



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

7214.98-WL

Order Number

11281216

Test Number

1253414

Test Date

2016-06-16

Prepared By

Khang Nguyen, Technician

Approved By

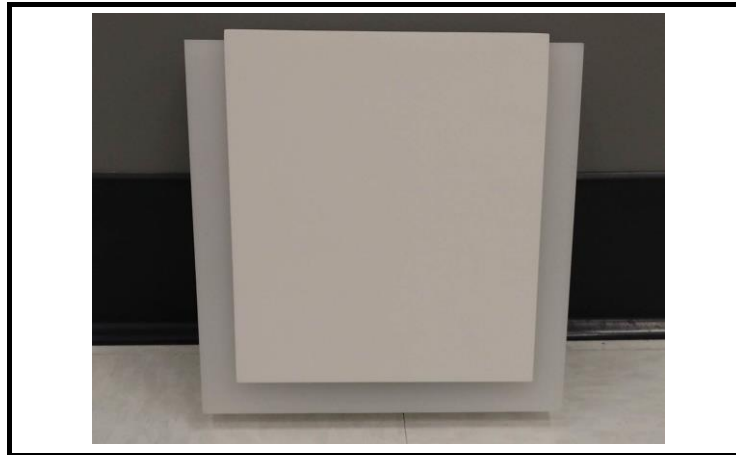
Eric Gaudreau, Senior Engineering Associate

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Luminaire Description: Rectangular white formed aluminum housing with a multi-directional frosted lens
Lamp: 72 White LEDs
Mounting: Surface/Wall
Ballast/Driver: One (1) ERP EBR015U-0350-32

Luminaire



Luminaire Characteristics

Luminous Length: 1.25 in.
Luminous Width: 7.000 in.
Luminous Height: 7.25 in.

Summary of Results

Total Luminaire Output: 694.2 Lumens
Luminaire Efficacy: 48.8 lm/w
Maximum Candela: 116 Candela

Test Conditions

Test Temperature: 25.2 °C
Voltage: 120.0 VAC
Current: 0.1199 A
Power: 14.22 W
Power Factor: 0.988
Frequency: 60 Hz
Current THD: 13.3 %

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



Distribution - Goniophotometer

Distribution Test Conditions

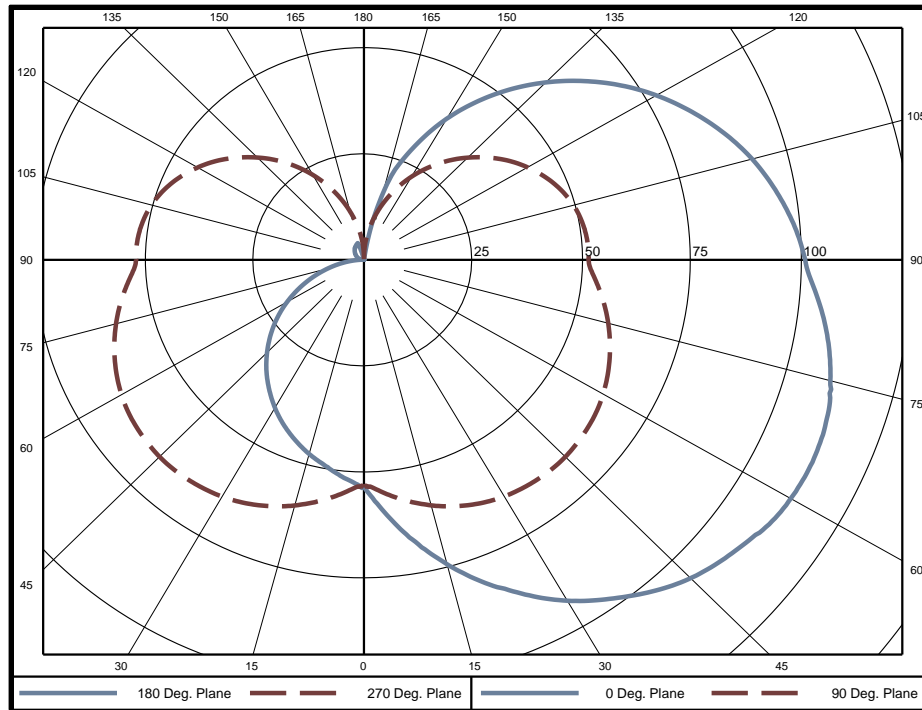
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.2 °C	120.0 VAC	0.1199 A	14.22 W	0.988	60 Hz	13.3 %

