

## Indoor Distribution Test Report

### Spectrum Lighting Inc.

994 Jefferson Street  
Fall River, MA 02721  
+1.508.678.2303

### Spectrum Lighting Photometric Lab

#### Luminaire

SR10SQLEDOA 40L 35K xx RT1010 MW xx FO  
10" square recessed LED downlight, regressed extruded aluminum door

#### Test Number

SP-01641\_3

#### Test Date

1/29/2024

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

### Summary of Results

#### Power

Input Watts	31.3 W
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#### Lumen Output

Output Lumens	2165
Efficacy	69.17 lm/W

#### Luminous Dimensions

0° - 180° Size	0.71
90° - 270° Size	0.71
Height	0

#### Spacing Criterion

Two luminaires, plane 0°	1.13
Two luminaires, plane 90°	1.15
Four luminaires	1.23

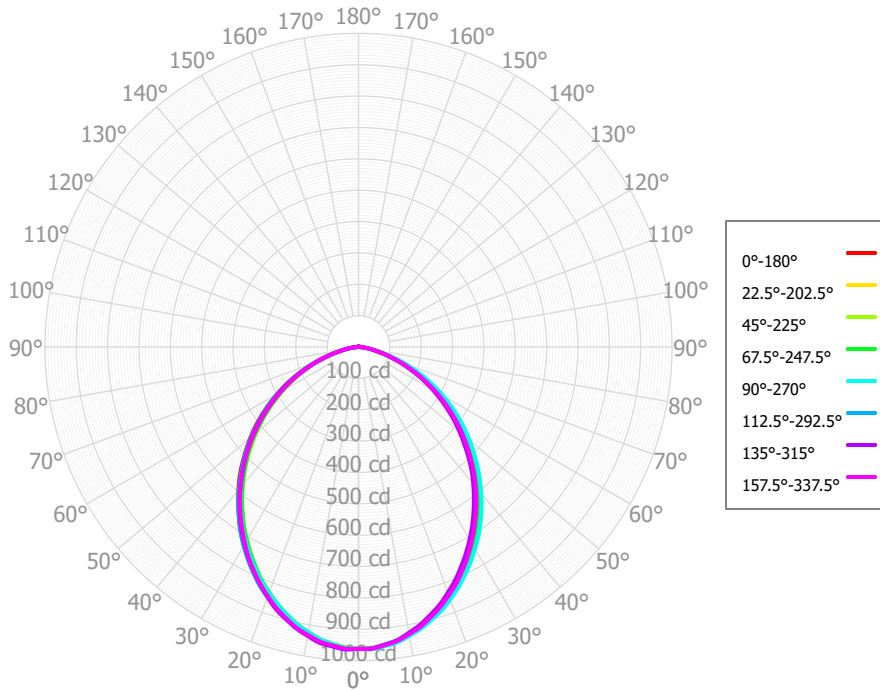
#### Full Beam Angle

0° - 180°	95°
90° - 270°	96°

### IES File Header Contents

Keyword	Value
TEST	SP-01641_3
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	1/29/2024
ISSUEDATE	2/28/2024
LUMCAT	SR10SQLEDOA 40L 35K xx RT1010 MW xx FO
LUMINAIRE	10" square recessed LED downlight, regressed extruded aluminum door
OTHER	Beam Angle: 96 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°	91.72	4.24%	90.00° - 100.00°	1.69	0.08%
10.00° - 20.00°	250.70	11.58%	100.00° - 110.00°	1.35	0.06%
20.00° - 30.00°	361.28	16.69%	100.00° - 120.00°	2.71	0.13%
30.00° - 40.00°	409.49	18.91%	120.00° - 130.00°	1.25	0.06%
40.00° - 50.00°	394.48	18.22%	130.00° - 140.00°	1.11	0.05%
50.00° - 60.00°	324.01	14.97%	140.00° - 150.00°	0.95	0.04%
60.00° - 70.00°	212.99	9.84%	150.00° - 160.00°	0.74	0.03%
70.00° - 80.00°	91.99	4.25%	160.00° - 170.00°	0.46	0.02%
80.00° - 90.00°	19.34	0.89%	170.00° - 180.00°	0.16	0.01%
0.00° - 90.00°	2156.00	99.58%	0.00° - 180.00°	2165.07	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°	962.86	962.86	962.86	962.86	962.86	962.86	962.86	962.86	962.86	962.86	962.86	962.86	962.86	962.86	962.86	962.86	962.86
2.50°	962.04	963.13	961.28	962.22	965.17	964.87	965.28	962.76	962.36	962.48	960.35	959.57	961.61	961.88	962.64	962.92	962.04
5.00°	953.81	955.45	954.28	955.02	958.14	957.65	958.62	955.50	953.84	953.52	951.94	950.28	951.46	952.83	953.51	954.80	953.81
7.50°	945.42	947.33	946.85	946.87	950.18	949.50	951.61	947.34	945.18	944.13	943.07	939.90	940.65	942.98	943.94	945.67	945.42
