



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: 15064 DATE: 04-17-2009
 PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING
 CATALOG NUMBER: LM3P-01-X-TWA-X-120-T5HO
 LUMINAIRE: FORMED STEEL AND EXTRUDED ALUMINUM HOUSING, FORMED SPECULAR ALUMINUM CENTER REFLECTOR, TRANSLUCENT WHITE ACRYLIC LOWER LENSES, OPEN TOP.
 LAMP: ONE 54 WATT HIGH OUTPUT T5 LINEAR FLUORESCENT LAMP RATED AT 4400 LUMENS.
 LAMP CATALOG NUMBER: SYLVANIA FP54/841/HO/ECO
 BALLAST: ONE UNIVERSAL LIGHTING TECHNOLOGIES B254PUNV-D
 MOUNTING: WALL
 ELECTRICAL VALUES: 120.0VAC, 0.5145A, 61.56W

Candela Distribution

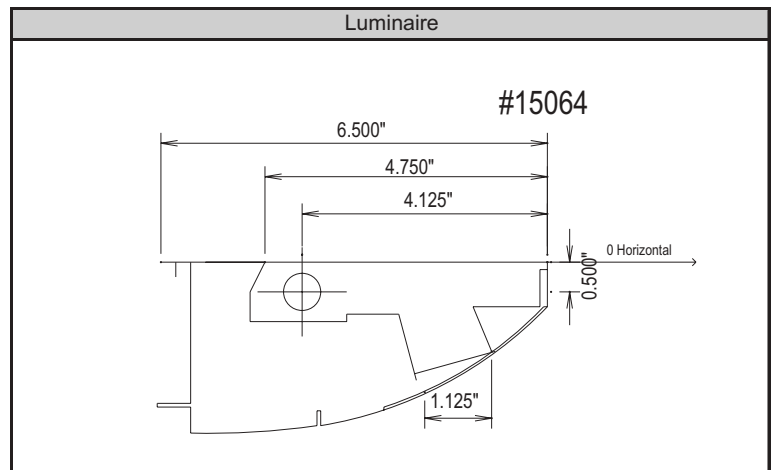
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	Flux
0	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	
5	19	17	16	17	17	19	19	18	19	18	19	19	17	17	16	17	1.7
15	19	18	16	15	16	19	17	15	17	15	17	19	16	15	16	18	4.7
25	20	18	16	14	15	16	12	12	12	12	12	16	15	14	16	18	6.8
35	19	18	16	13	12	11	9	9	9	9	9	11	12	13	16	18	8.0
45	18	17	15	12	9	7	6	5	5	5	6	7	9	12	15	17	7.9
55	16	14	12	9	6	4	2	1	1	1	2	4	6	9	12	14	6.3
65	13	11	9	6	2	1	0	0	0	0	0	1	2	6	9	11	4.6
75	10	8	6	3	0	0	0	0	0	0	0	0	0	3	6	8	3.0
85	7	5	4	1	0	0	0	0	0	0	0	0	0	1	4	5	1.6
90	3	2	1	0	0	0	0	0	0	0	0	0	0	0	1	2	
95	314	311	308	241	20	54	150	149	144	149	150	54	20	241	308	311	187.9
105	944	904	711	464	121	89	91	177	218	177	91	89	121	464	711	904	408.6
115	1017	940	866	696	240	250	159	134	136	134	159	250	240	696	866	940	482.9
125	1284	1287	1145	657	359	400	318	256	242	256	318	400	359	657	1145	1287	576.7
135	1458	1406	1126	694	469	531	498	450	418	450	498	531	469	694	1126	1406	589.0
145	1376	1252	950	689	565	660	624	606	600	606	624	660	565	689	950	1252	497.5
155	1061	1030	876	684	640	770	736	713	710	713	736	770	640	684	876	1030	365.5
165	849	821	752	674	694	819	830	816	812	816	830	819	694	674	752	821	221.3
175	692	688	677	691	723	765	798	825	834	825	798	765	723	691	677	688	71.8
180	728	728	728	728	728	728	728	728	728	728	728	728	728	728	728	728	

