

LM-79-08 Test Report

For

EiKO Global, LLC

(Brand Name: EiKO)

23220 W. 84th St, Shawnee, KS 66227 USA

Outdoor Non-Cutoff and Semi-Cutoff Wall-mounted Area Luminaires

Model name(s): WMG-2C-50K-347V

Remark: X=CCT(4=4000K,5=5000K)

YY=Mounting Option(WM=Wall Mount)

ZZ=Housing Color(use 2 digits to indicate all of color)

Representative (Tested) Model: WMG-2C-50K-347V

Test & Report By:

Johnson Sun

Engineer: Johnson Sun

Update: Nov.28, 2016

Review By:

Tommy Liang

Manager: Tommy Liang

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

Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320

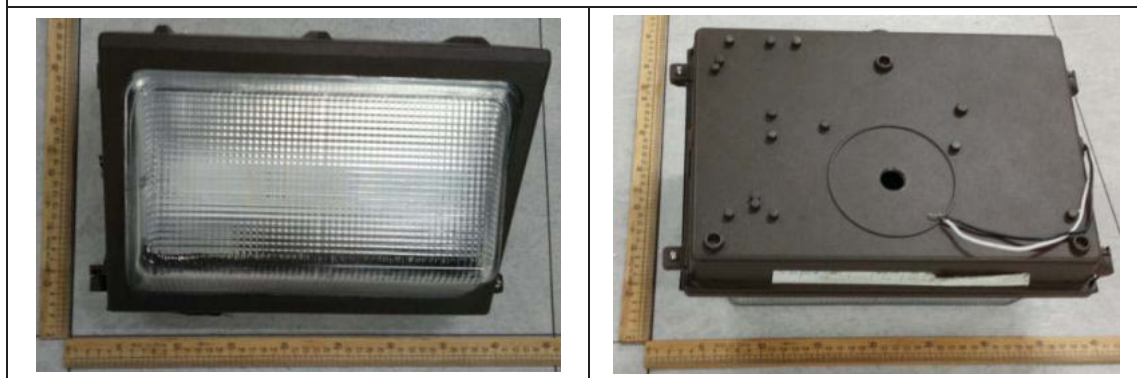
Fax: 8620-32290422

<http://www.standard-tech.com>

1.1 Product Information:

Organization Name	EiKO Global, LLC	
Brand Name	EiKO	
Model Number	WMG-2C-50K-347V	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Outdoor Non-Cutoff and Semi-Cutoff Wall-mounted Area Luminaires	
Rated Voltage / Frequency	347 -480Vac, 50/60 Hz	
Nominal Power	40W	
Rated Initial Lamp Lumen	--	
Declared CCT	5000K	
LED Manufacturer	Philips Lumileds	
LED Model	LUXEON 3030 2D	
Sample Number	WMG-2C-50K-347V (5000K)	
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	: Nov.21,2016
Date of Test	: Nov.22,2016
Test item	<ol style="list-style-type: none"> 1. Total Luminous Flux 2. Luminous Distribution Intensity 3. Luminous Efficacy 4. Correlated Color Temperature 5. Color Rendering Index 6. Chromaticity Coordinate 7. Electrical Parameters
Reference Standard	<ol style="list-style-type: none"> 1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products 2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products 3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources 4. CIE 15-2004 Technical Report Colorimetry 5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source 6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
Reference Work Instruction	QD25

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.

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.

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.

