



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**

**7200.98-WL**

Order Number

11281216

Test Number

1253410

Test Date

2016-06-16

Prepared By

Khang Nguyen, Technician

Approved By

Eric Gaudreau, Senior Engineering Associate

The results contained in this report pertain only to the tested sample.  
This report shall not be reproduced, except in full, without written approval of Underwriters Laboratories.  
This report must not be used by the client to claim product certification, approval, or endorsement by  
NVLAP, NIST, or any agency of the Federal Government.



**Luminaire Description:** Rectangular white formed aluminum housing with a open rectangular reflector and a clear magnified LED lens  
**Lamp:** 24 White LEDs  
**Mounting:** Surface/Wall  
**Ballast/Driver:** One (1) ERP EBR015U-0350-42

**Luminaire**



**Luminaire Characteristics**

Luminous Length: 2.00 in.  
Luminous Width: 6.500 in.  
Luminous Height: 7.35 in.

**Summary of Results**

Total Luminaire Output: 639.7 Lumens  
Luminaire Efficacy: 47.4 lm/w  
Maximum Candela: 488 Candela

**Test Conditions**

Test Temperature: 25.8 °C  
Voltage: 120.0 VAC  
Current: 0.1138 A  
Power: 13.50 W  
Power Factor: 0.989  
Frequency: 60 Hz  
Current THD: 12.6 %

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



## Distribution - Goniophotometer

### Distribution Test Conditions

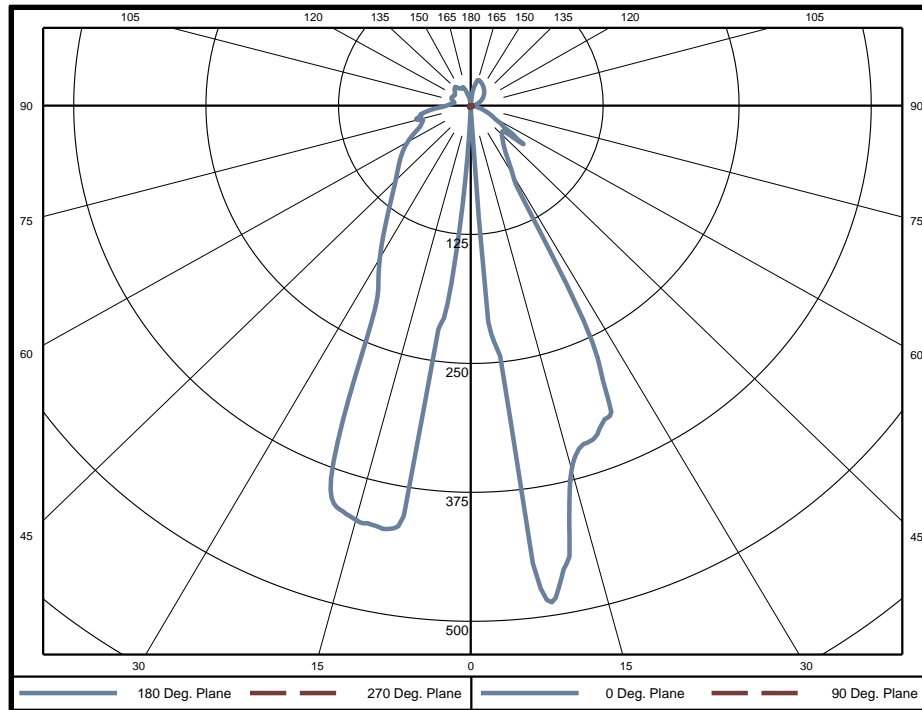
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.8 °C	120.0 VAC	0.1138 A	13.50 W	0.989	60 Hz	12.6 %

### Summary of Results

**Spacing Criteria**  
 0-180: 4.82  
 90-270: 7.41

**Total Lumen Output:** 639.7 Lumens  
**Luminaire Efficacy:** 47.4 lm/w  
**Maximum Candela:** 488 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.70	0.1%	60-65	23.37	3.7%	120-125	8.76	1.4%
5-10	11.91	1.9%	65-70	20.44	3.2%	125-130	8.24	1.3%
10-15	33.14	5.2%	70-75	18.13	2.8%	130-135	7.64	1.2%
15-20	46.97	7.3%	75-80	16.70	2.6%	135-140	7.05	1.1%
20-25	56.74	8.9%	80-85	14.31	2.2%	140-145	6.27	1.0%
25-30	55.78	8.7%	85-90	12.26	1.9%	145-150	5.34	0.8%
30-35	47.04	7.4%	90-95	11.03	1.7%	150-155	4.37	0.7%
35-40	40.08	6.3%	95-100	10.17	1.6%	155-160	3.36	0.5%
40-45	37.86	5.9%	100-105	9.96	1.6%	160-165	2.22	0.3%
45-50	32.22	5.0%	105-110	9.94	1.6%	165-170	1.11	0.2%
50-55	30.08	4.7%	110-115	9.69	1.5%	170-175	0.29	0.0%
55-60	27.21	4.3%	115-120	9.29	1.5%	175-180	0.01	0.0%

