



# LUMINAIRE TESTING LABORATORY, INC.

SUSTAINING  
MEMBER  
of the  
IESNA

905 Harrison Street · Allentown, PA 18103 · 610-770-1044 · Fax 610-770-8912 · www.LuminaireTesting.com

LTL NUMBER: 21370  
 PREPARED FOR: RENOVA LIGHTING  
 CATALOG NUMBER: ECS-SVT4-MN-332-UNV-13L-CAL  
 LUMINAIRE: MOLDED PLASTIC AND FORMED STEEL HOUSING, FORMED WHITE PAINTED ALUMINUM REFLECTOR, CLEAR PATTERNED ACRYLIC ENCLOSURE.  
 LAMP: THREE 32W T8 LINEAR FLUORESCENT LAMPS RATED AT 2850 LUMENS EACH.  
 LAMP CATALOG NUMBER: PHILIPS F32T8/TL835/ALTO  
 BALLAST: ONE SYLVANIA "QUICKTRONIC" QHE3X32T8/UNV-ISL-SC  
 MOUNTING: PENDANT  
 ELECTRICAL VALUES: 120.0VAC, 0.5816A, 69.75W

DATE: 11/10/2010

Candela Distribution

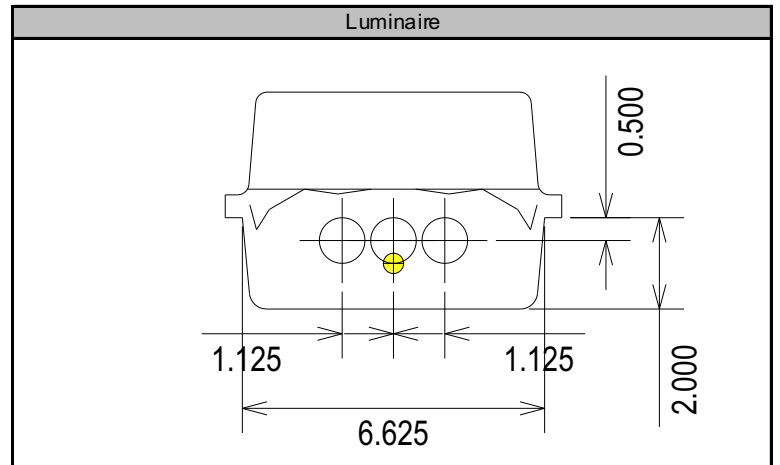
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	Flux
0	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162	
5	2145	2142	2134	2114	2115	2114	2134	2142	2145	2142	2134	2114	2115	2114	2134	2142	201.3
15	2067	2023	1999	2000	2009	2000	1999	2023	2067	2023	1999	2000	2009	2000	1999	2023	569.1
25	1910	1848	1869	1860	1859	1860	1869	1848	1910	1848	1869	1860	1859	1860	1869	1848	858.8
35	1671	1629	1630	1616	1631	1616	1630	1629	1671	1629	1630	1616	1631	1616	1630	1629	1021.5
45	1353	1328	1336	1422	1458	1422	1336	1328	1353	1328	1336	1422	1458	1422	1336	1328	1058.3
55	972	963	1066	1141	1151	1141	1066	963	972	963	1066	1141	1151	1141	1066	963	944.7
65	599	634	749	814	841	814	749	634	599	634	749	814	841	814	749	634	724.4
75	298	360	501	600	636	600	501	360	298	360	501	600	636	600	501	360	513.4
85	78	174	340	448	482	448	340	174	78	174	340	448	482	448	340	174	340.4
90	27	120	262	362	395	362	262	120	27	120	262	362	395	362	262	120	
95	33	94	213	304	336	304	213	94	33	94	213	304	336	304	213	94	217.1
105	23	58	127	179	200	179	127	58	23	58	127	179	200	179	127	58	127.0
115	10	29	71	87	89	87	71	29	10	29	71	87	89	87	71	29	60.5
125	4	10	34	47	49	47	34	10	4	10	34	47	49	47	34	10	27.3
135	2	2	15	23	26	23	15	2	2	2	15	23	26	23	15	2	11.0
145	0	0	5	11	13	11	5	0	0	0	5	11	13	11	5	0	3.7
155	0	0	0	3	4	3	0	0	0	0	0	3	4	3	0	0	0.7
165	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
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Zonal Lumen Summary

