



Guangdong Meide Testing Technology Co., Ltd.



TEST REPORT OF ANSI/IES LM-79-19

APPROVED METHOD FOR OPTICAL AND ELECTRICAL MEASUREMENTS OF SOLID-STATE LIGHTING PRODUCTS

Client : IKIO LED LIGHTING

Address 8470 Allison Pointe Blvd, Suite 128 Indianapolis, IN 46250

Test Model IK-BL22-40/30/20-354050-YLY

Brand Name IKIO

Testing Laboratory Guangdong Meide Testing Technology Co., Ltd.

Address 1st floor, B Area, Jinbaisheng Industrial Park, Headquarters 2 Road, Songshan Lake Hi-tech Industrial Development Zone, Dongguan City, Guangdong Pr., China

Testing location As above

Report No. C02A21306127L00101

Date of receipt June 11,2020

Date of test June 11,2022- June 16, 2020

Date of report June 16, 2020

Tested by:

Jarvis. Zhang

Jarvis Zhang/ Test Engineer

Checked by:

Ken

Ken Mo/ Project Engineer

Approved by:

Jessie

Jessie Li/ Technical Manager



Note 1: The test data was only valid for the test sample(s). This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or use in part without prior written consent from Guangdong Meide Testing Technology Co., Ltd. This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Note 2: This report does not imply product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.



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1. Product Description for Equipment under Test(EUT)

The client submitted 1 sample of model IK-BL22-40/30/20-354050-YLY. The sample was received on 2021-04-13, is in undamaged condition.

Model Tested: IK-BL22-40/30/20-354050-YLY

Manufacturer: IKIO

Address: 8470 Allison Pointe Blvd, Suite 128 Indianapolis, IN 46250

Product Type: 2X2 Luminaires for Ambient Lighting of Interior Commercial Spaces

Rated Voltage/Frequency: 120-277V AC, 50/60Hz

Rated Power: 40W, 30W, 20W

Nominal CCT: 3500K, 4000K, 5000K

LED Driver Manufacturer: HUNAN XIEZHEN ELECTRONICS CO., LTD.

LED Driver Model No: XZ-SE40B-380100-077053-W-D

LED Manufacturer: KAISTAR LIGHTING(XIAMEN) CO., LTD

LED Model No: BXEN-27E-13H 99N



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2. Standards Used

- ANSI/IES LM-79-19: APPROVED METHOD: OPTICAL AND ELECTRICAL MEASUREMENTS OF SOLID-STATE LIGHTING PRODUCTS
- IES TM-30-18 IES Method for Evaluating Light Source Color Rendition (This Method is not in Nvlap accreditation scope)
- ANSI C82.77-10: 2014 Harmonic Emission Limits – Related Power Quality Requirements for Lighting Equipment-Solid State

3. Test equipment list

Test Equipment	Serial No	Model No	Calibration due date
Full-field Speed Goniophotometer	MD-E028	GO-R5000	2021/09/29
Digital Power Meter	MD-E001	PF2010	2021/09/29
AC Testing Power Source	MD-E002	DPS1060	2021/09/29
Total Spectral Radiant Flux Standard Lamp	MD-E007	D908S	2021/09/29
Integrating Sphere System	MD-E029	2M	2021/09/29
High Accuracy Array Spectroradio Meter	MD-E011	HAAS-3000	2021/09/29
Digital Power Meter	MD-E008	PF310	2021/09/29
AC Testing Power Source	MD-E010	DPS1010	2021/09/29
Standard Lamp	MD-E012	D204	2021/06/09

Statement of Traceability: Guangdong Meide Testing Technology Co., Ltd. attested that all calibration has been performed using suitable standards traceable to national primary standards and International System of Unit(SI).



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4. Test Method

Requirements of Ambient Condition

Product was tested with no seasoning. All stabilization and measurements were made in compliance with ANSI/IES LM-79-19. The product was operated at rated voltage or at voltage required by manufacturer. The ambient temperature of the sample was maintained at $25^{\circ}\text{C} \pm 1.2^{\circ}\text{C}$ during measurement. And relative humidity between 10% and 65%.

Goniophotometer System

The sample was tested according to the ANSI/IES LM-79-19.

Photometric parameters were measured using a type C goniophotometer and software. The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, Luminous efficacy, zonal flux were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals. Photometric distance was more than five times of the Largest dimension of the test SSL product.

Integrating Sphere System

The sample was tested according to the ANSI/IES LM-79-19.

The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. Coating reflectance of the integrating sphere was 90% to 98%. Photometric measurement conditions was using 4π geometry. The self-absorption factor is applied in the final test result. The sample was operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

Fidelity Index (R_f) and Gamut Index (R_g) Calculation

The R_f , R_g was calculated according to IES TM-30-18 by using calculation tools. The calculation was based on the measured SPD from 380nm to 780nm with 1nm intervals. All the colors in this report is for reference only.

THD and PF Test

The sample was tested according to the ANSI C82.77-10:2014.

The sample was operated at rated voltage and was stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.



