



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: 14720

DATE: 03-09-2009

PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING

CATALOG NUMBER: LM3S-02-X-4-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: TWO 54 WATT HIGH OUTPUT T5 LINEAR FLUORESCENT LAMPS RATED AT 4400 LUMENS EACH.

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

BALLAST: ONE ADVANCE ICN-2S54

MOUNTING: PENDANT

ELECTRICAL VALUES: 120.0VAC, 1.0361A, 123.95W

Candela Distribution

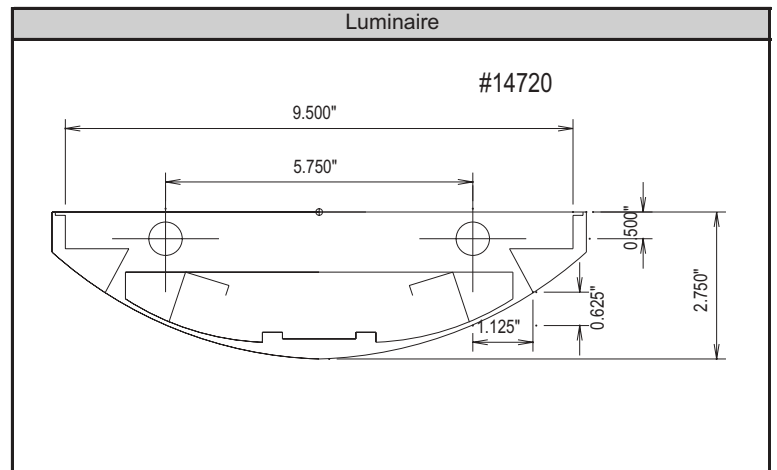
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	Flux
0	353	353	353	353	353	353	353	353	353	353	353	353	353	353	353	353	
5	351	349	349	351	353	351	349	349	351	349	349	351	353	351	349	349	33.3
15	336	336	339	342	343	342	339	336	336	336	339	342	343	342	339	336	95.6
25	310	310	313	317	319	317	313	310	310	310	313	317	319	317	313	310	144.6
35	273	274	278	283	285	283	278	274	273	274	278	283	285	283	278	274	174.3
45	227	229	234	240	242	240	234	229	227	229	234	240	242	240	234	229	180.7
55	174	177	182	189	192	189	182	177	174	177	182	189	192	189	182	177	163.4
65	117	121	128	146	154	146	128	121	117	121	128	146	154	146	128	121	131.8
75	59	64	92	115	123	115	92	64	59	64	92	115	123	115	92	64	96.0
85	7	29	59	81	89	81	59	29	7	29	59	81	89	81	59	29	59.7
90	0	14	43	64	72	64	43	14	0	14	43	64	72	64	43	14	
95	37	361	566	691	707	691	566	361	37	361	566	691	707	691	566	361	481.1
105	222	535	1110	1476	1563	1476	1110	535	222	535	1110	1476	1563	1476	1110	535	1027.4
115	446	668	1110	1531	1688	1531	1110	668	446	668	1110	1531	1688	1531	1110	668	1084.4
125	669	809	1150	1424	1544	1424	1150	809	669	809	1150	1424	1544	1424	1150	809	1009.1
135	877	966	1187	1412	1496	1412	1187	966	877	966	1187	1412	1496	1412	1187	966	918.2
145	1058	1109	1231	1367	1425	1367	1231	1109	1058	1109	1231	1367	1425	1367	1231	1109	776.6
155	1203	1225	1290	1353	1380	1353	1290	1225	1203	1225	1290	1353	1380	1353	1290	1225	596.2
165	1305	1309	1335	1362	1374	1362	1335	1309	1305	1309	1335	1362	1374	1362	1335	1309	378.0
175	1360	1349	1356	1364	1367	1364	1356	1349	1360	1349	1356	1364	1367	1364	1356	1349	129.4
180	1358	1358	1358	1358	1358	1358	1358	1358	1358	1358	1358	1358	1358	1358	1358	1358	