Zone	Lumens	% of Luminaire
0-40	292	45.7%
0-60	420	65.6%
0-90	525	82.1%
90-180	115	17.9%



**Candela Tabulation**  
Horizontal Angle (Degrees)

Vertical Angle (Degrees)	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	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
5	222.5	219.2	106.8	5.1	2.1	6.1	37.7	81.5	120.6	81.5	37.7	6.1	2.1	5.1	106.8	219.2
10	475.5	460.7	340.3	110.9	1.9	47.2	197.8	330.2	416.0	330.2	197.8	47.2	1.9	110.9	340.3	460.7
15	366.2	361.1	405.7	203.8	2.0	120.0	381.8	406.7	415.9	406.7	381.8	120.0	2.0	203.8	405.7	361.1
20	342.1	327.9	324.2	330.1	1.9	156.5	373.5	393.4	384.5	393.4	373.5	156.5	1.9	330.1	324.2	327.9
25	294.4	303.2	308.0	290.5	1.8	241.0	358.4	266.9	209.7	266.9	358.4	241.0	1.8	290.5	308.0	303.2
30	80.8	111.0	300.4	236.6	1.8	235.6	293.5	185.1	171.2	185.1	293.5	235.6	1.8	236.6	300.4	111.0
35	58.7	66.5	132.9	227.6	1.7	217.2	170.7	154.3	139.4	154.3	170.7	217.2	1.7	227.6	132.9	66.5
40	47.6	53.9	66.4	220.8	1.7	199.7	139.9	128.0	115.6	128.0	139.9	199.7	1.7	220.8	66.4	53.9
45	41.6	47.5	55.4	137.3	1.7	183.3	119.4	108.5	99.4	108.5	119.4	183.3	1.7	137.3	55.4	47.5
50	38.9	44.7	49.5	61.4	1.7	164.9	101.7	94.9	88.1	94.9	101.7	164.9	1.7	61.4	49.5	44.7
55	48.4	56.3	48.2	48.4	1.6	130.1	87.9	84.6	78.2	84.6	87.9	130.1	1.6	48.4	48.2	56.3
60	27.9	38.7	46.9	45.0	1.6	91.1	76.9	74.7	67.3	74.7	76.9	91.1	1.6	45.0	46.9	38.7
65	20.0	28.6	41.2	42.7	1.5	68.3	67.4	64.6	55.3	64.6	67.4	68.3	1.5	42.7	41.2	28.6
70	13.1	22.3	32.8	38.2	1.4	56.7	59.1	55.4	48.9	55.4	59.1	56.7	1.4	38.2	32.8	22.3
75	7.4	16.7	27.1	34.0	1.3	48.7	53.1	51.6	52.9	51.6	53.1	48.7	1.3	34.0	27.1	16.7
80	1.3	11.0	22.7	30.1	1.2	42.0	52.3	48.9	47.4	48.9	52.3	42.0	1.2	30.1	22.7	11.0
85	0.4	10.0	19.6	26.8	1.2	37.3	41.8	38.1	33.5	38.1	41.8	37.3	1.2	26.8	19.6	10.0
90	0.5	10.3	19.8	25.9	1.0	33.6	35.9	30.8	22.5	30.8	35.9	33.6	1.0	25.9	19.8	10.3
95	2.2	11.8	20.7	25.7	1.0	30.0	29.8	24.7	18.3	24.7	29.8	30.0	1.0	25.7	20.7	11.8
100	4.1	13.3	21.7	25.3	1.0	28.5	26.7	21.4	15.7	21.4	26.7	28.5	1.0	25.3	21.7	13.3
105	6.2	14.9	22.6	24.8	1.0	26.7	26.4	22.4	17.3	22.4	26.4	26.7	1.0	24.8	22.6	14.9
110	8.2	16.5	23.4	24.2	0.9	25.0	25.5	23.7	19.2	23.7	25.5	25.0	0.9	24.2	23.4	16.5
115	10.3	17.9	24.0	23.6	0.8	23.3	24.4	24.0	19.3	24.0	24.4	23.3	0.8	23.6	24.0	17.9
120	12.4	19.3	24.5	22.9	0.7	21.8	24.3	23.2	18.4	23.2	24.3	21.8	0.7	22.9	24.5	19.3
125	14.4	20.5	24.8	22.2	0.6	20.3	24.2	22.5	18.1	22.5	24.2	20.3	0.6	22.2	24.8	20.5
130	16.2	21.5	25.0	21.4	0.5	19.8	23.7	21.8	19.4	21.8	23.7	19.8	0.5	21.4	25.0	21.5
135	18.0	22.5	25.1	20.6	0.4	18.1	23.8	21.3	21.5	21.3	23.8	18.1	0.4	20.6	25.1	22.5
140	19.6	23.4	25.0	19.9	0.4	19.1	23.0	20.9	23.0	20.9	23.0	19.1	0.4	19.9	25.0	23.4
145	21.2	24.1	24.8	19.1	0.3	15.2	22.8	20.7	20.7	20.7	22.8	15.2	0.3	19.1	24.8	24.1
150	22.7	24.7	24.9	17.2	0.2	12.9	20.9	20.3	18.9	20.3	20.9	12.9	0.2	17.2	24.9	24.7
155	24.1	25.4	24.6	15.0	0.2	9.8	20.3	17.7	19.0	17.7	20.3	9.8	0.2	15.0	24.6	25.4
160	25.4	25.7	23.5	12.0	0.2	6.6	13.4	16.5	17.2	16.5	13.4	6.6	0.2	12.0	23.5	25.7
165	25.6	23.9	18.2	8.5	0.2	3.6	8.6	11.1	11.0	11.1	8.6	3.6	0.2	8.5	18.2	23.9
170	18.1	15.4	9.1	4.4	0.1	1.2	3.8	6.9	6.9	6.9	3.8	1.2	0.1	4.4	9.1	15.4
175	0.4	2.2	2.1	0.9	0.0	0.2	0.5	0.7	0.0	0.7	0.5	0.2	0.0	0.9	2.1	2.2
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/m<sup>2</sup>)**  
Horizontal Angle (Degrees)