Zone	Lumens	% of Lamp	% of Luminaire
0-30	1629.2	19.1%	24.4%
0-40	2650.7	31.0%	39.7%
0-60	4653.7	54.4%	69.7%
0-90	6232.0	72.9%	93.3%
90-180	447.2	5.2%	6.7%
0-180	6679.1	78.1%	100.0%

Total luminaire efficiency: 78.1%

CIE Type: Direct  
 Spacing Criterion: 0 deg: 1.24    90 deg: 1.20  
 180 deg: 1.24    270 deg: 1.20



Approved By: MG

THIS REPORT BASED ON LM-41 AND OTHER PERTINENT IESNA PROCEDURES.



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Candela Tabulation (5 degree Vertical Increments)

	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	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162
5	2145	2142	2134	2114	2115	2114	2134	2142	2145	2142	2134	2114	2115	2114	2134	2142
10	2117	2094	2064	2040	2043	2040	2064	2094	2117	2094	2064	2040	2043	2040	2064	2094
15	2067	2023	1999	2000	2009	2000	1999	2023	2067	2023	1999	2000	2009	2000	1999	2023
20	1999	1940	1945	1947	1953	1947	1945	1940	1999	1940	1945	1947	1953	1947	1945	1940
25	1910	1848	1869	1860	1859	1860	1869	1848	1910	1848	1869	1860	1859	1860	1869	1848
30	1801	1748	1765	1741	1739	1741	1765	1748	1801	1748	1765	1741	1739	1741	1765	1748
35	1671	1629	1630	1616	1631	1616	1630	1629	1671	1629	1630	1616	1631	1616	1630	1629
40	1521	1489	1478	1518	1553	1518	1478	1489	1521	1489	1478	1518	1553	1518	1478	1489
45	1353	1328	1336	1422	1458	1422	1336	1328	1353	1328	1336	1422	1458	1422	1336	1328
50	1166	1150	1206	1300	1329	1300	1206	1150	1166	1150	1206	1300	1329	1300	1206	1150
55	972	963	1066	1141	1151	1141	1066	963	972	963	1066	1141	1151	1141	1066	963
60	780	789	912	955	970	955	912	789	780	789	912	955	970	955	912	789
65	599	634	749	814	841	814	749	634	599	634	749	814	841	814	749	634
70	438	490	612	692	717	692	612	490	438	490	612	692	717	692	612	490
75	298	360	501	600	636	600	501	360	298	360	501	600	636	600	501	360
80	178	256	420	533	569	533	420	256	178	256	420	533	569	533	420	256
85	78	174	340	448	482	448	340	174	78	174	340	448	482	448	340	174
90	27	120	262	362	395	362	262	120	27	120	262	362	395	362	262	120
95	33	94	213	304	336	304	213	94	33	94	213	304	336	304	213	94
100	29	74	168	245	273	245	168	74	29	74	168	245	273	245	168	74
105	23	58	127	179	200	179	127	58	23	58	127	179	200	179	127	58
110	16	42	95	123	134	123	95	42	16	42	95	123	134	123	95	42
115	10	29	71	87	89	87	71	29	10	29	71	87	89	87	71	29
120	7	18	51	65	67	65	51	18	7	18	51	65	67	65	51	18
125	4	10	34	47	49	47	34	10	4	10	34	47	49	47	34	10
130	3	5	22	33	36	33	22	5	3	5	22	33	36	33	22	5
135	2	2	15	23	26	23	15	2	2	2	15	23	26	23	15	2
140	0	1	9	16	18	16	9	1	0	1	9	16	18	16	9	1
145	0	0	5	11	13	11	5	0	0	0	5	11	13	11	5	0
150	0	0	2	6	8	6	2	0	0	0	2	6	8	6	2	0
155	0	0	0	3	4	3	0	0	0	0	0	3	4	3	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	Lumens	Zone	Lumens	Zone	Lumens	Zone	Lumens
0-5	51.3	45-50	525.1	90-95	119.4	135-140	4.2
5-10	150.0	50-55	497.0	95-100	97.7	140-145	2.4
10-15	242.1	55-60	447.7	100-105	74.4	145-150	1.2
15-20	327.1	60-65	390.8	105-110	52.6	150-155	0.5
20-25	400.5	65-70	333.7	110-115	35.9	155-160	0.1
25-30	458.3	70-75	279.3	115-120	24.6	160-165	0.0
30-35	498.6	75-80	234.1	120-125	16.5	165-170	0.0
35-40	523.0	80-85	192.0	125-130	10.7	170-175	0.0
40-45	533.2	85-90	148.5	130-135	6.8	175-180	0.0