10.00°	929.87	932.87	930.27	932.31	935.64	934.22	935.48	932.47	930.58	927.64	926.84	923.13	924.02	926.21	925.87	930.13	929.87
12.50°	914.20	918.06	913.17	916.81	920.38	918.17	918.94	916.78	915.81	910.74	910.10	905.43	906.75	908.85	907.58	913.78	914.20
15.00°	893.08	895.98	890.52	895.05	901.00	896.86	897.83	894.91	894.35	887.39	885.66	882.75	883.75	886.36	884.77	891.77	893.08
17.50°	871.86	873.51	867.56	872.89	881.19	874.97	876.53	872.46	872.80	863.82	861.04	859.35	860.49	863.42	861.69	869.06	871.86
20.00°	845.60	846.48	841.14	848.05	856.42	849.35	848.17	845.71	847.52	836.62	833.67	832.92	834.86	836.64	833.57	842.73	845.60
22.50°	819.26	819.22	814.53	822.48	831.14	823.31	819.52	818.60	822.13	809.27	806.08	806.05	808.83	809.48	805.27	815.95	819.26
25.00°	790.31	790.14	784.14	792.18	802.72	793.92	789.51	788.85	792.18	779.46	775.12	775.45	779.40	779.08	773.66	785.10	790.31
27.50°	761.31	760.96	753.56	761.67	773.98	764.18	759.43	758.55	762.19	749.43	744.08	744.33	749.79	748.51	741.96	753.75	761.31
30.00°	729.32	727.40	720.36	729.88	743.38	732.28	726.59	724.36	730.86	715.97	711.86	712.27	718.68	716.49	708.57	720.55	729.32
32.50°	697.28	693.62	687.03	697.84	712.60	700.17	693.65	690.10	699.44	682.39	679.45	680.07	687.23	684.16	675.08	687.13	697.28
35.00°	662.60	658.61	651.24	664.19	678.98	664.98	658.50	655.40	664.76	647.03	644.36	645.61	653.00	649.20	639.87	652.58	662.60
37.50°	627.88	623.54	615.34	630.20	645.08	629.48	623.27	620.63	630.08	611.67	609.23	610.83	618.73	614.19	604.66	617.88	627.88
40.00°	592.02	587.39	578.84	594.02	608.96	593.02	586.15	585.41	595.64	576.46	573.78	575.27	584.14	578.66	569.34	581.50	592.02
42.50°	556.14	551.20	542.32	557.70	572.61	556.47	548.97	549.95	561.11	541.12	538.17	539.60	549.31	542.93	533.84	544.92	556.14
45.00°	519.28	514.03	505.24	520.48	535.76	520.20	512.93	512.85	523.81	503.79	500.28	503.79	512.59	505.70	495.36	507.47	519.28
47.50°	482.40	476.81	468.14	483.15	498.87	483.95	476.92	475.60	486.52	466.45	462.51	467.97	475.84	468.53	457.01	469.91	482.40
50.00°	444.37	438.50	430.36	445.13	461.83	446.04	440.10	437.36	449.79	429.04	426.41	430.02	438.91	431.83	420.74	432.74	444.37
52.50°	406.33	400.15	392.55	407.04	424.78	407.96	403.25	399.24	413.01	391.61	390.24	391.81	401.94	395.05	384.42	395.60	406.33
