



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: 15058

DATE: 04-13-2009

PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING

CATALOG NUMBER: LM3P-02-X-PBW-X-120-T5HO

LUMINAIRE: FORMED STEEL AND EXTRUDED ALUMINUM HOUSING, FORMED SPECULAR ALUMINUM REFLECTOR, 28 CELL, 3/4" DEEP, FORMED WHITE ENAMEL ALUMINUM LOUVER, OPEN TOP.

LAMP: TWO 54 WATT HIGH OUTPUT T5 LINEAR FLUORESCENT LAMPS RATED AT 4400 LUMENS EACH.

LAMP CATALOG NUMBER: SYLVANIA FP54/841/HO/ECO

BALLAST: ONE UNIVERSAL LIGHTING TECHNOLOGIES B254PUNV-D

MOUNTING: WALL

ELECTRICAL VALUES: 120.0VAC, 1.006A, 120.53W

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	277	277	277	277	277	277	277	277	277	277	277	277	277	277	277	277	
5	376	365	342	310	274	240	210	189	186	189	210	240	274	310	342	365	26.4
15	533	521	457	358	250	162	126	132	137	132	126	162	250	358	457	521	82.1
25	488	473	445	377	219	119	126	131	125	131	126	119	219	377	445	473	126.3
35	482	436	376	347	183	109	96	79	76	79	96	109	183	347	376	436	149.5
45	425	405	332	262	140	85	56	39	35	39	56	85	140	262	332	405	148.6
55	248	251	259	182	89	49	20	4	5	4	20	49	89	182	259	251	109.9
65	231	165	142	115	52	18	0	0	0	0	0	18	52	115	142	165	77.7
75	166	160	127	57	23	0	0	0	0	0	0	0	23	57	127	160	59.5
85	89	79	55	25	0	0	0	0	0	0	0	0	0	25	55	79	28.4
90	69	59	37	11	0	0	0	0	0	0	0	0	0	11	37	59	
95	365	348	308	223	50	154	113	84	76	84	113	154	50	223	308	348	213.2
105	924	897	847	717	293	419	535	635	636	635	535	419	293	717	847	897	663.2
115	1404	1313	1339	1055	571	702	748	799	832	799	748	702	571	1055	1339	1313	949.8
125	1986	1970	1755	1133	837	969	1021	1036	1048	1036	1021	969	837	1133	1755	1970	1139.3
135	2250	2163	1763	1295	1074	1215	1274	1291	1295	1291	1274	1215	1074	1295	1763	2163	1142.5
145	2146	2002	1711	1393	1279	1447	1456	1494	1509	1494	1456	1447	1279	1393	1711	2002	988.7
155	1923	1862	1674	1482	1441	1631	1635	1636	1642	1636	1635	1631	1441	1482	1674	1862	757.6
165	1705	1673	1600	1534	1556	1703	1763	1771	1769	1771	1763	1703	1556	1534	1600	1673	472.2
175	1579	1569	1562	1583	1615	1667	1707	1730	1743	1730	1707	1667	1615	1583	1562	1569	157.4
180	1627	1627	1627	1627	1627	1627	1627	1627	1627	1627	1627	1627	1627	1627	1627	1627	

Zonal Lumen Summary

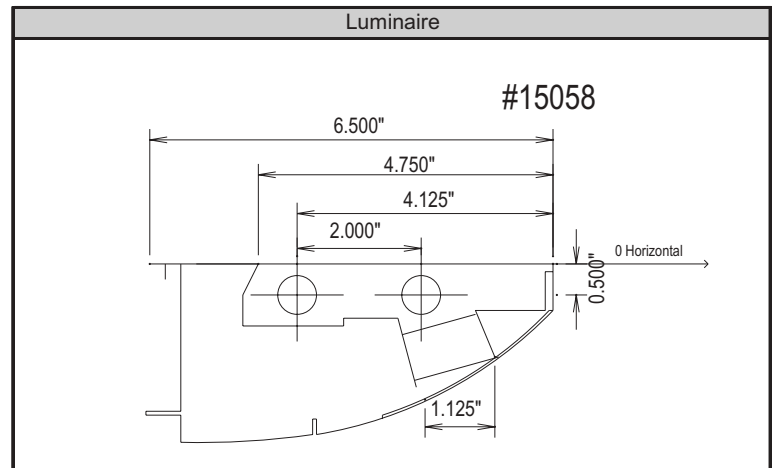
Zone	Lumens	% of Lamp	% of Luminaire
0-30	234.9	2.7%	3.2%
0-40	384.4	4.4%	5.3%
0-60	642.9	7.3%	8.8%
0-90	808.4	9.2%	11.1%
90-180	6483.9	73.7%	88.9%
0-180	7292.3	82.9%	100.0%

