

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGE4LEDOS 30L 35K DS101 AR4223OS MW SO 1FGR
Nom 4" diam illumitech decorative trim recessed downlight

Test Number

SP-00910

Test Date

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

Summary of Results

Power

Input Watts	29.6 W
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Lumen Output

Output Lumens	1239
Efficacy	41.87 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.68
Two luminaires, plane 90°	0.69
Four luminaires	0.64

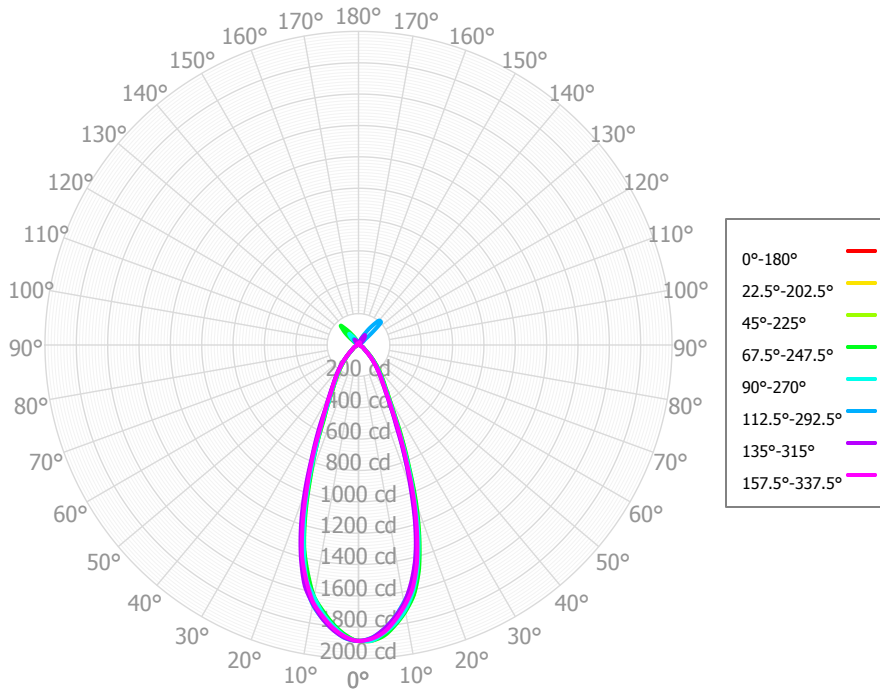
Full Beam Angle

0° - 180°	41°
90° - 270°	41°

IES File Header Contents

Keyword	Value
TEST	SP-00910
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	10/15/2018
UPDATE	8/19/2019
LUMCAT	SGE4LEDOS 30L 35K DS101 AR4223OS MW SO 1FGR
LUMINAIRE	Nom 4" diam illumitech decorative trim recessed downlight
OTHER	Solite lens, Frosted Glass Ring
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°	171.74	13.86%	90.00° - 100.00°	2.22	0.18%
10.00° - 20.00°	378.99	30.58%	100.00° - 110.00°	2.00	0.16%
20.00° - 30.00°	276.40	22.30%	100.00° - 120.00°	3.54	0.29%
30.00° - 40.00°	158.58	12.80%	120.00° - 130.00°	7.43	0.60%
40.00° - 50.00°	89.90	7.25%	130.00° - 140.00°	28.78	2.32%
50.00° - 60.00°	43.06	3.47%	140.00° - 150.00°	27.34	2.21%
60.00° - 70.00°	23.81	1.92%	150.00° - 160.00°	11.96	0.97%
70.00° - 80.00°	8.93	0.72%	160.00° - 170.00°	3.09	0.25%
80.00° - 90.00°	3.14	0.25%	170.00° - 180.00°	0.36	0.03%
0.00° - 90.00°	1,154.56	93.16%	0.00° - 180.00°	1,239.27	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°	1,887.56	1,887.56	1,887.56	1,887.56	1,887.56	1,887.56	1,887.56	1,887.56	1,887.56	1,887.56	1,887.56	1,887.56	1,887.56	1,887.56	1,887.56	1,887.56	1,887.56
2.50°	1,883.36	1,889.78	1,884.96	1,888.16	1,889.04	1,873.89	1,871.51	1,864.07	1,869.76	1,860.52	1,859.24	1,852.98	1,862.36	1,870.31	1,872.04	1,876.77	1,883.36
5.00°	1,836.02	1,852.20	1,849.31	1,862.30	1,846.83	1,825.39	1,827.49	1,815.74	1,814.80	1,799.64	1,805.38	1,792.83	1,802.52	1,822.49	1,822.35	1,841.11	1,836.02
7.50°	1,779.54	1,794.43	1,791.80	1,801.31	1,792.29	1,761.51	1,761.61	1,746.14	1,750.98	1,727.40	1,730.40	1,715.15	1,729.44	1,753.90	1,755.34	1,773.78	1,779.54
10.00°	1,699.55	1,715.75	1,717.42	1,726.20	1,716.65	1,682.07	1,676.21	1,666.44	1,657.21	1,639.60	1,637.49	1,630.31	1,633.28	1,666.07	1,673.34	1,691.31	1,699.55
12.50°	1,592.32	1,629.13	1,603.74	1,632.63	1,610.25	1,560.26	1,578.38	1,537.97	1,558.86	1,514.04	1,531.76	1,492.55	1,530.54	1,567.74	1,551.84	1,591.72	1,592.32
15.00°	1,428.24	1,467.01	1,465.51	1,489.07	1,460.76	1,403.03	1,417.00	1,391.40	1,379.92	1,346.48	1,363.88	1,337.89	1,346.72	1,405.41	1,402.56	1,440.27	1,428.24
17.50°	1,237.77	1,283.13	1,268.18	1,292.37	1,271.55	1,201.07	1,223.24	1,180.94	1,193.84	1,145.15	1,159.03	1,122.45	1,145.84	1,215.42	1,202.91	1,239.63	1,237.77
20.00°	1,003.38	1,058.19	1,040.85	1,076.82	1,037.15	968.79	1,006.11	952.17	965.89	912.34	940.93	892.69	926.24	997.80	973.83	1,022.70	1,003.38
22.50°	789.11	824.27	826.39	844.95	820.32	763.15	779.28	752.73	737.68	709.82	716.54	702.26	704.02	770.96	766.64	793.18	789.11
25.00°	602.27	645.97	617.15	654.32	619.97	572.26	608.10	559.52	581.29	530.24	555.80	518.40	554.74	601.40	569.61	610.75	602.27
27.50°	460.24	475.84	484.52	493.50	475.17	449.15	454.68	449.59	430.44	411.72	418.63	418.95	411.64	446.73	443.50	457.68	460.24
30.00°	368.55	390.81	375.75	389.92	373.41	356.28	371.24	351.42	358.54	330.56	341.17	328.38	344.89	364.74	343.55	360.84	368.55
