

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

SR12SQLEDOA 33L 35K xx RT1212 MW xx FO
12" square recessed LED downlight, flush extruded aluminum door

Test Number

SP-01643_2

Test Date

2/12/2024

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

Summary of Results

Power

Input Watts	26 W
-------------	------

Lumen Output

Output Lumens	2441
Efficacy	93.87 lm/W

Luminous Dimensions

0° - 180° Size	0.88
90° - 270° Size	0.88
Height	0

Spacing Criterion

Two luminaires, plane 0°	1.19
Two luminaires, plane 90°	1.17
Four luminaires	1.28

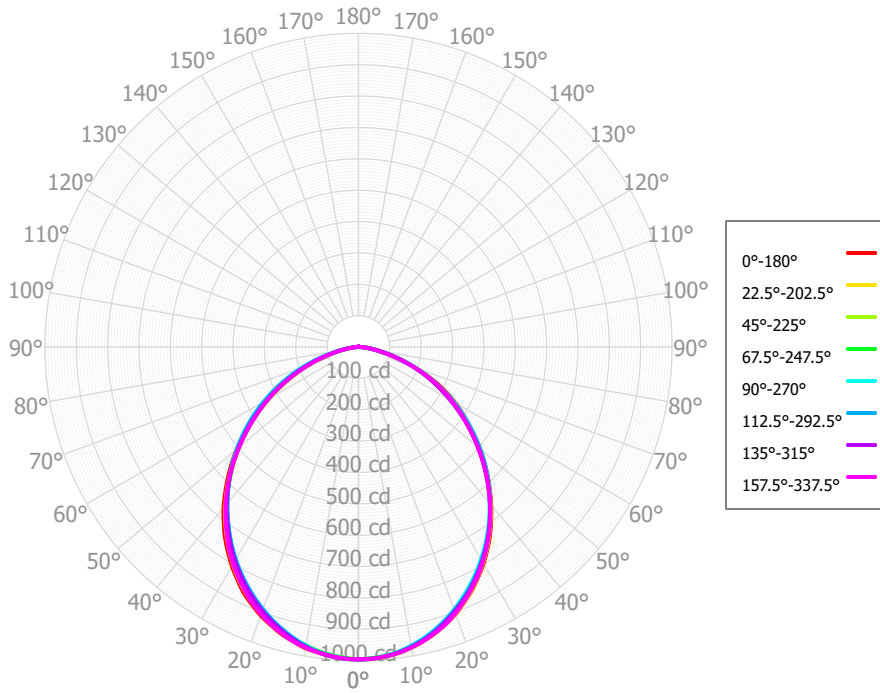
Full Beam Angle

0° - 180°	101°
90° - 270°	101°

IES File Header Contents

Keyword	Value
TEST	SP-01643_2
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	2/12/2024
ISSUEDATE	2/28/2024
LUMCAT	SR12SQLEDOA 33L 35K xx RT1212 MW xx FO
LUMINAIRE	12" square recessed LED downlight, flush extruded aluminum door
OTHER	Beam Angle: 101 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°	95.28	3.90%	90.00° - 100.00°	1.96	0.08%
10.00° - 20.00°	264.58	10.84%	100.00° - 110.00°	1.50	0.06%
20.00° - 30.00°	390.21	15.99%	100.00° - 120.00°	2.92	0.12%
30.00° - 40.00°	452.92	18.56%	120.00° - 130.00°	1.36	0.06%
40.00° - 50.00°	446.38	18.29%	130.00° - 140.00°	1.20	0.05%
50.00° - 60.00°	376.74	15.44%	140.00° - 150.00°	1.02	0.04%
60.00° - 70.00°	259.35	10.63%	150.00° - 160.00°	0.77	0.03%
70.00° - 80.00°	119.75	4.91%	160.00° - 170.00°	0.47	0.02%
80.00° - 90.00°	25.66	1.05%	170.00° - 180.00°	0.16	0.01%
0.00° - 90.00°	2430.87	99.60%	0.00° - 180.00°	2440.74	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°	996.36	996.36	996.36	996.36	996.36	996.36	996.36	996.36	996.36	996.36	996.36	996.36	996.36	996.36	996.36	996.36	996.36
2.50°	994.10	996.37	993.89	993.43	994.74	995.57	994.96	994.82	994.07	995.85	992.67	992.87	994.67	996.02	994.83	995.39	994.10
5.00°	990.59	991.75	991.11	988.23	990.15	989.94	990.50	989.58	990.45	990.65	988.72	986.79	989.30	989.45	990.67	990.61	990.59
7.50°	982.45	985.02	982.10	980.55	981.14	982.53	981.80	983.17	983.09	983.37	979.56	978.33	980.35	981.46	982.77	984.43	982.45
10.00°	973.69	974.04	972.74	968.89	967.72	968.12	971.36	973.40	975.38	972.57	970.16	966.25	967.65	968.58	972.67	973.27	973.69
12.50°	959.79	960.75	957.98	954.90	952.37	952.70	955.70	961.90	962.01	960.18	954.16	951.65	951.51	954.62	957.75	960.56	959.79
15.00°	945.29	944.43	942.74	936.37	935.16	933.48	937.96	945.70	948.16	945.19	937.91	933.33	933.51	935.57	940.92	944.21	945.29
17.50°	926.07	926.52	921.08	915.24	914.79	913.38	917.56	928.15	930.02	927.83	916.75	913.36	913.87	915.44	920.03	926.78	926.07
20.00°	906.19	904.99	899.10	891.94	891.47	890.10	896.14	907.07	911.54	906.70	895.45	890.98	891.62	892.94	898.10	903.87	906.19
22.50°	881.48	881.63	873.41	867.43	866.37	866.06	871.36	884.37	888.75	883.98	871.37	867.24	867.10	869.96	874.03	879.40	881.48
25.00°	856.21	854.36	847.39	841.07	839.64	839.42	845.32	857.53	865.66	858.83	847.24	841.57	840.85	843.19	848.22	852.10	856.21
27.50°	827.10	825.19	817.89	813.71	811.35	812.10	816.90	829.63	836.58	831.34	818.41	814.08	813.13	815.69	818.94	824.03	827.10
30.00°	797.50	793.81	788.14	784.12	781.67	782.57	787.64	799.10	807.13	800.35	789.53	784.13	783.44	785.23	788.93	792.20	797.50
32.50°	764.78	761.39	756.02	753.36	750.88	752.08	755.72	767.22	774.83	768.05	756.75	753.10	752.13	754.24	757.49	759.38	764.78
