



Report No.: UTC2307026E-A

LM-79-08 Test Report

For

IKIO LED LIGHTING, LLC

(Brand Name: IKIO)

8470 Allison Pointe Blvd, Suite 128 Indianapolis, IN 46250

Outdoor Pole/Arm-Mounted Area and Roadway Luminaires

Model name(s): IK-COBRA-150WPT2H1-BR3NTXX

Remark: BR,WH,BL,GR,SL or blank can be housing color;3NP;3RP;3NT;3RT;5NP;5RP;5NT;5RT;7NP;7RP;7NT;7RT;blank can be photosensor sensor provided or not; 10SP;20SP;blank can be Surge-Protective Device or not; “DP”, “DM” can be type of DC sensor provided or blank for not provided; “RAM”, “AM”, “DM”, “YM”, “A&D” or blank can be type of bracket; “S” can be for Shade provided or blank for not provided; “W” can be dimming module provided or blank for not provided; 30;40;50;57 can be CCT.

Representative (Tested) Model:
IK-COBRA-150WPT2H1-BR3NTXX

Model Different: All construction and rating are the same, except CCT

Test & Report By:

Winnie Wu

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Date: 2023-08-02

Review By:

Jason Luo

Manager: Jason Luo

Laboratory: UTEST TECHNICAL LABORATORY CO.LTD A2LA Certificate# 4810.01
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Report Format Number BL-FM-SA-012

1.1 Product Information:

Organization Name	IKIO LED LIGHTING, LLC	
Brand Name	IKIO	
Model Number	IK-COBRA-150WPT2H1-BR3NTXX	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Outdoor Pole/Arm-Mounted Area and Roadway Luminaires	
Rated Voltage / Frequency	277-480Vac, 50/60 Hz	
Nominal Power	150W(Power adjustable)	
Rated Initial Lamp Lumen	--	
Declared CCT	3000K, 4000K, 5000K,5700K	
LED Manufacturer	Bridgelux, Inc.	
LED Model	BXEM-30C-12H-6C BXEM-57C-12H-6C	
Sample Number	UTC2307026E-A 1-2	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s
Photo		
		

1.2 Test Specifications:

Date of Receipt	2023-07-24
Date of Test	2023-07-26
Test item	<ol style="list-style-type: none"> Total Luminous Flux Luminous Distribution Intensity Luminous Efficacy Correlated Color Temperature Color Rendering Index Chromaticity Coordinate Electrical Parameters
Reference Standard	<ol style="list-style-type: none"> IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources CIE 15-2004 Technical Report Colorimetry IESNA LM-16-93 Practical Guide to Colorimetry of Light Source IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
Reference Work Instruction	BL-QP-033

1.3 Test Methods

1) Photometric and Light Distribution Measurement – Goniophotometer Method:

Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, measured at a point not more than 1 m from the sample and at the same height as the sample. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals. Goniophotometer far field detector $f1' = 1.42\%$, Test distance: 14.14m

2) Chromaticity Measurement – Sphere-Spectroradiometer Method:

Chromaticity parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral power distribution taken at 5 nm intervals over the range of 380 to 780 nm.

Self-absorption:

IK-COBRA-150WPT2H1-[BR,WH,BL,GR,SL or

blank][3NP;3RP;3NT;3RT;5NP;5RP;5NT;5RT;7NP;7RP;7NT;7RT;blank][10SP;20SP;blank][DP;DM;blank][RAM;AM;DM;YM;A&D;blank][S;blank][W;blank]30 : 1.025

IK-COBRA-150WPT2H1-[BR,WH,BL,GR,SL or

blank][3NP;3RP;3NT;3RT;5NP;5RP;5NT;5RT;7NP;7RP;7NT;7RT;blank][10SP;20SP;blank][DP;DM;blank][RAM;AM;DM;YM;A&D;blank][S;blank][W;blank]57:1.028



Report No.: UTC2307026E-A

3) Electrical Measurements:

Electrical parameters were measured using power meters incorporated in goniophotometer or sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Voltage, frequency, current, power, power factor and total harmonic distortion were measured by and read from the power meter.

2.1 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

Test date	2023-07-26	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	IK-COBRA-150WPT2H1-BR3NT30		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
UTC230702	277.0	60	0.538	148.79	0.999	3.36
6E-A1	480.0	60	0.317	147.27	0.969	3.04
DLC Pass Criteria					$\geq 0.9(-3\%)$	$\leq 20(+5)$

Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result				
Test Voltage (V)	277.0	R1	71	R9	-30
Frequency (Hz)	60	R2	86	R10	69
CCT (K)	3029	R3	94	R11	67
Duv	-0.0007	R4	70	R12	60
Chromaticity (x, y)	x=0.4339 y=0.4014	R5	72	R13	74
Chromaticity (u', v')	u(u')=0.2498v'(v')=0.5199	R6	82	R14	97
Color Rendering Index (CRI)	74	R7	75	R15	62
R9	-30	R8	43	--	--
Rf	78	--	--	--	--
Rg	93	--	--	--	--
Rcs,h1(%)	-16				

Photometric Measurement – Goniophotometer Method:

