



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: 17524

DATE: 12-09-2009

PREPARED FOR: RENOVA LIGHTING SYSTEMS

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

LUMINAIRE: FORMED STEEL HOUSING, FORMED SPECULAR ALUMINUM REFLECTOR,
6 CELL, 1-5/8" DEEP, FORMED WHITE ENAMEL STEEL LOUVER.

LAMP: TWO 17 WATT T8 LINEAR FLUORESCENT LAMPS RATED AT 1325 LUMENS
EACH.

LAMP CATALOG NUMBER: GE F17T8/SP41/ECO

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

MOUNTING: RECESSED

ELECTRICAL VALUES: 120.0VAC, 0.2193A, 26.24W

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	1641	1641	1641	1641	1641	1641	1641	1641	1641	1641	1641	1641	1641	1641	1641	1641	
5	1623	1617	1603	1594	1592	1594	1603	1617	1623	1617	1603	1594	1592	1594	1603	1617	150.3
15	1509	1464	1342	1217	1177	1217	1342	1464	1509	1464	1342	1217	1177	1217	1342	1464	374.1
25	1312	1182	915	768	736	768	915	1182	1312	1182	915	768	736	768	915	1182	444.9
35	1062	826	577	511	505	511	577	826	1062	826	577	511	505	511	577	826	422.3
45	779	504	394	413	425	413	394	504	779	504	394	413	425	413	394	504	367.9
55	507	283	288	285	262	285	288	283	507	283	288	285	262	285	288	283	272.3
65	265	167	138	44	24	44	138	167	265	167	138	44	24	44	138	167	126.1
75	80	70	45	31	16	31	45	70	80	70	45	31	16	31	45	70	53.8
85	20	19	14	7	3	7	14	19	20	19	14	7	3	7	14	19	14.8
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	

Zonal Lumen Summary

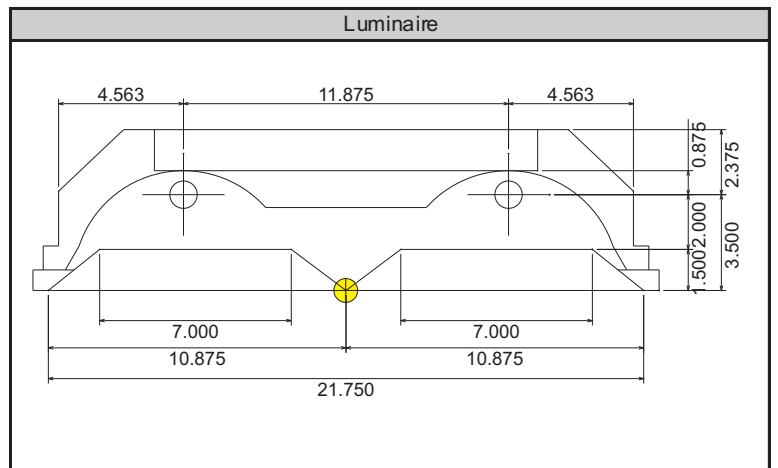
Zone	Lumens	% of Lamp	% of Luminaire
0-30	969.3	36.6%	43.5%
0-40	1391.5	52.5%	62.5%
0-60	2031.8	76.7%	91.3%
0-90	2226.5	84.0%	100.0%
90-180	0.0	0.0%	0.0%
0-180	2226.5	84.0%	100.0%

