Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGES8GK 100L 35K AR8GK SG

Nom 8" diam round recessed open high output luminaire

Test Number

SP-00928

Test Date

8/19/2019

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

Summary of Results

Power

Input Watts	53 W

Lumen Output

Output Lumens	5137
Efficacy	96.93 lm/W

Luminous Dimensions

0° - 180° Size	-0.62
90° - 270° Size	-0.62
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.92
Two luminaires, plane 90°	0.92
Four luminaires	0.97

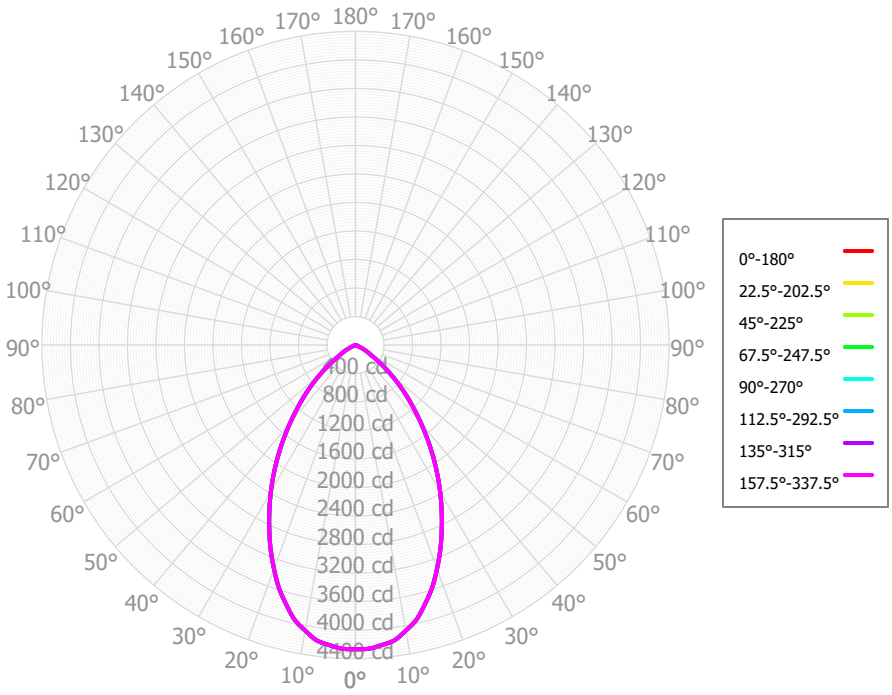
Full Beam Angle

0° - 180°	65°
90° - 270°	65°

IES File Header Contents

Keyword	Value
TEST	SP-00928
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	8/19/2019
ISSUEDATE	8/28/2019
LUMCAT	SGES8GK 100L 35K AR8GK SG
LUMINAIRE	Nom 8" diam round recessed open high output luminaire
OTHER	Trim: Soft glow (semi-diffuse aluminum)
OTHER	Beam Angle: 64.9 degrees
LAMPCAT	N/A
LAMP	N/A
OTHER	27K x 0.95, 30K x 0.98, 40K x 1.00
OTHER	Total luminaire wattages is approximate
OTHER	This report prepared by Spectum Lighting, scaled from 100L

