Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGE5LEDOS 30L 35K DS101 AR5223OS PT SO FGPY

Nom 5" diam illumitech decorative trim recessed downlight

Test Number

SP-00914

Test Date

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

Summary of Results

Power

Input Watts	29.6 W

Lumen Output

Output Lumens	2089
Efficacy	70.57 lm/W

Luminous Dimensions

0° - 180° Size	-0.42
90° - 270° Size	-0.42
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.88
Two luminaires, plane 90°	0.86
Four luminaires	0.85

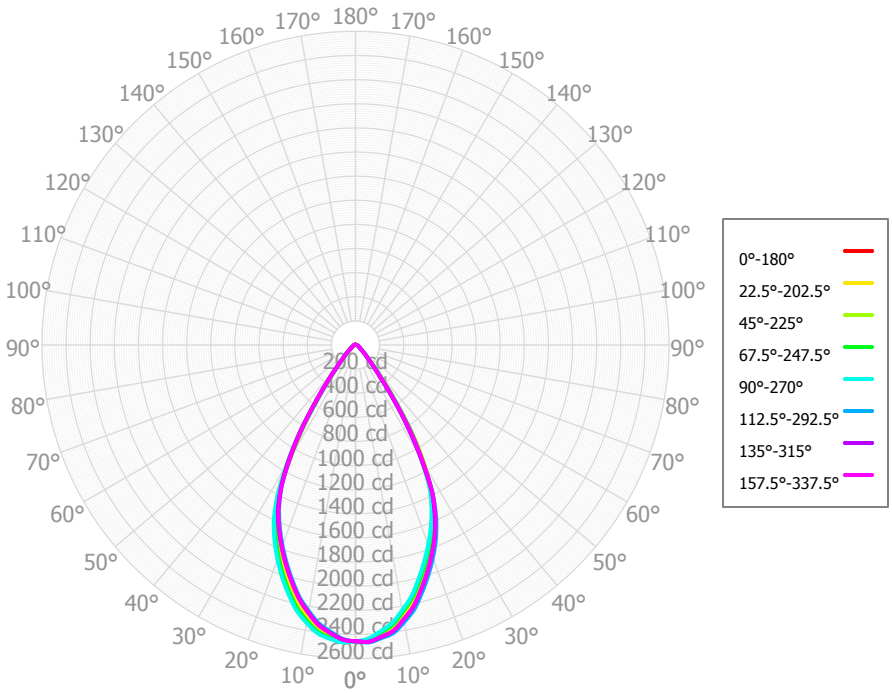
Full Beam Angle

0° - 180°	57°
90° - 270°	57°

IES File Header Contents

Keyword	Value
TEST	SP-00914
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	10/22/2018
UPDATE	8/19/2019
LUMCAT	SGE5LEDOS 30L 35K DS101 AR5223OS PT SO FGPY
LUMINAIRE	Nom 5" diam illumitech decorative trim recessed downlight
OTHER	Solite lens, flared frosted glass
LAMPCAT	N/A
LAMP	N/A
OTHER	CCT Output Multipliers: 27K x 0.89, 30K x 0.95, 40K x 1.03
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	229.82	11.00%	90.00° - 100.00°	6.37	0.30%
10.00° - 20.00°	577.67	27.66%	100.00° - 110.00°	3.34	0.16%
20.00° - 30.00°	688.85	32.98%	100.00° - 120.00°	5.21	0.25%
30.00° - 40.00°	371.79	17.80%	120.00° - 130.00°	1.22	0.06%
40.00° - 50.00°	102.05	4.89%	130.00° - 140.00°	0.97	0.05%
50.00° - 60.00°	42.78	2.05%	140.00° - 150.00°	0.83	0.04%
60.00° - 70.00°	28.30	1.35%	150.00° - 160.00°	0.65	0.03%
70.00° - 80.00°	19.67	0.94%	160.00° - 170.00°	0.39	0.02%
80.00° - 90.00°	12.13	0.58%	170.00° - 180.00°	0.13	0.01%
0.00° - 90.00°	2,073.08	99.25%	0.00° - 180.00°	2,088.85	100.00%

SPECTRUM LIGHTING INC.