32.50°	301.13	312.86	315.55	319.70	304.98	298.03	304.27	299.06	290.32	274.82	281.15	280.32	280.89	296.07	285.45	292.95	301.13
35.00°	255.89	269.48	266.72	270.14	257.44	251.77	260.28	250.47	249.85	231.91	238.90	234.24	242.24	252.50	239.28	245.30	255.89
37.50°	215.11	227.38	226.93	230.17	217.19	212.62	220.22	213.21	210.33	195.00	200.41	198.57	203.91	211.82	201.54	205.85	215.11
40.00°	177.67	191.06	188.63	193.22	180.65	175.36	184.20	176.41	175.73	160.49	166.72	163.28	169.81	177.04	165.52	171.07	177.67
42.50°	144.98	155.24	155.05	157.40	148.26	143.75	148.59	144.71	142.45	132.06	133.71	134.70	136.63	142.63	136.13	137.74	144.98
45.00°	115.21	126.29	121.94	127.47	117.56	113.23	120.98	113.65	114.04	105.52	108.56	106.93	110.18	115.75	107.65	111.55	115.21
47.50°	91.05	98.33	98.29	99.21	93.12	89.32	93.73	90.99	88.50	83.29	84.08	86.26	85.54	89.30	84.72	87.06	91.05
50.00°	69.67	78.11	75.12	78.94	70.62	66.24	74.68	69.47	70.95	62.07	67.03	66.83	69.65	70.75	62.23	69.03	69.67
52.50°	56.11	59.82	61.83	60.30	56.32	55.14	56.24	56.52	56.08	50.47	50.44	54.40	55.18	53.20	51.97	52.06	56.11
55.00°	45.63	51.19	48.95	50.43	43.98	44.84	48.85	44.99	47.26	40.41	43.89	43.81	45.91	46.03	42.13	43.48	45.63
57.50°	40.42	43.32	42.83	41.80	38.77	39.94	41.69	40.41	39.98	36.57	37.58	40.60	38.23	39.34	38.01	35.73	40.42
60.00°	36.83	38.22	36.85	36.92	34.75	35.07	36.54	35.69	35.44	33.33	34.50	36.74	34.92	35.54	33.81	31.44	36.83
62.50°	30.86	32.62	32.10	32.34	30.14	29.00	31.14	30.48	30.13	27.26	30.85	30.90	30.33	30.98	28.64	27.30	30.86
65.00°	24.36	25.61	27.04	26.16	25.46	22.98	24.25	25.11	23.68	21.07	22.99	24.80	23.01	23.11	23.44	21.43	24.36
67.50°	18.44	19.16	20.17	19.99	19.43	17.48	18.02	19.30	18.04	15.75	15.97	18.08	16.94	16.48	17.96	15.72	18.44
70.00°	12.62	13.94	14.07	16.36	13.35	12.49	14.45	14.03	13.38	10.64	13.13	12.65	13.11	13.93	12.91	12.78	12.62
72.50°	10.14	9.80	10.92	12.77	11.16	10.89	11.12	9.97	10.34	9.11	10.32	9.66	9.97	11.57	9.95	9.90	10.14
75.00°	7.98	7.58	8.12	9.72	8.99	9.12	8.52	7.00	8.88	7.55	7.65	7.11	7.81	9.73	7.30	7.65	7.98
77.50°	6.32	5.86	6.39	6.90	7.03	6.61	6.17	5.99	7.43	5.73	5.42	5.24	5.83	7.70	5.77	5.54	6.32
80.00°	4.68	4.87	4.79	5.65	5.14	4.47	4.41	5.18	6.00	4.00	4.40	3.96	4.06	5.30	4.41	4.27	4.68
82.50°	3.69	3.91	3.50	4.39	3.91	3.63	3.06	4.66	4.36	2.76	3.38	3.43	2.86	3.46	3.50	3.06	3.69
85.00°	2.72	2.98	2.46	3.01	2.78	2.88	2.50	3.77	2.60	1.75	2.34	2.88	2.21	2.52	2.71	2.11	2.72
87.50°	2.10	2.49	1.86	1.95	2.21	2.37	2.05	2.47	2.00	1.65	1.76	2.31	1.68	1.93	2.19	1.41	2.10
90.00°	1.57	2.42	1.71	2.00	1.74	2.01	1.78	1.86	2.01	1.61	2.02	2.09	1.24	1.78	1.91	1.41	1.57
92.50°	1.84	2.25	2.25	2.02	1.60	1.95	1.71	1.90	2.12	1.73	2.19	2.16	1.48	1.87	2.02	1.54	1.84
95.00°	2.12	2.00	2.53	1.97	1.46	1.74	1.89	2.32	2.28	2.06	2.25	2.10	2.16	2.22	2.15	1.94	2.12
97.50°	2.54	2.23	2.48	1.80	1.30	1.27	2.01	3.03	2.41	2.89	2.19	1.97	1.83	2.09	2.30	2.35	2.54
100.00°	2.98	2.77	2.43	1.39	1.15	1.00	2.06	3.17	2.52	3.34	2.01	1.77	0.97	1.53	2.27	2.77	2.98
102.50°	3.53	3.00	2.39	1.19	1.04	1.00	1.85	2.95	2.66	3.09	1.69	1.53	0.79	1.08	2.03	2.89	3.53
105.00°	3.88	3.08	1.92	1.38	0.99	0.92	1.40	2.96	2.81	2.76	1.25	1.42	0.87	0.70	1.77	2.55	3.88
107.50°	3.67	2.93	1.09	1.51	1.08	0.75	1.16	3.10	2.42	2.30	1.16	1.36	0.86	0.66	1.49	2.25	3.67
110.00°	3.31	2.68	0.93	1.56	1.17	0.78	1.05	2.58	1.94	1.89	1.35	1.42	0.81	0.82	1.36	2.01	3.31
112.50°	2.63	2.24	1.24	1.69	1.27	0.98	1.09	1.79	1.63	1.54	1.39	1.53	0.99	0.98	1.36	1.82	2.63

