



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: 19582

DATE: 06-09-2010

PREPARED FOR: RENOVA LIGHTING SYSTEMS

CATALOG NUMBER: ECS-KCN2-MN-217-UNV-12L-FRL

LUMINAIRE: FORMED WHITE ENAMEL STEEL HOUSING, FORMED SPECULAR ALUMINUM REFLECTOR, FORMED WHITE ENAMEL ALUMINUM ENCLOSURE WITH FROSTED LINEAR PRISMATIC PLASTIC DIFFUSERS BELOW EACH LAMP.

LAMP: TWO 17 WATT T8 LINEAR FLUORESCENT LAMPS RATED AT 1350 LUMENS EACH.

LAMP CATALOG NUMBER: GE F17T8-SP41-ECO

BALLAST: ONE SYLVANIA "QUICKTRONIC" QHE2X32T8/UNV-ISL-SC

MOUNTING: RECESSED

ELECTRICAL VALUES: 120.0VAC, 0.2151A, 25.61W

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	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	
5	1069	1067	1064	1063	1062	1063	1064	1067	1069	1067	1064	1063	1062	1063	1064	1067	100.7
15	1001	997	989	981	978	981	989	997	1001	997	989	981	978	981	989	997	278.1
25	873	868	854	840	834	840	854	868	873	868	854	840	834	840	854	868	392.8
35	706	705	691	676	670	676	691	705	706	705	691	676	670	676	691	705	431.0
45	519	526	521	511	508	511	521	526	519	526	521	511	508	511	521	526	399.5
55	343	355	361	357	353	357	361	355	343	355	361	357	353	357	361	355	318.0
65	198	211	223	203	187	203	223	211	198	211	223	203	187	203	223	211	205.9
75	90	101	95	73	64	73	95	101	90	101	95	73	64	73	95	101	93.6
85	19	20	16	14	13	14	16	20	19	20	16	14	13	14	16	20	19.6
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
115	0	0	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	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

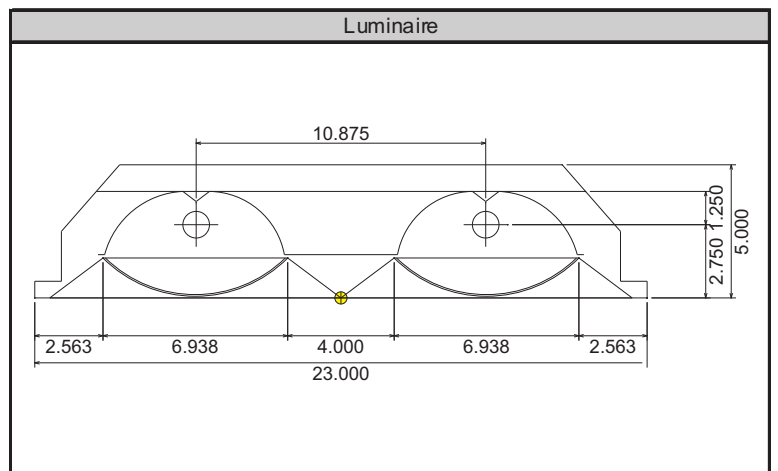
Zonal Lumen Summary

Zone	Lumens	% of Lamp	% of Luminaire
0-30	771.6	28.6%	34.5%
0-40	1202.7	44.5%	53.7%
0-60	1920.2	71.1%	85.7%
0-90	2239.3	82.9%	100.0%
90-180	0.0	0.0%	0.0%
0-180	2239.3	82.9%	100.0%