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5. Integrating Sphere Test Results

5.1 Test Data

Test Ambient Temperature	25.1℃	Test orientation	Downward
Operate time(Min.)	75	stabilization time(Min.)	60

Model # IK-BL22-40/30/20-354050-YLY Optical and Electrical Measurement Result

Mode	Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)	CCT (K)
40W-3500K	120.1	60	0.3187	38.03	0.9936	5086.8	133.74	3446
40W-4000K	119.9	60	0.3256	38.75	0.9926	5185.0	133.79	4107
40W-5000K	120.1	60	0.3188	38.06	0.9942	5274.6	138.57	5037
30W-3500K	120.1	60	0.2389	28.54	0.9947	3952.5	138.47	3442
30W-4000K	119.9	60	0.2422	28.85	0.9932	4031.7	139.76	4031.7
30W-5000K	120.1	60	0.2381	28.44	0.9943	4054.5	142.58	5035
20W-3500K	120.1	60	0.1629	19.47	0.9947	2769.2	142.24	3440
20W-4000K	119.9	60	0.1650	19.65	0.9925	2819.6	143.52	4141
20W-5000K	120.1	60	0.1613	19.28	0.9951	2829.2	146.72	5040

Mode	Ra	R9	Rf	Rg	x	y	u'	v'	Duv
40W-3500K	84.6	14	85	96	0.4084	0.3923	0.2371	0.5124	-0.00018
40W-4000K	86.0	22	86	95	0.3764	0.3759	0.2227	0.5006	0.00083
40W-5000K	86.1	21	86	94	0.3449	0.3607	0.2078	0.4890	0.00356
30W-3500K	84.7	15	85	95	0.4085	0.3921	0.2372	0.5123	-0.00010
30W-4000K	86.2	23	85	95	0.3754	0.3749	0.2225	0.5000	0.00063
30W-5000K	86.3	22	86	94	0.3449	0.3605	0.2079	0.4889	0.00345
20W-3500K	84.8	16	85	95	0.4085	0.3917	0.2373	0.5122	-0.00024
20W-4000K	86.3	24	85	95	0.3747	0.3743	0.2223	0.4996	0.00054
20W-5000K	86.4	23	85	94	0.3448	0.3604	0.2078	0.4888	0.00347



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5.2 Model # IK-BL22-40/30/20-354050-YLY(Mode:40W-3500K) Color Rendering Index

Ra				
84.6				
R1	R2	R3	R4	R5
83	92	97	83	83
R6	R7	R8	R9	R10
89	85	64	14	81
R11	R12	R13	R14	R15
82	68	86	99	77



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5.3.1 Model # IK-BL22-40/30/20-354050-YLY(Mode:40W-3500K) ANSI/IES TM-30-18 Color Rendition Report

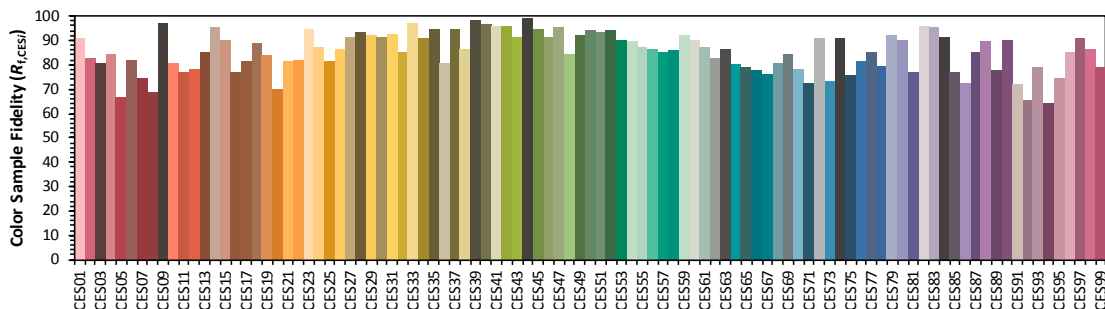
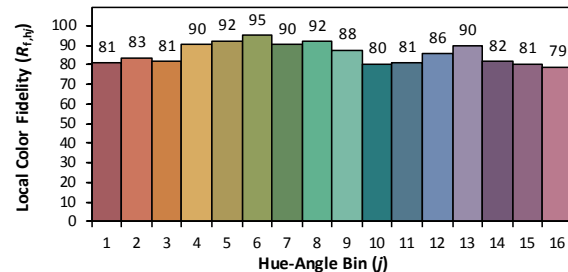
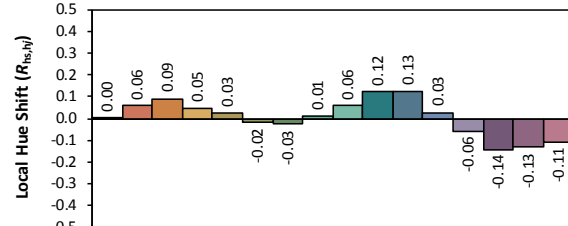
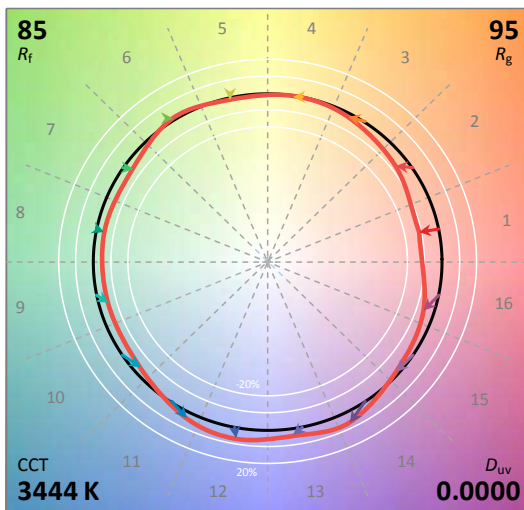
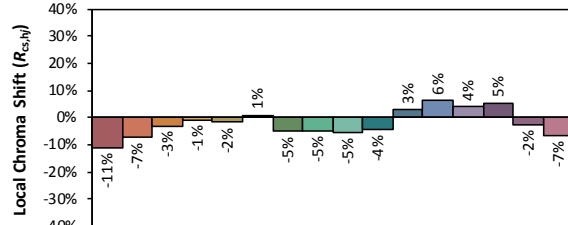
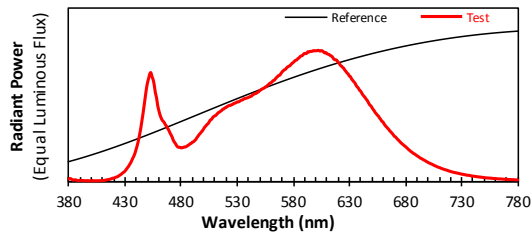
ANSI/IES TM-30-18 Color Rendition Report

Source: HL-AS-2835DW-3C-S1-08L-PCT-HR3

Manufacturer: IKIO LED LIGHTING

Date: 2021/4/25

Model: IK-BL22-40/30/20-354050-YLY



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.4084
 y 0.3922
 u' 0.2371
 v' 0.5123

CIE 13.3-1995
(CRI)

R_a 85
 R_g 14

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.



