

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

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

Test Number

SP-01641

Test Date

1/30/2024

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

Summary of Results

Power

Input Watts	10.1 W
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Lumen Output

Output Lumens	622
Efficacy	61.54 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	1.2
Two luminaires, plane 90°	1.11
Four luminaires	1.28

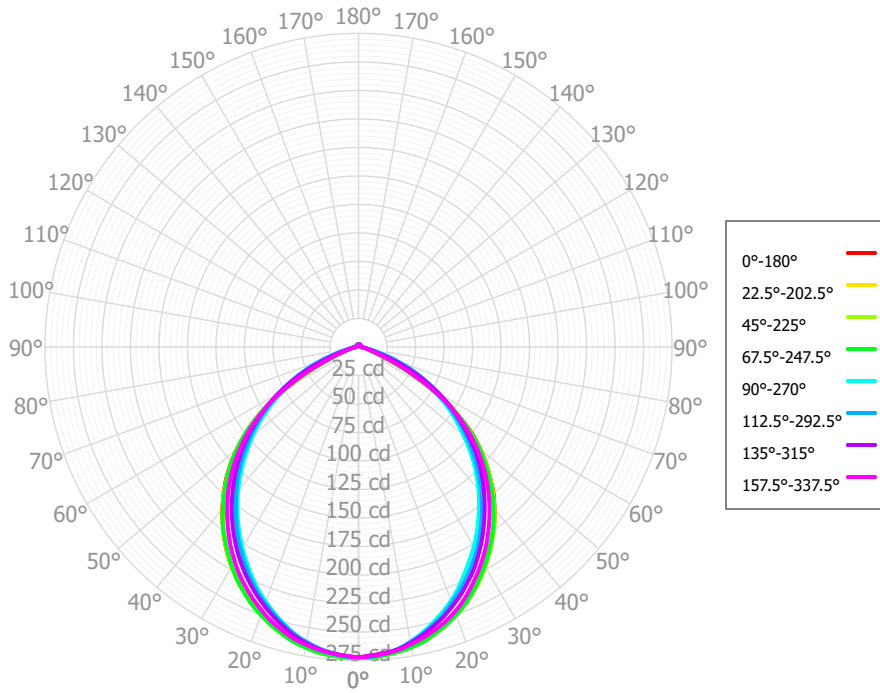
Full Beam Angle

0° - 180°	101°
90° - 270°	93°

IES File Header Contents

Keyword	Value
TEST	SP-01641
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	1/30/2024
ISSUEDATE	2/28/2024
LUMCAT	SR10SQLEDOA 10L 35K xx RT1010 MW xx FO
LUMINAIRE	10" square recessed LED downlight, regressed extruded aluminum door
OTHER	Beam Angle: 101 x 93 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°	26.03	4.19%	90.00° - 100.00°	2.32	0.37%
10.00° - 20.00°	72.28	11.63%	100.00° - 110.00°	2.24	0.36%
20.00° - 30.00°	106.51	17.14%	100.00° - 120.00°	4.32	0.69%
30.00° - 40.00°	123.33	19.84%	120.00° - 130.00°	1.92	0.31%
40.00° - 50.00°	120.22	19.34%	130.00° - 140.00°	1.68	0.27%
50.00° - 60.00°	94.45	15.19%	140.00° - 150.00°	1.33	0.21%
60.00° - 70.00°	46.99	7.56%	150.00° - 160.00°	1.00	0.16%
70.00° - 80.00°	13.81	2.22%	160.00° - 170.00°	0.63	0.10%
80.00° - 90.00°	4.54	0.73%	170.00° - 180.00°	0.21	0.03%
0.00° - 90.00°	608.15	97.84%	0.00° - 180.00°	621.57	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°	272.08	272.08	272.08	272.08	272.08	272.08	272.08	272.08	272.08	272.08	272.08	272.08	272.08	272.08	272.08	272.08	272.08
2.50°	270.67	272.73	272.96	272.68	271.51	271.50	271.12	271.19	271.20	272.20	272.57	272.70	271.68	271.86	270.89	271.30	270.67
5.00°	269.53	271.06	271.61	271.27	269.90	269.32	269.47	269.78	269.90	270.78	271.64	271.64	270.07	270.09	269.28	269.97	269.53
7.50°	268.13	269.16	269.61	269.63	266.99	266.55	267.29	267.90	268.20	269.13	270.08	270.27	267.66	267.42	267.28	267.99	268.13
10.00°	265.46	266.67	267.12	267.52	262.39	262.61	263.87	265.17	265.81	266.43	267.45	267.68	263.31	262.82	263.42	264.85	265.46