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°	2,456.82	2,456.82	2,456.82	2,456.82	2,456.82	2,456.82	2,456.82	2,456.82	2,456.82	2,456.82	2,456.82	2,456.82	2,456.82	2,456.82	2,456.82	2,456.82	2,456.82
2.50°	2,456.46	2,451.26	2,445.67	2,442.45	2,436.91	2,439.30	2,443.82	2,445.41	2,452.02	2,457.41	2,465.24	2,463.87	2,468.41	2,468.89	2,463.24	2,464.35	2,456.46
5.00°	2,417.59	2,410.90	2,394.79	2,395.00	2,383.18	2,385.79	2,397.35	2,397.63	2,412.21	2,418.64	2,435.38	2,437.09	2,445.40	2,440.90	2,431.20	2,429.69	2,417.59
7.50°	2,370.74	2,360.77	2,341.03	2,341.69	2,325.26	2,328.29	2,339.76	2,344.68	2,369.97	2,376.00	2,399.68	2,397.08	2,411.09	2,408.94	2,392.36	2,391.65	2,370.74
10.00°	2,284.58	2,275.64	2,246.62	2,250.32	2,232.40	2,238.20	2,253.30	2,253.41	2,283.91	2,291.08	2,321.02	2,322.70	2,340.20	2,331.59	2,309.50	2,308.75	2,284.58
12.50°	2,190.03	2,180.65	2,148.66	2,155.23	2,137.27	2,142.76	2,155.47	2,156.74	2,195.02	2,203.72	2,235.50	2,234.33	2,256.41	2,247.89	2,222.15	2,220.93	2,190.03
15.00°	2,067.49	2,060.32	2,027.25	2,035.63	2,012.87	2,020.61	2,035.91	2,035.59	2,074.55	2,081.41	2,118.99	2,119.24	2,142.23	2,126.98	2,100.58	2,100.77	2,067.49
17.50°	1,942.95	1,936.63	1,904.26	1,914.94	1,888.31	1,897.17	1,913.82	1,912.79	1,952.79	1,958.49	1,999.69	1,997.88	2,022.43	2,004.76	1,977.70	1,979.02	1,942.95
20.00°	1,813.66	1,806.56	1,774.81	1,785.57	1,761.94	1,769.50	1,788.09	1,784.95	1,823.57	1,829.93	1,871.82	1,867.46	1,892.63	1,877.67	1,848.60	1,850.84	1,813.66
22.50°	1,680.11	1,673.28	1,642.46	1,655.17	1,633.57	1,638.74	1,658.51	1,653.18	1,690.58	1,696.61	1,737.15	1,726.88	1,753.83	1,742.07	1,716.31	1,717.01	1,680.11
25.00°	1,538.91	1,535.34	1,501.63	1,515.62	1,493.20	1,500.71	1,524.52	1,512.62	1,543.36	1,538.36	1,587.26	1,574.73	1,602.85	1,583.44	1,554.18	1,567.00	1,538.91
27.50°	1,353.15	1,360.16	1,328.85	1,360.28	1,331.32	1,329.06	1,341.73	1,334.03	1,365.11	1,353.04	1,395.26	1,358.16	1,393.96	1,383.52	1,372.17	1,379.63	1,353.15
30.00°	1,105.78	1,142.85	1,088.45	1,121.17	1,087.49	1,096.63	1,116.13	1,090.79	1,103.62	1,072.88	1,131.68	1,085.09	1,123.17	1,101.68	1,084.51	1,113.20	1,105.78
32.50°	845.01	890.62	838.40	876.17	839.96	848.64	859.73	836.34	840.66	799.07	860.65	807.84	842.81	822.62	803.27	843.51	845.01
35.00°	569.99	607.99	573.03	610.78	582.24	579.31	582.65	567.38	574.82	541.04	579.98	527.81	554.59	547.79	544.26	568.66	569.99
37.50°	373.79	406.90	371.88	387.08	371.51	379.47	393.01	369.64	366.83	335.63	373.62	346.56	361.56	345.56	330.60	362.16	373.79
40.00°	243.79	261.77	250.96	267.54	255.48	252.84	249.10	244.83	247.30	229.79	242.26	217.02	228.31	228.94	230.29	240.99	243.79
42.50°	167.32	180.97	170.35	175.01	169.22	171.24	174.60	165.80	164.17	152.62	161.28	152.04	157.53	154.24	152.93	161.95	167.32
45.00°	125.23	133.52	128.46	133.13	128.16	127.20	126.83	122.82	123.63	116.52	119.97	111.95	117.16	117.58	118.65	123.37	125.23
