

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGE8LEDFX-20L35KDX-AR8223FX-SG-SO

Nom 8" diam recessed downlight

Test Number

SP-00746_1_M-20L

Test Date

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

Summary of Results

Power

Input Watts	17 W
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Lumen Output

Output Lumens	1644
Efficacy	96.73 lm/W

Luminous Dimensions

0° - 180° Size	-0.63
90° - 270° Size	-0.63
Height	0

Spacing Criterion

Two luminaires, plane 0°	1.02
Two luminaires, plane 90°	1.01
Four luminaires	1.06

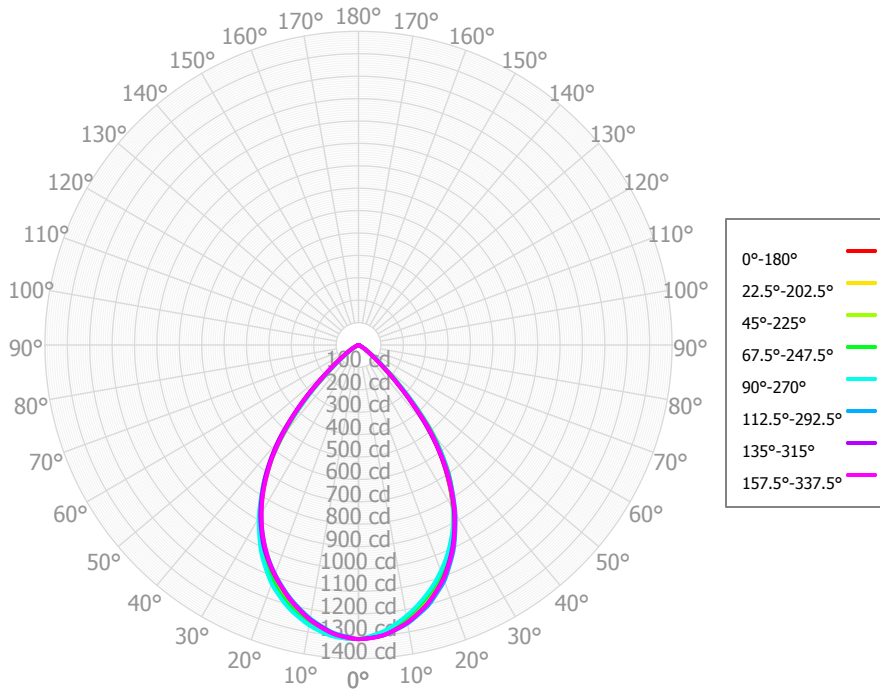
Full Beam Angle

0° - 180°	73°
90° - 270°	73°

IES File Header Contents

Keyword	Value
TEST	SP-00746_1_M-20L
TESTLAB	Spectrum Lighting Photometric Lab
MANUFAC	Spectrum Lighting
ISSUEDATE	12/28/2018
UPDATE	3/4/2019
LUMCAT	SGE8LEDFX-20L35KDX-AR8223FX-SG-SO
LUMINAIRE	Nom 8" diam recessed downlight
OTHER	Trim: AR8223FX, Soft glow
OTHER	Regressed Integral Solite lens
OTHER	Data for New Construction: SGE8LEDFX-series w/AR8223FX-SG-SO
OTHER	Data for Retrofit: SGRTE8LEDFX-series w/AR8223FX-SG-SO
OTHER	Beam Angle: 72 deg
LAMPCAT	N/A
LAMP	N/A, Philips LED, Min CRI: 80+, Gen: 80G1
OTHER	CCT Tested: 3500K
OTHER	CCT Multipliers: 27K x 0.95, 30K x 1.0, 40K x 1.08
OTHER	This report prepared by Spectrum Lighting, scaled from 30L

