



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

7228.98-WL

Order Number

11281216

Test Number

1253421

Test Date

2016-06-17

Prepared By

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Approved By

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The results contained in this report pertain only to the tested sample.
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Luminaire Description: Semi circular white formed aluminum housing with a half circular directional frosted lens
Lamp: White LEDs
Mounting: Surface/Wall
Ballast/Driver: One (1) ERP EBR015U-0350-32

Luminaire



Luminaire Characteristics

Luminous Length: 1.25 in.
Luminous Width: 6.500 in.
Luminous Height: 3.00 in.

Summary of Results

Total Luminaire Output: 471.6 Lumens
Luminaire Efficacy: 41.7 lm/w
Maximum Candela: 178 Candela

Test Conditions

Test Temperature: 24.5 °C
Voltage: 120.0 VAC
Current: 0.09580 A
Power: 11.31 W
Power Factor: 0.984
Frequency: 60 Hz
Current THD: 16.0 %

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



Distribution - Goniophotometer

Distribution Test Conditions

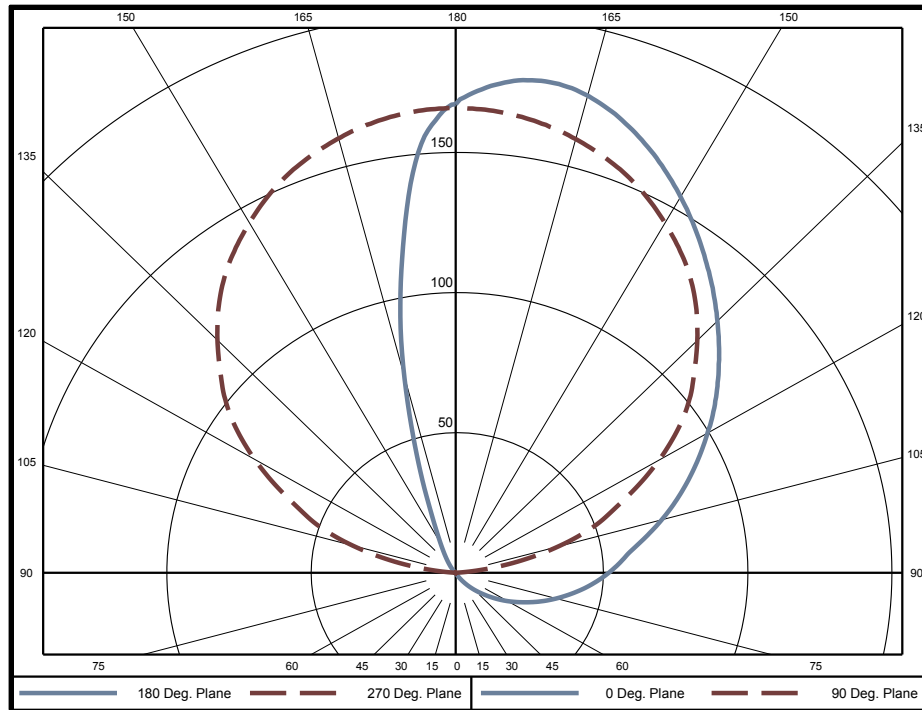
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.5 °C	120.0 VAC	0.09580 A	11.31 W	0.984	60 Hz	16.0 %

Summary of Results

Spacing Criteria
 0-180: 65.69
 90-270: 1.08

Total Lumen Output: 471.6 Lumens
Luminaire Efficacy: 41.7 lm/w
Maximum Candela: 178 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.00	0.0%	60-65	4.56	1.0%	120-125	29.06	6.2%
5-10	0.01	0.0%	65-70	6.00	1.3%	125-130	30.06	6.4%
10-15	0.01	0.0%	70-75	7.59	1.6%	130-135	30.44	6.5%
15-20	0.01	0.0%	75-80	9.30	2.0%	135-140	30.41	6.4%
20-25	0.00	0.0%	80-85	11.08	2.3%	140-145	29.85	6.3%
25-30	0.01	0.0%	85-90	12.89	2.7%	145-150	28.67	6.1%
30-35	0.08	0.0%	90-95	14.79	3.1%	150-155	26.91	5.7%
35-40	0.30	0.1%	95-100	17.28	3.7%	155-160	24.62	5.2%
40-45	0.72	0.2%	100-105	20.20	4.3%	160-165	21.64	4.6%
45-50	1.34	0.3%	105-110	22.98	4.9%	165-170	17.33	3.7%
50-55	2.20	0.5%	110-115	25.32	5.4%	170-175	11.35	2.4%
55-60	3.29	0.7%	115-120	27.39	5.8%	175-180	3.97	0.8%

Zone	Lumens	% of Luminaire
0-40	0	0.1%
0-60	8	1.7%
0-90	59	12.6%
90-180	412	87.4%