Zonal Lumen Summary

Zone	Lumens	% of Lamp	% of Luminaire
0-30	13.3	0.3%	0.4%
0-40	21.3	0.5%	0.6%
0-60	35.5	0.8%	1.0%
0-90	44.7	1.0%	1.3%
90-180	3401.1	77.3%	98.7%
0-180	3445.8	78.3%	100.0%

Total luminaire efficiency: 78.3%

CIE Type: Indirect
 Spacing Criterion: 0 deg: 1.58 90 deg: 1.10
 180 deg: 0.96 270 deg: 1.10



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	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
5	19	17	16	17	17	19	19	18	19	18	19	19	17	17	16	17
10	19	17	16	16	17	20	19	17	18	17	19	20	17	16	16	17
15	19	18	16	15	16	19	17	15	17	15	17	19	16	15	16	18
20	20	18	16	15	15	18	14	14	15	14	14	18	15	15	16	18
25	20	18	16	14	15	16	12	12	12	12	12	16	15	14	16	18
30	20	18	16	14	13	13	11	10	11	10	11	13	13	14	16	18
35	19	18	16	13	12	11	9	9	9	9	9	11	12	13	16	18
40	19	17	15	13	11	9	8	7	7	7	8	9	11	13	15	17
45	18	17	15	12	9	7	6	5	5	5	6	7	9	12	15	17
50	17	15	13	11	8	6	4	3	3	3	4	6	8	11	13	15
55	16	14	12	9	6	4	2	1	1	1	2	4	6	9	12	14
60	14	13	11	8	4	2	0	0	0	0	0	2	4	8	11	13
65	13	11	9	6	2	1	0	0	0	0	0	1	2	6	9	11
70	12	10	7	5	1	0	0	0	0	0	0	0	1	5	7	10
75	10	8	6	3	0	0	0	0	0	0	0	0	0	3	6	8
80	8	7	4	1	0	0	0	0	0	0	0	0	0	1	4	7
85	7	5	4	1	0	0	0	0	0	0	0	0	0	1	4	5
90	3	2	1	0	0	0	0	0	0	0	0	0	0	0	1	2
95	314	311	308	241	20	54	150	149	144	149	150	54	20	241	308	311
100	701	688	589	320	65	44	138	263	305	263	138	44	65	320	589	688
105	944	904	711	464	121	89	91	177	218	177	91	89	121	464	711	904
110	1070	971	706	605	180	158	104	126	149	126	104	158	180	605	706	971
115	1017	940	866	696	240	250	159	134	136	134	159	250	240	696	866	940
120	1071	1065	1055	690	300	328	228	187	176	187	228	328	300	690	1055	1065
125	1284	1287	1145	657	359	400	318	256	242	256	318	400	359	657	1145	1287
130	1411	1364	1195	676	416	466	422	336	317	336	422	466	416	676	1195	1364
135	1458	1406	1126	694	469	531	498	450	418	450	498	531	469	694	1126	1406
140	1491	1398	1030	693	518	597	565	535	527	535	565	597	518	693	1030	1398
145	1376	1252	950	689	565	660	624	606	600	606	624	660	565	689	950	1252
150	1181	1081	945	688	605	719	678	663	659	663	678	719	605	688	945	1081
155	1061	1030	876	684	640	770	736	713	710	713	736	770	640	684	876	1030
160	977	927	805	678	671	812	786	766	760	766	786	812	671	678	805	927
165	849	821	752	674	694	819	830	816	812	816	830	819	694	674	752	821
170	758	743	707	670	712	794	855	854	855	854	855	794	712	670	707	743
175	692	688	677	691	723	765	798	825	834	825	798	765	723	691	677	688
180	728	728	728	728	728	728	728	728	728	728	728	728	728	728	728	728

