



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: 21358 DATE: 10/29/2010
 PREPARED FOR: RENOVA LIGHTING
 CATALOG NUMBER: ECS-MVT4-MN-132-UNV-11L-CAL
 LUMINAIRE: MOLDED PLASTIC AND FORMED STEEL HOUSING, FORMED "MIRO 4"
 SPECULAR ALUMINUM REFLECTORS, CLEAR LINEAR PRISMATIC
 ACRYLIC ENCLOSURE.
 LAMP: ONE 32W T8 LINEAR FLUORESCENT LAMP RATED AT 2850 LUMENS.
 LAMP CATALOG NUMBER: PHILIPS F32T8/TL841/ALTO
 BALLAST: ONE SYLVANIA "QUICKTRONIC" QHE1X32T8/UNV-ISL-SC
 MOUNTING: PENDANT
 ELECTRICAL VALUES: 120.0V, 0.2150A, 25.763W

Candela Distribution

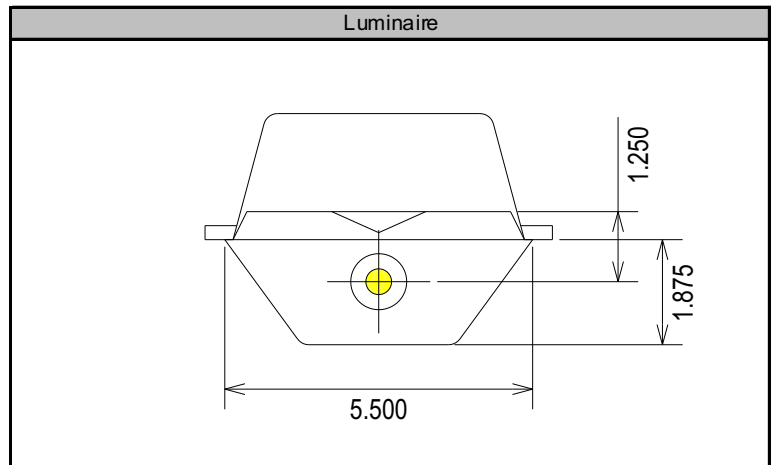
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	Flux
0	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	
5	451	454	462	462	464	462	462	454	451	454	462	462	464	462	462	454	44.1
15	438	450	488	511	521	511	488	450	438	450	488	511	521	511	488	450	136.7
25	408	444	505	530	547	530	505	444	408	444	505	530	547	530	505	444	225.7
35	364	421	490	560	597	560	490	421	364	421	490	560	597	560	490	421	305.3
45	304	372	498	598	642	598	498	372	304	372	498	598	642	598	498	372	372.4
55	236	309	466	542	569	542	466	309	236	309	466	542	569	542	466	309	383.7
65	155	257	371	430	454	430	371	257	155	257	371	430	454	430	371	257	336.3
75	70	162	255	343	378	343	255	162	70	162	255	343	378	343	255	162	261.3
85	14	88	190	263	291	263	190	88	14	88	190	263	291	263	190	88	190.5
90	4	63	150	238	273	238	150	63	4	63	150	238	273	238	150	63	
95	5	43	130	212	241	212	130	43	5	43	130	212	241	212	130	43	137.0
105	4	15	62	111	133	111	62	15	4	15	62	111	133	111	62	15	69.6
115	2	2	25	49	58	49	25	2	2	2	25	49	58	49	25	2	26.8
125	0	0	3	16	22	16	3	0	0	0	3	16	22	16	3	0	7.6
135	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	0.7
145	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
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	406.4	14.3%	16.3%
0-40	711.7	25.0%	28.5%
0-60	1467.8	51.5%	58.8%
0-90	2255.9	79.2%	90.3%
90-180	241.6	8.5%	9.7%
0-180	2497.5	87.6%	100.0%

Total luminaire efficiency: 87.6%

CIE Type: Direct
 Spacing Criterion: 0 deg: 1.27 90 deg: 2.00
 180 deg: 1.27 270 deg: 2.00



