

LM-79 Photometric Test Report

Fixture Model Number: RW5

Report Prepared For: ikan international
11500 S. SAM HOUSTON PKWY, HOUSTON, TX

Test: Electrical and Photometric tests as required by the IESNA test standards

Description of Sample (Test results are applicable only to the following configuration): IKAN RAYDEN DAYLIGHT HALF FOOT X 1 FOOT LED LIGHT FIXTURE.

The sample(s) was (were) tested in accordance with the following applied standards/regulations:

- IESNA LM79: 2008 Approved for Electrical and Photometric Measurements of Solid-State Lighting Products
- ANSI NEMA ANSLG C78.377: 2008 Specification of the Chromaticity of Solid State Lighting Products
- ATAL Goniophotometer Test Procedure
- ATAL Sphere Test Procedure

Test Report shall not be reproduced except in full, without written approval of ATAL

ATAL Test Number: ATAL019070

Sample Arrival Date: 6/15/2017

Date of Tests: 6/20/2017

Test Report Prepared by:

Adrienne Lattimore

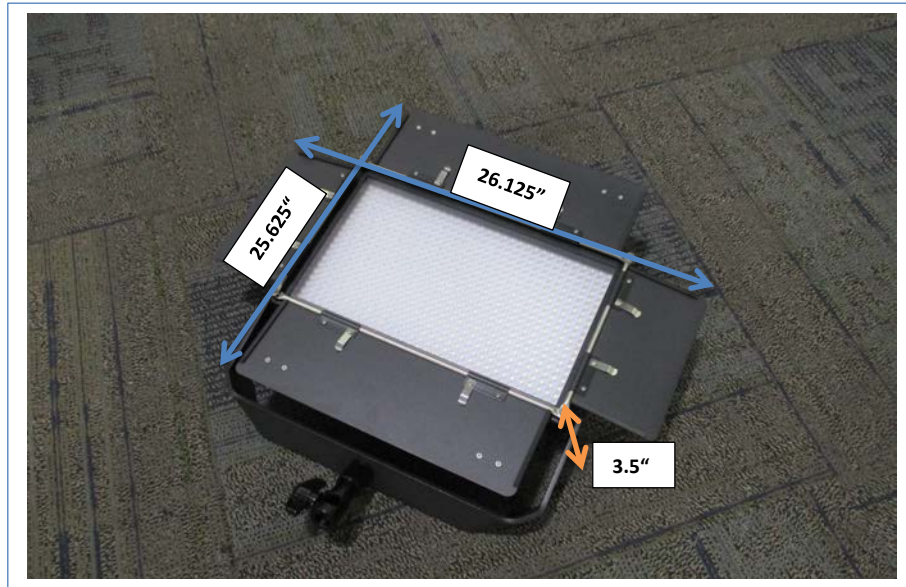
Adrienne Lattimore, Technician

Test Report Approved By:

Jim Rice

Jim Rice, Lab Manager

ATAL Test Number: ATAL019070



Sphere Equipment Used

Description	Model #	Serial #	Calibration Date	Calibration due date
Integrating 76 inch Sphere	LMS760	1230110011	4/26/2017	10/26/2017
Voltech Power Analyzer	PM1000+	100008202596	9/14/2016	9/14/2017
Onset Thermometer	U14-002	10408869	9/21/2016	9/21/2017
Agilent DC Power Supply	E3634A	MY53240055	9/14/2016	9/14/2017

Goniophotometer Equipment Used

Description	Model #	Serial #	Calibration Date	Calibration due date
ITL Type C Gonio System	ITL GCC1	C114-0512	1/6/2017	7/6/2017
Yokogawa Digital Power Meter	WT210	91MB22428	9/13/2016	9/13/2017
Agilent DC Power Supply	N5770A	US13A0157J	9/14/2016	9/14/2017
Onset Data Logger	U14-002	10408835	9/20/2016	9/20/2017

ATAL Test Number: ATAL019070

LM-79 Test Summary

Manufacturer:	ikan international
Model Number:	RW5
Driver Model Number:	DC POWER SUPPLY
Lamp :	5600K 0.06 WATT LEDS
Pre-Burn Time (hours):	24

Electrical Measurement

Input Voltage:	15.03 VDC	Continuous Voltage Monitoring <input checked="" type="checkbox"/>
Input Current:	2.346 A	
Input Power:	35.27 W	

Light Output:

Lumens:	2506 Lm
Efficacy:	71.0 Lm/W
Color Rendering Index (CRI):	R _a : 94.70 R _g : 86.64
Correlated Color Temperature (K):	6100
Chromaticity Coordinate x:	0.3215
Chromaticity Coordinate y:	0.3145
Ambient Temperature (°C):	25.6
Stabilization Time (Mins):	30
Total Operating Time (Hours):	24
u/u':	1
v:	0.3078
v':	0.4617
Duv:	-0.0090

ATAL Test Number: ATAL019070

Test Methods

Photometric Measurements – Goniophotometer

An ITL Type C Rotating Mirror Goniophotometer was used to measure candelas (intensity) at each angle of distribution as defined by IESNA for the appropriate fixture type.