Zonal Lumen Tabulation (5 degree zones)

Zone	Lumens	Zone	Lumens	Zone	Lumens	Zone	Lumens
0-5	0.4	45-50	3.9	90-95	41.0	135-140	289.2
5-10	1.3	50-55	3.4	95-100	147.0	140-145	264.6
10-15	2.0	55-60	2.9	100-105	192.3	145-150	232.8
15-20	2.7	60-65	2.5	105-110	216.4	150-155	199.4
20-25	3.2	65-70	2.1	110-115	229.9	155-160	166.1
25-30	3.6	70-75	1.7	115-120	253.0	160-165	129.4
30-35	3.9	75-80	1.3	120-125	279.2	165-170	91.9
35-40	4.1	80-85	1.0	125-130	297.5	170-175	54.2
40-45	4.1	85-90	0.7	130-135	299.7	175-180	17.5



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	0.861	0.861	0.861	0.861	0.748	0.748	0.748	0.748	0.641	0.641	0.641	0.641
1	0.785	0.746	0.711	0.68	0.68	0.649	0.621	0.595	0.582	0.557	0.534	0.514
2	0.715	0.649	0.596	0.551	0.619	0.566	0.522	0.485	0.528	0.486	0.45	0.42
3	0.652	0.569	0.506	0.456	0.564	0.496	0.444	0.402	0.481	0.426	0.384	0.35
4	0.595	0.501	0.433	0.382	0.514	0.437	0.381	0.338	0.438	0.376	0.33	0.294
5	0.544	0.443	0.373	0.323	0.47	0.387	0.329	0.286	0.4	0.333	0.285	0.249
6	0.499	0.394	0.325	0.276	0.431	0.344	0.286	0.245	0.367	0.297	0.249	0.214
7	0.459	0.352	0.285	0.238	0.396	0.308	0.251	0.212	0.338	0.266	0.219	0.185
8	0.423	0.317	0.251	0.207	0.366	0.278	0.222	0.184	0.312	0.24	0.193	0.161
9	0.391	0.286	0.223	0.181	0.339	0.251	0.197	0.161	0.289	0.217	0.172	0.141
10	0.363	0.26	0.199	0.159	0.315	0.228	0.176	0.142	0.269	0.197	0.153	0.124

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	0.441	0.441	0.441	0.441	0.257	0.257	0.257	0.089	0.089	0.089	0.01
1	0.398	0.383	0.37	0.358	0.225	0.218	0.212	0.078	0.076	0.074	0.008
2	0.36	0.335	0.314	0.295	0.197	0.186	0.176	0.068	0.065	0.062	0.007
3	0.327	0.295	0.269	0.247	0.173	0.16	0.148	0.06	0.056	0.053	0.006
4	0.298	0.261	0.232	0.209	0.153	0.138	0.126	0.054	0.049	0.045	0.005
5	0.272	0.231	0.201	0.178	0.136	0.12	0.107	0.048	0.043	0.039	0.005
6	0.25	0.206	0.175	0.152	0.122	0.105	0.092	0.043	0.037	0.033	0.004
7	0.23	0.185	0.154	0.132	0.11	0.093	0.08	0.039	0.033	0.029	0.004
8	0.213	0.167	0.137	0.115	0.099	0.082	0.07	0.035	0.03	0.025	0.003
9	0.197	0.152	0.122	0.101	0.09	0.073	0.061	0.032	0.026	0.022	0.003
10	0.184	0.138	0.109	0.089	0.082	0.066	0.054	0.029	0.024	0.02	0.003

Average Luminance Table (cd/m²)

	0	45	90
0	711	711	711
45	815	693	519
55	817	665	399
65	820	623	228
75	821	548	25
85	830	564	0

Note: The zonal cavity calculation technique is accurate when luminaires with symmetric candela distributions are employed and when the luminaires are located symmetrically throughout the room. This unit has special characteristics and therefore these values should be used with caution.

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.