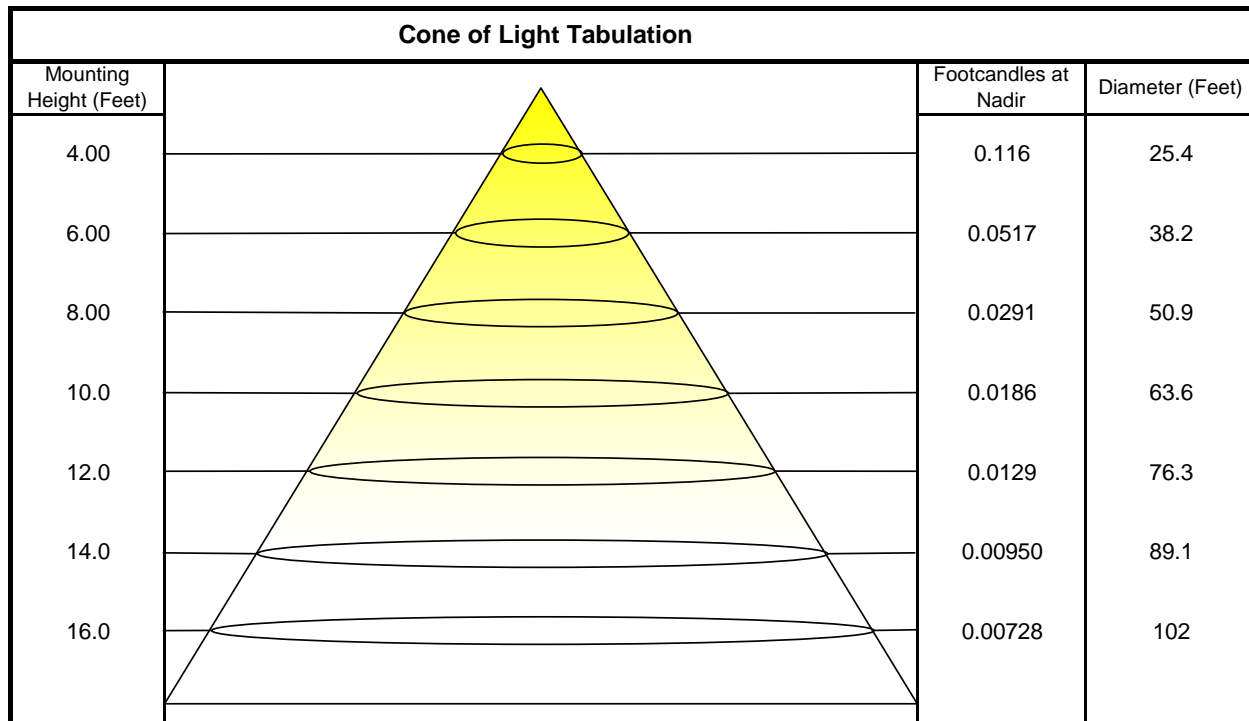
Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	222	222	222
45	1500	2125	135
55	1609	1710	130
65	635	1402	122
75	232	912	116
85	12	674	114



