

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SR14SQLEDOA 44L 35K xx FT1414 MW xx FO
14" square recessed LED downlight, flush extruded aluminum door

Test Number

SP-01644_3

Test Date

2/14/2024

The results contained in this report pertain only to this IES file.

Summary of Results

Power

Input Watts	33.7 W
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Lumen Output

Output Lumens	3061
Efficacy	90.84 lm/W

Luminous Dimensions

0° - 180° Size	1.02
90° - 270° Size	1.02
Height	0

Spacing Criterion

Two luminaires, plane 0°	1.23
Two luminaires, plane 90°	1.21
Four luminaires	1.34

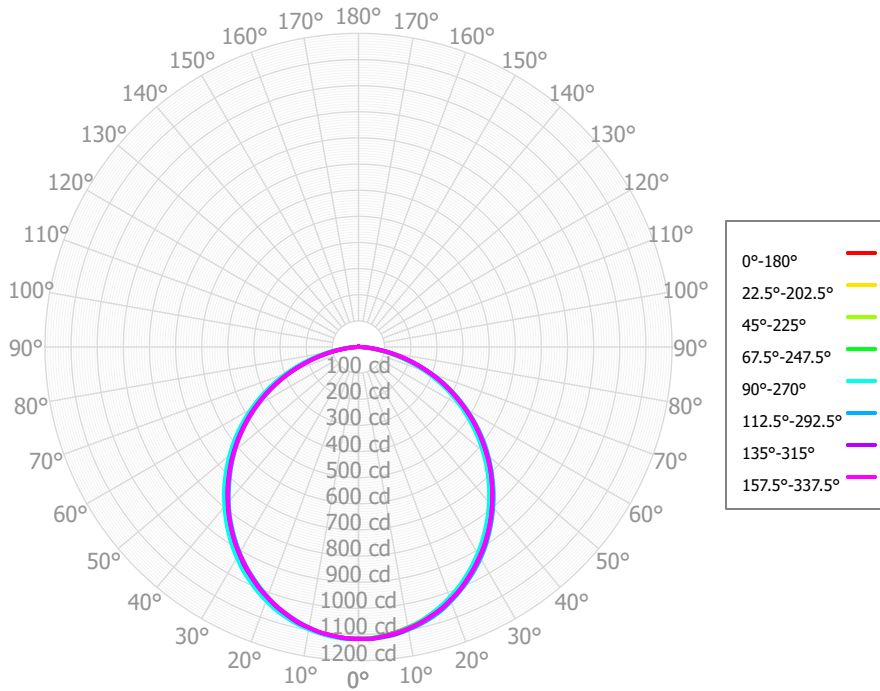
Full Beam Angle

0° - 180°	109°
90° - 270°	109°

IES File Header Contents

Keyword	Value
TEST	SP-01644_3
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	2/14/2024
ISSUEDATE	2/28/2024
LUMCAT	SR14SQLEDOA 44L 35K xx FT1414 MW xx FO
LUMINAIRE	14" square recessed LED downlight, flush extruded aluminum door
OTHER	Beam Angle: 109 deg
OTHER	80 CRI, 3500K tested
OTHER	CCT Output Multipliers: 30K x .97, 40K x 1.02, 50K x 1.01
OTHER	Total luminaire wattages are approximate
OTHER	This report prepared by Spectrum Lighting

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	107.09	3.50%	90.00° - 100.00°	2.71	0.09%
10.00° - 20.00°	300.02	9.80%	100.00° - 110.00°	1.86	0.06%
20.00° - 30.00°	449.62	14.69%	100.00° - 120.00°	3.59	0.12%
30.00° - 40.00°	535.26	17.48%	120.00° - 130.00°	1.65	0.05%
40.00° - 50.00°	548.02	17.90%	130.00° - 140.00°	1.44	0.05%
50.00° - 60.00°	489.59	15.99%	140.00° - 150.00°	1.22	0.04%
60.00° - 70.00°	367.75	12.01%	150.00° - 160.00°	0.93	0.03%
70.00° - 80.00°	202.38	6.61%	160.00° - 170.00°	0.57	0.02%
80.00° - 90.00°	49.38	1.61%	170.00° - 180.00°	0.20	0.01%
0.00° - 90.00°	3049.12	99.60%	0.00° - 180.00°	3061.44	100.00%