Ambient temperature is set to $25^{\circ}\text{C} \pm 1^{\circ}$ and is measured from the center of the fixture, within 1 meter from the outside of the fixture. Temperature is maintained at $25^{\circ}\text{C} \pm 1^{\circ}$ throughout the testing process and the sample is stabilized for at least 30 minutes and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Spectral Measurements – Integrating Sphere

A sensing Spectrometer CDS-2100, in conjunction with Labsphere 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature (CCT) and the color rendering index (CRI) for each sample.

Ambient temperature is set to $25^{\circ}\text{C} \pm 1^{\circ}$ and is measured from the center of the fixture, within 1 meter from the outside of the fixture. Temperature is maintained at $25^{\circ}\text{C} \pm 1^{\circ}$ throughout the testing process and the sample is stabilized for at least 30 minutes and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

REPORT NUMBER: ATAL019070
 ISSUE DATE: 06/20/17
 PREPARED FOR: ikan international
 CATALOG NUMBER: RW5
 LUMINAIRE: IKAN RAYDEN DAYLIGHT .5X1 LED LIGHT FIXTURE.
 LAMP CAT. NO.: 5600K 0.06 WATT LEDS
 LAMP: 5600K LED MODULE
 BALLAST CAT. NO.: DC POWER SUPPLY 114
 BALLAST: (1) AGILENT DC POWER SUPPLY

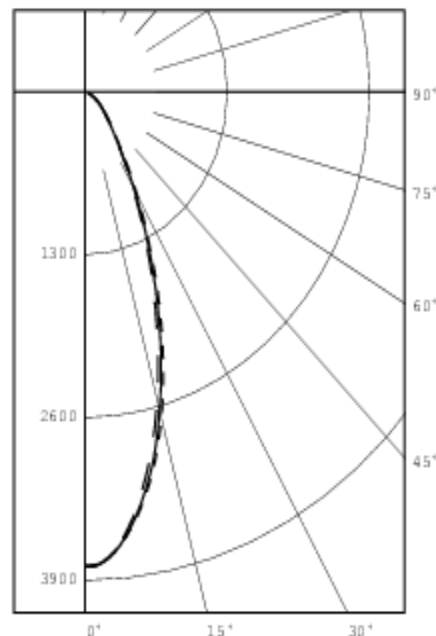
PAGE: 1 OF 8

(SEE PAGE 2 FOR MORE INFORMATION)

CANDELA DISTRIBUTION						FLUX
	0.0	22.5	45.0	67.5	90.0	
0	3787	3787	3787	3787	3787	
5	3635	3634	3637	3626	3620	333
15	2693	2670	2632	2577	2543	723
25	1430	1425	1383	1341	1316	635
35	592	588	565	554	550	369
45	287	279	272	269	268	216
55	151	157	153	154	142	137
65	60	73	68	70	54	68
75	19	22	20	20	16	22
85	1	2	2	2	2	3
90	0	0	0	0	0	
95	0	0	0	0	0	0
105	0	0	0	0	0	0
115	0	0	0	0	0	0
125	0	0	0	0	0	0
135	0	0	0	0	0	0
145	0	0	0	0	0	0
155	0	0	0	0	0	0
165	0	0	0	0	0	0
175	0	0	0	0	0	0
180	0	0	0	0	0	0

ZONAL LUMEN SUMMARY		
ZONE	LUMENS	%FIXT
0- 30	1690	67.5
0- 40	2059	82.2
0- 60	2412	96.3
0- 90	2506	100.0
90-120	0	0.0
90-130	0	0.0
90-150	0	0.0
90-180	0	0.0
0-180	2506	100.0

EFFICACY = 71.0 Lm/W
 CIE TYPE - DIRECT



LEGEND:
 0-deg: - - - - -
 45-deg: _____
 90-deg:

Checked
Approved

REPORT NUMBER: ATAL019070
ISSUE DATE: 06/20/17
PREPARED FOR: XTRALIGHT MANUFACTURING

PAGE: 2 OF 8

ADDITIONAL INFORMATION

INPUT WATTS: 35.27, AMPS: 2.346, VDC: 15.03, TEMP: 25.6 C, HRS OPERATED
PRIOR TO TESTING: 24; STABILITY: 30 MIN
MOUNTING: POLE MOUNTED
TEST ABSOLUTE PHOTOMETRY IS BASED ON CALIBRATION FACTORS CREATED USING A
1000 WATT, NIST TRACEABLE, OMNIDIRECTIONAL LAB LUMEN STANDARD IN
THE GONIOPHOTOMETER WITH A TEST DISTANCE OF 28 FEET
DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.