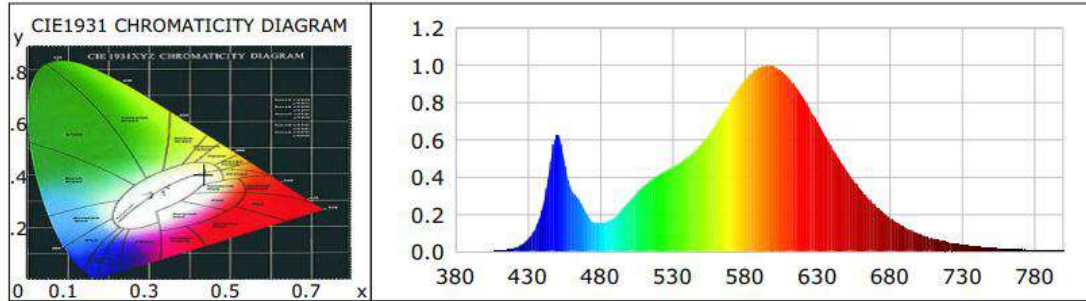
Parameter	Result		DLC V5.1 Pass Criteria
Test Voltage (V)	2277.0	480.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	22029.3	21864.1	$\geq 10000(-10\%)$
Luminous Efficacy (lm/W)	148.06	148.46	Premium: $\geq 120(-3\%)$
Most worst Luminous/Highest	146.95		
Zonal lumens in the 0-90° zone (%)	100	--	Category 1: $\geq 100(-1)$



Report No.: UTC2307026E-A

			Category 2: $\geq 85(-3)$
Zonal lumens in the 80-90°zone (%)	1.0	--	$\leq 10(+3)$
Beam Angle (°)	112.2	--	--
Center Beam Candle Power (cd)	7038	--	--

Spectral Power Distribution & Chromaticity Diagram

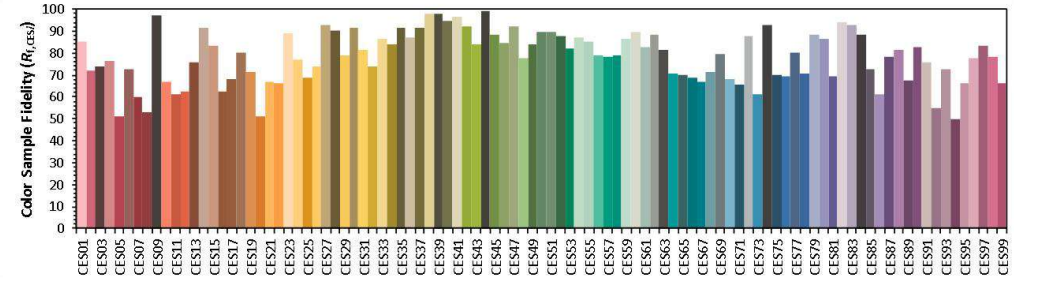
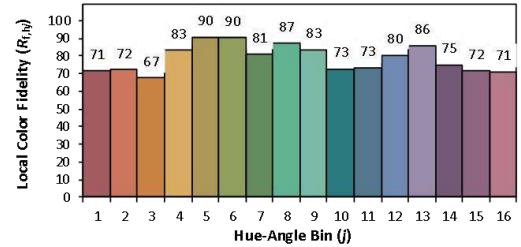
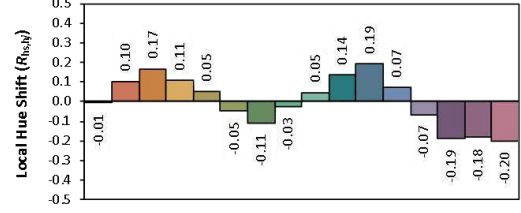
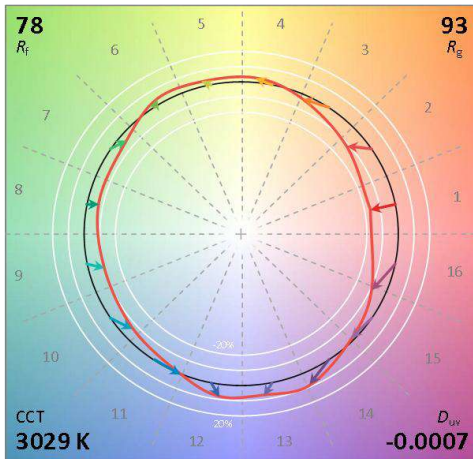
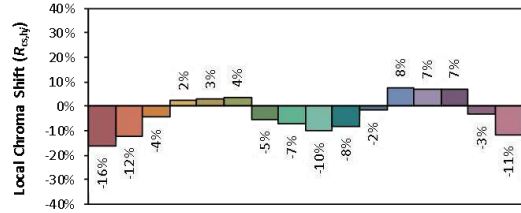
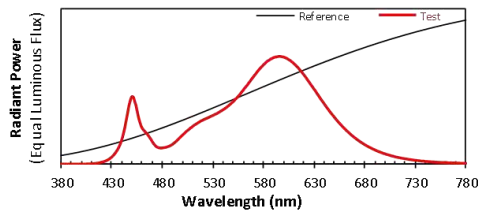


WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0001	0.0517	535	0.4288	215.4461	690	0.2466	123.9004
385	0.0000	0.0153	540	0.4506	226.3920	695	0.2115	106.2767
390	0.0002	0.0851	545	0.4749	238.5866	700	0.1814	91.1367
395	0.0004	0.2084	550	0.5039	253.1470	705	0.1549	77.8110
400	0.0005	0.2572	555	0.5370	269.7850	710	0.1325	66.5590
405	0.0011	0.5405	560	0.5783	290.5163	715	0.1129	56.7349
410	0.0031	1.5325	565	0.6275	315.2806	720	0.0961	48.2597
415	0.0078	3.9167	570	0.6840	343.6497	725	0.0815	40.9377
420	0.0168	8.4209	575	0.7461	374.8296	730	0.0680	34.1441
425	0.0330	16.5848	580	0.8087	406.2701	735	0.0582	29.2621
430	0.0648	32.5528	585	0.8695	436.8567	740	0.0500	25.1178
435	0.1214	60.9919	590	0.9212	462.7897	745	0.0420	21.1127
440	0.2255	113.2948	595	0.9607	482.6636	750	0.0353	17.7483
445	0.4349	218.5033	600	0.9885	496.6092	755	0.0293	14.7363
450	0.6257	314.3328	605	0.9982	501.5018	760	0.0251	12.6050
455	0.5016	251.9865	610	0.9932	498.9633	765	0.0221	11.1122
460	0.3366	169.1194	615	0.9697	487.1612	770	0.0189	9.4824
465	0.2812	141.2584	620	0.9330	468.7481	775	0.0153	7.6749
470	0.2103	105.6412	625	0.8864	445.3221	780	0.0132	6.6442
475	0.1576	79.1976	630	0.8281	416.0287	785	0.0120	6.0426
480	0.1498	75.2799	635	0.7636	383.6269	790	0.0097	4.8506
485	0.1599	80.3539	640	0.6952	349.2646	795	0.0080	4.0218
490	0.1824	91.6207	645	0.6269	314.9495	800	0.0067	3.3858
495	0.2223	111.6848	650	0.5604	281.5382			
500	0.2684	134.8453	655	0.4949	248.6223			
505	0.3115	156.4783	660	0.4357	218.9091			
510	0.3495	175.5841	665	0.3814	191.6115			
515	0.3807	191.2565	670	0.3305	166.0669			
520	0.4069	204.4362	675	0.2864	143.8820			
525	0.4288	215.4461	680	0.2466	123.9004			
530	0.4506	226.3920	685	0.2115	106.2767			

TM30

ANSI/IES TM-30-18 Color Rendition Report

Source:	BXEM-30C-12H-6C	Manufacturer:	IK10 LED LIGHTING
Date:	2023/7/26	Model:	IK-COBRA-150WPT2H1-BR3NT30



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

x	0.4339	CIE 13.3-1995 (CRI) R_a 74 R_9 -30
y	0.4014	
u'	0.2498	
v'	0.5199	

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

Zonal Lumen Tabulation

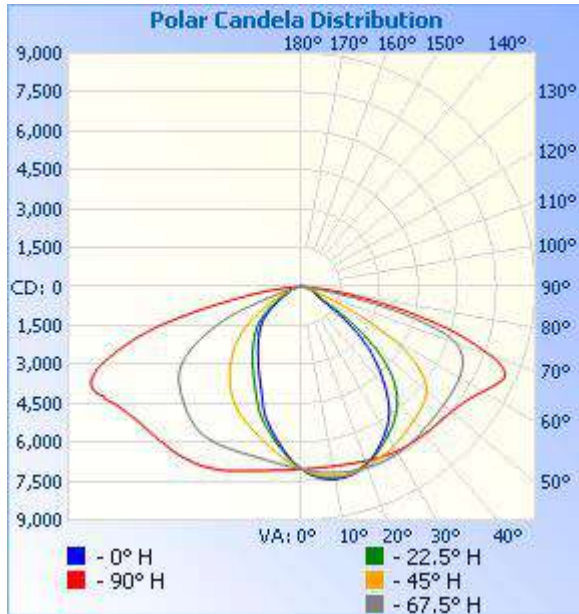
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0-30	5,537.3	25.1%	25.1%
0-40	9,262.6	42%	42.1%
0-60	17,191.0	78%	78%
60-90	4,836.2	22%	22%
70-100	1,806.8	8.2%	8.2%
90-120	0	0%	0%
0-90	22,027.2	100%	100%
90-180	0	0%	0%
0-180	22,027.2	100%	100%

Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	665.2	3.0%	90-100	0	0%
10-20	1,914.3	8.7%	100-110	0	0%
20-30	2,957.7	13.4%	110-120	0	0%
30-40	3,725.3	16.9%	120-130	0	0%
40-50	4,099.0	18.6%	130-140	0	0%
50-60	3,829.4	17.4%	140-150	0	0%
60-70	3,029.5	13.8%	150-160	0	0%
70-80	1,589.4	7.2%	160-170	0	0%
80-90	217.4	1.0%	170-180	0	0%

