

LM-79 Photometric Test Report

Fixture Model Number: RW10

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 ONE FOOT X ONE 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: ATAL019074

Sample Arrival Date: 6/15/2017

Date of Tests: 6/20/2017

Test Report Prepared by:

Adrienne Lattimore

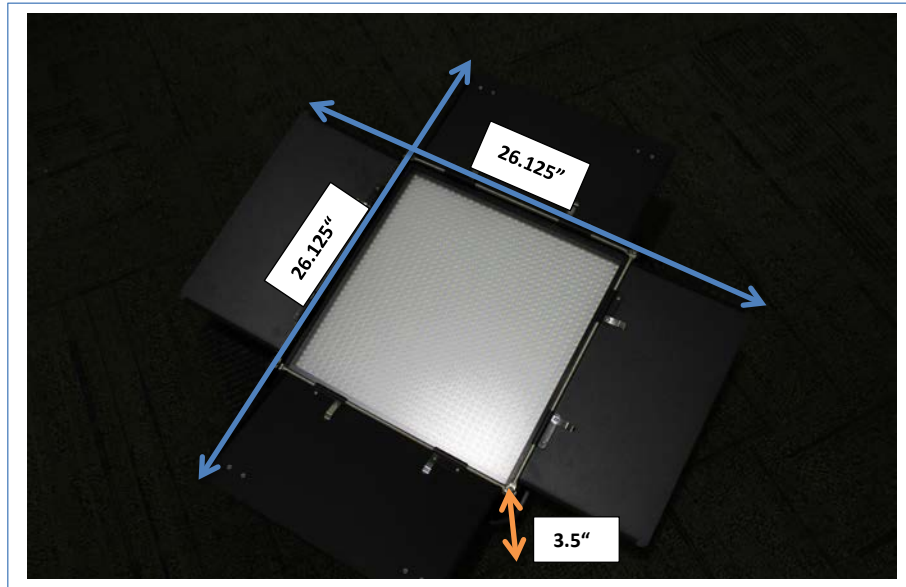
Adrienne Lattimore, Technician

Test Report Approved By:

Jim Rice

Jim Rice, Lab Manager

ATAL Test Number: ATAL019074



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

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LM-79 Test Summary

Manufacturer:	ikan international	
Model Number:	RW10	
Driver Model Number:	DC POWER SUPPLY	
Lamp :	5600K 0.06 WATT LEDS	
Pre-Burn Time (hours):	24	

Electrical Measurement

Input Voltage:	15.02 VDC	Continuous Voltage Monitoring <input checked="" type="checkbox"/>
Input Current:	4.678 A	
Input Power:	70.29 W	

Light Output:

Lumens:	4971 Lm	
Efficacy:	70.7 Lm/W	
Color Rendering Index (CRI):	R _a : 94.09	R _g : 85.31
Correlated Color Temperature (K):	5952	
Chromaticity Coordinate x:	0.3241	
Chromaticity Coordinate y:	0.3139	
Ambient Temperature (°C):	25.6	
Stabilization Time (Mins):	30	
Total Operating Time (Hours):	24	
u/u':	1	
v:	0.3078	
v':	0.4617	
Duv:	-0.0106	

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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°C ±1° and is measured from the center of the fixture, within 1 meter from the outside of the fixture. Temperature is maintained at 25°C ±1° 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°C ±1° and is measured from the center of the fixture, within 1 meter from the outside of the fixture. Temperature is maintained at 25°C ±1° 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: ATAL019074
 ISSUE DATE: 06/20/17
 PREPARED FOR: ikan international
 CATALOG NUMBER: RW10
 LUMINAIRE: IKAN RAYDEN DAYLIGHT 1X1 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