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	123.98	7.54%	90.00° - 100.00°	0.06	0.00%
10.00° - 20.00°	332.43	20.22%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	454.61	27.65%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	434.53	26.43%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	231.66	14.09%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	57.87	3.52%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	7.84	0.48%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	0.76	0.05%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.70	0.04%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,644.38	100.00%	0.00° - 180.00°	1,644.38	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°	1,313.22	1,313.22	1,313.22	1,313.22	1,313.22	1,313.22	1,313.22	1,313.22	1,313.22	1,313.22	1,313.22	1,313.22	1,313.22	1,313.22	1,313.22	1,313.22	1,313.22
2.50°	1,307.62	1,305.97	1,304.18	1,304.40	1,300.10	1,302.66	1,305.53	1,306.86	1,309.34	1,308.36	1,310.04	1,310.77	1,311.59	1,308.29	1,309.22	1,309.60	1,307.62
5.00°	1,296.40	1,295.54	1,289.51	1,289.08	1,283.00	1,289.70	1,293.40	1,294.17	1,299.98	1,299.47	1,300.90	1,301.98	1,306.07	1,301.08	1,300.68	1,299.64	1,296.40
7.50°	1,274.98	1,272.95	1,267.73	1,264.67	1,257.85	1,266.37	1,269.67	1,272.87	1,278.43	1,279.24	1,283.39	1,283.58	1,290.84	1,282.86	1,280.49	1,280.83	1,274.98
10.00°	1,250.42	1,247.96	1,239.95	1,236.83	1,228.83	1,240.17	1,245.28	1,246.14	1,254.41	1,255.01	1,260.34	1,261.50	1,270.56	1,262.65	1,258.17	1,258.04	1,250.42
12.50°	1,219.12	1,216.83	1,207.25	1,203.53	1,195.76	1,207.42	1,212.06	1,213.08	1,221.74	1,221.94	1,231.81	1,234.45	1,243.43	1,233.76	1,227.51	1,228.15	1,219.12
15.00°	1,184.87	1,184.91	1,170.09	1,168.67	1,159.08	1,172.00	1,178.46	1,176.17	1,187.87	1,186.15	1,200.35	1,202.13	1,213.47	1,203.90	1,194.19	1,195.76	1,184.87
17.50°	1,145.59	1,143.02	1,129.95	1,127.71	1,119.35	1,131.68	1,136.93	1,135.62	1,146.24	1,145.61	1,160.66	1,163.90	1,175.03	1,162.67	1,153.22	1,154.77	1,145.59
20.00°	1,100.23	1,100.46	1,083.09	1,085.52	1,074.39	1,088.74	1,094.85	1,091.15	1,104.04	1,101.92	1,117.50	1,119.60	1,133.91	1,120.82	1,107.99	1,111.47	1,100.23
22.50°	1,046.59	1,045.32	1,032.63	1,034.57	1,025.88	1,041.91	1,047.61	1,043.58	1,054.45	1,053.80	1,067.31	1,069.78	1,081.41	1,083.94	1,052.95	1,056.82	1,046.59
25.00°	986.28	989.57	974.60	982.38	971.68	989.87	998.54	989.47	1,004.34	998.95	1,014.81	1,011.79	1,026.22	1,006.37	993.40	1,000.02	986.28
27.50°	918.43	922.16	913.32	919.87	914.28	931.61	939.10	931.22	940.95	936.28	951.76	947.71	959.26	936.24	925.68	930.88	918.43
30.00°	843.98	853.54	842.01	856.57	846.56	867.91	877.19	865.11	876.66	868.34	886.10	876.91	890.36	864.95	851.77	860.22	843.98
32.50°	763.48	772.52	767.34	780.45	774.27	798.87	805.10	795.04	802.15	795.44	809.40	802.03	811.23	782.61	768.91	775.10	763.48
35.00°	675.55	689.70	683.04	703.64	692.16	721.21	729.94	715.35	725.97	715.28	730.80	717.64	731.11	697.87	679.78	689.06	675.55
37.50°	582.05	595.64	596.37	610.46	606.70	636.60	645.48	631.72	639.02	629.61	640.53	628.66	637.22	599.32	583.12	590.61	582.05
40.00°	474.18	497.06	487.00	515.39	500.36	539.09	554.12	534.49	548.35	531.17	548.95	523.31	542.53	496.53	474.81	491.28	474.18
42.50°	357.54	378.86	373.57	398.71	388.52	433.21	446.48	433.03	440.73	424.70	433.69	411.72	423.32	376.87	355.17	372.10	357.54
45.00°	257.56	268.99	271.21	286.10	285.03	327.46	341.07	327.45	335.63	320.00	317.38	304.49	305.89	265.76	253.16	256.65	257.56
47.50°	165.66	185.62	170.07	200.04	183.09	221.79	239.86	220.94	238.86	216.18	227.26	198.55	215.27	180.79	165.22	178.78	165.66
50.00°	110.65	115.83	119.59	122.83	128.22	152.07	158.88	155.71	155.68	148.70	139.66	136.73	130.34	110.83	107.65	107.55	110.65
52.50°	69.80	80.06	71.58	86.35	78.77	97.42	108.41	97.14	107.18	95.42	99.12	84.23	91.02	75.98	69.89	76.12	69.80
55.00°	47.70	50.95	52.40	54.80	57.18	67.71	71.38	70.47	68.41	66.24	61.06	59.71	55.63	48.22	46.86	47.85	47.70
57.50°	31.15	34.87	33.56	39.67	37.31	46.00	50.93	46.82	49.33	44.49	44.42	39.20	40.83	33.52	31.47	33.23	31.15
60.00°	18.38	20.92	20.53	25.19	23.71	30.07	33.34	31.86	32.35	28.92	28.44	25.35	26.57	20.30	18.62	19.66	18.38
62.50°	6.41	10.27	8.41	12.41	10.54	15.56	18.65	17.27	18.73	14.73	16.06	12.05	14.32	9.30	6.82	9.41	6.41
65.00°	3.01	3.51	4.14	3.38	5.33	7.87	8.87	8.60	8.58	7.30	5.66	6.12	4.71	2.70	2.63	2.02	3.01
67.50°	0.84	1.62	0.73	1.70	0.88	1.31	3.03	0.98	2.83	0.87	2.55	0.83	2.26	1.29	0.86	1.18	0.84
70.00°	0.77	0.80	0.70	0.81	0.82	0.88	0.99	0.85	0.54	0.79	0.62	0.78	0.82	0.75	0.73	0.70	0.77
72.50°	0.70	0.74	0.62	0.75	0.73	0.65	0.65	0.76	0.70	0.81	0.63	0.75	0.72	0.78	0.81	0.66	0.70
75.00°	0.57	0.69	0.48	0.73	0.61	0.58	0.62	0.75	0.79	0.78	0.73	0.78	0.56	0.79	0.82	0.66	0.57
77.50°	0.58	0.67	0.78	0.72	0.58	0.62	0.59	0.87	0.81	0.91	0.79	0.76	0.47	0.88	0.83	0.67	0.58
80.00°	0.64	0.67	0.84	0.68	0.58	0.69	0.60	0.90	0.76	0.90	0.54	0.71	0.59	1.02	0.73	0.70	0.64
82.50°	0.60	0.39	0.63	0.73	0.62	0.70	0.74	0.76	0.76	0.62	0.73	0.62	0.50	0.69	0.44	0.41	0.60
85.00°	0.49	0.59	0.53	0.80	0.67	0.67	0.85	0.65	0.66	0.58	0.87	0.58	0.66	0.63	0.74	0.77	0.49
87.50°	0.51	0.58	0.84	0.79	0.68	0.71	0.77	0.81	0.65	0.75	0.57	0.78	0.57	0.82	0.75	0.55	0.51
90.00°	0.43	0.20	0.34	0.37	0.42	0.75	0.31	0.47	0.36	0.84	0.28	0.82	0.69	0.28	0.48	0.31	0.43