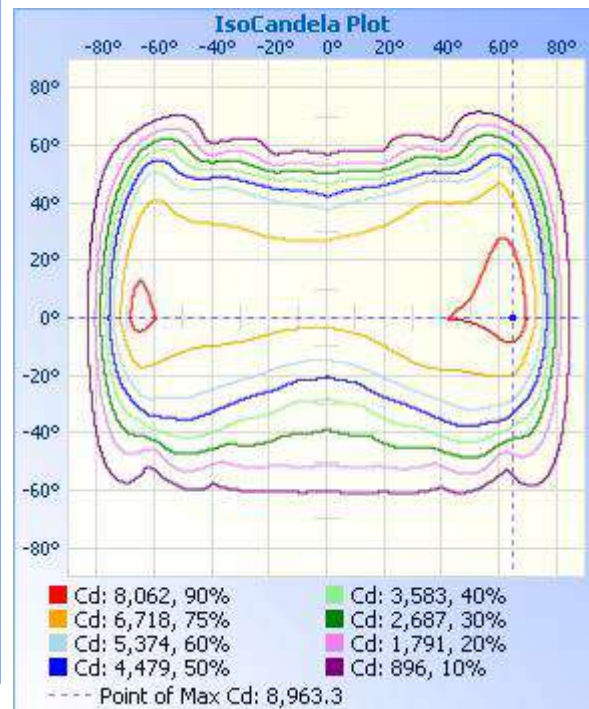
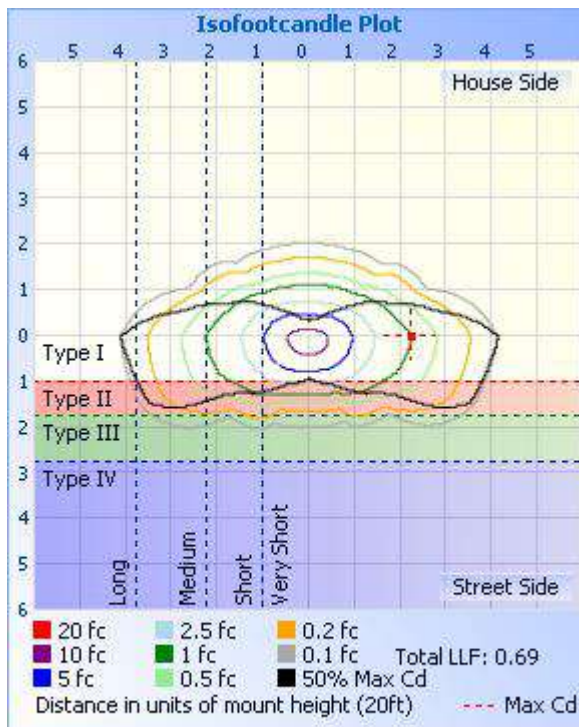
Photometric Data



Illuminance at a Distance

	Center Beam fc	Beam Width	
17.0ft	24.4 fc	31.6 ft	139.6 ft
34.0ft	6.09 fc	63.2 ft	279.3 ft
51.0ft	2.71 fc	94.8 ft	418.9 ft
68.0ft	1.52 fc	126.3 ft	558.5 ft
85.0ft	0.97 fc	157.9 ft	698.2 ft
102.0ft	0.68 fc	189.5 ft	837.8 ft

■ Vert. Spread: 85.8°
■ Horiz. Spread: 152.6°



Candela Table - Type C

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	7038	7038	7038	7038	7038	7038	7038	7038	7038	7038	7038	7038	7038	7038	7038	7038	7038
1	7120	7111	7094	7068	7032	6994	6961	6952	6944	6946	6981	7009	7043	7085	7095	7123	7120
2	7197	7179	7145	7098	7026	6957	6892	6867	6843	6863	6921	6991	7060	7131	7158	7204	7197
3	7265	7238	7199	7124	7023	6913	6817	6764	6739	6771	6858	6968	7069	7172	7217	7270	7265
4	7328	7300	7242	7148	7021	6877	6741	6649	6621	6673	6797	6949	7087	7217	7275	7333	7328
5	7381	7340	7283	7183	7019	6842	6654	6535	6494	6564	6729	6932	7099	7259	7324	7392	7381
6	7429	7387	7330	7206	7015	6804	6573	6400	6369	6454	6667	6908	7115	7306	7384	7449	7429
7	7467	7423	7361	7225	7020	6772	6481	6286	6237	6331	6596	6892	7130	7352	7428	7496	7467
8	7497	7444	7388	7246	7020	6730	6401	6170	6115	6222	6526	6874	7147	7394	7473	7532	7497
9	7518	7462	7410	7265	7024	6695	6316	6056	5993	6116	6457	6857	7166	7434	7512	7557	7518
10	7532	7473	7429	7285	7029	6665	6236	5949	5871	6009	6384	6841	7193	7472	7546	7576	7532
11	7544	7474	7444	7306	7036	6632	6160	5827	5751	5900	6316	6828	7224	7507	7578	7577	7544
12	7544	7476	7445	7321	7049	6608	6076	5719	5630	5795	6251	6816	7247	7544	7600	7584	7544
13	7540	7471	7450	7335	7060	6582	6002	5616	5500	5687	6183	6808	7280	7579	7618	7582	7540
14	7523	7458	7456	7348	7066	6563	5932	5514	5387	5583	6121	6803	7307	7611	7633	7572	7523
15	7500	7437	7446	7368	7079	6541	5868	5406	5266	5480	6062	6798	7342	7645	7640	7557	7500
16	7471	7411	7445	7378	7094	6522	5802	5297	5133	5384	6002	6797	7379	7676	7642	7540	7471
17	7438	7378	7436	7383	7104	6501	5737	5174	4982	5279	5944	6797	7421	7704	7642	7518	7438
18	7395	7347	7422	7393	7118	6486	5670	5051	4813	5164	5889	6798	7466	7729	7643	7489	7395
19	7350	7308	7408	7398	7142	6474	5599	4929	4630	5046	5834	6804	7513	7767	7640	7457	7350
20	7294	7271	7387	7411	7161	6456	5540	4799	4474	4900	5775	6808	7557	7795	7634	7419	7294
21	7234	7232	7364	7418	7179	6444	5478	4666	4329	4765	5722	6815	7604	7822	7622	7383	7234
22	7170	7175	7334	7423	7194	6429	5417	4527	4197	4631	5666	6822	7652	7843	7608	7340	7170
23	7091	7123	7303	7426	7210	6416	5350	4376	4073	4496	5607	6833	7695	7867	7592	7296	7091
24	7011	7069	7271	7427	7238	6405	5286	4250	3961	4373	5548	6846	7733	7889	7576	7244	7011
25	6918	7006	7247	7427	7258	6385	5219	4136	3846	4245	5494	6851	7765	7917	7558	7182	6918
26	6831	6933	7213	7428	7272	6369	5155	4027	3741	4138	5440	6862	7808	7937	7545	7125	6831
27	6745	6859	7187	7427	7286	6351	5091	3915	3635	4033	5379	6869	7839	7951	7522	7057	6745
28	6655	6783	7159	7420	7301	6339	5022	3817	3540	3936	5314	6872	7870	7965	7505	6984	6655

