



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: 21366 DATE: 11/11/2010
 PREPARED FOR: RENOVA LIGHTING
 CATALOG NUMBER: ECS-SVT4-MN-132-UNV-11L-CAL
 LUMINAIRE: MOLDED PLASTIC AND FORMED STEEL HOUSING, FORMED "MIRO 4"
 SPECULAR ALUMINUM REFLECTOR, CLEAR PATTERNED 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: 120.0VAC, 0.2112A, 25.30W

Candela Distribution

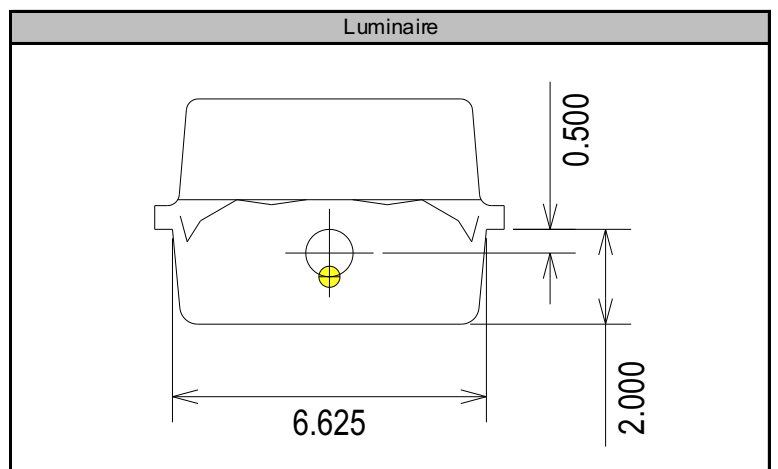
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	Flux
0	752	752	752	752	752	752	752	752	752	752	752	752	752	752	752	752	
5	746	752	762	765	770	765	762	752	746	752	762	765	770	765	762	752	72.9
15	719	748	792	815	826	815	792	748	719	748	792	815	826	815	792	748	221.1
25	662	722	785	790	784	790	785	722	662	722	785	790	784	790	785	722	346.4
35	578	662	671	620	604	620	671	662	578	662	671	620	604	620	671	662	397.3
45	469	549	488	449	442	449	488	549	469	549	488	449	442	449	488	549	374.7
55	341	372	321	341	362	341	321	372	341	372	321	341	362	341	321	372	311.3
65	215	218	225	299	325	299	225	218	215	218	225	299	325	299	225	218	253.1
75	110	116	221	305	331	305	221	116	110	116	221	305	331	305	221	116	228.3
85	29	90	207	291	319	291	207	90	29	90	207	291	319	291	207	90	205.5
90	10	71	175	261	290	261	175	71	10	71	175	261	290	261	175	71	
95	14	50	127	199	226	199	127	50	14	50	127	199	226	199	127	50	134.2
105	10	24	46	57	65	57	46	24	10	24	46	57	65	57	46	24	48.4
115	5	14	33	34	31	34	33	14	5	14	33	34	31	34	33	14	24.4
125	2	5	16	23	24	23	16	5	2	5	16	23	24	23	16	5	13.2
135	0	1	7	11	13	11	7	1	0	1	7	11	13	11	7	1	5.0
145	0	0	3	5	6	5	3	0	0	0	3	5	6	5	3	0	1.7
155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
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	640.4	22.5%	24.3%
0-40	1037.7	36.4%	39.3%
0-60	1723.7	60.5%	65.4%
0-90	2410.5	84.6%	91.4%
90-180	227.0	8.0%	8.6%
0-180	2637.5	92.5%	100.0%

Total luminaire efficiency: 92.5%

CIE Type: Direct
 Spacing Criterion: 0 deg: 1.23 90 deg: 1.30
 180 deg: 1.23 270 deg: 1.30



