



# 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: 17350

DATE: 11-30-2009

PREPARED FOR: RENOVA LIGHTING SYSTEMS, INC.

CATALOG NUMBER: ECS-EGI4-WN-132-UNV-11L

LUMINAIRE: FORMED STEEL HOUSING, FORMED WHITE ENAMEL ALUMINUM REFLECTOR, NO ENCLOSURE.

LAMP: ONE 32 WATT T8 LINEAR FLUORESCENT LAMP RATED AT 2850 LUMENS.

LAMP CATALOG NUMBER: PHILIPS F32T8/TL841/ALTO

BALLAST: ONE SYLVANIA "QUICKTRONIC" QHE1X32T8/UNV-ISL-SC

MOUNTING: SURFACE

ELECTRICAL VALUES: 120.0VAC, 0.2202A, 26.35W

### 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	734	734	734	734	734	734	734	734	734	734	734	734	734	734	734	734	
5	728	730	732	728	730	728	732	730	728	730	732	728	730	728	732	730	69.4
15	706	707	713	713	715	713	713	707	706	707	713	713	715	713	713	707	200.9
25	663	665	679	690	697	690	679	665	663	665	679	690	697	690	679	665	313.3
35	598	602	634	660	674	660	634	602	598	602	634	660	674	660	634	602	397.0
45	515	526	578	625	646	625	578	526	515	526	578	625	646	625	578	526	447.1
55	429	449	527	590	616	590	527	449	429	449	527	590	616	590	527	449	465.6
65	305	349	457	521	538	521	457	349	305	349	457	521	538	521	457	349	430.7
75	170	257	328	369	384	369	328	257	170	257	328	369	384	369	328	257	321.7
85	29	108	121	127	131	127	121	108	29	108	121	127	131	127	121	108	120.4
90	1	17	15	17	19	17	15	17	1	17	15	17	19	17	15	17	
95	0	8	2	0	0	0	2	8	0	8	2	0	0	0	2	8	3.4
105	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0.6
115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
135	0	0	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	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

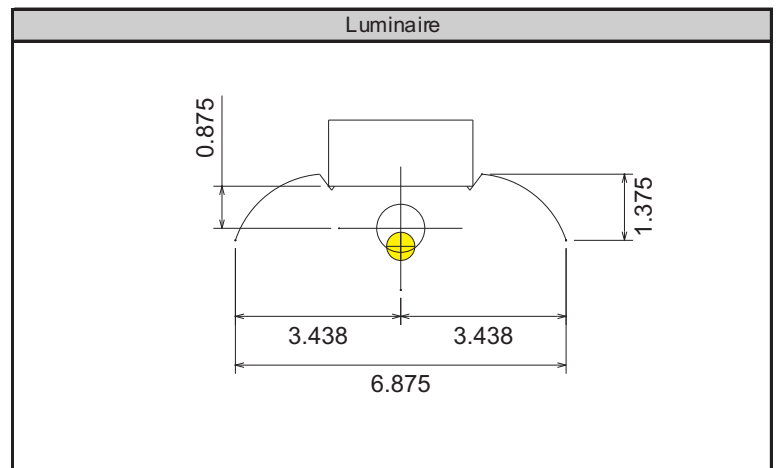
### Zonal Lumen Summary

Zone	Lumens	% of Lamp	% of Luminaire
0-30	583.7	20.5%	21.1%
0-40	980.7	34.4%	35.4%
0-60	1893.4	66.4%	68.3%
0-90	2766.2	97.1%	99.9%
90-180	4.1	0.1%	0.1%
0-180	2770.3	97.2%	100.0%