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	0.946	0.946	0.946	0.946	0.918	0.918	0.918	0.918	0.89	0.89	0.89	0.89
1	0.855	0.809	0.768	0.731	0.827	0.785	0.747	0.714	0.799	0.762	0.728	0.697
2	0.777	0.701	0.639	0.587	0.749	0.68	0.624	0.576	0.723	0.661	0.609	0.565
3	0.708	0.613	0.541	0.485	0.682	0.596	0.53	0.477	0.658	0.58	0.518	0.469
4	0.648	0.542	0.466	0.409	0.624	0.528	0.457	0.403	0.602	0.514	0.448	0.397
5	0.595	0.483	0.407	0.351	0.574	0.471	0.399	0.346	0.553	0.459	0.392	0.342
6	0.549	0.435	0.359	0.306	0.53	0.424	0.353	0.302	0.511	0.414	0.347	0.299
7	0.509	0.393	0.32	0.269	0.491	0.384	0.315	0.266	0.474	0.375	0.31	0.264
8	0.473	0.358	0.288	0.24	0.457	0.35	0.283	0.237	0.442	0.343	0.279	0.235
9	0.442	0.328	0.261	0.215	0.427	0.321	0.257	0.213	0.413	0.315	0.253	0.211
10	0.413	0.303	0.238	0.195	0.4	0.296	0.234	0.193	0.388	0.291	0.231	0.192

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	0.839	0.839	0.839	0.839	0.792	0.792	0.792	0.749	0.749	0.749	0.729
1	0.749	0.718	0.691	0.665	0.679	0.656	0.635	0.642	0.624	0.607	0.587
2	0.675	0.624	0.581	0.544	0.591	0.555	0.523	0.56	0.53	0.504	0.484
3	0.613	0.549	0.497	0.454	0.52	0.476	0.439	0.493	0.457	0.425	0.406
4	0.56	0.487	0.431	0.386	0.463	0.414	0.375	0.44	0.399	0.365	0.346
5	0.516	0.436	0.378	0.334	0.415	0.365	0.325	0.396	0.352	0.317	0.299
6	0.477	0.394	0.336	0.292	0.376	0.324	0.285	0.359	0.314	0.279	0.261
7	0.443	0.358	0.3	0.258	0.343	0.291	0.253	0.328	0.282	0.247	0.231
8	0.413	0.328	0.271	0.23	0.314	0.263	0.226	0.301	0.256	0.222	0.206
9	0.387	0.302	0.246	0.208	0.29	0.24	0.204	0.278	0.233	0.2	0.185
10	0.364	0.279	0.225	0.188	0.268	0.22	0.185	0.258	0.214	0.182	0.168

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

	0	45	90
0	10220	10220	10220
45	8738	7473	7776
55	7624	6796	6901
65	6220	5753	5960
75	4782	5038	5724
85	2987	5184	6210

THIS TEST WAS CONDUCTED USING RELATIVE PHOTOMETRY TECHNIQUES ACCORDING TO STANDARD IESNA PROCEDURES. THE USER MUST THEREFORE USE CAUTION IN THE FOLLOWING SITUATIONS: 1) THIS TEST WAS PERFORMED USING A SPECIFIC BALLAST/LAMP COMBINATION. EXTRAPOLATION OF THESE 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. 3) 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.

