



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: 21375 DATE: 12/10/2010
 PREPARED FOR: RENOVA LIGHTING
 CATALOG NUMBER: ECS-WVT4-WN-632-UNV-23L-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 32W T8 LINEAR FLUORESCENT LAMPS RATED AT 2850 LUMENS EACH
 LAMP CATALOG NUMBER: PHILIPS F32T8/TL835/ALTO
 BALLAST: TWO SYLVANIA "QUICKTRONIC" QHE3X32T8/UNV-ISL-SC
 MOUNTING: PENDANT
 ELECTRICAL VALUES: 120.0VAC, 1.112A, 133.3W

Candela Distribution

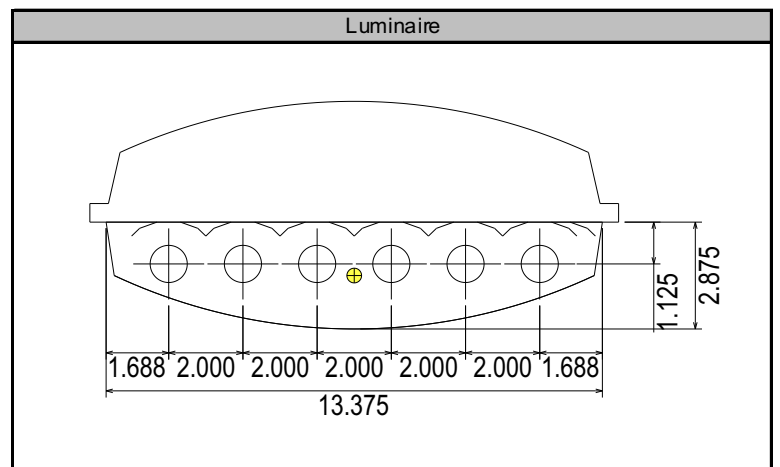
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	Flux
0	3882	3882	3882	3882	3882	3882	3882	3882	3882	3882	3882	3882	3882	3882	3882	3882	
5	3850	3855	3868	3866	3866	3866	3868	3855	3850	3855	3868	3866	3866	3866	3868	3855	367.3
15	3724	3728	3749	3760	3764	3760	3749	3728	3724	3728	3749	3760	3764	3760	3749	3728	1058.0
25	3466	3479	3530	3608	3652	3608	3530	3479	3466	3479	3530	3608	3652	3608	3530	3479	1636.4
35	3089	3113	3273	3419	3466	3419	3273	3113	3089	3113	3273	3419	3466	3419	3273	3113	2045.8
45	2597	2657	2899	3022	3085	3022	2899	2657	2597	2657	2899	3022	3085	3022	2899	2657	2204.0
55	2006	2112	2369	2586	2671	2586	2369	2112	2006	2112	2369	2586	2671	2586	2369	2112	2100.1
65	1321	1462	1791	1975	2010	1975	1791	1462	1321	1462	1791	1975	2010	1975	1791	1462	1701.4
75	611	809	1034	1173	1219	1173	1034	809	611	809	1034	1173	1219	1173	1034	809	1046.0
85	127	282	472	602	650	602	472	282	127	282	472	602	650	602	472	282	505.2
90	59	201	389	521	564	521	389	201	59	201	389	521	564	521	389	201	
95	57	164	274	364	399	364	274	164	57	164	274	364	399	364	274	164	294.6
105	54	95	181	258	290	258	181	95	54	95	181	258	290	258	181	95	188.4
115	27	52	133	187	212	187	133	52	27	52	133	187	212	187	133	52	122.3
125	13	21	66	106	129	106	66	21	13	21	66	106	129	106	66	21	60.6
135	8	8	29	52	61	52	29	8	8	8	29	52	61	52	29	8	24.3
145	2	4	9	21	25	21	9	4	2	4	9	21	25	21	9	4	7.8
155	0	0	0	5	7	5	0	0	0	0	0	5	7	5	0	0	1.0
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	3061.6	17.9%	22.9%
0-40	5107.5	29.9%	38.2%
0-60	9411.5	55.0%	70.4%
0-90	12664.2	74.1%	94.8%
90-180	698.9	4.1%	5.2%
0-180	13363.1	78.1%	100.0%