Candela Distribution

	0.00°	22.50°	45.00°	67.50°	90.00°	112.50°	135.00°	157.50°	180.00°	202.50°	225.00°	247.50°	270.00°	292.50°	315.00°	337.50°	360.00°
0.00°	1117.07	1117.07	1117.07	1117.07	1117.07	1117.07	1117.07	1117.07	1117.07	1117.07	1117.07	1117.07	1117.07	1117.07	1117.07	1117.07	1117.07
2.50°	1116.41	1117.21	1115.95	1115.08	1115.56	1116.88	1115.81	1115.22	1115.71	1116.46	1116.50	1115.09	1118.98	1118.74	1117.34	1117.81	1116.41
5.00°	1108.72	1111.98	1109.81	1108.66	1110.48	1110.66	1109.57	1109.41	1110.10	1110.55	1110.75	1110.69	1114.18	1114.92	1112.53	1111.10	1108.72
7.50°	1100.97	1106.66	1102.20	1101.46	1103.67	1102.16	1102.80	1102.73	1104.35	1104.51	1104.00	1105.56	1107.25	1108.95	1107.12	1103.81	1100.97
10.00°	1091.41	1094.91	1089.99	1090.29	1092.14	1089.82	1091.61	1090.61	1092.58	1092.28	1093.93	1095.13	1097.38	1099.05	1095.21	1094.17	1091.41
12.50°	1081.54	1083.07	1076.46	1078.18	1078.74	1075.47	1079.67	1077.22	1080.65	1079.93	1082.54	1083.74	1086.46	1087.73	1082.57	1083.37	1081.54
15.00°	1063.47	1065.30	1060.43	1061.34	1060.32	1058.21	1061.63	1059.37	1063.21	1062.42	1066.86	1067.10	1071.41	1073.82	1066.87	1067.91	1063.47
17.50°	1045.28	1047.46	1043.71	1043.58	1041.01	1039.41	1043.07	1040.51	1045.64	1044.80	1049.78	1049.53	1054.90	1057.16	1050.85	1051.39	1045.28
20.00°	1023.89	1026.39	1021.63	1021.21	1019.33	1016.77	1020.32	1018.92	1023.10	1023.09	1028.11	1028.56	1034.11	1035.57	1029.82	1030.61	1023.89
22.50°	1002.31	1005.29	998.07	998.30	996.25	992.13	997.22	996.72	1000.45	1001.25	1005.50	1006.99	1011.84	1012.94	1008.27	1008.76	1002.31
25.00°	976.07	977.90	972.31	972.74	969.54	965.93	971.34	969.27	973.71	974.15	979.86	980.53	986.71	988.45	982.08	982.73	976.07
27.50°	949.69	950.46	945.95	946.37	941.85	938.94	944.88	940.65	946.89	946.99	953.36	953.23	960.61	962.60	955.42	955.96	949.69
30.00°	919.97	921.04	915.51	916.04	911.65	908.93	913.91	911.80	917.26	917.56	924.12	922.81	931.37	934.36	926.92	926.32	919.97
32.50°	890.10	891.61	883.97	885.32	880.48	877.39	882.68	882.89	887.59	887.96	893.81	891.86	901.07	904.32	898.24	896.12	890.10
35.00°	857.24	857.53	849.92	852.69	846.85	844.05	849.42	848.83	854.12	853.61	860.16	859.47	867.88	871.13	864.64	863.82	857.24
37.50°	824.17	823.44	815.19	819.27	812.60	809.80	815.74	813.66	820.59	819.19	826.18	826.84	833.73	837.20	830.58	830.70	824.17
40.00°	786.76	787.46	778.94	782.22	776.78	772.65	779.02	777.16	784.43	782.89	791.17	790.23	798.13	801.99	794.34	794.46	786.76
42.50°	749.31	751.46	742.29	744.79	740.16	734.06	742.09	740.37	748.23	746.50	755.29	752.98	762.05	765.59	757.91	757.86	749.31
45.00°	711.26	713.37	703.54	705.67	701.54	695.65	703.59	701.03	708.50	707.68	716.76	715.11	723.88	727.16	720.31	719.92	711.26
