

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SR10SQLEDOA 10L 35K xx FT1010 MW xx FO
10" square recessed LED downlight, flush extruded aluminum door

Test Number

SP-01640

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	522
Efficacy	51.73 lm/W

Luminous Dimensions

0° - 180° Size	0.69
90° - 270° Size	0.69
Height	0

Spacing Criterion

Two luminaires, plane 0°	1.19
Two luminaires, plane 90°	1.19
Four luminaires	1.3

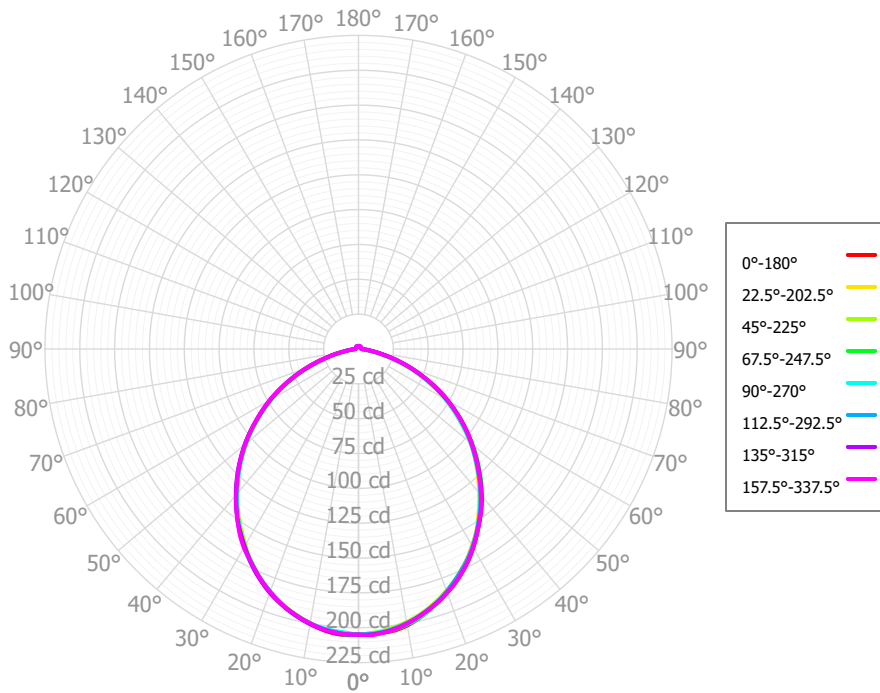
Full Beam Angle

0° - 180°	102°
90° - 270°	102°

IES File Header Contents

Keyword	Value
TEST	SP-01640
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	1/30/2024
ISSUEDATE	2/28/2024
LUMCAT	SR10SQLEDOA 10L 35K xx FT1010 MW xx FO
LUMINAIRE	10" square recessed LED downlight, flush extruded aluminum door
OTHER	Beam Angle: 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°	19.63	3.76%	90.00° - 100.00°	2.25	0.43%
10.00° - 20.00°	54.58	10.45%	100.00° - 110.00°	2.17	0.41%
20.00° - 30.00°	80.73	15.45%	100.00° - 120.00°	4.18	0.80%
30.00° - 40.00°	94.09	18.01%	120.00° - 130.00°	1.82	0.35%
40.00° - 50.00°	93.52	17.90%	130.00° - 140.00°	1.57	0.30%
50.00° - 60.00°	79.93	15.30%	140.00° - 150.00°	1.28	0.25%
60.00° - 70.00°	55.45	10.61%	150.00° - 160.00°	0.95	0.18%
70.00° - 80.00°	25.59	4.90%	160.00° - 170.00°	0.59	0.11%
80.00° - 90.00°	6.07	1.16%	170.00° - 180.00°	0.20	0.04%
0.00° - 90.00°	509.59	97.54%	0.00° - 180.00°	522.43	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°	205.02	205.02	205.02	205.02	205.02	205.02	205.02	205.02	205.02	205.02	205.02	205.02	205.02	205.02	205.02	205.02	205.02
2.50°	205.07	204.71	204.12	204.89	204.24	204.83	205.11	204.85	205.56	204.11	204.46	205.37	203.78	204.89	205.10	205.55	205.07
5.00°	204.37	203.44	202.93	204.00	203.78	203.68	204.41	203.95	204.78	203.46	203.72	204.06	203.01	203.78	204.20	204.42	204.37
7.50°	203.56	201.81	201.26	202.99	202.44	202.04	202.77	202.46	202.93	202.40	202.23	202.43	201.89	202.03	202.54	202.66	203.56
10.00°	201.43	199.57	198.92	200.78	200.62	199.87	200.52	199.92	200.07	200.03	199.73	199.81	200.12	199.71	200.20	200.11	201.43
