



LUMINAIRE TESTING LABORATORY, INC.

SUSTAINING
MEMBER
of the
IESNA

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LTL NUMBER: 14707 DATE: 02-27-2009
 PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING
 CATALOG NUMBER: LM3S-04-X-4-X-PB-X-120-T8
 LUMINAIRE: FORMED STEEL AND EXTRUDED ALUMINUM HOUSING, FORMED SEMI-SPECULAR ALUMINUM CENTER REFLECTOR, 48 CELL, 3/4" DEEP, SEMI-SPECULAR ALUMINUM LOUVER, OPEN TOP.
 LAMP: FOUR 32 WATT T8 LINEAR FLUORESCENT LAMPS RATED AT 2850 LUMENS EACH.
 LAMP CATALOG NUMBER: SYLVANIA FO32/741/ECO
 BALLAST: ONE SYLVANIA QTP4X32T8/UNV-ISN-SC
 MOUNTING: PENDANT
 ELECTRICAL VALUES: 120.0VAC, 0.9298A, 111.37W

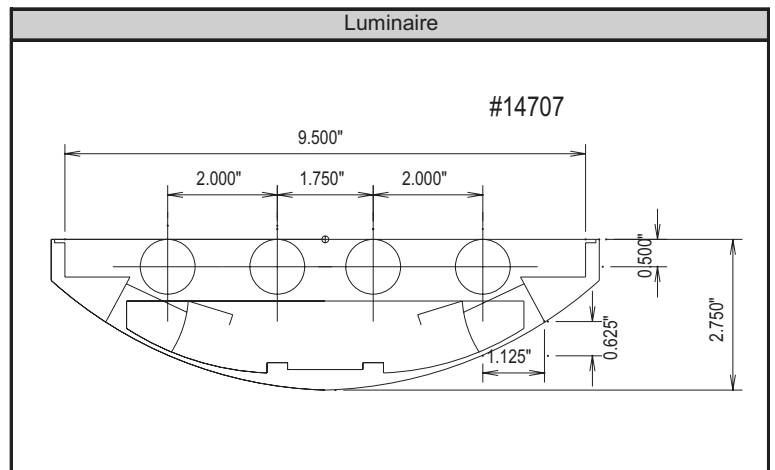
Candela Distribution

	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	416	416	416	416	416	416	416	416	416	416	416	416	416	416	416	416	
5	412	410	411	414	417	414	411	410	412	410	411	414	417	414	411	410	39.1
15	378	383	392	406	414	406	392	383	378	383	392	406	414	406	392	383	111.3
25	332	341	365	404	421	404	365	341	332	341	365	404	421	404	365	341	170.8
35	272	291	333	333	338	333	333	291	272	291	333	333	338	333	333	291	197.3
45	199	233	249	267	282	267	249	233	199	233	249	267	282	267	249	233	190.7
55	112	149	184	209	227	209	184	149	112	149	184	209	227	209	184	149	160.1
65	10	88	129	186	215	186	129	88	10	88	129	186	215	186	129	88	125.7
75	0	7	62	83	96	83	62	7	0	7	62	83	96	83	62	7	54.8
85	0	0	1	14	23	14	1	0	0	0	1	14	23	14	1	0	8.5
90	0	0	2	10	16	10	2	0	0	0	2	10	16	10	2	0	
95	46	195	217	224	229	224	217	195	46	195	217	224	229	224	217	195	225.4
105	269	663	847	893	904	893	847	663	269	663	847	893	904	893	847	663	786.4
115	544	1059	1306	1482	1524	1482	1306	1059	544	1059	1306	1482	1524	1482	1306	1059	1203.2
125	820	1353	1686	1835	1890	1835	1686	1353	820	1353	1686	1835	1890	1835	1686	1353	1391.7
135	1076	1517	1960	2148	2198	2148	1960	1517	1076	1517	1960	2148	2198	2148	1960	1517	1399.6
145	1300	1635	2047	2286	2365	2286	2047	1635	1300	1635	2047	2286	2365	2286	2047	1635	1220.8
155	1480	1702	1982	2196	2277	2196	1982	1702	1480	1702	1982	2196	2277	2196	1982	1702	897.5
165	1607	1715	1867	1981	2026	1981	1867	1715	1607	1715	1867	1981	2026	1981	1867	1715	524.3
175	1675	1691	1720	1749	1763	1749	1720	1691	1675	1691	1720	1749	1763	1749	1720	1691	166.2
180	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	

