

## LM-79 Photometric Test Report

**Fixture Model Number: RB10**

**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 BI-COLOR 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: ATAL019076**

**Sample Arrival Date: 6/22/2017**

**Date of Tests: 6/26/2017**

**Test Report Prepared by:**

*Adrienne lattimore*

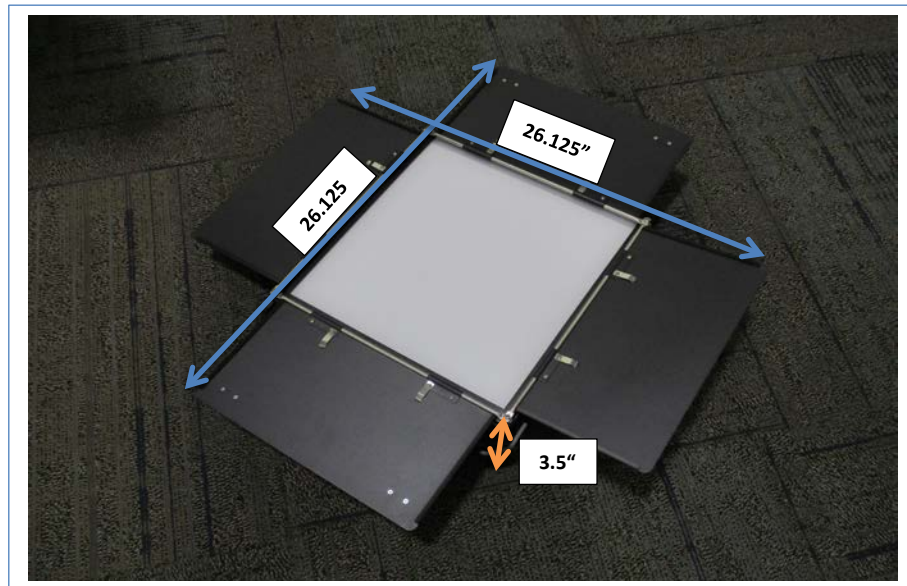
**Adrienne Lattimore, Deputy**

**Test Report Approved By:**

*Jim Rice*

**Jim Rice, Lab Manager**

**ATAL Test Number: ATAL019076**



**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: ATAL019076**

**LM-79 Test Summary**

<b>Manufacturer:</b>	ikan international	
<b>Model Number:</b>	RB10	
<b>Driver Model Number:</b>	DC POWER SUPPLY	
<b>Lamp :</b>	3200K 0.06 WATT LEDS	
<b>Pre-Burn Time (hours):</b>	24	

**Electrical Measurement**

<b>Input Voltage:</b>	15.05 VDC	Continuous Voltage Monitoring <input checked="" type="checkbox"/>
<b>Input Current:</b>	4.182 A	
<b>Input Power:</b>	62.96 W	

**Light Output:**

<b>Lumens:</b>	4559 Lm	
<b>Efficacy:</b>	72.4 Lm/W	
<b>Color Rendering Index (CRI):</b>	R <sub>a</sub> : 95.62	R <sub>g</sub> : 87.13
<b>Correlated Color Temperature (K):</b>	3166	
<b>Chromaticity Coordinate x:</b>	0.4185	
<b>Chromaticity Coordinate y:</b>	0.3839	
<b>Ambient Temperature (°C):</b>	25.6	
<b>Stabilization Time (Mins):</b>	30	
<b>Total Operating Time (Hours):</b>	24	
<b>u/u':</b>	1	
<b>v:</b>	0.3402	
<b>v':</b>	0.5104	
<b>Duv:</b>	-0.0056	