12.50°	198.26	197.21	196.22	198.32	197.75	197.16	197.57	197.09	197.10	197.38	196.83	197.02	197.46	196.99	197.08	197.25	198.26
15.00°	194.27	193.72	192.77	194.51	194.37	193.92	194.21	193.77	194.03	193.96	193.43	193.78	194.06	193.57	193.71	193.92	194.27
17.50°	189.69	190.03	188.96	190.47	190.20	189.94	190.33	189.97	190.26	190.18	189.57	190.12	189.72	189.70	190.10	190.42	189.69
20.00°	185.17	185.15	184.56	186.11	185.69	185.31	186.19	185.50	185.94	185.55	185.20	185.48	185.29	185.11	186.03	186.11	185.17
22.50°	180.69	180.11	179.90	181.71	180.94	180.38	181.24	180.62	180.82	180.60	180.50	180.54	180.76	180.12	181.55	181.53	180.69
25.00°	175.33	174.63	174.97	176.39	176.09	175.22	175.91	175.21	175.14	174.96	175.46	174.98	175.74	174.94	176.47	176.25	175.33
27.50°	169.47	169.10	169.93	170.97	170.52	169.72	169.84	169.86	169.45	169.37	169.40	169.28	170.23	169.67	170.91	170.77	169.47
30.00°	163.50	162.94	163.78	164.54	164.72	164.00	163.47	164.59	163.76	163.89	162.42	163.35	164.22	163.57	164.65	164.48	163.50
32.50°	157.48	156.73	157.26	158.03	157.76	157.64	157.26	158.41	157.17	157.83	155.85	157.07	157.73	157.09	157.86	157.99	157.48
35.00°	150.93	149.41	150.19	151.28	150.46	150.86	151.11	151.27	150.06	150.79	149.62	150.21	150.58	150.33	151.31	151.23	150.93
37.50°	144.12	142.04	142.95	144.53	143.63	143.79	144.16	143.97	143.28	143.62	143.11	143.32	142.86	143.46	144.93	144.41	144.12
40.00°	136.79	134.65	135.96	137.50	136.91	136.55	136.94	136.51	136.66	136.25	136.40	136.37	135.35	136.06	137.63	136.81	136.79
42.50°	129.25	127.25	129.04	130.48	128.84	129.11	129.60	129.06	129.13	128.76	129.07	129.15	128.01	128.48	129.76	129.07	129.25
45.00°	121.67	119.93	121.58	122.67	120.47	121.56	122.22	121.61	121.18	121.09	121.33	121.56	120.56	120.87	121.94	121.40	121.67
47.50°	114.07	112.60	114.01	114.85	112.82	113.69	114.47	113.97	113.54	113.22	113.31	113.98	113.04	113.24	114.16	113.73	114.07
50.00°	106.11	104.93	105.33	106.68	105.31	105.68	106.64	106.17	106.02	105.09	105.10	106.40	105.25	105.56	106.39	106.10	106.11
52.50°	98.04	97.23	96.45	98.51	96.99	97.56	98.22	98.15	97.79	96.95	97.11	98.30	97.28	97.85	98.64	98.47	98.04
