



UL LLC
1075 W Lambert Rd Suite B
Brea, CA 92821

Indoor Distribution Test Report

Relevant Standards
IES LM-79-2008
ANSI C82.77-2002

Prepared For
SONNEMAN - A WAY OF LIGHT

NICOLAS CARMICHAEL
106 PIERCES RD
NEWBURGH, NY 12550-9369
United States

Catalog Number

7232.98-WL

Order Number

11281216

Test Number

1253423

Test Date

2016-07-11

Prepared By

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Approved By

Eric Gaudreau, Senior Engineering Associate

The results contained in this report pertain only to the tested sample.
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Luminaire Description: Circular/curved white formed aluminum housing with multi-directional frosted lens
Lamp: 36 White LEDs
Mounting: Surface/Wall
Ballast/Driver: One (1) ERP EBR020U-0500-32

Luminaire



Luminaire Characteristics

Luminous Length: 2.00 in.
Luminous Width: 7.000 in.
Luminous Height: 7.25 in.

Summary of Results

Total Luminaire Output: 407.8 Lumens
Luminaire Efficacy: 26.8 lm/w
Maximum Candela: 147 Candela

Test Conditions

Test Temperature: 24.4 °C
Voltage: 120.0 VAC
Current: 0.1288 A
Power: 15.22 W
Power Factor: 0.984
Frequency: 60 Hz
Current THD: 15.7 %

Laboratory results may not be representative of field performance
Ballast factors have not been applied



Distribution - Goniophotometer

Distribution Test Conditions

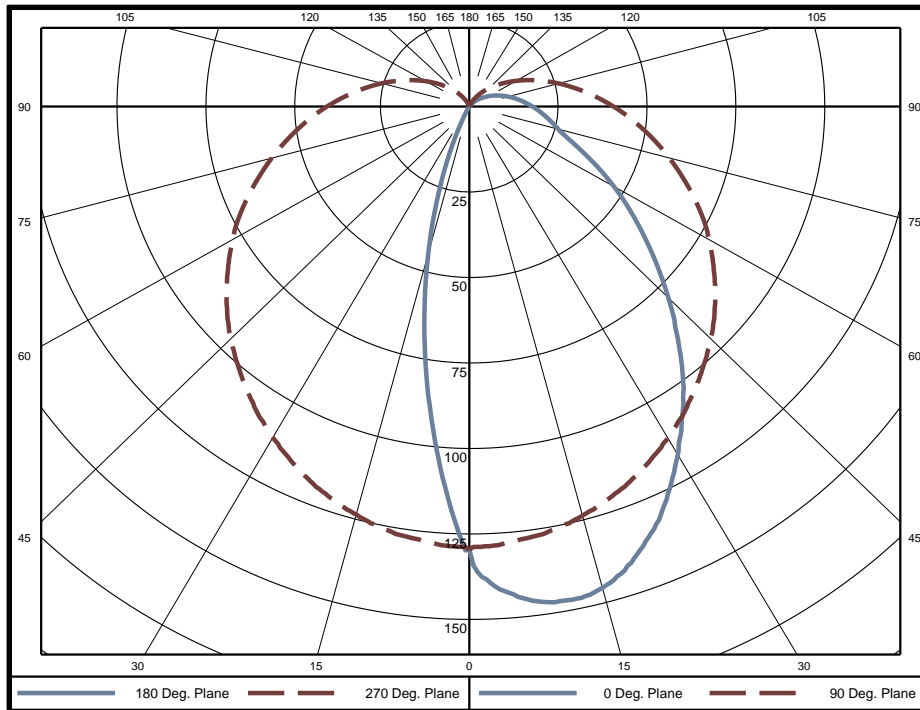
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.4 °C	120.0 VAC	0.1288 A	15.22 W	0.984	60 Hz	15.7 %

Summary of Results

Spacing Criteria
 0-180: 1.30
 90-270: 0.39

Total Lumen Output: 407.8 Lumens
Luminaire Efficacy: 26.8 lm/w
Maximum Candela: 147 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	3.04	0.7%	60-65	22.61	5.5%	120-125	4.00	1.0%
5-10	8.65	2.1%	65-70	21.08	5.2%	125-130	3.00	0.7%
10-15	13.42	3.3%	70-75	19.40	4.8%	130-135	2.16	0.5%
15-20	17.24	4.2%	75-80	17.71	4.3%	135-140	1.47	0.4%
20-25	20.15	4.9%	80-85	15.99	3.9%	140-145	0.92	0.2%
25-30	22.23	5.5%	85-90	14.28	3.5%	145-150	0.51	0.1%
30-35	23.76	5.8%	90-95	12.57	3.1%	150-155	0.23	0.1%
35-40	24.78	6.1%	95-100	10.90	2.7%	155-160	0.08	0.0%
40-45	25.23	6.2%	100-105	9.32	2.3%	160-165	0.02	0.0%
45-50	25.19	6.2%	105-110	7.81	1.9%	165-170	0.00	0.0%
50-55	24.69	6.1%	110-115	6.40	1.6%	170-175	0	0.0%
55-60	23.80	5.8%	115-120	5.13	1.3%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	133	32.7%
0-60	232	56.9%
0-90	343	84.2%
90-180	65	15.8%



