



## Photometric Indoor Test Report

### Relevant Standards

IES LM-9-2009, IES LM-41-1998  
ANSI C78.81-2010, ANSI C82.1-2004, ANSI C82.11, ANSI C82.2, ANSI C82.77  
IEC 60081, IEC 60901, IEC 61347-2-3

Prepared For  
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Catalog Number  
ECS-SGI4-WN-332-UNV-13L

LTL Test Number  
23046

Test Date

2011-04-15

Prepared By

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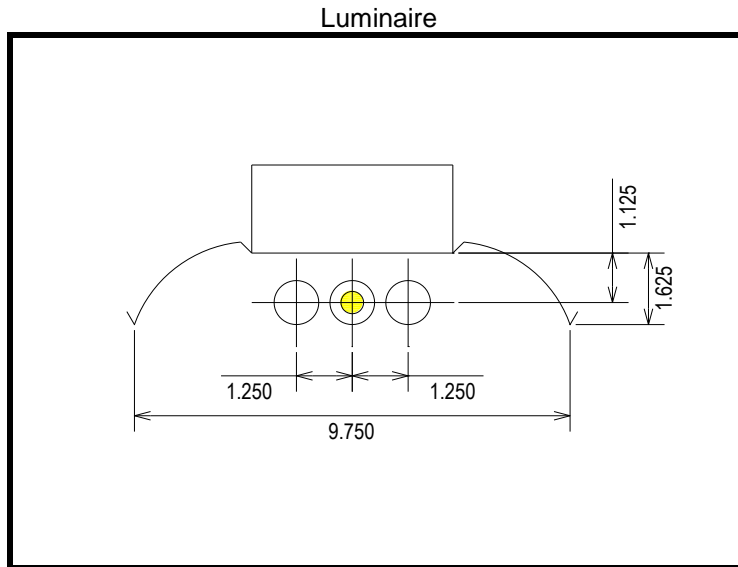
Approved By

Brian Moyer, Engineer

The results contained in this report pertain only to the tested sample.  
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Luminaire Description: Formed white enamel steel housing, formed white enamel aluminum reflector, no enclosure
Catalog Number: ECS-SGI4-WN-332-UNV-13L
Lamp: Three horizontal 32 Watt T8 linear fluorescent lamps rated at 2850 lumens each
Lamp Catalog Number: Philips F32T8/TL841/ALTO
Mounting: Surface / Pendant
Ballast/Driver: One Sylvania "Quicktronic" QHE-3X32T8/UNV-ISL-SC



Zonal Lumen Summary

Table with 4 columns: Zone (Degrees), Lumens, % of Lamp, % of Luminaire. Rows include zones from 0-30 to 0-180.

Test Conditions

Test Temperature: 24.4 °C
Voltage: 120.0 VAC
Current: 0.6318 A
Power: 74.99 W
Power Factor: 0.989
Frequency: 60 Hz

Summary of Results

Luminaire Efficiency: 89.7 %

Spacing Criterion: 0 Degree: 1.27 90 Degree: 1.38
180 Degree: 1.27 270 Degree: 1.38

CIE Type: Direct

Total Reflectance of Paint: 92.7 %



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	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297
5	2278	2286	2300	2295	2299	2295	2300	2286	2278	2286	2300	2295	2299	2295	2300	2286
10	2251	2263	2275	2268	2275	2268	2275	2263	2251	2263	2275	2268	2275	2268	2275	2263
15	2206	2221	2234	2237	2247	2237	2234	2221	2206	2221	2234	2237	2247	2237	2234	2221
20	2143	2158	2183	2194	2207	2194	2183	2158	2143	2158	2183	2194	2207	2194	2183	2158
25	2065	2080	2119	2149	2172	2149	2119	2080	2065	2080	2119	2149	2172	2149	2119	2080
30	1968	1989	2044	2091	2113	2091	2044	1989	1968	1989	2044	2091	2113	2091	2044	1989
35	1856	1884	1963	2019	2052	2019	1963	1884	1856	1884	1963	2019	2052	2019	1963	1884
40	1732	1764	1856	1936	1969	1936	1856	1764	1732	1764	1856	1936	1969	1936	1856	1764
45	1595	1632	1749	1826	1856	1826	1749	1632	1595	1632	1749	1826	1856	1826	1749	1632
50	1447	1498	1624	1701	1733	1701	1624	1498	1447	1498	1624	1701	1733	1701	1624	1498
55	1285	1337	1476	1557	1596	1557	1476	1337	1285	1337	1476	1557	1596	1557	1476	1337
60	1114	1176	1317	1419	1450	1419	1317	1176	1114	1176	1317	1419	1450	1419	1317	1176
65	934	1011	1162	1229	1238	1229	1162	1011	934	1011	1162	1229	1238	1229	1162	1011
70	738	834	964	954	945	954	964	834	738	834	964	954	945	954	964	834
75	527	651	678	667	667	667	678	651	527	651	678	667	667	667	678	651
80	316	435	413	407	406	407	413	435	316	435	413	407	406	407	413	435
85	105	177	172	165	162	165	172	177	105	177	172	165	162	165	172	177
90	3	16	6	1	0	1	6	16	3	16	6	1	0	1	6	16
95	2	14	5	0	0	0	5	14	2	14	5	0	0	0	5	14
100	0	7	3	0	0	0	3	7	0	7	3	0	0	0	3	7
105	0	3	2	0	0	0	2	3	0	3	2	0	0	0	2	3
110	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1
115	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
125	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
135	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
145	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
155	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
165	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
175	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