55.00°	90.02	88.92	88.19	90.37	88.56	89.40	89.69	89.97	89.32	88.81	89.22	89.61	89.07	90.05	90.46	90.22	90.02
57.50°	82.02	80.60	80.03	82.21	80.51	81.17	81.51	81.86	80.92	80.69	81.31	81.11	80.73	82.23	82.10	81.92	82.02
60.00°	73.29	72.22	71.99	73.78	72.50	72.92	73.39	73.79	72.56	72.58	73.37	72.80	72.52	73.47	73.67	74.21	73.29
62.50°	64.38	63.79	63.97	65.34	64.01	64.38	64.83	65.20	64.25	64.37	64.95	64.50	64.38	64.51	65.21	66.53	64.38
65.00°	55.96	54.92	55.37	56.72	55.47	55.74	56.22	56.31	55.97	56.05	56.31	56.20	56.01	56.02	56.85	57.35	55.96
67.50°	47.63	46.15	46.73	48.13	47.20	46.95	47.84	47.90	47.26	47.80	48.02	47.84	47.52	47.61	48.54	48.16	47.63
70.00°	39.65	38.07	38.31	39.76	38.94	38.13	39.49	39.73	38.46	39.63	39.87	39.41	39.31	39.84	40.28	40.05	39.65
72.50°	31.73	30.07	29.90	31.52	30.60	30.39	31.50	31.81	30.90	31.71	31.65	31.43	31.21	32.14	32.05	31.96	31.73
75.00°	24.22	22.53	22.57	24.02	22.26	22.91	23.53	24.01	23.57	24.00	23.41	23.80	23.97	24.77	24.55	24.54	24.22
77.50°	16.77	15.47	15.27	16.96	16.42	16.64	17.35	17.39	17.16	17.43	17.19	17.40	17.03	17.42	17.24	17.27	16.77
80.00°	11.81	10.67	10.77	11.98	10.64	10.63	11.26	11.26	10.89	11.65	11.58	11.87	12.07	12.30	12.44	12.48	11.81
82.50°	7.11	6.43	6.33	7.50	7.42	7.31	8.01	7.57	7.47	7.68	7.80	8.06	7.70	7.34	8.20	7.88	7.11
85.00°	4.79	4.36	4.48	5.09	4.30	4.44	4.82	4.76	4.41	4.86	4.51	5.32	5.12	4.98	5.55	5.47	4.79
87.50°	2.64	2.65	2.70	3.08	3.12	3.23	3.43	3.28	3.24	3.26	3.12	3.66	2.99	2.73	3.21	3.26	2.64
90.00°	2.25	2.11	2.23	2.46	2.01	2.24	2.08	2.22	2.25	2.36	2.15	2.59	2.32	2.27	2.53	2.73	2.25
92.50°	1.94	1.74	1.79	1.99	1.92	2.18	2.19	2.08	2.11	2.05	1.94	2.17	1.97	1.84	2.11	2.27	1.94
95.00°	1.93	1.87	1.83	1.95	1.84	2.21	2.29	2.19	2.03	2.04	1.88	2.06	1.95	1.88	2.14	2.23	1.93
97.50°	1.92	1.94	1.87	1.93	1.97	2.17	2.20	2.22	2.05	2.05	1.88	2.07	1.99	1.91	2.22	2.20	1.92
100.00°	1.94	1.88	2.00	1.96	2.08	2.12	2.12	2.23	2.07	2.07	1.88	2.14	1.93	1.92	2.20	2.19	1.94
102.50°	1.95	1.83	2.11	2.00	1.99	2.11	2.13	2.17	2.09	2.05	1.91	2.15	1.85	1.93	2.17	2.18	1.95
105.00°	1.99	1.82	2.11	2.08	1.92	2.11	2.14	2.10	2.11	2.02	1.94	2.15	1.99	1.89	2.22	2.12	1.99