55.00°	369.13	362.25	355.61	368.56	387.26	371.12	365.29	362.00	374.91	354.01	353.16	354.89	364.68	357.67	347.23	358.47	369.13
57.50°	331.94	324.38	318.71	330.32	349.69	334.41	327.29	324.76	336.83	316.46	316.15	318.13	327.41	320.26	310.13	321.33	331.94
60.00°	293.37	287.09	282.48	293.45	311.79	296.96	291.18	287.51	299.38	279.62	279.94	282.03	290.15	282.58	274.32	283.23	293.37
62.50°	254.79	249.82	246.28	256.64	273.86	259.44	255.13	250.42	261.93	242.92	243.86	246.01	252.78	245.22	238.52	245.02	254.79
65.00°	216.97	213.54	210.56	220.17	236.03	222.94	219.39	214.37	224.63	207.96	209.50	210.74	214.60	210.27	202.88	209.60	216.97
67.50°	179.15	177.30	174.85	184.11	198.20	186.53	183.67	178.67	187.35	173.10	175.32	175.56	176.76	175.57	167.55	174.50	179.15
70.00°	143.40	144.14	142.11	150.44	161.77	152.13	151.36	145.23	150.45	139.50	143.56	141.68	141.45	142.75	136.60	141.25	143.40
72.50°	107.65	111.11	109.50	117.43	125.46	117.90	119.14	112.57	113.91	106.48	112.17	107.95	107.14	110.54	106.08	108.20	107.65
75.00°	81.12	84.80	83.96	88.35	94.85	89.57	91.85	84.89	86.04	80.67	85.31	81.56	80.25	82.84	81.55	82.33	81.12
77.50°	54.59	58.73	58.72	61.09	64.74	61.75	64.68	58.82	58.68	55.62	59.30	56.08	54.69	56.62	57.54	57.22	54.59
80.00°	40.03	42.54	42.48	44.38	46.75	44.85	46.73	43.14	43.54	39.97	43.49	40.17	38.88	41.25	41.07	41.15	40.03
82.50°	25.47	26.68	26.60	28.47	29.79	28.90	29.03	27.99	28.53	24.73	27.99	25.42	23.76	26.37	24.99	26.03	25.47
85.00°	14.90	16.03	15.51	17.04	18.55	17.22	17.77	16.25	16.80	14.48	16.22	14.82	13.75	15.02	14.46	15.59	14.90
87.50°	4.35	5.56	4.59	6.88	7.79	5.91	6.66	5.78	5.46	4.87	5.23	4.70	4.75	4.83	4.53	5.62	4.35
90.00°	2.81	3.31	2.72	3.87	4.37	3.29	3.87	3.32	3.25	3.02	3.06	2.53	2.96	2.97	3.01	3.14	2.81
92.50°	1.28	1.32	1.17	1.28	1.58	1.42	1.28	1.25	1.15	1.33	1.06	1.27	1.40	1.33	1.59	1.43	1.28
95.00°	1.31	1.14	1.19	1.08	1.36	1.31	1.35	1.55	1.26	1.47	0.96	1.20	1.44	1.27	1.53	1.26	1.31
97.50°	1.34	1.02	1.26	0.92	1.37	1.34	1.49	1.79	1.35	1.58	0.87	1.27	1.48	1.24	1.49	1.25	1.34
100.00°	1.47	1.09	1.16	0.99	1.31	1.36	1.41	1.64	1.09	1.39	1.03	1.23	1.53	1.37	1.58	1.30	1.47
102.50°	1.60	1.16	1.06	1.08	1.24	1.37	1.32	1.50	0.83	1.22	1.18	1.18	1.56	1.50	1.66	1.37	1.60
105.00°	1.39	1.16	1.11	1.29	1.31	1.30	1.30	1.36	0.86	1.18	1.15	1.14	1.43	1.53	1.52	1.29	1.39

### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

<b>RCR</b>	<b>ptc</b>	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	<b>pcc</b>	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	<b>0</b>	2575	2575	2575	2575	2514	2514	2514	2514	2401	2401	2401	2297	2297	2297	2201	2201	2156
	<b>1</b>	2378	2286	2203	2128	2320	2236	2161	2093	2144	2082	2025	2058	2008	1962	1980	1940	1899
	<b>2</b>	2181	2018	1883	1770	2125	1977	1853	1748	1900	1796	1706	1829	1742	1667	1763	1692	1655
	<b>3</b>	2001	1790	1626	1496	1948	1755	1604	1482	1691	1562	1455	1631	1521	1429	1576	1483	1451
	<b>4</b>	1841	1598	1420	1285	1793	1570	1404	1275	1515	1371	1257	1465	1340	1239	1418	1311	1222
	<b>5</b>	1700	1437	1254	1118	1656	1413	1241	1112	1367	1216	1099	1325	1191	1087	1285	1168	1075
	<b>6</b>	1575	1301	1117	985	1535	1281	1107	981	1242	1087	972	1205	1068	963	1171	1049	954
	<b>7</b>	1465	1185	1004	877	1428	1168	996	874	1134	980	867	1103	964	860	1074	949	854
	<b>8</b>	1367	1086	909	788	1334	1071	903	785	1042	889	780	1015	877	775	990	864	770
	<b>9</b>	1280	1000	829	713	1250	987	823	711	962	812	707	939	802	703	917	792	700
	<b>10</b>	1202	926	760	650	1174	914	756	649	893	746	645	872	738	642	853	729	639

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	31.8 fc	12.1 ft
6.5 ft	22.8 fc	14.2 ft
7.5 ft	17.1 fc	16.4 ft
8.0 ft	15.0 fc	17.5 ft
10.0 ft	9.6 fc	21.9 ft
12.0 ft	6.7 fc	26.3 ft
14.0 ft	4.9 fc	30.7 ft
16.0 ft	3.8 fc	35.1 ft
20.0 ft	2.4 fc	43.8 ft
24.0 ft	1.7 fc	52.6 ft
28.0 ft	1.2 fc	61.4 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	20560	20560	20560
<b>45.00°</b>	15681	15257	16179
<b>55.00°</b>	13742	13238	14417
<b>65.00°</b>	10962	10638	11925
<b>75.00°</b>	6693	6927	7825
<b>85.00°</b>	3650	3799	4544

### 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	20.8	22.3	21.2	22.7	23.0	20.9	22.4	21.3	22.7	23.1
	3H	22.1	23.4	22.4	23.8	24.1	22.2	23.6	22.6	23.9	24.3
	4H	22.4	23.7	22.8	24.0	24.4	22.6	23.9	23.0	24.2	24.6
	6H	22.5	23.7	23.0	24.1	24.5	22.7	23.9	23.2	24.3	24.7
	8H	22.6	23.7	23.0	24.1	24.5	22.8	23.9	23.2	24.3	24.7
	12H	22.6	23.7	23.0	24.1	24.5	22.8	23.9	23.2	24.3	24.7
4H	2H	21.2	22.5	21.6	22.9	23.3	21.4	22.7	21.8	23.0	23.4
	3H	22.7	23.7	23.1	24.2	24.6	22.9	23.9	23.3	24.3	24.7
	4H	23.1	24.0	23.5	24.5	24.9	23.3	24.2	23.7	24.7	25.1
	6H	23.3	24.2	23.8	24.6	25.1	23.5	24.4	24.0	24.8	25.3
	8H	23.4	24.1	23.8	24.6	25.1	23.6	24.4	24.1	24.8	25.3
	12H	23.4	24.1	23.9	24.6	25.1	23.6	24.3	24.1	24.8	25.3
8H	4H	23.2	24.0	23.7	24.5	24.9	23.4	24.2	23.9	24.7	25.1
	6H	23.5	24.2	24.0	24.7	25.1	23.7	24.4	24.2	24.9	25.4
	8H	23.6	24.2	24.1	24.7	25.2	23.8	24.4	24.3	24.9	25.4
	12H	23.7	24.2	24.2	24.7	25.2	23.9	24.4	24.4	24.9	25.5
12H	4H	23.2	23.9	23.7	24.4	24.9	23.4	24.1	23.9	24.6	25.1
	6H	23.5	24.1	24.0	24.6	25.1	23.7	24.3	24.3	24.8	25.3
	8H	23.6	24.1	24.1	24.6	25.2	23.8	24.4	24.4	24.9	25.4

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0