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1075 W Lambert Rd Suite B
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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

2710.98-WL

Order Number

11281216

Test Number

1253404

Test Date

2016-06-13

Prepared By

Tony Rubio, Technician

Approved By

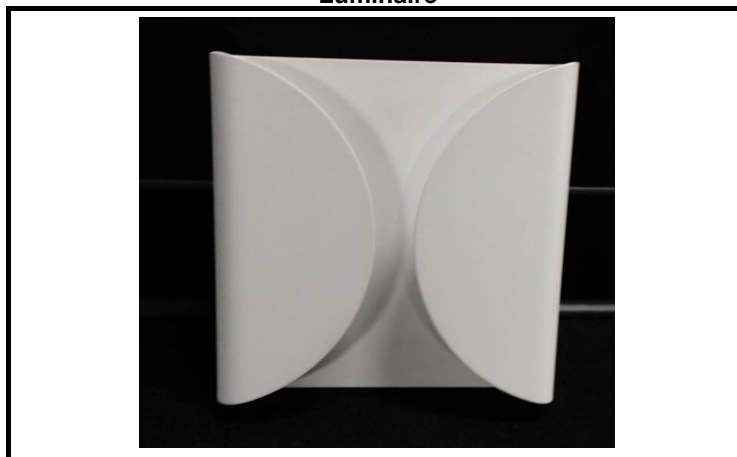
Eric Gaudreau, Senior Engineering Associate

The results contained in this report pertain only to the tested sample.
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Luminaire Description: Rectangular white formed aluminum housing with dual overlapped reflectors and two (2) semi-rounded frosted lens
Lamp: 30 White LEDs
Mounting: Surface/Wall
Ballast/Driver: One (1) L.T.F TA60WA12LED-0000

Luminaire



Luminaire Characteristics

Luminous Length: 7.75 in.
Luminous Width: 1.500 in.
Luminous Height: 8.00 in.

Summary of Results

Total Luminaire Output: 453.3 Lumens
Luminaire Efficacy: 22.9 lm/w
Maximum Candela: 88 Candela

Test Conditions

Test Temperature: 24.7 °C
Voltage: 120.0 VAC
Current: 0.1724 A
Power: 19.78 W
Power Factor: 0.956
Frequency: 60 Hz
Current THD: 30.4 %

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	0.1724 A	19.78 W	0.956	60 Hz	30.4 %

Summary of Results

Spacing Criteria

0-180: 1.40

90-270: 0.66

Total Lumen Output:

453.3 Lumens

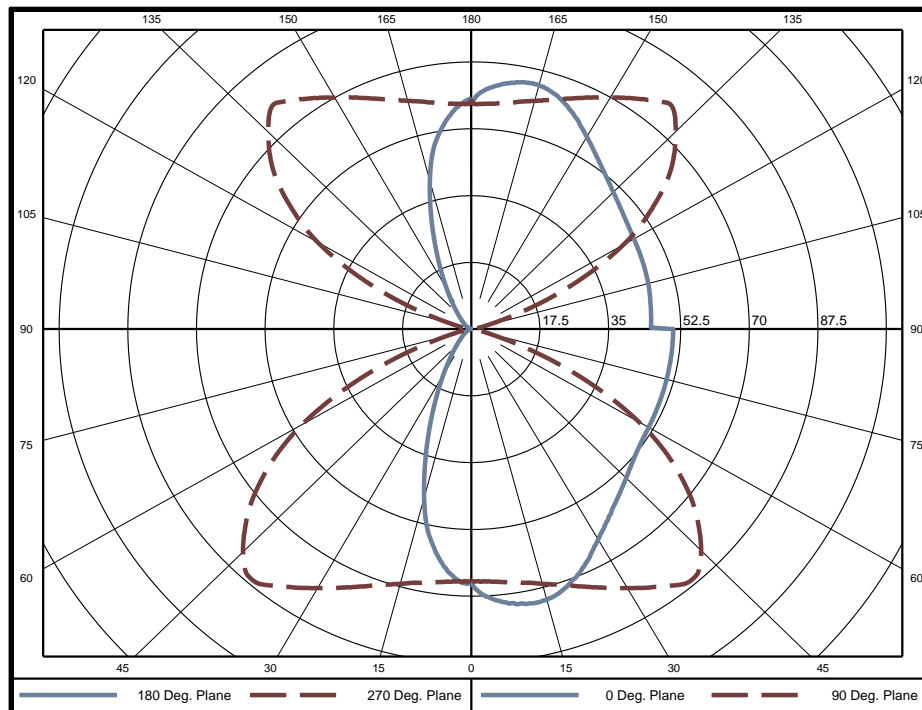
Luminaire Efficacy:

22.9 lm/w

Maximum Candela:

88 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	1.62	0.4%	60-65	16.02	3.5%	120-125	15.20	3.4%
5-10	4.83	1.1%	65-70	14.93	3.3%	125-130	15.63	3.4%
10-15	7.88	1.7%	70-75	13.94	3.1%	130-135	15.82	3.5%
15-20	10.55	2.3%	75-80	13.45	3.0%	135-140	15.73	3.5%
20-25	12.73	2.8%	80-85	13.31	2.9%	140-145	15.11	3.3%
25-30	14.48	3.2%	85-90	13.23	2.9%	145-150	14.08	3.1%
30-35	15.86	3.5%	90-95	11.77	2.6%	150-155	12.82	2.8%
35-40	16.95	3.7%	95-100	11.88	2.6%	155-160	11.27	2.5%
40-45	17.60	3.9%	100-105	12.06	2.7%	160-165	9.34	2.1%
45-50	17.66	3.9%	105-110	12.56	2.8%	165-170	7.00	1.5%
50-55	17.39	3.8%	110-115	13.50	3.0%	170-175	4.30	0.9%
55-60	16.88	3.7%	115-120	14.47	3.2%	175-180	1.44	0.3%

Zone	Lumens	% of Luminaire
0-40	85	18.7%
0-60	154	34.1%
0-90	239	52.8%
90-180	214	47.2%