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5.3.2 Model # IK-BL22-40/30/20-354050-YLY (Mode:40W-4000K) ANSI/IES TM-30-18 Color Rendition Report

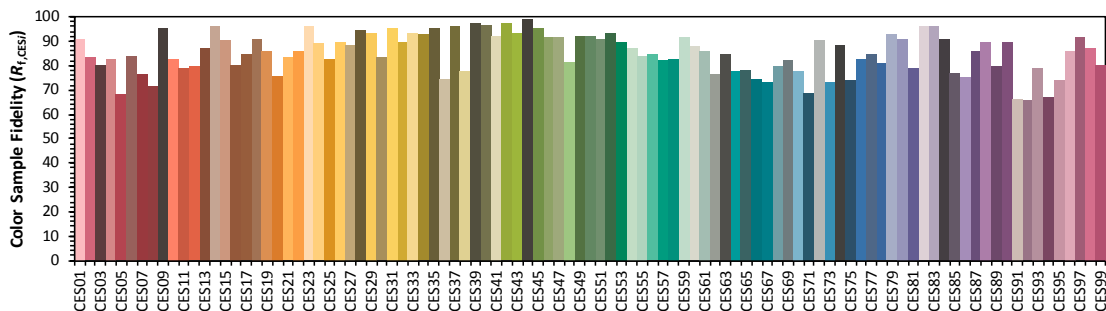
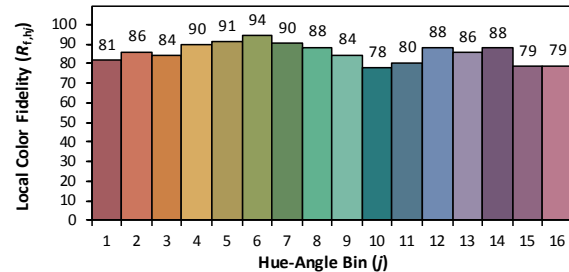
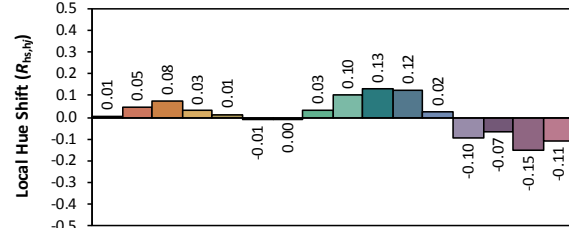
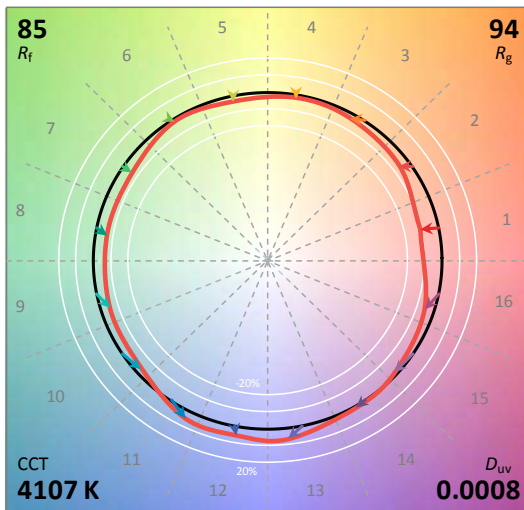
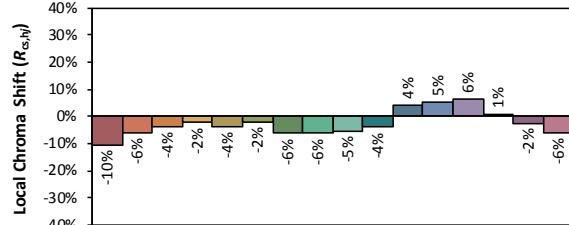
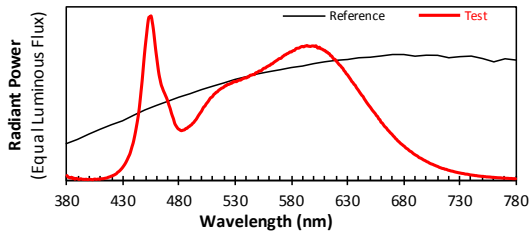
ANSI/IES TM-30-18 Color Rendition Report

Source: HL-AS-2835DW-3C-S1-08L-PCT-HR3

Manufacturer: IKIO LED LIGHTING

Date: 2021/4/25

Model: IK-BL22-40/30/20-354050-YLY



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.3763
 y 0.3758
 u' 0.2228
 v' 0.5006

CIE 13.3-1995
 (CRI)
 R_a 86
 R_g 22

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.



