

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

SR14SQLEDOA 22L 35K xx RT1414 MW xx FO
14" square recessed LED downlight, regressed extruded aluminum door

Test Number

SP-01645_1

Test Date

2/20/2024

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

Summary of Results

Power

Input Watts	18.4 W
-------------	--------

Lumen Output

Output Lumens	1818
Efficacy	98.79 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	1.24
Two luminaires, plane 90°	1.15
Four luminaires	1.32

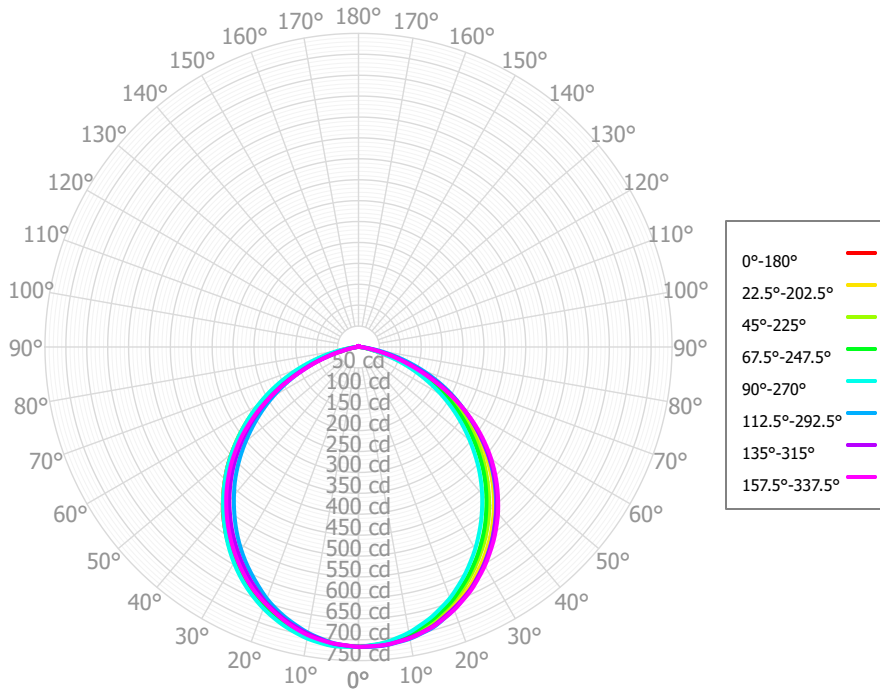
Full Beam Angle

0° - 180°	106°
90° - 270°	102°

IES File Header Contents

Keyword	Value
TEST	SP-01645_1
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	2/20/2024
ISSUEDATE	2/28/2024
LUMCAT	SR14SQLEDOA 22L 35K xx RT1414 MW xx FO
LUMINAIRE	14" square recessed LED downlight, regressed extruded aluminum door
OTHER	Beam Angle: 106 x 102 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°	68.72	3.78%	90.00° - 100.00°	2.48	0.14%
10.00° - 20.00°	192.33	10.58%	100.00° - 110.00°	2.25	0.12%
20.00° - 30.00°	287.26	15.80%	100.00° - 120.00°	4.36	0.24%
30.00° - 40.00°	339.15	18.66%	120.00° - 130.00°	1.98	0.11%
40.00° - 50.00°	341.33	18.78%	130.00° - 140.00°	1.72	0.09%
50.00° - 60.00°	291.16	16.02%	140.00° - 150.00°	1.39	0.08%
60.00° - 70.00°	193.25	10.63%	150.00° - 160.00°	1.05	0.06%
70.00° - 80.00°	78.02	4.29%	160.00° - 170.00°	0.64	0.04%
80.00° - 90.00°	12.77	0.70%	170.00° - 180.00°	0.22	0.01%
0.00° - 90.00°	1803.99	99.24%	0.00° - 180.00°	1817.83	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°	717.21	717.21	717.21	717.21	717.21	717.21	717.21	717.21	717.21	717.21	717.21	717.21	717.21	717.21	717.21	717.21	717.21
2.50°	715.25	715.42	715.51	714.82	713.76	714.64	714.77	714.26	715.33	715.06	716.89	716.10	717.99	717.65	717.09	716.32	715.25
5.00°	713.05	713.58	712.42	710.66	710.21	710.41	711.85	711.27	713.25	712.52	715.50	713.53	717.82	716.68	716.16	715.51	713.05
7.50°	708.65	708.45	706.90	704.77	702.30	702.80	704.32	706.43	708.11	707.35	710.05	708.67	713.52	712.86	711.47	711.96	708.65
10.00°	703.65	702.54	700.06	698.71	693.83	694.15	696.60	699.80	702.73	701.37	703.46	702.65	708.01	708.71	706.29	707.66	703.65
