



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

2725.98-WL

Order Number

11281216

Test Number

1253409

Test Date

2016-06-15

Prepared By

Khang Nguyen, Technician

Approved By

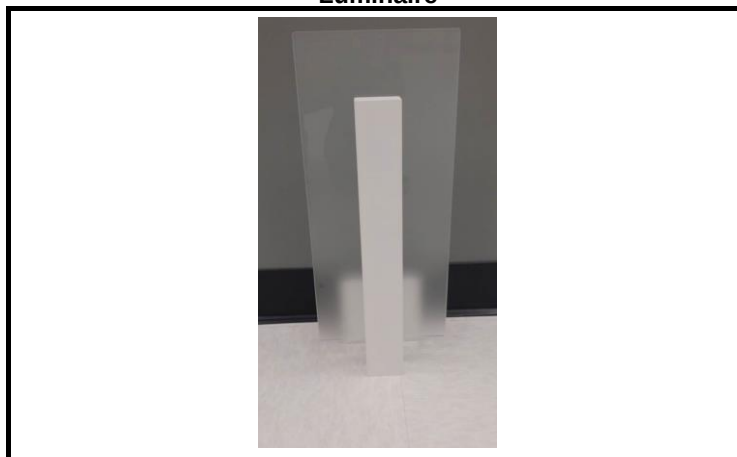
Eric Gaudreau, Senior Engineering Associate

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 single sided directional reflector and a frosted glass lens
Lamp: 48 White LEDs
Mounting: Surface/Wall
Ballast/Driver: One (1) ERP EBR020U-0700-30

Luminaire



Luminaire Characteristics

Luminous Length: 2.50 in.
Luminous Width: 7.000 in.
Luminous Height: 16.00 in.

Summary of Results

Total Luminaire Output: 1349 Lumens
Luminaire Efficacy: 69 lm/w
Maximum Candela: 486 Candela

Test Conditions

Test Temperature: 24.9 °C
Voltage: 120.0 VAC
Current: 0.1656 A
Power: 19.54 W
Power Factor: 0.984
Frequency: 60 Hz
Current THD: 16.6 %

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



Distribution - Goniophotometer

Distribution Test Conditions

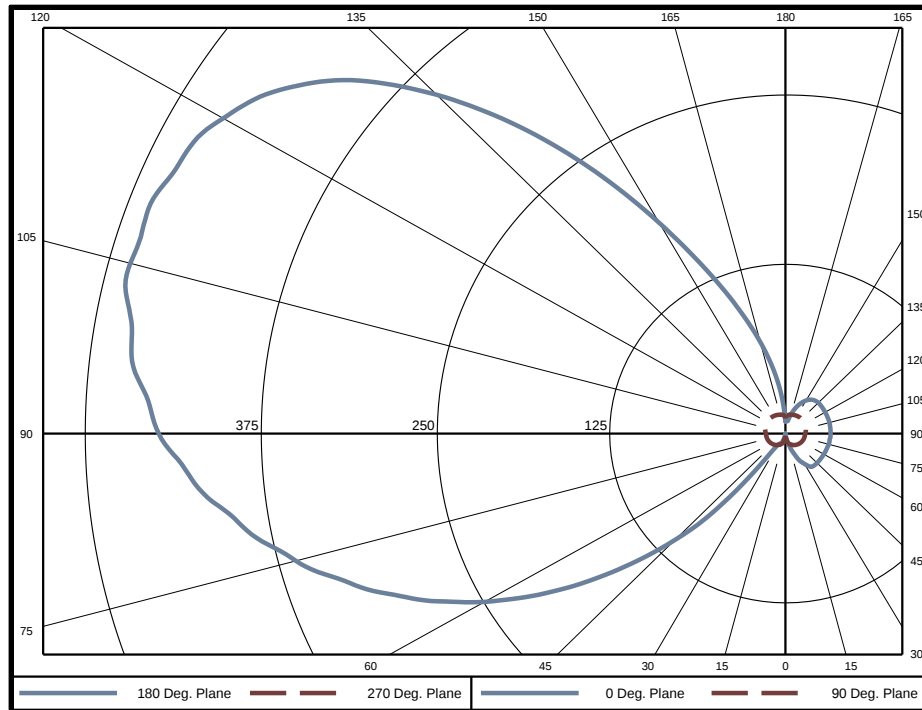
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	120.0 VAC	0.1656 A	19.54 W	0.984	60 Hz	16.6 %