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5.3.3 Model # IK-BL22-40/30/20-354050-YLY(Mode:40W-5000K) ANSI/IES TM-30-18 Color Rendition Report

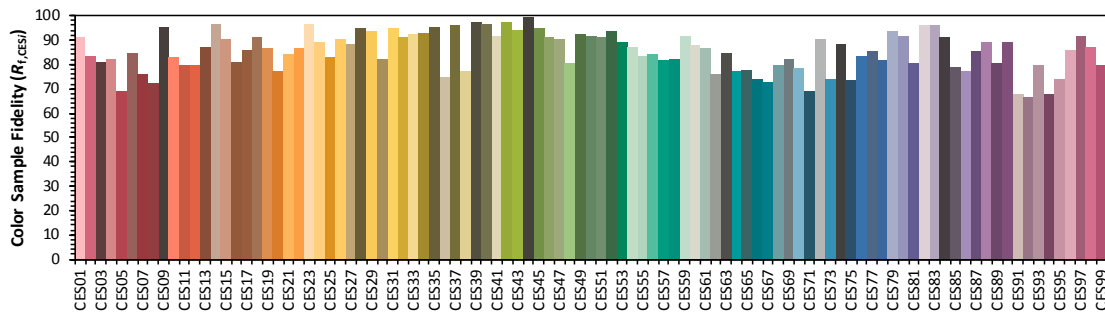
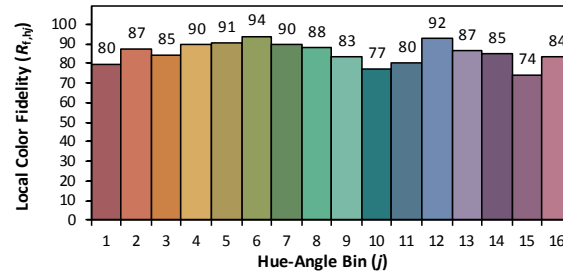
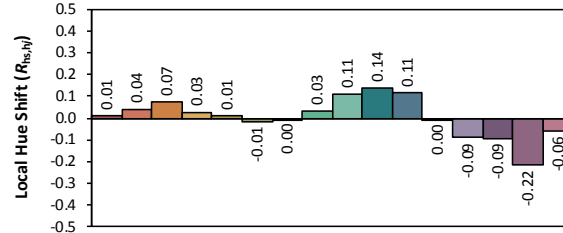
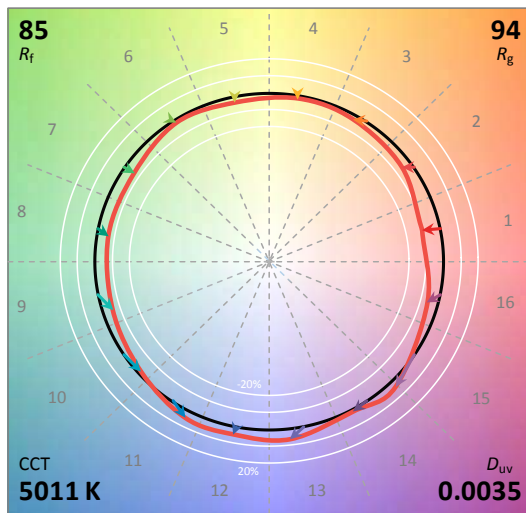
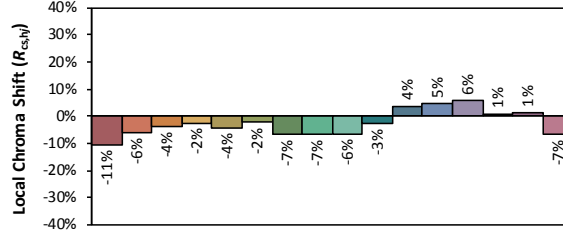
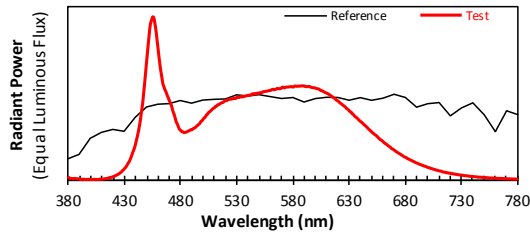
ANSI/IES TM-30-18 Color Rendition Report

Source: HL-AS-2835DW-3C-S1-08L-PCT-HR3

Manufacturer: IKIO LED LIGHTING

Date: 2021/4/25

Model: IK-BL22-40/30/20-354050-YLY



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.3455
 y 0.3590
 u' 0.2088
 v' 0.4883

CIE 13.3-1995
(CRI)

R_a 86
 R_g 21

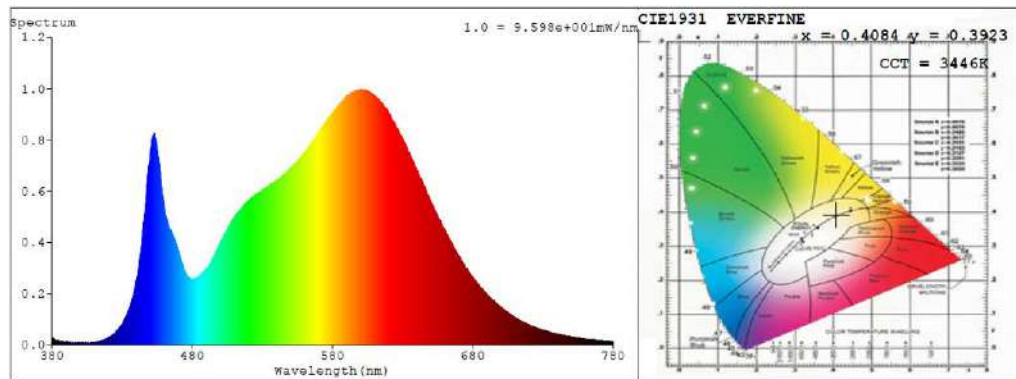
Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.