Zonal Lumen Summary

Zone	Lumens	% of Lamp	% of Luminaire
0-30	321.2	2.8%	3.6%
0-40	518.5	4.5%	5.8%
0-60	869.4	7.6%	9.8%
0-90	1058.4	9.3%	11.9%
90-180	7815.2	68.6%	88.1%
0-180	8873.6	77.8%	100.0%

Total luminaire efficiency: 77.8%
 CIE Type: Semi-Indirect
 Spacing Criterion: 0 deg: 1.10 90 deg: 1.30
 180 deg: 1.10 270 deg: 1.30
 Shielding angle: 0 deg: 31 90 deg: 26



Approved By: MG

THIS REPORT BASED ON LM-41 AND OTHER PERTINENT IESNA PROCEDURES.



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	416	416	416	416	416	416	416	416	416	416	416	416	416	416	416	416
5	412	410	411	414	417	414	411	410	412	410	411	414	417	414	411	410
10	398	399	405	410	415	410	405	399	398	399	405	410	415	410	405	399
15	378	383	392	406	414	406	392	383	378	383	392	406	414	406	392	383
20	357	363	379	401	415	401	379	363	357	363	379	401	415	401	379	363
25	332	341	365	404	421	404	365	341	332	341	365	404	421	404	365	341
30	303	316	357	383	386	383	357	316	303	316	357	383	386	383	357	316
35	272	291	333	333	338	333	333	291	272	291	333	333	338	333	333	291
40	237	264	290	296	309	296	290	264	237	264	290	296	309	296	290	264
45	199	233	249	267	282	267	249	233	199	233	249	267	282	267	249	233
50	159	190	216	238	255	238	216	190	159	190	216	238	255	238	216	190
55	112	149	184	209	227	209	184	149	112	149	184	209	227	209	184	149
60	47	120	155	191	224	191	155	120	47	120	155	191	224	191	155	120
65	10	88	129	186	215	186	129	88	10	88	129	186	215	186	129	88
70	0	40	107	148	169	148	107	40	0	40	107	148	169	148	107	40
75	0	7	62	83	96	83	62	7	0	7	62	83	96	83	62	7
80	0	0	16	35	42	35	16	0	0	0	16	35	42	35	16	0
85	0	0	1	14	23	14	1	0	0	0	1	14	23	14	1	0
90	0	0	2	10	16	10	2	0	0	0	2	10	16	10	2	0
95	46	195	217	224	229	224	217	195	46	195	217	224	229	224	217	195
100	147	462	533	553	559	553	533	462	147	462	533	553	559	553	533	462
105	269	663	847	893	904	893	847	663	269	663	847	893	904	893	847	663
110	404	868	1115	1213	1238	1213	1115	868	404	868	1115	1213	1238	1213	1115	868
115	544	1059	1306	1482	1524	1482	1306	1059	544	1059	1306	1482	1524	1482	1306	1059
120	683	1221	1499	1668	1735	1668	1499	1221	683	1221	1499	1668	1735	1668	1499	1221
125	820	1353	1686	1835	1890	1835	1686	1353	820	1353	1686	1835	1890	1835	1686	1353
130	951	1444	1848	2001	2052	2001	1848	1444	951	1444	1848	2001	2052	2001	1848	1444
135	1076	1517	1960	2148	2198	2148	1960	1517	1076	1517	1960	2148	2198	2148	1960	1517
140	1193	1580	2024	2249	2311	2249	2024	1580	1193	1580	2024	2249	2311	2249	2024	1580
145	1300	1635	2047	2286	2365	2286	2047	1635	1300	1635	2047	2286	2365	2286	2047	1635
150	1396	1675	2024	2278	2357	2278	2024	1675	1396	1675	2024	2278	2357	2278	2024	1675
155	1480	1702	1982	2196	2277	2196	1982	1702	1480	1702	1982	2196	2277	2196	1982	1702
160	1551	1715	1930	2091	2155	2091	1930	1715	1551	1715	1930	2091	2155	2091	1930	1715
165	1607	1715	1867	1981	2026	1981	1867	1715	1607	1715	1867	1981	2026	1981	1867	1715
170	1649	1706	1793	1865	1894	1865	1793	1706	1649	1706	1793	1865	1894	1865	1793	1706
175	1675	1691	1720	1749	1763	1749	1720	1691	1675	1691	1720	1749	1763	1749	1720	1691
180	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680