Zonal Lumen Tabulation (5 degree zones)

Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens
0-5	54.9	45-50	674.2	90-95	3.0	135-140	0
5-10	163.1	50-55	664.7	95-100	2.0	140-145	0
10-15	266.7	55-60	636.0	100-105	0.9	145-150	0
15-20	363.3	60-65	589.2	105-110	0.4	150-155	0
20-25	450.3	65-70	513.6	110-115	0.2	155-160	0
25-30	526.1	70-75	404.3	115-120	0.0	160-165	0
30-35	588.5	75-80	281.2	120-125	0	165-170	0
35-40	635.4	80-85	151.4	125-130	0	170-175	0
40-45	664.2	85-90	37.3	130-135	0	175-180	0



Coefficients of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 20%												
Ceiling Cavity Reflectance	90				80				70			
Wall Reflectance	70	50	30	10	70	50	30	10	70	50	30	10
Room Cavity Ratio (RCR)												
0	1.094	1.094	1.094	1.094	1.068	1.068	1.068	1.068	1.043	1.043	1.043	1.043
1	0.994	0.943	0.897	0.856	0.967	0.921	0.879	0.842	0.942	0.900	0.862	0.828
2	0.899	0.812	0.741	0.681	0.873	0.794	0.728	0.673	0.849	0.777	0.716	0.665
3	0.816	0.706	0.622	0.556	0.791	0.691	0.613	0.551	0.768	0.676	0.604	0.546
4	0.744	0.620	0.531	0.464	0.721	0.608	0.524	0.461	0.700	0.595	0.518	0.457
5	0.682	0.551	0.461	0.395	0.661	0.540	0.455	0.393	0.641	0.529	0.450	0.390
6	0.628	0.493	0.404	0.341	0.609	0.484	0.400	0.340	0.591	0.475	0.396	0.338
7	0.580	0.445	0.359	0.299	0.563	0.437	0.355	0.298	0.547	0.430	0.352	0.297
8	0.539	0.404	0.321	0.265	0.523	0.398	0.318	0.264	0.509	0.391	0.316	0.263
9	0.502	0.370	0.290	0.237	0.488	0.364	0.288	0.236	0.475	0.358	0.286	0.236
10	0.470	0.340	0.264	0.214	0.457	0.335	0.262	0.213	0.445	0.330	0.260	0.213

Ceiling Cavity Reflectance	50				30			10			0
Wall Reflectance	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)											
0	0.997	0.997	0.997	0.997	0.954	0.954	0.954	0.915	0.915	0.915	0.896
1	0.896	0.862	0.830	0.802	0.826	0.800	0.777	0.793	0.773	0.753	0.734
2	0.804	0.744	0.693	0.649	0.714	0.671	0.634	0.686	0.651	0.619	0.599
3	0.726	0.649	0.587	0.536	0.623	0.570	0.526	0.600	0.555	0.516	0.496
4	0.661	0.572	0.504	0.451	0.551	0.492	0.444	0.531	0.480	0.438	0.417
5	0.605	0.510	0.440	0.386	0.492	0.430	0.381	0.475	0.420	0.377	0.357
6	0.558	0.458	0.388	0.335	0.443	0.380	0.332	0.428	0.372	0.328	0.309
7	0.517	0.415	0.345	0.294	0.402	0.339	0.292	0.389	0.333	0.289	0.271
8	0.482	0.379	0.310	0.261	0.367	0.305	0.260	0.357	0.300	0.258	0.240
9	0.451	0.348	0.281	0.234	0.338	0.277	0.233	0.329	0.273	0.231	0.215
10	0.424	0.321	0.256	0.212	0.313	0.253	0.211	0.304	0.249	0.209	0.193

Average Luminance Table (cd/m<sup>2</sup>)

		Horizontal Angle (Degrees)		
		0	45	90
Vertical Angle (Degree)	0	14840	14840	14840
	45	13910	10590	11500
	55	13530	10900	12190
	65	12900	11460	12820
	75	11090	10530	11290
	85	4952	8115	8115

This test was conducted using photometry techniques according to standard IES procedures. The user must therefore use caution in the following situations: 1) This test was performed using a specific ballast/lamp combination. Extrapolation of this data for other ballast/lamp combinations may produce erroneous results. 2) According to IESNA procedures, the ballast(s) and lamp(s) are presumed to produce 100% of rated output. An appropriate ballast factor must be applied to the lumen output ratings and luminous intensity values given. This test was conducted in a controlled laboratory environment where the ambient temperature was held at 25°C ±1°C. Field performance may differ particularly in regards to change in luminous output as a result of difference in ambient temperature and method of mounting the luminaire.



Polar Plot (Candela)

