

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGE4SQLEDOS 30L 35K DS101 CA0422OS SO 1TCGSQ
Nom 4" square illumitech decorative trim recessed downlight

Test Number

SP-00912_M-30L

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	2130
Efficacy	71.96 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.93
Two luminaires, plane 90°	0.92
Four luminaires	0.98

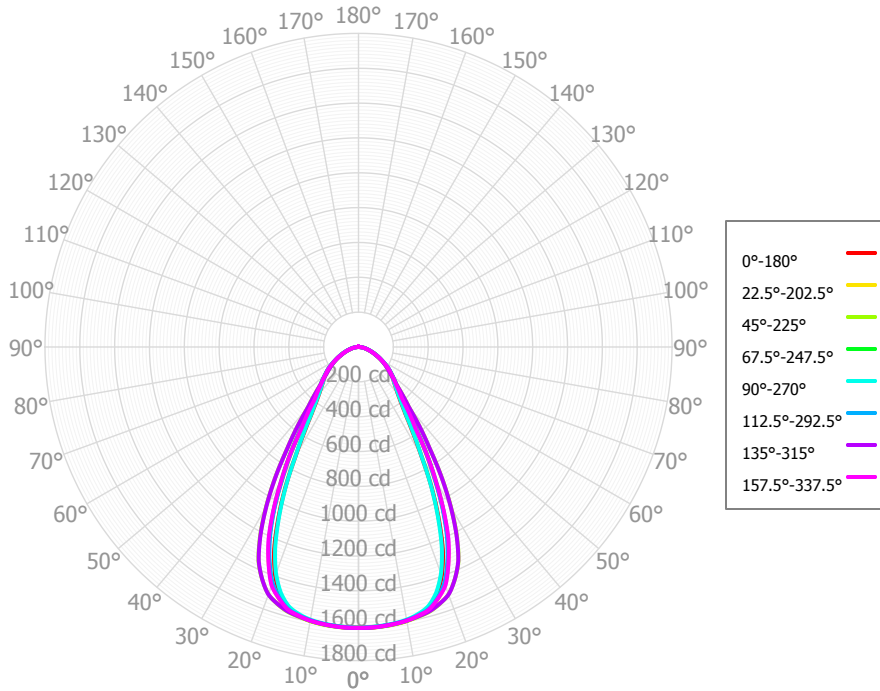
Full Beam Angle

0° - 180°	58°
90° - 270°	58°

IES File Header Contents

Keyword	Value
TEST	SP-00912_M-30L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	10/18/2018
UPDATE	8/19/2019
LUMCAT	SGE4SQLEDOS 30L 35K DS101 CA0422OS SO 1TCGSQ
LUMINAIRE	Nom 4" square illumitech decorative trim recessed downlight
OTHER	Solite lens, square tier clear 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, scaled from 20L
_CRI	80+
_CCTMULT	27K x 0.89, 30K x 0.95, 40K x 1.03
_LAMPMULT	10L x 0.41, 15L x 0.52, 20L x 0.67

