

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

SR4MOTD 10LE1 RDD4x 30K MWxSO
Nom 4" diam round recessed downlight

Test Number

SP-00790_2

Test Date

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

Summary of Results

Power

Input Watts	15.9 W
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Lumen Output

Output Lumens	803
Efficacy	50.53 lm/W

Luminous Dimensions

0° - 180° Size	-0.33
90° - 270° Size	-0.33
Height	0

Spacing Criterion

Two luminaires, plane 0°	1.13
Two luminaires, plane 90°	1.13
Four luminaires	1.08

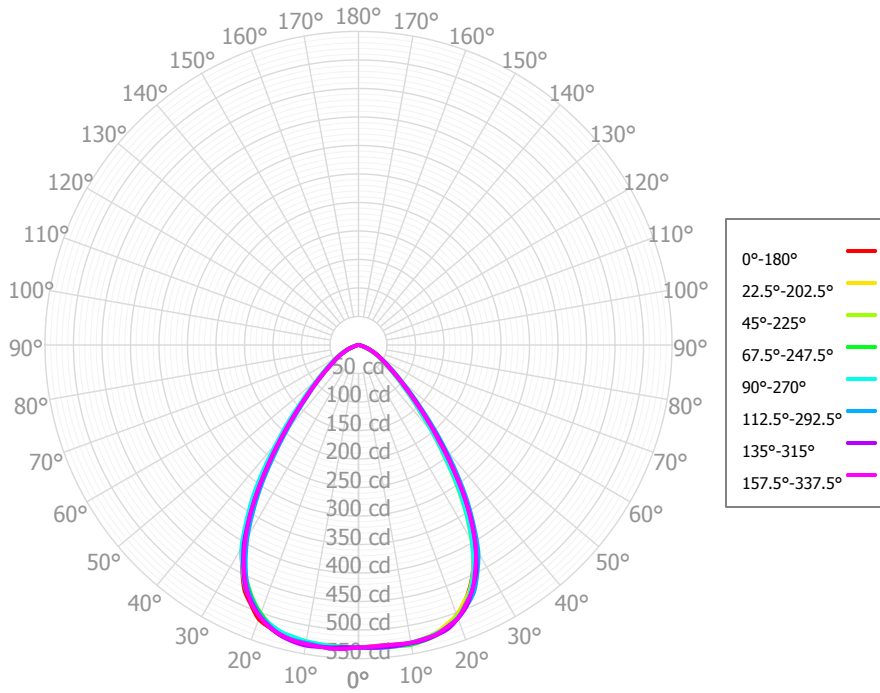
Full Beam Angle

0° - 180°	74°
90° - 270°	74°

IES File Header Contents

Keyword	Value
TEST	SP-00790_2
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	3/14/2019
UPDATE	4/4/2019
LUMCAT	SR4MOTD 10LE1 RDD4x 30K MWxSO
LUMINAIRE	Nom 4" diam round recessed downlight
OTHER	Beam Angle: 73 degrees
OTHER	Matte white trim; Solite lens
LAMPCAT	N/A
LAMP	N/A, White Light, CRI: 80
OTHER	CCT Output Multipliers:
OTHER	Total luminaire wattages is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	80
_CCTMULT	only 30K available
_LAMPMULT	only 10K available