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5.4 Model # IK-BL22-40/30/20-354050-YLY(Mode:40W-3500K) Relative Spectral Power Distribution



nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	0.0209	414	0.0154	448	0.6429	482	0.2605	516	0.5402
381	0.0258	415	0.0171	449	0.7045	483	0.2649	517	0.5496
382	0.0205	416	0.0186	450	0.7514	484	0.2643	518	0.5522
383	0.0166	417	0.0209	451	0.7841	485	0.2697	519	0.5605
384	0.0122	418	0.0241	452	0.8166	486	0.2758	520	0.5635
385	0.0154	419	0.0276	453	0.8275	487	0.2805	521	0.5702
386	0.0146	420	0.0281	454	0.7967	488	0.2884	522	0.5748
387	0.011	421	0.0319	455	0.7744	489	0.2917	523	0.5792
388	0.0106	422	0.0359	456	0.7329	490	0.3006	524	0.5792
389	0.01	423	0.0381	457	0.6751	491	0.3038	525	0.5847
390	0.0104	424	0.0429	458	0.6391	492	0.3122	526	0.5871
391	0.0116	425	0.0493	459	0.5822	493	0.3203	527	0.5944
392	0.0091	426	0.0542	460	0.5436	494	0.334	528	0.5965
393	0.0096	427	0.0607	461	0.5114	495	0.3455	529	0.6002
394	0.0083	428	0.0686	462	0.4876	496	0.3576	530	0.6057
395	0.0085	429	0.0742	463	0.4688	497	0.367	531	0.6059
396	0.0085	430	0.0823	464	0.4589	498	0.3777	532	0.61
397	0.0094	431	0.0938	465	0.4477	499	0.3875	533	0.6156
398	0.0069	432	0.1055	466	0.432	500	0.4005	534	0.6198
399	0.0078	433	0.1166	467	0.4212	501	0.4145	535	0.6221
400	0.0079	434	0.1307	468	0.4041	502	0.4231	536	0.6303
401	0.0099	435	0.1448	469	0.3908	503	0.4344	537	0.6305
402	0.0077	436	0.1627	470	0.3707	504	0.4409	538	0.6341
403	0.0076	437	0.1813	471	0.3555	505	0.4541	539	0.6359
404	0.0081	438	0.1984	472	0.338	506	0.4681	540	0.6399
405	0.0079	439	0.2224	473	0.315	507	0.4731	541	0.6442
406	0.0085	440	0.2511	474	0.3006	508	0.4854	542	0.647
407	0.0084	441	0.2811	475	0.2887	509	0.4947	543	0.6512
408	0.0088	442	0.318	476	0.2738	510	0.4995	544	0.6634
409	0.0099	443	0.3603	477	0.2645	511	0.5042	545	0.6641
410	0.0104	444	0.4073	478	0.2616	512	0.5137	546	0.6686
411	0.0106	445	0.4623	479	0.2619	513	0.5229	547	0.6711
412	0.0117	446	0.5187	480	0.2571	514	0.5278	548	0.6777
413	0.0137	447	0.5796	481	0.2596	515	0.534	549	0.6823



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nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
550	0.6906	599	0.9927	648	0.5849	697	0.164	746	0.0364
551	0.6972	600	0.9939	649	0.5772	698	0.1579	747	0.0358
552	0.7019	601	0.9933	650	0.5655	699	0.1529	748	0.0349
553	0.7079	602	0.9964	651	0.5506	700	0.1482	749	0.0331
554	0.7106	603	0.9946	652	0.5407	701	0.1428	750	0.0324
555	0.7189	604	0.9901	653	0.5257	702	0.1402	751	0.0311
556	0.721	605	0.9946	654	0.5158	703	0.1351	752	0.0299
557	0.731	606	0.9916	655	0.5054	704	0.1324	753	0.0297
558	0.7375	607	0.9849	656	0.497	705	0.1273	754	0.0286
559	0.7467	608	0.9765	657	0.4829	706	0.1231	755	0.0289
560	0.7505	609	0.9798	658	0.4724	707	0.1195	756	0.0275
561	0.7567	610	0.9716	659	0.4584	708	0.1156	757	0.0271
562	0.7667	611	0.9672	660	0.4535	709	0.1114	758	0.026
563	0.7698	612	0.9646	661	0.4384	710	0.1092	759	0.0249
564	0.7802	613	0.957	662	0.4267	711	0.1057	760	0.0254
565	0.7897	614	0.9537	663	0.4169	712	0.1015	761	0.0243
566	0.7982	615	0.9444	664	0.4074	713	0.0991	762	0.0227
567	0.8056	616	0.932	665	0.3986	714	0.0956	763	0.0223
568	0.8086	617	0.9252	666	0.3865	715	0.0929	764	0.0224
569	0.8211	618	0.9249	667	0.3787	716	0.0907	765	0.0216
570	0.8328	619	0.9185	668	0.3684	717	0.0876	766	0.0211
571	0.8413	620	0.906	669	0.359	718	0.085	767	0.0205
572	0.8488	621	0.8965	670	0.3462	719	0.0814	768	0.0195
573	0.8526	622	0.8834	671	0.341	720	0.0796	769	0.0195
574	0.8633	623	0.8764	672	0.3318	721	0.0762	770	0.019
575	0.8708	624	0.8677	673	0.3222	722	0.0746	771	0.0183
576	0.8758	625	0.8598	674	0.314	723	0.0718	772	0.0176
577	0.8803	626	0.8461	675	0.3047	724	0.0706	773	0.0175
578	0.8897	627	0.8363	676	0.2961	725	0.0681	774	0.0169
579	0.8985	628	0.824	677	0.2881	726	0.067	775	0.0163
580	0.9045	629	0.8169	678	0.2816	727	0.0644	776	0.0162
581	0.9135	630	0.8011	679	0.2734	728	0.0625	777	0.0158
582	0.9206	631	0.7968	680	0.2672	729	0.0612	778	0.0152
583	0.9235	632	0.7795	681	0.2595	730	0.0582	779	0.0145
584	0.9329	633	0.7689	682	0.2515	731	0.0572	780	0.0145
585	0.9384	634	0.7581	683	0.2435	732	0.0558		
586	0.9484	635	0.7489	684	0.2365	733	0.0541		
587	0.9539	636	0.7316	685	0.2286	734	0.0523		
588	0.9567	637	0.7197	686	0.224	735	0.0499		
589	0.9654	638	0.7108	687	0.2157	736	0.0496		
590	0.9737	639	0.695	688	0.2118	737	0.0484		
591	0.9715	640	0.6877	689	0.2061	738	0.0469		
592	0.9746	641	0.6735	690	0.1993	739	0.0441		
593	0.986	642	0.6591	691	0.1943	740	0.0435		
594	0.9839	643	0.6491	692	0.188	741	0.0428		
595	0.9881	644	0.639	693	0.1818	742	0.041		
596	0.9884	645	0.626	694	0.1768	743	0.0399		
597	0.9896	646	0.6159	695	0.1732	744	0.0386		
598	0.9945	647	0.6003	696	0.1667	745	0.0377		