12.50°	262.30	263.71	264.44	264.58	257.03	258.32	259.70	262.12	262.81	263.50	264.24	264.69	257.94	257.93	259.06	261.37	262.30
15.00°	258.56	259.61	260.28	260.15	250.80	252.41	254.03	257.64	258.90	259.45	260.15	260.38	251.67	252.53	253.71	257.35	258.56
17.50°	254.63	254.95	255.60	255.41	244.09	246.10	248.05	252.69	254.39	255.21	255.38	255.70	245.00	246.35	248.13	252.68	254.63
20.00°	249.04	249.09	250.15	250.18	236.89	239.26	241.54	246.59	249.09	249.42	249.72	250.18	237.66	238.90	241.60	247.13	249.04
22.50°	242.97	242.99	244.48	244.12	228.68	232.31	234.63	240.19	243.32	243.42	243.72	244.48	230.05	231.35	234.89	240.62	242.97
25.00°	236.30	236.46	237.58	236.90	219.54	223.95	227.12	233.02	237.00	237.02	237.33	237.53	221.49	223.64	227.21	232.92	236.30
27.50°	229.48	229.35	230.37	229.31	210.72	215.35	219.19	225.68	230.09	230.59	230.18	230.37	212.60	215.50	219.40	224.96	229.48
30.00°	221.32	221.29	222.27	221.25	202.17	206.26	210.68	217.11	222.54	222.31	222.24	221.93	203.43	206.79	210.38	216.70	221.32
32.50°	212.90	212.92	213.98	212.80	193.00	197.11	201.75	208.31	214.21	213.92	213.77	213.32	194.17	197.58	201.24	207.81	212.90
35.00°	204.27	204.09	205.07	203.93	183.38	187.02	192.31	198.77	205.13	204.73	204.83	204.51	184.50	187.81	191.51	198.31	204.27
37.50°	195.61	194.80	196.06	194.41	173.59	176.85	182.55	189.12	195.59	195.53	195.21	195.67	174.74	177.85	181.74	188.54	195.61
40.00°	185.56	184.93	185.36	184.26	163.70	166.92	172.44	178.92	185.68	185.22	185.05	185.01	164.19	167.70	171.76	178.53	185.56
42.50°	175.35	174.39	174.47	173.42	153.32	157.01	162.13	168.68	175.20	174.86	174.33	174.22	153.48	157.21	161.78	168.06	175.35
45.00°	163.69	163.11	163.14	161.99	142.66	146.31	151.61	157.44	164.31	163.25	163.21	162.95	142.59	146.42	151.41	157.25	163.69
47.50°	151.93	151.06	151.77	150.29	131.45	135.60	140.72	146.13	152.19	151.54	151.17	151.66	131.68	135.59	140.99	145.78	151.93
50.00°	139.22	138.24	138.66	138.37	119.96	124.85	129.50	133.78	139.26	138.30	138.56	138.55	120.86	124.73	129.17	133.86	139.22
52.50°	126.46	124.23	125.46	124.59	109.12	114.08	117.74	121.39	125.16	124.84	124.38	125.37	110.05	113.58	117.36	120.96	126.46