35.00°	731.50	727.22	723.50	721.06	719.13	718.54	722.90	732.08	742.39	733.89	723.94	720.67	719.54	721.53	724.46	725.01	731.50
37.50°	694.89	692.27	687.41	687.98	685.52	684.81	688.69	696.34	705.93	698.36	688.60	687.18	685.94	688.52	688.47	690.26	694.89
40.00°	658.09	655.20	651.17	652.79	650.35	650.48	654.03	659.20	669.29	660.93	653.23	652.34	651.33	653.31	652.00	652.80	658.09
42.50°	620.32	617.21	613.75	616.59	615.11	615.67	616.96	620.90	629.14	622.18	614.72	616.47	615.95	617.76	614.67	614.68	620.32
45.00°	582.53	577.96	576.09	579.45	579.81	579.43	579.12	580.01	588.86	581.63	576.19	579.31	579.78	580.80	576.77	575.53	582.53
47.50°	544.62	538.16	536.67	541.87	543.05	542.77	539.09	538.72	547.99	540.51	536.72	541.80	543.02	543.65	537.85	536.15	544.62
50.00°	506.57	498.63	497.25	503.89	505.14	504.89	498.38	496.57	507.10	498.61	497.19	503.86	505.24	505.05	498.38	496.67	506.57
52.50°	467.86	459.20	457.79	465.73	467.15	466.80	457.34	454.62	465.76	456.62	455.29	465.05	466.73	466.25	457.97	457.16	467.86
55.00°	429.48	421.14	418.23	426.61	429.09	428.15	416.21	413.08	424.41	414.49	413.37	425.23	427.79	426.59	417.53	419.08	429.48
57.50°	392.69	383.61	377.90	387.06	390.22	388.94	374.47	371.96	383.28	372.97	370.64	384.88	388.55	386.82	377.07	381.31	392.69
60.00°	355.65	346.02	337.94	347.18	350.73	348.29	332.56	331.66	342.16	332.20	327.95	343.91	348.62	346.55	337.36	344.38	355.65
62.50°	317.51	308.39	300.28	307.16	311.02	307.69	291.71	291.02	299.64	291.38	286.35	302.52	308.21	306.21	298.85	307.63	317.51
65.00°	278.50	270.12	262.81	267.31	271.14	267.20	251.14	249.73	257.11	250.48	244.91	260.67	268.50	266.97	261.01	268.53	278.50
67.50°	235.67	231.62	226.45	227.53	232.35	227.00	212.89	209.45	215.09	209.94	206.94	219.69	229.26	227.86	224.20	229.00	235.67
70.00°	193.27	191.71	190.15	189.61	194.31	187.51	175.24	171.04	173.12	169.82	169.12	179.66	189.90	188.42	187.78	189.00	193.27
72.50°	152.65	151.30	154.27	152.42	156.68	149.33	139.00	134.56	137.03	132.66	133.85	142.11	150.44	148.95	151.95	148.92	152.65
75.00°	113.62	115.83	119.23	118.41	119.32	114.26	103.10	101.61	101.07	98.89	99.05	107.15	113.56	114.98	118.05	113.63	113.62
77.50°	80.87	82.04	88.71	85.61	86.71	82.00	76.43	72.51	73.18	70.44	71.87	76.49	78.28	81.54	86.94	79.15	80.87
80.00°	52.11	59.17	60.27	60.86	57.22	56.19	51.92	50.18	45.56	47.89	45.46	50.18	52.81	58.14	60.35	57.49	52.11
82.50°	38.40	39.90	42.30	39.07	36.36	34.01	34.02	31.09	30.09	29.65	29.81	30.21	33.32	35.61	40.13	37.88	38.40
85.00°	25.13	25.32	25.47	23.93	21.01	19.89	17.59	17.50	14.88	16.03	14.81	16.50	19.05	21.63	23.41	24.12	25.13
87.50°	13.41	12.24	14.12	11.14	11.10	8.80	9.39	7.57	8.06	7.22	7.97	7.64	7.88	8.30	11.47	11.23	13.41
90.00°	3.98	6.33	4.52	5.42	4.55	4.22	2.95	3.68	1.50	3.45	1.67	3.46	3.10	4.56	3.89	5.94	3.98
92.50°	2.42	2.61	2.86	2.11	1.82	1.16	1.60	1.29	1.46	1.51	1.48	1.35	1.94	1.48	2.12	1.70	2.42
95.00°	1.24	1.71	1.51	1.35	1.37	1.25	1.29	1.30	1.42	1.44	1.31	1.18	1.52	1.27	1.18	1.34	1.24
97.50°	1.32	1.65	1.50	1.44	1.29	1.27	1.11	1.28	1.44	1.41	1.32	1.21	1.53	1.23	1.32	1.49	1.32
100.00°	1.38	1.59	1.48	1.43	1.43	1.14	0.97	1.23	1.46	1.42	1.33	1.41	1.55	1.14	1.35	1.52	1.38
102.50°	1.41	1.53	1.43	1.38	1.51	1.11	1.15	1.28	1.45	1.50	1.40	1.53	1.58	1.04	1.24	1.54	1.41
105.00°	1.45	1.57	1.39	1.44	1.56	1.27	1.39	1.49	1.44	1.65	1.46	1.55	1.45	1.21	1.24	1.51	1.45