Summary of Results

Spacing Criteria
 0-180: 2.49
 90-270: 1.13

Total Lumen Output: 694.2 Lumens
Luminaire Efficacy: 48.8 lm/w
Maximum Candela: 116 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	1.32	0.2%	60-65	34.39	5.0%	120-125	21.10	3.0%
5-10	4.14	0.6%	65-70	35.03	5.0%	125-130	18.35	2.6%
10-15	7.20	1.0%	70-75	35.14	5.1%	130-135	15.59	2.2%
15-20	10.47	1.5%	75-80	34.71	5.0%	135-140	12.87	1.9%
20-25	13.83	2.0%	80-85	33.77	4.9%	140-145	10.28	1.5%
25-30	17.22	2.5%	85-90	32.54	4.7%	145-150	7.88	1.1%
30-35	20.53	3.0%	90-95	31.88	4.6%	150-155	5.70	0.8%
35-40	23.68	3.4%	95-100	31.11	4.5%	155-160	3.74	0.5%
40-45	26.62	3.8%	100-105	29.87	4.3%	160-165	2.13	0.3%
45-50	29.22	4.2%	105-110	28.16	4.1%	165-170	0.99	0.1%
50-55	31.43	4.5%	110-115	26.08	3.8%	170-175	0.31	0.0%
55-60	33.20	4.8%	115-120	23.69	3.4%	175-180	0.03	0.0%

Zone	Lumens	% of Luminaire
0-40	98	14.2%
0-60	219	31.5%
0-90	424	61.1%
90-180	270	38.9%