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	404.86	7.88%	90.00° - 100.00°	0.10	0.00%
10.00° - 20.00°	1,049.79	20.44%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	1,308.89	25.48%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	1,175.35	22.88%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	786.08	15.30%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	338.18	6.58%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	71.00	1.38%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	1.91	0.04%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.07	0.02%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	5,137.13	100.00%	0.00° - 180.00°	5,137.24	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°	4,269.58	4,269.58	4,269.58	4,269.58	4,269.58	4,269.58	4,269.58	4,269.58	4,269.58	4,269.58	4,269.58	4,269.58	4,269.58	4,269.58	4,269.58	4,269.58	4,269.58
2.50°	4,266.68	4,266.68	4,266.68	4,266.68	4,266.68	4,266.68	4,266.68	4,266.68	4,266.68	4,266.68	4,266.68	4,266.68	4,266.68	4,266.68	4,266.68	4,266.68	4,266.68
5.00°	4,227.46	4,227.46	4,227.46	4,227.46	4,227.46	4,227.46	4,227.46	4,227.46	4,227.46	4,227.46	4,227.46	4,227.46	4,227.46	4,227.46	4,227.46	4,227.46	4,227.46
7.50°	4,180.57	4,180.57	4,180.57	4,180.57	4,180.57	4,180.57	4,180.57	4,180.57	4,180.57	4,180.57	4,180.57	4,180.57	4,180.57	4,180.57	4,180.57	4,180.57	4,180.57
10.00°	4,069.87	4,069.87	4,069.87	4,069.87	4,069.87	4,069.87	4,069.87	4,069.87	4,069.87	4,069.87	4,069.87	4,069.87	4,069.87	4,069.87	4,069.87	4,069.87	4,069.87
12.50°	3,949.14	3,949.14	3,949.14	3,949.14	3,949.14	3,949.14	3,949.14	3,949.14	3,949.14	3,949.14	3,949.14	3,949.14	3,949.14	3,949.14	3,949.14	3,949.14	3,949.14
15.00°	3,765.80	3,765.80	3,765.80	3,765.80	3,765.80	3,765.80	3,765.80	3,765.80	3,765.80	3,765.80	3,765.80	3,765.80	3,765.80	3,765.80	3,765.80	3,765.80	3,765.80
17.50°	3,574.41	3,574.41	3,574.41	3,574.41	3,574.41	3,574.41	3,574.41	3,574.41	3,574.41	3,574.41	3,574.41	3,574.41	3,574.41	3,574.41	3,574.41	3,574.41	3,574.41
20.00°	3,344.10	3,344.10	3,344.10	3,344.10	3,344.10	3,344.10	3,344.10	3,344.10	3,344.10	3,344.10	3,344.10	3,344.10	3,344.10	3,344.10	3,344.10	3,344.10	3,344.10
22.50°	3,110.42	3,110.42	3,110.42	3,110.42	3,110.42	3,110.42	3,110.42	3,110.42	3,110.42	3,110.42	3,110.42	3,110.42	3,110.42	3,110.42	3,110.42	3,110.42	3,110.42
25.00°	2,863.60	2,863.60	2,863.60	2,863.60	2,863.60	2,863.60	2,863.60	2,863.60	2,863.60	2,863.60	2,863.60	2,863.60	2,863.60	2,863.60	2,863.60	2,863.60	2,863.60
27.50°	2,617.61	2,617.61	2,617.61	2,617.61	2,617.61	2,617.61	2,617.61	2,617.61	2,617.61	2,617.61	2,617.61	2,617.61	2,617.61	2,617.61	2,617.61	2,617.61	2,617.61
30.00°	2,374.26	2,374.26	2,374.26	2,374.26	2,374.26	2,374.26	2,374.26	2,374.26	2,374.26	2,374.26	2,374.26	2,374.26	2,374.26	2,374.26	2,374.26	2,374.26	2,374.26
32.50°	2,131.40	2,131.40	2,131.40	2,131.40	2,131.40	2,131.40	2,131.40	2,131.40	2,131.40	2,131.40	2,131.40	2,131.40	2,131.40	2,131.40	2,131.40	2,131.40	2,131.40
35.00°	1,889.88	1,889.88	1,889.88	1,889.88	1,889.88	1,889.88	1,889.88	1,889.88	1,889.88	1,889.88	1,889.88	1,889.88	1,889.88	1,889.88	1,889.88	1,889.88	1,889.88
37.50°	1,652.91	1,652.91	1,652.91	1,652.91	1,652.91	1,652.91	1,652.91	1,652.91	1,652.91	1,652.91	1,652.91	1,652.91	1,652.91	1,652.91	1,652.91	1,652.91	1,652.91
40.00°	1,426.62	1,426.62	1,426.62	1,426.62	1,426.62	1,426.62	1,426.62	1,426.62	1,426.62	1,426.62	1,426.62	1,426.62	1,426.62	1,426.62	1,426.62	1,426.62	1,426.62
42.50°	1,211.90	1,211.90	1,211.90	1,211.90	1,211.90	1,211.90	1,211.90	1,211.90	1,211.90	1,211.90	1,211.90	1,211.90	1,211.90	1,211.90	1,211.90	1,211.90	1,211.90
45.00°	1,020.39	1,020.39	1,020.39	1,020.39	1,020.39	1,020.39	1,020.39	1,020.39	1,020.39	1,020.39	1,020.39	1,020.39	1,020.39	1,020.39	1,020.39	1,020.39	1,020.39
47.50°	835.10	835.10	835.10	835.10	835.10	835.10	835.10	835.10	835.10	835.10	835.10	835.10	835.10	835.10	835.10	835.10	835.10
50.00°	660.64	660.64	660.64	660.64	660.64	660.64	660.64	660.64	660.64	660.64	660.64	660.64	660.64	660.64	660.64	660.64	660.64
52.50°	498.95	498.95	498.95	498.95	498.95	498.95	498.95	498.95	498.95	498.95	498.95	498.95	498.95	498.95	498.95	498.95	498.95
55.00°	356.71	356.71	356.71	356.71	356.71	356.71	356.71	356.71	356.71	356.71	356.71	356.71	356.71	356.71	356.71	356.71	356.71
57.50°	249.63	249.63	249.63	249.63	249.63	249.63	249.63	249.63	249.63	249.63	249.63	249.63	249.63	249.63	249.63	249.63	249.63
60.00°	189.35	189.35	189.35	189.35	189.35	189.35	189.35	189.35	189.35	189.35	189.35	189.35	189.35	189.35	189.35	189.35	189.35
62.50°	124.61	124.61	124.61	124.61	124.61	124.61	124.61	124.61	124.61	124.61	124.61	124.61	124.61	124.61	124.61	124.61	124.61
65.00°	54.68	54.68	54.68	54.68	54.68	54.68	54.68	54.68	54.68	54.68	54.68	54.68	54.68	54.68	54.68	54.68	54.68
67.50°	15.93	15.93	15.93	15.93	15.93	15.93	15.93	15.93	15.93	15.93	15.93	15.93	15.93	15.93	15.93	15.93	15.93
70.00°	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70
72.50°	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
75.00°	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19
77.50°	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59
80.00°	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29
82.50°	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
85.00°	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
87.50°	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
90.00°	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
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.

