parameter (Distance=2.410m):





I	A	I
166.5	67.5	21.88
149.1	69.0	19.55
133.0	70.5	17.79
118.3	72.0	16.25
105.1	73.5	14.76
92.98	75.0	13.31
82.24	76.5	11.91
72.88	78.0	10.53
64.78	79.5	9.179
57.86	81.0	7.878
52.06	82.5	6.661
47.35	84.0	5.461
43.38	85.5	4.347
40.08	87.0	3.264
37.17	88.5	2.238
34.77	90.0	1.611
32.68		
30.71		
28.82		
26.84		
24.45		

ff=199.401m/W

: 47.8deg @ (50%): 65.6deg : 47.9deg @ (50%): 65.6deg Imax= 478.7cd(G=-1.5deg)

I0= 478.0cd



(60)	18.	7
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-4-		
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60	75	90

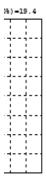
A	I
67.5	3.481
69.0	3.070
70.5	2.634
72.0	2.258
73.5	1.959
75.0	1.683
76.5	1.426
78.0	1.247
79.5	1.091
81.0	0.8605
82.5	0.6583
84.0	0.4937
85.5	0.2690
87.0	0.2143
88.5	0.1015
90.0	0.1444

331m/W

≥g ((50%): 18.7deg ≥g ((50%): 18.7deg 126cd (G=0.0deg)

6cd





A	I
67.5	1.437
69.0	1.270
70.5	1.130
72.0	0.9716
73.5	0.8398
75.0	0.7278
76.5	0.6147
78.0	0.5337
79.5	0.4834
81.0	0.3416
82.5	0.3189
84.0	0.2256
85.5	0.1606
87.0	0.0853
88.5	0.1128
90.0	0.0033

501m/W

g @ (50%): 19.4deg g @ (50%): 19.6deg 16cd (G=2.0deg)

cd



		Standard size	Upper Size limit	Lower size limit	Test result1	Test result2	Judgm
	OL	286	286.7	286	286.64	286.38	OK
1.Size	OW	61	61.3	61	61.27	61.29	ОК
1.0126	D of locating	1.3	1.35	1.2	1.23	1.22	OK
	S of locating	6.3	6.35	6.3	6.31	6.35	ОК
			Gate shear can	not affect the appe	earance of the	lamp	

Gate shear can not affect the appearance of the lamp

See attachment "Appearance Inspection Standards"

2.Appearance Quality	See attachment "Appearance Inspection Standards"	E	No burr	No burr	No burr	No burr
			No stains	No stains	No stains	No stains
3.Material	PMMA			Color	Tra	nsparent

	Testing	LED	2835					
	FWHM		See light distribution curve					
4.Optica		Standard	Test result 1	Test result 2				
I index	Angle	60° +7°	66.6°X66.7°	65.5°X65.6°				
	Effiency	>80%	84.40%	85.30%				
	Facula	See the signature sample						

Comprehensive Qualified judgment

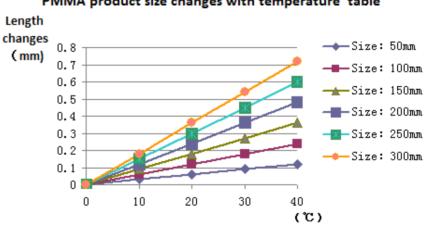
Remarks:

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、Test environment: In 20 ℃ -25 ℃ environment to achieve thermal equilibrium after the test. (Ambient temperature on

the size of the product refer to

the table on the right)

PMMA product size changes with temperature table



Precautions:

- 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 with industrial solvents.



nent

OK

OK

OK OK

wipe



PI	٧	HK-286@08-60-3030-22-	-1g-33	Product Name	HK-286@08-Minin	g lan
Product i	material	PMMA		Customer		
Package	diagram	单个产品	→ PE級月装	→ 成務社1		>
Product packing		2	Packet	3/46:2/12	Each layer	5
		162	Floor/Carton			
	NO.	Material Code	Item name	Specification	Single box usage	Unit
	1		Blister box		81	PCS
	2	2.06.0005	Box label paper	62mm*70mm	1	PCS
Packagin	3	2.06.0007	Middle plate	39cm*29cm	6	PCS
g Materials	4	2.06.0012	Middle carton	40cm*30cm*26	em 1	PCS
			_			
Remarks		Scatte	ered packaging is no	ot subject to this sp	ecification	

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u	J	7	١

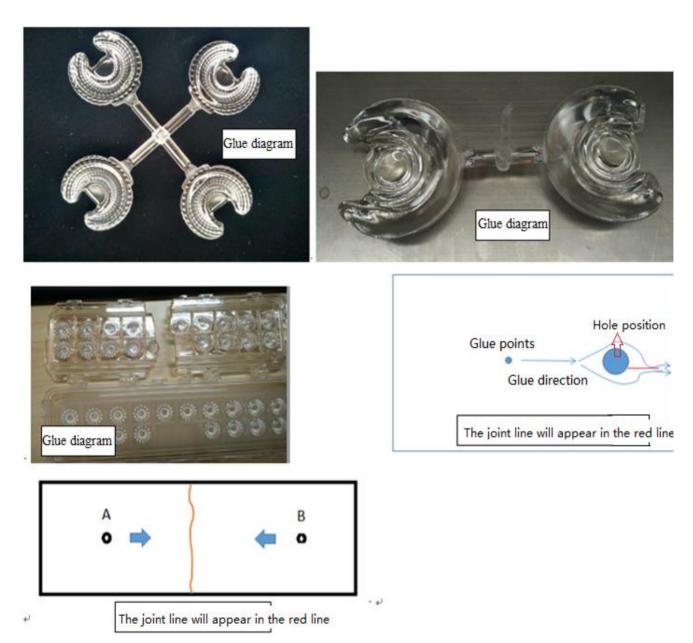
ıp-60°	

The number of
Remarks



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	Unit	Code	Code	Unit
	description			description	
N	Amount/pcs	pcs	D	Diameter	mm
L	Length	mm	H	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, chip should be from the lens surface 500-550mm, in order to make the bad appearance can be correctly found, the illumination should not be less than 500Lux;
 - 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		
reschenis	When start the machine and process, all	Testing method	МІ	MA	CR
	When start the machine and process, all products have to check the appearance of the sample, the appearance of the sample is divided into qualified samples and limited samples.				
Check the sample	1: Qualified sample refers to the appearance and structure standard of the product which recognized by the client, the sample size should be confirmed before mass production;	Sample comparison , visual			√

	_	T	Ī		
	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 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		✓	
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	 Product does not allow the presence of flow marks and welding lines unless the structure can not be avoided; 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 matter、Dark 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		√	