Zonal Lumen Summary

Zone	Lumens	% of Lamp	% of Luminaire
0-30	273.5	3.1%	3.7%
0-40	447.8	5.1%	6.0%
0-60	791.9	9.0%	10.6%
0-90	1079.4	12.3%	14.4%
90-180	6400.4	72.7%	85.6%
0-180	7479.8	85.0%	100.0%

Total luminaire efficiency: 85.0%

CIE Type: Semi-Indirect
 Spacing Criterion: 0 deg: 1.24 90 deg: 1.27
 180 deg: 1.24 270 deg: 1.27



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	353	353	353	353	353	353	353	353	353	353	353	353	353	353	353	353
5	351	349	349	351	353	351	349	349	351	349	349	351	353	351	349	349
10	345	344	345	348	349	348	345	344	345	344	345	348	349	348	345	344
15	336	336	339	342	343	342	339	336	336	336	339	342	343	342	339	336
20	324	325	327	331	332	331	327	325	324	325	327	331	332	331	327	325
25	310	310	313	317	319	317	313	310	310	310	313	317	319	317	313	310
30	293	293	297	301	303	301	297	293	293	293	297	301	303	301	297	293
35	273	274	278	283	285	283	278	274	273	274	278	283	285	283	278	274
40	251	252	257	263	265	263	257	252	251	252	257	263	265	263	257	252
45	227	229	234	240	242	240	234	229	227	229	234	240	242	240	234	229
50	202	204	209	215	217	215	209	204	202	204	209	215	217	215	209	204
55	174	177	182	189	192	189	182	177	174	177	182	189	192	189	182	177
60	146	149	155	164	170	164	155	149	146	149	155	164	170	164	155	149
65	117	121	128	146	154	146	128	121	117	121	128	146	154	146	128	121
70	88	92	108	131	139	131	108	92	88	92	108	131	139	131	108	92
75	59	64	92	115	123	115	92	64	59	64	92	115	123	115	92	64
80	32	45	76	98	106	98	76	45	32	45	76	98	106	98	76	45
85	7	29	59	81	89	81	59	29	7	29	59	81	89	81	59	29
90	0	14	43	64	72	64	43	14	0	14	43	64	72	64	43	14
95	37	361	566	691	707	691	566	361	37	361	566	691	707	691	566	361
100	121	515	947	1048	1085	1048	947	515	121	515	947	1048	1085	1048	947	515
105	222	535	1110	1476	1563	1476	1110	535	222	535	1110	1476	1563	1476	1110	535
110	332	596	1131	1540	1666	1540	1131	596	332	596	1131	1540	1666	1540	1131	596
115	446	668	1110	1531	1688	1531	1110	668	446	668	1110	1531	1688	1531	1110	668
120	558	737	1116	1478	1627	1478	1116	737	558	737	1116	1478	1627	1478	1116	737
125	669	809	1150	1424	1544	1424	1150	809	669	809	1150	1424	1544	1424	1150	809
130	776	888	1171	1419	1508	1419	1171	888	776	888	1171	1419	1508	1419	1171	888
135	877	966	1187	1412	1496	1412	1187	966	877	966	1187	1412	1496	1412	1187	966
140	972	1040	1206	1388	1463	1388	1206	1040	972	1040	1206	1388	1463	1388	1206	1040
145	1058	1109	1231	1367	1425	1367	1231	1109	1058	1109	1231	1367	1425	1367	1231	1109
150	1136	1170	1261	1353	1396	1353	1261	1170	1136	1170	1261	1353	1396	1353	1261	1170
155	1203	1225	1290	1353	1380	1353	1290	1225	1203	1225	1290	1353	1380	1353	1290	1225
160	1259	1273	1316	1358	1376	1358	1316	1273	1259	1273	1316	1358	1376	1358	1316	1273
165	1305	1309	1335	1362	1374	1362	1335	1309	1305	1309	1335	1362	1374	1362	1335	1309
170	1339	1335	1349	1365	1370	1365	1349	1335	1339	1335	1349	1365	1370	1365	1349	1335
175	1360	1349	1356	1364	1367	1364	1356	1349	1360	1349	1356	1364	1367	1364	1356	1349
180	1358	1358	1358	1358	1358	1358	1358	1358	1358	1358	1358	1358	1358	1358	1358	1358

