



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: 21379 DATE: 11-11-2010
 PREPARED FOR: RENOVA LIGHTING
 CATALOG NUMBER: ECS-WVT4-WN-654-UNV-32H-CAL
 LUMINAIRE: MOLDED PLASTIC AND FORMED STEEL HOUSING, FORMED WHITE
 PAINTED ALUMINUM REFLECTOR, CLEAR ACRYLIC ENCLOSURE WITH
 CLEAR LINEAR PRISMATIC SIDES AND FROSTED ENDS.
 LAMP: SIX 54 WATT HIGH OUTPUT T5 LINEAR FLUORESCENT LAMPS RATED AT
 4400 LUMENS EACH.
 LAMP CATALOG NUMBER: PHILIPS F54T5/841/HO/ALTO
 BALLAST: THREE SYLVANIA "QUICKTRONIC" QHE2X54T5HO/UNV-PSN-HT
 MOUNTING: PENDANT
 ELECTRICAL VALUES: 120.0VAC, 2.443A, 292.1W

Candela Distribution

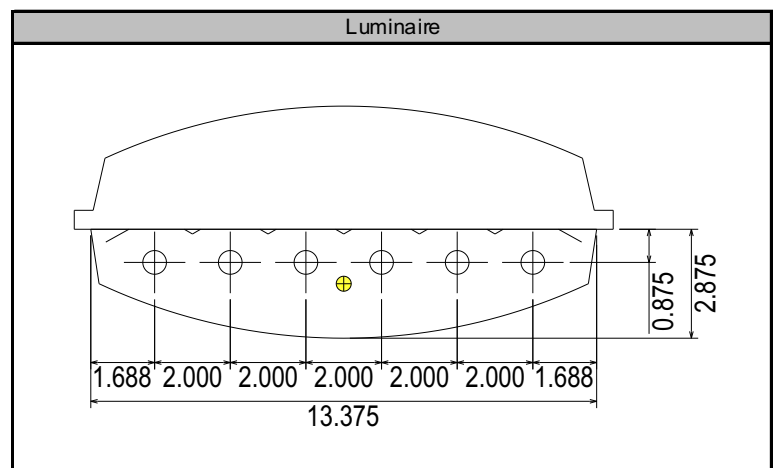
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	Flux
0	4724	4724	4724	4724	4724	4724	4724	4724	4724	4724	4724	4724	4724	4724	4724	4724	
5	4701	4700	4719	4717	4719	4717	4719	4700	4701	4700	4719	4717	4719	4717	4719	4700	448.5
15	4545	4561	4612	4628	4635	4628	4612	4561	4545	4561	4612	4628	4635	4628	4612	4561	1298.3
25	4223	4266	4350	4432	4477	4432	4350	4266	4223	4266	4350	4432	4477	4432	4350	4266	2009.1
35	3757	3830	4025	4181	4229	4181	4025	3830	3757	3830	4025	4181	4229	4181	4025	3830	2506.4
45	3155	3265	3550	3739	3837	3739	3550	3265	3155	3265	3550	3739	3837	3739	3550	3265	2710.5
55	2417	2578	2961	3287	3402	3287	2961	2578	2417	2578	2961	3287	3402	3287	2961	2578	2620.2
65	1583	1813	2315	2589	2668	2589	2315	1813	1583	1813	2315	2589	2668	2589	2315	1813	2189.1
75	738	1030	1494	1832	1913	1832	1494	1030	738	1030	1494	1832	1913	1832	1494	1030	1503.2
85	170	427	780	1032	1121	1032	780	427	170	427	780	1032	1121	1032	780	427	817.1
90	72	321	648	788	817	788	648	321	72	321	648	788	817	788	648	321	
95	72	229	362	471	511	471	362	229	72	229	362	471	511	471	362	229	399.3
105	79	112	192	293	334	293	192	112	79	112	192	293	334	293	192	112	214.2
115	40	85	149	157	163	157	149	85	40	85	149	157	163	157	149	85	125.5
125	18	33	116	169	189	169	116	33	18	33	116	169	189	169	116	33	91.7
135	10	12	47	81	91	81	47	12	10	12	47	81	91	81	47	12	38.7
145	6	7	15	31	38	31	15	7	6	7	15	31	38	31	15	7	12.4
155	2	1	7	9	11	9	7	1	2	1	7	9	11	9	7	1	2.8
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	

