



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

7234.98-WL

Order Number

11281216

Test Number

1253424

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/triangular white formed aluminum housing with a triangular frosted glass lens
Lamp: 32 White LEDs
Mounting: Surface/Wall
Ballast/Driver: One (1) ERP EBR020U-0500-32

Luminaire



Luminaire Characteristics

Luminous Length: 3.25 in.
Luminous Width: 7.000 in.

Summary of Results

Total Luminaire Output: 684.1 Lumens
Luminaire Efficacy: 49.6 lm/w
Maximum Candela: 371 Candela

Test Conditions

Test Temperature: 24.7 °C
Voltage: 120.0 VAC
Current: 0.1171 A
Power: 13.78 W
Power Factor: 0.981
Frequency: 60 Hz
Current THD: 17.2 %

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



Distribution - Goniophotometer

Distribution Test Conditions

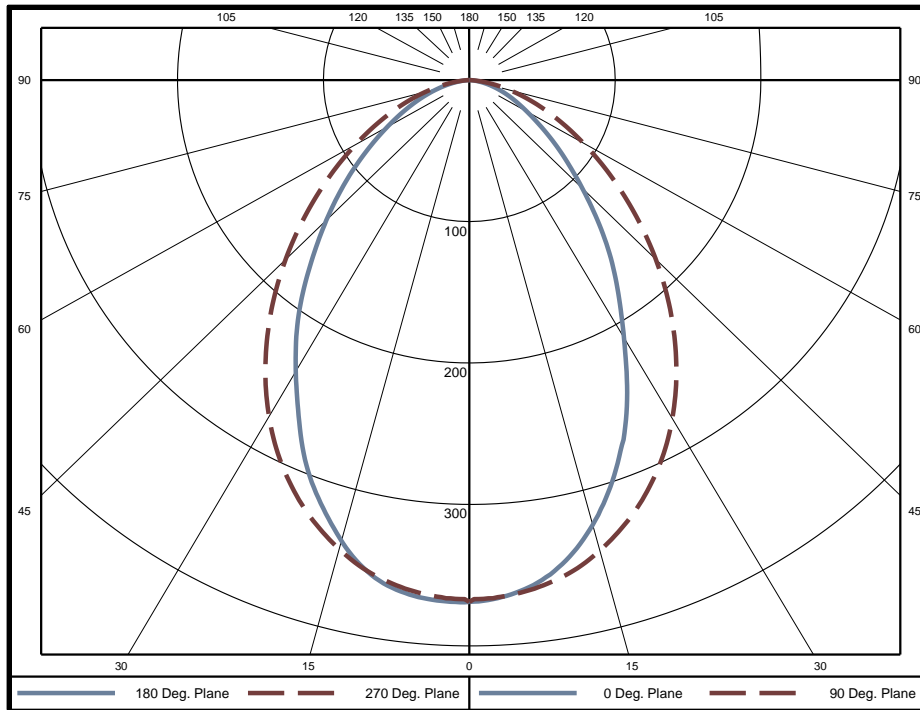
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.7 °C	120.0 VAC	0.1171 A	13.78 W	0.981	60 Hz	17.2 %

Summary of Results

Spacing Criteria
 0-180: 0.95
 90-270: 1.02

Total Lumen Output: 684.1 Lumens
Luminaire Efficacy: 49.6 lm/w
Maximum Candela: 371 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	8.80	1.3%	60-65	30.32	4.4%	120-125	0	0.0%
5-10	25.89	3.8%	65-70	22.81	3.3%	125-130	0	0.0%
10-15	41.32	6.0%	70-75	15.86	2.3%	130-135	0	0.0%
15-20	53.92	7.9%	75-80	9.66	1.4%	135-140	0	0.0%
20-25	62.96	9.2%	80-85	4.42	0.6%	140-145	0	0.0%
25-30	68.06	9.9%	85-90	0.90	0.1%	145-150	0	0.0%
30-35	69.38	10.1%	90-95	0	0.0%	150-155	0	0.0%
35-40	67.32	9.8%	95-100	0	0.0%	155-160	0	0.0%
40-45	62.23	9.1%	100-105	0	0.0%	160-165	0	0.0%
45-50	55.01	8.0%	105-110	0	0.0%	165-170	0	0.0%
50-55	46.83	6.8%	110-115	0	0.0%	170-175	0	0.0%
55-60	38.43	5.6%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	398	58.1%
0-60	600	87.7%
0-90	684	100.0%
90-180	0	0.0%