Zonal Lumen Tabulation (5 degree zones)

Zone	Lumens	Zone	Lumens	Zone	Lumens	Zone	Lumens
0-5	9.9	45-50	93.0	90-95	44.7	135-140	688.8
5-10	29.2	50-55	84.7	95-100	180.7	140-145	643.8
10-15	47.4	55-60	75.4	100-105	327.6	145-150	577.0
15-20	63.9	60-65	68.2	105-110	458.8	150-155	494.7
20-25	79.1	65-70	57.5	110-115	565.0	155-160	402.8
25-30	91.7	70-75	37.6	115-120	638.2	160-165	308.7
30-35	97.9	75-80	17.2	120-125	683.2	165-170	215.5
35-40	99.4	80-85	6.0	125-130	708.5	170-175	125.5
40-45	97.7	85-90	2.5	130-135	710.8	175-180	40.7



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	0.866	0.866	0.866	0.866	0.763	0.763	0.763	0.763	0.666	0.666	0.666	0.666
1	0.79	0.752	0.717	0.687	0.695	0.664	0.636	0.61	0.605	0.58	0.557	0.536
2	0.72	0.655	0.602	0.557	0.633	0.579	0.535	0.498	0.55	0.507	0.47	0.44
3	0.657	0.574	0.511	0.462	0.577	0.509	0.456	0.414	0.501	0.445	0.402	0.366
4	0.6	0.506	0.438	0.387	0.527	0.449	0.391	0.348	0.457	0.393	0.346	0.309
5	0.549	0.448	0.379	0.329	0.482	0.398	0.339	0.295	0.418	0.349	0.3	0.263
6	0.504	0.399	0.331	0.282	0.442	0.355	0.296	0.254	0.384	0.312	0.262	0.226
7	0.464	0.358	0.291	0.244	0.407	0.318	0.261	0.22	0.354	0.28	0.231	0.196
8	0.428	0.322	0.257	0.213	0.376	0.287	0.231	0.192	0.327	0.253	0.205	0.172
9	0.397	0.292	0.229	0.187	0.349	0.26	0.206	0.169	0.304	0.229	0.183	0.151
10	0.369	0.266	0.205	0.165	0.325	0.237	0.184	0.149	0.283	0.209	0.164	0.134

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	0.484	0.484	0.484	0.484	0.318	0.318	0.318	0.165	0.165	0.165	0.093
1	0.439	0.423	0.409	0.396	0.279	0.271	0.264	0.146	0.142	0.139	0.079
2	0.398	0.37	0.347	0.327	0.245	0.232	0.22	0.128	0.123	0.118	0.067
3	0.361	0.326	0.298	0.274	0.216	0.2	0.186	0.114	0.106	0.1	0.057
4	0.33	0.289	0.257	0.232	0.192	0.173	0.158	0.101	0.093	0.086	0.049
5	0.302	0.257	0.224	0.199	0.171	0.151	0.136	0.091	0.082	0.074	0.043
6	0.277	0.23	0.196	0.171	0.154	0.133	0.118	0.082	0.073	0.065	0.037
7	0.256	0.207	0.174	0.149	0.139	0.118	0.103	0.075	0.065	0.057	0.033
8	0.237	0.187	0.154	0.131	0.126	0.106	0.091	0.068	0.058	0.051	0.03
9	0.22	0.17	0.138	0.116	0.115	0.095	0.08	0.063	0.053	0.046	0.027
10	0.205	0.156	0.124	0.103	0.105	0.086	0.072	0.058	0.048	0.041	0.024

Average Luminance Table (cd/m²)

	0	45	90
0	2271	2271	2271
45	1536	2046	2180
55	1062	1810	2139
65	125	1640	2575
75	0	1160	1654
85	0	25	739

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.