Summary of Results

Spacing Criteria
 0-180: 6.29
 90-270: 15.60

Total Lumen Output: 1349 Lumens
Luminaire Efficacy: 69.0 lm/w
Maximum Candela: 486 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.05	0.0%	60-65	52.60	3.9%	120-125	63.45	4.7%
5-10	0.21	0.0%	65-70	59.90	4.4%	125-130	55.19	4.1%
10-15	0.91	0.1%	70-75	66.63	4.9%	130-135	46.19	3.4%
15-20	2.34	0.2%	75-80	72.57	5.4%	135-140	37.15	2.8%
20-25	4.38	0.3%	80-85	77.44	5.7%	140-145	28.61	2.1%
25-30	7.13	0.5%	85-90	81.07	6.0%	145-150	21.02	1.6%
30-35	10.75	0.8%	90-95	83.28	6.2%	150-155	14.75	1.1%
35-40	15.51	1.1%	95-100	83.94	6.2%	155-160	9.83	0.7%
40-45	21.98	1.6%	100-105	83.12	6.2%	160-165	6.06	0.4%
45-50	29.10	2.2%	105-110	80.40	6.0%	165-170	3.31	0.2%
50-55	36.80	2.7%	110-115	76.20	5.6%	170-175	1.49	0.1%
55-60	44.82	3.3%	115-120	70.48	5.2%	175-180	0.35	0.0%

Zone	Lumens	% of Luminaire
0-40	41	3.1%
0-60	174	12.9%
0-90	584	43.3%
90-180	765	56.7%



Candela Tabulation
Horizontal Angle (Degrees)

