



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-232-UNV-12L

LTL Test Number
23044

Test Date

2011-04-14

Prepared By

Zachary Mooney, Project Coordinator

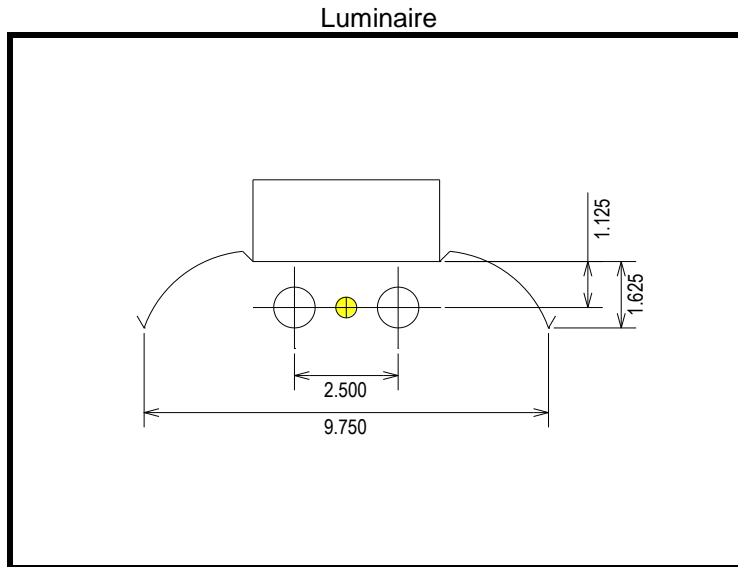
Approved By

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 white enamel aluminum reflector, no enclosure
Catalog Number: ECS-SGI4-WN-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: 24.7 °C
Voltage: 120.0 VAC
Current: 0.4375 A
Power: 51.51 W
Power Factor: 0.982
Frequency: 60 Hz

Summary of Results

Luminaire Efficiency: 94.1 %
CIE Type: Direct
Total Reflectance of Paint: 92.7 %
Spacing Criterion: 0 Degree: 1.28, 90 Degree: 1.38, 180 Degree: 1.28, 270 Degree: 1.38