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	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6
5	60.4	60.9	60.0	57.8	55.3	54.2	53.2	52.1	51.6	52.1	53.2	54.2	55.3	57.8	60.0	60.9
10	67.5	68.3	66.6	62.4	57.7	55.4	53.3	50.9	49.4	50.9	53.3	55.4	57.7	62.4	66.6	68.3
15	74.6	75.6	73.2	67.0	59.9	56.6	53.4	49.9	47.5	49.9	53.4	56.6	59.9	67.0	73.2	75.6
20	81.1	82.5	79.2	71.1	61.8	57.6	53.6	48.9	45.3	48.9	53.6	57.6	61.8	71.1	79.2	82.5
25	87.1	88.8	84.7	74.7	63.4	58.3	53.7	47.7	42.9	47.7	53.7	58.3	63.4	74.7	84.7	88.8
30	92.8	94.6	89.6	77.9	64.5	58.8	53.4	46.1	40.2	46.1	53.4	58.8	64.5	77.9	89.6	94.6
35	97.6	99.7	94.0	80.6	65.2	59.1	52.8	44.3	37.3	44.3	52.8	59.1	65.2	80.6	94.0	99.7
40	102.1	104.3	97.8	82.8	65.6	59.1	51.9	42.3	34.2	42.3	51.9	59.1	65.6	82.8	97.8	104.3
45	105.9	108.2	101.0	84.6	65.7	58.8	50.7	40.0	30.9	40.0	50.7	58.8	65.7	84.6	101.0	108.2
50	108.5	111.6	103.5	85.7	65.3	58.1	49.2	37.5	27.5	37.5	49.2	58.1	65.3	85.7	103.5	111.6
55	111.0	114.0	105.3	86.5	64.7	57.1	47.4	34.7	23.9	34.7	47.4	57.1	64.7	86.5	105.3	114.0
60	112.4	115.5	106.4	86.6	63.6	55.6	45.3	31.7	20.1	31.7	45.3	55.6	63.6	86.6	106.4	115.5
65	112.9	115.8	106.5	86.1	62.2	53.8	42.8	28.5	16.3	28.5	42.8	53.8	62.2	86.1	106.5	115.8
70	112.1	115.3	105.9	85.0	60.4	51.7	40.2	25.3	12.5	25.3	40.2	51.7	60.4	85.0	105.9	115.3
75	110.1	113.9	104.5	83.5	58.3	49.5	37.5	22.1	8.9	22.1	37.5	49.5	58.3	83.5	104.5	113.9
80	107.4	111.4	102.4	81.5	56.0	47.0	34.7	19.0	5.6	19.0	34.7	47.0	56.0	81.5	102.4	111.4
85	103.9	107.8	99.6	78.9	53.5	44.5	32.0	16.1	2.6	16.1	32.0	44.5	53.5	78.9	99.6	107.8
90	100.6	105.1	97.3	76.8	51.7	42.7	30.0	14.0	0.6	14.0	30.0	42.7	51.7	76.8	97.3	105.1
95	98.3	103.0	95.7	75.8	51.7	42.7	30.0	14.0	0.8	14.0	30.0	42.7	51.7	75.8	95.7	103.0
100	95.3	100.0	93.3	74.1	51.1	42.3	29.8	14.0	1.0	14.0	29.8	42.3	51.1	74.1	93.3	100.0
105	91.7	96.4	90.2	71.7	50.0	41.5	29.3	13.8	1.3	13.8	29.3	41.5	50.0	71.7	90.2	96.4
110	87.4	92.1	86.2	68.4	48.3	40.3	28.6	13.6	1.6	13.6	28.6	40.3	48.3	68.4	86.2	92.1
115	82.6	87.0	81.6	64.6	46.1	38.7	27.6	13.5	1.9	13.5	27.6	38.7	46.1	64.6	81.6	87.0
120	77.3	81.5	76.5	60.1	43.5	36.8	26.3	13.3	2.1	13.3	26.3	36.8	43.5	60.1	76.5	81.5
125	71.7	75.4	70.7	55.3	40.7	34.6	24.9	13.0	2.4	13.0	24.9	34.6	40.7	55.3	70.7	75.4
130	65.6	68.9	64.6	49.9	37.4	32.0	23.8	12.4	2.7	12.4	23.8	32.0	37.4	49.9	64.6	68.9
135	59.2	62.0	58.3	44.5	34.0	29.3	22.3	11.8	2.9	11.8	22.3	29.3	34.0	44.5	58.3	62.0
140	52.7	55.0	51.7	39.0	30.5	26.5	20.4	11.2	3.2	11.2	20.4	26.5	30.5	39.0	51.7	55.0
145	45.8	47.8	44.7	33.6	26.8	23.6	18.3	10.4	3.5	10.4	18.3	23.6	26.8	33.6	44.7	47.8
150	38.9	40.3	37.9	28.4	23.0	20.7	16.3	9.5	3.7	9.5	16.3	20.7	23.0	28.4	37.9	40.3
155	31.6	32.8	29.9	22.9	19.1	16.9	13.2	8.5	3.9	8.5	13.2	16.9	19.1	22.9	29.9	32.8
160	24.5	24.0	21.0	17.9	15.2	13.6	10.4	5.9	4.1	5.9	10.4	13.6	15.2	17.9	21.0	24.0
165	15.3	14.0	13.4	13.3	11.4	10.3	8.1	4.6	0.8	4.6	8.1	10.3	11.4	13.3	13.4	14.0
170	3.6	6.3	9.0	8.9	7.8	7.2	5.6	2.1	0.0	2.1	5.6	7.2	7.8	8.9	9.0	6.3
175	0.0	0.1	3.1	4.7	4.3	4.1	1.8	0.0	0.0	0.0	1.8	4.1	4.3	4.7	3.1	0.1
180	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