Vertical 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	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
	5	0.2	1.1	2.6	3.3	3.1	3.2	2.0	0.7	0.3	0.7	2.0	3.2	3.1	3.3	2.6
	10	3.9	4.4	4.9	5.1	4.7	6.8	5.4	1.5	0.5	1.5	5.4	6.8	4.7	5.1	4.9
	15	8.8	9.0	9.9	8.8	6.9	17.5	21.1	7.3	3.3	7.3	21.1	17.5	6.9	8.8	9.9
	20	14.3	15.8	15.5	11.5	8.1	26.6	34.2	16.0	7.1	16.0	34.2	26.6	8.1	11.5	15.5
	25	21.2	22.1	21.2	14.7	8.7	35.0	51.4	28.3	8.2	28.3	51.4	35.0	8.7	14.7	21.2
	30	25.8	27.6	26.6	17.8	9.6	43.0	68.9	45.7	9.1	45.7	68.9	43.0	9.6	17.8	26.6
	35	30.0	31.8	31.6	20.9	10.3	50.0	87.8	73.9	12.3	73.9	87.8	50.0	10.3	20.9	31.6
	40	30.7	33.7	36.6	24.2	10.8	56.3	108.6	108.1	55.5	108.1	108.6	56.3	10.8	24.2	36.6
	45	30.6	33.8	41.0	27.6	11.3	61.9	131.2	148.5	109.7	148.5	131.2	61.9	11.3	27.6	41.0
	50	30.5	33.5	42.0	30.9	11.8	66.9	155.7	191.9	156.1	191.9	155.7	66.9	11.8	30.9	42.0
	55	30.4	33.4	42.7	34.1	12.1	71.3	180.8	235.5	203.2	235.5	180.8	71.3	12.1	34.1	42.7
	60	30.4	33.4	43.3	37.0	12.5	75.1	204.3	276.7	248.6	276.7	204.3	75.1	12.5	37.0	43.3
	65	30.3	33.4	43.7	39.1	12.7	78.3	225.3	314.2	290.0	314.2	225.3	78.3	12.7	39.1	43.7
	70	30.4	33.6	44.1	40.9	12.9	81.0	243.8	349.7	327.6	349.7	243.8	81.0	12.9	40.9	44.1
	75	30.6	33.9	44.5	42.4	13.1	83.4	259.0	380.0	362.9	380.0	259.0	83.4	13.1	42.4	44.5
	80	30.5	34.0	44.8	43.6	13.2	85.3	271.3	406.8	394.7	406.8	271.3	85.3	13.2	43.6	44.8
	85	30.8	34.3	45.0	44.5	13.3	86.7	280.9	433.1	424.4	433.1	280.9	86.7	13.3	44.5	45.0
	90	30.8	34.2	44.9	44.9	13.4	87.6	286.7	453.0	448.6	453.0	286.7	87.6	13.4	44.9	44.9
	95	30.9	34.3	45.2	45.2	13.8	88.1	288.8	466.7	465.4	466.7	288.8	88.1	13.8	45.2	45.2
	100	30.9	34.4	45.3	45.1	14.1	88.2	286.8	473.6	475.4	473.6	286.8	88.2	14.1	45.1	45.3
	105	31.0	34.5	45.2	44.6	14.5	87.8	280.2	473.8	485.6	473.8	280.2	87.8	14.5	44.6	45.2
	110	31.1	34.5	44.9	43.7	14.8	86.8	268.9	468.8	485.3	468.8	268.9	86.8	14.8	43.7	44.9
	115	31.2	34.4	44.3	42.4	15.0	85.1	253.0	454.9	477.4	454.9	253.0	85.1	15.0	42.4	44.3
	120	31.3	34.3	43.3	40.7	15.2	82.9	234.0	433.0	465.2	433.0	234.0	82.9	15.2	40.7	43.3
	125	31.5	34.2	41.8	38.6	15.4	80.1	212.5	400.4	442.3	400.4	212.5	80.1	15.4	38.6	41.8
	130	31.8	34.1	39.7	36.1	15.5	76.5	189.4	356.5	406.1	356.5	189.4	76.5	15.5	36.1	39.7
	135	31.9	33.6	37.0	33.3	15.5	72.3	167.1	307.5	354.2	307.5	167.1	72.3	15.5	33.3	37.0
	140	31.6	32.2	33.7	30.3	15.5	67.6	145.3	255.5	295.6	255.5	145.3	67.6	15.5	30.3	33.7
	145	30.5	29.8	30.0	27.0	15.4	62.4	124.8	204.1	235.1	204.1	124.8	62.4	15.4	27.0	30.0
	150	28.1	26.5	25.7	23.7	15.3	56.4	105.6	158.7	178.6	158.7	105.6	56.4	15.3	23.7	25.7
	155	24.5	22.3	21.2	20.4	15.1	49.7	87.3	122.4	132.9	122.4	87.3	49.7	15.1	20.4	21.2
	160	19.9	17.6	16.6	17.6	14.8	42.4	70.3	93.1	98.0	93.1	70.3	42.4	14.8	17.6	16.6
	165	14.7	12.8	12.5	14.6	14.5	34.8	54.2	68.7	70.4	68.7	54.2	34.8	14.5	14.6	12.5
	170	9.5	10.2	13.4	12.9	14.2	26.9	38.9	47.1	46.8	47.1	38.9	26.9	14.2	12.9	13.4
	175	10.5	10.3	11.2	12.1	13.6	19.0	23.9	27.1	25.3	27.1	23.9	19.0	13.6	12.1	11.2
	180	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2

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

Vertical Angle (Degrees)	0	45	90
	0	150	150
	45	518	431
	55	462	440
	65	432	452
	75	420	471
	85	422	498