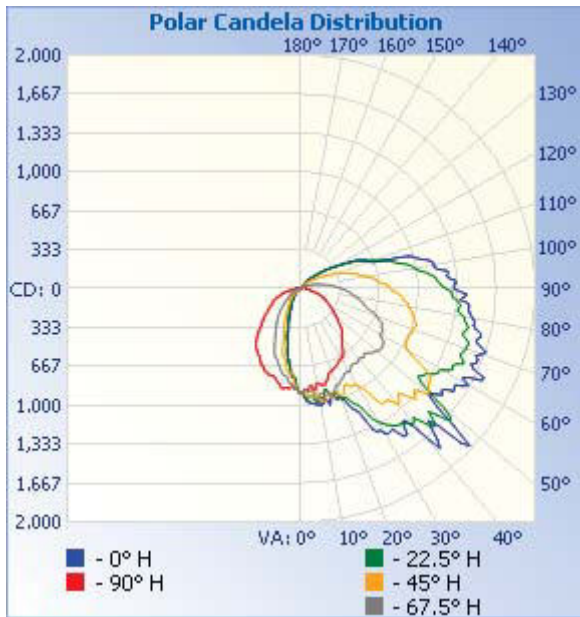
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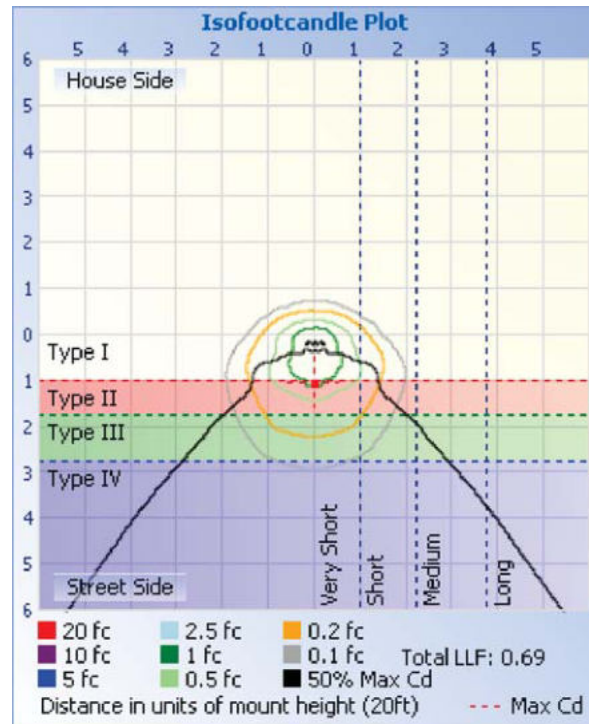
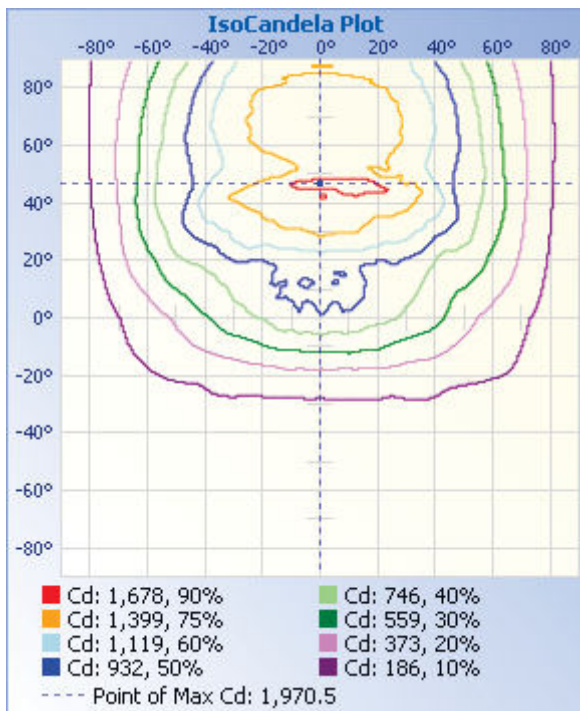
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Illuminance at a Distance

	Center Beam fc	Beam Width	
17.0ft	3.09 fc	44.7 ft	34.4 ft
34.0ft	0.77 fc	89.4 ft	68.8 ft
51.0ft	0.34 fc	134.2 ft	103.1 ft
68.0ft	0.19 fc	178.9 ft	137.5 ft
85.0ft	0.12 fc	223.6 ft	171.9 ft
102.0ft	0.09 fc	268.3 ft	206.3 ft