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	1541	1541	1541	1541	1541	1541	1541	1541	1541	1541	1541	1541	1541	1541	1541	1541
5	1526	1532	1539	1534	1537	1534	1539	1532	1526	1532	1539	1534	1537	1534	1539	1532
10	1509	1514	1517	1509	1513	1509	1517	1514	1509	1514	1517	1509	1513	1509	1517	1514
15	1480	1482	1485	1484	1489	1484	1485	1482	1480	1482	1485	1484	1489	1484	1485	1482
20	1438	1438	1447	1456	1467	1456	1447	1438	1438	1438	1447	1456	1467	1456	1447	1438
25	1386	1383	1405	1435	1453	1435	1405	1383	1386	1383	1405	1435	1453	1435	1405	1383
30	1322	1319	1363	1403	1418	1403	1363	1319	1322	1319	1363	1403	1418	1403	1363	1319
35	1250	1249	1316	1354	1374	1354	1316	1249	1250	1249	1316	1354	1374	1354	1316	1249
40	1167	1170	1248	1294	1318	1294	1248	1170	1167	1170	1248	1294	1318	1294	1248	1170
45	1077	1087	1170	1232	1264	1232	1170	1087	1077	1087	1170	1232	1264	1232	1170	1087
50	979	1003	1086	1169	1204	1169	1086	1003	979	1003	1086	1169	1204	1169	1086	1003
55	872	901	1002	1100	1143	1100	1002	901	872	901	1002	1100	1143	1100	1002	901
60	759	786	915	1037	1075	1037	915	786	759	786	915	1037	1075	1037	915	786
65	638	665	838	939	971	939	838	665	638	665	838	939	971	939	838	665
70	506	553	734	789	802	789	734	553	506	553	734	789	802	789	734	553
75	361	457	568	613	616	613	568	457	361	457	568	613	616	613	568	457
80	211	348	383	382	379	382	383	348	211	348	383	382	379	382	383	348
85	66	167	163	157	155	157	163	167	66	167	163	157	155	157	163	167
90	1	20	6	1	0	1	6	20	1	20	6	1	0	1	6	20
95	0	16	5	0	0	0	5	16	0	16	5	0	0	0	5	16
100	0	10	3	0	0	0	3	10	0	10	3	0	0	0	3	10
105	0	6	2	0	0	0	2	6	0	6	2	0	0	0	2	6
110	0	2	0	0	0	0	0	2	0	2	0	0	0	0	0	2
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	36.8	45-50	455.0	90-95	3.3	135-140	0
5-10	109.0	50-55	454.5	95-100	2.4	140-145	0
10-15	177.7	55-60	442.9	100-105	1.4	145-150	0
15-20	241.7	60-65	419.3	105-110	0.7	150-155	0
20-25	299.8	65-70	380.0	110-115	0.1	155-160	0
25-30	351.2	70-75	318.6	115-120	0	160-165	0
30-35	393.5	75-80	237.9	120-125	0	165-170	0
35-40	425.0	80-85	135.4	125-130	0	170-175	0
40-45	445.0	85-90	35.2	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	1.148	1.148	1.148	1.148	1.120	1.120	1.120	1.120	1.094	1.094	1.094	1.094
1	1.037	0.981	0.931	0.886	1.009	0.958	0.913	0.871	0.983	0.936	0.895	0.857
2	0.936	0.841	0.764	0.699	0.908	0.822	0.751	0.691	0.882	0.804	0.738	0.682
3	0.848	0.729	0.639	0.568	0.822	0.713	0.629	0.562	0.797	0.698	0.619	0.557
4	0.772	0.639	0.544	0.472	0.748	0.626	0.537	0.468	0.725	0.613	0.529	0.465
5	0.707	0.567	0.471	0.400	0.685	0.555	0.465	0.398	0.664	0.544	0.459	0.396
6	0.651	0.507	0.412	0.346	0.630	0.497	0.408	0.344	0.612	0.488	0.403	0.342
7	0.601	0.457	0.366	0.302	0.583	0.449	0.362	0.301	0.566	0.441	0.358	0.300
8	0.558	0.415	0.327	0.268	0.542	0.408	0.324	0.267	0.526	0.401	0.321	0.266
9	0.520	0.380	0.295	0.239	0.506	0.374	0.293	0.238	0.492	0.368	0.291	0.238
10	0.487	0.349	0.269	0.216	0.473	0.344	0.267	0.215	0.461	0.339	0.265	0.215

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	1.045	1.045	1.045	1.045	1.000	1.000	1.000	0.959	0.959	0.959	0.940
1	0.933	0.895	0.861	0.829	0.858	0.830	0.803	0.823	0.800	0.779	0.758
2	0.834	0.769	0.714	0.666	0.737	0.691	0.650	0.708	0.669	0.635	0.613
3	0.752	0.668	0.601	0.546	0.641	0.584	0.536	0.616	0.568	0.526	0.504
4	0.683	0.588	0.515	0.458	0.565	0.502	0.451	0.544	0.490	0.444	0.423
5	0.626	0.524	0.448	0.391	0.504	0.438	0.386	0.486	0.428	0.381	0.360
6	0.577	0.470	0.395	0.339	0.454	0.387	0.335	0.438	0.379	0.332	0.311
7	0.535	0.426	0.351	0.297	0.412	0.345	0.295	0.398	0.338	0.292	0.272
8	0.498	0.388	0.316	0.264	0.376	0.310	0.262	0.365	0.305	0.260	0.241
9	0.466	0.357	0.286	0.236	0.346	0.281	0.235	0.336	0.277	0.233	0.215
10	0.438	0.329	0.261	0.213	0.320	0.257	0.212	0.311	0.253	0.211	0.194

Average Luminance Table (cd/m²)

		Horizontal Angle (Degrees)		
		0	45	90
Vertical Angle (Degree)	0	9954	9954	9954
	45	9391	7086	7824
	55	9188	7407	8722
	65	8812	8266	10050
	75	7606	8819	10420
	85	3133	7773	7773

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)