	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%
RCR	0	6,116	6,116	6,116	6,116	5,973	5,973	5,973	5,973	5,708	5,708	5,708	5,465	5,465	5,465	5,242	5,242	5,242	5,137
	1	5,788	5,628	5,484	5,355	5,659	5,516	5,386	5,269	5,306	5,202	5,106	5,113	5,030	4,953	4,936	4,870	4,810	4,772
	2	5,445	5,158	4,921	4,722	5,327	5,068	4,851	4,668	4,898	4,719	4,564	4,742	4,594	4,465	4,597	4,477	4,371	4,387
	3	5,112	4,732	4,438	4,203	5,004	4,658	4,387	4,168	4,519	4,289	4,100	4,390	4,197	4,034	4,271	4,109	3,971	4,027
	4	4,799	4,351	4,023	3,773	4,699	4,290	3,985	3,750	4,174	3,911	3,703	4,067	3,841	3,659	3,967	3,774	3,615	3,701
	5	4,506	4,012	3,667	3,412	4,416	3,961	3,638	3,396	3,864	3,581	3,364	3,774	3,527	3,333	3,690	3,475	3,302	3,409
	6	4,237	3,712	3,359	3,106	4,154	3,668	3,336	3,094	3,586	3,292	3,072	3,510	3,249	3,049	3,438	3,208	3,027	3,149
	7	3,989	3,444	3,091	2,843	3,914	3,408	3,073	2,835	3,338	3,037	2,819	3,273	3,003	2,802	3,211	2,970	2,786	2,918
	8	3,763	3,207	2,857	2,617	3,694	3,175	2,842	2,611	3,115	2,814	2,598	3,059	2,786	2,586	3,006	2,759	2,574	2,713
	9	3,556	2,995	2,652	2,420	3,493	2,968	2,640	2,415	2,916	2,616	2,406	2,867	2,593	2,397	2,821	2,571	2,388	2,530
	10	3,366	2,806	2,471	2,247	3,310	2,782	2,461	2,244	2,737	2,441	2,237	2,695	2,422	2,229	2,654	2,404	2,222	2,366

