



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: 18183 DATE: 02-18-2010
 PREPARED FOR: RENOVA LIGHTING SYSTEMS
 CATALOG NUMBER: EFK-24-W-2LT8-V
 LUMINAIRE: FORMED WHITE ENAMEL STEEL HOUSING, FORMED WHITE ENAMEL ALUMINUM REFLECTOR, NO ENCLOSURE.
 LAMP: TWO 32 WATT T8 LINEAR FLUORESCENT LAMPS RATED AT 2850 LUMENS EACH.
 LAMP CATALOG NUMBER: PHILIPS F32T8/841/ALTO
 BALLAST: ONE SYLVANIA "QUICKTRONIC" QHE2X32T8/UNV-ISL-SC
 MOUNTING: RECESSED
 ELECTRICAL VALUES: 120.0VAC, 0.4229A, 50.68W

Candela Distribution

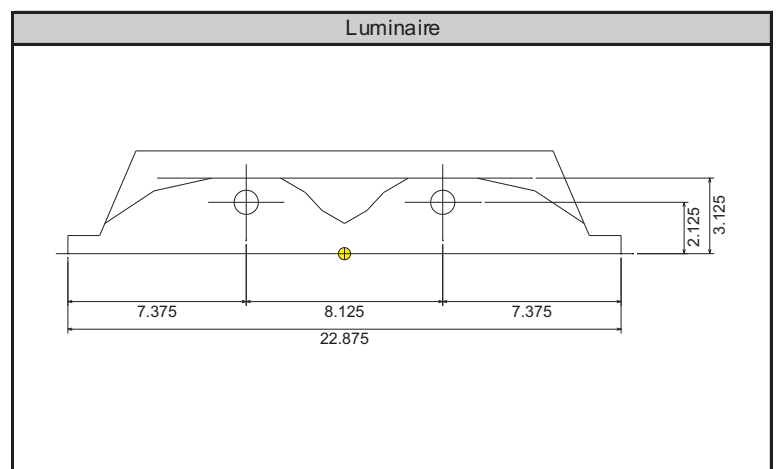
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	Flux
0	1499	1499	1499	1499	1499	1499	1499	1499	1499	1499	1499	1499	1499	1499	1499	1499	
5	1489	1491	1497	1502	1499	1502	1497	1491	1489	1491	1497	1502	1499	1502	1497	1491	142.5
15	1442	1453	1474	1488	1491	1488	1474	1453	1442	1453	1474	1488	1491	1488	1474	1453	415.8
25	1350	1375	1415	1440	1448	1440	1415	1375	1350	1375	1415	1440	1448	1440	1415	1375	649.5
35	1210	1256	1316	1369	1388	1369	1316	1256	1210	1256	1316	1369	1388	1369	1316	1256	821.0
45	1029	1094	1193	1282	1310	1282	1193	1094	1029	1094	1193	1282	1310	1282	1193	1094	914.2
55	811	900	1046	1134	1162	1134	1046	900	811	900	1046	1134	1162	1134	1046	900	907.5
65	561	683	823	920	951	920	823	683	561	683	823	920	951	920	823	683	786.7
75	291	413	553	539	499	539	553	413	291	413	553	539	499	539	553	413	488.6
85	48	80	55	51	49	51	55	80	48	80	55	51	49	51	55	80	85.1
90	0	1	2	3	3	3	2	1	0	1	2	3	3	3	2	1	
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	1207.9	21.2%	23.2%
0-40	2028.9	35.6%	38.9%
0-60	3850.6	67.6%	73.9%
0-90	5210.9	91.4%	100.0%
90-180	0.0	0.0%	0.0%
0-180	5210.9	91.4%	100.0%

Total luminaire efficiency: 91.4%

CIE Type: Direct
 Spacing Criterion: 0 deg: 1.27 90 deg: 1.42
 180 deg: 1.27 270 deg: 1.42



