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Indoor Distribution Test Report

Relevant Standards
IES LM-79-2008
ANSI C82.77-2002

Prepared For
Sonneman
Nicolas Carmichael
106 Pierces Rd
Newburgh, NY 12550-9369

Catalog Number
2730
Order Number
11175190
Test Number
1216537

Test Date

2016-03-07

Prepared By

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Approved By

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Luminaire Description: Formed white enamel aluminum housing, frosted plastic lens enclosure
Lamp: Six white LEDs
Mounting: Pendant
Ballast/Driver: One ERP EBR020U-0700-24

Luminaire



Luminaire Characteristics

Luminous Length: 5.00 in.
Luminous Width: 3.500 in.
Luminous Height: 1.13 in.

Summary of Results

Total Luminaire Output: 681.0 Lumens
Luminaire Efficacy: 41.1 lm/w
Maximum Candela: 360 Candela

Electrical Data

Test Temperature: 25.1 °C
Voltage: 120.0 VAC
Current: 0.1407 A
Power: 16.57 W
Power Factor: 0.981
Frequency: 60 Hz
Current THD: 18.2 %

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
25.1 °C	120.0 VAC	0.1407 A	16.57 W	0.981	60 Hz	18.2 %

Summary of Results

Spacing Criteria

0-180: 1.19
90-270: 1.19

Total Lumen Output:

681.0 Lumens

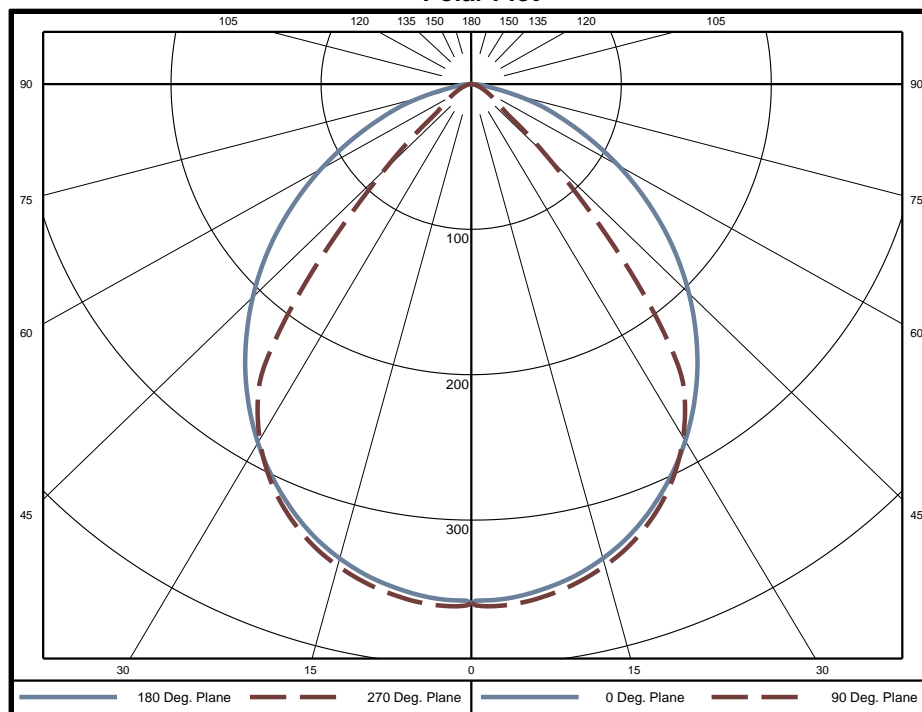
Luminaire Efficacy:

41.1 lm/w

Maximum Candela:

360 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	8.55	1.3%	60-65	21.70	3.2%	120-125	0	0.0%
5-10	25.35	3.7%	65-70	14.00	2.1%	125-130	0	0.0%
10-15	41.16	6.0%	70-75	8.23	1.2%	130-135	0	0.0%
15-20	55.28	8.1%	75-80	4.28	0.6%	135-140	0	0.0%
20-25	67.01	9.8%	80-85	2.29	0.3%	140-145	0	0.0%
25-30	75.69	11.1%	85-90	1.11	0.2%	145-150	0	0.0%
30-35	80.60	11.8%	90-95	0.51	0.1%	150-155	0	0.0%
35-40	79.56	11.7%	95-100	0.28	0.0%	155-160	0	0.0%
40-45	69.59	10.2%	100-105	0.13	0.0%	160-165	0	0.0%
45-50	55.12	8.1%	105-110	0.05	0.0%	165-170	0	0.0%
50-55	40.48	5.9%	110-115	0.01	0.0%	170-175	0	0.0%
55-60	30.06	4.4%	115-120	0.00	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	433	63.6%
0-60	628	92.3%
0-90	680	99.9%
90-180	1	0.1%



