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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

2711.98-WL

Order Number

11281216

Test Number

1253405

Test Date

2016-06-23

Prepared By

Jeremy Lewis, Technician

Approved By

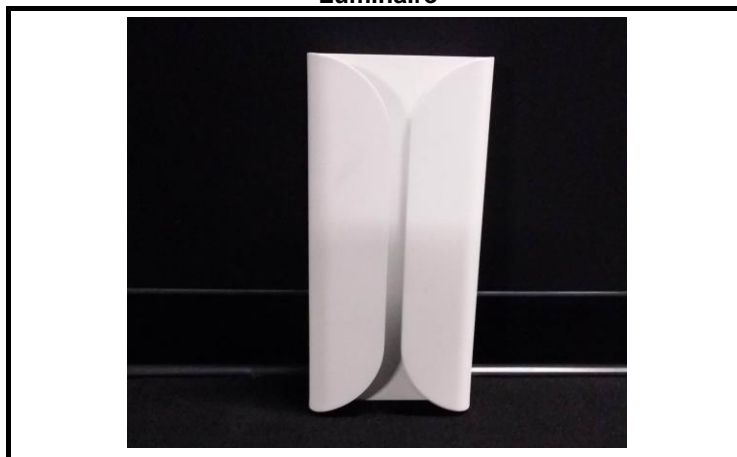
Eric Gaudreau, Senior Engineering Associate

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: 42 White LEDs
Mounting: Surface/Wall
Ballast/Driver: One (1) L.T.F TA60WA12LED-0000

Luminaire



Luminaire Characteristics

Luminous Length: 6.50 in.
Luminous Width: 1.500 in.
Luminous Height: 13.75 in.

Summary of Results

Total Luminaire Output: 216.7 Lumens
Luminaire Efficacy: 8.1 lm/w
Maximum Candela: 44 Candela

Test Conditions

Test Temperature: 24.4 °C
Voltage: 120.1 VAC
Current: 0.2334 A
Power: 26.85 W
Power Factor: 0.958
Frequency: 60 Hz
Current THD: 29.8 %

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
24.4 °C	120.1 VAC	0.2334 A	26.85 W	0.958	60 Hz	29.8 %

Summary of Results

Spacing Criteria

0-180: 1.86

90-270: 0.68

Total Lumen Output:

216.7 Lumens

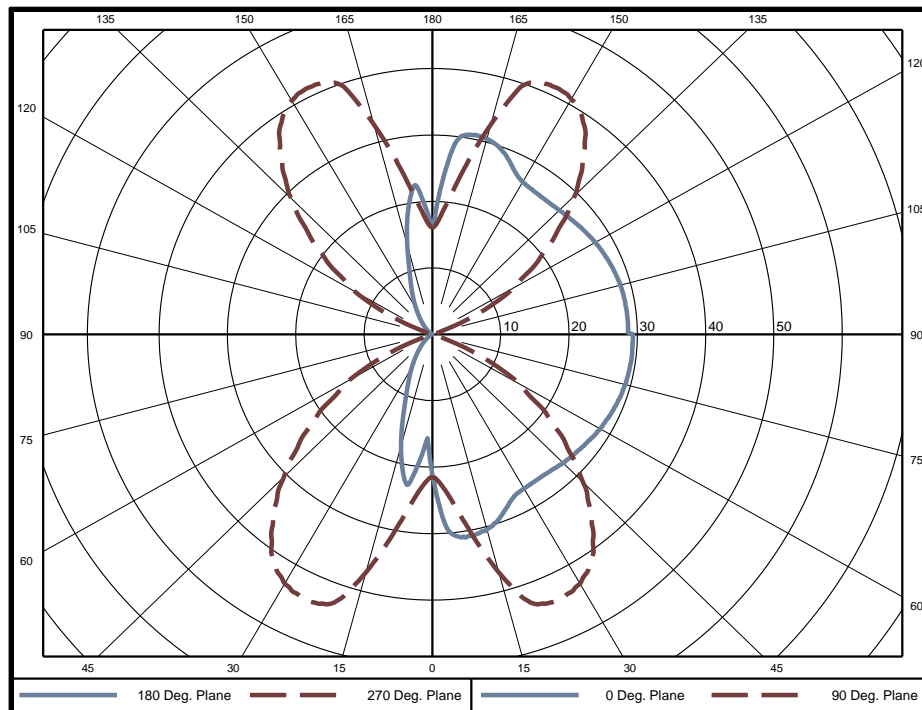
Luminaire Efficacy:

8.1 lm/w

Maximum Candela:

44 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.540	0.2%	60-65	7.591	3.5%	120-125	7.101	3.3%
5-10	1.883	0.9%	65-70	7.329	3.4%	125-130	7.122	3.3%
10-15	3.423	1.6%	70-75	7.219	3.3%	130-135	7.105	3.3%
15-20	4.780	2.2%	75-80	7.248	3.3%	135-140	7.033	3.2%
20-25	5.793	2.7%	80-85	7.227	3.3%	140-145	6.855	3.2%
25-30	6.535	3.0%	85-90	7.160	3.3%	145-150	6.531	3.0%
30-35	7.102	3.3%	90-95	7.067	3.3%	150-155	6.021	2.8%
35-40	7.460	3.4%	95-100	7.016	3.2%	155-160	5.319	2.5%
40-45	7.641	3.5%	100-105	6.943	3.2%	160-165	4.360	2.0%
45-50	7.724	3.6%	105-110	6.830	3.2%	165-170	3.127	1.4%
50-55	7.754	3.6%	110-115	6.860	3.2%	170-175	1.741	0.8%
55-60	7.718	3.6%	115-120	7.033	3.2%	175-180	0.465	0.2%

Zone	Lumens	% of Luminaire
0-40	38	17.3%
0-60	68	31.5%
0-90	112	51.7%
90-180	105	48.2%