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%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	0	1,958	1,958	1,958	1,958	1,912	1,912	1,912	1,912	1,827	1,827	1,827	1,749	1,749	1,749	1,678	1,678	1,678	1,644
	1	1,856	1,806	1,762	1,721	1,815	1,771	1,730	1,694	1,704	1,671	1,642	1,642	1,616	1,593	1,585	1,565	1,546	1,534
	2	1,751	1,662	1,589	1,527	1,713	1,633	1,566	1,509	1,579	1,524	1,476	1,529	1,484	1,444	1,483	1,446	1,414	1,417
	3	1,648	1,530	1,439	1,366	1,614	1,507	1,423	1,355	1,463	1,391	1,333	1,422	1,362	1,312	1,384	1,334	1,291	1,308
	4	1,550	1,411	1,310	1,232	1,519	1,392	1,297	1,224	1,355	1,274	1,209	1,321	1,251	1,195	1,290	1,230	1,181	1,206
	5	1,458	1,305	1,197	1,118	1,430	1,288	1,188	1,112	1,258	1,170	1,102	1,229	1,152	1,092	1,202	1,136	1,082	1,114
	6	1,373	1,209	1,099	1,020	1,347	1,195	1,091	1,016	1,169	1,077	1,009	1,145	1,064	1,001	1,122	1,050	994	1,031
	7	1,293	1,123	1,012	935	1,270	1,111	1,006	932	1,089	995	927	1,068	984	921	1,049	974	916	957
	8	1,220	1,046	936	861	1,199	1,036	931	859	1,017	922	855	999	913	851	982	905	847	890
	9	1,153	977	869	796	1,133	968	865	794	952	857	791	936	850	788	922	843	785	829
	10	1,091	915	809	738	1,073	907	806	737	893	799	735	879	793	733	866	787	730	775

