



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: 17544 DATE: 01-05-2010
 PREPARED FOR: RENOVA LIGHTING SYSTEMS
 CATALOG NUMBER: ECS-IRK4-MN-1LT8-UNV5.8-V
 LUMINAIRE: FORMED STEEL HOUSING, FORMED SPECULAR 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, 0.2219A, 26.57W

Candela Distribution

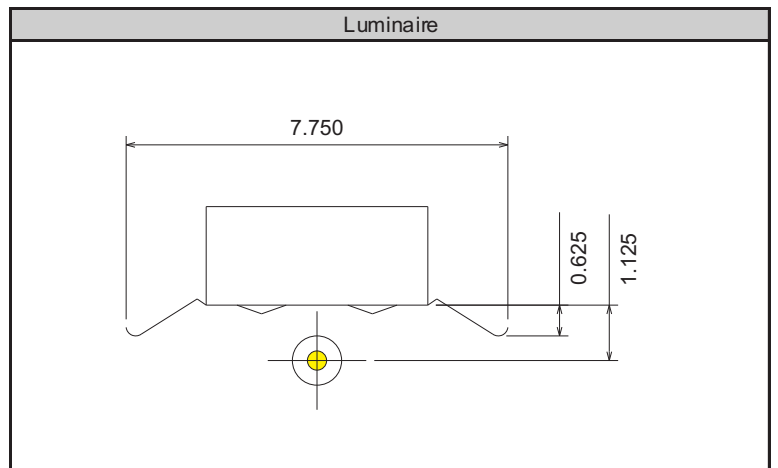
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	Flux
0	1104	1104	1104	1104	1104	1104	1104	1104	1104	1104	1104	1104	1104	1104	1104	1104	
5	1094	1099	1086	1067	1063	1067	1086	1099	1094	1099	1086	1067	1063	1067	1086	1099	101.3
15	1053	1006	920	829	801	829	920	1006	1053	1006	920	829	801	829	920	1006	257.6
25	970	854	670	676	689	676	670	854	970	854	670	676	689	676	670	854	349.6
35	849	638	613	576	558	576	613	638	849	638	613	576	558	576	613	638	393.3
45	697	482	458	401	406	401	458	482	697	482	458	401	406	401	458	482	369.3
55	522	377	315	367	387	367	315	377	522	377	315	367	387	367	315	377	341.3
65	336	215	278	350	378	350	278	215	336	215	278	350	378	350	278	215	297.9
75	156	142	237	301	333	301	237	142	156	142	237	301	333	301	237	142	246.5
85	21	104	211	290	320	290	211	104	21	104	211	290	320	290	211	104	212.5
90	0	93	201	277	306	277	201	93	0	93	201	277	306	277	201	93	
95	0	19	101	170	196	170	101	19	0	19	101	170	196	170	101	19	110.3
105	0	3	2	1	1	1	2	3	0	3	2	1	1	1	2	3	6.8
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	708.5	24.9%	26.4%
0-40	1101.8	38.7%	41.0%
0-60	1812.4	63.6%	67.5%
0-90	2569.4	90.2%	95.6%
90-180	117.3	4.1%	4.4%
0-180	2686.7	94.3%	100.0%

Total luminaire efficiency: 94.3%

CIE Type: Direct
 Spacing Criterion: 0 deg: 1.23 90 deg: 0.79
 180 deg: 1.23 270 deg: 0.79



