

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SR14SQLEDOA 44L 35K xx RT1414 MW xx FO
14" square recessed LED downlight, regressed extruded aluminum door

Test Number

SP-01645_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	3503
Efficacy	103.94 lm/W

Luminous Dimensions

0° - 180° Size	1.04
90° - 270° Size	1.04
Height	0

Spacing Criterion

Two luminaires, plane 0°	1.21
Two luminaires, plane 90°	1.17
Four luminaires	1.32

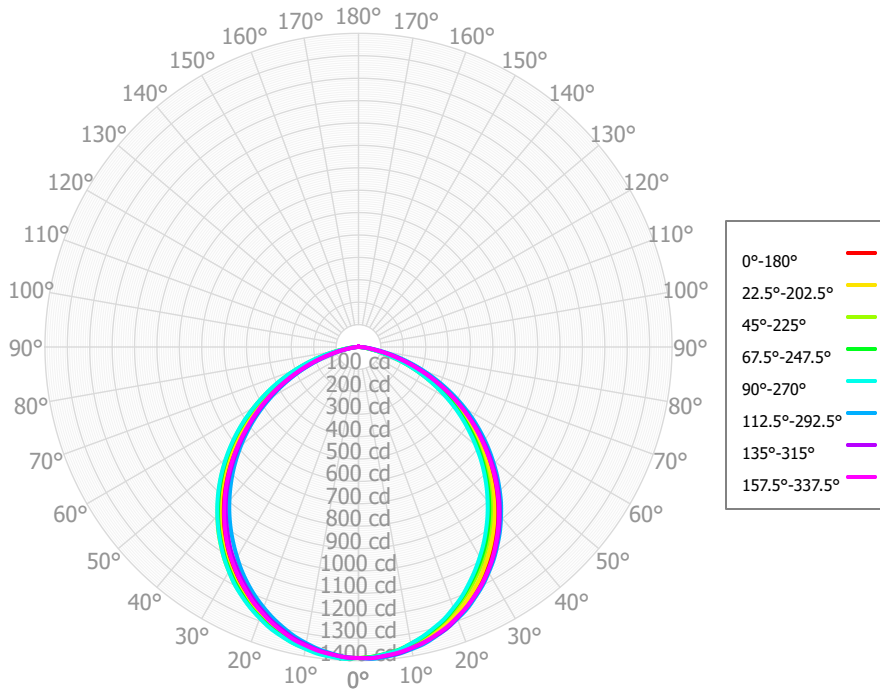
Full Beam Angle

0° - 180°	103°
90° - 270°	103°

IES File Header Contents

Keyword	Value
TEST	SP-01645_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 RT1414 MW xx FO
LUMINAIRE	14" square recessed LED downlight, regressed extruded aluminum door
OTHER	Beam Angle: 103 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°	133.11	3.80%	90.00° - 100.00°	2.40	0.07%
10.00° - 20.00°	372.14	10.62%	100.00° - 110.00°	1.89	0.05%
20.00° - 30.00°	554.83	15.84%	100.00° - 120.00°	3.69	0.11%
30.00° - 40.00°	652.10	18.62%	120.00° - 130.00°	1.73	0.05%
40.00° - 50.00°	650.13	18.56%	130.00° - 140.00°	1.55	0.04%
50.00° - 60.00°	551.76	15.75%	140.00° - 150.00°	1.31	0.04%
60.00° - 70.00°	376.55	10.75%	150.00° - 160.00°	0.99	0.03%
70.00° - 80.00°	168.15	4.80%	160.00° - 170.00°	0.59	0.02%
80.00° - 90.00°	31.62	0.90%	170.00° - 180.00°	0.21	0.01%
0.00° - 90.00°	3490.40	99.64%	0.00° - 180.00°	3502.86	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°	1388.84	1388.84	1388.84	1388.84	1388.84	1388.84	1388.84	1388.84	1388.84	1388.84	1388.84	1388.84	1388.84	1388.84	1388.84	1388.84	1388.84
2.50°	1388.38	1385.70	1384.72	1385.06	1386.39	1385.18	1386.87	1386.60	1387.10	1389.10	1388.29	1391.21	1394.33	1394.08	1389.79	1390.90	1388.38
5.00°	1382.14	1379.45	1377.66	1375.33	1376.22	1373.92	1376.92	1377.98	1381.32	1381.83	1383.34	1384.86	1388.75	1388.84	1385.00	1383.63	1382.14
7.50°	1374.09	1372.20	1367.16	1364.46	1365.76	1361.04	1366.64	1368.80	1374.41	1374.17	1376.57	1378.06	1382.16	1381.96	1379.55	1376.15	1374.09
10.00°	1361.85	1357.64	1349.20	1345.83	1345.04	1342.94	1349.85	1354.00	1359.85	1360.80	1364.77	1365.71	1368.71	1369.99	1365.27	1364.38	1361.85
12.50°	1346.64	1341.76	1329.44	1326.36	1324.10	1322.68	1332.41	1338.09	1343.65	1347.08	1351.77	1353.01	1354.45	1357.38	1350.74	1352.02	1346.64
15.00°	1325.68	1319.21	1306.48	1302.67	1298.88	1296.90	1308.57	1315.03	1323.59	1326.38	1332.46	1332.94	1336.05	1337.36	1334.22	1331.95	1325.68
17.50°	1302.97	1295.71	1280.77	1276.99	1273.03	1269.29	1283.83	1290.90	1302.93	1305.20	1312.03	1312.35	1315.93	1316.74	1315.88	1311.19	1302.97
20.00°	1277.46	1268.48	1250.90	1243.78	1239.75	1237.90	1253.39	1261.81	1276.21	1279.05	1285.01	1285.68	1289.28	1291.55	1287.81	1285.18	1277.46
22.50°	1248.27	1239.55	1218.92	1209.57	1205.68	1204.47	1221.84	1231.24	1248.90	1251.88	1257.16	1258.15	1261.41	1266.16	1259.14	1258.28	1248.27
25.00°	1214.00	1205.47	1184.25	1172.39	1166.00	1167.45	1185.00	1195.32	1213.76	1217.80	1226.43	1224.43	1229.96	1233.58	1227.93	1226.48	1214.00
27.50°	1177.48	1169.40	1146.53	1134.19	1125.82	1127.73	1147.40	1158.48	1178.19	1182.88	1195.50	1189.92	1196.38	1200.72	1195.14	1193.35	1177.48
30.00°	1138.39	1128.26	1105.60	1093.47	1083.08	1084.09	1107.05	1119.05	1138.48	1143.91	1156.81	1151.42	1157.58	1162.81	1157.30	1154.76	1138.39
32.50°	1096.94	1085.86	1062.52	1050.95	1039.64	1039.60	1065.03	1077.61	1098.50	1103.69	1117.80	1111.95	1117.04	1124.40	1118.00	1114.61	1096.94