■ Vert. Spread: 105.5°
■ Horiz. Spread: 90.6°



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C (DEG) γ (DEG)	0	23	45	68	90	113	135	158	180	203	225	248	270	293	315	338
0	893	893	893	893	893	893	893	893	893	893	893	893	893	893	893	893
5	833	877	957	944	983	925	941	878	836	842	786	744	765	741	762	833
10	870	948	974	978	1018	959	972	921	819	733	707	629	627	613	705	760
15	813	931	1015	970	978	941	959	926	830	721	561	455	453	454	599	702
20	785	877	970	1011	980	1017	972	879	750	604	436	338	318	330	437	628
25	753	856	919	1104	1169	1091	902	845	722	503	317	236	221	245	335	535
30	702	833	962	1363	1429	1320	964	824	688	415	242	177	159	182	258	440
35	658	795	1082	1454	1545	1429	1208	780	619	346	181	137	131	139	191	362
40	602	757	1253	1451	1663	1497	1297	778	542	273	143	112	107	112	148	301
45	513	725	1367	1604	1659	1607	1316	779	488	211	113	87.1	76.5	88.6	119	236
50	428	758	1392	1741	1434	1607	1407	837	404	160	90.3	62.1	56.6	63.9	96.1	179
55	356	795	1415	1393	1506	1288	1354	855	337	122	69.7	42.7	36.5	46.8	76.5	130
60	304	762	1106	1474	1647	1391	1045	783	278	93.1	52.6	26.3	23.0	31.5	56.6	101
65	267	728	1052	1629	1628	1530	1008	757	228	75.3	40.2	19.4	15.4	22.3	44.6	80.9
70	210	669	1060	1571	1646	1502	1014	691	184	66.2	30.5	9.91	6.18	11.5	33.4	66.7
75	167	560	1030	1510	1593	1439	1000	565	129	62.0	19.4	2.34	2.45	2.17	21.6	56.9
80	112	484	981	1428	1495	1418	938	496	84.4	53.5	12.3	2.66	2.87	2.27	13.3	48.8
85	69.8	422	916	1339	1434	1351	869	422	59.4	42.2	10.0	3.03	3.51	2.65	10.6	38.5
90	46.8	356	815	1247	1307	1241	766	348	46.5	34.9	7.91	3.24	3.72	2.86	8.52	31.3
95	36.2	288	710	1176	1250	1150	667	273	39.3	28.1	6.17	3.13	3.77	2.96	7.10	26.6
100	32.6	216	622	1030	1152	991	580	200	34.6	21.8	4.75	3.03	3.77	3.07	5.58	21.8
105	30.9	157	528	894	1019	853	487	143	31.6	16.6	3.80	2.92	3.77	2.75	4.89	17.8
110	30.1	112	419	754	676	714	388	101	29.6	12.7	3.22	2.60	3.40	2.43	4.47	13.9
115	26.7	83.0	313	611	577	570	291	69.1	25.3	10.5	3.06	2.61	3.08	2.27	3.73	10.8
120	20.2	61.3	227	463	432	425	208	46.8	19.7	8.27	2.53	2.45	2.98	2.22	3.05	8.69
125	14.9	43.4	163	347	310	305	147	32.7	14.9	6.22	2.11	2.18	2.66	2.11	2.42	6.97
130	11.4	29.3	117	226	220	208	105	21.9	11.1	4.69	2.01	2.18	2.39	2.11	2.05	5.54
135	8.58	20.2	84.2	141	149	139	73.9	15.5	7.99	3.79	1.69	2.13	2.29	2.11	1.79	4.27
140	6.62	13.3	57.1	90.2	104	91.2	49.3	9.85	5.66	2.90	1.53	2.07	2.18	2.06	1.58	3.11
145	4.77	8.02	34.7	57.6	69.9	58.6	30.4	5.86	3.86	2.11	1.53	2.07	2.18	2.01	1.58	2.22
150	3.44	4.86	19.2	33.0	43.1	33.3	17.3	3.22	2.43	1.85	1.43	1.91	2.13	1.85	1.58	1.58
155	2.33	2.69	8.81	18.6	23.1	18.0	7.93	2.22	1.53	1.27	1.37	1.49	1.49	1.32	1.37	1.37
160	1.54	1.74	3.41	7.50	10.5	7.56	2.60	1.43	0.90	0.95	1.32	1.44	1.38	1.27	1.37	1.37
165	1.38	1.11	1.00	2.18	2.77	1.91	0.74	1.00	0.95	1.11	1.27	1.49	1.38	1.27	1.37	1.43
170	1.22	1.27	1.06	0.90	0.69	0.85	0.84	1.27	1.48	1.58	1.74	2.02	1.49	1.32	1.37	1.53
175	1.32	1.42	1.43	1.11	0.80	1.16	1.26	1.37	1.48	1.42	1.69	2.42	1.49	1.27	1.32	1.48
180	1.33	1.64	1.48	1.22	0.95	1.16	1.26	1.48	1.48	1.37	1.64	1.49	1.27	0.90	1.21	1.27

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BUG Rating: B1-U4-G3

IESNA Luminaire Flux Distribution Table:

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	402.07	8.6
FM - Front-Medium(30-60)	1316.5	28.3
FH - Front-High(60-80)	1048	22.5
FVH - Front-Very High(80-90)	462.08	9.9
Total Forward Light	4158.7	89.4

BL - Back-Low(0-30)	208.85	4.5
BM - Back-Medium(30-60)	199.5	4.3
BH - Back-High(60-80)	52.721	1.1
BVH - Back-Very High(80-90)	11.802	0.3
Total Back Light	495.13	10.6