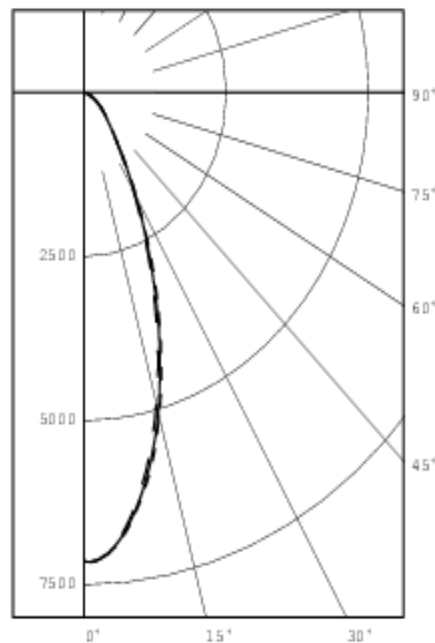
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(SEE PAGE 2 FOR MORE INFORMATION)

CANDELA DISTRIBUTION						FLUX
	0.0	22.5	45.0	67.5	90.0	
0	7151	7151	7151	7151	7151	
5	6889	6892	6875	6858	6849	630
15	5103	5108	5039	4949	4902	1384
25	2787	2790	2695	2661	2612	1247
35	1186	1193	1158	1145	1132	749
45	573	568	562	564	559	445
55	314	328	325	334	294	290
65	134	162	158	166	123	155
75	46	56	54	59	47	59
85	5	6	7	8	8	10
90	0	0	1	1	1	
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	3261	65.6
0- 40	4011	80.7
0- 60	4746	95.5
0- 90	4971	100.0
90-120	0	0.0
90-130	0	0.0
90-150	0	0.0
90-180	0	0.0
0-180	4971	100.0

EFFICACY = 70.7 Lm/W
 CIE TYPE - DIRECT



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

Checked
Approved

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ADDITIONAL INFORMATION

INPUT WATTS: 70.29, AMPS: 4.678, VDC: 15.02, 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.

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PLANE : 0-DEG 90-DEG
BEAM ANGLE (50%): 42.9 X 41.1 DEGREES
FIELD ANGLE (10%): 83.0 X 82.1 DEGREES

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

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CANDELA DISTRIBUTION
 LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0
0.0	7151	7151	7151	7151	7151
1.0	7153	7153	7157	7152	7154
2.0	7123	7127	7127	7123	7123
3.0	7073	7073	7069	7061	7059
4.0	6993	6994	6984	6974	6970
5.0	6889	6892	6875	6858	6849
6.0	6765	6771	6747	6724	6714
7.0	6631	6632	6599	6569	6553
8.0	6471	6479	6441	6402	6383
9.0	6311	6314	6267	6220	6198
10.0	6140	6138	6086	6030	6004
12.5	5658	5653	5589	5513	5477
15.0	5103	5108	5039	4949	4902
17.5	4524	4526	4438	4358	4305
20.0	3920	3930	3837	3760	3708
22.5	3340	3343	3246	3196	3137
25.0	2787	2790	2695	2661	2612
27.5	2283	2291	2216	2185	2145
30.0	1858	1854	1790	1771	1739
32.5	1481	1488	1438	1428	1403
35.0	1186	1193	1158	1145	1132
37.5	957	966	941	937	923
40.0	788	789	778	775	764
42.5	667	661	656	654	648
45.0	573	568	562	564	559
47.5	498	494	490	493	486
50.0	431	431	427	435	418
52.5	371	377	375	382	355
55.0	314	328	325	334	294
57.5	260	282	279	287	238
60.0	211	238	235	244	191
62.5	170	199	195	204	152
65.0	134	162	158	166	123
67.5	105	130	126	134	99
70.0	81	101	97	104	78
72.5	62	77	74	80	61
75.0	46	56	54	59	47
77.5	32	39	38	41	34
80.0	21	25	25	28	24
82.5	12	14	15	17	15
85.0	5	6	7	8	8
87.5	2	2	3	3	3
90.0	0	0	1	1	1
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

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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

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5-DEGREE
 ZONAL LUMEN SUMMARY

0- 5	168
5- 10	462
10- 15	657
15- 20	727
20- 25	682
25- 30	565
30- 35	430
35- 40	319
40- 45	246
45- 50	200
50- 55	163
55- 60	127
60- 65	93
65- 70	63
70- 75	39
75- 80	21
80- 85	8
85- 90	2
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	630
0- 20	2015
0- 30	3261
0- 40	4011
0- 50	4456
0- 60	4746
0- 70	4901
0- 80	4961
0- 90	4971
0-100	4971
0-110	4971
0-120	4971
0-130	4971
0-140	4971
0-150	4971
0-160	4971
0-170	4971
0-180	4971