12.50°	695.97	694.20	691.17	687.77	681.92	682.76	686.47	690.31	692.97	693.99	694.83	693.38	699.53	701.42	699.06	700.29	695.97
15.00°	687.15	685.50	680.22	676.58	669.79	670.51	676.05	679.22	682.97	684.70	685.80	683.16	689.98	693.92	690.57	692.35	687.15
17.50°	674.81	673.13	666.73	662.71	654.69	656.59	663.03	666.13	670.95	672.75	673.87	670.94	678.43	681.22	678.18	680.94	674.81
20.00°	662.29	660.48	652.10	648.48	639.38	640.63	649.27	652.52	658.48	659.28	661.61	657.13	665.47	668.35	665.45	669.17	662.29
22.50°	649.32	645.65	636.38	630.53	620.43	621.53	631.61	638.42	643.66	644.15	645.93	640.74	650.44	653.33	651.90	654.74	649.32
25.00°	634.67	630.62	618.50	612.28	601.20	602.07	613.43	621.73	628.28	627.90	630.04	623.42	633.94	637.85	636.82	640.13	634.67
27.50°	617.04	611.55	598.94	592.19	579.88	582.16	593.38	603.03	610.89	610.67	611.03	604.92	615.74	619.28	619.07	622.35	617.04
30.00°	598.20	592.31	578.66	571.66	558.18	560.80	572.89	583.00	592.61	592.23	591.91	585.19	595.91	600.31	600.39	604.41	598.20
32.50°	577.70	571.65	557.95	549.30	534.68	538.01	551.27	562.15	572.03	572.94	571.37	564.21	574.58	579.61	580.43	584.36	577.70
35.00°	556.89	550.61	535.40	526.28	510.79	513.95	528.89	539.71	550.91	550.95	550.39	541.21	551.92	558.30	559.07	564.03	556.89
37.50°	535.73	527.58	512.00	501.31	485.62	488.93	505.03	516.53	528.70	527.51	526.45	516.57	528.29	535.07	536.20	541.90	535.73
40.00°	513.08	504.03	486.31	476.08	460.00	463.48	480.44	492.03	504.93	503.40	502.10	491.53	503.68	511.28	512.75	519.20	513.08
42.50°	489.12	478.59	459.82	450.31	433.30	437.77	454.70	467.07	478.74	479.02	475.95	466.25	478.52	486.21	488.82	494.18	489.12
45.00°	462.68	452.46	433.04	423.54	405.72	410.19	427.93	440.12	452.27	452.32	449.72	440.11	452.17	460.51	463.04	468.66	462.68
47.50°	434.50	424.50	406.19	395.10	376.44	381.73	399.88	412.66	425.44	424.92	423.18	413.55	425.29	433.71	436.00	441.67	434.50
50.00°	404.53	395.92	378.23	366.69	347.27	352.54	371.21	382.58	395.99	395.58	395.91	384.93	396.23	405.76	407.26	413.64	404.53
52.50°	373.60	366.06	350.09	338.34	318.28	323.11	341.94	352.03	364.00	365.83	366.96	355.55	366.46	376.19	377.61	383.25	373.60
55.00°	340.30	335.00	319.89	309.33	289.13	293.88	311.53	318.52	330.56	333.86	337.15	325.70	336.69	346.10	347.03	351.92	340.30
