



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
Renova Lighting Systems, Inc.
Rick Edwards
15 Wellstown Road
Ashaway, RI 02804

Catalog Number
ECS-SGI4-WN-132-UNV-11L

LTL Test Number
23042

Test Date
2011-04-13

Prepared By

Zachary Mooney, Project Coordinator

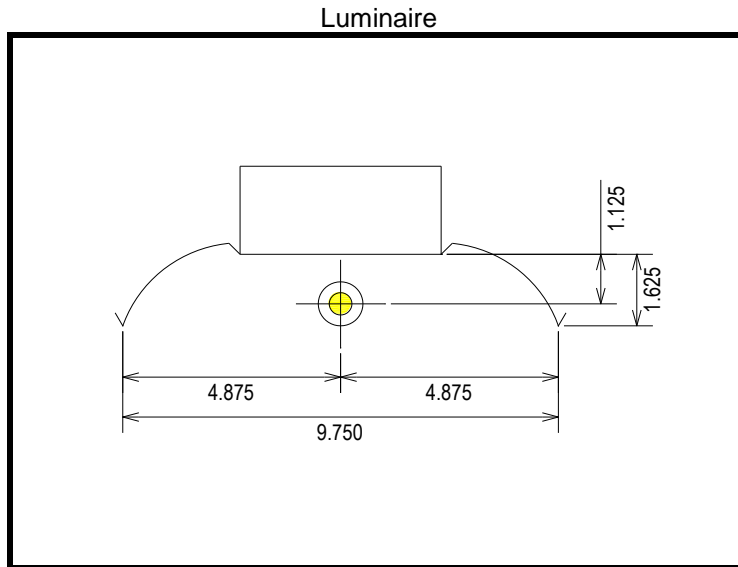
Approved By

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-132-UNV-11L
Lamp: One horizontal 32 Watt T8 linear fluorescent lamp rated at 2850 lumens
Lamp Catalog Number: Philips F32T8/TL841/ALTO
Mounting: Surface / Pendant
Ballast/Driver: One Sylvania "Quicktronic" QHE-1X32T8/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: 24.2 °C
Voltage: 120.0 VAC
Current: 0.2192 A
Power: 26.08 W
Power Factor: 0.991
Frequency: 60 Hz

Summary of Results

Luminaire Efficiency: 95.8 %
CIE Type: Direct
Spacing Criterion: 0 Degree: 1.28 90 Degree: 1.41 180 Degree: 1.28 270 Degree: 1.41
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	737.2	737.2	737.2	737.2	737.2	737.2	737.2	737.2	737.2	737.2	737.2	737.2	737.2	737.2	737.2	737.2
5	729.3	732.4	735.7	733.7	735.1	733.7	735.7	732.4	729.3	732.4	735.7	733.7	735.1	733.7	735.7	732.4
10	721.3	723.6	724.5	722.4	724.9	722.4	724.5	723.6	721.3	723.6	724.5	722.4	724.9	722.4	724.5	723.6
15	707.9	709.2	712.7	715.6	719.0	715.6	712.7	709.2	707.9	709.2	712.7	715.6	719.0	715.6	712.7	709.2
20	688.3	687.5	697.8	704.4	710.2	704.4	697.8	687.5	688.3	687.5	697.8	704.4	710.2	704.4	697.8	687.5
25	662.8	662.3	679.0	692.3	700.6	692.3	679.0	662.3	662.8	662.3	679.0	692.3	700.6	692.3	679.0	662.3
30	632.8	635.0	658.3	678.1	688.1	678.1	658.3	635.0	632.8	635.0	658.3	678.1	688.1	678.1	658.3	635.0
35	598.3	602.6	635.5	662.8	677.4	662.8	635.5	602.6	598.3	602.6	635.5	662.8	677.4	662.8	635.5	602.6
40	558.6	565.1	606.9	645.7	661.9	645.7	606.9	565.1	558.6	565.1	606.9	645.7	661.9	645.7	606.9	565.1
45	514.6	524.5	579.4	623.4	641.8	623.4	579.4	524.5	514.6	524.5	579.4	623.4	641.8	623.4	579.4	524.5
50	466.3	483.1	549.1	598.7	618.4	598.7	549.1	483.1	466.3	483.1	549.1	598.7	618.4	598.7	549.1	483.1
55	414.4	437.2	514.6	567.5	590.8	567.5	514.6	437.2	414.4	437.2	514.6	567.5	590.8	567.5	514.6	437.2
60	357.9	393.0	475.3	535.1	559.0	535.1	475.3	393.0	357.9	393.0	475.3	535.1	559.0	535.1	475.3	393.0
65	296.4	347.6	431.5	491.4	509.4	491.4	431.5	347.6	296.4	347.6	431.5	491.4	509.4	491.4	431.5	347.6
70	229.1	297.4	379.7	430.1	447.5	430.1	379.7	297.4	229.1	297.4	379.7	430.1	447.5	430.1	379.7	297.4
75	158.4	236.3	312.0	361.7	385.8	361.7	312.0	236.3	158.4	236.3	312.0	361.7	385.8	361.7	312.0	236.3
80	86.4	168.1	255.3	284.8	286.0	284.8	255.3	168.1	86.4	168.1	255.3	284.8	286.0	284.8	255.3	168.1
85	25.5	117.0	126.7	120.7	119.5	120.7	126.7	117.0	25.5	117.0	126.7	120.7	119.5	120.7	126.7	117.0
90	0.4	19.5	8.5	0.8	0.0	0.8	8.5	19.5	0.4	19.5	8.5	0.8	0.0	0.8	8.5	19.5
95	0.0	13.2	5.8	0.4	0.0	0.4	5.8	13.2	0.0	13.2	5.8	0.4	0.0	0.4	5.8	13.2
100	0.0	6.7	3.6	0.2	0.0	0.2	3.6	6.7	0.0	6.7	3.6	0.2	0.0	0.2	3.6	6.7
105	0.0	2.6	2.3	0.2	0.0	0.2	2.3	2.6	0.0	2.6	2.3	0.2	0.0	0.2	2.3	2.6
110	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
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

