



LUMINAIRE TESTING LABORATORY, INC.

SUSTAINING
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IESNA

905 Harrison Street • Allentown, PA 18103 • 610-770-1044 • Fax 610-770-8912 • www.LuminaireTesting.com

LTL NUMBER: 14717

DATE: 02-20-2009

PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING

CATALOG NUMBER: LM3S-04-X-4-X-TWA-X-120-T8

LUMINAIRE: FORMED STEEL AND EXTRUDED ALUMINUM HOUSING, FORMED SPECULAR ALUMINUM CENTER REFLECTOR, TRANSLUCENT WHITE ACRYLIC LOWER LENSES, 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-1SN-SC

MOUNTING: PENDANT

ELECTRICAL VALUES: 120.0VAC, 0.9241A, 110.79W

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	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	
5	232	230	229	231	234	231	229	230	232	230	229	231	234	231	229	230	22.0
15	221	223	223	224	227	224	223	223	221	223	223	224	227	224	223	223	63.1
25	204	206	206	210	212	210	206	206	204	206	206	210	212	210	206	206	95.6
35	181	181	184	188	191	188	184	181	181	181	184	188	191	188	184	181	115.5
45	150	150	155	160	163	160	155	150	150	150	155	160	163	160	155	150	119.7
55	113	115	120	125	129	125	120	115	113	115	120	125	129	125	120	115	107.7
65	75	78	84	96	102	96	84	78	75	78	84	96	102	96	84	78	85.9
75	36	40	58	74	81	74	58	40	36	40	58	74	81	74	58	40	61.2
85	1	16	35	51	58	51	35	16	1	16	35	51	58	51	35	16	36.6
90	0	5	27	43	50	43	27	5	0	5	27	43	50	43	27	5	
95	47	201	235	249	254	249	235	201	47	201	235	249	254	249	235	201	243.4
105	280	677	853	904	918	904	853	677	280	677	853	904	918	904	853	677	798.5
115	561	1077	1329	1492	1533	1492	1329	1077	561	1077	1329	1492	1533	1492	1329	1077	1218.7
125	842	1381	1715	1859	1916	1859	1715	1381	842	1381	1715	1859	1916	1859	1715	1381	1415.1
135	1102	1553	1974	2176	2228	2176	1974	1553	1102	1553	1974	2176	2228	2176	1974	1553	1420.2
145	1329	1663	2086	2308	2376	2308	2086	1663	1329	1663	2086	2308	2376	2308	2086	1663	1238.0
155	1510	1726	2019	2240	2319	2240	2019	1726	1510	1726	2019	2240	2319	2240	2019	1726	913.2
165	1638	1740	1889	2006	2052	2006	1889	1740	1638	1740	1889	2006	2052	2006	1889	1740	531.7
175	1706	1720	1748	1775	1787	1775	1748	1720	1706	1720	1748	1775	1787	1775	1748	1720	168.7
180	1708	1708	1708	1708	1708	1708	1708	1708	1708	1708	1708	1708	1708	1708	1708	1708	

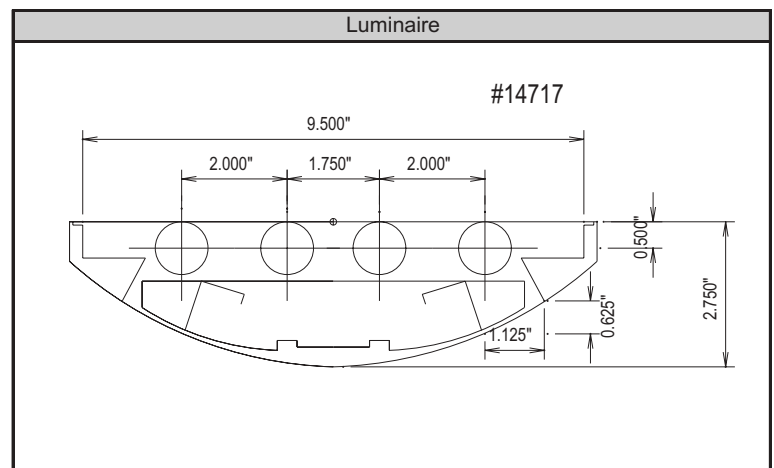
Zonal Lumen Summary

Zone	Lumens	% of Lamp	% of Luminaire
0-30	180.6	1.6%	2.1%
0-40	296.1	2.6%	3.4%
0-60	523.5	4.6%	6.0%
0-90	707.2	6.2%	8.2%
90-180	7947.5	69.7%	91.8%
0-180	8654.7	75.9%	100.0%