29	6555	6705	7134	7418	7314	6326	4944	3720	3437	3841	5240	6877	7896	7970	7486	6914	6555
30	6466	6634	7101	7414	7325	6304	4867	3628	3343	3734	5170	6876	7927	7980	7469	6845	6466
31	6374	6566	7069	7405	7340	6287	4789	3540	3252	3647	5102	6879	7950	7984	7447	6778	6374
32	6268	6496	7031	7392	7346	6263	4707	3456	3169	3562	5031	6879	7970	7985	7415	6702	6268
33	6150	6421	6997	7380	7355	6240	4620	3361	3087	3471	4953	6875	7980	7991	7386	6627	6150
34	6021	6339	6958	7357	7362	6211	4533	3279	3010	3387	4870	6860	8004	7990	7348	6552	6021
35	5881	6245	6918	7345	7363	6182	4436	3205	2923	3297	4776	6838	8015	7985	7312	6470	5881
36	5728	6156	6875	7328	7379	6159	4345	3129	2848	3215	4685	6812	8028	7978	7276	6386	5728
37	5560	6059	6833	7311	7387	6132	4257	3057	2778	3137	4595	6789	8036	7970	7235	6287	5560
38	5378	5959	6798	7294	7385	6098	4169	2976	2708	3058	4502	6758	8041	7958	7204	6187	5378
39	5193	5848	6758	7276	7393	6060	4070	2910	2642	2983	4405	6714	8043	7946	7174	6079	5193
40	5003	5728	6729	7256	7402	6025	3972	2842	2571	2900	4307	6669	8047	7934	7147	5966	5003
41	4814	5608	6699	7234	7410	5983	3883	2777	2506	2822	4209	6622	8053	7918	7123	5839	4814
42	4604	5465	6668	7221	7417	5937	3786	2713	2441	2749	4111	6572	8059	7906	7097	5705	4604
43	4406	5315	6635	7205	7418	5891	3698	2641	2386	2679	4010	6520	8069	7891	7066	5563	4406
44	4205	5149	6602	7191	7429	5845	3606	2575	2320	2600	3899	6458	8085	7877	7036	5399	4205
45	3997	4960	6559	7171	7431	5799	3520	2509	2254	2528	3796	6401	8094	7863	7005	5218	3997
46	3788	4781	6512	7161	7443	5753	3434	2445	2185	2455	3694	6345	8100	7846	6971	5015	3788
47	3581	4535	6465	7150	7452	5708	3342	2366	2119	2384	3590	6294	8111	7832	6927	4789	3581
48	3338	4293	6421	7141	7479	5658	3252	2282	2044	2305	3479	6242	8122	7820	6875	4544	3338
49	3100	4034	6355	7131	7496	5616	3147	2198	1955	2211	3354	6185	8133	7810	6808	4254	3100
50	2871	3751	6286	7122	7522	5566	3041	2107	1873	2124	3240	6125	8157	7795	6743	3961	2871
51	2560	3448	6196	7113	7549	5520	2938	2016	1773	2025	3110	6066	8186	7788	6646	3653	2560
52	2266	3133	6071	7110	7588	5465	2818	1902	1675	1927	2983	6003	8218	7779	6518	3329	2266
53	1954	2767	5924	7099	7628	5409	2692	1795	1567	1826	2830	5927	8255	7773	6393	2992	1954
54	1640	2418	5761	7088	7669	5342	2546	1684	1452	1708	2683	5847	8294	7768	6244	2630	1640
55	1303	2045	5552	7077	7715	5266	2408	1569	1350	1593	2527	5756	8337	7762	6059	2210	1303
56	1083	1689	5346	7078	7766	5163	2264	1442	1248	1486	2373	5651	8389	7756	5843	1827	1083
57	906	1371	5064	7057	7833	5052	2111	1328	1143	1374	2196	5511	8446	7744	5606	1481	906
58	821	1084	4786	7058	7901	4935	1942	1214	1046	1266	2035	5363	8522	7733	5309	1188	821
59	773	913	4458	7044	7980	4794	1786	1113	956	1146	1874	5197	8600	7716	5006	996	773