REPORT NUMBER: ATAL019070
ISSUE DATE: 06/20/17
PREPARED FOR: XTRALIGHT MANUFACTURING

PAGE: 3 OF 8

PLANE : 0-DEG 90-DEG
BEAM ANGLE (50%) : 42.5 X 39.9 DEGREES
FIELD ANGLE (10%) : 81.4 X 79.4 DEGREES

REPORT NUMBER: ATAL019070
ISSUE DATE: 06/20/17
PREPARED FOR: XTRALIGHT MANUFACTURING

PAGE: 4 OF 8

PLANE : 0-DEG 90-DEG
SPACING CRITERIA : 0.7 0.6

REPORT NUMBER: ATAL019070

PAGE: 5 OF 8

ISSUE DATE: 06/20/17

PREPARED FOR: XTRALIGHT MANUFACTURING

CANDELA DISTRIBUTION
 LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0
0.0	3787	3787	3787	3787	3787
1.0	3781	3785	3787	3792	3793
2.0	3767	3768	3773	3774	3772
3.0	3736	3736	3742	3739	3734
4.0	3689	3691	3696	3689	3683
5.0	3635	3634	3637	3626	3620
6.0	3573	3567	3567	3551	3544
7.0	3499	3491	3489	3466	3457
8.0	3424	3408	3404	3374	3370
9.0	3335	3320	3311	3276	3256
10.0	3244	3224	3212	3170	3147
12.5	2988	2964	2945	2886	2861
15.0	2693	2670	2632	2577	2543
17.5	2386	2355	2313	2253	2216
20.0	2053	2032	1987	1920	1892
22.5	1743	1722	1673	1621	1597
25.0	1430	1425	1383	1341	1316
27.5	1175	1159	1120	1087	1069
30.0	949	930	896	873	858
32.5	760	740	712	696	686
35.0	592	588	565	554	550
37.5	481	472	459	451	447
40.0	396	388	378	373	370
42.5	337	325	318	314	312
45.0	287	279	272	269	268
47.5	246	241	236	234	233
50.0	211	210	206	205	201
52.5	181	182	178	178	171
55.0	151	157	153	154	142
57.5	123	133	128	131	115
60.0	98	112	106	109	91
62.5	77	91	86	88	70
65.0	60	73	68	70	54
67.5	46	57	52	54	41
70.0	35	43	39	40	31
72.5	26	32	29	29	23
75.0	19	22	20	20	16
77.5	13	15	14	13	11
80.0	8	9	8	8	7
82.5	4	5	4	4	4
85.0	1	2	2	2	2
87.5	0	1	1	1	1
90.0	0	0	0	0	0
92.5	0	0	0	0	0
95.0	0	0	0	0	0
97.5	0	0	0	0	0
100.0	0	0	0	0	0
102.5	0	0	0	0	0
105.0	0	0	0	0	0
107.5	0	0	0	0	0
110.0	0	0	0	0	0
112.5	0	0	0	0	0
115.0	0	0	0	0	0
117.5	0	0	0	0	0
120.0	0	0	0	0	0
122.5	0	0	0	0	0
125.0	0	0	0	0	0
127.5	0	0	0	0	0
130.0	0	0	0	0	0
132.5	0	0	0	0	0
135.0	0	0	0	0	0
137.5	0	0	0	0	0
140.0	0	0	0	0	0
142.5	0	0	0	0	0
145.0	0	0	0	0	0

REPORT NUMBER: ATAL019070

ISSUE DATE: 06/20/17

PREPARED FOR: XTRALIGHT MANUFACTURING

PAGE: 6 OF 8

	CANDELA DISTRIBUTION LATERAL ANGLE				
	0.0	22.5	45.0	67.5	90.0
147.5	0	0	0	0	0
150.0	0	0	0	0	0
152.5	0	0	0	0	0
155.0	0	0	0	0	0
157.5	0	0	0	0	0
160.0	0	0	0	0	0
162.5	0	0	0	0	0
165.0	0	0	0	0	0
167.5	0	0	0	0	0
170.0	0	0	0	0	0
172.5	0	0	0	0	0
175.0	0	0	0	0	0
177.5	0	0	0	0	0
180.0	0	0	0	0	0

REPORT NUMBER: ATAL019070
 ISSUE DATE: 06/20/17
 PREPARED FOR: XTRALIGHT MANUFACTURING

PAGE: 7 OF 8

5-DEGREE

ZONAL LUMEN SUMMARY

0- 5	89
5- 10	244
10- 15	345
15- 20	378
20- 25	350
25- 30	285
30- 35	213
35- 40	156
40- 45	120
45- 50	96
50- 55	78
55- 60	59
60- 65	41
65- 70	26
70- 75	15
75- 80	7
80- 85	3
85- 90	0
90- 95	0
95-100	0
100-105	0
105-110	0
110-115	0
115-120	0
120-125	0
125-130	0
130-135	0
135-140	0
140-145	0
145-150	0
150-155	0
155-160	0
160-165	0
165-170	0
170-175	0
175-180	0