Zonal Lumen Summary

Zone	Lumens	% of Lamp	% of Luminaire
0-30	3755.9	14.2%	22.1%
0-40	6262.3	23.7%	36.9%
0-60	11593.1	43.9%	68.2%
0-90	16102.4	61.0%	94.8%
90-180	884.6	3.4%	5.2%
0-180	16987.0	64.3%	100.0%

Total luminaire efficiency: 64.3%

CIE Type: Direct
 Spacing Criterion: 0 deg: 1.26 90 deg: 1.38
 180 deg: 1.26 270 deg: 1.38



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	4724	4724	4724	4724	4724	4724	4724	4724	4724	4724	4724	4724	4724	4724	4724	4724
5	4701	4700	4719	4717	4719	4717	4719	4700	4701	4700	4719	4717	4719	4717	4719	4700
10	4643	4648	4682	4690	4695	4690	4682	4648	4643	4648	4682	4690	4695	4690	4682	4648
15	4545	4561	4612	4628	4635	4628	4612	4561	4545	4561	4612	4628	4635	4628	4612	4561
20	4400	4431	4494	4534	4556	4534	4494	4431	4400	4431	4494	4534	4556	4534	4494	4431
25	4223	4266	4350	4432	4477	4432	4350	4266	4223	4266	4350	4432	4477	4432	4350	4266
30	4011	4067	4190	4343	4388	4343	4190	4067	4011	4067	4190	4343	4388	4343	4190	4067
35	3757	3830	4025	4181	4229	4181	4025	3830	3757	3830	4025	4181	4229	4181	4025	3830
40	3469	3560	3810	3961	4010	3961	3810	3560	3469	3560	3810	3961	4010	3961	3810	3560
45	3155	3265	3550	3739	3837	3739	3550	3265	3155	3265	3550	3739	3837	3739	3550	3265
50	2798	2935	3259	3536	3652	3536	3259	2935	2798	2935	3259	3536	3652	3536	3259	2935
55	2417	2578	2961	3287	3402	3287	2961	2578	2417	2578	2961	3287	3402	3287	2961	2578
60	2006	2207	2638	2991	3094	2991	2638	2207	2006	2207	2638	2991	3094	2991	2638	2207
65	1583	1813	2315	2589	2668	2589	2315	1813	1583	1813	2315	2589	2668	2589	2315	1813
70	1149	1401	1898	2219	2385	2219	1898	1401	1149	1401	1898	2219	2385	2219	1898	1401
75	738	1030	1494	1832	1913	1832	1494	1030	738	1030	1494	1832	1913	1832	1494	1030
80	401	712	1108	1360	1436	1360	1108	712	401	712	1108	1360	1436	1360	1108	712
85	170	427	780	1032	1121	1032	780	427	170	427	780	1032	1121	1032	780	427
90	72	321	648	788	817	788	648	321	72	321	648	788	817	788	648	321
95	72	229	362	471	511	471	362	229	72	229	362	471	511	471	362	229
100	91	149	271	385	426	385	271	149	91	149	271	385	426	385	271	149
105	79	112	192	293	334	293	192	112	79	112	192	293	334	293	192	112
110	58	101	134	193	225	193	134	101	58	101	134	193	225	193	134	101
115	40	85	149	157	163	157	149	85	40	85	149	157	163	157	149	85
120	27	56	155	177	180	177	155	56	27	56	155	177	180	177	155	56
125	18	33	116	169	189	169	116	33	18	33	116	169	189	169	116	33
130	13	17	74	125	141	125	74	17	13	17	74	125	141	125	74	17
135	10	12	47	81	91	81	47	12	10	12	47	81	91	81	47	12
140	7	9	26	53	65	53	26	9	7	9	26	53	65	53	26	9
145	6	7	15	31	38	31	15	7	6	7	15	31	38	31	15	7
150	2	5	8	19	23	19	8	5	2	5	8	19	23	19	8	5
155	2	1	7	9	11	9	7	1	2	1	7	9	11	9	7	1
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	112.8	45-50	1363.6	90-95	237.6	135-140	14.5
5-10	335.7	50-55	1342.5	95-100	161.6	140-145	8.1
10-15	549.9	55-60	1277.7	100-105	125.3	145-150	4.3
15-20	748.4	60-65	1170.6	105-110	88.8	150-155	2.1
20-25	926.7	65-70	1018.6	110-115	65.3	155-160	0.8
25-30	1082.3	70-75	849.0	115-120	60.3	160-165	0.0
30-35	1208.5	75-80	654.2	120-125	53.5	165-170	0.0
35-40	1298.0	80-85	463.7	125-130	38.2	170-175	0.0
40-45	1346.9	85-90	353.4	130-135	24.2	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	0.781	0.781	0.781	0.781	0.758	0.758	0.758	0.758	0.737	0.737	0.737	0.737
1	0.704	0.664	0.63	0.598	0.681	0.645	0.614	0.585	0.659	0.627	0.598	0.572
2	0.636	0.572	0.519	0.475	0.614	0.556	0.507	0.466	0.593	0.54	0.496	0.458
3	0.577	0.497	0.436	0.388	0.557	0.484	0.427	0.382	0.537	0.471	0.418	0.376
4	0.527	0.437	0.373	0.324	0.508	0.426	0.366	0.32	0.49	0.415	0.359	0.316
5	0.483	0.388	0.323	0.276	0.465	0.378	0.317	0.273	0.449	0.369	0.312	0.269
6	0.445	0.347	0.284	0.238	0.429	0.339	0.279	0.236	0.414	0.331	0.275	0.233
7	0.411	0.314	0.252	0.209	0.397	0.306	0.248	0.207	0.383	0.299	0.244	0.205
8	0.382	0.285	0.225	0.185	0.369	0.279	0.222	0.183	0.356	0.273	0.219	0.182
9	0.356	0.261	0.204	0.165	0.344	0.255	0.201	0.164	0.333	0.25	0.198	0.163
10	0.333	0.24	0.185	0.149	0.322	0.235	0.183	0.148	0.312	0.23	0.18	0.147

