



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: 17543 DATE: 01-05-2010
 PREPARED FOR: RENOVA LIGHTING SYSTEMS
 CATALOG NUMBER: ECS-IRK4-WN-1LT8-UNV5.8-V
 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 F32T8/841/ALTO
 BALLAST: ONE SYLVANIA "QUICKTRONIC" QHE-1X32T8/UNV-ISL-SC
 MOUNTING: PENDANT
 ELECTRICAL VALUES: 120.0VAC, 0.2226A, 26.65W

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	667	667	667	667	667	667	667	667	667	667	667	667	667	667	667	667	
5	663	664	666	661	663	661	666	664	663	664	666	661	663	661	666	664	63.0
15	642	642	638	633	635	633	638	642	642	642	638	633	635	633	638	642	180.2
25	601	595	599	605	611	605	599	595	601	595	599	605	611	605	599	595	277.6
35	541	531	553	571	580	571	553	531	541	531	553	571	580	571	553	531	347.2
45	466	459	495	535	554	535	495	459	466	459	495	535	554	535	495	459	386.3
55	377	376	440	498	520	498	440	376	377	376	440	498	520	498	440	376	394.3
65	276	284	379	447	471	447	379	284	276	284	379	447	471	447	379	284	366.9
75	159	201	301	377	405	377	301	201	159	201	301	377	405	377	301	201	307.3
85	29	121	232	312	342	312	232	121	29	121	232	312	342	312	232	121	233.0
90	0	90	186	256	280	256	186	90	0	90	186	256	280	256	186	90	
95	0	12	78	140	163	140	78	12	0	12	78	140	163	140	78	12	91.1
105	0	3	2	0	0	0	2	3	0	3	2	0	0	0	2	3	3.2
115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
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	

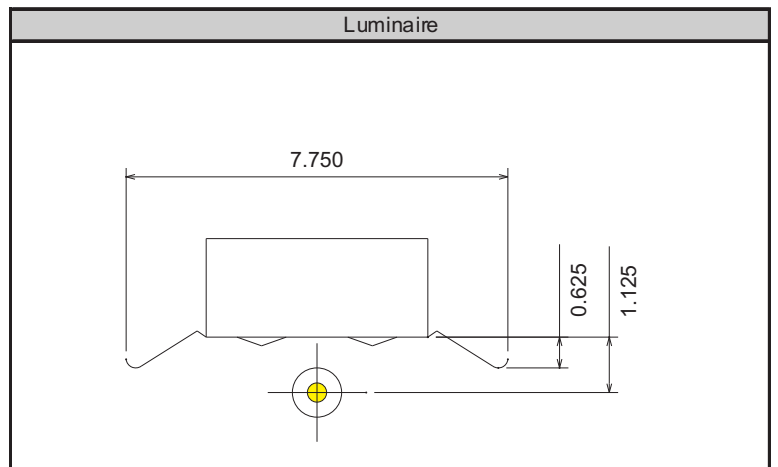
Zonal Lumen Summary

Zone	Lumens	% of Lamp	% of Luminaire
0-30	520.8	18.3%	19.6%
0-40	868.0	30.5%	32.7%
0-60	1648.6	57.8%	62.2%
0-90	2555.9	89.7%	96.4%
90-180	94.6	3.3%	3.6%
0-180	2650.5	93.0%	100.0%

Total luminaire efficiency: 93.0%

CIE Type: Direct
 Spacing Criterion: 0 deg: 1.28 90 deg: 1.35
 180 deg: 1.28 270 deg: 1.35

