



LUMINAIRE TESTING LABORATORY, INC.

SUSTAINING
MEMBER
of the
IESNA

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LTL NUMBER: 14719
 PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING
 CATALOG NUMBER: LM3S-02-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: TWO 32 WATT T8 LINEAR FLUORESCENT LAMPS RATED AT 2850 LUMENS EACH.
 LAMP CATALOG NUMBER: SYLVANIA FO32/741/ECO
 BALLAST: ONE SYLVANIA QTP2X32T8/UNV-ISN-SC
 MOUNTING: PENDANT
 ELECTRICAL VALUES: 120.0VAC, 0.4637A, 55.53W

DATE: 02-27-2009

Candela Distribution

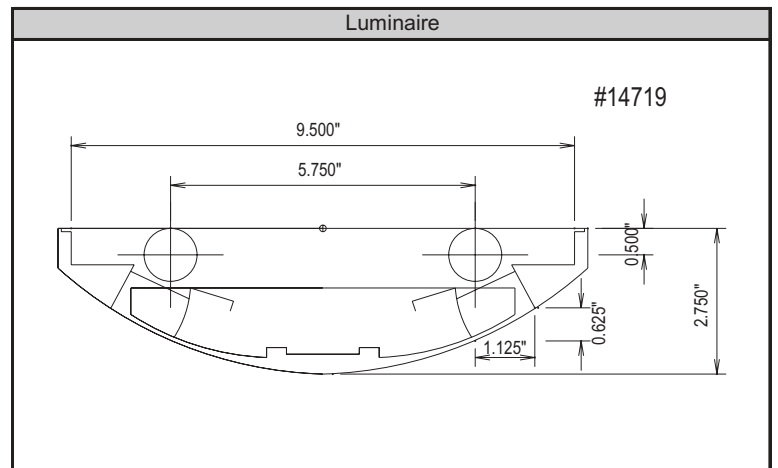
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	Flux
0	211	211	211	211	211	211	211	211	211	211	211	211	211	211	211	211	
5	209	209	209	210	211	210	209	209	209	209	209	210	211	210	209	209	19.9
15	200	201	203	204	205	204	203	201	200	201	203	204	205	204	203	201	57.2
25	185	186	188	190	191	190	188	186	185	186	188	190	191	190	188	186	86.7
35	164	164	167	170	171	170	167	164	164	164	167	170	171	170	167	164	104.5
45	136	137	140	143	145	143	140	137	136	137	140	143	145	143	140	137	108.2
55	104	106	109	113	114	113	109	106	104	106	109	113	114	113	109	106	97.7
65	70	72	77	87	92	87	77	72	70	72	77	87	92	87	77	72	78.7
75	36	38	55	69	73	69	55	38	36	38	55	69	73	69	55	38	57.3
85	4	17	35	48	53	48	35	17	4	17	35	48	53	48	35	17	35.8
90	0	9	27	40	46	40	27	9	0	9	27	40	46	40	27	9	
95	18	181	256	278	282	278	256	181	18	181	256	278	282	278	256	181	234.4
105	116	341	662	760	785	760	662	341	116	341	662	760	785	760	662	341	574.5
115	241	396	723	963	1047	963	723	396	241	396	723	963	1047	963	723	396	674.1
125	368	483	712	945	1027	945	712	483	368	483	712	945	1027	945	712	483	635.2
135	488	572	722	866	932	866	722	572	488	572	722	866	932	866	722	572	556.5
145	593	648	749	836	872	836	749	648	593	648	749	836	872	836	749	648	465.4
155	678	707	768	821	841	821	768	707	678	707	768	821	841	821	768	707	353.1
165	738	747	775	800	809	800	775	747	738	747	775	800	809	800	775	747	219.1
175	769	766	771	777	779	777	771	766	769	766	771	777	779	777	771	766	73.8
180	770	770	770	770	770	770	770	770	770	770	770	770	770	770	770	770	

Zonal Lumen Summary

Zone	Lumens	% of Lamp	% of Luminaire
0-30	163.7	2.9%	3.7%
0-40	268.3	4.7%	6.1%
0-60	474.2	8.3%	10.7%
0-90	646.1	11.3%	14.6%
90-180	3785.9	66.4%	85.4%
0-180	4432.0	77.8%	100.0%

Total luminaire efficiency: 77.8%

CIE Type: Semi-Indirect
 Spacing Criterion: 0 deg: 1.24 90 deg: 1.28
 180 deg: 1.24 270 deg: 1.28



