



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: 17299

DATE: 11-30-2009

PREPARED FOR: RENOVA LIGHTING SYSTEMS, INC.

CATALOG NUMBER: ECS-SRW4-MN-132-UNV-11L

LUMINAIRE: FORMED WHITE ENAMEL STEEL HOUSING, FORMED SPECULAR ALUMINUM REFLECTOR, CLEAR PRISMATIC PLASTIC ENCLOSURE WITH LINEAR PRISMATIC SIDES.

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, 0.2150A, 25.74W

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	651	651	651	651	651	651	651	651	651	651	651	651	651	651	651	651	
5	650	650	656	657	659	657	656	650	650	650	656	657	659	657	656	650	62.9
15	635	652	696	738	755	738	696	652	635	652	696	738	755	738	696	652	198.1
25	605	660	762	826	848	826	762	660	605	660	762	826	848	826	762	660	343.2
35	560	649	753	800	799	800	753	649	560	649	753	800	799	800	753	649	449.2
45	487	559	656	662	668	662	656	559	487	559	656	662	668	662	656	559	470.9
55	316	382	469	490	497	490	469	382	316	382	469	490	497	490	469	382	391.9
65	162	226	297	333	345	333	297	226	162	226	297	333	345	333	297	226	276.9
75	91	121	171	235	261	235	171	121	91	121	171	235	261	235	171	121	186.0
85	31	51	101	150	164	150	101	51	31	51	101	150	164	150	101	51	108.4
90	1	23	70	101	110	101	70	23	1	23	70	101	110	101	70	23	
95	0	19	54	77	85	77	54	19	0	19	54	77	85	77	54	19	53.1
105	0	11	31	48	55	48	31	11	0	11	31	48	55	48	31	11	31.3
115	0	1	19	29	34	29	19	1	0	1	19	29	34	29	19	1	17.1
125	0	0	9	20	23	20	9	0	0	0	9	20	23	20	9	0	8.9
135	0	0	0	7	11	7	0	0	0	0	0	7	11	7	0	0	2.3
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	604.2	21.2%	23.2%
0-40	1053.4	37.0%	40.5%
0-60	1916.2	67.2%	73.7%
0-90	2487.6	87.3%	95.7%
90-180	112.7	4.0%	4.3%
0-180	2600.2	91.2%	100.0%

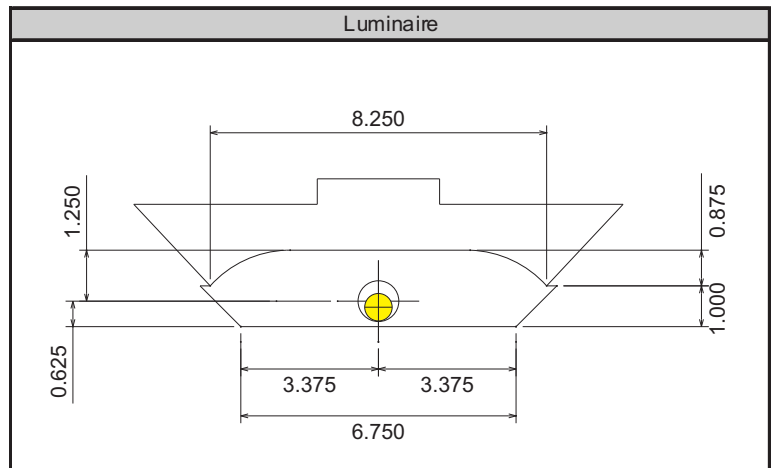
Total luminaire efficiency: 91.2%

CIE Type:

Direct

Spacing Criterion:

0 deg: 1.34 90 deg: 1.69
180 deg: 1.34 270 deg: 1.69



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	651	651	651	651	651	651	651	651	651	651	651	651	651	651	651	651
5	650	650	656	657	659	657	656	650	650	650	656	657	659	657	656	650
10	643	650	670	684	691	684	670	650	643	650	670	684	691	684	670	650
15	635	652	696	738	755	738	696	652	635	652	696	738	755	738	696	652
20	622	655	735	792	814	792	735	655	622	655	735	792	814	792	735	655
25	605	660	762	826	848	826	762	660	605	660	762	826	848	826	762	660
30	585	662	768	832	847	832	768	662	585	662	768	832	847	832	768	662
35	560	649	753	800	799	800	753	649	560	649	753	800	799	800	753	649
40	529	616	716	733	730	733	716	616	529	616	716	733	730	733	716	616
45	487	559	656	662	668	662	656	559	487	559	656	662	668	662	656	559
50	422	477	568	580	591	580	568	477	422	477	568	580	591	580	568	477
55	316	382	469	490	497	490	469	382	316	382	469	490	497	490	469	382
60	219	299	380	408	413	408	380	299	219	299	380	408	413	408	380	299
65	162	226	297	333	345	333	297	226	162	226	297	333	345	333	297	226
70	122	167	224	276	295	276	224	167	122	167	224	276	295	276	224	167
75	91	121	171	235	261	235	171	121	91	121	171	235	261	235	171	121
80	62	83	133	193	219	193	133	83	62	83	133	193	219	193	133	83
85	31	51	101	150	164	150	101	51	31	51	101	150	164	150	101	51
90	1	23	70	101	110	101	70	23	1	23	70	101	110	101	70	23
95	0	19	54	77	85	77	54	19	0	19	54	77	85	77	54	19
100	0	14	40	59	67	59	40	14	0	14	40	59	67	59	40	14
105	0	11	31	48	55	48	31	11	0	11	31	48	55	48	31	11
110	0	7	24	38	44	38	24	7	0	7	24	38	44	38	24	7
115	0	1	19	29	34	29	19	1	0	1	19	29	34	29	19	1
120	0	0	14	24	28	24	14	0	0	0	14	24	28	24	14	0
125	0	0	9	20	23	20	9	0	0	0	9	20	23	20	9	0
130	0	0	1	14	18	14	1	0	0	0	1	14	18	14	1	0
135	0	0	0	7	11	7	0	0	0	0	0	7	11	7	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	15.6	45-50	232.2	90-95	30.2	135-140	0.5
5-10	47.3	50-55	210.9	95-100	22.9	140-145	0.0
10-15	80.9	55-60	181.1	100-105	17.7	145-150	0.0
15-20	117.3	60-65	151.9	105-110	13.5	150-155	0.0
20-25	154.4	65-70	125.0	110-115	9.9	155-160	0.0
25-30	188.8	70-75	102.7	115-120	7.2	160-165	0.0
30-35	216.4	75-80	83.4	120-125	5.4	165-170	0.0
35-40	232.9	80-85	64.6	125-130	3.5	170-175	0.0
40-45	238.7	85-90	43.8	130-135	1.8	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	1.108	1.108	1.108	1.108	1.077	1.077	1.077	1.077	1.047	1.047	1.047	1.047
1	1.005	0.953	0.906	0.864	0.974	0.927	0.884	0.846	0.945	0.902	0.863	0.829
2	0.913	0.826	0.755	0.696	0.883	0.804	0.739	0.684	0.855	0.783	0.724	0.673
3	0.832	0.722	0.639	0.573	0.804	0.704	0.627	0.566	0.777	0.686	0.615	0.558
4	0.76	0.637	0.549	0.482	0.734	0.622	0.539	0.477	0.71	0.607	0.53	0.471
5	0.698	0.567	0.477	0.412	0.674	0.554	0.47	0.408	0.652	0.541	0.463	0.404
6	0.643	0.508	0.42	0.357	0.621	0.497	0.414	0.354	0.601	0.486	0.408	0.351
7	0.594	0.458	0.372	0.313	0.574	0.449	0.367	0.31	0.556	0.439	0.362	0.308
8	0.551	0.416	0.333	0.277	0.534	0.408	0.329	0.275	0.517	0.4	0.325	0.273
9	0.513	0.38	0.3	0.247	0.497	0.373	0.297	0.245	0.482	0.366	0.293	0.244
10	0.48	0.349	0.273	0.222	0.465	0.343	0.27	0.221	0.451	0.337	0.267	0.219

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	0.992	0.992	0.992	0.992	0.941	0.941	0.941	0.895	0.895	0.895	0.873
1	0.89	0.856	0.824	0.795	0.813	0.787	0.763	0.774	0.753	0.734	0.712
2	0.803	0.744	0.694	0.651	0.708	0.667	0.63	0.675	0.641	0.61	0.588
3	0.728	0.653	0.593	0.543	0.623	0.571	0.528	0.594	0.551	0.514	0.492
4	0.665	0.579	0.513	0.46	0.553	0.496	0.45	0.528	0.48	0.439	0.418
5	0.61	0.517	0.448	0.396	0.495	0.435	0.388	0.474	0.422	0.38	0.359
6	0.563	0.465	0.396	0.344	0.446	0.385	0.338	0.428	0.374	0.332	0.312
7	0.522	0.422	0.353	0.303	0.405	0.343	0.298	0.389	0.335	0.293	0.274
8	0.486	0.384	0.317	0.269	0.37	0.309	0.264	0.356	0.301	0.26	0.242
9	0.454	0.352	0.286	0.24	0.34	0.28	0.237	0.328	0.273	0.234	0.216
10	0.426	0.325	0.261	0.216	0.314	0.255	0.214	0.303	0.249	0.211	0.194

Average Luminance Table (cd/m²)

	0	45	90
0	2636	2636	2636
45	2786	3716	3655
55	2232	3159	3191
65	1551	2557	2777
75	1426	2137	2939
85	1434	2434	3235

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.