35.00°	1053.22	1040.85	1017.49	1004.86	993.47	994.07	1018.32	1031.60	1052.41	1058.83	1073.83	1068.63	1073.05	1081.29	1075.00	1069.56	1053.22
37.50°	1005.34	993.90	969.81	957.38	946.40	946.52	970.93	983.81	1005.94	1012.80	1029.49	1023.93	1027.87	1037.61	1030.16	1023.41	1005.34
40.00°	953.99	943.65	920.14	907.60	896.61	896.85	921.95	932.59	954.77	963.41	979.16	975.05	980.74	990.16	981.42	974.41	953.99
42.50°	901.22	891.50	867.64	856.43	846.02	845.89	870.86	880.06	903.32	912.87	928.73	925.40	931.87	941.81	931.39	923.99	901.22
45.00°	847.47	836.59	813.34	803.30	793.41	793.80	815.75	825.42	849.71	859.52	877.38	873.87	880.56	889.31	879.12	870.59	847.47
47.50°	792.29	780.56	758.06	750.02	739.47	739.96	759.86	769.52	795.51	805.08	824.97	821.38	827.48	836.22	824.70	815.54	792.29
50.00°	736.28	723.17	702.27	696.57	682.84	684.80	702.73	711.96	738.14	748.47	766.10	766.96	772.31	781.08	767.19	757.55	736.28
52.50°	677.70	664.73	643.81	641.28	626.76	628.65	644.83	653.48	680.63	690.87	707.47	711.45	716.18	725.41	708.88	699.87	677.70
55.00°	617.87	605.22	584.17	584.17	571.60	571.88	585.88	593.96	622.56	631.65	649.83	654.12	659.11	668.25	649.58	642.63	617.87
57.50°	558.99	546.27	523.91	526.90	515.06	513.31	527.25	535.21	564.10	571.90	591.47	596.28	600.17	610.29	589.22	584.40	558.99
60.00°	500.50	487.82	463.42	469.49	456.54	453.82	468.97	477.20	504.41	511.41	530.57	537.68	539.65	550.47	527.77	524.93	500.50
62.50°	440.12	428.26	404.47	411.03	398.94	395.93	410.07	417.87	444.43	450.76	469.70	477.76	480.56	489.99	466.04	464.55	440.12
65.00°	379.15	367.90	345.97	351.83	342.44	338.76	350.58	357.45	383.71	389.93	408.93	416.25	422.46	428.29	404.07	403.19	379.15
67.50°	319.60	308.97	289.20	294.60	286.39	281.69	293.02	299.00	323.69	329.53	348.75	356.20	363.08	367.43	343.87	342.58	319.60
70.00°	260.43	250.90	232.81	238.57	230.78	224.67	237.03	241.90	265.12	269.55	289.91	297.63	302.93	307.95	284.99	282.62	260.43
72.50°	203.34	196.67	182.09	185.73	176.98	172.81	185.10	187.88	207.88	212.67	232.06	239.99	245.93	250.03	228.59	225.44	203.34
75.00°	146.64	144.40	132.32	134.50	124.72	122.38	135.94	135.59	152.88	158.39	176.11	183.16	190.52	194.22	173.72	170.31	146.64
77.50°	102.46	101.38	94.05	93.64	84.63	85.15	95.34	94.24	104.96	111.67	126.05	132.33	139.15	142.57	126.64	121.61	102.46
80.00°	60.02	62.25	57.06	57.00	53.33	50.82	59.75	58.16	67.41	70.28	85.16	85.86	89.42	95.73	83.69	77.01	60.02
82.50°	40.75	39.00	36.55	34.49	31.77	31.32	35.94	35.13	39.27	42.98	52.53	53.61	58.27	60.15	53.92	48.93	40.75
85.00°	23.42	21.31	17.00	16.73	16.05	14.15	17.77	17.22	22.64	23.90	30.90	29.92	33.38	35.47	29.86	29.60	23.42
87.50°	12.99	11.43	9.34	8.46	7.82	7.48	8.73	8.71	11.14	12.37	15.25	15.32	18.21	18.34	15.63	16.30	12.99
90.00°	2.84	3.69	2.09	2.66	3.42	1.92	3.25	3.12	4.90	4.58	6.26	5.36	5.60	7.34	4.83	5.62	2.84
92.50°	2.26	2.05	1.93	1.81	2.12	1.65	1.95	2.02	1.91	2.05	1.87	2.09	2.89	2.57	2.26	2.41	2.26
95.00°	1.71	1.67	1.79	1.93	2.13	1.69	2.00	2.04	1.80	1.64	1.78	1.62	2.12	2.13	2.05	1.90	1.71
97.50°	1.74	1.70	1.86	1.79	1.99	1.65	1.78	2.02	1.82	1.53	1.68	1.59	2.05	2.04	1.92	1.67	1.74
100.00°	1.76	1.80	1.93	1.62	1.80	1.62	1.50	1.99	1.93	1.52	1.55	1.72	2.08	2.13	1.81	1.53	1.76
102.50°	1.82	1.98	1.97	1.65	1.67	1.57	1.51	1.81	1.85	1.69	1.64	1.70	1.97	2.02	1.79	1.67	1.82
105.00°	1.89	2.18	1.99	1.71	1.55	1.53	1.58	1.62	1.65	1.91	1.89	1.65	1.83	1.80	1.78	1.88	1.89

