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Indoor Distribution Test Report

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

Prepared For
Sonneman
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106 Pierces Rd.
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Catalog Number
2729
Order Number
10776086
Test Number
1053174

Test Date

2015-05-05

Prepared By

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Approved By

Kyle Spaziani, Project Handler

The results contained in this report pertain only to the tested sample.
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Luminaire Description: Formed white aluminum housing, lower white steel trim, frosted plastic enclosure
Lamp: 84 white LEDs
Mounting: Surface - Ceiling
Ballast/Driver: One ERP ESS030W-0700-42

Luminaire



Luminaire Characteristics

Luminous Diameter: 12.00 in.
Luminous Height: 1.25 in.

Summary of Results

Total Luminaire Output:	1918 Lumens
Luminaire Efficacy:	67 lm/w
Maximum Candela:	663 Candela

Electrical Data

Test Temperature:	25.4 °C
Voltage:	120.0 VAC
Current:	0.2413 A
Power:	28.64 W
Power Factor:	0.989
Frequency:	60 Hz
Current THD:	10.9 %

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
25.4 °C	120.0 VAC	0.2413 A	28.64 W	0.989	60 Hz	10.9 %

Summary of Results

Spacing Criteria

0-180: 1.19

90-270: 1.19

Total Lumen Output:

1918 Lumens

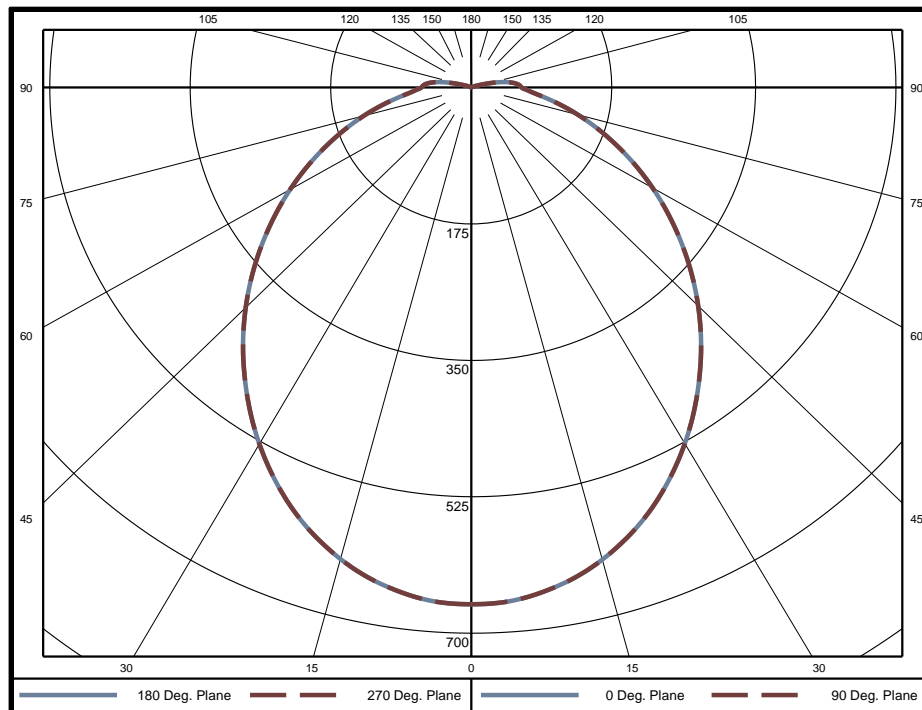
Luminaire Efficacy:

67.0 lm/w

Maximum Candela:

663 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	15.8	0.8%	60-65	116.2	6.1%	120-125	0	0.0%
5-10	46.7	2.4%	65-70	99.4	5.2%	125-130	0	0.0%
10-15	75.6	3.9%	70-75	82.0	4.3%	130-135	0	0.0%
15-20	101.1	5.3%	75-80	64.7	3.4%	135-140	0	0.0%
20-25	122.4	6.4%	80-85	48.7	2.5%	140-145	0	0.0%
25-30	138.7	7.2%	85-90	37.7	2.0%	145-150	0	0.0%
30-35	149.6	7.8%	90-95	32.7	1.7%	150-155	0	0.0%
35-40	155.1	8.1%	95-100	26.6	1.4%	155-160	0	0.0%
40-45	155.8	8.1%	100-105	15.5	0.8%	160-165	0	0.0%
45-50	151.6	7.9%	105-110	5.8	0.3%	165-170	0	0.0%
50-55	143.1	7.5%	110-115	2.0	0.1%	170-175	0	0.0%
55-60	131.0	6.8%	115-120	0.3	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	805	42.0%
0-60	1248	72.3%
0-90	1835	95.7%
90-180	83	4.3%