55.00°	110.07	109.17	109.52	109.56	98.54	102.88	105.55	107.13	110.37	109.20	109.32	109.68	98.64	102.22	105.83	107.48	110.07
57.50°	93.59	92.61	93.52	92.76	87.33	91.65	93.23	92.81	93.13	93.18	92.47	93.85	87.19	91.27	94.17	91.86	93.59
60.00°	74.69	74.90	76.16	74.91	75.89	80.17	80.80	76.36	74.65	74.34	74.76	75.55	75.71	80.57	81.06	75.11	74.69
62.50°	55.91	57.61	58.86	57.32	64.65	68.71	67.71	59.94	56.76	55.94	57.10	57.48	64.22	69.56	67.94	58.70	55.91
65.00°	39.84	40.63	42.72	39.87	53.47	57.53	54.23	44.02	39.13	39.99	39.47	41.83	53.56	58.38	54.63	42.45	39.84
67.50°	24.46	27.97	27.17	27.68	42.61	46.41	41.09	28.74	27.06	25.61	27.39	27.13	42.92	47.31	41.43	29.76	24.46
70.00°	17.57	17.97	19.52	17.91	31.83	35.73	28.12	20.54	17.15	18.53	17.36	19.87	32.63	36.30	28.82	18.48	17.57
72.50°	11.19	12.75	12.42	13.02	23.02	25.51	19.33	12.96	12.54	12.40	12.73	13.32	22.49	26.81	17.56	13.29	11.19
75.00°	9.18	10.12	10.51	10.08	14.63	17.83	12.45	10.21	9.69	9.87	9.81	11.07	16.13	17.97	12.74	10.19	9.18
77.50°	7.29	8.36	8.61	8.18	10.49	11.05	8.76	7.66	7.81	7.65	8.19	8.90	10.04	12.64	8.51	8.04	7.29
80.00°	6.14	7.02	6.73	6.65	7.11	8.24	6.37	6.36	6.21	6.40	6.93	7.15	7.59	8.59	6.56	6.17	6.14
82.50°	4.96	5.59	4.98	5.31	5.22	5.74	4.77	5.08	5.00	5.14	5.44	5.46	5.26	6.24	4.78	4.86	4.96
85.00°	3.59	4.14	3.95	4.02	3.53	4.32	3.45	3.90	3.89	3.82	3.90	4.05	3.96	4.43	3.58	3.68	3.59
87.50°	2.45	3.20	3.03	3.06	2.83	3.16	2.71	2.84	3.04	2.77	3.08	2.88	2.78	3.46	2.59	2.84	2.45
90.00°	2.25	2.43	2.57	2.19	2.23	2.74	2.13	2.26	2.23	2.36	2.40	2.54	2.41	2.71	2.17	2.08	2.25
92.50°	2.07	2.29	2.22	1.95	2.09	2.42	2.00	1.82	2.09	2.08	2.30	2.27	2.11	2.46	1.85	1.93	2.07
95.00°	1.94	2.34	2.21	1.84	1.97	2.34	1.97	1.81	2.06	2.09	2.29	2.23	2.24	2.32	1.80	1.89	1.94
97.50°	1.86	2.33	2.19	1.88	2.09	2.32	1.92	1.81	2.12	2.10	2.31	2.18	2.31	2.29	1.80	1.84	1.86
100.00°	1.91	2.30	2.17	1.95	2.22	2.45	1.86	1.82	2.19	2.11	2.34	2.10	2.13	2.28	1.91	1.80	1.91
102.50°	1.91	2.44	2.16	1.95	2.15	2.48	1.89	1.87	2.12	2.16	2.25	2.07	2.00	2.34	1.98	1.89	1.91
105.00°	1.83	2.61	2.18	1.93	2.08	2.31	1.94	2.02	2.03	2.27	2.15	2.14	2.02	2.40	1.97	1.99	1.83