Total luminaire efficiency: 97.2%

CIE Type: Direct

Spacing Criterion: 0 deg: 1.28 90 deg: 1.41  
180 deg: 1.28 270 deg: 1.41



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	734	734	734	734	734	734	734	734	734	734	734	734	734	734	734	734
5	728	730	732	728	730	728	732	730	728	730	732	728	730	728	732	730
10	720	721	724	722	724	722	724	721	720	721	724	722	724	722	724	721
15	706	707	713	713	715	713	713	707	706	707	713	713	715	713	713	707
20	687	689	697	702	707	702	697	689	687	689	697	702	707	702	697	689
25	663	665	679	690	697	690	679	665	663	665	679	690	697	690	679	665
30	632	637	658	676	686	676	658	637	632	637	658	676	686	676	658	637
35	598	602	634	660	674	660	634	602	598	602	634	660	674	660	634	602
40	561	569	609	644	662	644	609	569	561	569	609	644	662	644	609	569
45	515	526	578	625	646	625	578	526	515	526	578	625	646	625	578	526
50	473	488	552	609	633	609	552	488	473	488	552	609	633	609	552	488
55	429	449	527	590	616	590	527	449	429	449	527	590	616	590	527	449
60	363	394	492	563	588	563	492	394	363	394	492	563	588	563	492	394
65	305	349	457	521	538	521	457	349	305	349	457	521	538	521	457	349
70	239	304	407	450	465	450	407	304	239	304	407	450	465	450	407	304
75	170	257	328	369	384	369	328	257	170	257	328	369	384	369	328	257
80	99	188	247	257	261	257	247	188	99	188	247	257	261	257	247	188
85	29	108	121	127	131	127	121	108	29	108	121	127	131	127	121	108
90	1	17	15	17	19	17	15	17	1	17	15	17	19	17	15	17
95	0	8	2	0	0	0	2	8	0	8	2	0	0	0	2	8
100	0	3	1	0	0	0	1	3	0	3	1	0	0	0	1	3
105	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1
110	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1
115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0	0	0	0	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	17.5	45-50	227.4	90-95	2.4	135-140	0.0
5-10	51.9	50-55	233.8	95-100	0.9	140-145	0.0
10-15	85.0	55-60	231.8	100-105	0.4	145-150	0.0
15-20	115.9	60-65	223.6	105-110	0.2	150-155	0.0
20-25	144.2	65-70	207.1	110-115	0.1	155-160	0.0
25-30	169.2	70-75	179.5	115-120	0.0	160-165	0.0
30-35	190.1	75-80	142.2	120-125	0.0	165-170	0.0
35-40	206.9	80-85	88.6	125-130	0.0	170-175	0.0
40-45	219.7	85-90	31.7	130-135	0.0	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	1.185	1.185	1.185	1.185	1.157	1.157	1.157	1.157	1.13	1.13	1.13	1.13
1	1.064	1.003	0.948	0.899	1.035	0.979	0.929	0.884	1.007	0.956	0.911	0.869
2	0.957	0.855	0.772	0.702	0.928	0.835	0.758	0.693	0.9	0.816	0.745	0.685
3	0.864	0.738	0.641	0.565	0.837	0.721	0.631	0.56	0.811	0.705	0.622	0.554
4	0.786	0.645	0.544	0.468	0.761	0.631	0.536	0.464	0.737	0.618	0.529	0.46
5	0.719	0.571	0.469	0.395	0.696	0.559	0.463	0.393	0.674	0.547	0.457	0.39
6	0.661	0.51	0.41	0.34	0.64	0.5	0.405	0.338	0.62	0.49	0.401	0.336
7	0.61	0.459	0.363	0.296	0.591	0.45	0.359	0.295	0.574	0.442	0.355	0.294
8	0.566	0.417	0.324	0.262	0.549	0.409	0.321	0.261	0.533	0.402	0.318	0.26
9	0.528	0.381	0.292	0.234	0.512	0.374	0.29	0.233	0.498	0.368	0.287	0.232
10	0.494	0.35	0.266	0.21	0.48	0.345	0.264	0.21	0.467	0.339	0.261	0.209

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	1.079	1.079	1.079	1.079	1.033	1.033	1.033	0.991	0.991	0.991	0.971
1	0.955	0.914	0.876	0.841	0.874	0.843	0.814	0.838	0.813	0.79	0.768
2	0.85	0.78	0.72	0.668	0.746	0.696	0.652	0.716	0.674	0.637	0.613
3	0.763	0.674	0.603	0.544	0.646	0.585	0.534	0.62	0.568	0.524	0.5
4	0.693	0.592	0.514	0.453	0.568	0.501	0.446	0.546	0.488	0.44	0.417
5	0.634	0.526	0.446	0.385	0.505	0.435	0.38	0.486	0.425	0.376	0.353
6	0.584	0.471	0.392	0.333	0.454	0.383	0.329	0.438	0.375	0.326	0.304
7	0.541	0.426	0.348	0.291	0.412	0.341	0.288	0.398	0.334	0.286	0.265
8	0.504	0.389	0.312	0.258	0.376	0.306	0.256	0.364	0.301	0.254	0.234
9	0.471	0.357	0.282	0.23	0.346	0.278	0.229	0.335	0.273	0.227	0.209
10	0.442	0.329	0.257	0.208	0.32	0.253	0.207	0.31	0.249	0.205	0.188

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

	0	45	90
0	6773	6773	6773
45	24006	11949	6048
55	24601	132597	6797
65	23761	13303	7519
75	21602	12750	7627
85	11059	7497	4732

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.