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	21.27	21.27	21.27	21.27	21.27	21.27	21.27	21.27	21.27	21.27	21.27	21.27	21.27	21.27	21.27
	5	29.96	30.36	29.60	27.09	23.90	19.90	18.16	18.25	18.70	18.25	18.16	19.90	23.90	27.09	29.60
	10	30.80	31.47	32.22	32.72	29.46	24.30	23.51	23.10	22.31	23.10	23.51	24.30	29.46	32.72	32.22
	15	30.47	31.37	32.96	36.87	37.01	30.45	22.86	18.64	16.91	18.64	22.86	30.45	37.01	36.87	32.96
	20	29.21	30.42	33.04	39.75	43.15	30.50	18.10	13.00	11.31	13.00	18.10	30.50	43.15	39.75	33.04
	25	27.44	28.93	32.57	41.87	43.90	26.69	13.17	8.97	7.90	8.97	13.17	26.69	43.90	41.87	32.57
	30	26.82	27.77	31.80	43.28	43.14	21.84	9.30	6.58	5.70	6.58	9.30	21.84	43.14	43.28	31.80
	35	26.74	27.33	30.76	43.88	40.61	16.60	6.88	4.75	3.99	4.75	6.88	16.60	40.61	43.88	30.76
	40	26.86	27.35	29.52	44.18	36.03	11.54	5.03	3.36	2.72	3.36	5.03	11.54	36.03	44.18	29.52
	45	27.25	27.57	28.41	44.13	30.58	7.53	3.55	2.31	1.83	2.31	3.55	7.53	30.58	44.13	28.41
	50	27.55	27.86	27.64	43.75	25.09	4.99	2.45	1.52	1.14	1.52	2.45	4.99	25.09	43.75	27.64
	55	27.90	28.19	27.24	43.19	19.59	3.30	1.57	0.90	0.61	0.90	1.57	3.30	19.59	43.19	27.24
	60	28.40	28.44	27.05	42.31	14.17	2.11	0.91	0.41	0.17	0.41	0.91	2.11	14.17	42.31	27.05
	65	28.73	28.71	26.86	40.96	7.66	1.26	0.41	0.05	0.00	0.05	0.41	1.26	7.66	40.96	26.86
	70	28.97	28.85	26.70	39.47	1.75	0.60	0.03	0.00	0.00	0.00	0.03	0.60	1.75	39.47	26.70
	75	29.24	29.00	26.60	38.08	0.91	0.11	0.00	0.00	0.00	0.00	0.00	0.11	0.91	38.08	26.60
	80	29.32	29.09	26.49	36.70	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.48	36.70	26.49	29.09
	85	29.38	29.08	26.33	35.21	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.02	35.21	26.33	29.08
	90	29.37	28.98	26.32	33.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.85	26.32	28.98
	95	28.69	28.70	26.20	33.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.93	26.20	28.70
	100	28.63	28.74	26.27	33.86	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.36	33.86	26.27	28.74
	105	28.49	28.64	26.36	33.99	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.77	33.99	26.36	28.64
	110	28.25	28.48	26.45	34.32	1.54	0.39	0.00	0.00	0.00	0.00	0.39	1.54	34.32	26.45	28.48
	115	27.91	28.23	26.59	34.97	7.16	0.95	0.16	0.00	0.00	0.00	0.16	0.95	7.16	34.97	26.59
	120	27.58	27.93	26.75	35.60	13.15	1.60	0.56	0.14	0.00	0.14	0.56	1.60	13.15	35.60	26.75
	125	27.16	27.57	27.12	36.17	18.22	2.50	1.09	0.53	0.32	0.53	1.09	2.50	18.22	36.17	27.12
	130	26.74	27.22	27.92	36.74	23.41	3.74	1.78	1.02	0.77	1.02	1.78	3.74	23.41	36.74	27.92
	135	26.34	27.00	29.16	37.44	29.08	5.39	2.64	1.67	1.36	1.67	2.64	5.39	29.08	37.44	29.16
	140	26.16	26.96	30.56	38.33	33.99	7.69	3.77	2.48	2.13	2.48	3.77	7.69	33.99	38.33	30.56
	145	26.17	27.22	31.68	39.10	38.46	11.00	5.29	3.59	3.16	3.59	5.29	11.00	38.46	39.10	31.68
	150	26.45	28.18	32.58	39.73	40.68	15.05	7.15	5.10	4.60	5.10	7.15	15.05	40.68	39.73	32.58
	155	27.78	29.64	33.25	39.83	41.21	19.10	9.55	7.01	6.53	7.01	9.55	19.10	41.21	39.83	33.25
	160	29.60	30.73	33.39	39.58	40.14	22.76	13.33	9.60	9.06	9.60	13.33	22.76	40.14	39.58	33.39
	165	30.48	31.16	32.93	36.68	32.58	25.47	18.02	14.08	13.47	14.08	18.02	25.47	32.58	36.68	32.93
	170	30.49	30.55	30.62	28.68	24.64	24.46	22.12	19.59	19.27	19.59	22.12	24.46	24.64	28.68	30.62
	175	25.92	24.02	22.70	20.30	18.86	20.47	21.37	22.19	21.76	22.19	21.37	20.47	18.86	20.30	22.70
	180	16.24	16.24	16.24	16.24	16.24	16.24	16.24	16.24	16.24	16.24	16.24	16.24	16.24	16.24	16.24

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

Vertical Angle (Degrees)	0	45	90
	0	3381	3381
	45	1966	711
	55	1923	609
	65	1952	558
	75	2019	531
	85	2128	521



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	233	233	233	233	215	215	215	215	183	183	183	153	153	153	125	125	125	112
1	206	194	183	174	190	179	170	161	151	144	137	125	119	114	101	97	93	81
2	186	167	151	138	170	154	140	128	129	118	109	106	98	91	86	80	74	64
3	168	145	127	113	154	134	118	105	112	100	90	93	83	75	74	67	61	52
4	154	128	108	94	140	118	101	88	99	86	75	82	72	63	66	58	52	44
5	141	113	94	80	129	104	87	74	88	75	64	73	62	54	59	51	44	37
6	129	101	82	69	118	94	77	64	79	66	56	66	55	47	53	45	39	32
7	119	91	73	60	109	84	68	56	72	58	49	60	49	41	48	40	34	28
8	111	82	65	53	102	76	60	49	65	52	43	54	44	37	44	36	30	25
9	103	75	58	47	95	70	54	44	60	47	38	50	40	33	41	33	27	22
10	96	69	52	42	88	64	49	39	55	43	34	46	36	29	38	30	25	20