### 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	734	734	734	734	704	704	704	704	647	647	647	595	595	595	547	547	547	525
1	668	638	610	586	639	612	587	565	564	544	527	520	504	490	479	467	456	435
2	612	562	520	486	585	540	503	471	499	469	443	462	437	416	427	408	391	371
3	563	500	451	412	538	481	437	401	446	410	380	414	384	359	384	360	339	321
4	519	448	396	356	496	432	385	348	402	363	331	374	341	315	348	321	299	282
5	481	405	352	312	460	391	342	306	365	324	292	341	306	279	318	289	266	250
6	447	368	315	277	427	356	307	271	333	291	260	312	276	249	292	262	239	224
7	416	336	284	248	399	326	277	243	306	264	234	287	251	225	270	239	216	202
8	389	309	258	223	373	299	252	219	282	241	212	265	230	204	250	219	196	183
9	364	285	236	203	350	276	231	199	261	221	193	246	211	186	233	202	179	167
10	342	264	216	185	329	256	212	182	242	203	176	229	195	170	217	187	165	153

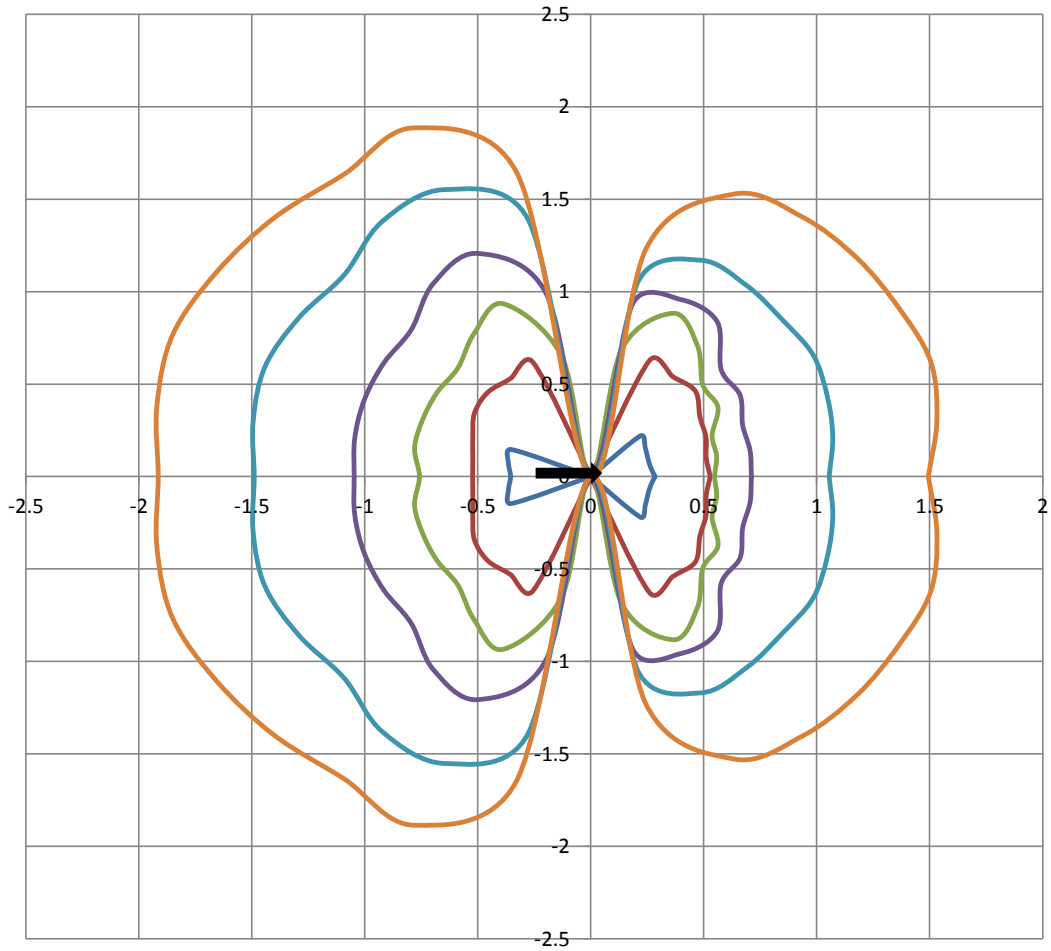
Beam and Field Information	
CIE Type:	Semi-Direct
Center Beam Intensity:	1.9 Candela
Central Cone Intensity:	21 Candela
Beam Flux:	639.3 Lumens
Beam Angle (0-180):	253.4 Degrees
Beam Angle (90-270):	214.9 Degrees
Field Angle (0-180):	348.7 Degrees
Field Angle (90-270):	308.8 Degrees





### ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