Total luminaire efficiency: 82.9%

CIE Type: Direct

Spacing Criterion: 0 deg: 1.12 90 deg: 1.07
180 deg: 1.12 270 deg: 1.07



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	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075
5	1069	1067	1064	1063	1062	1063	1064	1067	1069	1067	1064	1063	1062	1063	1064	1067
10	1043	1041	1036	1031	1029	1031	1036	1041	1043	1041	1036	1031	1029	1031	1036	1041
15	1001	997	989	981	978	981	989	997	1001	997	989	981	978	981	989	997
20	944	939	928	917	910	917	928	939	944	939	928	917	910	917	928	939
25	873	868	854	840	834	840	854	868	873	868	854	840	834	840	854	868
30	794	790	775	759	753	759	775	790	794	790	775	759	753	759	775	790
35	706	705	691	676	670	676	691	705	706	705	691	676	670	676	691	705
40	613	615	605	592	588	592	605	615	613	615	605	592	588	592	605	615
45	519	526	521	511	508	511	521	526	519	526	521	511	508	511	521	526
50	429	438	439	433	430	433	439	438	429	438	439	433	430	433	439	438
55	343	355	361	357	353	357	361	355	343	355	361	357	353	357	361	355
60	266	279	288	283	274	283	288	279	266	279	288	283	274	283	288	279
65	198	211	223	203	187	203	223	211	198	211	223	203	187	203	223	211
70	140	152	156	128	115	128	156	152	140	152	156	128	115	128	156	152
75	90	101	95	73	64	73	95	101	90	101	95	73	64	73	95	101
80	50	56	49	37	33	37	49	56	50	56	49	37	33	37	49	56
85	19	20	16	14	13	14	16	20	19	20	16	14	13	14	16	20
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	25.6	45-50	192.1	90-95	0.0	135-140	0.0
5-10	75.2	50-55	171.5	95-100	0.0	140-145	0.0
10-15	120.1	55-60	146.4	100-105	0.0	145-150	0.0
15-20	158.0	60-65	118.2	105-110	0.0	150-155	0.0
20-25	186.9	65-70	87.7	110-115	0.0	155-160	0.0
25-30	206.0	70-75	58.7	115-120	0.0	160-165	0.0
30-35	215.5	75-80	34.9	120-125	0.0	165-170	0.0
35-40	215.6	80-85	16.3	125-130	0.0	170-175	0.0
40-45	207.4	85-90	3.4	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	1.011	1.011	1.011	1.011	0.987	0.987	0.987	0.987	0.964	0.964	0.964	0.964
1	0.936	0.898	0.863	0.833	0.913	0.878	0.847	0.819	0.891	0.86	0.831	0.806
2	0.861	0.794	0.738	0.692	0.839	0.778	0.727	0.684	0.818	0.762	0.716	0.676
3	0.792	0.705	0.639	0.586	0.771	0.692	0.63	0.581	0.752	0.679	0.622	0.576
4	0.73	0.631	0.559	0.505	0.711	0.619	0.552	0.501	0.693	0.609	0.546	0.498
5	0.675	0.568	0.494	0.44	0.658	0.559	0.489	0.438	0.641	0.549	0.484	0.436
6	0.626	0.515	0.441	0.389	0.61	0.507	0.437	0.387	0.595	0.499	0.433	0.386
7	0.583	0.469	0.397	0.347	0.568	0.462	0.394	0.346	0.554	0.456	0.391	0.345
8	0.544	0.43	0.36	0.313	0.531	0.424	0.358	0.312	0.518	0.419	0.355	0.311
9	0.509	0.397	0.329	0.284	0.497	0.392	0.327	0.283	0.486	0.387	0.325	0.282
10	0.478	0.367	0.302	0.259	0.467	0.363	0.3	0.259	0.457	0.359	0.299	0.258

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	0.922	0.922	0.922	0.922	0.882	0.882	0.882	0.846	0.846	0.846	0.829
1	0.85	0.825	0.802	0.78	0.793	0.774	0.757	0.763	0.748	0.734	0.718
2	0.779	0.733	0.694	0.66	0.707	0.674	0.646	0.682	0.655	0.631	0.615
3	0.715	0.655	0.606	0.566	0.633	0.591	0.556	0.612	0.577	0.547	0.53
4	0.659	0.589	0.534	0.491	0.57	0.523	0.485	0.552	0.512	0.478	0.461
5	0.61	0.532	0.475	0.431	0.516	0.466	0.427	0.502	0.458	0.422	0.406
6	0.567	0.485	0.426	0.383	0.471	0.419	0.379	0.458	0.412	0.376	0.36
7	0.529	0.444	0.385	0.342	0.432	0.379	0.34	0.421	0.374	0.338	0.322
8	0.495	0.408	0.35	0.309	0.398	0.346	0.307	0.389	0.341	0.306	0.291
9	0.465	0.377	0.321	0.281	0.369	0.317	0.28	0.361	0.313	0.278	0.264
10	0.438	0.351	0.295	0.257	0.343	0.292	0.256	0.336	0.289	0.255	0.241

Average Luminance Table (cd/m²)

	0	45	90
0	3585	3585	3585
45	2448	2454	2397
55	1994	2100	2051
65	1565	1757	1474
75	1158	1222	827
85	712	628	480

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.