60	729	810	4100	7029	8076	4629	1620	1018	877	1058	1712	5003	8720	7707	4658	874	729
61	698	757	3704	7009	8173	4452	1471	924	817	972	1556	4791	8724	7692	4270	805	698
62	662	712	3246	6976	8273	4241	1314	852	760	889	1395	4541	8845	7681	3794	763	662
63	632	676	2812	6953	8358	4028	1181	794	706	823	1266	4298	8934	7665	3332	726	632
64	607	635	2363	6914	8449	3792	1057	737	666	763	1140	4028	8963	7646	2846	685	607
65	572	609	1923	6860	8537	3546	947	684	639	712	1026	3760	8957	7609	2362	650	572
66	545	574	1482	6788	8571	3256	848	645	611	672	928	3483	8884	7550	1848	621	545
67	524	546	1141	6707	8517	2944	760	614	587	632	832	3171	8719	7454	1442	586	524
68	496	516	887	6612	8382	2529	694	586	564	601	758	2826	8526	7321	1117	551	496
69	471	490	738	6492	8132	1953	629	557	542	574	694	2339	8218	7144	905	520	471
70	442	460	651	6321	7765	1523	578	534	517	548	632	1821	7818	6935	779	495	442
71	416	431	588	6062	7296	1227	525	510	487	520	570	1393	7426	6625	687	463	416
72	391	406	533	5744	6857	1004	483	481	464	498	529	1125	6997	6277	627	435	391
73	370	376	489	5268	6383	843	446	460	436	469	489	938	6562	5835	562	406	370
74	347	354	444	4736	5859	706	420	429	404	444	454	799	6035	5262	508	378	347
75	313	326	406	4179	5203	603	383	401	366	409	419	682	5445	4664	461	353	313
76	286	297	371	3481	4587	525	355	375	313	382	394	588	4738	3941	412	323	286
77	256	272	335	2758	3980	454	327	338	272	350	362	515	4102	3295	373	295	256
78	232	239	298	2131	3367	395	294	286	236	304	326	446	3447	2660	332	267	232
79	210	210	269	1472	2736	354	265	230	193	254	294	398	2866	1938	301	232	210
80	181	183	235	980	2215	304	220	187	152	199	260	344	2398	1290	265	206	181
81	158	159	205	656	1779	267	167	140	117	156	208	299	1981	819	230	179	158
82	132	135	170	454	1410	221	129	100	82	111	156	257	1611	546	193	153	132
83	112	115	150	353	1064	183	99	70	54	81	119	222	1288	405	166	130	112
84	92	94	120	272	730	150	77	39	15	49	100	181	1006	311	141	106	92
85	69	71	95	210	454	106	56	26	0	27	69	146	717	245	114	86	69
86	46	51	71	140	241	58	18	19	8	16	48	106	469	179	89	64	46
87	27	36	46	85	92	39	22	15	0	14	38	81	246	119	54	44	27
88	10	12	25	36	14	10	10	11	0	10	26	34	115	69	31	30	10
89	0	0	10	20	7	9	0	11	0	12	12	22	25	33	22	15	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Report No.: UTC2307026E-A

91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Laboratory: UTEST TECHNICAL LABORATORY CO.LTD A2LA Certificate# 4810.01
Unit 401, No. 309 Xinxin Seven Road, Zengcheng District,
Guangzhou, People' s Republic of China engineer@etk-utest.com

Report Format Number BL-FM-SA-012



Report No.: UTC2307026E-A

122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
124	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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152	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Unit 401, No. 309 Xinxin Seven Road, Zengcheng District,
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Report No.: UTC2307026E-A

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174	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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179	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Report No.: UTC2307026E-A

BUG Rating

Lum. Classification System (LCS)

<u>LCS Zone</u>	<u>Lumens</u>	<u>%Lamp</u>	<u>%Lum</u>
FL (0-30)	3103.6	14.1	14.1
FM (30-60)	6860.7	31.1	31.1
FH (60-80)	2827.0	12.8	12.8
FVH (80-90)	125.4	0.6	0.6
BL (0-30)	2433.7	11.0	11.0
BM (30-60)	4795.2	21.8	21.8
BH (60-80)	1791.6	8.1	8.1
BVH(80-90)	91.9	0.4	0.4
UL (90-100)	0.0	0.0	0.0
UH (100-180)	0.0	0.0	0.0
Total	22029.1	99.9	100.0
BUG Rating	B3-U0-G3		

2.2 Electrical, Photometric and Chromaticity Measurements
(Refer to Work Instruction BL-QP-033)

Test date	2023-07-26	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	IK-COBRA-150WPT2H1-BR3NT57		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
UTC230702	277.0	60	0.538	148.76	0.998	3.21
6E-A2	480.0	60	0.316	146.89	0.968	3.18
DLC Pass Criteria					$\geq 0.9(-3\%)$	$\leq 20(+5)$