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%	10%
	0	4167	4167	4167	4167	4069	4069	4069	4069	3885	3885	3885	3717	3717	3717	3563	3563	3490
	1	3839	3685	3547	3423	3744	3605	3480	3366	3455	3352	3258	3317	3234	3156	3190	3123	3057
	2	3510	3239	3015	2827	3418	3172	2967	2792	3047	2875	2726	2932	2788	2662	2825	2707	2601
	3	3212	2861	2590	2374	3126	2806	2554	2352	2701	2486	2309	2604	2421	2268	2514	2360	2208
	4	2949	2546	2252	2027	2869	2500	2225	2012	2411	2172	1983	2329	2123	1955	2253	2075	1928
	5	2717	2283	1979	1755	2644	2243	1958	1745	2169	1917	1725	2099	1878	1705	2034	1841	1686
	6	2514	2061	1757	1539	2447	2027	1740	1532	1964	1708	1517	1904	1677	1503	1849	1647	1490
	7	2334	1873	1574	1364	2273	1844	1560	1359	1790	1534	1348	1739	1509	1338	1691	1485	1328
	8	2175	1712	1421	1221	2120	1687	1410	1217	1641	1389	1209	1597	1368	1201	1555	1348	1193
	9	2033	1573	1292	1101	1984	1552	1283	1098	1512	1265	1092	1474	1248	1086	1438	1231	1080
	10	1908	1454	1182	1001	1863	1435	1174	998	1400	1159	993	1367	1145	989	1335	1131	984