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	368.9	368.9	368.9	368.9	368.9	368.9	368.9	368.9	368.9	368.9	368.9	368.9	368.9	368.9	368.9	368.9
5	363.9	364.4	365.6	364.5	364.6	367.0	370.0	369.8	367.6	369.8	370.0	367.0	364.6	364.5	365.6	364.4
10	350.0	349.6	352.3	353.9	357.2	361.0	363.6	362.5	359.3	362.5	363.6	361.0	357.2	353.9	352.3	349.6
15	325.6	325.2	330.6	335.9	343.9	350.5	351.6	345.9	338.8	345.9	351.6	350.5	343.9	335.9	330.6	325.2
20	292.8	293.0	301.6	311.5	325.5	335.8	331.3	319.2	310.7	319.2	331.3	335.8	325.5	311.5	301.6	293.0
25	254.6	256.2	269.0	282.1	302.6	316.1	304.5	288.4	276.7	288.4	304.5	316.1	302.6	282.1	269.0	256.2
30	211.4	219.2	235.5	250.3	275.2	290.3	274.1	251.7	240.5	251.7	274.1	290.3	275.2	250.3	235.5	219.2
35	175.3	182.0	201.0	217.6	244.2	259.5	239.2	217.6	207.1	217.6	239.2	259.5	244.2	217.6	201.0	182.0
40	142.0	146.4	167.0	184.6	211.5	226.4	203.6	183.4	171.8	183.4	203.6	226.4	211.5	184.6	167.0	146.4
45	110.1	114.7	134.6	152.3	178.1	191.6	169.3	149.5	140.2	149.5	169.3	191.6	178.1	152.3	134.6	114.7
50	84.3	87.6	105.6	121.6	145.6	156.6	136.5	119.8	111.9	119.8	136.5	156.6	145.6	121.6	105.6	87.6
55	63.2	66.9	81.6	94.7	115.9	124.5	107.2	93.6	86.4	93.6	107.2	124.5	115.9	94.7	81.6	66.9
60	46.6	50.0	61.5	72.2	89.2	95.7	82.3	70.9	65.0	70.9	82.3	95.7	89.2	72.2	61.5	50.0
65	34.4	36.2	44.8	53.1	66.4	71.1	61.3	52.1	47.7	52.1	61.3	71.1	66.4	53.1	44.8	36.2
70	24.3	25.1	30.9	37.0	46.7	50.3	43.2	36.7	33.3	36.7	43.2	50.3	46.7	37.0	30.9	25.1
75	15.7	15.8	19.4	23.4	29.9	32.3	27.8	23.7	21.3	23.7	27.8	32.3	29.9	23.4	19.4	15.8
80	8.6	8.2	10.1	12.2	15.8	17.3	15.0	12.9	11.4	12.9	15.0	17.3	15.8	12.2	10.1	8.2
85	2.8	2.5	3.1	3.8	5.0	5.7	5.2	4.6	3.7	4.6	5.2	5.7	5.0	3.8	3.1	2.5
90	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.3	0.4	0.3	0.3	0.2	0.1	0.1	0.1
95	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
100	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
105	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
110	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
115	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
120	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
125	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
130	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
135	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
140	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
145	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
150	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
155	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
160	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
165	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
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)