Total luminaire efficiency: 82.9%

CIE Type: Semi-Indirect

Spacing Criterion: 0 deg: 2.06 90 deg: 1.10
180 deg: 0.27 270 deg: 1.10

Shielding angle: 0 deg: 31 90 deg: 26



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	277	277	277	277	277	277	277	277	277	277	277	277	277	277	277	277
5	376	365	342	310	274	240	210	189	186	189	210	240	274	310	342	365
10	475	454	405	339	263	200	147	126	129	126	147	200	263	339	405	454
15	533	521	457	358	250	162	126	132	137	132	126	162	250	358	457	521
20	512	501	478	370	235	132	128	136	142	136	128	132	235	370	478	501
25	488	473	445	377	219	119	126	131	125	131	126	119	219	377	445	473
30	477	447	411	373	203	116	121	101	99	101	121	116	203	373	411	447
35	482	436	376	347	183	109	96	79	76	79	96	109	183	347	376	436
40	486	446	349	305	162	99	75	59	55	59	75	99	162	305	349	446
45	425	405	332	262	140	85	56	39	35	39	56	85	140	262	332	405
50	337	331	313	221	115	66	38	21	17	21	38	66	115	221	313	331
55	248	251	259	182	89	49	20	4	5	4	20	49	89	182	259	251
60	164	176	198	147	68	33	5	1	3	1	5	33	68	147	198	176
65	231	165	142	115	52	18	0	0	0	0	0	18	52	115	142	165
70	289	243	114	78	37	4	0	0	0	0	0	4	37	78	114	243
75	166	160	127	57	23	0	0	0	0	0	0	0	23	57	127	160
80	115	102	78	40	10	0	0	0	0	0	0	0	10	40	78	102
85	89	79	55	25	0	0	0	0	0	0	0	0	0	25	55	79
90	69	59	37	11	0	0	0	0	0	0	0	0	0	11	37	59
95	365	348	308	223	50	154	113	84	76	84	113	154	50	223	308	348
100	661	640	565	437	161	290	385	350	336	350	385	290	161	437	565	640
105	924	897	847	717	293	419	535	635	636	635	535	419	293	717	847	897
110	1224	1211	992	926	431	560	625	725	771	725	625	560	431	926	992	1211
115	1404	1313	1339	1055	571	702	748	799	832	799	748	702	571	1055	1339	1313
120	1569	1626	1628	1098	707	844	881	912	923	912	881	844	707	1098	1628	1626
125	1986	1970	1755	1133	837	969	1021	1036	1048	1036	1021	969	837	1133	1755	1970
130	2188	2100	1812	1235	961	1093	1146	1163	1168	1163	1146	1093	961	1235	1812	2100
135	2250	2163	1763	1295	1074	1215	1274	1291	1295	1291	1274	1215	1074	1295	1763	2163
140	2275	2122	1711	1351	1181	1332	1371	1402	1411	1402	1371	1332	1181	1351	1711	2122
145	2146	2002	1711	1393	1279	1447	1456	1494	1509	1494	1456	1447	1279	1393	1711	2002
150	1973	1878	1717	1444	1367	1552	1545	1567	1579	1567	1545	1552	1367	1444	1717	1878
155	1923	1862	1674	1482	1441	1631	1635	1636	1642	1636	1635	1631	1441	1482	1674	1862
160	1815	1758	1630	1505	1504	1696	1711	1703	1716	1703	1711	1696	1504	1505	1630	1758
165	1705	1673	1600	1534	1556	1703	1763	1771	1769	1771	1763	1703	1556	1534	1600	1673
170	1633	1612	1579	1548	1593	1696	1774	1805	1807	1805	1774	1696	1593	1548	1579	1633
175	1579	1569	1562	1583	1615	1667	1707	1730	1743	1730	1707	1667	1615	1583	1562	1579
180	1627	1627	1627	1627	1627	1627	1627	1627	1627	1627	1627	1627	1627	1627	1627	1627