57.50°	306.02	302.06	289.49	279.65	259.80	264.71	280.25	284.71	296.00	301.59	305.83	295.73	306.92	315.46	316.06	318.93	306.02
60.00°	269.53	267.89	257.39	249.52	229.71	234.57	247.90	248.90	259.11	265.67	273.93	265.18	276.83	285.52	284.27	284.15	269.53
62.50°	232.36	232.21	225.24	219.01	198.92	204.28	214.92	213.01	220.82	229.53	241.22	234.52	246.68	256.20	252.22	246.97	232.36
65.00°	195.33	195.98	192.77	188.48	168.65	173.78	180.73	176.73	184.88	191.84	207.67	203.49	215.56	225.50	217.70	209.95	195.33
67.50°	158.34	159.21	160.17	157.93	138.77	143.26	145.95	140.94	150.03	154.54	173.19	172.41	184.38	193.85	182.67	173.11	158.34
70.00°	127.33	126.10	126.26	128.48	109.67	113.53	113.72	110.45	119.42	123.67	139.43	141.96	153.84	162.47	148.14	139.47	127.33
72.50°	97.14	95.79	93.42	99.57	81.02	83.95	82.37	80.55	90.28	93.14	106.29	111.57	123.42	131.23	113.68	108.56	97.14
75.00°	66.99	68.48	66.99	72.28	56.45	58.08	58.36	54.28	60.78	65.23	77.61	83.09	95.09	101.25	85.46	79.66	66.99
77.50°	36.85	43.00	42.69	45.61	33.68	33.51	36.20	31.09	31.19	39.73	51.97	55.33	67.41	71.80	57.61	52.12	36.85
80.00°	24.76	27.17	26.78	29.22	21.05	21.89	22.80	20.26	19.97	25.71	33.03	36.10	45.23	48.36	38.17	32.82	24.76
82.50°	13.11	15.86	13.65	15.72	11.73	11.28	10.89	11.12	11.79	13.82	17.67	18.47	25.12	26.75	19.48	17.87	13.11
85.00°	8.78	9.41	8.34	9.19	6.95	6.56	6.55	6.85	7.67	8.98	9.77	11.24	15.97	16.34	12.86	10.50	8.78
87.50°	4.78	4.65	4.31	4.03	3.24	2.73	2.93	3.66	3.93	5.01	4.91	5.06	8.09	8.35	6.72	6.16	4.78
90.00°	3.26	3.00	2.99	2.89	2.49	2.34	2.48	2.83	2.85	3.17	3.16	3.30	4.74	5.08	4.35	3.95	3.26
92.50°	2.01	2.15	2.15	2.21	2.19	2.05	2.14	2.35	1.88	1.96	2.33	1.97	2.33	2.44	2.36	2.37	2.01
95.00°	2.02	1.95	2.12	2.06	2.30	2.07	2.17	2.43	1.79	1.92	2.11	1.94	2.36	2.26	2.17	2.19	2.02
97.50°	2.05	1.85	2.06	1.93	2.44	2.09	2.20	2.43	1.74	1.95	2.02	1.96	2.32	2.23	2.05	2.30	2.05
100.00°	2.13	2.03	1.97	2.00	2.30	2.14	2.20	2.29	1.99	2.06	1.93	2.12	2.15	2.20	2.17	2.16	2.13
102.50°	2.15	2.23	1.96	2.06	2.17	2.19	2.19	2.21	2.19	2.08	1.83	2.18	2.13	2.18	2.26	1.98	2.15
105.00°	2.00	2.27	2.01	2.04	2.24	2.25	2.12	2.19	2.00	1.98	1.92	2.07	2.36	2.23	2.28	2.17	2.00