47.50°	673.05	675.28	664.26	666.23	662.18	657.31	664.81	661.15	668.73	668.80	677.80	677.13	685.03	688.27	682.59	681.43	673.05
50.00°	631.95	634.16	623.36	625.34	621.00	617.26	624.08	620.39	628.90	628.55	637.54	636.16	644.70	648.57	640.84	640.89	631.95
52.50°	590.80	593.04	582.06	584.36	579.28	576.38	583.15	579.45	589.07	588.19	596.81	594.72	603.89	607.89	598.73	600.15	590.80
55.00°	548.88	551.37	540.85	542.92	536.24	533.71	540.85	536.72	546.93	545.54	554.67	552.05	561.32	565.58	556.53	558.70	548.88
57.50°	506.86	509.66	499.66	501.07	493.27	490.18	498.25	493.63	504.77	502.78	512.09	509.19	518.20	522.52	514.31	516.49	506.86
60.00°	463.04	464.29	455.30	457.47	450.47	446.07	453.77	450.50	459.91	457.89	468.22	464.25	474.32	478.23	469.66	471.63	463.04
62.50°	419.12	418.93	410.15	413.41	407.17	401.69	409.23	407.36	415.03	412.98	423.83	418.99	430.20	434.11	424.81	426.86	419.12
65.00°	373.59	374.26	365.81	367.34	362.65	357.03	364.32	361.96	369.24	367.83	377.94	374.61	384.52	390.27	380.72	382.45	373.59
67.50°	328.07	329.60	321.67	321.55	317.88	312.23	319.24	316.12	323.44	322.64	332.19	330.37	338.36	345.22	336.68	337.72	328.07
70.00°	282.63	285.05	276.15	276.99	272.53	266.72	273.15	270.13	277.79	276.59	286.80	284.66	292.34	298.25	290.45	291.86	282.63
72.50°	237.19	240.49	230.31	232.39	227.23	220.89	227.43	224.11	232.14	230.64	241.30	238.75	246.37	252.37	244.04	246.22	237.19
75.00°	191.76	194.84	186.12	187.71	182.07	176.62	184.04	180.00	187.80	186.59	195.46	193.97	201.62	208.25	200.07	201.32	191.76
77.50°	146.78	149.31	142.32	144.01	138.93	133.07	141.27	136.24	143.50	142.80	151.33	149.35	157.23	164.80	156.27	157.21	146.78
80.00°	107.79	109.42	103.18	104.33	100.44	94.51	102.24	97.91	104.17	103.57	111.95	110.07	116.62	122.43	115.54	115.73	107.79
82.50°	69.57	69.81	65.14	66.77	64.56	58.20	64.83	60.57	64.99	64.99	74.57	71.51	77.12	83.62	75.03	76.77	69.57
85.00°	41.09	41.97	37.68	37.70	34.59	32.30	36.99	34.60	37.84	36.91	42.64	42.66	46.98	50.39	45.88	45.98	41.09
87.50°	14.21	14.69	12.64	13.21	12.01	11.08	12.39	10.67	11.01	10.28	16.90	15.09	19.56	24.64	17.48	19.98	14.21
90.00°	7.74	8.13	5.63	6.73	5.99	3.58	6.56	4.79	6.38	5.95	8.08	7.40	8.87	10.51	9.19	9.57	7.74
92.50°	1.75	1.77	2.67	1.63	1.85	2.17	1.58	2.06	1.84	1.87	1.69	2.25	2.96	1.88	2.18	1.60	1.75
95.00°	1.77	1.74	1.93	1.96	1.87	1.73	1.57	1.58	2.00	1.60	1.85	1.82	1.54	1.72	1.91	1.48	1.77
97.50°	1.78	1.73	1.70	2.15	1.83	1.71	1.57	1.49	2.16	1.35	1.92	1.98	1.40	1.64	2.04	1.42	1.78
100.00°	1.82	1.87	1.67	1.83	1.65	1.71	1.67	1.48	2.01	1.48	1.77	1.91	1.50	1.68	2.06	1.55	1.82
102.50°	1.85	2.01	1.70	1.58	1.59	1.70	1.75	1.49	1.87	1.60	1.66	1.82	1.66	1.73	2.08	1.70	1.85
105.00°	1.81	1.93	1.82	1.61	1.81	1.76	1.71	1.53	1.87	1.60	1.65	1.75	1.74	1.78	1.99	1.90	1.81