Total reflectance of paint: 89.9



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	667	667	667	667	667	667	667	667	667	667	667	667	667	667	667	667
5	663	664	666	661	663	661	666	664	663	664	666	661	663	661	666	664
10	655	656	655	649	650	649	655	656	655	656	655	649	650	649	655	656
15	642	642	638	633	635	633	638	642	642	642	638	633	635	633	638	642
20	624	621	618	619	623	619	618	621	624	621	618	619	623	619	618	621
25	601	595	599	605	611	605	599	595	601	595	599	605	611	605	599	595
30	573	565	577	589	597	589	577	565	573	565	577	589	597	589	577	565
35	541	531	553	571	580	571	553	531	541	531	553	571	580	571	553	531
40	505	496	526	551	567	551	526	496	505	496	526	551	567	551	526	496
45	466	459	495	535	554	535	495	459	466	459	495	535	554	535	495	459
50	423	419	467	518	539	518	467	419	423	419	467	518	539	518	467	419
55	377	376	440	498	520	498	440	376	377	376	440	498	520	498	440	376
60	328	330	411	472	497	472	411	330	328	330	411	472	497	472	411	330
65	276	284	379	447	471	447	379	284	276	284	379	447	471	447	379	284
70	220	243	345	410	437	410	345	243	220	243	345	410	437	410	345	243
75	159	201	301	377	405	377	301	201	159	201	301	377	405	377	301	201
80	94	160	266	342	369	342	266	160	94	160	266	342	369	342	266	160
85	29	121	232	312	342	312	232	121	29	121	232	312	342	312	232	121
90	0	90	186	256	280	256	186	90	0	90	186	256	280	256	186	90
95	0	12	78	140	163	140	78	12	0	12	78	140	163	140	78	12
100	0	6	3	32	51	32	3	6	0	6	3	32	51	32	3	6
105	0	3	2	0	0	0	2	3	0	3	2	0	0	0	2	3
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	15.9	45-50	196.1	90-95	66.9	135-140	0.0
5-10	47.1	50-55	198.3	95-100	24.2	140-145	0.0
10-15	76.5	55-60	196.0	100-105	2.7	145-150	0.0
15-20	103.6	60-65	189.0	105-110	0.5	150-155	0.0
20-25	128.2	65-70	178.0	110-115	0.2	155-160	0.0
25-30	149.4	70-75	162.7	115-120	0.0	160-165	0.0
30-35	166.9	75-80	144.6	120-125	0.0	165-170	0.0
35-40	180.3	80-85	124.8	125-130	0.0	170-175	0.0
40-45	190.2	85-90	108.2	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	1.13	1.13	1.13	1.13	1.099	1.099	1.099	1.099	1.07	1.07	1.07	1.07
1	1.001	0.935	0.877	0.825	0.968	0.909	0.856	0.808	0.937	0.884	0.835	0.791
2	0.898	0.795	0.711	0.641	0.867	0.773	0.695	0.63	0.837	0.752	0.68	0.62
3	0.812	0.687	0.591	0.516	0.782	0.668	0.579	0.509	0.755	0.65	0.568	0.502
4	0.739	0.601	0.502	0.427	0.712	0.585	0.493	0.422	0.686	0.57	0.484	0.417
5	0.677	0.532	0.434	0.362	0.652	0.519	0.426	0.358	0.628	0.506	0.419	0.354
6	0.622	0.476	0.38	0.312	0.6	0.465	0.374	0.309	0.579	0.454	0.368	0.306
7	0.575	0.429	0.336	0.272	0.555	0.419	0.331	0.27	0.536	0.41	0.327	0.268
8	0.534	0.39	0.301	0.241	0.516	0.381	0.297	0.239	0.499	0.373	0.293	0.237
9	0.498	0.356	0.272	0.215	0.481	0.349	0.268	0.213	0.466	0.342	0.265	0.212
10	0.466	0.328	0.247	0.194	0.451	0.321	0.244	0.192	0.437	0.315	0.241	0.191

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	1.015	1.015	1.015	1.015	0.965	0.965	0.965	0.919	0.919	0.919	0.897
1	0.88	0.836	0.796	0.759	0.793	0.76	0.729	0.753	0.726	0.701	0.677
2	0.782	0.712	0.651	0.6	0.675	0.624	0.58	0.641	0.599	0.562	0.537
3	0.703	0.616	0.546	0.488	0.585	0.525	0.475	0.556	0.505	0.462	0.438
4	0.639	0.541	0.467	0.407	0.515	0.45	0.398	0.49	0.434	0.388	0.365
5	0.585	0.482	0.405	0.347	0.459	0.392	0.339	0.438	0.379	0.332	0.31
6	0.54	0.433	0.357	0.3	0.413	0.346	0.294	0.395	0.335	0.289	0.267
7	0.501	0.392	0.317	0.263	0.375	0.308	0.258	0.359	0.3	0.254	0.234
8	0.467	0.358	0.285	0.233	0.343	0.277	0.23	0.329	0.27	0.226	0.207
9	0.437	0.328	0.258	0.209	0.316	0.252	0.206	0.304	0.245	0.203	0.184
10	0.411	0.303	0.235	0.188	0.292	0.23	0.186	0.282	0.225	0.183	0.166

Average Luminance Table (cd/m²)

	0	45	90
0	4310	3493	3488
45	4079	3212	3523
55	3996	3341	3848
65	3857	3603	4325
75	3408	3987	5090
85	1408	5331	7185

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.