**ATAL Test Number: ATAL019076**

**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.**

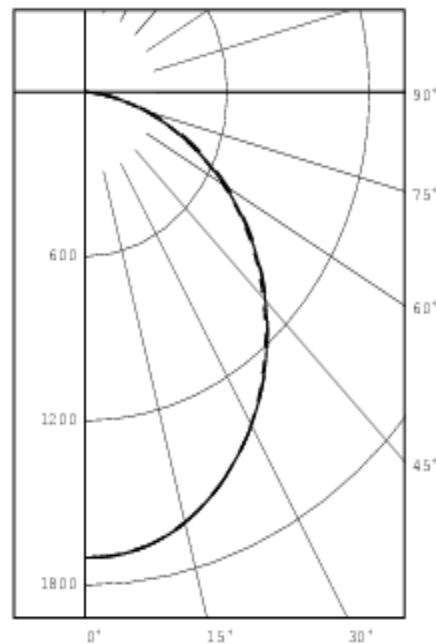
REPORT NUMBER: ATAL019076  
 ISSUE DATE: 06/26/17  
 PREPARED FOR: ikan international  
 CATALOG NUMBER: RB10  
 LUMINAIRE: IKAN RAYDEN BI-COLOR 1X1 LED LIGHT FIXTURE.  
 LAMP CAT. NO.: 3200-5600K 0.06 WATT LEDS  
 LAMP: 3200K LED MODULE  
 BALLAST CAT. NO.: DC POWER SUPPLY 114  
 BALLAST: (1) AGILENT DC POWER SUPPLY  
 INPUT WATTS: 62.96, AMPS: 4.182, VDC:  
 15.05, 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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CANDELA DISTRIBUTION						FLUX
	0.0	22.5	45.0	67.5	90.0	
0	1700	1700	1700	1700	1700	
5	1693	1694	1695	1694	1694	161
15	1626	1626	1627	1626	1627	459
25	1489	1489	1490	1489	1492	686
35	1297	1299	1305	1305	1306	815
45	1063	1067	1076	1081	1082	829
55	808	812	819	828	829	732
65	531	536	537	550	557	536
75	260	258	262	270	280	282
85	40	39	44	48	53	60
90	2	3	4	4	3	

ZONAL LUMEN SUMMARY		
ZONE	LUMENS	%FIXT
0- 30	1306	28.6
0- 40	2121	46.5
0- 60	3681	80.7
0- 90	4559	100.0
90-180	0	0.0
0-180	4559	100.0

TOTAL INPUT WATTS = 63.0  
 EFFICACY = 72.4 Lm/W  
 CIE TYPE - DIRECT  
 PLANE : 0-DEG 90-DEG  
 SPACING CRITERIA : 1.2 1.2



LEGEND:  
 0-deg: - - - - -  
 45-deg: \_\_\_\_\_  
 90-deg: - - - - -

Checked \_\_\_\_\_  
 Approved \_\_\_\_\_

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PLANE : 0-DEG 90-DEG  
BEAM ANGLE (50%) : 106.8 X 108.4 DEGREES  
FIELD ANGLE (10%): 157.2 X 158.8 DEGREES

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CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0.0	1700	1700	1700	1700	1700
2.5	1698	1699	1700	1698	1698
5.0	1693	1694	1695	1694	1694
7.5	1684	1685	1685	1684	1685
10.0	1670	1670	1671	1670	1671
12.5	1650	1650	1652	1651	1652
15.0	1626	1626	1627	1626	1627
17.5	1598	1597	1598	1597	1599
20.0	1565	1564	1566	1564	1567
22.5	1530	1528	1530	1528	1531
25.0	1489	1489	1490	1489	1492
27.5	1448	1448	1449	1448	1450
30.0	1401	1402	1404	1403	1405
32.5	1351	1352	1356	1356	1357
35.0	1297	1299	1305	1305	1306
37.5	1241	1243	1251	1253	1253
40.0	1183	1185	1195	1197	1198
42.5	1124	1127	1137	1140	1141
45.0	1063	1067	1076	1081	1082
47.5	1002	1006	1015	1021	1021
50.0	939	943	951	958	959
52.5	874	878	886	894	895
55.0	808	812	819	828	829
57.5	740	745	750	761	762
60.0	672	676	680	691	697
62.5	602	606	609	621	627
65.0	531	536	537	550	557
67.5	462	466	466	480	488
70.0	392	395	397	409	418
72.5	327	326	329	339	348
75.0	260	258	262	270	280
77.5	196	194	198	207	216
80.0	137	135	139	146	156
82.5	84	83	87	93	102
85.0	40	39	44	48	53
87.5	12	12	14	14	13
90.0	2	3	4	4	3

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5-DEGREE  
 ZONAL LUMEN SUMMARY