Zonal Lumen Tabulation (5 degree zones)

Zone	Lumens	Zone	Lumens	Zone	Lumens	Zone	Lumens
0-5	8.4	45-50	89.6	90-95	132.3	135-140	444.6
5-10	24.9	50-55	85.2	95-100	348.8	140-145	408.6
10-15	40.6	55-60	78.3	100-105	484.0	145-150	368.0
15-20	55.0	60-65	70.2	105-110	543.4	150-155	322.9
20-25	67.3	65-70	61.6	110-115	549.7	155-160	273.3
25-30	77.3	70-75	52.7	115-120	534.7	160-165	218.6
30-35	84.8	75-80	43.3	120-125	514.3	165-170	159.4
35-40	89.5	80-85	34.3	125-130	494.8	170-175	96.9
40-45	91.1	85-90	25.4	130-135	473.6	175-180	32.5



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	0.948	0.948	0.948	0.948	0.839	0.839	0.839	0.839	0.735	0.735	0.735	0.735
1	0.862	0.819	0.78	0.745	0.761	0.725	0.693	0.664	0.665	0.636	0.609	0.585
2	0.785	0.712	0.653	0.603	0.692	0.631	0.581	0.54	0.603	0.554	0.513	0.478
3	0.716	0.624	0.554	0.498	0.63	0.553	0.494	0.447	0.548	0.486	0.437	0.397
4	0.653	0.549	0.474	0.418	0.574	0.488	0.424	0.375	0.5	0.429	0.375	0.334
5	0.598	0.486	0.409	0.354	0.525	0.432	0.367	0.319	0.458	0.38	0.325	0.284
6	0.548	0.433	0.357	0.303	0.482	0.385	0.32	0.273	0.42	0.339	0.284	0.244
7	0.505	0.388	0.314	0.262	0.444	0.346	0.282	0.237	0.387	0.305	0.25	0.212
8	0.466	0.35	0.278	0.229	0.411	0.312	0.25	0.207	0.358	0.275	0.222	0.185
9	0.432	0.317	0.247	0.201	0.381	0.283	0.223	0.182	0.332	0.25	0.198	0.163
10	0.402	0.288	0.221	0.178	0.354	0.257	0.199	0.161	0.309	0.228	0.178	0.144

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	0.54	0.54	0.54	0.54	0.363	0.363	0.363	0.199	0.199	0.199	0.123
1	0.486	0.468	0.451	0.436	0.314	0.304	0.295	0.172	0.167	0.163	0.098
2	0.44	0.408	0.381	0.358	0.274	0.258	0.244	0.15	0.142	0.135	0.081
3	0.399	0.359	0.326	0.299	0.241	0.221	0.205	0.132	0.122	0.114	0.067
4	0.364	0.317	0.281	0.253	0.213	0.192	0.174	0.117	0.106	0.097	0.057
5	0.333	0.282	0.244	0.216	0.19	0.167	0.149	0.105	0.093	0.084	0.049
6	0.306	0.252	0.214	0.186	0.171	0.147	0.129	0.095	0.082	0.073	0.043
7	0.282	0.227	0.189	0.162	0.154	0.13	0.113	0.086	0.074	0.064	0.038
8	0.261	0.205	0.168	0.142	0.14	0.116	0.099	0.078	0.066	0.057	0.034
9	0.243	0.187	0.151	0.125	0.128	0.104	0.088	0.072	0.06	0.051	0.03
10	0.227	0.171	0.135	0.111	0.117	0.094	0.078	0.066	0.054	0.046	0.027

Average Luminance Table (cd/m²)

	0	45	90
0	1926	1926	1926
45	1753	1992	1867
55	1659	1864	1823
65	1514	1708	1950
75	1254	1834	2265
85	468	2488	3194

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.