Total luminaire efficiency: 78.1%

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	3882	3882	3882	3882	3882	3882	3882	3882	3882	3882	3882	3882	3882	3882	3882	3882
5	3850	3855	3868	3866	3866	3866	3868	3855	3850	3855	3868	3866	3866	3866	3868	3855
10	3804	3806	3822	3824	3830	3824	3822	3806	3804	3806	3822	3824	3830	3824	3822	3806
15	3724	3728	3749	3760	3764	3760	3749	3728	3724	3728	3749	3760	3764	3760	3749	3728
20	3610	3617	3646	3681	3702	3681	3646	3617	3610	3617	3646	3681	3702	3681	3646	3617
25	3466	3479	3530	3608	3652	3608	3530	3479	3466	3479	3530	3608	3652	3608	3530	3479
30	3293	3309	3406	3542	3586	3542	3406	3309	3293	3309	3406	3542	3586	3542	3406	3309
35	3089	3113	3273	3419	3466	3419	3273	3113	3089	3113	3273	3419	3466	3419	3273	3113
40	2857	2894	3111	3242	3277	3242	3111	2894	2857	2894	3111	3242	3277	3242	3111	2894
45	2597	2657	2899	3022	3085	3022	2899	2657	2597	2657	2899	3022	3085	3022	2899	2657
50	2312	2396	2646	2815	2891	2815	2646	2396	2312	2396	2646	2815	2891	2815	2646	2396
55	2006	2112	2369	2586	2671	2586	2369	2112	2006	2112	2369	2586	2671	2586	2369	2112
60	1670	1800	2086	2323	2407	2323	2086	1800	1670	1800	2086	2323	2407	2323	2086	1800
65	1321	1462	1791	1975	2010	1975	1791	1462	1321	1462	1791	1975	2010	1975	1791	1462
70	963	1126	1439	1551	1596	1551	1439	1126	963	1126	1439	1551	1596	1551	1439	1126
75	611	809	1034	1173	1219	1173	1034	809	611	809	1034	1173	1219	1173	1034	809
80	320	501	702	848	893	848	702	501	320	501	702	848	893	848	702	501
85	127	282	472	602	650	602	472	282	127	282	472	602	650	602	472	282
90	59	201	389	521	564	521	389	201	59	201	389	521	564	521	389	201
95	57	164	274	364	399	364	274	164	57	164	274	364	399	364	274	164
100	65	122	220	307	341	307	220	122	65	122	220	307	341	307	220	122
105	54	95	181	258	290	258	181	95	54	95	181	258	290	258	181	95
110	38	73	156	221	245	221	156	73	38	73	156	221	245	221	156	73
115	27	52	133	187	212	187	133	52	27	52	133	187	212	187	133	52
120	18	35	95	152	180	152	95	35	18	35	95	152	180	152	95	35
125	13	21	66	106	129	106	66	21	13	21	66	106	129	106	66	21
130	9	12	46	71	80	71	46	12	9	12	46	71	80	71	46	12
135	8	8	29	52	61	52	29	8	8	8	29	52	61	52	29	8
140	6	7	17	33	40	33	17	7	6	7	17	33	40	33	17	7
145	2	4	9	21	25	21	9	4	2	4	9	21	25	21	9	4
150	0	0	2	11	15	11	2	0	0	0	2	11	15	11	2	0
155	0	0	0	5	7	5	0	0	0	0	0	5	7	5	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	92.6	45-50	1105.4	90-95	167.9	135-140	9.2
5-10	274.7	50-55	1079.9	95-100	126.8	140-145	5.3
10-15	448.7	55-60	1020.2	100-105	104.4	145-150	2.5
15-20	609.3	60-65	922.2	105-110	84.0	150-155	0.9
20-25	754.3	65-70	779.2	110-115	68.8	155-160	0.1
25-30	882.1	70-75	608.2	115-120	53.6	160-165	0.0
30-35	986.1	75-80	437.9	120-125	37.1	165-170	0.0
35-40	1059.7	80-85	292.1	125-130	23.4	170-175	0.0
40-45	1098.6	85-90	213.1	130-135	15.0	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	0.948	0.948	0.948	0.948	0.921	0.921	0.921	0.921	0.894	0.894	0.894	0.894
1	0.859	0.813	0.773	0.737	0.831	0.79	0.754	0.72	0.805	0.768	0.735	0.705
2	0.778	0.702	0.64	0.588	0.752	0.683	0.626	0.578	0.727	0.664	0.612	0.568
3	0.707	0.612	0.539	0.482	0.682	0.596	0.528	0.475	0.659	0.58	0.518	0.468
4	0.646	0.539	0.462	0.404	0.623	0.525	0.453	0.399	0.601	0.512	0.445	0.393
5	0.592	0.479	0.401	0.344	0.571	0.467	0.394	0.34	0.551	0.455	0.387	0.336
6	0.545	0.429	0.352	0.298	0.526	0.419	0.347	0.295	0.508	0.409	0.341	0.292
7	0.504	0.387	0.313	0.261	0.487	0.378	0.308	0.259	0.47	0.37	0.303	0.256
8	0.468	0.352	0.28	0.231	0.452	0.344	0.276	0.229	0.438	0.337	0.272	0.227
9	0.436	0.322	0.253	0.207	0.422	0.315	0.25	0.205	0.409	0.309	0.246	0.204
10	0.408	0.296	0.23	0.187	0.395	0.29	0.227	0.185	0.383	0.285	0.224	0.184

Ceiling Cavity Reflectance	50				30			10			0
	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)											
0	0.846	0.846	0.846	0.846	0.801	0.801	0.801	0.76	0.76	0.76	0.741
1	0.757	0.727	0.7	0.675	0.69	0.667	0.647	0.655	0.637	0.621	0.601
2	0.681	0.63	0.586	0.548	0.598	0.561	0.53	0.568	0.538	0.512	0.492
3	0.616	0.55	0.498	0.454	0.523	0.479	0.441	0.498	0.46	0.428	0.409
4	0.561	0.486	0.429	0.383	0.463	0.414	0.374	0.441	0.399	0.364	0.345
5	0.515	0.434	0.374	0.329	0.414	0.362	0.321	0.395	0.35	0.314	0.296
6	0.475	0.39	0.331	0.286	0.373	0.32	0.28	0.357	0.311	0.274	0.257
7	0.44	0.354	0.295	0.252	0.339	0.286	0.247	0.325	0.278	0.242	0.226
8	0.41	0.323	0.265	0.224	0.31	0.258	0.22	0.298	0.251	0.216	0.2
9	0.384	0.297	0.24	0.2	0.285	0.234	0.197	0.275	0.228	0.194	0.179
10	0.361	0.274	0.219	0.181	0.264	0.214	0.178	0.254	0.209	0.176	0.162

Average Luminance Table (cd/m²)

	0	45	90
0	9036	9036	9036
45	8123	8224	8562
55	7561	7731	8470
65	6514	7133	7711
75	4555	5503	6157
85	2080	3970	5031

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.