47.50°	94.88	101.19	96.71	99.22	95.27	95.06	97.13	91.99	92.40	87.32	91.26	87.03	90.26	89.83	89.82	93.75	94.88
50.00°	70.18	74.62	72.44	76.64	72.17	70.50	72.31	68.48	69.54	65.72	70.10	66.22	68.15	68.38	68.74	70.73	70.18
52.50°	55.80	58.11	56.32	58.88	55.18	54.75	57.50	53.92	54.15	51.50	56.15	55.56	55.41	54.91	53.71	56.00	55.80
55.00°	45.18	44.40	44.90	46.44	43.82	43.28	44.51	43.51	44.09	43.72	45.55	46.76	44.96	45.78	45.37	46.05	45.18
57.50°	39.83	39.78	38.78	38.97	37.10	37.33	38.74	37.88	37.90	37.96	40.00	41.58	40.46	40.52	39.62	40.54	39.83
60.00°	35.81	36.81	34.93	35.78	33.68	33.38	33.68	33.86	33.80	33.55	36.14	36.75	36.91	36.83	36.09	36.94	35.81
62.50°	31.92	32.53	31.46	32.53	30.23	29.71	30.06	30.39	30.59	29.98	32.56	33.55	33.47	32.98	32.52	33.61	31.92
65.00°	28.06	28.12	28.10	29.23	26.76	26.11	26.52	27.05	27.74	26.81	29.04	30.38	30.05	29.08	28.91	30.36	28.06
67.50°	26.08	25.21	25.38	26.60	24.77	23.97	24.05	24.04	24.52	24.14	26.09	26.38	26.56	26.89	25.91	26.18	26.08
70.00°	24.26	22.38	22.78	24.29	23.39	22.06	21.57	21.07	21.20	21.64	23.23	22.55	23.17	25.02	23.23	21.81	24.26
72.50°	21.37	20.57	20.49	21.56	20.62	20.36	18.85	19.63	19.18	20.03	20.79	20.26	21.53	22.44	20.72	20.13	21.37
75.00°	18.50	18.66	18.23	18.67	17.45	18.68	16.47	18.30	17.41	18.66	18.39	18.17	19.89	19.77	18.26	18.79	18.50
77.50°	16.34	15.87	16.02	16.65	16.14	16.77	15.86	16.57	16.32	16.63	17.13	17.13	18.27	18.00	16.71	17.11	16.34
80.00°	14.23	13.46	13.81	14.86	15.21	14.84	14.90	14.81	15.30	14.50	15.86	15.78	16.41	16.24	15.39	15.41	14.23
82.50°	12.44	13.07	12.19	13.22	12.63	12.40	12.74	12.50	13.61	13.03	14.62	13.32	13.38	14.02	13.25	13.20	12.44
85.00°	10.61	12.00	10.57	11.61	9.86	10.05	10.73	10.27	11.89	11.63	13.18	11.11	10.73	11.81	10.97	11.02	10.61
87.50°	8.61	8.55	9.01	9.03	7.63	8.46	9.09	8.64	10.07	9.40	10.42	9.49	9.31	9.69	9.46	9.15	8.61
90.00°	7.03	6.18	7.47	6.35	5.46	6.97	7.51	7.10	8.36	7.23	7.96	8.13	8.04	7.83	8.02	7.50	7.03
92.50°	6.76	6.47	6.03	5.67	4.78	6.01	6.05	5.97	7.65	6.78	6.77	7.24	7.16	7.43	7.35	7.27	6.76
95.00°	6.50	6.32	4.79	5.02	4.12	4.98	5.11	5.07	6.91	6.32	5.76	6.16	6.41	6.72	6.68	6.88	6.50
97.50°	6.31	5.34	4.37	4.06	3.60	3.74	4.90	4.90	6.00	5.83	5.32	4.80	5.89	4.89	5.48	5.87	6.31
100.00°	5.85	4.95	3.87	3.09	3.02	2.61	4.44	4.64	5.27	5.31	4.72	3.55	4.77	3.33	4.34	5.11	5.85
102.50°	4.95	5.39	3.18	2.07	2.02	1.75	3.71	4.21	5.19	4.66	3.76	2.43	2.83	2.48	3.73	5.01	4.95
105.00°	4.38	5.13	2.71	1.24	1.24	1.23	3.19	3.72	5.02	4.09	3.06	1.64	1.61	1.82	3.12	4.83	4.38
107.50°	4.28	4.11	2.69	1.33	1.32	1.30	2.83	3.13	4.57	3.76	2.79	1.13	1.10	1.52	2.49	4.50	4.28
110.00°	4.13	3.45	2.45	1.35	1.34	1.24	2.38	2.64	4.05	3.39	2.48	0.92	0.87	1.37	1.90	3.95	4.13
112.50°	3.94	3.09	1.89	1.13	1.19	1.03	1.87	2.28	3.36	2.93	2.12	0.91	0.88	1.43	1.44	3.07	3.94

