

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGE8LEDFX-20L35KDX-AR8223FX-MW-SO

Nom 8" diam recessed downlight

Test Number

SP-00746_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	1736
Efficacy	102.1 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	1.2
Two luminaires, plane 90°	1.2
Four luminaires	1.19

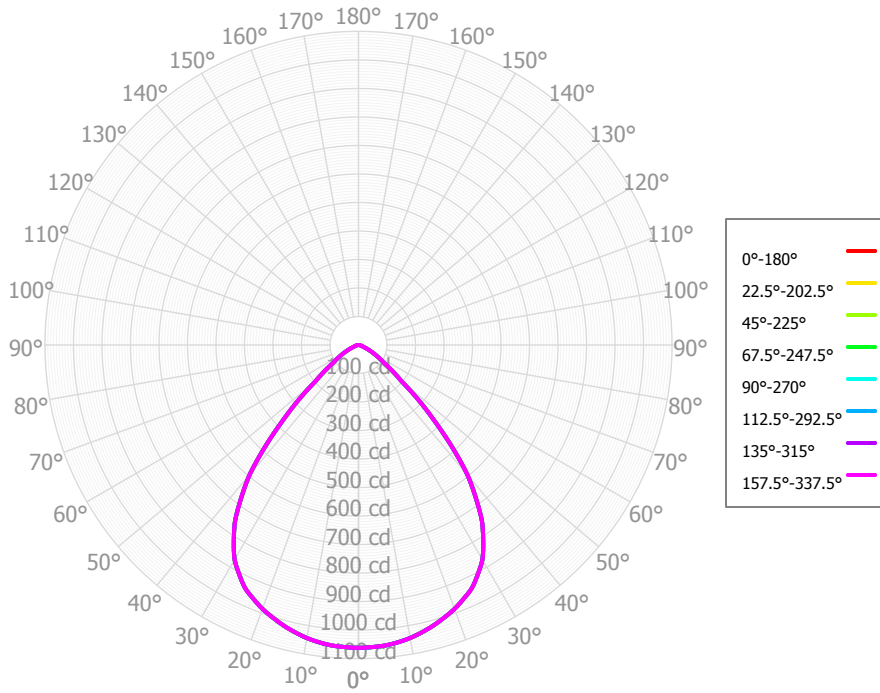
Full Beam Angle

0° - 180°	83°
90° - 270°	83°

IES File Header Contents

Keyword	Value
TEST	SP-00746_M-20L
TESTLAB	Spectrum Lighting Photometric Lab
MANUFAC	Spectrum Lighting
ISSUEDATE	12/28/2018
UPDATE	3/4/2019
LUMCAT	SGE8LEDFX-20L35KDX-AR8223FX-MW-SO
LUMINAIRE	Nom 8" diam recessed downlight
OTHER	Trim: AR8223FX, Matte White
OTHER	Regressed Integral Solite lens
OTHER	Data for New Construction: SGE8LEDFX-series w/AR8223FX-MW-SO
OTHER	Data for Retrofit: SGRTE8LEDFX-series w/AR8223FX-MW-SO
OTHER	Beam Angle: 83 deg
LAMPCAT	N/A
LAMP	N/A, Philips LED, Min CRI: 80+, Gen: 80G1
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°	102.07	5.88%	90.00° - 100.00°	0.08	0.00%
10.00° - 20.00°	287.16	16.54%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	430.72	24.82%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	463.46	26.70%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	293.98	16.94%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	105.79	6.10%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	38.70	2.23%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	11.12	0.64%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	2.66	0.15%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,735.66	100.00%	0.00° - 180.00°	1,735.66	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°	1,062.51	1,062.51	1,062.51	1,062.51	1,062.51	1,062.51	1,062.51	1,062.51	1,062.51	1,062.51	1,062.51	1,062.51	1,062.51	1,062.51	1,062.51	1,062.51	1,062.51
2.50°	1,061.10	1,061.10	1,061.10	1,061.10	1,061.10	1,061.10	1,061.10	1,061.10	1,061.10	1,061.10	1,061.10	1,061.10	1,061.10	1,061.10	1,061.10	1,061.10	1,061.10
5.00°	1,058.54	1,058.54	1,058.54	1,058.54	1,058.54	1,058.54	1,058.54	1,058.54	1,058.54	1,058.54	1,058.54	1,058.54	1,058.54	1,058.54	1,058.54	1,058.54	1,058.54
7.50°	1,052.40	1,052.40	1,052.40	1,052.40	1,052.40	1,052.40	1,052.40	1,052.40	1,052.40	1,052.40	1,052.40	1,052.40	1,052.40	1,052.40	1,052.40	1,052.40	1,052.40
10.00°	1,043.93	1,043.93	1,043.93	1,043.93	1,043.93	1,043.93	1,043.93	1,043.93	1,043.93	1,043.93	1,043.93	1,043.93	1,043.93	1,043.93	1,043.93	1,043.93	1,043.93
12.50°	1,032.07	1,032.07	1,032.07	1,032.07	1,032.07	1,032.07	1,032.07	1,032.07	1,032.07	1,032.07	1,032.07	1,032.07	1,032.07	1,032.07	1,032.07	1,032.07	1,032.07
15.00°	1,018.42	1,018.42	1,018.42	1,018.42	1,018.42	1,018.42	1,018.42	1,018.42	1,018.42	1,018.42	1,018.42	1,018.42	1,018.42	1,018.42	1,018.42	1,018.42	1,018.42
17.50°	1,002.36	1,002.36	1,002.36	1,002.36	1,002.36	1,002.36	1,002.36	1,002.36	1,002.36	1,002.36	1,002.36	1,002.36	1,002.36	1,002.36	1,002.36	1,002.36	1,002.36