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	45.9 fc	13.9 ft
6.5 ft	32.9 fc	16.5 ft
7.5 ft	24.7 fc	19.0 ft
8.0 ft	21.7 fc	20.3 ft
10.0 ft	13.9 fc	25.3 ft
12.0 ft	9.6 fc	30.4 ft
14.0 ft	7.1 fc	35.5 ft
16.0 ft	5.4 fc	40.6 ft
20.0 ft	3.5 fc	50.7 ft
24.0 ft	2.4 fc	60.8 ft
28.0 ft	1.8 fc	71.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	13821	13821	13821
45.00°	11927	11447	11166
55.00°	10720	10136	9918
65.00°	8928	8147	8064
75.00°	5638	5088	4796
85.00°	2674	1942	1833

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	20.3	21.9	20.7	22.2	22.5	20.2	21.8	20.6	22.1	22.4
	3H	21.7	23.1	22.1	23.4	23.8	21.6	23.0	22.0	23.4	23.7
	4H	22.0	23.4	22.4	23.7	24.1	22.0	23.4	22.4	23.7	24.1
	6H	22.2	23.4	22.6	23.8	24.2	22.2	23.5	22.6	23.8	24.2
	8H	22.2	23.4	22.6	23.8	24.2	22.3	23.4	22.7	23.8	24.2
	12H	22.2	23.3	22.6	23.7	24.2	22.3	23.4	22.7	23.8	24.2
4H	2H	20.8	22.1	21.2	22.5	22.9	20.7	22.1	21.1	22.4	22.8
	3H	22.4	23.5	22.8	23.9	24.3	22.3	23.4	22.7	23.8	24.2
	4H	22.8	23.8	23.3	24.2	24.7	22.8	23.8	23.3	24.2	24.7
	6H	23.0	23.9	23.5	24.4	24.8	23.1	23.9	23.5	24.4	24.9
	8H	23.1	23.9	23.5	24.3	24.8	23.1	23.9	23.6	24.4	24.9
	12H	23.1	23.8	23.6	24.3	24.8	23.2	23.9	23.7	24.4	24.8
8H	4H	23.0	23.8	23.4	24.2	24.7	23.0	23.8	23.4	24.2	24.7
	6H	23.3	23.9	23.8	24.4	24.9	23.3	24.0	23.8	24.5	24.9
	8H	23.3	23.9	23.8	24.4	24.9	23.4	24.0	23.9	24.5	25.0
	12H	23.4	23.9	23.9	24.4	25.0	23.4	24.0	23.9	24.4	25.0
12H	4H	23.0	23.7	23.5	24.2	24.7	23.0	23.7	23.5	24.2	24.6
	6H	23.3	23.9	23.8	24.3	24.9	23.3	23.9	23.8	24.4	24.9
	8H	23.4	23.9	23.9	24.4	24.9	23.4	23.9	23.9	24.4	25.0

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0