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%	10%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	0	1,455	1,455	1,455	1,455	1,411	1,411	1,411	1,411	1,330	1,330	1,330	1,255	1,255	1,255	1,187	1,187	1,187
	1	1,381	1,344	1,311	1,282	1,341	1,309	1,280	1,253	1,243	1,220	1,199	1,183	1,165	1,149	1,127	1,114	1,101
	2	1,308	1,244	1,192	1,147	1,272	1,215	1,168	1,128	1,161	1,123	1,090	1,112	1,081	1,055	1,066	1,042	1,020
	3	1,239	1,156	1,092	1,041	1,207	1,132	1,074	1,027	1,088	1,039	1,000	1,046	1,007	974	1,008	976	948
	4	1,175	1,079	1,008	954	1,146	1,059	994	944	1,021	967	924	986	941	904	954	916	885
	5	1,116	1,010	937	882	1,089	994	925	874	962	903	859	932	883	844	904	863	829
	6	1,061	950	875	821	1,037	935	866	815	908	848	803	883	831	791	859	814	779
	7	1,011	896	821	768	989	883	813	764	860	798	754	838	784	744	817	771	735
	8	964	847	773	723	945	836	767	719	816	755	711	797	743	703	779	731	695
	9	922	803	731	682	904	794	726	679	776	715	672	759	705	666	744	695	659
	10	882	764	693	646	866	756	689	643	740	680	638	725	671	632	711	662	627