Total luminaire efficiency: 75.9%

CIE Type: Indirect

Spacing Criterion: 0 deg: 1.24 90 deg: 1.29
180 deg: 1.24 270 deg: 1.29



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	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233
5	232	230	229	231	234	231	229	230	232	230	229	231	234	231	229	230
10	228	228	228	228	231	228	228	228	228	228	228	228	231	228	228	228
15	221	223	223	224	227	224	223	223	221	223	223	224	227	224	223	223
20	214	215	215	218	220	218	215	215	214	215	215	218	220	218	215	215
25	204	206	206	210	212	210	206	206	204	206	206	210	212	210	206	206
30	193	194	195	200	202	200	195	194	193	194	195	200	202	200	195	194
35	181	181	184	188	191	188	184	181	181	181	184	188	191	188	184	181
40	166	166	170	175	178	175	170	166	166	166	170	175	178	175	170	166
45	150	150	155	160	163	160	155	150	150	150	155	160	163	160	155	150
50	132	134	138	143	146	143	138	134	132	134	138	143	146	143	138	134
55	113	115	120	125	129	125	120	115	113	115	120	125	129	125	120	115
60	94	97	102	108	113	108	102	97	94	97	102	108	113	108	102	97
65	75	78	84	96	102	96	84	78	75	78	84	96	102	96	84	78
70	55	59	69	85	92	85	69	59	55	59	69	85	92	85	69	59
75	36	40	58	74	81	74	58	40	36	40	58	74	81	74	58	40
80	18	27	47	63	69	63	47	27	18	27	47	63	69	63	47	27
85	1	16	35	51	58	51	35	16	1	16	35	51	58	51	35	16
90	0	5	27	43	50	43	27	5	0	5	27	43	50	43	27	5
95	47	201	235	249	254	249	235	201	47	201	235	249	254	249	235	201
100	152	468	545	572	579	572	545	468	152	468	545	572	579	572	545	468
105	280	677	853	904	918	904	853	677	280	677	853	904	918	904	853	677
110	418	887	1126	1220	1245	1220	1126	887	418	887	1126	1220	1245	1220	1126	887
115	561	1077	1329	1492	1533	1492	1329	1077	561	1077	1329	1492	1533	1492	1329	1077
120	703	1240	1523	1690	1752	1690	1523	1240	703	1240	1523	1690	1752	1690	1523	1240
125	842	1381	1715	1859	1916	1859	1715	1381	842	1381	1715	1859	1916	1859	1715	1381
130	975	1479	1870	2031	2079	2031	1870	1479	975	1479	1870	2031	2079	2031	1870	1479
135	1102	1553	1974	2176	2228	2176	1974	1553	1102	1553	1974	2176	2228	2176	1974	1553
140	1221	1613	2052	2260	2330	2260	2052	1613	1221	1613	2052	2260	2330	2260	2052	1613
145	1329	1663	2086	2308	2376	2308	2086	1663	1329	1663	2086	2308	2376	2308	2086	1663
150	1426	1702	2067	2314	2385	2314	2067	1702	1426	1702	2067	2314	2385	2314	2067	1702
155	1510	1726	2019	2240	2319	2240	2019	1726	1510	1726	2019	2240	2319	2240	2019	1726
160	1582	1738	1957	2128	2194	2128	1957	1738	1582	1738	1957	2128	2194	2128	1957	1738
165	1638	1740	1889	2006	2052	2006	1889	1740	1638	1740	1889	2006	2052	2006	1889	1740
170	1680	1734	1815	1885	1914	1885	1815	1734	1680	1734	1815	1885	1914	1885	1815	1734
175	1706	1720	1748	1775	1787	1775	1748	1720	1706	1720	1748	1775	1787	1775	1748	1720
180	1708	1708	1708	1708	1708	1708	1708	1708	1708	1708	1708	1708	1708	1708	1708	1708