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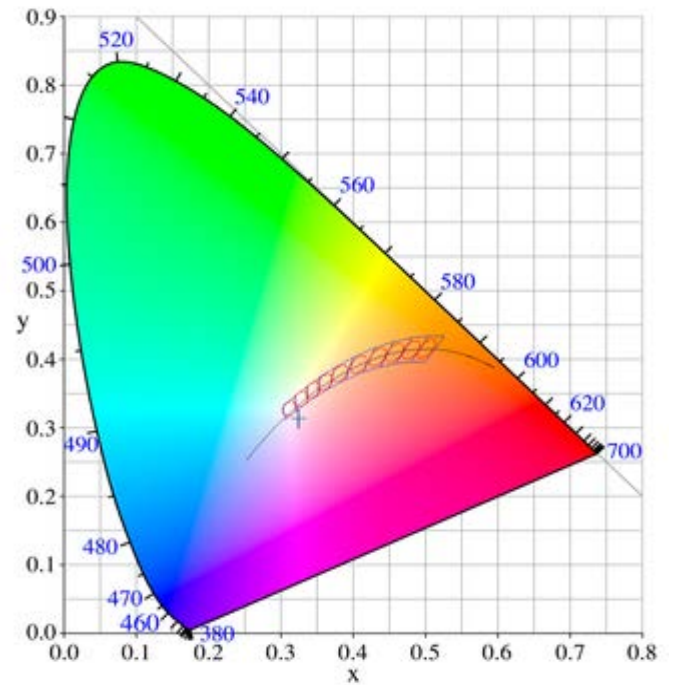
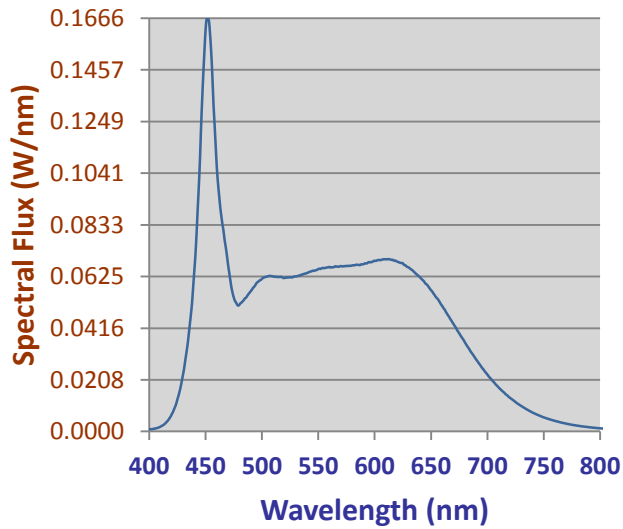
COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	0	
0	119	119	119	119	116	116	116	116	111	111	111	111	111	111	100	
1	113	110	107	104	110	108	105	103	103	101	100	100	98	97	92	
2	106	101	97	93	104	99	95	92	96	93	90	93	90	88	84	
3	101	93	88	84	98	92	87	83	89	85	82	87	83	80	77	
4	95	87	81	76	93	86	80	76	83	79	75	81	77	74	71	
5	90	81	75	70	88	80	74	70	78	73	69	77	72	69	66	
6	85	76	69	65	84	75	69	65	74	68	64	72	67	64	62	
7	81	71	65	60	80	71	65	60	69	64	60	68	63	60	58	
8	77	67	61	57	76	67	61	57	66	60	56	64	60	56	54	
9	74	64	57	53	72	63	57	53	62	57	53	61	56	53	51	
10	70	60	54	50	69	60	54	50	59	54	50	58	53	50	48	

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'	
5952.0		94.091		0.3241		0.3139		-0.0106		0.2119		0.4617	
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
91.2	93.7	96.9	94.9	92.4	90.1	97.3	96.3	85.3	90.6	91.7	78	91.4	97.8