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	66.22	66.22	66.22	66.22	66.22	66.22	66.22	66.22	66.22	66.22	66.22	66.22	66.22	66.22	66.22
	5	71.33	71.32	70.80	69.25	66.43	65.99	65.64	64.98	64.27	64.98	65.64	65.99	66.43	69.25	70.80
	10	72.95	73.21	73.13	71.58	67.35	65.50	62.13	59.17	57.51	59.17	62.13	65.50	67.35	71.58	73.13
	15	73.50	74.12	75.03	74.30	69.08	64.33	56.58	50.63	47.08	50.63	56.58	64.33	69.08	74.30	75.03
	20	71.35	72.86	76.35	77.42	71.47	62.35	48.07	38.35	34.23	38.35	48.07	62.35	71.47	77.42	76.35
	25	67.86	70.32	76.71	80.94	74.61	58.91	37.41	27.18	23.38	27.18	37.41	58.91	74.61	80.94	76.71
	30	63.73	67.14	76.20	84.51	78.32	52.65	27.37	18.32	15.46	18.32	27.37	52.65	78.32	84.51	76.20
	35	60.17	63.89	75.03	87.22	82.47	43.61	18.98	12.11	10.03	12.11	18.98	43.61	82.47	87.22	75.03
	40	57.36	60.92	73.33	87.49	86.23	33.85	12.78	7.95	6.59	7.95	12.78	33.85	86.23	87.49	73.33
	45	55.07	58.41	71.12	85.59	82.40	24.46	8.39	5.31	4.42	5.31	8.39	24.46	82.40	85.59	71.12
	50	53.20	56.39	68.40	82.12	74.18	16.20	5.49	3.63	3.10	3.63	5.49	16.20	74.18	82.12	68.40
	55	52.01	55.03	66.06	78.27	63.26	9.86	3.64	2.59	2.25	2.59	3.64	9.86	63.26	78.27	66.06
	60	51.45	54.02	63.90	73.99	49.69	5.66	2.52	1.87	1.59	1.87	2.52	5.66	49.69	73.99	63.90
	65	51.16	53.12	61.91	69.20	32.68	3.20	1.74	1.33	1.11	1.33	1.74	3.20	32.68	69.20	61.91
	70	50.93	52.44	60.25	64.63	16.09	1.92	1.20	0.94	0.76	0.94	1.20	1.92	16.09	64.63	60.25
	75	50.77	51.95	58.89	60.95	5.18	1.30	0.85	0.66	0.51	0.66	0.85	1.30	5.18	60.95	58.89
	80	50.74	51.94	58.08	58.35	1.96	0.91	0.63	0.49	0.35	0.49	0.63	0.91	1.96	58.35	58.08
	85	50.69	51.93	57.49	56.82	1.09	0.61	0.48	0.37	0.26	0.37	0.48	0.61	1.09	56.82	57.49
	90	50.73	51.97	57.33	56.26	0.41	0.40	0.41	0.29	0.24	0.29	0.41	0.40	0.41	56.26	57.33
	95	45.32	46.37	51.07	50.58	1.08	0.55	0.44	0.34	0.28	0.34	0.44	0.55	1.08	50.58	51.07
	100	45.61	46.57	51.70	51.93	1.85	0.83	0.56	0.43	0.37	0.43	0.56	0.83	1.85	51.93	51.70
	105	46.02	46.88	52.73	54.30	4.93	1.21	0.76	0.60	0.55	0.60	0.76	1.21	4.93	54.30	52.73
	110	46.38	47.55	54.05	57.80	15.14	1.75	1.07	0.84	0.79	0.84	1.07	1.75	15.14	57.80	54.05
	115	46.73	48.30	55.66	62.10	30.01	2.77	1.52	1.17	1.10	1.17	1.52	2.77	30.01	62.10	55.66
	120	47.22	49.22	57.57	66.35	44.98	4.70	2.15	1.61	1.52	1.61	2.15	4.70	44.98	66.35	57.57
	125	47.94	50.18	59.75	70.22	56.52	8.06	3.07	2.23	2.09	2.23	3.07	8.06	56.52	70.22	59.75
	130	49.05	51.47	62.12	73.71	66.36	13.23	4.54	3.06	2.85	3.06	4.54	13.23	66.36	73.71	62.12
	135	50.57	53.32	64.57	76.68	73.28	20.03	6.94	4.41	4.02	4.41	6.94	20.03	73.28	76.68	64.57
	140	52.52	55.64	66.59	78.77	77.43	27.92	10.57	6.56	5.90	6.56	10.57	27.92	77.43	78.77	66.59
	145	55.05	58.23	68.05	78.45	73.66	36.26	15.78	9.89	8.90	9.89	15.78	36.26	73.66	78.45	68.05
	150	58.15	61.19	68.85	75.61	70.08	44.25	22.82	14.95	13.60	14.95	22.82	44.25	70.08	75.61	68.85
	155	61.51	63.91	69.06	72.30	66.84	50.75	31.57	22.30	20.55	22.30	31.57	50.75	66.84	72.30	69.06
	160	64.53	65.78	68.40	69.03	64.12	54.69	41.08	31.88	30.10	31.88	41.08	54.69	64.12	69.03	68.40
	165	66.08	66.35	67.00	66.30	61.89	57.06	49.35	42.80	41.38	42.80	49.35	57.06	61.89	66.30	67.00
	170	65.74	65.30	65.21	63.84	60.30	58.56	54.85	51.46	50.90	51.46	54.85	58.56	60.30	63.84	65.21
	175	63.79	63.29	63.01	61.52	59.34	59.50	58.40	57.00	57.00	57.00	58.40	59.50	59.34	61.52	63.01
	180	60.11	60.11	60.11	60.11	60.11	60.11	60.11	60.11	60.11	60.11	60.11	60.11	60.11	60.11	60.11

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

Vertical Angle (Degrees)	0	45	90
	0	8829	8829
	45	10380	15540
	55	12090	14710
	65	16140	10310
	75	26160	2666
	85	77540	87950



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	489	489	489	489	452	452	452	452	385	385	385	323	323	323	266	266	266	239
1	435	410	388	369	400	379	360	343	321	306	293	267	256	246	218	210	202	179
2	392	353	321	294	360	326	298	274	276	254	235	229	213	199	186	174	164	143
3	356	308	271	241	327	285	252	225	241	215	194	200	181	165	163	148	136	117
4	325	271	232	202	298	251	216	189	213	185	164	177	156	139	144	128	115	98
5	297	241	201	172	273	223	187	161	189	161	140	158	136	119	129	112	99	84
6	274	215	176	148	251	200	164	139	170	142	121	143	120	104	117	100	86	73
7	253	194	156	129	232	180	146	121	154	126	106	129	107	91	106	89	76	64
8	234	176	139	114	216	164	130	107	140	113	94	118	97	81	98	81	68	57
9	218	160	125	101	201	149	117	95	128	102	84	109	88	72	90	73	61	51
10	204	147	113	90	188	137	106	85	118	93	75	100	80	65	84	67	55	46