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	155.43	7.30%	90.00° - 100.00°	1.94	0.09%
10.00° - 20.00°	435.31	20.44%	100.00° - 110.00°	1.82	0.09%
20.00° - 30.00°	544.93	25.58%	100.00° - 120.00°	3.10	0.15%
30.00° - 40.00°	375.90	17.65%	120.00° - 130.00°	1.13	0.05%
40.00° - 50.00°	239.82	11.26%	130.00° - 140.00°	1.07	0.05%
50.00° - 60.00°	179.54	8.43%	140.00° - 150.00°	0.88	0.04%
60.00° - 70.00°	114.12	5.36%	150.00° - 160.00°	0.71	0.03%
70.00° - 80.00°	57.81	2.71%	160.00° - 170.00°	0.41	0.02%
80.00° - 90.00°	17.67	0.83%	170.00° - 180.00°	0.14	0.01%
0.00° - 90.00°	2,120.52	99.56%	0.00° - 180.00°	2,129.90	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°	1,612.50	1,612.50	1,612.50	1,612.50	1,612.50	1,612.50	1,612.50	1,612.50	1,612.50	1,612.50	1,612.50	1,612.50	1,612.50	1,612.50	1,612.50	1,612.50	1,612.50
2.50°	1,612.92	1,609.51	1,613.58	1,610.37	1,609.42	1,610.45	1,612.77	1,612.04	1,612.92	1,609.51	1,613.58	1,610.37	1,609.42	1,610.45	1,612.77	1,612.04	1,612.92
5.00°	1,608.68	1,609.36	1,610.40	1,609.19	1,605.43	1,607.55	1,608.08	1,609.47	1,608.68	1,609.36	1,610.40	1,609.19	1,605.43	1,607.55	1,608.08	1,609.47	1,608.68
7.50°	1,603.21	1,605.74	1,604.92	1,604.03	1,599.33	1,601.93	1,602.11	1,603.80	1,603.21	1,605.74	1,604.92	1,604.03	1,599.33	1,601.93	1,602.11	1,603.80	1,603.21
10.00°	1,595.04	1,598.12	1,596.64	1,596.09	1,589.73	1,593.10	1,594.66	1,596.01	1,595.04	1,598.12	1,596.64	1,596.09	1,589.73	1,593.10	1,594.66	1,596.01	1,595.04
12.50°	1,579.28	1,583.25	1,586.05	1,580.41	1,571.71	1,578.37	1,584.29	1,580.67	1,579.28	1,583.25	1,586.05	1,580.41	1,571.71	1,578.37	1,584.29	1,580.67	1,579.28
15.00°	1,550.00	1,561.49	1,573.18	1,560.31	1,542.20	1,557.80	1,571.18	1,561.18	1,550.00	1,561.49	1,573.18	1,560.31	1,542.20	1,557.80	1,571.18	1,561.18	1,550.00
17.50°	1,493.57	1,516.31	1,547.41	1,510.66	1,480.98	1,510.47	1,546.26	1,515.35	1,493.57	1,516.31	1,547.41	1,510.66	1,480.98	1,510.47	1,546.26	1,515.35	1,493.57
20.00°	1,398.24	1,452.76	1,511.06	1,447.61	1,384.70	1,441.53	1,512.07	1,457.80	1,398.24	1,452.76	1,511.06	1,447.61	1,384.70	1,441.53	1,512.07	1,457.80	1,398.24
22.50°	1,266.48	1,346.07	1,444.63	1,338.36	1,250.49	1,334.31	1,444.33	1,349.18	1,266.48	1,346.07	1,444.63	1,338.36	1,250.49	1,334.31	1,444.33	1,349.18	1,266.48
25.00°	1,091.73	1,211.97	1,357.93	1,212.55	1,081.66	1,202.04	1,355.30	1,222.57	1,091.73	1,211.97	1,357.93	1,212.55	1,081.66	1,202.04	1,355.30	1,222.57	1,091.73
27.50°	909.65	1,050.46	1,222.90	1,053.44	904.97	1,045.18	1,219.24	1,059.83	909.65	1,050.46	1,222.90	1,053.44	904.97	1,045.18	1,219.24	1,059.83	909.65
30.00°	720.45	874.79	1,061.71	885.15	722.37	875.02	1,058.88	887.54	720.45	874.79	1,061.71	885.15	722.37	875.02	1,058.88	887.54	720.45
32.50°	577.40	716.90	890.56	731.30	585.36	721.82	888.75	728.42	577.40	716.90	890.56	731.30	585.36	721.82	888.75	728.42	577.40
35.00°	470.94	566.35	715.06	580.29	476.08	575.90	714.56	571.83	470.94	566.35	715.06	580.29	476.08	575.90	714.56	571.83	470.94
37.50°	399.77	470.19	576.64	485.13	405.71	479.97	576.31	477.43	399.77	470.19	576.64	485.13	405.71	479.97	576.31	477.43	399.77
40.00°	351.90	391.32	450.94	397.38	354.85	400.57	449.48	390.97	351.90	391.32	450.94	397.38	354.85	400.57	449.48	390.97	351.90
42.50°	317.25	344.09	375.66	350.14	319.70	350.91	374.24	346.23	317.25	344.09	375.66	350.14	319.70	350.91	374.24	346.23	317.25
45.00°	289.59	304.45	313.32	305.91	290.74	308.89	311.38	304.25	289.59	304.45	313.32	305.91	290.74	308.89	311.38	304.25	289.59
47.50°	268.18	277.02	275.30	278.36	268.66	279.59	273.51	276.48	268.18	277.02	275.30	278.36	268.66	279.59	273.51	276.48	268.18
50.00°	249.39	251.66	241.91	251.21	248.64	252.58	239.91	249.08	249.39	251.66	241.91	251.21	248.64	252.58	239.91	249.08	249.39
52.50°	226.04	227.76	217.83	227.31	226.88	228.81	215.84	226.64	226.04	227.76	217.83	227.31	226.88	228.81	215.84	226.64	226.04
55.00°	201.18	204.01	194.90	203.38	204.71	205.41	192.76	204.01	201.18	204.01	194.90	203.38	204.71	205.41	192.76	204.01	201.18
57.50°	178.21	179.11	173.05	179.16	181.50	180.07	171.73	179.50	178.21	179.11	173.05	179.16	181.50	180.07	171.73	179.50	178.21
60.00°	155.72	154.15	151.27	155.46	158.12	154.62	150.81	155.47	155.72	154.15	151.27	155.46	158.12	154.62	150.81	155.47	155.72
62.50°	136.42	133.96	130.16	135.22	137.61	134.66	129.27	134.75	136.42	133.96	130.16	135.22	137.61	134.66	129.27	134.75	136.42
65.00°	117.68	113.93	109.25	115.51	117.35	114.86	108.07	114.57	117.68	113.93	109.25	115.51	117.35	114.86	108.07	114.57	117.68
67.50°	99.42	96.81	93.24	98.29	100.12	97.73	93.05	96.89	99.42	96.81	93.24	98.29	100.12	97.73	93.05	96.89	99.42
70.00°	81.22	79.92	77.55	81.60	83.05	80.91	78.29	79.98	81.22	79.92	77.55	81.60	83.05	80.91	78.29	79.98	81.22
72.50°	66.84	65.10	65.10	66.71	68.91	67.15	65.83	65.64	66.84	65.10	65.10	66.71	68.91	67.15	65.83	65.64	66.84
75.00°	52.67	51.11	52.93	53.10	55.01	54.00	53.67	52.45	52.67	51.11	52.93	53.10	55.01	54.00	53.67	52.45	52.67
77.50°	42.96	41.90	42.61	42.84	44.65	44.61	43.24	42.27	42.96	41.90	42.61	42.84	44.65	44.61	43.24	42.27	42.96
80.00°	33.24	32.61	32.51	33.04	34.40	34.96	33.04	32.46	33.24	32.61	32.51	33.04	34.40	34.96	33.04	32.46	33.24
82.50°	23.53	23.01	23.41	24.26	24.97	24.15	23.75	23.41	23.53	23.01	23.41	24.26	24.97	24.15	23.75	23.41	23.53
85.00°	14.15	14.20	14.83	15.92	15.91	14.39	15.00	15.07	14.15	14.20	14.83	15.92	15.91	14.39	15.00	15.07	14.15
87.50°	8.01	7.82	7.98	8.35	8.77	8.00	7.93	7.92	8.01	7.82	7.98	8.35	8.77	8.00	7.93	7.92	8.01
90.00°	2.64	3.05	2.80	3.37	2.91	3.16	2.64	3.21	2.64	3.05	2.80	3.37	2.91	3.16	2.64	3.21	2.64
92.50°	1.91	2.12	1.90	1.91	1.83	2.15	1.61	1.80	1.91	2.12	1.90	1.91	1.83	2.15	1.61	1.80	1.91
95.00°	1.39	1.64	1.42	1.17	1.01	1.42	1.09	1.32	1.39	1.64	1.42	1.17	1.01	1.42	1.09	1.32	1.39
97.50°	1.74	2.02	1.78	1.23	0.94	1.25	1.52	1.86	1.74	2.02	1.78	1.23	0.94	1.25	1.52	1.86	1.74
100.00°	2.17	2.38	1.98	1.25	0.93	1.19	1.70	2.38	2.17	2.38	1.98	1.25	0.93	1.19	1.70	2.38	2.17
102.50°	2.84	2.71	1.91	1.23	1.07	1.31	1.52	2.88	2.84	2.71	1.91	1.23	1.07	1.31	1.52	2.88	2.84
105.00°	3.01	2.63	1.73	1.18	1.16	1.37	1.36	2.67	3.01	2.63	1.73	1.18	1.16	1.37	1.36	2.67	3.01
107.50°	1.95	2.03	1.42	1.10	1.17	1.36	1.25	1.90	1.95	2.03	1.42	1.10	1.17	1.36	1.25	1.90	1.95
110.00°	1.30	1.54	1.23	1.21	1.24	1.38	1.22	1.40	1.30	1.54	1.23	1.21	1.24	1.38	1.22	1.40	1.30
112.50°	1.46	1.16	1.16	1.43	1.38	1.42	1.27	1.04	1.46	1.16	1.16	1.43	1.38	1.42	1.27	1.04	1.46

