



# 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: 14712 DATE: 02-27-2009  
 PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING  
 CATALOG NUMBER: LM3S-04-X-4-X-PBW-X-120-T8  
 LUMINAIRE: FORMED STEEL AND EXTRUDED ALUMINUM HOUSING, FORMED SEMI-SPECULAR CENTER REFLECTOR, 48 CELL, 3/4" DEEP, FORMED WHITE ENAMEL 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, 0.9318A, 111.50W

### 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	377	377	377	377	377	377	377	377	377	377	377	377	377	377	377	377	
5	372	371	372	376	379	376	372	371	372	371	372	376	379	376	372	371	35.5
15	338	345	359	379	390	379	359	345	338	345	359	379	390	379	359	345	102.5
25	293	309	345	389	408	389	345	309	293	309	345	389	408	389	345	309	160.3
35	242	267	318	348	364	348	318	267	242	267	318	348	364	348	318	267	192.6
45	183	220	253	266	278	266	253	220	183	220	253	266	278	266	253	220	186.3
55	117	154	172	174	185	174	172	154	117	154	172	174	185	174	172	154	147.3
65	62	86	101	147	172	147	101	86	62	86	101	147	172	147	101	86	111.5
75	28	32	64	80	88	80	64	32	28	32	64	80	88	80	64	32	63.5
85	0	10	27	40	47	40	27	10	0	10	27	40	47	40	27	10	28.5
90	0	2	21	37	44	37	21	2	0	2	21	37	44	37	21	2	
95	61	196	228	245	252	245	228	196	61	196	228	245	252	245	228	196	238.7
105	349	705	841	864	872	864	841	705	349	705	841	864	872	864	841	705	796.9
115	690	1115	1349	1500	1531	1500	1349	1115	690	1115	1349	1500	1531	1500	1349	1115	1249.2
125	1020	1463	1734	1876	1928	1876	1734	1463	1020	1463	1734	1876	1928	1876	1734	1463	1462.8
135	1319	1685	2023	2187	2237	2187	2023	1685	1319	1685	2023	2187	2237	2187	2023	1685	1480.2
145	1577	1852	2195	2374	2425	2374	2195	1852	1577	1852	2195	2374	2425	2374	2195	1852	1317.7
155	1784	1963	2194	2371	2441	2371	2194	1963	1784	1963	2194	2371	2441	2371	2194	1963	998.5
165	1928	2014	2134	2229	2266	2229	2134	2014	1928	2014	2134	2229	2266	2229	2134	2014	601.1
175	2004	2017	2039	2061	2072	2061	2039	2017	2004	2017	2039	2061	2072	2061	2039	2017	196.0
180	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	

### Zonal Lumen Summary

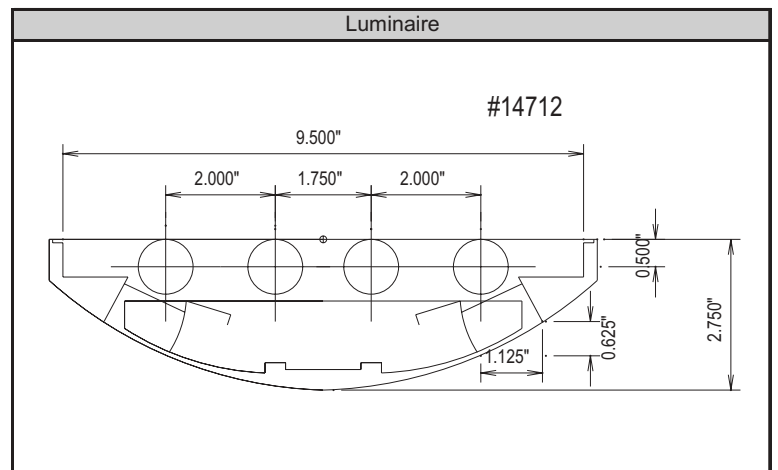
Zone	Lumens	% of Lamp	% of Luminaire
0-30	298.3	2.6%	3.2%
0-40	490.9	4.3%	5.2%
0-60	824.4	7.2%	8.8%
0-90	1028.0	9.0%	11.0%
90-180	8341.1	73.2%	89.0%
0-180	9369.1	82.2%	100.0%