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	51.50	6.41%	90.00° - 100.00°	0.10	0.01%
10.00° - 20.00°	147.68	18.38%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	212.69	26.47%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	191.65	23.86%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	108.80	13.54%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	55.56	6.92%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	26.83	3.34%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	6.85	0.85%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.75	0.22%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	803.32	99.99%	0.00° - 180.00°	803.41	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°	530.73	530.73	530.73	530.73	530.73	530.73	530.73	530.73	530.73	530.73	530.73	530.73	530.73	530.73	530.73	530.73	530.73
2.50°	529.27	529.92	531.95	530.66	532.31	532.91	530.65	533.58	532.23	531.07	530.69	530.03	530.52	531.24	531.82	529.80	529.27
5.00°	528.69	529.69	532.35	531.84	533.03	534.19	532.64	534.53	533.86	531.79	530.01	530.08	530.33	531.75	532.31	529.08	528.69
7.50°	530.09	530.07	532.57	532.89	532.71	532.13	534.16	533.53	533.05	532.35	528.98	530.04	529.18	531.02	532.11	529.41	530.09
10.00°	530.58	530.59	531.06	533.89	531.44	530.41	535.27	532.24	531.68	531.85	527.67	529.11	527.72	530.20	531.47	530.25	530.58
12.50°	529.32	527.26	528.31	531.14	528.67	529.96	532.76	530.63	529.51	529.31	525.39	527.06	524.74	528.09	530.55	528.53	529.32
15.00°	525.13	523.32	523.43	527.19	524.72	526.92	527.63	526.06	527.21	524.94	522.50	522.09	521.38	525.77	527.00	525.83	525.13
17.50°	516.42	513.89	517.34	518.82	519.28	516.66	518.37	518.85	519.67	517.67	515.27	514.19	513.82	518.39	522.15	518.38	516.42
20.00°	504.14	503.95	505.27	509.36	508.72	504.06	506.69	506.77	511.61	505.54	505.87	501.01	505.58	510.36	510.22	509.56	504.14
22.50°	487.29	486.01	490.49	491.31	492.93	486.26	489.28	491.16	493.01	487.19	487.77	483.44	488.23	495.62	495.57	492.33	487.29
25.00°	464.88	467.56	466.02	471.82	468.65	462.69	469.19	466.48	473.81	464.21	466.29	460.99	470.01	479.04	472.79	473.34	464.88
27.50°	436.69	436.43	438.02	440.21	437.15	429.01	437.69	436.39	441.63	436.44	436.40	435.25	440.62	451.42	447.67	443.49	436.69
30.00°	400.12	404.18	396.88	407.38	397.93	389.73	401.98	397.55	408.58	400.26	403.94	398.91	410.60	420.65	410.60	412.06	400.12
32.50°	356.52	356.35	352.14	357.88	353.43	342.61	354.21	354.57	361.84	356.82	360.17	356.87	366.19	376.87	370.94	368.23	356.52
35.00°	308.40	308.18	301.01	307.57	303.78	293.35	303.11	305.24	314.71	309.07	313.89	309.05	321.39	331.68	321.82	323.39	308.40
37.50°	257.13	257.29	248.65	257.79	251.31	241.60	254.14	253.58	264.60	258.32	264.87	258.70	270.84	282.05	271.35	271.27	257.13
40.00°	211.12	208.39	204.52	208.68	205.76	196.23	205.61	208.36	215.96	212.53	215.45	214.11	221.43	234.18	225.55	219.37	211.12
42.50°	168.05	169.47	161.48	170.18	163.29	156.89	166.90	164.99	174.71	169.50	176.53	171.46	180.99	190.56	180.12	179.72	168.05
45.00°	135.59	133.87	132.04	133.17	132.62	126.56	129.51	134.24	136.93	136.97	138.57	139.35	142.82	151.95	146.45	141.18	135.59
47.50°	107.79	110.16	103.53	108.94	106.00	103.12	106.59	106.08	112.11	109.22	114.33	109.86	116.40	122.82	113.45	116.18	107.79
50.00°	88.50	88.78	87.06	86.22	87.86	84.37	84.68	86.91	89.87	89.68	90.73	90.59	92.40	98.20	93.26	92.31	88.50
52.50°	72.19	73.95	70.91	71.64	71.89	68.58	70.98	68.95	74.80	73.02	76.24	73.18	77.25	80.59	73.71	76.13	72.19
55.00°	60.47	60.40	59.66	58.26	59.93	57.12	57.56	58.34	61.41	61.55	62.09	61.21	63.41	65.65	61.79	61.11	60.47
57.50°	49.95	49.63	48.62	49.39	48.71	47.85	49.29	48.31	51.67	51.43	52.50	49.85	53.20	54.04	50.44	51.30	49.95
60.00°	41.28	39.99	39.90	40.99	41.36	39.25	41.05	40.20	42.49	42.20	43.07	42.12	43.73	44.12	43.16	42.11	41.28
62.50°	32.94	32.27	31.53	33.97	34.45	30.92	33.18	32.20	34.31	33.14	34.86	34.57	35.92	35.89	35.87	35.04	32.94
65.00°	25.68	25.45	25.28	27.24	26.80	24.76	25.73	26.13	26.61	26.02	27.10	27.55	28.28	28.95	28.53	28.08	25.68
67.50°	18.57	19.85	19.14	21.11	19.25	19.28	20.66	19.96	19.56	19.15	21.34	20.67	20.94	23.07	21.52	21.41	18.57
70.00°	13.78	14.42	13.34	14.98	13.97	12.90	14.97	13.12	13.57	14.05	15.60	14.83	14.63	16.66	15.39	14.81	13.78
72.50°	9.29	9.12	8.56	8.83	8.95	7.12	7.95	7.72	8.37	9.21	9.89	9.47	9.26	10.01	10.21	8.31	9.29
75.00°	5.55	6.03	4.83	5.77	4.47	4.54	4.47	4.48	5.48	5.04	5.67	4.92	5.88	6.39	5.91	5.25	5.55
77.50°	3.56	3.84	3.56	3.74	2.58	3.16	3.01	3.28	3.48	3.39	2.83	3.35	3.47	3.92	4.13	3.65	3.56
80.00°	2.58	2.66	2.73	2.28	1.85	2.45	2.39	2.65	2.46	2.74	2.60	2.56	2.22	2.74	2.74	3.19	2.58
82.50°	2.23	1.93	1.97	1.87	1.83	1.85	1.75	2.09	1.71	2.20	2.12	1.93	2.25	1.96	1.91	2.18	2.23
85.00°	1.63	1.88	1.37	1.65	2.02	1.56	1.50	1.34	1.17	1.54	1.94	1.29	1.64	1.34	1.62	1.46	1.63
87.50°	1.17	1.21	1.29	1.29	1.50	1.07	1.17	1.26	1.43	1.14	1.43	1.04	1.30	1.10	1.32	1.15	1.17
90.00°	1.30	0.33	0.76	0.40	1.00	0.78	0.59	0.51	0.52	0.68	0.46	1.30	0.87	0.33	0.85	0.58	1.30
92.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
97.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
102.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
107.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