Candela Tabulation
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	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2
5	353.8	356.3	357.5	358.2	358.6	358.2	357.5	356.3	353.8	356.3	357.5	358.2	358.6	358.2	357.5	356.3
10	347.8	350.8	352.1	352.9	352.9	352.9	352.1	350.8	347.8	350.8	352.1	352.9	352.9	352.9	352.1	350.8
15	337.9	341.4	342.7	343.5	343.4	343.5	342.7	341.4	337.9	341.4	342.7	343.5	343.4	343.5	342.7	341.4
20	323.9	327.9	329.6	329.7	329.4	329.7	329.6	327.9	323.9	327.9	329.6	329.7	329.4	329.7	329.6	327.9
25	305.6	310.1	312.4	311.1	309.6	311.1	312.4	310.1	305.6	310.1	312.4	311.1	309.6	311.1	312.4	310.1
30	284.5	289.4	291.1	286.5	282.5	286.5	291.1	289.4	284.5	289.4	291.1	286.5	282.5	286.5	291.1	289.4
35	260.2	265.3	264.6	254.5	244.2	254.5	264.6	265.3	260.2	265.3	264.6	254.5	244.2	254.5	264.6	265.3
40	233.7	238.4	233.7	191.7	156.5	191.7	233.7	238.4	233.7	238.4	233.7	191.7	156.5	191.7	233.7	238.4
45	205.3	209.4	195.3	103.9	76.5	103.9	195.3	209.4	205.3	209.4	195.3	103.9	76.5	103.9	195.3	209.4
50	175.7	178.0	123.3	45.3	29.5	45.3	123.3	178.0	175.7	178.0	123.3	45.3	29.5	45.3	123.3	178.0
55	144.8	145.3	60.2	22.6	20.0	22.6	60.2	145.3	144.8	145.3	60.2	22.6	20.0	22.6	60.2	145.3
60	114.3	111.8	25.6	15.2	13.7	15.2	25.6	111.8	114.3	111.8	25.6	15.2	13.7	15.2	25.6	111.8
65	84.4	69.3	15.4	10.2	9.3	10.2	15.4	69.3	84.4	69.3	15.4	10.2	9.3	10.2	15.4	69.3
70	58.4	34.3	10.1	6.9	6.2	6.9	10.1	34.3	58.4	34.3	10.1	6.9	6.2	6.9	10.1	34.3
75	33.7	14.6	6.9	4.5	3.8	4.5	6.9	14.6	33.7	14.6	6.9	4.5	3.8	4.5	6.9	14.6
80	13.4	7.3	4.7	2.7	2.0	2.7	4.7	7.3	13.4	7.3	4.7	2.7	2.0	2.7	4.7	7.3
85	6.4	4.2	3.1	1.3	0.5	1.3	3.1	4.2	6.4	4.2	3.1	1.3	0.5	1.3	3.1	4.2
90	0.0	2.5	1.9	0.3	0.0	0.3	1.9	2.5	0.0	2.5	1.9	0.3	0.0	0.3	1.9	2.5
95	0.0	1.3	1.3	0.2	0.0	0.2	1.3	1.3	0.0	1.3	1.3	0.2	0.0	0.2	1.3	1.3
100	0.0	0.5	0.8	0.1	0.0	0.1	0.8	0.5	0.0	0.5	0.8	0.1	0.0	0.1	0.8	0.5
105	0.0	0.1	0.5	0.0	0.0	0.0	0.5	0.1	0.0	0.1	0.5	0.0	0.0	0.0	0.5	0.1
110	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	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)

	0	45	90
0	31640	31640	31640
45	21000	17640	7252
55	16930	5990	2120
65	11930	1759	1156
75	6273	971	586
85	1833	579	111



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	811	811	811	811	792	792	792	792	756	756	756	724	724	724	694	694	694	680
1	758	732	710	689	740	717	697	678	689	672	657	663	649	637	639	628	618	605
2	703	658	621	590	687	646	612	583	623	594	570	601	578	557	581	562	545	532
3	652	593	548	511	637	583	541	507	564	528	498	546	515	490	529	504	482	469
4	605	537	487	448	591	528	481	445	512	472	439	497	462	434	483	453	428	415
5	563	488	436	397	550	481	432	395	467	424	391	454	417	387	442	409	383	370
6	524	445	392	354	512	439	389	353	428	383	350	417	377	347	407	372	344	332
7	490	408	356	319	479	403	353	318	393	348	316	384	344	314	375	339	312	299
8	458	376	324	289	449	372	322	288	363	318	286	355	315	285	348	311	283	272
9	430	348	297	263	421	344	296	263	337	292	261	330	289	260	323	286	259	248
10	405	323	274	241	397	319	272	241	313	270	240	307	267	239	301	264	238	227

Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	22.3	4.79
6.00	9.92	7.19
8.00	5.58	9.58
10.0	3.57	12.0
12.0	2.48	14.4
14.0	1.82	16.8
16.0	1.40	19.2

Cone of Light Plot