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	2161	2161	2161	2161	2109	2109	2109	2109	2012	2012	2012	1924	1924	1924	1842	1842	1804
	1	1993	1915	1844	1781	1943	1872	1808	1751	1793	1741	1693	1721	1678	1639	1654	1620	1585
	2	1823	1684	1569	1473	1776	1649	1544	1454	1583	1495	1419	1523	1449	1384	1466	1406	1375
	3	1669	1489	1349	1238	1624	1459	1330	1226	1404	1293	1202	1353	1259	1180	1305	1226	1199
	4	1532	1325	1173	1056	1491	1300	1158	1048	1253	1130	1033	1210	1104	1017	1170	1078	1054
	5	1412	1187	1030	915	1374	1166	1019	909	1127	997	898	1090	976	887	1056	956	936
	6	1306	1072	914	802	1271	1054	905	798	1020	888	790	989	871	782	959	855	837
	7	1212	973	819	710	1180	958	811	707	929	797	701	902	784	695	877	771	755
	8	1129	889	739	635	1100	876	733	633	852	721	628	828	710	624	806	699	686
	9	1056	817	671	573	1030	806	666	571	785	657	567	764	648	564	745	639	627
	10	990	755	614	520	966	745	610	519	726	602	516	709	594	513	692	586	576

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	23.7 fc	14.7 ft
6.5 ft	17.0 fc	17.4 ft
7.5 ft	12.8 fc	20.1 ft
8.0 ft	11.2 fc	21.4 ft
10.0 ft	7.2 fc	26.8 ft
12.0 ft	5.0 fc	32.1 ft
14.0 ft	3.7 fc	37.5 ft
16.0 ft	2.8 fc	42.8 ft
20.0 ft	1.8 fc	53.5 ft
24.0 ft	1.2 fc	64.3 ft
28.0 ft	0.9 fc	75.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	7138	7138	7138
45.00°	6512	6095	5710
55.00°	5904	5550	5017
65.00°	4600	4539	3971
75.00°	2576	2576	2171
85.00°	1003	953	794

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	18.4	19.9	18.8	20.3	20.6	17.7	19.3	18.1	19.6	19.9
	3H	19.5	20.9	19.9	21.3	21.7	19.1	20.5	19.5	20.8	21.2
	4H	19.8	21.1	20.2	21.5	21.9	19.5	20.8	19.9	21.1	21.5
	6H	19.9	21.1	20.3	21.5	21.9	19.6	20.8	20.0	21.2	21.6
	8H	19.9	21.0	20.3	21.4	21.8	19.6	20.8	20.1	21.2	21.6
	12H	19.9	21.0	20.3	21.4	21.8	19.6	20.7	20.1	21.1	21.6
4H	2H	18.9	20.2	19.3	20.6	21.0	18.3	19.6	18.7	19.9	20.3
	3H	20.2	21.3	20.6	21.7	22.1	19.8	20.9	20.2	21.3	21.7
	4H	20.6	21.5	21.0	22.0	22.4	20.2	21.2	20.7	21.6	22.1
	6H	20.7	21.5	21.2	22.0	22.5	20.4	21.3	20.9	21.7	22.2
	8H	20.7	21.5	21.2	21.9	22.4	20.4	21.2	20.9	21.7	22.2
	12H	20.7	21.4	21.2	21.9	22.4	20.5	21.2	21.0	21.7	22.1
8H	4H	20.7	21.5	21.2	21.9	22.4	20.3	21.1	20.8	21.6	22.0
	6H	20.9	21.5	21.4	22.0	22.5	20.5	21.2	21.0	21.7	22.2
	8H	20.9	21.4	21.4	22.0	22.5	20.6	21.2	21.1	21.7	22.2
	12H	20.9	21.4	21.4	21.9	22.5	20.6	21.1	21.1	21.6	22.2
12H	4H	20.7	21.4	21.2	21.9	22.4	20.3	21.0	20.8	21.5	22.0
	6H	20.8	21.4	21.4	21.9	22.5	20.5	21.1	21.1	21.6	22.1
	8H	20.9	21.4	21.4	21.9	22.5	20.6	21.1	21.1	21.6	22.2

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0