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	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455
5	451	454	462	462	464	462	462	454	451	454	462	462	464	462	462	454
10	446	456	468	482	488	482	468	456	446	456	468	482	488	482	468	456
15	438	450	488	511	521	511	488	450	438	450	488	511	521	511	488	450
20	425	447	502	527	530	527	502	447	425	447	502	527	530	527	502	447
25	408	444	505	530	547	530	505	444	408	444	505	530	547	530	505	444
30	389	438	493	538	549	538	493	438	389	438	493	538	549	538	493	438
35	364	421	490	560	597	560	490	421	364	421	490	560	597	560	490	421
40	335	400	475	586	618	586	475	400	335	400	475	586	618	586	475	400
45	304	372	498	598	642	598	498	372	304	372	498	598	642	598	498	372
50	272	346	494	580	610	580	494	346	272	346	494	580	610	580	494	346
55	236	309	466	542	569	542	466	309	236	309	466	542	569	542	466	309
60	197	291	419	488	503	488	419	291	197	291	419	488	503	488	419	291
65	155	257	371	430	454	430	371	257	155	257	371	430	454	430	371	257
70	111	208	314	374	408	374	314	208	111	208	314	374	408	374	314	208
75	70	162	255	343	378	343	255	162	70	162	255	343	378	343	255	162
80	37	118	227	308	337	308	227	118	37	118	227	308	337	308	227	118
85	14	88	190	263	291	263	190	88	14	88	190	263	291	263	190	88
90	4	63	150	238	273	238	150	63	4	63	150	238	273	238	150	63
95	5	43	130	212	241	212	130	43	5	43	130	212	241	212	130	43
100	5	24	98	167	192	167	98	24	5	24	98	167	192	167	98	24
105	4	15	62	111	133	111	62	15	4	15	62	111	133	111	62	15
110	3	6	43	71	81	71	43	6	3	6	43	71	81	71	43	6
115	2	2	25	49	58	49	25	2	2	2	25	49	58	49	25	2
120	1	1	11	31	37	31	11	1	1	1	11	31	37	31	11	1
125	0	0	3	16	22	16	3	0	0	0	3	16	22	16	3	0
130	0	0	0	7	11	7	0	0	0	0	0	7	11	7	0	0
135	0	0	0	0	3	0	0	0	0	0	0	0	3	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	Lumens	Zone	Lumens	Zone	Lumens	Zone	Lumens
0-5	10.9	45-50	192.9	90-95	75.8	135-140	0.1
5-10	33.1	50-55	194.8	95-100	61.2	140-145	0.0
10-15	56.5	55-60	188.8	100-105	43.1	145-150	0.0
15-20	80.2	60-65	177.1	105-110	26.5	150-155	0.0
20-25	102.3	65-70	159.2	110-115	16.7	155-160	0.0
25-30	123.3	70-75	139.4	115-120	10.0	160-165	0.0
30-35	142.8	75-80	121.8	120-125	5.4	165-170	0.0
35-40	162.6	80-85	104.4	125-130	2.2	170-175	0.0
40-45	179.5	85-90	86.1	130-135	0.7	175-180	0.0



Coefficients of Utilization - Zonal Cavity Method												
Effective Floor Cavity Reflectance 20%												
Ceiling Cavity Reflectance	90				80				70			
	70	50	30	10	70	50	30	10	70	50	30	10
Room Cavity Ratio (RCR)												
0	1.058	1.058	1.058	1.058	1.023	1.023	1.023	1.023	0.989	0.989	0.989	0.989
1	0.94	0.88	0.826	0.779	0.904	0.85	0.801	0.757	0.87	0.821	0.777	0.737
2	0.843	0.748	0.67	0.604	0.809	0.722	0.65	0.59	0.776	0.698	0.632	0.576
3	0.761	0.644	0.555	0.485	0.729	0.622	0.54	0.474	0.698	0.601	0.526	0.464
4	0.691	0.562	0.469	0.399	0.661	0.543	0.457	0.391	0.633	0.525	0.445	0.383
5	0.631	0.496	0.403	0.335	0.604	0.48	0.393	0.329	0.578	0.464	0.383	0.323
6	0.579	0.441	0.35	0.286	0.554	0.427	0.342	0.281	0.531	0.414	0.334	0.276
7	0.534	0.396	0.308	0.248	0.512	0.384	0.302	0.244	0.49	0.373	0.295	0.24
8	0.495	0.358	0.274	0.217	0.474	0.348	0.268	0.214	0.455	0.338	0.263	0.21
9	0.46	0.326	0.246	0.192	0.441	0.317	0.241	0.189	0.424	0.308	0.236	0.187
10	0.429	0.299	0.222	0.172	0.413	0.291	0.218	0.169	0.397	0.283	0.214	0.167

Ceiling Cavity Reflectance	50				30			10			0
	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)											
0	0.927	0.927	0.927	0.927	0.869	0.869	0.869	0.816	0.816	0.816	0.792
1	0.806	0.767	0.731	0.698	0.717	0.688	0.661	0.671	0.648	0.626	0.6
2	0.715	0.651	0.597	0.55	0.609	0.564	0.524	0.57	0.533	0.5	0.474
3	0.642	0.562	0.498	0.445	0.526	0.472	0.426	0.492	0.447	0.408	0.383
4	0.581	0.492	0.423	0.369	0.46	0.402	0.354	0.431	0.381	0.34	0.316
5	0.531	0.435	0.365	0.311	0.408	0.347	0.3	0.383	0.331	0.289	0.266
6	0.488	0.389	0.319	0.267	0.366	0.304	0.258	0.344	0.29	0.249	0.227
7	0.451	0.351	0.282	0.232	0.33	0.27	0.224	0.311	0.258	0.217	0.197
8	0.42	0.319	0.252	0.204	0.301	0.241	0.197	0.284	0.231	0.191	0.172
9	0.392	0.292	0.227	0.181	0.276	0.217	0.176	0.261	0.209	0.17	0.152
10	0.367	0.268	0.205	0.162	0.254	0.197	0.157	0.241	0.19	0.153	0.136

Average Luminance Table (cd/m²)

	0	45	90
0	3761	3761	3761
45	3546	4979	5746
55	3346	5105	5463
65	2923	4654	4869
75	2064	3879	4747
85	1014	3803	4576

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.