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	141.1 fc	7.0 ft
6.5 ft	101.1 fc	8.3 ft
7.5 ft	75.9 fc	9.5 ft
8.0 ft	66.7 fc	10.2 ft
10.0 ft	42.7 fc	12.7 ft
12.0 ft	29.6 fc	15.3 ft
14.0 ft	21.8 fc	17.8 ft
16.0 ft	16.7 fc	20.4 ft
20.0 ft	10.7 fc	25.4 ft
24.0 ft	7.4 fc	30.5 ft
28.0 ft	5.4 fc	35.6 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	152,224	152,224	152,224
45.00°	51,449	51,449	51,449
55.00°	22,173	22,173	22,173
65.00°	4,613	4,613	4,613
75.00°	164	164	164
85.00°	408	408	408

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	17.3	18.5	17.7	18.8	19.1	17.3	18.5	17.7	18.8	19.1
	3H	17.2	18.2	17.5	18.5	18.9	17.2	18.2	17.5	18.5	18.9
	4H	17.1	18.1	17.5	18.4	18.8	17.1	18.1	17.5	18.4	18.8
	6H	17.0	17.9	17.4	18.3	18.6	17.0	17.9	17.4	18.3	18.6
	8H	16.9	17.8	17.4	18.2	18.6	16.9	17.8	17.4	18.2	18.6
	12H	16.9	17.7	17.3	18.1	18.5	16.9	17.7	17.3	18.1	18.5
4H	2H	17.2	18.1	17.6	18.5	18.9	17.2	18.1	17.6	18.5	18.9
	3H	17.0	17.8	17.4	18.2	18.6	17.0	17.8	17.4	18.2	18.6
	4H	16.9	17.6	17.4	18.0	18.5	16.9	17.6	17.4	18.0	18.5
	6H	16.8	17.4	17.3	17.9	18.3	16.8	17.4	17.3	17.9	18.3
	8H	16.8	17.3	17.2	17.8	18.2	16.8	17.3	17.2	17.8	18.2
	12H	16.7	17.2	17.2	17.7	18.2	16.7	17.2	17.2	17.7	18.2
8H	4H	16.8	17.3	17.2	17.8	18.2	16.8	17.3	17.2	17.8	18.2
	6H	16.6	17.1	17.2	17.6	18.1	16.6	17.1	17.2	17.6	18.1
	8H	16.6	17.0	17.1	17.5	18.0	16.6	17.0	17.1	17.5	18.0
	12H	16.5	16.9	17.0	17.4	18.0	16.5	16.9	17.0	17.4	18.0
12H	4H	16.7	17.2	17.2	17.7	18.2	16.7	17.2	17.2	17.7	18.2
	6H	16.6	17.0	17.1	17.5	18.0	16.6	17.0	17.1	17.5	18.0
	8H	16.5	16.9	17.0	17.4	18.0	16.5	16.9	17.0	17.4	18.0

Corrected UGR values based on total output lumens

SHR = 1.0