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	752	752	752	752	752	752	752	752	752	752	752	752	752	752	752	752
5	746	752	762	765	770	765	762	752	746	752	762	765	770	765	762	752
10	736	751	779	792	801	792	779	751	736	751	779	792	801	792	779	751
15	719	748	792	815	826	815	792	748	719	748	792	815	826	815	792	748
20	694	739	796	821	830	821	796	739	694	739	796	821	830	821	796	739
25	662	722	785	790	784	790	785	722	662	722	785	790	784	790	785	722
30	624	698	747	713	699	713	747	698	624	698	747	713	699	713	747	698
35	578	662	671	620	604	620	671	662	578	662	671	620	604	620	671	662
40	527	615	580	531	519	531	580	615	527	615	580	531	519	531	580	615
45	469	549	488	449	442	449	488	549	469	549	488	449	442	449	488	549
50	406	464	404	382	391	382	404	464	406	464	404	382	391	382	404	464
55	341	372	321	341	362	341	321	372	341	372	321	341	362	341	321	372
60	275	290	260	312	337	312	260	290	275	290	260	312	337	312	260	290
65	215	218	225	299	325	299	225	218	215	218	225	299	325	299	225	218
70	159	154	216	298	325	298	216	154	159	154	216	298	325	298	216	154
75	110	116	221	305	331	305	221	116	110	116	221	305	331	305	221	116
80	66	102	223	302	327	302	223	102	66	102	223	302	327	302	223	102
85	29	90	207	291	319	291	207	90	29	90	207	291	319	291	207	90
90	10	71	175	261	290	261	175	71	10	71	175	261	290	261	175	71
95	14	50	127	199	226	199	127	50	14	50	127	199	226	199	127	50
100	13	33	75	121	141	121	75	33	13	33	75	121	141	121	75	33
105	10	24	46	57	65	57	46	24	10	24	46	57	65	57	46	24
110	8	20	38	37	35	37	38	20	8	20	38	37	35	37	38	20
115	5	14	33	34	31	34	33	14	5	14	33	34	31	34	33	14
120	3	9	25	30	29	30	25	9	3	9	25	30	29	30	25	9
125	2	5	16	23	24	23	16	5	2	5	16	23	24	23	16	5
130	1	3	10	16	18	16	10	3	1	3	10	16	18	16	10	3
135	0	1	7	11	13	11	7	1	0	1	7	11	13	11	7	1
140	0	0	4	7	8	7	4	0	0	0	4	7	8	7	4	0
145	0	0	3	5	6	5	3	0	0	0	3	5	6	5	3	0
150	0	0	1	3	4	3	1	0	0	0	1	3	4	3	1	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	18.1	45-50	180.9	90-95	79.8	135-140	1.8
5-10	54.8	50-55	164.4	95-100	54.4	140-145	1.1
10-15	92.3	55-60	146.9	100-105	30.7	145-150	0.6
15-20	128.8	60-65	131.9	105-110	17.7	150-155	0.1
20-25	161.4	65-70	121.2	110-115	13.5	155-160	0.0
25-30	185.0	70-75	115.4	115-120	10.9	160-165	0.0
30-35	197.6	75-80	112.8	120-125	7.9	165-170	0.0
35-40	199.7	80-85	108.1	125-130	5.3	170-175	0.0
40-45	193.8	85-90	97.4	130-135	3.2	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	1.119	1.119	1.119	1.119	1.083	1.083	1.083	1.083	1.048	1.048	1.048	1.048
1	1.002	0.943	0.89	0.843	0.966	0.912	0.864	0.821	0.931	0.883	0.839	0.8
2	0.909	0.815	0.739	0.675	0.874	0.789	0.719	0.66	0.841	0.765	0.701	0.646
3	0.829	0.714	0.627	0.558	0.797	0.692	0.612	0.548	0.766	0.672	0.597	0.538
4	0.76	0.633	0.541	0.472	0.73	0.614	0.529	0.465	0.702	0.596	0.518	0.457
5	0.699	0.565	0.474	0.407	0.672	0.55	0.464	0.401	0.646	0.534	0.455	0.395
6	0.646	0.509	0.419	0.356	0.621	0.496	0.411	0.351	0.598	0.482	0.403	0.346
7	0.599	0.462	0.375	0.314	0.577	0.45	0.368	0.31	0.556	0.439	0.361	0.306
8	0.557	0.421	0.337	0.28	0.537	0.411	0.332	0.277	0.518	0.401	0.326	0.274
9	0.52	0.386	0.306	0.252	0.502	0.377	0.301	0.249	0.485	0.369	0.296	0.247
10	0.488	0.356	0.279	0.229	0.471	0.348	0.275	0.226	0.455	0.341	0.271	0.224

Ceiling Cavity Reflectance	50				30			10			0
	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)											
0	0.984	0.984	0.984	0.984	0.925	0.925	0.925	0.871	0.871	0.871	0.846
1	0.867	0.828	0.792	0.76	0.777	0.749	0.722	0.731	0.708	0.687	0.66
2	0.781	0.718	0.665	0.619	0.675	0.631	0.593	0.636	0.6	0.568	0.542
3	0.71	0.632	0.569	0.518	0.595	0.543	0.499	0.562	0.518	0.48	0.456
4	0.65	0.563	0.495	0.442	0.531	0.474	0.427	0.502	0.454	0.413	0.39
5	0.599	0.505	0.436	0.383	0.479	0.419	0.372	0.454	0.402	0.361	0.338
6	0.555	0.458	0.388	0.337	0.434	0.374	0.327	0.413	0.36	0.318	0.297
7	0.517	0.417	0.349	0.299	0.397	0.336	0.291	0.378	0.324	0.284	0.264
8	0.483	0.382	0.315	0.267	0.365	0.305	0.261	0.348	0.295	0.255	0.236
9	0.453	0.352	0.287	0.241	0.337	0.278	0.236	0.322	0.269	0.231	0.213
10	0.426	0.326	0.263	0.219	0.312	0.255	0.215	0.299	0.247	0.21	0.193

Average Luminance Table (cd/m²)

	0	45	90
0	3556	3556	3556
45	3028	2728	2357
55	2677	2046	2167
65	2226	1731	2304
75	1760	2225	2981
85	1100	3153	4113

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.