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	2903	2903	2903	2903	2835	2835	2835	2835	2706	2706	2706	2589	2589	2589	2481	2481	2431
	1	2674	2566	2470	2383	2607	2510	2423	2343	2405	2333	2268	2309	2251	2197	2220	2174	2127
	2	2445	2256	2100	1969	2381	2210	2066	1945	2122	2002	1898	2042	1942	1854	1968	1885	1843
	3	2239	1995	1806	1655	2179	1956	1781	1640	1883	1733	1610	1815	1688	1581	1752	1645	1608
	4	2056	1776	1571	1415	2001	1744	1552	1405	1682	1516	1384	1625	1481	1365	1572	1448	1416
	5	1896	1594	1383	1227	1845	1566	1368	1220	1514	1340	1206	1465	1312	1192	1420	1286	1259
	6	1754	1440	1229	1077	1708	1417	1217	1072	1372	1195	1062	1331	1173	1052	1292	1152	1128
	7	1630	1309	1102	956	1588	1289	1092	952	1251	1074	945	1216	1056	937	1183	1039	1019
	8	1519	1198	995	856	1481	1181	988	854	1148	973	848	1117	958	842	1088	945	926
	9	1421	1102	906	774	1387	1087	899	771	1059	887	767	1032	875	763	1007	864	848
	10	1334	1018	829	704	1302	1005	824	702	981	814	698	958	804	695	936	794	780