Candela Tabulation

Horizontal Angle (Degrees)

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
0	129.6	129.6	129.6	129.6	129.6	129.6	129.6	129.6	129.6	129.6	129.6	129.6	129.6	129.6	129.6	129.6
5	143.2	141.4	139.1	135.1	128.0	118.8	110.1	104.2	103.2	104.2	110.1	118.8	128.0	135.1	139.1	141.4
10	146.9	145.6	142.8	137.5	126.4	108.1	90.7	78.3	74.0	78.3	90.7	108.1	126.4	137.5	142.8	145.6
15	145.8	145.7	143.2	137.8	123.8	98.0	72.9	54.7	47.1	54.7	72.9	98.0	123.8	137.8	143.2	145.7
20	139.3	141.3	141.3	136.4	120.4	89.3	57.5	35.0	24.6	35.0	57.5	89.3	120.4	136.4	141.3	141.3
25	129.9	133.4	136.1	133.3	116.5	81.3	45.1	20.2	8.6	20.2	45.1	81.3	116.5	133.3	136.1	133.4
30	118.1	123.3	128.8	128.6	112.0	74.2	35.5	10.7	1.6	10.7	35.5	74.2	112.0	128.6	128.8	123.3
35	105.9	112.6	120.4	122.9	107.2	68.4	28.9	6.3	0.0	6.3	28.9	68.4	107.2	122.9	120.4	112.6
40	92.8	101.3	111.2	117.4	101.8	63.5	24.5	4.6	0.0	4.6	24.5	63.5	101.8	117.4	111.2	101.3
45	80.2	90.1	101.7	108.7	96.4	59.1	21.8	4.1	0.0	4.1	21.8	59.1	96.4	108.7	101.7	90.1
50	68.2	79.5	92.2	100.9	90.5	55.2	20.1	4.0	0.0	4.0	20.1	55.2	90.5	100.9	92.2	79.5
55	57.5	69.1	83.1	92.7	84.3	51.7	19.0	4.0	0.0	4.0	19.0	51.7	84.3	92.7	83.1	69.1
60	47.8	59.6	74.6	85.0	78.1	48.5	18.2	4.0	0.0	4.0	18.2	48.5	78.1	85.0	74.6	59.6
65	38.9	51.1	66.2	77.1	71.8	45.2	17.5	4.1	0.0	4.1	17.5	45.2	71.8	77.1	66.2	51.1
70	31.4	43.4	58.4	69.2	65.0	41.8	16.8	4.1	0.0	4.1	16.8	41.8	65.0	69.2	58.4	43.4
75	26.3	36.9	51.3	61.8	58.5	38.6	16.1	4.1	0.0	4.1	16.1	38.6	58.5	61.8	51.3	36.9
80	23.2	31.4	44.9	54.8	52.3	35.4	15.3	4.0	0.0	4.0	15.3	35.4	52.3	54.8	44.9	31.4
85	20.4	27.0	39.2	48.3	46.3	32.2	14.5	4.0	0.0	4.0	14.5	32.2	46.3	48.3	39.2	27.0
90	17.9	23.4	34.1	42.3	40.7	28.9	13.6	3.8	0.0	3.8	13.6	28.9	40.7	42.3	34.1	23.4
95	15.5	20.3	29.5	36.7	35.4	25.7	12.6	3.7	0.0	3.7	12.6	25.7	35.4	36.7	29.5	20.3
100	13.3	17.5	25.5	31.7	30.5	22.6	11.6	3.5	0.0	3.5	11.6	22.6	30.5	31.7	25.5	17.5
105	11.2	15.0	21.9	27.2	26.1	19.7	10.5	3.2	0.0	3.2	10.5	19.7	26.1	27.2	21.9	15.0
110	9.3	12.7	18.5	23.0	22.0	16.8	9.3	2.9	0.0	2.9	9.3	16.8	22.0	23.0	18.5	12.7
115	7.5	10.7	15.6	19.3	18.3	14.2	8.0	2.6	0.0	2.6	8.0	14.2	18.3	19.3	15.6	10.7
120	5.8	8.8	13.1	16.1	14.9	11.7	6.8	2.3	0.0	2.3	6.8	11.7	14.9	16.1	13.1	8.8
125	4.3	7.1	10.7	13.1	12.0	9.4	5.6	1.9	0.0	1.9	5.6	9.4	12.0	13.1	10.7	7.1
130	3.0	5.5	8.6	10.5	9.4	7.3	4.4	1.5	0.0	1.5	4.4	7.3	9.4	10.5	8.6	5.5
135	1.8	4.1	6.7	8.2	7.2	5.5	3.3	1.2	0.0	1.2	3.3	5.5	7.2	8.2	6.7	4.1
140	0.8	2.9	5.1	6.2	5.2	3.9	2.3	0.7	0.0	0.7	2.3	3.9	5.2	6.2	5.1	2.9
145	0.0	2.0	3.7	4.4	3.5	2.4	1.3	0.4	0.0	0.4	1.3	2.4	3.5	4.4	3.7	2.0
150	0.0	1.3	2.4	2.8	2.0	1.2	0.4	0.0	0.0	0.0	0.4	1.2	2.0	2.8	2.4	1.3
155	0.0	0.7	1.4	1.5	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.8	1.5	1.4	0.7
160	0.0	0.3	0.7	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.7	0.3
165	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0
170	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