Approved By: _____

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	1104	1104	1104	1104	1104	1104	1104	1104	1104	1104	1104	1104	1104	1104	1104	1104
5	1094	1099	1086	1067	1063	1067	1086	1099	1094	1099	1086	1067	1063	1067	1086	1099
10	1079	1063	1018	974	961	974	1018	1063	1079	1063	1018	974	961	974	1018	1063
15	1053	1006	920	829	801	829	920	1006	1053	1006	920	829	801	829	920	1006
20	1016	939	785	695	692	695	785	939	1016	939	785	695	692	695	785	939
25	970	854	670	676	689	676	670	854	970	854	670	676	689	676	670	854
30	914	751	635	648	639	648	635	751	914	751	635	648	639	648	635	751
35	849	638	613	576	558	576	613	638	849	638	613	576	558	576	613	638
40	777	539	544	480	464	480	544	539	777	539	544	480	464	480	544	539
45	697	482	458	401	406	401	458	482	697	482	458	401	406	401	458	482
50	613	445	370	386	406	386	370	445	613	445	370	386	406	386	370	445
55	522	377	315	367	387	367	315	377	522	377	315	367	387	367	315	377
60	430	300	300	357	382	357	300	300	430	300	300	357	382	357	300	300
65	336	215	278	350	378	350	278	215	336	215	278	350	378	350	278	215
70	243	167	265	329	342	329	265	167	243	167	265	329	342	329	265	167
75	156	142	237	301	333	301	237	142	156	142	237	301	333	301	237	142
80	78	124	224	292	319	292	224	124	78	124	224	292	319	292	224	124
85	21	104	211	290	320	290	211	104	21	104	211	290	320	290	211	104
90	0	93	201	277	306	277	201	93	0	93	201	277	306	277	201	93
95	0	19	101	170	196	170	101	19	0	19	101	170	196	170	101	19
100	0	6	9	63	85	63	9	6	0	6	9	63	85	63	9	6
105	0	3	2	1	1	1	2	3	0	3	2	1	1	1	2	3
110	0	1	1	1	1	1	1	1	0	1	1	1	1	1	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	26.2	45-50	181.3	90-95	76.6	135-140	0.0
5-10	75.1	50-55	174.8	95-100	33.7	140-145	0.0
10-15	115.0	55-60	166.4	100-105	6.2	145-150	0.0
15-20	142.6	60-65	155.3	105-110	0.6	150-155	0.0
20-25	164.6	65-70	142.7	110-115	0.2	155-160	0.0
25-30	185.0	70-75	128.6	115-120	0.0	160-165	0.0
30-35	196.9	75-80	118.0	120-125	0.0	165-170	0.0
35-40	196.4	80-85	108.5	125-130	0.0	170-175	0.0
40-45	188.0	85-90	104.0	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	1.145	1.145	1.145	1.145	1.112	1.112	1.112	1.112	1.082	1.082	1.082	1.082
1	1.025	0.964	0.91	0.861	0.992	0.936	0.887	0.843	0.96	0.91	0.865	0.825
2	0.929	0.833	0.754	0.689	0.897	0.81	0.738	0.677	0.868	0.788	0.722	0.666
3	0.847	0.73	0.64	0.57	0.818	0.711	0.628	0.562	0.79	0.692	0.615	0.554
4	0.777	0.647	0.553	0.483	0.75	0.631	0.544	0.477	0.724	0.615	0.534	0.471
5	0.716	0.579	0.486	0.417	0.691	0.565	0.478	0.413	0.668	0.552	0.47	0.409
6	0.662	0.523	0.431	0.366	0.64	0.511	0.425	0.363	0.619	0.5	0.419	0.359
7	0.615	0.475	0.387	0.325	0.595	0.465	0.381	0.322	0.576	0.456	0.376	0.32
8	0.574	0.435	0.35	0.292	0.555	0.426	0.345	0.29	0.538	0.418	0.341	0.287
9	0.537	0.4	0.319	0.264	0.52	0.393	0.315	0.262	0.504	0.386	0.311	0.261
10	0.504	0.37	0.292	0.241	0.489	0.364	0.289	0.239	0.475	0.357	0.286	0.238

Ceiling Cavity Reflectance	50				30			10			0
	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)											
0	1.025	1.025	1.025	1.025	0.972	0.972	0.972	0.924	0.924	0.924	0.902
1	0.902	0.862	0.825	0.791	0.817	0.787	0.759	0.776	0.752	0.729	0.705
2	0.812	0.747	0.692	0.643	0.709	0.663	0.622	0.674	0.636	0.602	0.578
3	0.739	0.657	0.592	0.538	0.625	0.57	0.524	0.596	0.549	0.509	0.486
4	0.677	0.586	0.516	0.46	0.559	0.498	0.449	0.533	0.482	0.439	0.416
5	0.625	0.527	0.455	0.4	0.504	0.441	0.392	0.482	0.428	0.384	0.362
6	0.58	0.478	0.406	0.353	0.458	0.395	0.346	0.44	0.384	0.34	0.319
7	0.541	0.437	0.366	0.315	0.42	0.357	0.309	0.404	0.347	0.304	0.285
8	0.506	0.402	0.333	0.283	0.387	0.325	0.279	0.373	0.317	0.275	0.256
9	0.476	0.372	0.304	0.257	0.359	0.297	0.253	0.346	0.291	0.25	0.232
10	0.449	0.345	0.28	0.235	0.334	0.274	0.232	0.323	0.268	0.229	0.212

Average Luminance Table (cd/m²)

	0	45	90
0	7131	5780	5772
45	6108	2972	2583
55	5537	2391	2863
65	4691	2645	3464
75	3331	3146	4185
85	1007	4864	6730

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.