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	737	737	737	737	718	718	718	718	683	683	683	651	651	651	622	622	608
	1	684	659	636	616	666	644	623	605	615	599	584	589	576	564	565	555	545
	2	630	585	549	518	613	573	539	511	549	521	497	527	504	484	507	488	471
	3	579	521	476	441	564	511	469	436	491	456	427	473	443	418	456	431	409
	4	534	467	417	380	520	458	412	377	441	401	370	426	391	364	411	382	358
	5	493	420	369	331	480	413	365	329	398	356	324	385	349	320	373	341	315
	6	457	381	329	292	445	374	326	290	362	319	287	351	313	283	340	306	280
	7	425	347	296	260	414	341	293	259	331	287	256	321	282	253	312	277	251
	8	397	317	267	233	386	313	265	232	304	261	230	295	256	228	287	252	226
	9	371	292	244	211	362	288	242	210	280	238	208	273	234	207	266	231	205
	10	348	270	223	192	340	266	221	191	259	218	190	253	215	189	247	212	187

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	9.0 fc	13.4 ft
6.5 ft	6.4 fc	15.8 ft
7.5 ft	4.8 fc	18.2 ft
8.0 ft	4.3 fc	19.4 ft
10.0 ft	2.7 fc	24.3 ft
12.0 ft	1.9 fc	29.1 ft
14.0 ft	1.4 fc	34.0 ft
16.0 ft	1.1 fc	38.8 ft
20.0 ft	0.7 fc	48.5 ft
24.0 ft	0.5 fc	58.3 ft
28.0 ft	0.3 fc	68.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	5810	5810	5810
45.00°	4943	4926	4308
55.00°	4098	4077	3668
65.00°	2013	2159	2701
75.00°	757	867	1207
85.00°	880	968	866

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	16.4	17.8	16.8	18.2	18.5	16.3	17.8	16.7	18.1	18.5
	3H	16.6	17.9	17.0	18.3	18.7	17.1	18.4	17.5	18.8	19.2
	4H	16.7	17.9	17.1	18.3	18.7	17.2	18.5	17.7	18.9	19.3
	6H	16.7	17.8	17.1	18.2	18.6	17.3	18.4	17.7	18.8	19.3
	8H	16.7	17.7	17.1	18.2	18.6	17.3	18.4	17.8	18.8	19.2
	12H	16.7	17.7	17.1	18.1	18.6	17.3	18.3	17.8	18.7	19.2
4H	2H	16.6	17.8	17.1	18.2	18.7	16.6	17.8	17.0	18.2	18.6
	3H	17.0	18.0	17.4	18.4	18.9	17.5	18.4	17.9	18.9	19.3
	4H	17.0	17.9	17.5	18.4	18.9	17.6	18.5	18.1	19.0	19.5
	6H	17.1	17.9	17.6	18.3	18.9	17.7	18.5	18.2	19.0	19.5
	8H	17.1	17.8	17.6	18.3	18.8	17.8	18.5	18.3	19.0	19.5
	12H	17.1	17.8	17.6	18.3	18.8	17.8	18.4	18.3	18.9	19.5
8H	4H	17.0	17.8	17.5	18.2	18.8	17.6	18.3	18.1	18.8	19.3
	6H	17.1	17.7	17.6	18.2	18.8	17.7	18.3	18.3	18.9	19.4
	8H	17.2	17.7	17.7	18.2	18.8	17.8	18.3	18.3	18.9	19.4
	12H	17.2	17.7	17.8	18.2	18.8	17.8	18.3	18.4	18.8	19.5
12H	4H	17.0	17.7	17.5	18.2	18.7	17.6	18.2	18.1	18.7	19.3
	6H	17.1	17.6	17.7	18.1	18.7	17.7	18.2	18.3	18.8	19.3
	8H	17.2	17.6	17.7	18.2	18.8	17.8	18.3	18.3	18.8	19.4

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0