Beam and Field Information

CIE Type:	Direct/Indirect
Center Beam Intensity:	66.22 Candela
Central Cone Intensity:	67 Candela
Beam Flux:	422.9 Lumens
Beam Angle (0-180):	29.7 Degrees
Beam Angle (90-270):	129.8 Degrees
Field Angle (0-180):	72.0 Degrees
Field Angle (90-270):	147.9 Degrees

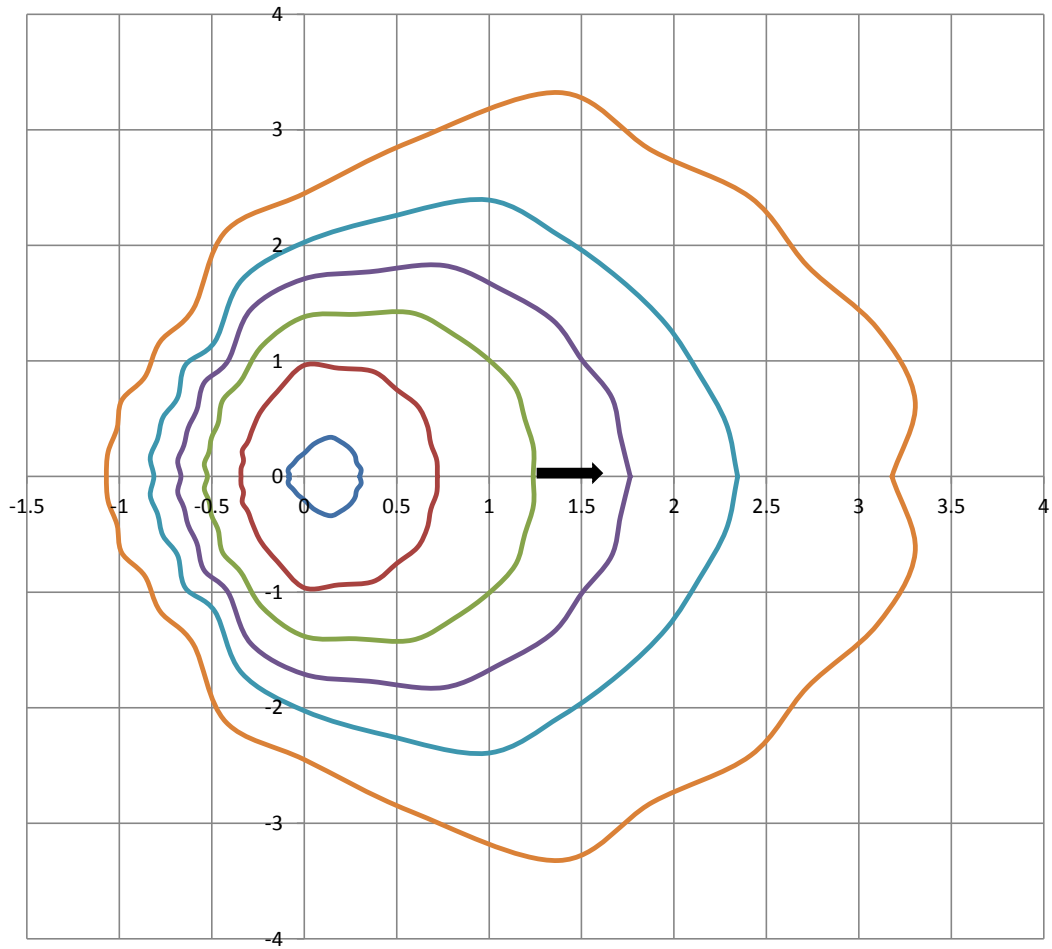
Cone of Light Tabulation

Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		4.14	4.99
6.00		1.84	7.49
8.00		1.03	9.98
10.0		0.662	12.5
12.0		0.460	15.0
14.0		0.338	17.5
16.0		0.259	20.0



ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

1 fc 0.5 fc 0.2 fc 0.1 fc 0.05 fc 0.02 fc