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6. Goniophotometer Test results for model # IK-BL22-40/30/20-354050-YLY(Mode:40W-3500K)

6.1 Test Data

Test Ambient Temperature	25.1℃	Test orientation	Downward
Operate time(Min.)	90	stabilization time(Min.)	60

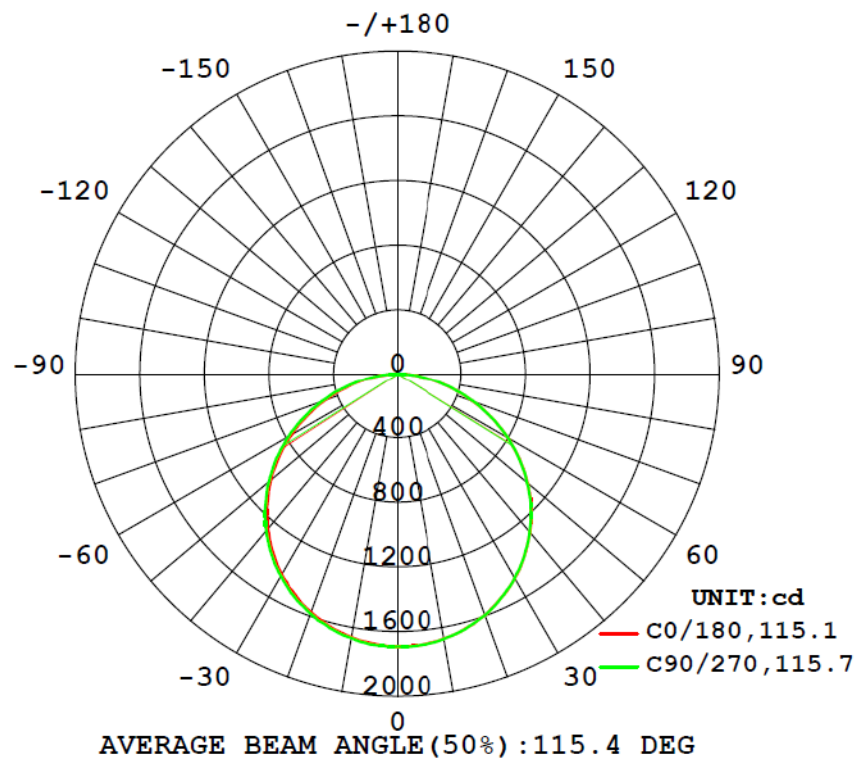
Electrical Measurement

Input Voltage (V)	Frequency (Hz)	Input Current(A)	Power Factor	Power(W)
120.0	60	0.3179	0.9938	37.91

Optical Measurement

Luminous Flux (lm)	Efficacy(lm/W)	ZL (0-60°)	Spacing Criteria (C0/180°)	Spacing Criteria (C90/270°)
4968.45	131.06	77.8%	1.27	1.28

6.2 Luminous Intensity Distribution





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6.3 Zonal Flux Diagram

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	1653	1652	1654	1645	1643	1647	1650	1651	0- 10	158.7	158.7	3.19, 3.19
20	1580	1580	1579	1564	1559	1559	1569	1573	10- 20	456.3	614.9	12.4, 12.4
30	1450	1452	1451	1430	1426	1428	1438	1445	20- 30	696.6	1312	26.4, 26.4
40	1273	1276	1270	1251	1245	1248	1260	1269	30- 40	848.4	2160	43.5, 43.5
50	1049	1053	1046	1024	1019	1023	1037	1048	40- 50	890.2	3050	61.4, 61.4
60	785.3	787.6	783.5	762.3	756.4	761.0	778.7	787.1	50- 60	813.2	3863	77.8, 77.8
70	494.3	499.7	497.6	477.9	471.6	478.4	496.6	503.0	60- 70	626.8	4490	90.4, 90.4
80	213.5	216.7	217.5	202.9	198.6	206.7	222.5	226.9	70- 80	367.8	4858	97.8, 97.8
90	6.325	5.466	8.696	6.788	0.9188	0.8706	3.167	5.229	80- 90	105.3	4963	99.9, 99.9
100	0.3414	0.3463	0.3588	0.3570	0.6265	0.6314	0.6233	0.6018	90-100	0.6956	4964	99.9, 99.9
110	0.4630	0.4702	0.5054	0.4836	0.6706	0.6806	0.6621	0.6361	100-110	0.5684	4964	99.9, 99.9
120	0.6100	0.6188	0.7377	0.6581	0.6129	0.6393	0.6821	0.6049	110-120	0.5981	4965	99.9, 99.9
130	0.7998	0.8497	0.9732	0.8759	0.7941	0.9116	0.8750	0.7924	120-130	0.6614	4966	99.9, 99.9
140	0.9892	1.030	1.097	1.025	1.192	1.202	1.203	1.157	130-140	0.7623	4967	100, 100
150	0.9877	1.044	1.082	1.066	1.487	1.518	1.494	1.501	140-150	0.7588	4967	100, 100
160	1.061	1.224	1.262	1.222	1.560	1.600	1.709	1.659	150-160	0.6261	4968	100, 100
170	1.255	1.333	1.390	1.394	1.545	1.485	1.600	1.616	160-170	0.4048	4968	100, 100
180	1.468	1.464	1.538	1.535	1.455	1.406	1.482	1.541	170-180	0.1413	4968	100, 100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		