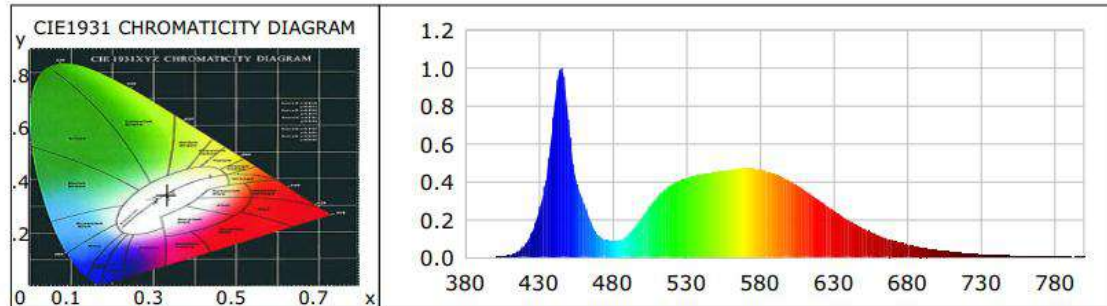
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	277.0	R1	71	R9	-30
Frequency (Hz)	60	R2	76	R10	43
CCT (K)	5569	R3	80	R11	74
Duv	0.0019	R4	74	R12	48
Chromaticity (x, y)	x=0.3309 y=0.3434	R5	73	R13	71
Chromaticity (u', v')	u(u')=0.2049 v'=0.4785	R6	69	R14	89
Color Rendering Index (CRI)	72	R7	79	R15	65
R9	-30	R8	59	--	--
Rf	73	--	--	--	--
Rg	96	--	--	--	--
Rcs,h1(%)	-17				

Photometric Measurement – Sphere-Spectroradiometer Method:

Parameter	Result		DLC V5.1 Pass Criteria
Test Voltage (V)	277.0	480.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	23203.6	23020.6	$\geq 10000(-10\%)$
Luminous Efficacy (lm/W)	155.98	156.72	Premium: $\geq 120(-3\%)$
Most worst Luminous/Highest Watts	154.75		

Spectral Power Distribution & Chromaticity Diagram



WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0008	0.6913	535	0.4046	346.2700	690	0.0893	76.4546
385	0.0002	0.2025	540	0.4175	357.3578	695	0.0780	66.7911
390	0.0003	0.2590	545	0.4266	365.1445	700	0.0675	57.7919
395	0.0004	0.3514	550	0.4368	373.8341	705	0.0586	50.1304
400	0.0012	1.0213	555	0.4419	378.2448	710	0.0508	43.4837
405	0.0039	3.3412	560	0.4484	383.7567	715	0.0436	37.3245
410	0.0109	9.3121	565	0.4560	390.2681	720	0.0373	31.9160
415	0.0275	23.5118	570	0.4617	395.1455	725	0.0326	27.9225
420	0.0612	52.3984	575	0.4663	399.0755	730	0.0283	24.2385
425	0.1250	106.9538	580	0.4688	401.2694	735	0.0237	20.2809
430	0.2359	201.8653	585	0.4683	400.8189	740	0.0203	17.3493
435	0.4194	358.9922	590	0.4631	396.3291	745	0.0175	15.0196
440	0.7476	639.8377	595	0.4549	389.3099	750	0.0155	13.3015
445	1.0000	855.8895	600	0.4419	378.2082	755	0.0129	11.0751
450	0.7275	622.6991	605	0.4254	364.1055	760	0.0111	9.4919
455	0.4175	357.3535	610	0.4049	346.5153	765	0.0104	8.8760
460	0.2996	256.4307	615	0.3811	326.1670	770	0.0082	6.9841
465	0.1918	164.1581	620	0.3569	305.5076	775	0.0074	6.3376
470	0.1197	102.4694	625	0.3294	281.9198	780	0.0061	5.1908
475	0.0938	80.2894	630	0.3029	259.2854	785	0.0060	5.1570
480	0.0848	72.5700	635	0.2748	235.1747	790	0.0051	4.3622
485	0.0893	76.3943	640	0.2471	211.5223	795	0.0040	3.4169
490	0.1164	99.6100	645	0.2215	189.5674	800	0.0036	3.0604
495	0.1601	137.0104	650	0.1973	168.8686			
500	0.2128	182.0981	655	0.1749	149.7315			
505	0.2661	227.7172	660	0.1537	131.5757			
510	0.3161	270.5231	665	0.1348	115.3516			
515	0.3542	303.1830	670	0.1174	100.4901			
520	0.3833	328.0821	675	0.1024	87.6024			
525	0.4046	346.2700	680	0.0893	76.4546			
530	0.4175	357.3578	685	0.0780	66.7911			