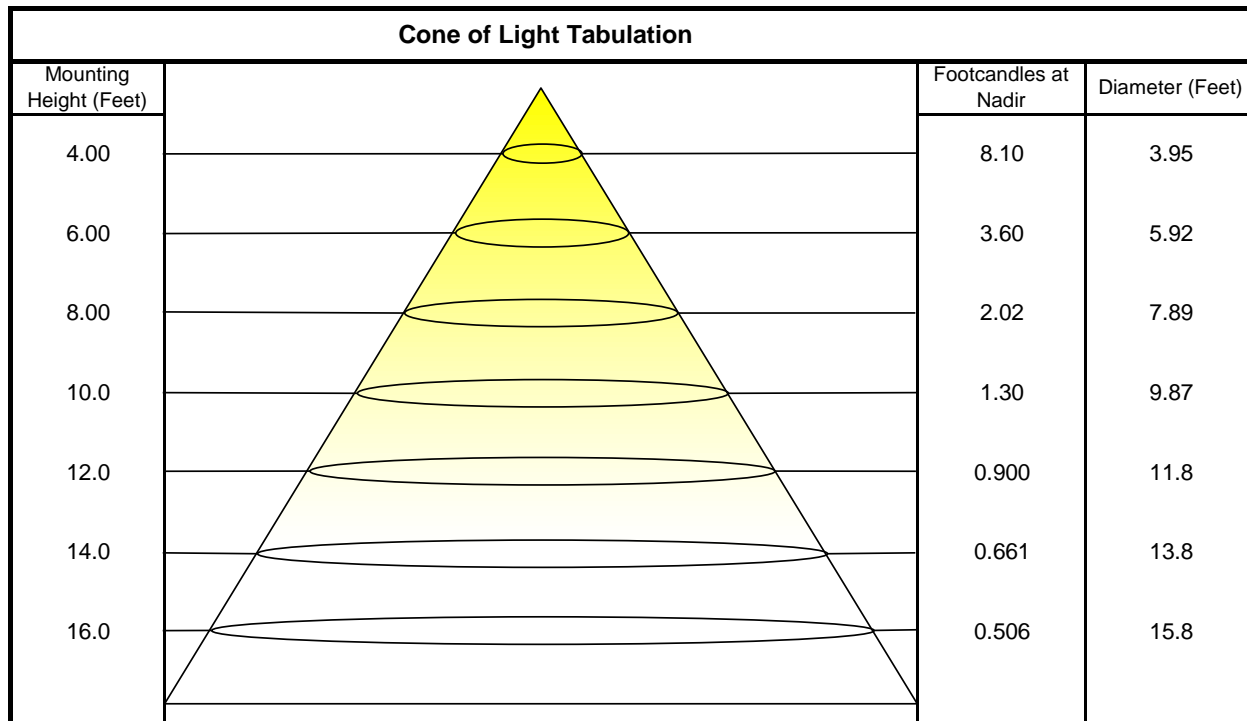
	0	45	90
0	14340	14340	14340
45	2714	3707	7415
55	1795	2810	6563
65	1161	2150	5835
75	774	1650	5144
85	612	1287	4582