Guangdong Meide Testing Technology Co., Ltd.



6.4 UGR (Unified Glare Rating) Table

ceiling/cavity	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
walls	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions	Viewed crosswise					Viewed endwise				
x = 2H y = 2H	18.2	19.7	18.4	19.9	20.1	18.1	19.7	18.4	19.9	20.1
3H	19.7	21.1	20.0	21.4	21.6	19.7	21.1	20.0	21.4	21.6
4H	20.4	21.7	20.7	22.0	22.2	20.4	21.7	20.7	22.0	22.2
6H	20.8	22.1	21.1	22.4	22.6	20.8	22.1	21.2	22.4	22.7
8H	21.0	22.2	21.3	22.5	22.8	21.0	22.2	21.3	22.5	22.8
12H	21.0	22.2	21.4	22.5	22.8	21.1	22.2	21.4	22.5	22.8
4H 2H	18.8	20.2	19.1	20.4	20.7	18.8	20.1	19.1	20.4	20.6
3H	20.5	21.7	20.9	22.0	22.3	20.5	21.7	20.9	22.0	22.3
4H	21.3	22.4	21.7	22.7	23.0	21.3	22.4	21.7	22.7	23.0
6H	21.9	22.8	22.3	23.2	23.6	21.9	22.9	22.3	23.2	23.6
8H	22.1	23.0	22.5	23.3	23.7	22.1	23.0	22.5	23.4	23.8
12H	22.2	23.0	22.6	23.4	23.8	22.2	23.1	22.7	23.5	23.9
8H 4H	21.6	22.5	22.0	22.8	23.2	21.6	22.5	22.0	22.9	23.2
6H	22.3	23.1	22.8	23.5	23.9	22.3	23.1	22.8	23.5	23.9
8H	22.6	23.3	23.1	23.7	24.1	22.6	23.3	23.1	23.7	24.2
12H	22.8	23.4	23.3	23.8	24.3	22.9	23.4	23.3	23.9	24.4
12H 4H	21.6	22.4	22.0	22.8	23.2	21.6	22.4	22.0	22.8	23.2
6H	22.4	23.0	22.8	23.5	23.9	22.4	23.1	22.9	23.5	23.9
8H	22.7	23.3	23.2	23.7	24.2	22.7	23.3	23.2	23.8	24.2
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.2					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117, 4968 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 5.6$)



Guangdong Meide Testing Technology Co., Ltd.