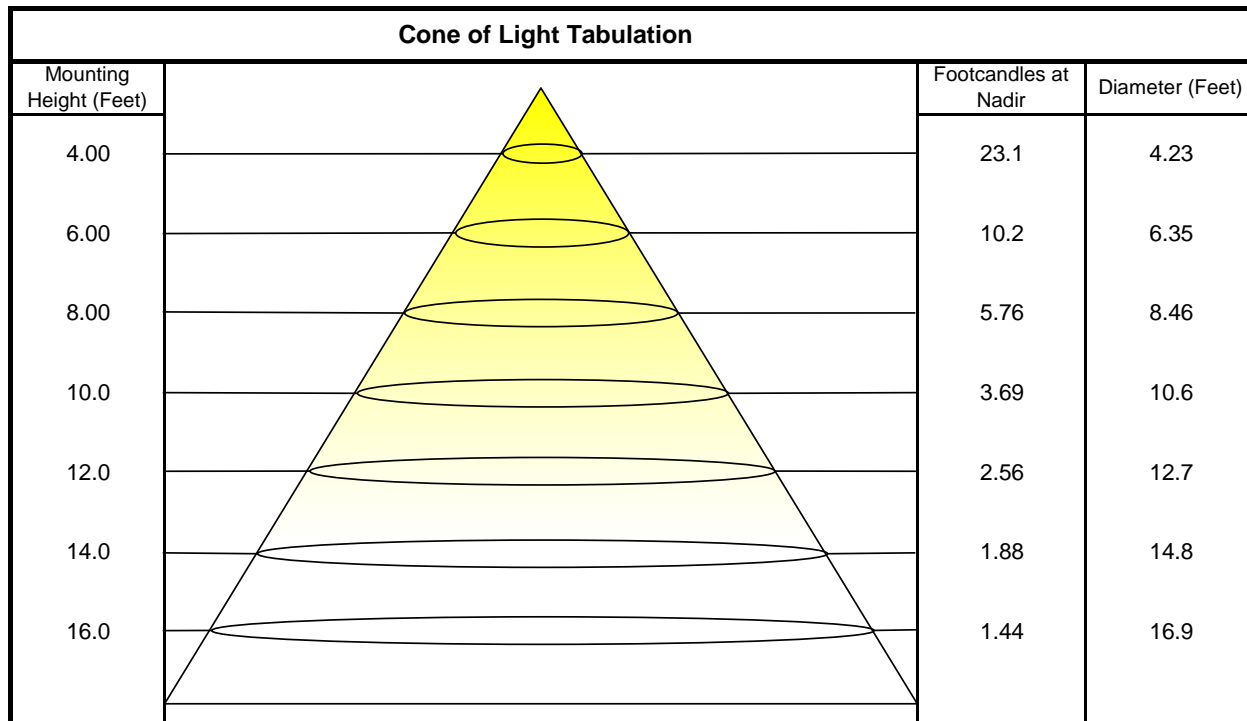
Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	25140	25140	25140
45	10610	12970	17160
55	7508	9693	13760
65	5547	7218	10700
75	4135	5105	7864
85	2222	2395	3944



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	814	814	814	814	795	795	795	795	760	760	760	728	728	728	698	698	698	684
1	756	728	704	681	738	713	691	670	685	666	649	658	643	630	634	622	611	598
2	698	649	609	575	681	636	600	568	613	582	555	591	565	543	571	550	531	517
3	644	581	532	493	628	570	525	489	551	512	480	533	500	472	516	488	465	451
4	596	523	470	429	581	514	465	426	498	455	421	483	445	415	468	436	410	396
5	553	474	419	378	539	467	415	376	453	407	372	440	400	368	428	393	365	351
6	514	432	376	337	502	426	373	335	414	367	332	403	361	330	393	356	327	314
7	480	396	341	302	469	390	338	301	380	333	299	371	329	297	362	324	296	283
8	449	364	311	274	439	360	309	273	351	305	272	343	301	270	335	297	269	257
9	422	337	285	250	413	333	283	249	326	280	248	318	277	247	312	274	246	234
10	397	313	263	229	389	310	261	229	303	259	228	297	256	227	291	253	226	215

