



## 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-MN-232-UNV-12L

LTL Test Number  
23043

Test Date  
2011-04-14

Prepared By

Zachary Mooney, Project Coordinator

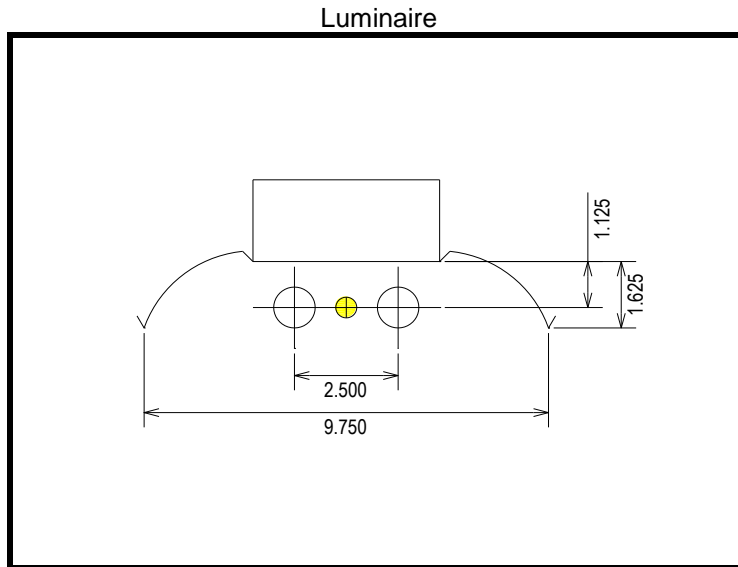
Approved By

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 specular aluminum reflector, no enclosure
Catalog Number: ECS-SGI4-MN-232-UNV-12L
Lamp: Two 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-2X32T8/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: 24.1 °C
Voltage: 120.0 VAC
Current: 0.4375 A
Power: 51.55 W
Power Factor: 0.982
Frequency: 60 Hz

Summary of Results

Luminaire Efficiency: 96.2 %
CIE Type: Direct
Spacing Criterion: 0 Degree: 1.24 90 Degree: 0.84 180 Degree: 1.24 270 Degree: 0.84