0- 5	41
5- 10	120
10- 15	196
15- 20	263
20- 25	320
25- 30	366
30- 35	398
35- 40	416
40- 45	420
45- 50	409
50- 55	385
55- 60	347
60- 65	298
65- 70	239
70- 75	174
75- 80	108
80- 85	49
85- 90	10
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	161
0- 20	620
0- 30	1306
0- 40	2121
0- 50	2949
0- 60	3681
0- 70	4217
0- 80	4499
0- 90	4559
0-100	4559
0-110	4559
0-120	4559
0-130	4559
0-140	4559
0-150	4559
0-160	4559
0-170	4559
0-180	4559



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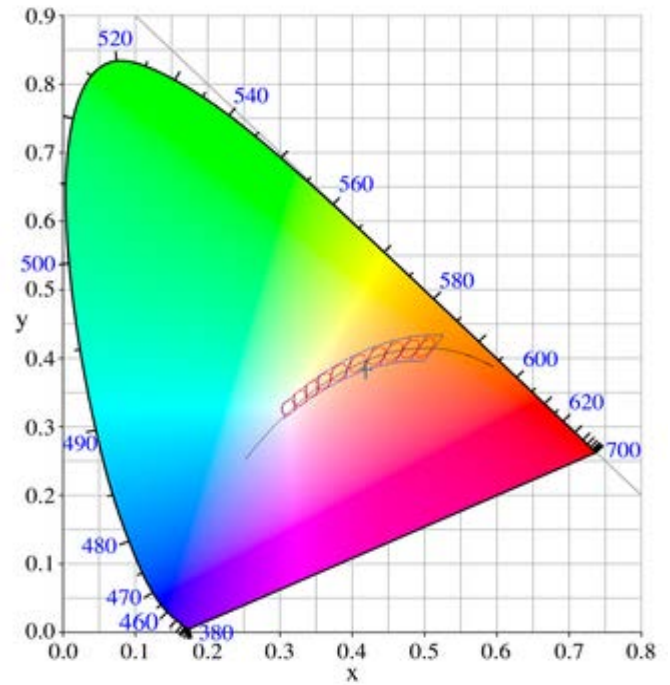
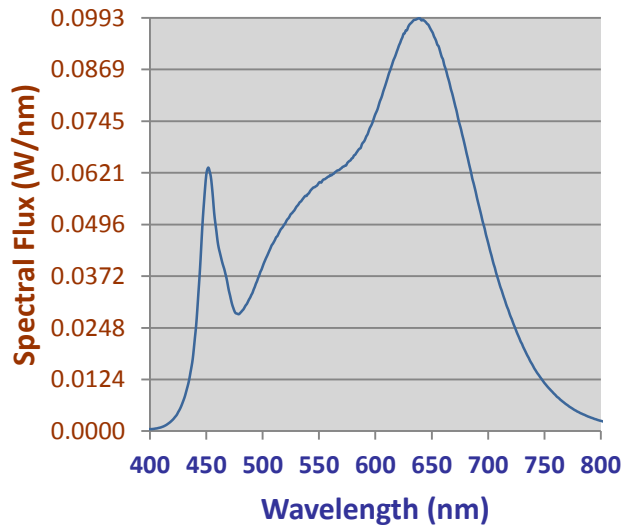
COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	50	30	10	0
0	119	119	119	119	116	116	116	116	111	111	111	111	111	111	106	106	106	100
1	109	105	100	97	106	102	98	95	98	95	92	94	92	89	91	88	87	85
2	99	91	85	79	97	89	83	78	86	81	76	83	78	75	80	76	73	71
3	91	80	72	66	88	79	71	65	76	69	64	73	68	63	71	66	62	60
4	83	71	63	56	81	70	62	56	67	60	55	65	59	54	63	58	53	51
5	77	64	55	48	74	63	54	48	61	53	48	59	52	47	57	51	47	44
6	71	57	49	42	69	57	48	42	55	47	42	53	46	41	51	46	41	39
7	66	52	43	37	64	51	43	37	50	42	37	48	42	37	47	41	36	34
8	61	48	39	33	60	47	39	33	46	38	33	44	38	33	43	37	33	31
9	57	44	36	30	56	43	35	30	42	35	30	41	34	30	40	34	30	28
10	54	40	33	27	52	40	32	27	39	32	27	38	32	27	37	31	27	25

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'	
3166.0		95.622		0.4185		0.3839		-0.0056		0.2472		0.5104	
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
94	96.2	97.3	94.9	94.5	94	99.1	94.9	87.1	94.1	91.9	86	94	97.5