Total luminaire efficiency: 82.2%

CIE Type: Semi-Indirect

Spacing Criterion: 0 deg: 1.08    90 deg: 1.46  
 180 deg: 1.08    270 deg: 1.46

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	377	377	377	377	377	377	377	377	377	377	377	377	377	377	377	377
5	372	371	372	376	379	376	372	371	372	371	372	376	379	376	372	371
10	357	360	368	377	383	377	368	360	357	360	368	377	383	377	368	360
15	338	345	359	379	390	379	359	345	338	345	359	379	390	379	359	345
20	317	328	351	385	402	385	351	328	317	328	351	385	402	385	351	328
25	293	309	345	389	408	389	345	309	293	309	345	389	408	389	345	309
30	269	288	337	376	394	376	337	288	269	288	337	376	394	376	337	288
35	242	267	318	348	364	348	318	267	242	267	318	348	364	348	318	267
40	213	245	289	310	324	310	289	245	213	245	289	310	324	310	289	245
45	183	220	253	266	278	266	253	220	183	220	253	266	278	266	253	220
50	152	188	214	219	229	219	214	188	152	188	214	219	229	219	214	188
55	117	154	172	174	185	174	172	154	117	154	172	174	185	174	172	154
60	82	120	133	151	183	151	133	120	82	120	133	151	183	151	133	120
65	62	86	101	147	172	147	101	86	62	86	101	147	172	147	101	86
70	45	53	88	121	139	121	88	53	45	53	88	121	139	121	88	53
75	28	32	64	80	88	80	64	32	28	32	64	80	88	80	64	32
80	12	19	40	55	63	55	40	19	12	19	40	55	63	55	40	19
85	0	10	27	40	47	40	27	10	0	10	27	40	47	40	27	10
90	0	2	21	37	44	37	21	2	0	2	21	37	44	37	21	2
95	61	196	228	245	252	245	228	196	61	196	228	245	252	245	228	196
100	192	478	519	541	549	541	519	478	192	478	519	541	549	541	519	478
105	349	705	841	864	872	864	841	705	349	705	841	864	872	864	841	705
110	518	918	1139	1199	1210	1199	1139	918	518	918	1139	1199	1210	1199	1139	918
115	690	1115	1349	1500	1531	1500	1349	1115	690	1115	1349	1500	1531	1500	1349	1115
120	859	1299	1548	1701	1762	1701	1548	1299	859	1299	1548	1701	1762	1701	1548	1299
125	1020	1463	1734	1876	1928	1876	1734	1463	1020	1463	1734	1876	1928	1876	1734	1463
130	1174	1586	1895	2046	2095	2046	1895	1586	1174	1586	1895	2046	2095	2046	1895	1586
135	1319	1685	2023	2187	2237	2187	2023	1685	1319	1685	2023	2187	2237	2187	2023	1685
140	1454	1773	2133	2290	2349	2290	2133	1773	1454	1773	2133	2290	2349	2290	2133	1773
145	1577	1852	2195	2374	2425	2374	2195	1852	1577	1852	2195	2374	2425	2374	2195	1852
150	1688	1915	2204	2414	2474	2414	2204	1915	1688	1915	2204	2414	2474	2414	2204	1915
155	1784	1963	2194	2371	2441	2371	2194	1963	1784	1963	2194	2371	2441	2371	2194	1963
160	1864	1996	2170	2304	2358	2304	2170	1996	1864	1996	2170	2304	2358	2304	2170	1996
165	1928	2014	2134	2229	2266	2229	2134	2014	1928	2014	2134	2229	2266	2229	2134	2014
170	1975	2021	2088	2145	2168	2145	2088	2021	1975	2021	2088	2145	2168	2145	2088	2021
175	2004	2017	2039	2061	2072	2061	2039	2017	2004	2017	2039	2061	2072	2061	2039	2017
180	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009