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	2,533	2,533	2,533	2,533	2,473	2,473	2,473	2,473	2,361	2,361	2,361	2,259	2,259	2,259	2,165	2,165	2,121
	1	2,372	2,295	2,226	2,164	2,317	2,247	2,185	2,128	2,158	2,107	2,060	2,075	2,034	1,997	1,999	1,967	1,926
	2	2,214	2,080	1,969	1,875	2,162	2,041	1,939	1,853	1,967	1,883	1,810	1,900	1,830	1,769	1,837	1,780	1,729
	3	2,068	1,894	1,759	1,651	2,020	1,861	1,737	1,637	1,801	1,695	1,608	1,745	1,656	1,581	1,693	1,618	1,554
	4	1,935	1,734	1,586	1,473	1,891	1,707	1,570	1,464	1,657	1,538	1,444	1,610	1,508	1,425	1,566	1,479	1,407
	5	1,814	1,595	1,442	1,329	1,775	1,573	1,429	1,322	1,531	1,405	1,308	1,491	1,381	1,295	1,455	1,359	1,282
	6	1,705	1,475	1,320	1,209	1,669	1,456	1,310	1,204	1,420	1,291	1,194	1,387	1,272	1,185	1,356	1,254	1,175
	7	1,606	1,369	1,216	1,108	1,573	1,353	1,208	1,105	1,323	1,192	1,097	1,294	1,177	1,090	1,268	1,163	1,083
	8	1,516	1,276	1,126	1,022	1,486	1,263	1,119	1,019	1,236	1,107	1,014	1,212	1,094	1,008	1,189	1,083	1,003
	9	1,434	1,194	1,047	948	1,407	1,182	1,041	945	1,159	1,031	941	1,138	1,021	937	1,118	1,011	933
	10	1,359	1,120	977	882	1,335	1,110	973	881	1,090	964	877	1,072	956	874	1,054	948	871