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	43.4 fc	7.9 ft
6.5 ft	31.1 fc	9.4 ft
7.5 ft	23.3 fc	10.8 ft
8.0 ft	20.5 fc	11.5 ft
10.0 ft	13.1 fc	14.4 ft
12.0 ft	9.1 fc	17.3 ft
14.0 ft	6.7 fc	20.2 ft
16.0 ft	5.1 fc	23.1 ft
20.0 ft	3.3 fc	28.8 ft
24.0 ft	2.3 fc	34.6 ft
28.0 ft	1.7 fc	40.3 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	45,346	45,346	45,346
45.00°	12,577	13,244	13,919
55.00°	2,872	3,155	3,443
65.00°	246	339	435
75.00°	76	64	81
85.00°	196	208	265

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	7.2	8.3	7.6	8.6	9.0	8.8	9.9	9.2	10.2	10.6
	3H	7.0	8.0	7.4	8.4	8.7	8.6	9.6	9.0	10.0	10.3
	4H	7.0	7.9	7.4	8.2	8.6	8.6	9.5	9.0	9.8	10.2
	6H	6.9	7.7	7.3	8.1	8.5	8.5	9.3	8.9	9.7	10.1
	8H	6.8	7.6	7.3	8.0	8.4	8.4	9.2	8.8	9.6	10.0
	12H	6.8	7.5	7.2	7.9	8.3	8.4	9.1	8.8	9.5	9.9
4H	2H	7.0	7.9	7.4	8.2	8.6	8.6	9.5	9.0	9.9	10.3
	3H	6.8	7.5	7.2	7.9	8.3	8.4	9.2	8.9	9.6	10.0
	4H	6.7	7.3	7.1	7.8	8.2	8.3	9.0	8.8	9.4	9.9
	6H	6.6	7.2	7.1	7.6	8.1	8.2	8.8	8.7	9.3	9.7
	8H	6.5	7.1	7.0	7.5	8.0	8.2	8.7	8.7	9.2	9.6
	12H	6.5	7.0	7.0	7.4	7.9	8.1	8.6	8.6	9.1	9.5
8H	4H	6.5	7.1	7.0	7.5	8.0	8.2	8.7	8.6	9.1	9.6
	6H	6.4	6.8	6.9	7.4	7.8	8.1	8.5	8.6	9.0	9.5
	8H	6.4	6.7	6.9	7.3	7.8	8.0	8.4	8.5	8.9	9.4
	12H	6.3	6.7	6.9	7.2	7.7	8.0	8.3	8.5	8.8	9.4
12H	4H	6.5	6.9	7.0	7.4	7.9	8.1	8.6	8.6	9.1	9.5
	6H	6.4	6.7	6.9	7.2	7.8	8.0	8.4	8.5	8.8	9.4
	8H	6.3	6.7	6.8	7.1	7.7	7.9	8.3	8.5	8.8	9.4

Corrected UGR values based on total output lumens

SHR = 1.0