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	619	619	619	619	603	603	603	603	573	573	573	546	546	546	521	521	510
	1	569	546	525	507	554	533	514	497	509	493	479	486	474	462	466	456	445
	2	520	480	446	418	506	469	438	412	448	423	400	429	408	389	412	395	385
	3	476	424	383	351	462	414	377	347	397	365	339	381	354	332	367	344	336
	4	437	377	333	299	424	369	328	297	355	319	291	341	311	286	329	302	295
	5	403	338	293	259	391	331	289	257	319	282	253	307	275	249	297	268	262
	6	372	305	260	227	362	299	257	226	289	251	223	279	245	220	270	240	235
	7	346	277	233	201	336	272	230	200	263	226	198	255	221	196	247	217	212
	8	322	253	210	180	313	249	208	179	241	204	178	234	200	176	227	197	193
	9	301	233	191	163	293	229	189	162	222	186	160	216	183	159	210	180	176
	10	283	215	175	148	275	212	173	147	206	171	146	200	168	145	195	165	162

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	6.8 fc	13.6 ft
6.5 ft	4.9 fc	16.1 ft
7.5 ft	3.6 fc	18.5 ft
8.0 ft	3.2 fc	19.8 ft
10.0 ft	2.1 fc	24.7 ft
12.0 ft	1.4 fc	29.6 ft
14.0 ft	1.0 fc	34.6 ft
16.0 ft	0.8 fc	39.5 ft
20.0 ft	0.5 fc	49.4 ft
24.0 ft	0.4 fc	59.3 ft
28.0 ft	0.3 fc	69.2 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	4635	4635	4635
45.00°	3890	3887	3852
55.00°	3548	3476	3491
65.00°	2993	2962	2967
75.00°	2116	1972	1944
85.00°	1242	1162	1115

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	16.2	17.7	16.6	18.1	18.5	16.2	17.7	16.6	18.1	18.5
	3H	17.7	19.0	18.1	19.4	19.8	17.6	19.0	18.0	19.4	19.8
	4H	18.1	19.4	18.5	19.8	20.2	18.0	19.3	18.5	19.7	20.2
	6H	18.3	19.5	18.7	19.9	20.3	18.2	19.4	18.7	19.8	20.3
	8H	18.3	19.5	18.8	19.9	20.4	18.3	19.4	18.7	19.9	20.3
	12H	18.4	19.4	18.8	19.9	20.4	18.3	19.4	18.8	19.8	20.3
4H	2H	16.8	18.0	17.2	18.4	18.9	16.7	18.0	17.2	18.4	18.9
	3H	18.4	19.4	18.8	19.9	20.3	18.3	19.4	18.8	19.9	20.3
	4H	18.9	19.8	19.3	20.3	20.8	18.8	19.8	19.3	20.3	20.8
	6H	19.2	20.0	19.7	20.5	21.0	19.1	20.0	19.6	20.5	21.0
	8H	19.2	20.0	19.7	20.5	21.0	19.2	20.0	19.7	20.5	21.0
	12H	19.3	20.0	19.8	20.5	21.0	19.2	19.9	19.8	20.5	21.0
8H	4H	19.0	19.8	19.5	20.3	20.8	19.0	19.8	19.5	20.3	20.8
	6H	19.4	20.0	19.9	20.6	21.1	19.4	20.0	19.9	20.5	21.1
	8H	19.5	20.1	20.0	20.6	21.2	19.5	20.1	20.0	20.6	21.1
	12H	19.6	20.1	20.1	20.6	21.2	19.6	20.1	20.1	20.6	21.2
12H	4H	19.0	19.7	19.6	20.3	20.8	19.0	19.7	19.5	20.2	20.8
	6H	19.4	20.0	20.0	20.5	21.1	19.4	20.0	19.9	20.5	21.1
	8H	19.5	20.0	20.1	20.6	21.2	19.5	20.0	20.1	20.6	21.2

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0