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

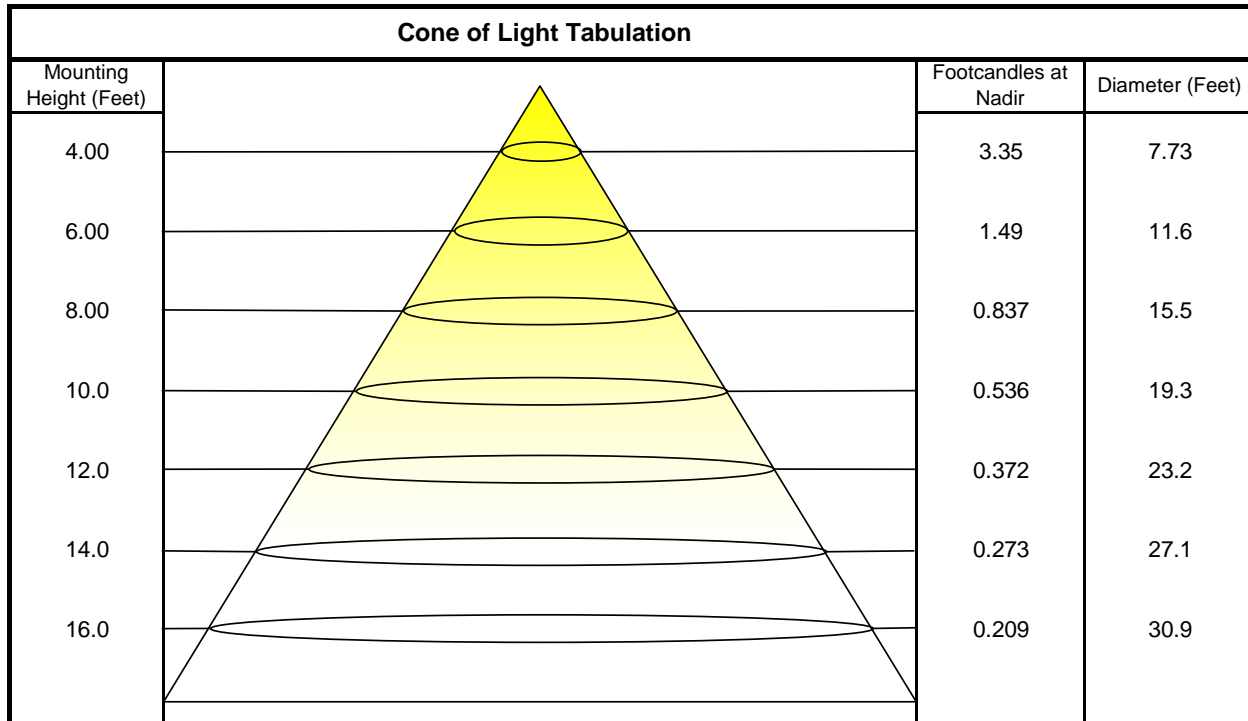
	0	45	90
0	9492	9492	9492
45	3901	4339	8082
55	3694	4115	8059
65	3520	3926	8088
75	3328	3757	8206
85	3137	3599	8474



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	762	762	762	762	713	713	713	713	621	621	621	538	538	538	461	461	461	424
1	663	618	578	542	615	576	540	508	496	468	442	423	401	381	355	339	323	289
2	590	521	464	416	546	485	434	390	416	375	340	352	320	293	293	269	247	216
3	531	448	383	332	490	416	358	311	356	310	272	301	264	233	249	221	196	168
4	481	390	323	272	443	362	302	255	310	261	222	262	223	191	217	186	160	135
5	439	343	276	227	404	319	258	213	273	224	186	231	191	160	192	160	134	111
6	402	305	239	192	371	284	224	181	244	195	158	206	166	136	171	139	114	93
7	370	273	210	166	342	254	197	156	219	171	136	186	147	117	155	123	98	80
8	343	246	186	144	317	230	174	136	199	152	119	169	131	102	141	110	86	69
9	319	224	166	127	295	209	156	119	181	136	105	155	117	90	130	99	76	61
10	297	204	149	112	275	191	140	106	166	123	93	142	106	80	120	90	68	54