Zonal Lumen Tabulation (5 degree zones)

Zone	Lumens		Zone	Lumens		Zone	Lumens		Zone	Lumens
0-5	5.5		45-50	59.3		90-95	55.2		135-140	698.3
5-10	16.4		50-55	56.2		95-100	188.2		140-145	652.0
10-15	26.8		55-60	51.5		100-105	334.0		145-150	586.1
15-20	36.3		60-65	45.9		105-110	464.5		150-155	503.5
20-25	44.4		65-70	40.0		110-115	572.0		155-160	409.7
25-30	51.1		70-75	33.8		115-120	646.7		160-165	313.3
30-35	56.2		75-80	27.3		120-125	694.5		165-170	218.4
35-40	59.3		80-85	21.1		125-130	720.6		170-175	127.4
40-45	60.4		85-90	15.4		130-135	721.9		175-180	41.4



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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	0.841	0.841	0.841	0.841	0.738	0.738	0.738	0.738	0.64	0.64	0.64	0.64
1	0.766	0.727	0.693	0.663	0.67	0.639	0.611	0.586	0.58	0.554	0.532	0.511
2	0.697	0.633	0.581	0.537	0.609	0.557	0.513	0.476	0.526	0.483	0.448	0.418
3	0.636	0.554	0.493	0.444	0.555	0.488	0.436	0.395	0.478	0.424	0.382	0.347
4	0.58	0.488	0.422	0.372	0.506	0.43	0.374	0.332	0.436	0.374	0.328	0.292
5	0.531	0.432	0.364	0.315	0.463	0.381	0.323	0.281	0.399	0.332	0.284	0.248
6	0.487	0.384	0.317	0.269	0.425	0.339	0.282	0.241	0.366	0.296	0.248	0.213
7	0.448	0.344	0.278	0.233	0.391	0.304	0.248	0.208	0.337	0.265	0.218	0.184
8	0.413	0.31	0.246	0.203	0.361	0.274	0.219	0.182	0.312	0.239	0.193	0.161
9	0.383	0.28	0.219	0.178	0.335	0.248	0.195	0.159	0.289	0.217	0.172	0.141
10	0.356	0.255	0.196	0.157	0.311	0.226	0.175	0.141	0.269	0.197	0.154	0.125

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	0.456	0.456	0.456	0.456	0.288	0.288	0.288	0.134	0.134	0.134	0.062
1	0.411	0.396	0.382	0.369	0.25	0.243	0.236	0.116	0.113	0.11	0.05
2	0.372	0.346	0.323	0.304	0.219	0.206	0.196	0.102	0.097	0.092	0.041
3	0.338	0.304	0.277	0.254	0.193	0.177	0.164	0.09	0.083	0.078	0.034
4	0.308	0.269	0.238	0.215	0.171	0.153	0.139	0.08	0.072	0.066	0.029
5	0.281	0.239	0.207	0.183	0.152	0.134	0.119	0.071	0.063	0.057	0.025
6	0.258	0.213	0.181	0.157	0.136	0.117	0.103	0.064	0.056	0.049	0.022
7	0.238	0.192	0.16	0.137	0.123	0.104	0.09	0.058	0.05	0.043	0.019
8	0.22	0.173	0.142	0.119	0.111	0.092	0.079	0.053	0.045	0.038	0.017
9	0.205	0.157	0.127	0.105	0.101	0.083	0.069	0.048	0.04	0.034	0.015
10	0.191	0.144	0.114	0.093	0.093	0.074	0.062	0.044	0.036	0.03	0.014

Average Luminance Table (cd/m²)

	0	45	90
0	1232	1232	1232
45	1121	1278	1216
55	1046	1190	1187
65	934	1079	1259
75	738	1129	1445
85	44	1452	2005

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.



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