6.5 Luminous Distribution Intensity Data

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
0	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676			
5	1671	1670	1672	1671	1672	1669	1663	1667	1665	1663	1666	1665	1673	1667	1669	1671			
10	1653	1652	1652	1655	1654	1646	1645	1645	1643	1641	1647	1646	1650	1648	1651	1654			
15	1622	1622	1622	1619	1624	1614	1611	1609	1610	1606	1609	1610	1620	1617	1619	1624			
20	1580	1579	1580	1578	1579	1570	1564	1561	1559	1557	1559	1564	1569	1569	1573	1579			
25	1520	1520	1522	1520	1519	1511	1504	1501	1498	1497	1500	1505	1511	1512	1515	1520			
30	1450	1450	1452	1450	1451	1439	1430	1428	1426	1424	1428	1433	1438	1441	1445	1452			
35	1369	1368	1371	1368	1365	1356	1346	1341	1340	1336	1344	1346	1357	1359	1362	1370			
40	1273	1272	1276	1273	1270	1260	1251	1245	1245	1241	1248	1253	1260	1265	1269	1275			
45	1168	1167	1169	1168	1165	1152	1142	1136	1138	1136	1138	1144	1154	1160	1163	1170			
50	1049	1050	1053	1052	1046	1035	1024	1017	1019	1018	1023	1030	1037	1041	1048	1054			
55	922	923	923	924	920	908	898	890	893	892	897	904	913	917	921	927			
60	785	786	788	787	783	773	762	754	756	757	761	770	779	782	787	791			
65	641	643	646	645	641	632	621	613	616	615	621	630	639	644	646	649			
70	494	496	500	500	498	488	478	469	472	471	478	487	497	501	503	504			
75	350	351	354	355	354	346	337	328	331	331	339	347	356	360	361	360			
80	214	214	217	219	218	211	203	195	199	200	207	215	223	226	227	225			
85	93.1	93.5	95.3	94.6	91.6	87.9	83.6	79.4	82.7	83.8	88.7	93.8	98.7	103	104	102			
90	6.32	6.00	5.47	4.93	8.70	7.85	6.79	6.37	0.92	0.89	0.87	1.59	3.17	4.41	5.23	5.03			
95	0.29	0.29	0.29	0.29	0.30	0.30	0.30	0.30	0.54	0.54	0.55	0.54	0.54	0.53	0.52	0.52			
100	0.34	0.34	0.35	0.35	0.36	0.36	0.36	0.36	0.63	0.63	0.63	0.63	0.62	0.61	0.60	0.60			
105	0.40	0.41	0.41	0.42	0.43	0.43	0.42	0.43	0.68	0.68	0.69	0.68	0.67	0.65	0.65	0.66			
110	0.46	0.47	0.47	0.48	0.51	0.49	0.48	0.50	0.67	0.68	0.68	0.67	0.66	0.64	0.64	0.65			
115	0.53	0.53	0.54	0.56	0.62	0.59	0.56	0.57	0.64	0.65	0.65	0.65	0.66	0.64	0.61	0.62			
120	0.61	0.61	0.62	0.67	0.74	0.70	0.66	0.65	0.61	0.63	0.64	0.66	0.68	0.65	0.60	0.60			
125	0.70	0.71	0.75	0.81	0.86	0.82	0.78	0.77	0.66	0.68	0.69	0.73	0.75	0.72	0.67	0.65			
130	0.80	0.82	0.85	0.94	0.97	0.95	0.88	0.91	0.79	0.82	0.81	0.86	0.87	0.85	0.79	0.78			
135	0.91	0.91	0.95	1.02	1.06	1.03	0.95	0.97	1.00	0.99	1.00	1.03	1.03	1.01	0.98	0.97			
140	0.99	0.99	1.03	1.05	1.10	1.07	1.02	1.01	1.19	1.17	1.20	1.20	1.20	1.18	1.20	1.19			
145	1.05	1.06	1.06	1.06	1.09	1.10	1.05	1.07	1.40	1.37	1.41	1.36	1.35	1.35	1.38	1.39			
150	0.99	1.01	1.04	1.05	1.08	1.12	1.07	1.03	1.49	1.51	1.52	1.53	1.49	1.48	1.50	1.50			
155	1.03	1.07	1.12	1.16	1.17	1.21	1.14	1.08	1.57	1.59	1.58	1.69	1.63	1.56	1.61	1.59			
160	1.06	1.14	1.22	1.23	1.26	1.28	1.22	1.14	1.56	1.57	1.60	1.69	1.71	1.65	1.66	1.65			
165	1.13	1.22	1.28	1.27	1.28	1.34	1.31	1.17	1.56	1.55	1.56	1.65	1.65	1.62	1.63	1.66			
170	1.27	1.28	1.33	1.36	1.39	1.42	1.39	1.27	1.55	1.54	1.49	1.56	1.60	1.61	1.62	1.62			
175	1.37	1.39	1.46	1.49	1.54	1.56	1.54	1.44	1.47	1.47	1.49	1.56	1.61	1.61	1.63	1.62			
180	1.47	1.40	1.46	1.48	1.54	1.54	1.54	1.47	1.46	1.45	1.41	1.47	1.48	1.53	1.54	1.54			

8. THD and PF Test for model # IK-BL22-40/30/20-354050-YLY(Mode:40W)

Voltage (V AC)	Frequency (Hz)	Power Factor	THD (%)	CCT (K)
120.0	60	0.9928	9.73	3500
277.0	60	0.9639	9.33	3500
120.0	60	0.9943	10.43	4000
277.0	60	0.9611	10.11	4000
120.0	60	0.9935	9.54	5000
277.0	60	0.9658	9.21	5000



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8.Photo of sample



Figure 1 for model IK-BL22-40/30/20-354050-YLY

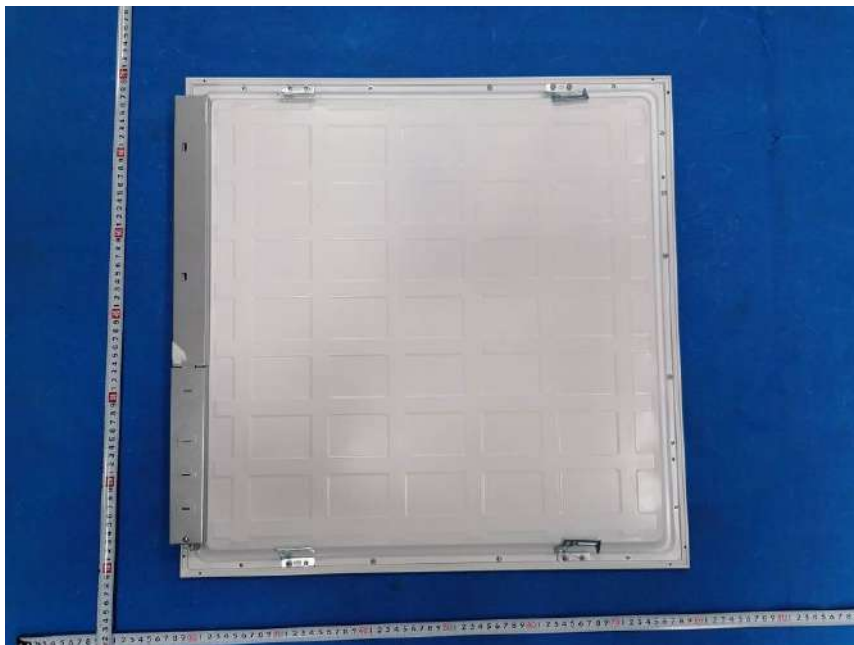


Figure 2 for model IK-BL22-40/30/20-354050-YLY

***** END OF THE TEST REPORT*****