Zonal Lumen Tabulation (5 degree zones)

Zone	Lumens	Zone	Lumens	Zone	Lumens	Zone	Lumens
0-5	9.0	45-50	90.0	90-95	54.6	135-140	730.6
5-10	26.5	50-55	79.4	95-100	184.1	140-145	689.8
10-15	43.3	55-60	67.9	100-105	329.5	145-150	628.0
15-20	59.2	60-65	60.3	105-110	467.4	150-155	546.7
20-25	74.0	65-70	51.2	110-115	583.6	155-160	451.9
25-30	86.3	70-75	38.2	115-120	665.6	160-165	351.7
30-35	94.6	75-80	25.3	120-125	717.0	165-170	249.4
35-40	98.0	80-85	16.8	125-130	745.8	170-175	147.6
40-45	96.4	85-90	11.7	130-135	749.6	175-180	48.4



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	0.913	0.913	0.913	0.913	0.804	0.804	0.804	0.804	0.7	0.7	0.7	0.7
1	0.833	0.792	0.755	0.722	0.732	0.698	0.668	0.641	0.636	0.609	0.584	0.562
2	0.759	0.69	0.633	0.586	0.666	0.609	0.562	0.522	0.578	0.532	0.493	0.46
3	0.692	0.605	0.538	0.485	0.607	0.534	0.479	0.434	0.526	0.467	0.421	0.384
4	0.632	0.533	0.461	0.407	0.554	0.471	0.411	0.365	0.48	0.412	0.362	0.323
5	0.578	0.472	0.398	0.345	0.507	0.418	0.356	0.31	0.439	0.366	0.314	0.275
6	0.531	0.42	0.347	0.296	0.465	0.373	0.31	0.266	0.403	0.327	0.274	0.236
7	0.489	0.376	0.305	0.256	0.428	0.334	0.273	0.231	0.371	0.293	0.242	0.205
8	0.451	0.339	0.27	0.223	0.396	0.301	0.242	0.201	0.343	0.265	0.214	0.179
9	0.418	0.307	0.24	0.196	0.367	0.273	0.216	0.177	0.319	0.24	0.191	0.158
10	0.388	0.279	0.215	0.173	0.341	0.249	0.193	0.156	0.297	0.219	0.171	0.139

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	0.507	0.507	0.507	0.507	0.329	0.329	0.329	0.167	0.167	0.167	0.09
1	0.458	0.442	0.426	0.412	0.288	0.279	0.272	0.146	0.143	0.139	0.075
2	0.415	0.386	0.362	0.341	0.253	0.239	0.226	0.129	0.123	0.117	0.063
3	0.377	0.34	0.31	0.286	0.223	0.206	0.191	0.114	0.106	0.1	0.054
4	0.344	0.301	0.268	0.242	0.198	0.178	0.163	0.102	0.093	0.086	0.046
5	0.315	0.268	0.233	0.206	0.176	0.156	0.14	0.091	0.082	0.074	0.04
6	0.289	0.24	0.204	0.178	0.158	0.137	0.121	0.082	0.072	0.065	0.035
7	0.267	0.216	0.181	0.155	0.143	0.122	0.106	0.075	0.065	0.057	0.031
8	0.247	0.195	0.16	0.136	0.13	0.108	0.093	0.068	0.058	0.051	0.028
9	0.23	0.177	0.144	0.12	0.118	0.097	0.082	0.063	0.053	0.045	0.025
10	0.214	0.162	0.129	0.106	0.108	0.088	0.073	0.058	0.048	0.041	0.023

Average Luminance Table (cd/m<sup>2</sup>)

	0	45	90
0	2056	2056	2056
45	1413	2078	2145
55	1116	1690	1743
65	806	1287	2071
75	582	1205	1516
85	0	1026	1512

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.