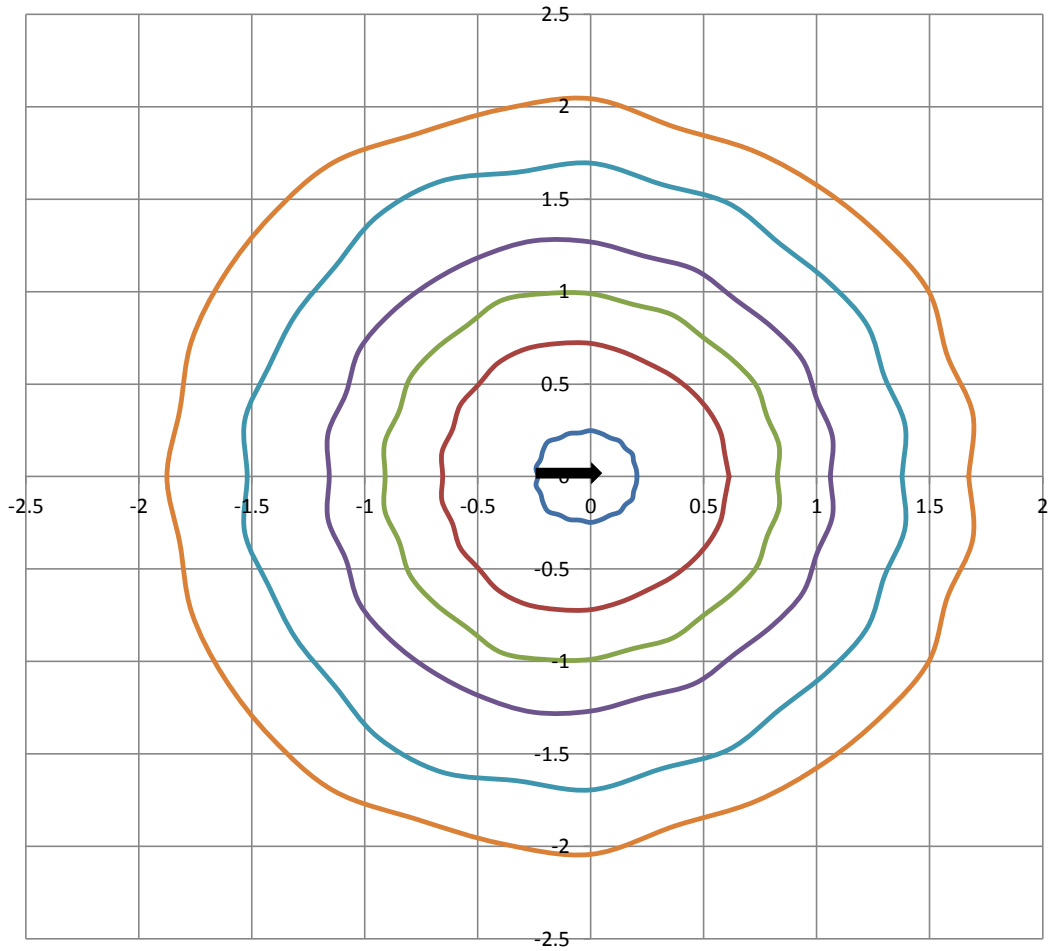
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	368.9 Candela
Central Cone Intensity:	368 Candela
Beam Flux:	404.3 Lumens
Beam Angle (0-180):	71.9 Degrees
Beam Angle (90-270):	88.1 Degrees
Field Angle (0-180):	132.5 Degrees
Field Angle (90-270):	145.6 Degrees





ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