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

RCR	ptc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	pcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	0	3642	3642	3642	3642	3556	3556	3556	3556	3395	3395	3395	3248	3248	3248	3113	3113	3049
	1	3331	3187	3058	2941	3247	3116	2999	2892	2984	2887	2798	2862	2783	2710	2750	2687	2629
	2	3031	2780	2573	2400	2949	2721	2531	2370	2611	2451	2312	2508	2375	2258	2414	2304	2252
	3	2764	2443	2195	1997	2687	2394	2164	1978	2301	2104	1941	2215	2047	1906	2135	1993	1948
	4	2532	2166	1898	1694	2460	2124	1874	1681	2046	1828	1656	1973	1785	1632	1905	1743	1704
	5	2329	1936	1662	1460	2263	1901	1643	1451	1835	1608	1434	1773	1573	1417	1715	1540	1507
	6	2151	1744	1471	1275	2092	1714	1456	1269	1658	1428	1256	1605	1400	1244	1556	1374	1345
	7	1995	1582	1314	1127	1942	1557	1303	1122	1509	1280	1113	1463	1257	1104	1421	1236	1211
	8	1858	1445	1184	1006	1809	1423	1175	1002	1381	1156	995	1342	1138	988	1306	1120	1098
	9	1737	1327	1075	906	1692	1308	1067	903	1272	1052	897	1238	1037	892	1206	1022	1003
	10	1628	1224	983	822	1589	1208	976	819	1177	963	815	1148	950	811	1120	938	921

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	36.9 fc	15.3 ft
6.5 ft	26.4 fc	18.1 ft
7.5 ft	19.9 fc	20.9 ft
8.0 ft	17.5 fc	22.3 ft
10.0 ft	11.2 fc	27.8 ft
12.0 ft	7.8 fc	33.4 ft
14.0 ft	5.7 fc	39.0 ft
16.0 ft	4.4 fc	44.6 ft
20.0 ft	2.8 fc	55.7 ft
24.0 ft	1.9 fc	66.8 ft
28.0 ft	1.4 fc	78.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	11557	11557	11557
45.00°	10407	10294	10264
55.00°	9901	9756	9672
65.00°	9146	8955	8878
75.00°	7665	7440	7278
85.00°	4877	4473	4106

UGR CIE 190:2010

Ceiling reflectance		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall reflectance		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Plane reflectance		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
2H	2H	20.2	21.8	20.5	22.1	22.4	20.0	21.6	20.4	21.9	22.3
	3H	21.9	23.4	22.3	23.7	24.1	21.8	23.2	22.2	23.6	23.9
	4H	22.5	23.9	22.9	24.3	24.7	22.4	23.8	22.8	24.1	24.5
	6H	23.0	24.2	23.4	24.6	25.0	22.8	24.1	23.2	24.5	24.9
	8H	23.1	24.3	23.5	24.7	25.1	22.9	24.1	23.4	24.5	25.0
	12H	23.1	24.3	23.6	24.7	25.1	23.0	24.2	23.4	24.6	25.0
4H	2H	20.8	22.1	21.2	22.5	22.9	20.6	22.0	21.0	22.4	22.8
	3H	22.7	23.9	23.2	24.3	24.7	22.6	23.8	23.0	24.2	24.6
	4H	23.5	24.5	23.9	25.0	25.4	23.3	24.4	23.8	24.8	25.2
	6H	24.0	25.0	24.5	25.4	25.9	23.9	24.8	24.3	25.2	25.7
	8H	24.2	25.0	24.7	25.5	26.0	24.0	24.9	24.5	25.3	25.8
	12H	24.3	25.1	24.8	25.5	26.0	24.1	24.9	24.6	25.4	25.8
8H	4H	23.8	24.6	24.3	25.1	25.6	23.6	24.5	24.1	24.9	25.4
	6H	24.4	25.1	24.9	25.6	26.1	24.2	24.9	24.7	25.4	25.9
	8H	24.6	25.3	25.2	25.8	26.3	24.4	25.1	24.9	25.6	26.1
	12H	24.8	25.4	25.3	25.9	26.4	24.6	25.1	25.1	25.6	26.2
12H	4H	23.8	24.6	24.3	25.1	25.5	23.6	24.4	24.1	24.9	25.4
	6H	24.5	25.1	25.0	25.6	26.1	24.3	24.9	24.8	25.4	25.9
	8H	24.7	25.3	25.2	25.8	26.4	24.5	25.1	25.0	25.6	26.1

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0