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	53.3 fc	6.1 ft
6.5 ft	38.2 fc	7.2 ft
7.5 ft	28.7 fc	8.3 ft
8.0 ft	25.2 fc	8.8 ft
10.0 ft	16.1 fc	11.0 ft
12.0 ft	11.2 fc	13.2 ft
14.0 ft	8.2 fc	15.4 ft
16.0 ft	6.3 fc	17.6 ft
20.0 ft	4.0 fc	22.0 ft
24.0 ft	2.8 fc	26.5 ft
28.0 ft	2.1 fc	30.9 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	159,383	159,383	159,383
45.00°	40,480	43,797	40,641
55.00°	34,668	33,586	35,277
65.00°	27,523	25,552	27,446
75.00°	20,116	20,214	21,006
85.00°	16,042	16,821	18,038

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	22.4	23.6	22.7	24.0	24.3	22.4	23.7	22.8	24.0	24.3
	3H	23.6	24.8	24.0	25.1	25.5	23.7	24.8	24.0	25.1	25.5
	4H	24.0	25.1	24.4	25.5	25.8	24.1	25.2	24.5	25.5	25.9
	6H	24.3	25.3	24.8	25.7	26.1	24.4	25.4	24.9	25.8	26.2
	8H	24.5	25.4	24.9	25.8	26.2	24.6	25.5	25.0	25.9	26.3
	12H	24.5	25.4	25.0	25.8	26.2	24.6	25.5	25.1	25.9	26.4
4H	2H	22.7	23.8	23.1	24.1	24.5	22.7	23.8	23.1	24.2	24.6
	3H	24.2	25.0	24.6	25.5	25.9	24.2	25.1	24.6	25.5	25.9
	4H	24.7	25.5	25.1	25.9	26.4	24.8	25.6	25.2	26.0	26.4
	6H	25.1	25.8	25.6	26.3	26.7	25.2	25.9	25.7	26.4	26.9
	8H	25.3	25.9	25.8	26.4	26.9	25.4	26.0	25.9	26.5	27.0
	12H	25.4	25.9	25.9	26.4	26.9	25.5	26.1	26.0	26.6	27.1
8H	4H	24.9	25.5	25.3	25.9	26.4	24.9	25.6	25.4	26.0	26.5
	6H	25.4	25.9	25.9	26.4	26.9	25.5	26.0	26.0	26.5	27.0
	8H	25.6	26.1	26.2	26.6	27.1	25.8	26.2	26.3	26.7	27.2
	12H	25.8	26.2	26.3	26.7	27.3	26.0	26.4	26.5	26.9	27.4
12H	4H	24.9	25.4	25.3	25.9	26.4	24.9	25.5	25.4	26.0	26.5
	6H	25.4	25.9	26.0	26.4	26.9	25.5	26.0	26.1	26.5	27.0
	8H	25.7	26.1	26.2	26.6	27.2	25.8	26.2	26.4	26.7	27.3

Corrected UGR values based on total output lumens

SHR = 1.0