Utilization of Lumens - Zonal Cavity Method

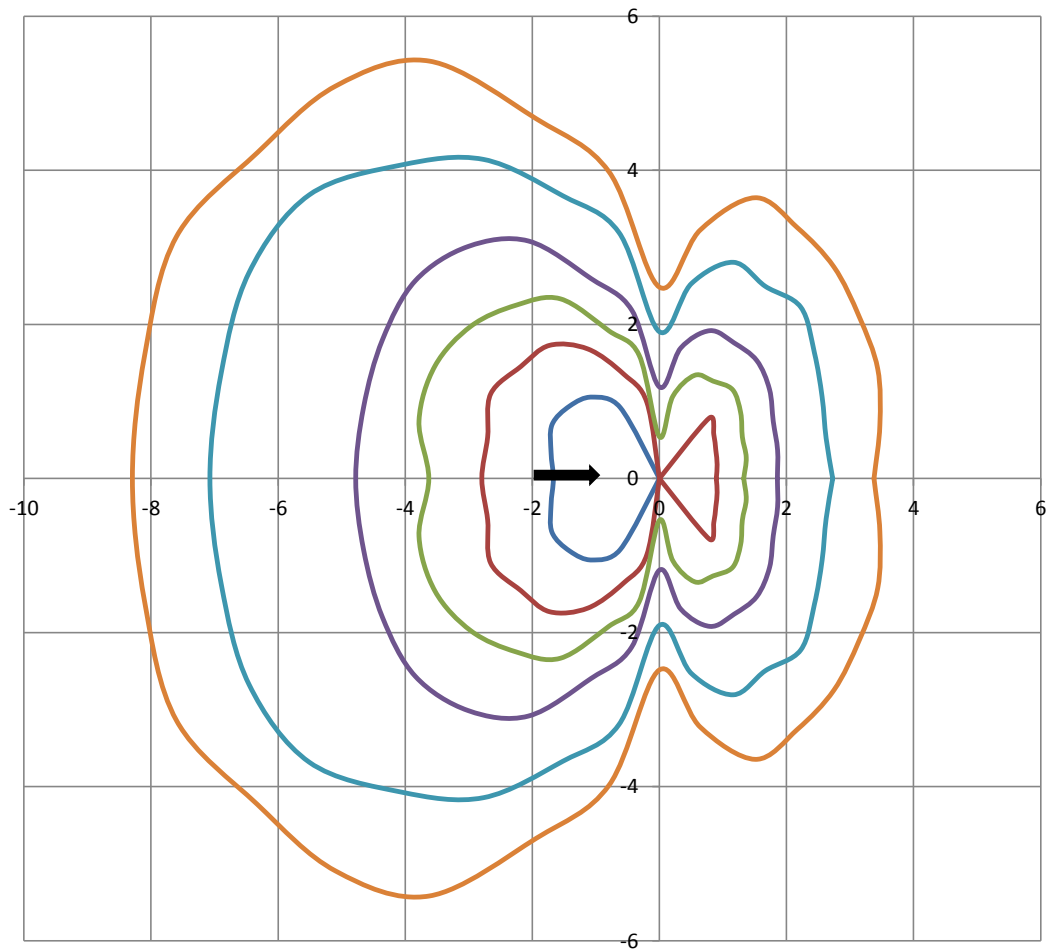
Effective Floor Cavity Reflectance 20%																		
Ceiling Cavity Reflectance	80				70				50			30			10			0
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as Lumens delivered to the task surface **																	
0	1424	1424	1424	1424	1302	1302	1302	1302	1074	1074	1074	866	866	866	674	674	674	584
1	1218	1125	1042	968	1100	1019	946	880	819	764	712	636	594	555	468	436	407	325
2	1078	939	824	728	968	847	746	660	674	596	529	514	456	404	367	323	285	212
3	965	800	673	572	864	720	608	517	570	483	411	431	364	309	301	252	210	146
4	872	693	562	462	779	623	507	417	492	401	329	370	300	244	256	204	161	105
5	793	607	476	380	708	546	430	343	430	339	270	323	253	198	223	170	128	78
6	725	536	410	319	648	483	370	287	381	292	225	286	217	164	197	145	104	60
7	666	479	357	271	596	431	322	244	341	254	191	256	189	138	177	126	87	47
8	615	430	313	233	551	388	283	210	307	223	164	232	166	118	160	110	73	37
9	571	389	278	202	512	351	251	182	279	198	142	211	147	102	147	98	63	30
10	531	354	248	177	477	320	224	159	255	177	124	193	132	89	135	88	54	25

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		0.106	43.0
6.00		0.0471	64.5
8.00		0.0265	86.0
10.0		0.0169	107
12.0		0.0118	129
14.0		0.00864	150
16.0		0.00662	172



ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

0.5 fc 0.2 fc 0.1 fc 0.05 fc 0.02 fc 0.01 fc