Total luminaire efficiency: 84.0%

CIE Type: Direct

Spacing Criterion: 0 deg: 1.10 90 deg: 0.69
180 deg: 1.10 270 deg: 0.69

Shielding angle: 0 deg: 14 90 deg: 29



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	1641	1641	1641	1641	1641	1641	1641	1641	1641	1641	1641	1641	1641	1641	1641	1641
5	1623	1617	1603	1594	1592	1594	1603	1617	1623	1617	1603	1594	1592	1594	1603	1617
10	1578	1556	1512	1458	1437	1458	1512	1556	1578	1556	1512	1458	1437	1458	1512	1556
15	1509	1464	1342	1217	1177	1217	1342	1464	1509	1464	1342	1217	1177	1217	1342	1464
20	1419	1337	1122	976	923	976	1122	1337	1419	1337	1122	976	923	976	1122	1337
25	1312	1182	915	768	736	768	915	1182	1312	1182	915	768	736	768	915	1182
30	1193	1001	721	601	577	601	721	1001	1193	1001	721	601	577	601	721	1001
35	1062	826	577	511	505	511	577	826	1062	826	577	511	505	511	577	826
40	920	660	464	451	462	451	464	660	920	660	464	451	462	451	464	660
45	779	504	394	413	425	413	394	504	779	504	394	413	425	413	394	504
50	639	383	341	343	350	343	341	383	639	383	341	343	350	343	341	383
55	507	283	288	285	262	285	288	283	507	283	288	285	262	285	288	283
60	384	220	221	152	87	152	221	220	384	220	221	152	87	152	221	220
65	265	167	138	44	24	44	138	167	265	167	138	44	24	44	138	167
70	148	115	53	37	19	37	53	115	148	115	53	37	19	37	53	115
75	80	70	45	31	16	31	45	70	80	70	45	31	16	31	45	70
80	44	43	32	28	19	28	32	43	44	43	32	28	19	28	32	43
85	20	19	14	7	3	7	14	19	20	19	14	7	3	7	14	19
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	38.8	45-50	175.0	90-95	0.0	135-140	0.0
5-10	111.5	50-55	152.8	95-100	0.0	140-145	0.0
10-15	168.9	55-60	119.5	100-105	0.0	145-150	0.0
15-20	205.2	60-65	77.9	105-110	0.0	150-155	0.0
20-25	221.7	65-70	48.3	110-115	0.0	155-160	0.0
25-30	223.2	70-75	31.1	115-120	0.0	160-165	0.0
30-35	216.5	75-80	22.7	120-125	0.0	165-170	0.0
35-40	205.7	80-85	11.8	125-130	0.0	170-175	0.0
40-45	193.0	85-90	3.0	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			
	70	50	30	10	70	50	30	10	70	50	30	10
Room Cavity Ratio (RCR)												
0	1.025	1.025	1.025	1.025	1	1	1	1	0.977	0.977	0.977	0.977
1	0.957	0.922	0.891	0.863	0.934	0.902	0.874	0.849	0.912	0.884	0.858	0.835
2	0.889	0.827	0.777	0.735	0.867	0.811	0.765	0.726	0.847	0.796	0.754	0.718
3	0.825	0.745	0.684	0.636	0.805	0.732	0.676	0.631	0.786	0.719	0.667	0.625
4	0.767	0.675	0.609	0.559	0.748	0.664	0.602	0.555	0.731	0.653	0.596	0.551
5	0.714	0.614	0.546	0.496	0.697	0.605	0.541	0.494	0.681	0.597	0.536	0.491
6	0.667	0.563	0.494	0.445	0.651	0.555	0.49	0.444	0.637	0.547	0.486	0.442
7	0.624	0.518	0.45	0.403	0.61	0.511	0.447	0.402	0.597	0.505	0.444	0.401
8	0.586	0.479	0.413	0.368	0.573	0.473	0.41	0.367	0.561	0.468	0.408	0.366
9	0.551	0.445	0.381	0.338	0.54	0.44	0.379	0.337	0.529	0.435	0.376	0.336
10	0.52	0.415	0.353	0.312	0.51	0.41	0.351	0.312	0.5	0.406	0.349	0.311

Ceiling Cavity Reflectance	50				30			10			0
	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)											
0	0.934	0.934	0.934	0.934	0.894	0.894	0.894	0.857	0.857	0.857	0.84
1	0.872	0.849	0.828	0.809	0.817	0.8	0.784	0.787	0.774	0.761	0.745
2	0.809	0.768	0.732	0.702	0.741	0.712	0.686	0.717	0.693	0.671	0.655
3	0.751	0.696	0.651	0.615	0.674	0.636	0.605	0.653	0.622	0.595	0.579
4	0.699	0.634	0.584	0.544	0.615	0.572	0.537	0.598	0.561	0.531	0.515
5	0.652	0.58	0.527	0.486	0.564	0.518	0.482	0.55	0.509	0.477	0.461
6	0.61	0.533	0.479	0.438	0.52	0.472	0.435	0.508	0.465	0.432	0.416
7	0.572	0.493	0.438	0.398	0.481	0.432	0.396	0.471	0.427	0.393	0.378
8	0.539	0.457	0.403	0.364	0.447	0.398	0.362	0.438	0.394	0.36	0.346
9	0.509	0.426	0.372	0.335	0.418	0.369	0.334	0.41	0.365	0.332	0.318
10	0.482	0.399	0.346	0.31	0.391	0.343	0.309	0.384	0.34	0.308	0.294

Average Luminance Table (cd/m²)

	0	45	90
0	5441	5441	5441
45	3650	1845	1991
55	2928	1666	1517
65	2081	1081	191
75	1019	579	205
85	743	549	103

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.