20.00°	985.27	985.27	985.27	985.27	985.27	985.27	985.27	985.27	985.27	985.27	985.27	985.27	985.27	985.27	985.27	985.27	985.27
22.50°	963.92	963.92	963.92	963.92	963.92	963.92	963.92	963.92	963.92	963.92	963.92	963.92	963.92	963.92	963.92	963.92	963.92
25.00°	941.18	941.18	941.18	941.18	941.18	941.18	941.18	941.18	941.18	941.18	941.18	941.18	941.18	941.18	941.18	941.18	941.18
27.50°	906.78	906.78	906.78	906.78	906.78	906.78	906.78	906.78	906.78	906.78	906.78	906.78	906.78	906.78	906.78	906.78	906.78
30.00°	869.49	869.49	869.49	869.49	869.49	869.49	869.49	869.49	869.49	869.49	869.49	869.49	869.49	869.49	869.49	869.49	869.49
32.50°	814.05	814.05	814.05	814.05	814.05	814.05	814.05	814.05	814.05	814.05	814.05	814.05	814.05	814.05	814.05	814.05	814.05
35.00°	755.45	755.45	755.45	755.45	755.45	755.45	755.45	755.45	755.45	755.45	755.45	755.45	755.45	755.45	755.45	755.45	755.45
37.50°	676.04	676.04	676.04	676.04	676.04	676.04	676.04	676.04	676.04	676.04	676.04	676.04	676.04	676.04	676.04	676.04	676.04
40.00°	594.38	594.38	594.38	594.38	594.38	594.38	594.38	594.38	594.38	594.38	594.38	594.38	594.38	594.38	594.38	594.38	594.38
42.50°	486.89	486.89	486.89	486.89	486.89	486.89	486.89	486.89	486.89	486.89	486.89	486.89	486.89	486.89	486.89	486.89	486.89
45.00°	378.09	378.09	378.09	378.09	378.09	378.09	378.09	378.09	378.09	378.09	378.09	378.09	378.09	378.09	378.09	378.09	378.09
47.50°	285.32	285.32	285.32	285.32	285.32	285.32	285.32	285.32	285.32	285.32	285.32	285.32	285.32	285.32	285.32	285.32	285.32
50.00°	195.03	195.03	195.03	195.03	195.03	195.03	195.03	195.03	195.03	195.03	195.03	195.03	195.03	195.03	195.03	195.03	195.03
52.50°	150.30	150.30	150.30	150.30	150.30	150.30	150.30	150.30	150.30	150.30	150.30	150.30	150.30	150.30	150.30	150.30	150.30
55.00°	108.02	108.02	108.02	108.02	108.02	108.02	108.02	108.02	108.02	108.02	108.02	108.02	108.02	108.02	108.02	108.02	108.02
57.50°	87.75	87.75	87.75	87.75	87.75	87.75	87.75	87.75	87.75	87.75	87.75	87.75	87.75	87.75	87.75	87.75	87.75
60.00°	68.11	68.11	68.11	68.11	68.11	68.11	68.11	68.11	68.11	68.11	68.11	68.11	68.11	68.11	68.11	68.11	68.11
62.50°	51.96	51.96	51.96	51.96	51.96	51.96	51.96	51.96	51.96	51.96	51.96	51.96	51.96	51.96	51.96	51.96	51.96
65.00°	36.90	36.90	36.90	36.90	36.90	36.90	36.90	36.90	36.90	36.90	36.90	36.90	36.90	36.90	36.90	36.90	36.90
67.50°	25.95	25.95	25.95	25.95	25.95	25.95	25.95	25.95	25.95	25.95	25.95	25.95	25.95	25.95	25.95	25.95	25.95
70.00°	17.40	17.40	17.40	17.40	17.40	17.40	17.40	17.40	17.40	17.40	17.40	17.40	17.40	17.40	17.40	17.40	17.40
72.50°	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27
75.00°	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12
77.50°	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53
80.00°	5.32	5.32	5.32	5.32	5.32	5.32	5.32	5.32	5.32	5.32	5.32	5.32	5.32	5.32	5.32	5.32	5.32
82.50°	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48
85.00°	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16
87.50°	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
90.00°	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58