Beam and Field Information

CIE Type:	Direct/Indirect
Center Beam Intensity:	21.27 Candela
Central Cone Intensity:	22 Candela
Beam Flux:	207.4 Lumens
Beam Angle (0-180):	N/A Degrees
Beam Angle (90-270):	125.4 Degrees
Field Angle (0-180):	N/A Degrees
Field Angle (90-270):	138.7 Degrees

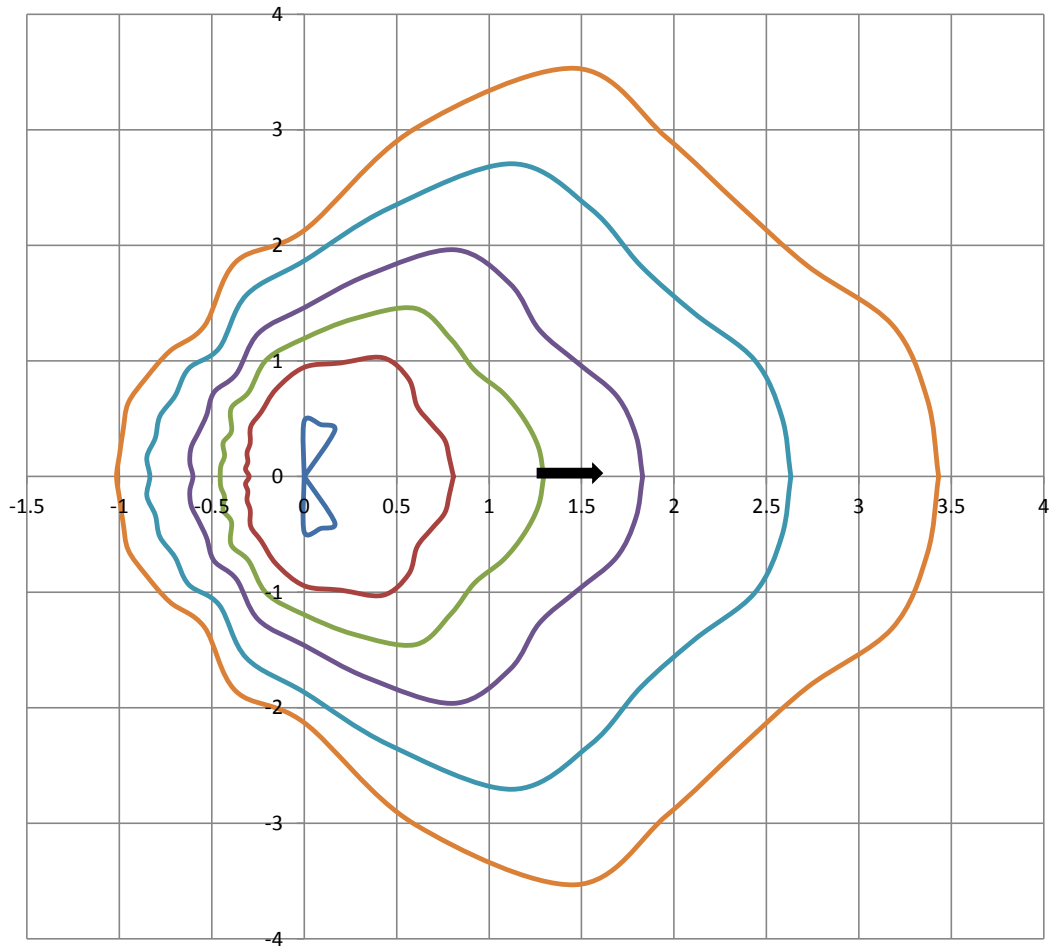
Cone of Light Tabulation

Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		1.33	6.33
6.00		0.591	9.50
8.00		0.332	12.7
10.0		0.213	15.8
12.0		0.148	19.0
14.0		0.109	22.2
16.0		0.0831	25.3



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