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	662.9	662.9	662.9	662.9	662.9	662.9	662.9	662.9	662.9	662.9	662.9	662.9	662.9	662.9	662.9
	5	659.3	659.3	659.3	659.3	659.3	659.3	659.3	659.3	659.3	659.3	659.3	659.3	659.3	659.3	659.3
	10	646.8	646.8	646.8	646.8	646.8	646.8	646.8	646.8	646.8	646.8	646.8	646.8	646.8	646.8	646.8
	15	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1
	20	600.3	600.3	600.3	600.3	600.3	600.3	600.3	600.3	600.3	600.3	600.3	600.3	600.3	600.3	600.3
	25	567.1	567.1	567.1	567.1	567.1	567.1	567.1	567.1	567.1	567.1	567.1	567.1	567.1	567.1	567.1
	30	528.9	528.9	528.9	528.9	528.9	528.9	528.9	528.9	528.9	528.9	528.9	528.9	528.9	528.9	528.9
	35	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1
	40	443.5	443.5	443.5	443.5	443.5	443.5	443.5	443.5	443.5	443.5	443.5	443.5	443.5	443.5	443.5
	45	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
	50	352.4	352.4	352.4	352.4	352.4	352.4	352.4	352.4	352.4	352.4	352.4	352.4	352.4	352.4	352.4
	55	306.2	306.2	306.2	306.2	306.2	306.2	306.2	306.2	306.2	306.2	306.2	306.2	306.2	306.2	306.2
	60	261.1	261.1	261.1	261.1	261.1	261.1	261.1	261.1	261.1	261.1	261.1	261.1	261.1	261.1	261.1
	65	217.3	217.3	217.3	217.3	217.3	217.3	217.3	217.3	217.3	217.3	217.3	217.3	217.3	217.3	217.3
	70	176.1	176.1	176.1	176.1	176.1	176.1	176.1	176.1	176.1	176.1	176.1	176.1	176.1	176.1	176.1
	75	138.3	138.3	138.3	138.3	138.3	138.3	138.3	138.3	138.3	138.3	138.3	138.3	138.3	138.3	138.3
	80	104.2	104.2	104.2	104.2	104.2	104.2	104.2	104.2	104.2	104.2	104.2	104.2	104.2	104.2	104.2
	85	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1
	90	62.4	62.4	62.4	62.4	62.4	62.4	62.4	62.4	62.4	62.4	62.4	62.4	62.4	62.4	62.4
	95	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1
	100	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	105	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2
	110	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
	115	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	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
	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
	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
	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
	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
	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
	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
	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
	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
	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
	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
	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
	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

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

Vertical Angle (Degrees)	0	45	90
	0	9084	9084
	45	20690	20690
	55	8514	8514
	65	5456	5456
	75	3117	3117
	85	1634	1634



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	2264	2264	2264	2264	2201	2201	2201	2201	2085	2085	2085	1979	1979	1979	1881	1881	1881	1835
1	2046	1945	1855	1774	1984	1893	1811	1737	1795	1728	1667	1706	1651	1601	1623	1579	1538	1491
2	1856	1690	1552	1436	1797	1646	1520	1412	1563	1458	1367	1488	1400	1323	1417	1345	1281	1234
3	1691	1482	1321	1192	1636	1445	1296	1176	1376	1249	1144	1311	1204	1114	1252	1161	1084	1038
4	1549	1314	1142	1010	1497	1282	1122	998	1223	1085	975	1168	1049	953	1117	1016	932	886
5	1425	1174	1000	870	1378	1148	984	862	1097	954	844	1051	926	828	1007	898	811	768
6	1317	1058	885	761	1274	1036	872	754	992	848	741	952	825	727	914	802	715	673
7	1221	960	791	673	1183	941	781	667	904	761	657	869	741	646	836	722	636	596
8	1138	877	713	601	1103	860	705	596	828	688	588	797	671	579	769	655	571	533
9	1063	806	648	541	1032	791	640	537	763	626	530	736	612	523	711	599	516	480
10	998	744	592	491	969	731	586	488	706	573	482	683	562	476	661	550	470	436

Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	41.4	4.77
6.00	18.4	7.15
8.00	10.4	9.53
10.0	6.63	11.9
12.0	4.60	14.3
14.0	3.38	16.7
16.0	2.59	19.1

Cone of Light Plot