UL - Uplight-Low(90-100)	385.68	8.3
UH - Uplight-High(100-180)	566.59	12.2
Total Up Light	952.27	20.5

BUG(Back,Up,Glare) Rating	B1-U4-G3
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Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	472.87	22.264	495.13
Street Side	3228.7	930.01	4158.7

2.2 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction QD25)

Test date	2016-11-22	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	WMG-2C-50K-347V		

Electrical Measurement :

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE161105-	347.0	60	0.1101	37.92	0.9926	14.91
V2	480.0	60	0.0825	37.98	0.9587	17.24
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

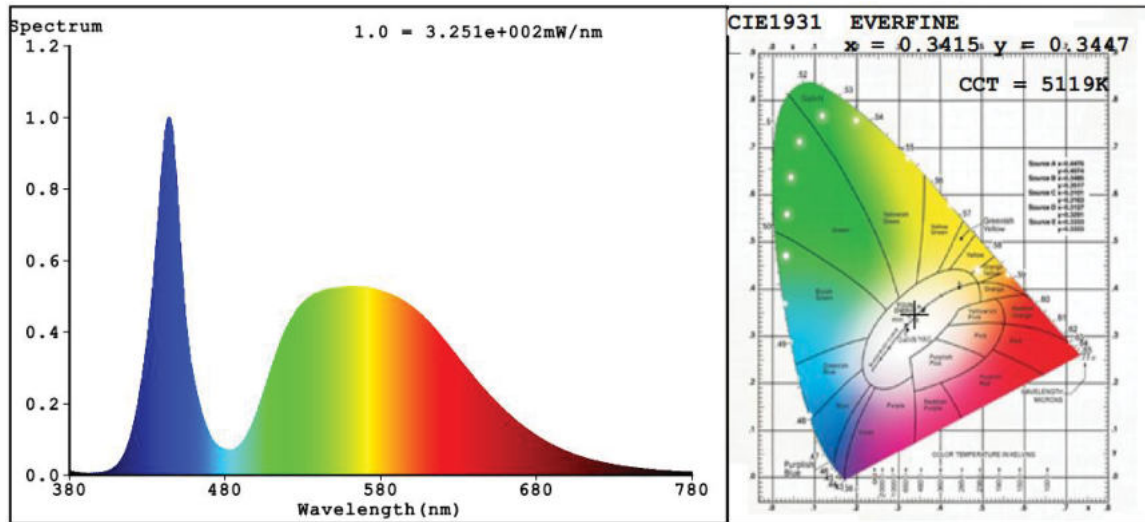
Chromaticity Measurement - Sphere-Spectroradiometer Method :

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	347.0	R1	73	R9	0
Frequency (Hz)	60	R2	75	R10	39
CCT (K)	5119	R3	74	R11	74
Duv	-0.0021	R4	74	R12	45
Chromaticity (x, y)	x=0.3415 y=0.3447	R5	73	R13	72
Chromaticity (u', v')	u'=0.2117 v'=0.4807	R6	66	R14	85
Color Rendering Index (CRI)	72.1	R7	77	R15	69
R9	0	R8	63	--	--

Photometric Measurement – Sphere-Spectroradiometer Method :

Parameter	Result		DLC V4.0 Pass Criteria	
Test Voltage (V)	347.0	480.0	--	
Frequency (Hz)	60	60		
Total Luminous (lm)	4758	4721		
Luminous Efficacy (lm/W)	125.47	124.30	>=300 (-10%)	
Total Luminous (lm)(0-90°)	3784	3755		
Luminous Efficacy(lm/W)(0-90°)	99.79	98.87	Standard: >= 90(-3%)	Premium: >= 110(-3%)

Spectral Power Distribution & Chromaticity Diagram



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3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-336	2 meter Integrating Sphere	2016-07-01	2017-06-30
ST-R-331	Spectral analysis system HAAS-2000	2016-07-01	2017-06-30
D204	Standard Lamp	2016-07-01	2017-06-30
PF2010	Power Meter for Integrating Sphere	2016-07-01	2017-06-30
EE-09	Goniophotometer system	2016-07-01	2017-06-30
D908S	Standard Lamp	2016-07-01	2017-06-30
PF210	Power Meter for Goniophotometer	2016-07-01	2017-06-30
ST-R-181A	Temperature Tester	2016-07-01	2017-06-30
Uncertainty: Photometric Measurement (Sphere):1.74% Chromaticity Measurement(Sphere):14.3K Photometric Measurement(Goniophotometer):1.62%			

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

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