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	2547	2547	2547	2547	2547	2547	2547	2547	2547	2547	2547	2547	2547	2547	2547	2547
5	2517	2530	2507	2461	2449	2461	2507	2530	2517	2530	2507	2461	2449	2461	2507	2530
10	2488	2456	2293	2129	2085	2129	2293	2456	2488	2456	2293	2129	2085	2129	2293	2456
15	2428	2299	1984	1817	1775	1817	1984	2299	2428	2299	1984	1817	1775	1817	1984	2299
20	2345	2087	1737	1625	1632	1625	1737	2087	2345	2087	1737	1625	1632	1625	1737	2087
25	2240	1847	1566	1594	1607	1594	1566	1847	2240	1847	1566	1594	1607	1594	1566	1847
30	2118	1644	1510	1485	1440	1485	1510	1644	2118	1644	1510	1485	1440	1485	1510	1644
35	1971	1432	1421	1241	1183	1241	1421	1432	1971	1432	1421	1241	1183	1241	1421	1432
40	1810	1273	1222	1048	1049	1048	1222	1273	1810	1273	1222	1048	1049	1048	1222	1273
45	1630	1162	979	969	983	969	979	1162	1630	1162	979	969	983	969	979	1162
50	1442	1052	842	874	927	874	842	1052	1442	1052	842	874	927	874	842	1052
55	1237	875	744	914	1011	914	744	875	1237	875	744	914	1011	914	744	875
60	1024	636	693	944	999	944	693	636	1024	636	693	944	999	944	693	636
65	788	483	730	898	910	898	730	483	788	483	730	898	910	898	730	483
70	572	385	671	667	681	667	671	385	572	385	671	667	681	667	671	385
75	367	373	481	504	505	504	481	373	367	373	481	504	505	504	481	373
80	186	300	308	299	296	299	308	300	186	300	308	299	296	299	308	300
85	50	130	116	104	100	104	116	130	50	130	116	104	100	104	116	130
90	3	15	4	0	0	0	4	15	3	15	4	0	0	0	4	15
95	1	13	4	0	0	0	4	13	1	13	4	0	0	0	4	13
100	1	9	3	0	0	0	3	9	1	9	3	0	0	0	3	9
105	1	5	2	0	0	0	2	5	1	5	2	0	0	0	2	5
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	60.4	45-50	421.4	90-95	2.6	135-140	0
5-10	171.0	50-55	412.8	95-100	2.0	140-145	0
10-15	256.5	55-60	400.7	100-105	1.3	145-150	0
15-20	321.1	60-65	379.9	105-110	0.5	150-155	0
20-25	375.9	65-70	336.7	110-115	0	155-160	0
25-30	422.5	70-75	271.8	115-120	0	160-165	0
30-35	445.2	75-80	198.4	120-125	0	165-170	0
35-40	442.2	80-85	105.5	125-130	0	170-175	0
40-45	432.5	85-90	21.8	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	1.173	1.173	1.173	1.173	1.145	1.145	1.145	1.145	1.118	1.118	1.118	1.118
1	1.070	1.017	0.970	0.928	1.042	0.994	0.951	0.913	1.015	0.972	0.933	0.898
2	0.973	0.883	0.810	0.749	0.946	0.864	0.797	0.740	0.920	0.846	0.784	0.731
3	0.888	0.775	0.689	0.621	0.862	0.759	0.679	0.615	0.838	0.743	0.669	0.609
4	0.814	0.687	0.595	0.526	0.790	0.673	0.588	0.523	0.768	0.660	0.581	0.519
5	0.750	0.615	0.522	0.455	0.728	0.603	0.516	0.452	0.708	0.592	0.511	0.449
6	0.693	0.555	0.463	0.399	0.674	0.545	0.459	0.397	0.655	0.536	0.454	0.395
7	0.644	0.504	0.416	0.354	0.626	0.496	0.412	0.353	0.609	0.488	0.408	0.351
8	0.601	0.462	0.376	0.318	0.584	0.455	0.373	0.317	0.569	0.448	0.370	0.316
9	0.562	0.425	0.343	0.288	0.547	0.419	0.340	0.287	0.534	0.413	0.338	0.286
10	0.528	0.393	0.315	0.263	0.515	0.388	0.312	0.262	0.502	0.383	0.310	0.261

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	1.068	1.068	1.068	1.068	1.022	1.022	1.022	0.981	0.981	0.981	0.961
1	0.966	0.931	0.898	0.869	0.893	0.866	0.842	0.858	0.836	0.817	0.796
2	0.872	0.811	0.759	0.714	0.779	0.736	0.697	0.750	0.714	0.681	0.660
3	0.793	0.714	0.651	0.598	0.687	0.633	0.588	0.662	0.617	0.577	0.556
4	0.727	0.636	0.566	0.511	0.613	0.553	0.504	0.592	0.540	0.497	0.476
5	0.670	0.572	0.500	0.444	0.553	0.489	0.439	0.535	0.479	0.434	0.414
6	0.621	0.518	0.446	0.391	0.502	0.437	0.388	0.487	0.429	0.384	0.364
7	0.579	0.473	0.401	0.349	0.459	0.394	0.346	0.446	0.388	0.343	0.324
8	0.541	0.435	0.364	0.314	0.423	0.359	0.312	0.412	0.353	0.310	0.291
9	0.509	0.402	0.333	0.285	0.392	0.328	0.283	0.382	0.324	0.282	0.264
10	0.479	0.373	0.306	0.260	0.364	0.303	0.259	0.356	0.299	0.258	0.241

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

		Horizontal Angle (Degrees)		
		0	45	90
Vertical Angle (Degree)	0	16450	16450	16450
	45	14210	5930	6083
	55	13030	5497	7721
	65	10890	7197	9429
	75	7719	7469	8548
	85	2362	5009	5009

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)