RCR	pfc	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	956	956	956	956	934	934	934	934	893	893	893	855	855	855	820	820	803
	1	901	875	851	829	881	857	835	816	824	806	790	794	780	767	766	755	739
	2	844	797	758	725	826	783	747	716	756	726	700	731	706	685	708	688	674
	3	790	728	679	640	773	716	671	635	694	656	625	673	641	614	654	628	615
	4	740	666	613	572	724	657	607	568	638	595	561	621	584	554	605	574	562
	5	693	612	556	515	678	604	551	512	589	543	507	574	534	502	561	526	498
	6	650	565	508	466	637	558	504	465	545	497	461	533	490	458	521	484	475
	7	611	523	466	425	599	517	463	424	506	457	422	495	452	419	486	447	439
	8	575	485	429	390	564	480	427	389	471	422	387	462	418	385	453	413	406
	9	543	452	397	359	533	448	395	359	440	391	357	432	388	356	425	384	378
	10	513	423	369	333	504	419	367	332	412	364	331	405	361	330	398	358	352

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	17.5 fc	8.2 ft
6.5 ft	12.6 fc	9.7 ft
7.5 ft	9.4 fc	11.2 ft
8.0 ft	8.3 fc	12.0 ft
10.0 ft	5.3 fc	15.0 ft
12.0 ft	3.7 fc	18.0 ft
14.0 ft	2.7 fc	21.0 ft
16.0 ft	2.1 fc	24.0 ft
20.0 ft	1.3 fc	30.0 ft
24.0 ft	0.9 fc	36.0 ft
28.0 ft	0.7 fc	42.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	66,792	66,792	66,792
45.00°	24,132	23,501	23,604
55.00°	13,268	13,089	13,148
65.00°	7,648	7,529	7,981
75.00°	2,701	2,349	2,171
85.00°	2,353	1,974	2,917

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	17.0	18.2	17.4	18.5	18.9	16.9	18.1	17.2	18.4	18.7
	3H	17.6	18.7	18.0	19.0	19.4	17.5	18.6	17.9	18.9	19.3
	4H	17.6	18.6	18.0	19.0	19.3	17.5	18.5	17.9	18.8	19.2
	6H	17.6	18.5	18.0	18.9	19.3	17.4	18.4	17.9	18.7	19.1
	8H	17.5	18.4	18.0	18.8	19.2	17.4	18.3	17.8	18.7	19.1
	12H	17.5	18.3	18.0	18.7	19.2	17.4	18.2	17.8	18.6	19.0
4H	2H	17.2	18.2	17.6	18.6	19.0	17.1	18.1	17.5	18.4	18.8
	3H	17.9	18.7	18.3	19.1	19.5	17.8	18.6	18.2	19.0	19.4
	4H	17.9	18.7	18.4	19.1	19.5	17.8	18.5	18.2	19.0	19.4
	6H	17.9	18.5	18.4	19.0	19.5	17.8	18.4	18.2	18.8	19.3
	8H	17.9	18.5	18.4	18.9	19.4	17.7	18.3	18.2	18.8	19.2
	12H	17.9	18.4	18.4	18.9	19.4	17.7	18.2	18.2	18.7	19.2
8H	4H	17.9	18.4	18.3	18.9	19.4	17.7	18.3	18.2	18.8	19.2
	6H	17.9	18.3	18.4	18.8	19.3	17.7	18.2	18.2	18.7	19.1
	8H	17.9	18.3	18.4	18.8	19.3	17.7	18.1	18.2	18.6	19.1
	12H	17.9	18.2	18.4	18.7	19.3	17.7	18.1	18.2	18.6	19.1
12H	4H	17.8	18.3	18.3	18.8	19.3	17.7	18.2	18.2	18.7	19.1
	6H	17.8	18.2	18.3	18.7	19.3	17.6	18.1	18.2	18.5	19.1
	8H	17.8	18.2	18.3	18.7	19.3	17.6	18.0	18.2	18.5	19.1

Corrected UGR values based on total output lumens

SHR = 1.0