10-DEGREE

ZONAL LUMEN SUMMARY

0- 10	333
0- 20	1055
0- 30	1690
0- 40	2059
0- 50	2275
0- 60	2412
0- 70	2480
0- 80	2503
0- 90	2506
0-100	2506
0-110	2506
0-120	2506
0-130	2506
0-140	2506
0-150	2506
0-160	2506
0-170	2506
0-180	2506

REPORT NUMBER: ATAL019070
 ISSUE DATE: 06/20/17

PAGE: 8 OF 8

PREPARED FOR: XTRALIGHT MANUFACTURING

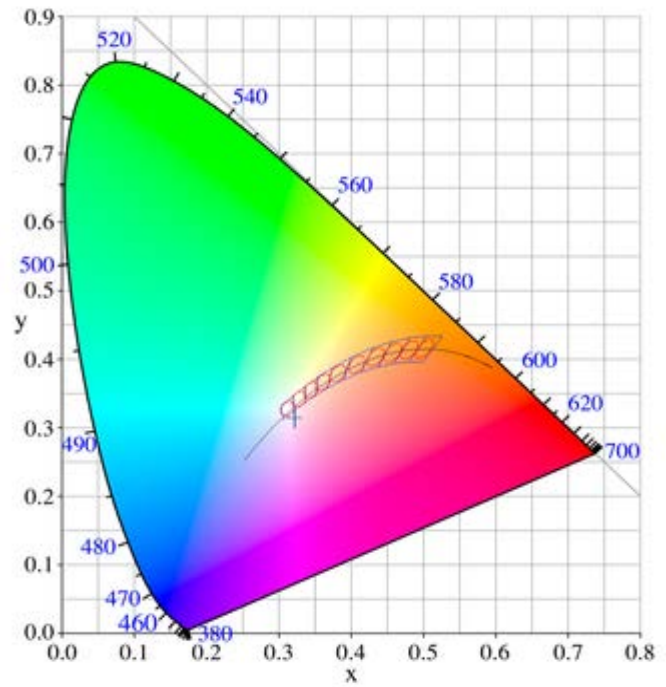
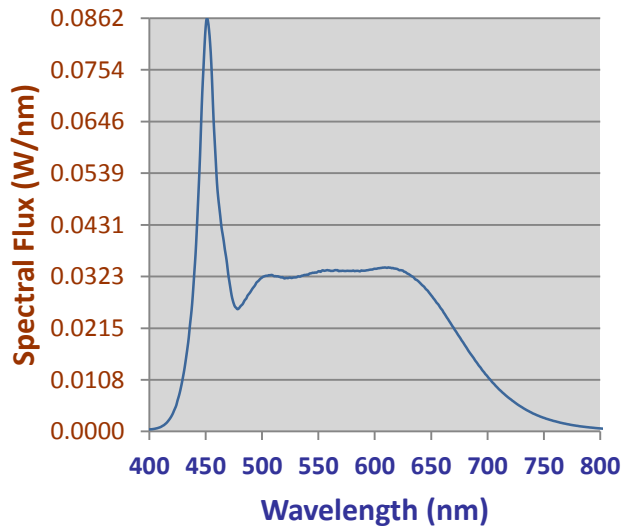
COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	97	95	94	92
2	107	102	97	94	105	100	96	93	97	93	90	94	91	89	91	89	87	85
3	101	94	89	85	99	93	88	84	90	86	83	88	84	81	85	82	80	78
4	96	88	82	77	94	86	81	77	84	80	76	82	78	75	80	77	74	73
5	91	82	76	71	89	81	75	71	79	74	70	77	73	70	76	72	69	67
6	86	77	71	66	85	76	70	66	74	69	65	73	68	65	72	68	64	63
7	82	72	66	62	81	72	66	62	70	65	61	69	64	61	68	64	61	59
8	78	68	62	58	77	68	62	58	67	61	57	65	61	57	65	60	57	56
9	74	65	59	54	73	64	58	54	63	58	54	62	57	54	61	57	54	52
10	71	61	55	51	70	61	55	51	60	55	51	59	54	51	59	54	51	50

ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE
 BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES
 ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS LUMINAIRE SAMPLE.

Relative Spectral Power Distribution



CCT		CRI		x		y		Duv		u'		v'	
6100.0		94.703		0.3215		0.3145		-0.0090		0.2097		0.4617	
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
92.2	94.6	96.7	95.4	93.4	91	97.8	96.6	86.6	92.2	92.2	77.9	92.5	97.7