Utilization of Lumens - Zonal Cavity Method

Effective Floor Cavity Reflectance 20%																		
Ceiling Cavity Reflectance	80				70				50			30			10			0
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as Lumens delivered to the task surface **																	
0	470	470	470	470	452	452	452	452	417	417	417	386	386	386	357	357	357	343
1	418	394	372	353	399	378	359	341	348	333	319	321	309	297	296	286	277	264
2	377	339	307	281	359	325	297	273	300	277	256	277	258	241	255	240	226	213
3	342	295	259	231	326	284	251	225	262	235	212	242	220	200	224	205	189	177
4	312	261	223	194	298	251	216	189	232	203	180	215	190	170	199	178	161	150
5	287	233	195	167	274	224	189	163	208	178	155	193	168	147	179	157	140	129
6	265	209	172	145	253	202	167	142	188	158	135	175	149	129	163	141	123	113
7	246	190	153	128	235	183	149	125	171	141	120	160	134	115	149	127	110	100
8	229	173	138	114	219	167	135	112	157	128	107	147	121	103	137	115	98	90
9	214	159	125	102	205	154	122	101	144	116	97	135	111	93	127	105	89	81
10	201	147	114	93	192	142	112	91	134	107	88	126	102	84	118	97	81	74

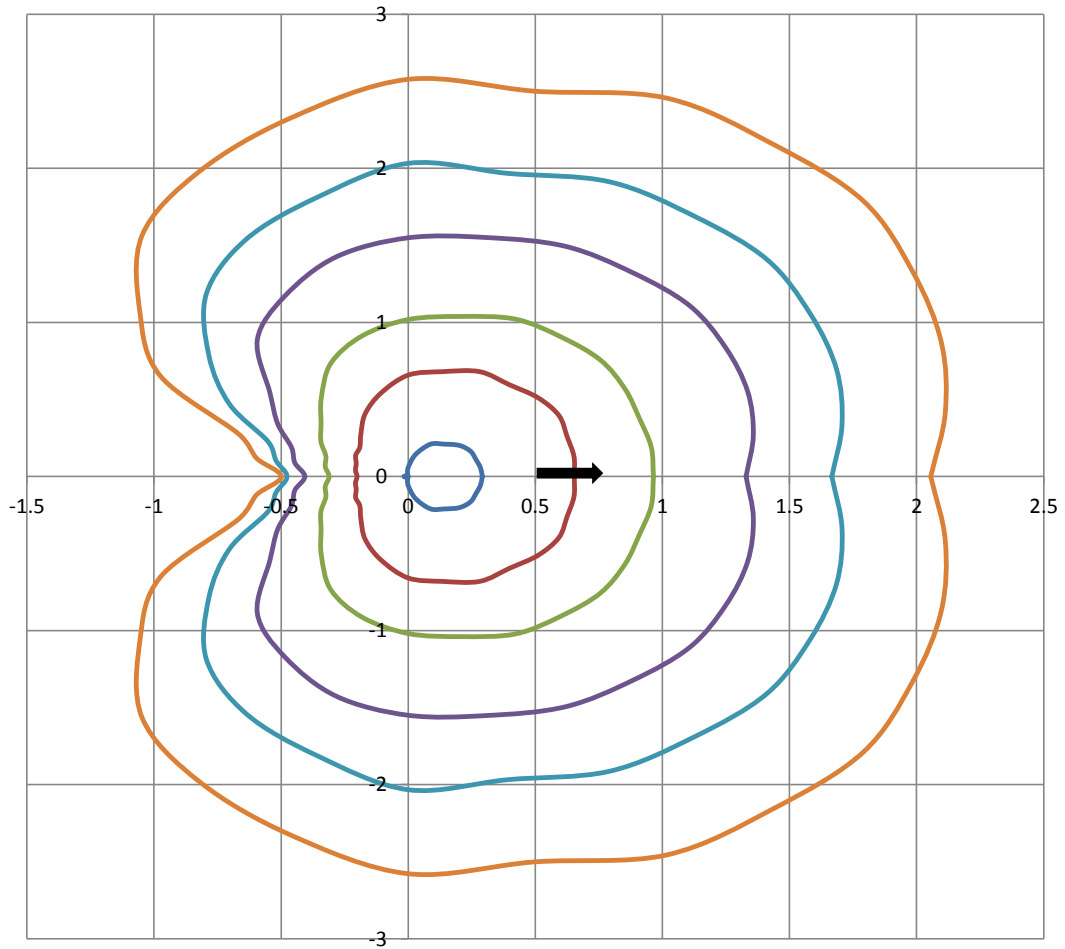
Beam and Field Information	
CIE Type:	Semi-Direct
Center Beam Intensity:	129.6 Candela
Central Cone Intensity:	128 Candela
Beam Flux:	226.7 Lumens
Beam Angle (0-180):	63.2 Degrees
Beam Angle (90-270):	140.3 Degrees
Field Angle (0-180):	124.2 Degrees
Field Angle (90-270):	246.6 Degrees





ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