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	1499	1499	1499	1499	1499	1499	1499	1499	1499	1499	1499	1499	1499	1499	1499	1499
5	1489	1491	1497	1502	1499	1502	1497	1491	1489	1491	1497	1502	1499	1502	1497	1491
10	1472	1478	1489	1497	1498	1497	1489	1478	1472	1478	1489	1497	1498	1497	1489	1478
15	1442	1453	1474	1488	1491	1488	1474	1453	1442	1453	1474	1488	1491	1488	1474	1453
20	1402	1419	1449	1470	1474	1470	1449	1419	1402	1419	1449	1470	1474	1470	1449	1419
25	1350	1375	1415	1440	1448	1440	1415	1375	1350	1375	1415	1440	1448	1440	1415	1375
30	1286	1321	1368	1407	1420	1407	1368	1321	1286	1321	1368	1407	1420	1407	1368	1321
35	1210	1256	1316	1369	1388	1369	1316	1256	1210	1256	1316	1369	1388	1369	1316	1256
40	1125	1180	1257	1327	1352	1327	1257	1180	1125	1180	1257	1327	1352	1327	1257	1180
45	1029	1094	1193	1282	1310	1282	1193	1094	1029	1094	1193	1282	1310	1282	1193	1094
50	925	999	1125	1217	1241	1217	1125	999	925	999	1125	1217	1241	1217	1125	999
55	811	900	1046	1134	1162	1134	1046	900	811	900	1046	1134	1162	1134	1046	900
60	690	792	942	1033	1062	1033	942	792	690	792	942	1033	1062	1033	942	792
65	561	683	823	920	951	920	823	683	561	683	823	920	951	920	823	683
70	427	560	690	802	821	802	690	560	427	560	690	802	821	802	690	560
75	291	413	553	539	499	539	553	413	291	413	553	539	499	539	553	413
80	162	274	262	191	179	191	262	274	162	274	262	191	179	191	262	274
85	48	80	55	51	49	51	55	80	48	80	55	51	49	51	55	80
90	0	1	2	3	3	3	2	1	0	1	2	3	3	3	2	1
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	35.8	45-50	463.0	90-95	0.0	135-140	0.0
5-10	106.7	50-55	461.9	95-100	0.0	140-145	0.0
10-15	175.5	55-60	445.6	100-105	0.0	145-150	0.0
15-20	240.3	60-65	415.0	105-110	0.0	150-155	0.0
20-25	299.1	65-70	371.6	110-115	0.0	155-160	0.0
25-30	350.5	70-75	303.4	115-120	0.0	160-165	0.0
30-35	393.6	75-80	185.2	120-125	0.0	165-170	0.0
35-40	427.4	80-85	72.9	125-130	0.0	170-175	0.0
40-45	451.2	85-90	12.2	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	1.115	1.115	1.115	1.115	1.088	1.088	1.088	1.088	1.063	1.063	1.063	1.063
1	1.014	0.962	0.916	0.875	0.987	0.94	0.899	0.861	0.962	0.919	0.881	0.847
2	0.916	0.827	0.755	0.694	0.89	0.809	0.742	0.686	0.865	0.792	0.73	0.678
3	0.83	0.718	0.632	0.565	0.805	0.703	0.623	0.559	0.782	0.688	0.614	0.554
4	0.756	0.63	0.539	0.47	0.733	0.617	0.532	0.467	0.711	0.604	0.525	0.463
5	0.693	0.558	0.466	0.399	0.671	0.547	0.461	0.396	0.651	0.537	0.455	0.394
6	0.637	0.499	0.408	0.344	0.618	0.49	0.404	0.342	0.6	0.481	0.4	0.341
7	0.589	0.45	0.362	0.301	0.571	0.442	0.358	0.3	0.555	0.434	0.355	0.298
8	0.546	0.409	0.324	0.266	0.531	0.402	0.321	0.265	0.516	0.395	0.318	0.264
9	0.509	0.373	0.292	0.238	0.495	0.368	0.29	0.237	0.481	0.362	0.287	0.236
10	0.476	0.343	0.265	0.214	0.463	0.338	0.263	0.214	0.451	0.333	0.261	0.213

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	1.016	1.016	1.016	1.016	0.973	0.973	0.973	0.933	0.933	0.933	0.914
1	0.915	0.88	0.849	0.82	0.844	0.818	0.794	0.811	0.79	0.771	0.751
2	0.819	0.758	0.706	0.661	0.728	0.684	0.646	0.7	0.664	0.631	0.611
3	0.739	0.66	0.596	0.544	0.634	0.58	0.534	0.61	0.564	0.525	0.504
4	0.671	0.581	0.511	0.456	0.559	0.499	0.45	0.539	0.487	0.444	0.423
5	0.615	0.517	0.445	0.39	0.498	0.435	0.385	0.481	0.425	0.381	0.36
6	0.566	0.464	0.391	0.337	0.448	0.383	0.334	0.433	0.376	0.331	0.311
7	0.525	0.42	0.348	0.296	0.406	0.342	0.293	0.394	0.335	0.291	0.272
8	0.488	0.383	0.312	0.262	0.371	0.307	0.261	0.36	0.302	0.259	0.241
9	0.457	0.351	0.283	0.235	0.341	0.278	0.233	0.332	0.274	0.232	0.215
10	0.429	0.324	0.258	0.212	0.315	0.254	0.211	0.307	0.25	0.21	0.193

Average Luminance Table (cd/m²)

	0	45	90
0	2156	2156	2156
45	2092	2426	2664
55	2033	2623	2913
65	1910	2801	3235
75	1618	3070	2774
85	786	904	806

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.