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	211	211	211	211	211	211	211	211	211	211	211	211	211	211	211	211
5	209	209	209	210	211	210	209	209	209	209	209	210	211	210	209	209
10	206	206	206	208	209	208	206	206	206	206	206	208	209	208	206	206
15	200	201	203	204	205	204	203	201	200	201	203	204	205	204	203	201
20	194	194	196	198	199	198	196	194	194	194	196	198	199	198	196	194
25	185	186	188	190	191	190	188	186	185	186	188	190	191	190	188	186
30	175	175	178	181	182	181	178	175	175	175	178	181	182	181	178	175
35	164	164	167	170	171	170	167	164	164	164	167	170	171	170	167	164
40	150	151	154	157	159	157	154	151	150	151	154	157	159	157	154	151
45	136	137	140	143	145	143	140	137	136	137	140	143	145	143	140	137
50	121	122	125	128	130	128	125	122	121	122	125	128	130	128	125	122
55	104	106	109	113	114	113	109	106	104	106	109	113	114	113	109	106
60	87	89	93	98	101	98	93	89	87	89	93	98	101	98	93	89
65	70	72	77	87	92	87	77	72	70	72	77	87	92	87	77	72
70	53	55	64	78	83	78	64	55	53	55	64	78	83	78	64	55
75	36	38	55	69	73	69	55	38	36	38	55	69	73	69	55	38
80	19	27	45	59	64	59	45	27	19	27	45	59	64	59	45	27
85	4	17	35	48	53	48	35	17	4	17	35	48	53	48	35	17
90	0	9	27	40	46	40	27	9	0	9	27	40	46	40	27	9
95	18	181	256	278	282	278	256	181	18	181	256	278	282	278	256	181
100	61	305	471	547	580	547	471	305	61	305	471	547	580	547	471	305
105	116	341	662	760	785	760	662	341	116	341	662	760	785	760	662	341
110	177	363	707	939	994	939	707	363	177	363	707	939	994	939	707	363
115	241	396	723	963	1047	963	723	396	241	396	723	963	1047	963	723	396
120	305	438	724	962	1045	962	724	438	305	438	724	962	1045	962	724	438
125	368	483	712	945	1027	945	712	483	368	483	712	945	1027	945	712	483
130	430	529	711	906	985	906	711	529	430	529	711	906	985	906	711	529
135	488	572	722	866	932	866	722	572	488	572	722	866	932	866	722	572
140	543	611	735	849	894	849	735	611	543	611	735	849	894	849	735	611
145	593	648	749	836	872	836	749	648	593	648	749	836	872	836	749	648
150	639	680	761	828	855	828	761	680	639	680	761	828	855	828	761	680
155	678	707	768	821	841	821	768	707	678	707	768	821	841	821	768	707
160	711	729	773	810	826	810	773	729	711	729	773	810	826	810	773	729
165	738	747	775	800	809	800	775	747	738	747	775	800	809	800	775	747
170	757	760	773	787	793	787	773	760	757	760	773	787	793	787	773	760
175	769	766	771	777	779	777	771	766	769	766	771	777	779	777	771	766
180	770	770	770	770	770	770	770	770	770	770	770	770	770	770	770	770

Zonal Lumen Tabulation (5 degree zones)

Zone	Lumens	Zone	Lumens	Zone	Lumens	Zone	Lumens
0-5	5.0	45-50	53.6	90-95	59.1	135-140	267.4
5-10	14.9	50-55	50.9	95-100	175.3	140-145	245.2
10-15	24.3	55-60	46.8	100-105	257.9	145-150	220.2
15-20	32.9	60-65	41.9	105-110	316.6	150-155	192.1
20-25	40.3	65-70	36.8	110-115	337.8	155-160	160.9
25-30	46.4	70-75	31.4	115-120	336.2	160-165	127.3
30-35	50.9	75-80	25.9	120-125	325.9	165-170	91.8
35-40	53.7	80-85	20.5	125-130	309.3	170-175	55.3
40-45	54.6	85-90	15.3	130-135	289.1	175-180	18.4



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	0.867	0.867	0.867	0.867	0.768	0.768	0.768	0.768	0.672	0.672	0.672	0.672
1	0.789	0.749	0.714	0.682	0.696	0.664	0.634	0.608	0.609	0.582	0.558	0.536
2	0.718	0.652	0.597	0.552	0.633	0.578	0.532	0.494	0.552	0.507	0.469	0.437
3	0.655	0.571	0.506	0.456	0.576	0.506	0.452	0.409	0.502	0.445	0.4	0.363
4	0.598	0.502	0.434	0.382	0.526	0.446	0.388	0.344	0.458	0.392	0.343	0.306
5	0.547	0.445	0.375	0.324	0.481	0.395	0.336	0.292	0.419	0.348	0.298	0.26
6	0.502	0.396	0.327	0.277	0.441	0.353	0.293	0.25	0.385	0.311	0.26	0.223
7	0.462	0.355	0.287	0.24	0.407	0.316	0.258	0.217	0.354	0.279	0.229	0.194
8	0.427	0.32	0.254	0.209	0.376	0.285	0.228	0.189	0.328	0.252	0.203	0.169
9	0.395	0.29	0.226	0.184	0.349	0.259	0.204	0.167	0.304	0.229	0.181	0.149
10	0.367	0.264	0.203	0.163	0.324	0.236	0.182	0.147	0.283	0.208	0.163	0.132

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	0.495	0.495	0.495	0.495	0.333	0.333	0.333	0.183	0.183	0.183	0.113
1	0.445	0.429	0.413	0.399	0.288	0.279	0.27	0.158	0.154	0.15	0.091
2	0.403	0.374	0.349	0.328	0.251	0.237	0.224	0.138	0.131	0.124	0.074
3	0.366	0.328	0.299	0.274	0.221	0.203	0.188	0.121	0.112	0.105	0.062
4	0.333	0.29	0.258	0.232	0.196	0.176	0.159	0.108	0.098	0.089	0.053
5	0.305	0.258	0.224	0.198	0.174	0.153	0.137	0.096	0.086	0.077	0.046
6	0.28	0.231	0.196	0.17	0.157	0.135	0.118	0.087	0.076	0.067	0.04
7	0.258	0.208	0.173	0.148	0.141	0.12	0.103	0.079	0.068	0.059	0.035
8	0.239	0.188	0.154	0.13	0.128	0.107	0.091	0.072	0.061	0.052	0.031
9	0.223	0.171	0.138	0.115	0.117	0.096	0.08	0.066	0.055	0.047	0.028
10	0.208	0.156	0.124	0.102	0.107	0.086	0.072	0.061	0.05	0.042	0.025

Average Luminance Table (cd/m²)

	0	45	90
0	1151	1151	1151
45	1050	1150	1117
55	993	1072	1078
65	906	972	1105
75	751	1029	1262
85	276	1356	1715

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.