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

	ρfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	ρcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	ρw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	0	2,483	2,483	2,483	2,483	2,423	2,423	2,423	2,423	2,312	2,312	2,312	2,210	2,210	2,210	2,117	2,117	2,117	2,073
	1	2,358	2,296	2,241	2,191	2,304	2,249	2,199	2,154	2,161	2,122	2,085	2,081	2,049	2,020	2,006	1,982	1,959	1,941
	2	2,236	2,130	2,041	1,967	2,188	2,092	2,012	1,944	2,021	1,955	1,899	1,956	1,903	1,855	1,896	1,853	1,814	1,815
	3	2,121	1,982	1,874	1,789	2,078	1,952	1,853	1,773	1,894	1,811	1,743	1,841	1,771	1,713	1,792	1,734	1,685	1,699
	4	2,013	1,851	1,732	1,641	1,973	1,826	1,716	1,631	1,778	1,684	1,609	1,734	1,654	1,589	1,693	1,625	1,569	1,594
RCR	5	1,911	1,733	1,608	1,517	1,875	1,712	1,596	1,509	1,673	1,572	1,494	1,636	1,548	1,479	1,602	1,526	1,465	1,497
	6	1,816	1,627	1,500	1,409	1,784	1,609	1,490	1,403	1,576	1,471	1,392	1,545	1,453	1,382	1,516	1,435	1,371	1,409
	7	1,727	1,531	1,404	1,315	1,698	1,516	1,396	1,311	1,488	1,381	1,302	1,462	1,366	1,294	1,437	1,352	1,287	1,328
	8	1,645	1,444	1,318	1,231	1,618	1,431	1,312	1,228	1,407	1,299	1,222	1,385	1,287	1,216	1,363	1,276	1,210	1,254
	9	1,568	1,365	1,241	1,157	1,544	1,354	1,236	1,155	1,333	1,225	1,150	1,314	1,215	1,145	1,295	1,206	1,140	1,187
	10	1,496	1,293	1,171	1,090	1,474	1,283	1,167	1,088	1,265	1,158	1,084	1,248	1,150	1,081	1,232	1,142	1,077	1,125

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	81.2 fc	6.0 ft
6.5 ft	58.1 fc	7.1 ft
7.5 ft	43.7 fc	8.2 ft
8.0 ft	38.4 fc	8.7 ft
10.0 ft	24.6 fc	10.9 ft
12.0 ft	17.1 fc	13.1 ft
14.0 ft	12.5 fc	15.3 ft
16.0 ft	9.6 fc	17.4 ft
20.0 ft	6.1 fc	21.8 ft
24.0 ft	4.3 fc	26.2 ft
28.0 ft	3.1 fc	30.5 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	190,878	190,878	190,878
45.00°	13,760	14,115	14,081
55.00°	6,120	6,082	5,935
65.00°	5,158	5,166	4,920
75.00°	5,553	5,471	5,238
85.00°	9,457	9,422	8,792

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	10.7	11.7	11.1	12.0	12.4	10.6	11.6	10.9	11.9	12.2
	3H	12.4	13.3	12.8	13.7	14.1	12.3	13.2	12.7	13.5	13.9
	4H	13.2	14.1	13.7	14.4	14.9	13.1	14.0	13.6	14.3	14.8
	6H	14.1	14.8	14.5	15.2	15.6	14.1	14.9	14.5	15.2	15.7
	8H	14.5	15.2	14.9	15.6	16.0	14.5	15.3	15.0	15.7	16.1
	12H	14.9	15.6	15.4	16.0	16.5	15.0	15.7	15.4	16.1	16.5
4H	2H	11.2	12.0	11.6	12.4	12.8	11.0	11.9	11.4	12.2	12.6
	3H	13.1	13.8	13.6	14.2	14.7	13.0	13.7	13.4	14.1	14.5
	4H	14.1	14.7	14.6	15.2	15.6	14.0	14.6	14.5	15.1	15.5
	6H	15.1	15.7	15.6	16.1	16.6	15.2	15.7	15.7	16.2	16.7
	8H	15.7	16.1	16.1	16.6	17.1	15.7	16.2	16.2	16.7	17.2
	12H	16.2	16.7	16.7	17.2	17.7	16.3	16.7	16.8	17.2	17.7
8H	4H	14.5	15.0	15.0	15.4	15.9	14.4	14.9	14.9	15.3	15.8
	6H	15.7	16.1	16.3	16.6	17.1	15.8	16.2	16.3	16.7	17.2
	8H	16.4	16.8	17.0	17.3	17.8	16.5	16.8	17.0	17.4	17.9
	12H	17.2	17.5	17.8	18.0	18.6	17.2	17.5	17.8	18.0	18.6
12H	4H	14.6	15.0	15.1	15.5	16.0	14.4	14.9	15.0	15.4	15.9
	6H	15.9	16.2	16.4	16.7	17.3	15.9	16.3	16.5	16.8	17.3
	8H	16.7	17.0	17.2	17.5	18.1	16.8	17.1	17.3	17.6	18.2

Corrected UGR values based on total output lumens

SHR = 1.0