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	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
5	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
10	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
25	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
30	0.6	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3
35	2.3	1.7	0.8	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.8	1.7
40	4.7	4.0	2.9	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	2.9	4.0
45	7.8	7.2	6.1	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	6.1	7.2
50	11.4	11.1	10.0	6.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	10.0	11.1
55	15.5	15.4	14.7	10.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.4	14.7	15.4
60	20.1	20.1	19.8	15.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.7	19.8	20.1
65	24.9	25.2	25.3	21.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.7	25.3	25.2
70	30.2	30.5	31.3	28.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.2	31.3	30.5
75	35.6	36.3	37.7	35.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.5	37.7	36.3
80	41.3	42.4	44.5	43.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.3	44.5	42.4
85	47.0	48.6	51.7	51.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.7	51.7	48.6
90	52.6	55.3	59.2	60.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.5	59.2	55.3
95	58.0	62.4	67.0	69.8	4.6	0.1	0.0	0.0	0.0	0.0	0.0	0.1	4.6	69.8	67.0	62.4
100	64.8	70.0	75.1	79.3	20.0	0.7	0.1	0.0	0.0	0.0	0.1	0.7	20.0	79.3	75.1	70.0
105	73.4	78.0	83.6	88.8	37.1	2.5	0.3	0.0	0.0	0.0	0.3	2.5	37.1	88.8	83.6	78.0
110	82.2	86.1	92.1	98.0	52.8	5.3	0.8	0.1	0.0	0.1	0.8	5.3	52.8	98.0	92.1	86.1
115	91.0	94.5	100.7	107.4	66.0	9.0	1.5	0.3	0.0	0.3	1.5	9.0	66.0	107.4	100.7	94.5
120	100.0	103.4	109.8	116.2	81.3	13.5	2.5	0.6	0.0	0.6	2.5	13.5	81.3	116.2	109.8	103.4
125	109.3	112.1	118.5	124.4	95.4	18.6	3.9	1.0	0.2	1.0	3.9	18.6	95.4	124.4	118.5	112.1
130	118.2	120.8	126.9	132.0	106.8	24.4	5.6	1.6	0.6	1.6	5.6	24.4	106.8	132.0	126.9	120.8
135	127.2	129.8	135.5	139.4	117.7	32.1	7.8	2.5	1.4	2.5	7.8	32.1	117.7	139.4	135.5	129.8
140	136.4	138.8	144.1	146.4	128.1	44.8	10.5	3.8	2.6	3.8	10.5	44.8	128.1	146.4	144.1	138.8
145	145.7	148.0	152.3	153.0	136.9	61.4	14.3	5.9	4.6	5.9	14.3	61.4	136.9	153.0	152.3	148.0
150	154.8	156.7	160.0	159.1	144.1	80.3	21.8	9.8	8.2	9.8	21.8	80.3	144.1	159.1	160.0	156.7
155	163.4	164.9	166.8	164.5	150.8	98.9	40.0	17.7	14.8	17.7	40.0	98.9	150.8	164.5	166.8	164.9
160	170.7	171.8	171.9	168.2	156.0	118.2	68.0	37.8	32.1	37.8	68.0	118.2	156.0	168.2	171.9	171.8
165	176.2	176.4	175.2	170.4	160.2	137.3	99.3	73.3	67.3	73.3	99.3	137.3	160.2	170.4	175.2	176.4
170	178.1	177.8	175.8	171.0	163.3	152.3	130.6	112.3	109.7	112.3	130.6	152.3	163.3	171.0	175.8	177.8
175	175.2	174.5	173.1	169.8	165.2	161.2	156.4	150.2	150.6	150.2	156.4	161.2	165.2	169.8	173.1	174.5
180	167.2	167.2	167.2	167.2	167.2	167.2	167.2	167.2	167.2	167.2	167.2	167.2	167.2	167.2	167.2	167.2

Average Luminance (cd/m²)
Horizontal Angle (Degrees)

	0	45	90
0	1	1	1
45	621	541	0
55	1165	1252	0
65	1828	2141	0
75	2638	3247	0
85	3620	4688	0



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	463	463	463	463	405	405	405	405	295	295	295	195	195	195	103	103	103	59
1	410	386	364	345	355	335	317	301	240	228	216	153	145	137	72	68	63	26
2	369	331	300	273	319	287	261	239	205	187	171	129	117	107	58	52	46	15
3	335	288	252	223	288	250	219	195	178	157	140	111	98	87	49	42	36	9
4	304	253	214	185	262	219	187	162	156	134	116	97	83	72	42	35	28	5
5	278	223	184	156	239	193	161	136	138	115	98	86	71	60	37	30	23	4
6	255	198	160	133	219	172	140	116	123	100	83	76	62	51	33	26	20	2
7	234	177	140	114	202	154	123	100	110	88	72	69	55	44	30	22	17	2
8	216	160	124	99	187	139	108	87	99	78	62	62	48	38	27	20	14	1
9	201	144	110	87	173	126	96	76	90	69	55	57	43	33	25	18	13	1
10	186	131	98	76	161	114	86	67	82	62	48	52	39	29	23	16	11	1