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	62.4 fc	4.2 ft
6.5 ft	44.7 fc	5.0 ft
7.5 ft	33.6 fc	5.7 ft
8.0 ft	29.5 fc	6.1 ft
10.0 ft	18.9 fc	7.6 ft
12.0 ft	13.1 fc	9.2 ft
14.0 ft	9.6 fc	10.7 ft
16.0 ft	7.4 fc	12.2 ft
20.0 ft	4.7 fc	15.3 ft
24.0 ft	3.3 fc	18.3 ft
28.0 ft	2.4 fc	21.4 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	237,548	237,548	237,548
45.00°	20,505	21,703	20,924
55.00°	10,012	10,741	9,650
65.00°	7,254	8,051	7,583
75.00°	3,882	3,948	4,373
85.00°	3,928	3,547	4,009

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	13.8	14.8	14.2	15.2	15.7	13.8	14.8	14.3	15.2	15.7
	3H	14.5	15.4	15.0	15.9	16.4	14.5	15.4	15.0	15.9	16.4
	4H	14.7	15.5	15.2	16.0	16.5	14.7	15.5	15.2	16.0	16.6
	6H	14.8	15.5	15.3	16.0	16.6	14.8	15.6	15.4	16.1	16.7
	8H	14.8	15.5	15.4	16.1	16.6	14.9	15.6	15.4	16.1	16.7
	12H	14.8	15.5	15.4	16.0	16.6	14.9	15.6	15.4	16.1	16.7
4H	2H	14.1	14.9	14.6	15.4	16.0	14.1	14.9	14.6	15.4	15.9
	3H	14.9	15.6	15.5	16.2	16.7	14.9	15.6	15.4	16.1	16.7
	4H	15.2	15.8	15.7	16.3	16.9	15.2	15.8	15.7	16.3	16.9
	6H	15.3	15.9	15.9	16.4	17.1	15.4	15.9	15.9	16.4	17.1
	8H	15.4	15.9	16.0	16.5	17.1	15.4	15.9	16.0	16.5	17.1
	12H	15.5	15.9	16.1	16.5	17.1	15.5	15.9	16.1	16.5	17.1
8H	4H	15.2	15.7	15.8	16.2	16.9	15.2	15.7	15.8	16.2	16.9
	6H	15.4	15.8	16.1	16.4	17.1	15.4	15.8	16.0	16.4	17.1
	8H	15.6	15.9	16.2	16.5	17.2	15.5	15.9	16.2	16.5	17.2
	12H	15.7	16.0	16.3	16.6	17.3	15.7	16.0	16.3	16.6	17.3
12H	4H	15.2	15.6	15.8	16.2	16.8	15.1	15.6	15.8	16.2	16.8
	6H	15.4	15.8	16.1	16.4	17.1	15.4	15.7	16.0	16.3	17.0
	8H	15.6	15.9	16.2	16.5	17.2	15.5	15.8	16.2	16.5	17.2

Corrected UGR values based on total output lumens

SHR = 1.0