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	2,066	2,066	2,066	2,066	2,018	2,018	2,018	2,018	1,929	1,929	1,929	1,846	1,846	1,846	1,771	1,771	1,771	1,736
	1	1,948	1,890	1,839	1,793	1,904	1,852	1,806	1,764	1,781	1,744	1,709	1,716	1,686	1,658	1,655	1,632	1,610	1,599
	2	1,825	1,722	1,637	1,566	1,784	1,691	1,614	1,548	1,633	1,569	1,513	1,580	1,527	1,480	1,531	1,487	1,449	1,457
	3	1,706	1,570	1,465	1,382	1,669	1,545	1,448	1,370	1,497	1,415	1,347	1,453	1,384	1,326	1,412	1,354	1,304	1,327
	4	1,595	1,435	1,319	1,230	1,560	1,414	1,306	1,222	1,375	1,281	1,207	1,338	1,257	1,192	1,304	1,235	1,177	1,210
	5	1,492	1,316	1,193	1,103	1,460	1,298	1,183	1,097	1,265	1,164	1,087	1,234	1,146	1,076	1,205	1,128	1,066	1,106
	6	1,396	1,210	1,085	995	1,368	1,195	1,077	991	1,167	1,062	984	1,140	1,048	977	1,116	1,034	969	1,014
	7	1,309	1,116	991	903	1,283	1,104	985	901	1,079	973	895	1,057	961	890	1,036	950	885	933
	8	1,230	1,033	909	824	1,206	1,022	904	822	1,001	895	818	982	885	814	964	876	810	861
	9	1,157	959	838	756	1,136	950	834	754	932	826	751	915	818	748	899	810	745	797
	10	1,091	893	775	696	1,072	885	772	695	870	765	693	855	758	690	841	752	688	740

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	35.1 fc	9.7 ft
6.5 ft	25.1 fc	11.5 ft
7.5 ft	18.9 fc	13.3 ft
8.0 ft	16.6 fc	14.1 ft
10.0 ft	10.6 fc	17.7 ft
12.0 ft	7.4 fc	21.2 ft
14.0 ft	5.4 fc	24.7 ft
16.0 ft	4.2 fc	28.3 ft
20.0 ft	2.7 fc	35.3 ft
24.0 ft	1.8 fc	42.4 ft
28.0 ft	1.4 fc	49.5 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	36,689	36,689	36,689
45.00°	18,463	18,463	18,463
55.00°	6,503	6,503	6,503
65.00°	3,015	3,015	3,015
75.00°	1,350	1,350	1,350
85.00°	855	855	855

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	13.7	14.9	14.0	15.2	15.5	13.7	14.9	14.0	15.2	15.5
	3H	13.9	15.0	14.3	15.3	15.7	13.9	15.0	14.3	15.3	15.7
	4H	14.0	15.0	14.4	15.3	15.7	14.0	15.0	14.4	15.3	15.7
	6H	14.0	14.9	14.4	15.2	15.6	14.0	14.9	14.4	15.2	15.6
	8H	13.9	14.8	14.4	15.2	15.6	13.9	14.8	14.4	15.2	15.6
	12H	13.9	14.7	14.3	15.1	15.5	13.9	14.7	14.3	15.1	15.5
4H	2H	13.7	14.7	14.1	15.1	15.5	13.7	14.7	14.1	15.1	15.5
	3H	14.1	14.9	14.5	15.3	15.7	14.1	14.9	14.5	15.3	15.7
	4H	14.1	14.9	14.6	15.3	15.7	14.1	14.9	14.6	15.3	15.7
	6H	14.2	14.8	14.6	15.2	15.7	14.2	14.8	14.6	15.2	15.7
	8H	14.1	14.7	14.6	15.2	15.6	14.1	14.7	14.6	15.2	15.6
	12H	14.1	14.6	14.6	15.1	15.6	14.1	14.6	14.6	15.1	15.6
8H	4H	14.1	14.6	14.5	15.1	15.6	14.1	14.6	14.5	15.1	15.6
	6H	14.1	14.6	14.6	15.1	15.6	14.1	14.6	14.6	15.1	15.6
	8H	14.1	14.5	14.6	15.0	15.5	14.1	14.5	14.6	15.0	15.5
	12H	14.1	14.5	14.6	15.0	15.5	14.1	14.5	14.6	15.0	15.5
12H	4H	14.0	14.5	14.5	15.0	15.5	14.0	14.5	14.5	15.0	15.5
	6H	14.1	14.5	14.6	15.0	15.5	14.1	14.5	14.6	15.0	15.5
	8H	14.1	14.5	14.6	14.9	15.5	14.1	14.5	14.6	14.9	15.5

Corrected UGR values based on total output lumens

SHR = 1.0