TM30

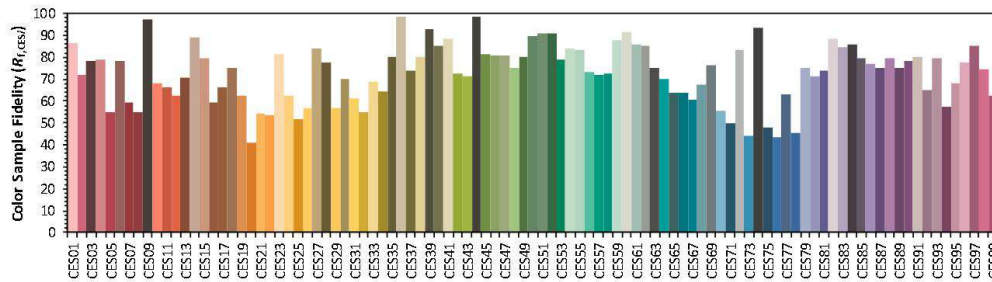
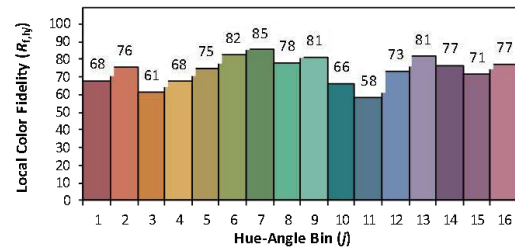
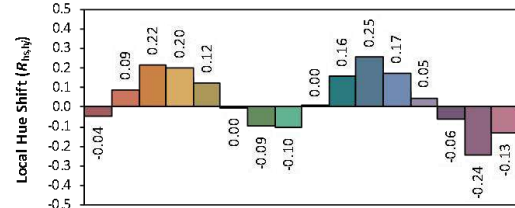
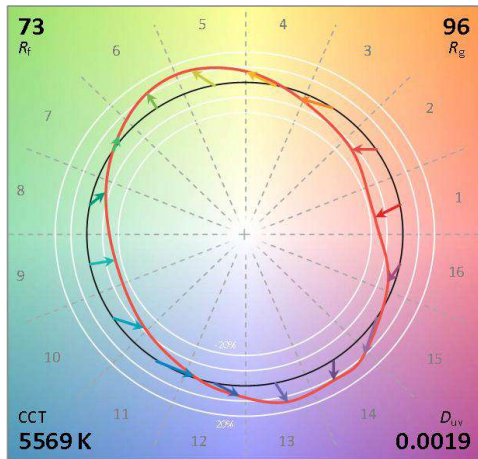
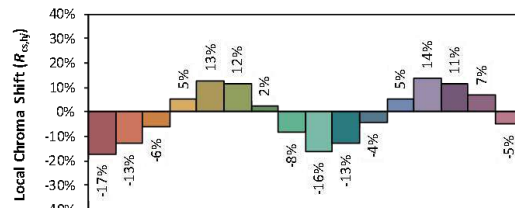
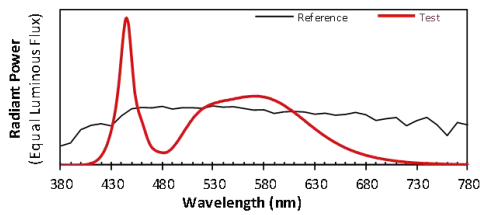
ANSI/IES TM-30-18 Color Rendition Report

Source: BXEM-57C-12H-6C

Manufacturer: IK10 LED LIGHTING

Date: 2023/7/26

Model: IK-COBRA-150WPT2H1-BR3NT57



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

x 0.3309
y 0.3434
u' 0.2049
v' 0.4785

CIE 13.3-1995 (CRI)
R_a 72
R_g -30

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

Calculated Efficacy Data for family models:

Model Number	Luminous Flux (lm)	Power (W)	Efficacy (lm/W)
IK-COBRA-150WPT2H1-BR3NT30	22029.3	148.79	148.06
IK-COBRA-150WPT2H1-BR3NT40	22420.7	148.78	150.70
IK-COBRA-150WPT2H1-BR3NT50	22812.2	148.78	153.33
IK-COBRA-150WPT2H1-BR3NT57	23203.6	148.76	155.98

*1: This value is calculated and the calculation formula is as below:

$$22420.7 = (23203.6 - 22029.3) / 3 + 22029.3$$

$$22812.2 = (23203.6 - 22029.3) / 3 + 22420.7$$

*2: This value is calculated and the calculation formula is as below:

$$148.78 = (148.76 + 148.79) / 2$$

*3: This value is calculated and the calculation formula is as below:

$$150.70 = 22420.7 / 148.78$$

$$153.33 = 22812.2 / 148.78$$

3. Test Equipment

Equipment Name	Model No.	Serial No.	Calibration Date
Goniophotometric System	GPM-3000	DYHXF120001	2023-01-17
AC Power Source	CHP-500C	DYBWD010159	2023-01-18
Total Luminous Flux Standard Lamp	24V/150W	DYJYR040040	2023-02-01
Digital Power Meter	WT500	DYDWQ20010	2023-01-18
Integral Sphere (2M)	2M	DYJCE120067	2023-01-17
Digital Power Meter	WT500	DYDWQ200006	2023-01-18
Optical Color and Electrical Measurement System	CMS-3000S	DYJCE120067	2023-01-17
Expand Uncertainty: Photometric Measurement (Sphere): 2.08%, k=2 Chromaticity Measurement(Sphere):25.6K, k=2 Photometric Measurement(Goniophotometer):2.645%, k=2			

***** END OF REPORT *****