Zonal Lumen Tabulation (5 degree zones)

Zone	Lumens	Zone	Lumens	Zone	Lumens	Zone	Lumens
0-5	6.6	45-50	71.7	90-95	48.3	135-140	560.1
5-10	19.8	50-55	61.3	95-100	164.9	140-145	519.8
10-15	34.1	55-60	48.6	100-105	281.9	145-150	468.9
15-20	48.0	60-65	38.3	105-110	381.3	150-155	411.0
20-25	59.1	65-70	39.3	110-115	447.8	155-160	346.7
25-30	67.3	70-75	35.6	115-120	502.0	160-165	274.3
30-35	72.9	75-80	23.9	120-125	555.1	165-170	197.8
35-40	76.6	80-85	16.5	125-130	584.3	170-175	118.4
40-45	76.9	85-90	11.9	130-135	582.3	175-180	39.0



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	0.921	0.921	0.921	0.921	0.811	0.811	0.811	0.811	0.707	0.707	0.707	0.707
1	0.839	0.798	0.761	0.728	0.738	0.704	0.673	0.646	0.641	0.614	0.589	0.566
2	0.765	0.695	0.638	0.59	0.671	0.614	0.566	0.526	0.582	0.536	0.497	0.464
3	0.698	0.609	0.542	0.489	0.611	0.539	0.482	0.437	0.53	0.471	0.424	0.386
4	0.637	0.537	0.465	0.41	0.558	0.475	0.414	0.368	0.484	0.416	0.365	0.326
5	0.583	0.475	0.402	0.348	0.511	0.421	0.358	0.312	0.443	0.369	0.316	0.277
6	0.535	0.423	0.35	0.298	0.469	0.376	0.313	0.268	0.406	0.329	0.277	0.238
7	0.493	0.38	0.308	0.258	0.432	0.337	0.275	0.232	0.375	0.296	0.244	0.207
8	0.455	0.342	0.272	0.225	0.399	0.304	0.244	0.203	0.346	0.267	0.216	0.181
9	0.421	0.31	0.242	0.198	0.37	0.275	0.217	0.178	0.321	0.242	0.193	0.159
10	0.391	0.281	0.217	0.175	0.344	0.251	0.195	0.158	0.299	0.221	0.173	0.141

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	0.511	0.511	0.511	0.511	0.333	0.333	0.333	0.169	0.169	0.169	0.092
1	0.462	0.445	0.43	0.415	0.29	0.282	0.274	0.148	0.144	0.141	0.076
2	0.419	0.389	0.365	0.343	0.255	0.241	0.228	0.13	0.124	0.118	0.064
3	0.381	0.343	0.313	0.288	0.225	0.207	0.192	0.115	0.107	0.101	0.054
4	0.347	0.304	0.27	0.244	0.199	0.18	0.164	0.103	0.094	0.086	0.047
5	0.318	0.27	0.235	0.208	0.178	0.157	0.141	0.092	0.082	0.075	0.041
6	0.292	0.242	0.206	0.18	0.16	0.138	0.122	0.083	0.073	0.065	0.036
7	0.269	0.218	0.182	0.156	0.144	0.123	0.107	0.076	0.065	0.058	0.032
8	0.249	0.197	0.162	0.137	0.131	0.109	0.094	0.069	0.059	0.051	0.028
9	0.232	0.179	0.145	0.121	0.119	0.098	0.083	0.063	0.053	0.046	0.026
10	0.216	0.163	0.13	0.107	0.109	0.089	0.074	0.058	0.048	0.041	0.023

Average Luminance Table (cd/m²)

	0	45	90
0	10769	10769	10769
45	19069	15775	7660
55	12748	14311	6052
65	14391	9759	4733
75	13600	12050	3424
85	11180	8791	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.

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