Zonal Lumen Tabulation (5 degree zones)

Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens
0-5	17.6	45-50	226.4	90-95	3.2	135-140	0
5-10	52.1	50-55	228.1	95-100	2.0	140-145	0
10-15	85.2	55-60	224.3	100-105	1.0	145-150	0
15-20	116.2	60-65	215.1	105-110	0.4	150-155	0
20-25	144.3	65-70	197.8	110-115	0	155-160	0
25-30	169.2	70-75	171.1	115-120	0	160-165	0
30-35	190.3	75-80	141.2	120-125	0	165-170	0
35-40	207.1	80-85	91.4	125-130	0	170-175	0
40-45	219.2	85-90	26.8	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	1.168	1.168	1.168	1.168	1.140	1.140	1.140	1.140	1.113	1.113	1.113	1.113
1	1.049	0.989	0.936	0.888	1.020	0.966	0.917	0.873	0.993	0.943	0.899	0.858
2	0.944	0.844	0.763	0.695	0.916	0.825	0.749	0.686	0.889	0.806	0.736	0.678
3	0.854	0.730	0.635	0.561	0.827	0.713	0.625	0.555	0.801	0.697	0.616	0.550
4	0.777	0.639	0.540	0.465	0.752	0.625	0.532	0.461	0.728	0.611	0.525	0.457
5	0.711	0.565	0.466	0.393	0.688	0.554	0.460	0.391	0.666	0.542	0.454	0.388
6	0.654	0.505	0.408	0.338	0.633	0.495	0.403	0.337	0.613	0.486	0.398	0.335
7	0.604	0.455	0.361	0.296	0.585	0.447	0.357	0.294	0.568	0.439	0.353	0.293
8	0.560	0.413	0.323	0.261	0.544	0.406	0.320	0.260	0.528	0.399	0.317	0.259
9	0.522	0.378	0.291	0.233	0.507	0.372	0.289	0.232	0.493	0.366	0.286	0.232
10	0.489	0.347	0.265	0.210	0.475	0.342	0.262	0.210	0.462	0.337	0.260	0.209

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	1.063	1.063	1.063	1.063	1.017	1.017	1.017	0.975	0.975	0.975	0.956
1	0.942	0.901	0.864	0.830	0.862	0.832	0.804	0.827	0.802	0.779	0.757
2	0.839	0.770	0.711	0.661	0.737	0.688	0.645	0.707	0.666	0.630	0.607
3	0.754	0.667	0.597	0.539	0.639	0.579	0.529	0.614	0.563	0.519	0.496
4	0.685	0.586	0.510	0.450	0.562	0.497	0.443	0.541	0.484	0.437	0.414
5	0.627	0.521	0.443	0.383	0.501	0.432	0.378	0.482	0.422	0.374	0.352
6	0.577	0.467	0.389	0.331	0.450	0.381	0.328	0.434	0.373	0.324	0.303
7	0.535	0.423	0.346	0.290	0.408	0.339	0.288	0.395	0.333	0.285	0.265
8	0.498	0.386	0.311	0.257	0.373	0.305	0.255	0.361	0.299	0.253	0.234
9	0.466	0.354	0.281	0.230	0.343	0.276	0.229	0.333	0.272	0.227	0.209
10	0.438	0.327	0.256	0.208	0.317	0.252	0.206	0.308	0.248	0.205	0.188

Average Luminance Table (cd/m²)

		Horizontal Angle (Degrees)		
		0	45	90
Vertical Angle (Degree)	0	4761	4761	4761
	45	4488	3508	3974
	55	4365	3803	4510
	65	4098	4255	5278
	75	3333	4848	6526
	85	1204	6002	6002

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)