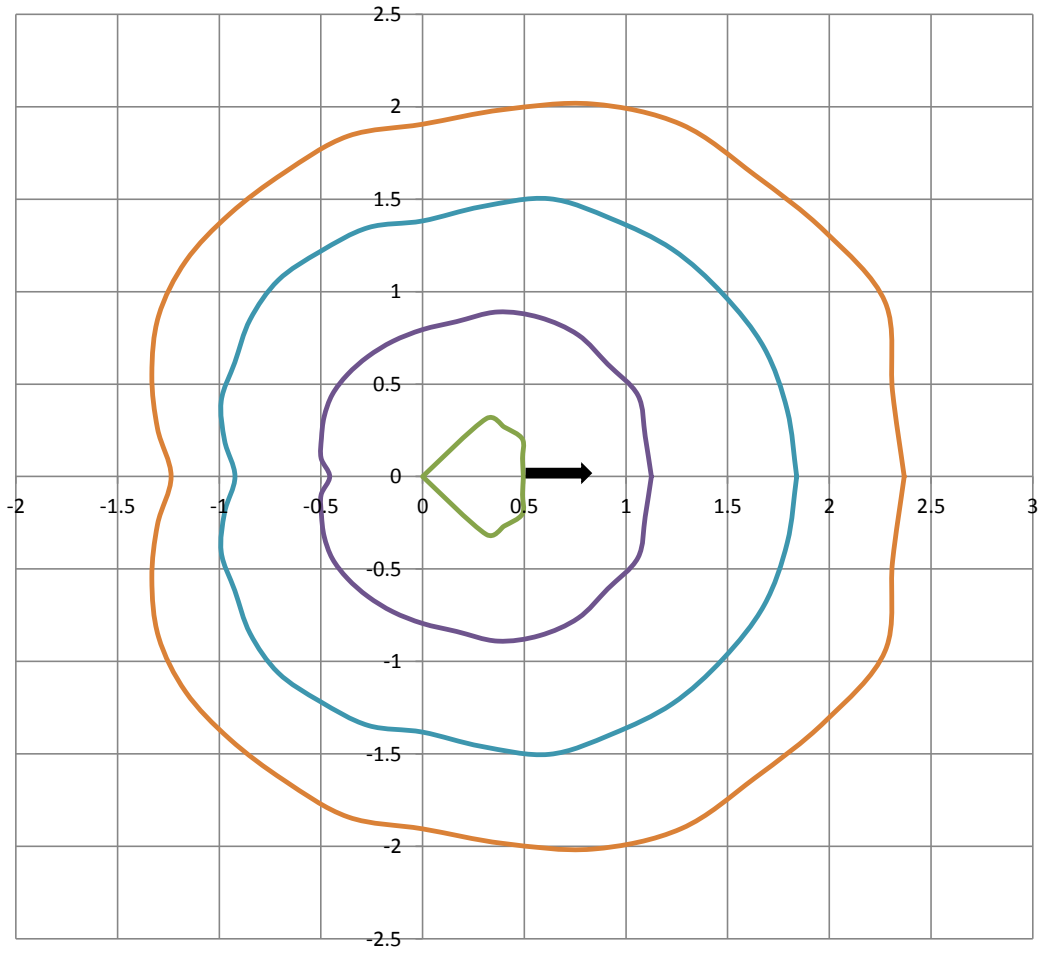
Beam and Field Information	
CIE Type:	Semi-Direct
Center Beam Intensity:	53.6 Candela
Central Cone Intensity:	55 Candela
Beam Flux:	657.2 Lumens
Beam Angle (0-180):	209.3 Degrees
Beam Angle (90-270):	290.0 Degrees
Field Angle (0-180):	249.7 Degrees
Field Angle (90-270):	346.9 Degrees





ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