Ceiling Cavity Reflectance	50				30			10			0
	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)											
0	0.696	0.696	0.696	0.696	0.66	0.66	0.66	0.626	0.626	0.626	0.61
1	0.619	0.593	0.57	0.548	0.562	0.543	0.525	0.533	0.518	0.503	0.487
2	0.555	0.512	0.474	0.442	0.485	0.454	0.427	0.46	0.435	0.412	0.396
3	0.501	0.446	0.402	0.365	0.424	0.386	0.354	0.403	0.371	0.344	0.328
4	0.457	0.394	0.346	0.307	0.374	0.333	0.299	0.357	0.321	0.292	0.276
5	0.419	0.351	0.301	0.263	0.335	0.291	0.257	0.319	0.282	0.251	0.236
6	0.386	0.316	0.266	0.229	0.302	0.258	0.224	0.288	0.25	0.219	0.205
7	0.358	0.286	0.237	0.201	0.274	0.23	0.197	0.262	0.223	0.193	0.18
8	0.334	0.261	0.213	0.179	0.251	0.207	0.175	0.24	0.201	0.172	0.159
9	0.312	0.24	0.193	0.16	0.231	0.188	0.157	0.222	0.183	0.155	0.142
10	0.293	0.222	0.176	0.145	0.213	0.172	0.142	0.205	0.168	0.14	0.128

Average Luminance Table (cd/m²)

	0	45	90
0	10998	10998	10998
45	9869	10071	10650
55	9109	9662	10788
65	7801	9219	10235
75	5502	7952	9659
85	2778	6565	8672

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.