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	32.9 fc	13.4 ft
6.5 ft	23.6 fc	15.8 ft
7.5 ft	17.7 fc	18.2 ft
8.0 ft	15.6 fc	19.4 ft
10.0 ft	10.0 fc	24.3 ft
12.0 ft	6.9 fc	29.2 ft
14.0 ft	5.1 fc	34.0 ft
16.0 ft	3.9 fc	38.9 ft
20.0 ft	2.5 fc	48.6 ft
24.0 ft	1.7 fc	58.3 ft
28.0 ft	1.3 fc	68.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	13849	13849	13849
45.00°	11451	11324	11397
55.00°	10408	10135	10398
65.00°	9160	8644	8918
75.00°	6102	6403	6408
85.00°	4008	4062	3350

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	20.0	21.6	20.4	21.9	22.3	20.1	21.7	20.5	22.0	22.3
	3H	21.6	23.0	22.0	23.3	23.7	21.5	23.0	21.9	23.3	23.7
	4H	22.0	23.3	22.4	23.7	24.1	22.0	23.3	22.4	23.7	24.0
	6H	22.2	23.4	22.6	23.8	24.2	22.2	23.4	22.6	23.8	24.2
	8H	22.3	23.4	22.7	23.8	24.2	22.2	23.4	22.7	23.8	24.2
	12H	22.3	23.4	22.7	23.8	24.2	22.2	23.4	22.7	23.8	24.2
4H	2H	20.6	21.9	21.0	22.2	22.6	20.5	21.9	20.9	22.2	22.6
	3H	22.3	23.4	22.7	23.8	24.2	22.2	23.3	22.6	23.7	24.1
	4H	22.8	23.8	23.2	24.2	24.7	22.7	23.7	23.1	24.1	24.6
	6H	23.1	24.0	23.6	24.4	24.9	23.0	23.9	23.5	24.3	24.8
	8H	23.2	24.0	23.6	24.4	24.9	23.1	23.9	23.5	24.3	24.8
	12H	23.2	24.0	23.7	24.4	24.9	23.1	23.8	23.6	24.3	24.8
8H	4H	23.0	23.8	23.5	24.2	24.7	22.8	23.6	23.3	24.1	24.6
	6H	23.4	24.0	23.9	24.5	25.0	23.2	23.8	23.7	24.3	24.8
	8H	23.5	24.1	24.0	24.6	25.1	23.3	23.9	23.8	24.4	24.9
	12H	23.6	24.1	24.1	24.6	25.2	23.3	23.9	23.9	24.4	24.9
12H	4H	23.0	23.7	23.5	24.2	24.7	22.8	23.5	23.3	24.0	24.5
	6H	23.4	24.0	23.9	24.4	25.0	23.2	23.8	23.7	24.3	24.8
	8H	23.5	24.1	24.0	24.6	25.1	23.3	23.8	23.8	24.3	24.9

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0