Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGE6LEDFX 50L 35K XX AR6223FX MW WF SO

Nom 6 inch dia downlight with matte white finish and Solite lens

Test Number

SP-01232

Test Date

5/5/2021

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

Summary of Results

Power

Input Watts	38.4 W

Lumen Output

Output Lumens	4056
Efficacy	105.62 lm/W

Luminous Dimensions

0° - 180° Size	-0.5
90° - 270° Size	-0.5
Height	0

Spacing Criterion

Two luminaires, plane 0°	1.04
Two luminaires, plane 90°	1.04
Four luminaires	1

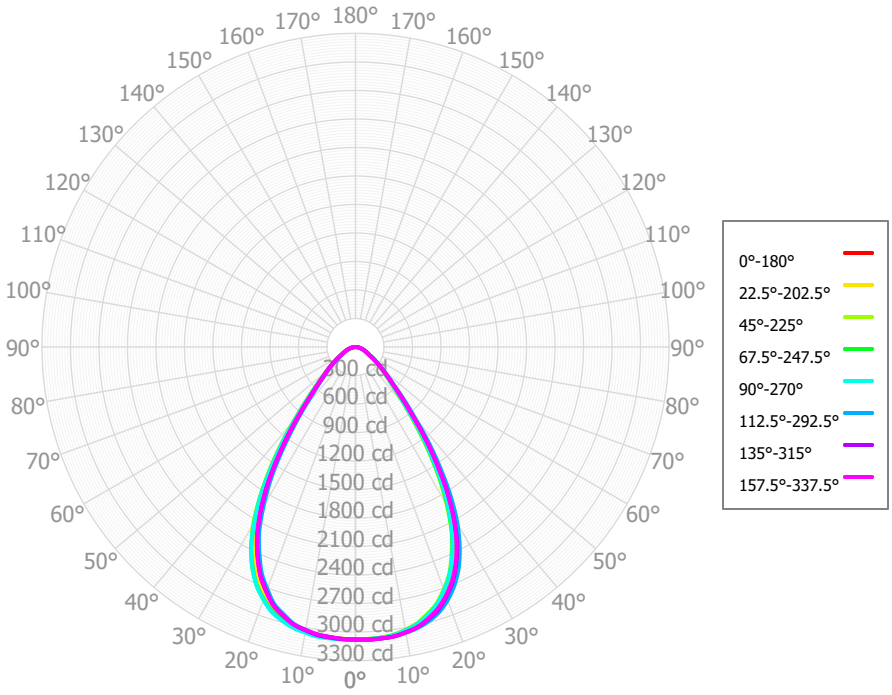
Full Beam Angle

0° - 180°	69°
90° - 270°	69°

IES File Header Contents

Keyword	Value
TEST	SP-01232
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	5/5/2021
ISSUEDATE	6/10/2021
LUMCAT	SGE6LEDFX 50L 35K XX AR6223FX MW WF SO
LUMINAIRE	Nom 6 inch dia downlight with matte white finish and Solite lens
OTHER	Beam Angle: 69 degrees
LAMPCAT	N/A
LAMP	FX Gen2
OTHER	CCT Output Multipliers: 27HK x 0.764, 30K x 0.96, 40K x 1.03, 50K x 1.04
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	80+
_CCTMULT	27HK x 0.77, 30K x 0.96, 40K x 1.03, 50K x 1.04
_LAMPMULT	10L x 0.18, 15L x 0.29, 20L x 0.39, 30L x 0.58, 40L x 0.78

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	296.73	7.32%	90.00° - 100.00°	0.00	0.00%
10.00° - 20.00°	826.66	20.38%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	1123.20	27.69%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	904.14	22.29%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	451.19	11.12%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	238.39	5.88%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	129.14	3.18%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	67.96	1.68%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	18.56	0.46%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	4055.97	100.00%	0.00° - 180.00°	4055.97	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°	3079.57	3079.57	3079.57	3079.57	3079.57	3079.57	3079.57	3079.57	3079.57	3079.57	3079.57	3079.57	3079.57	3079.57	3079.57	3079.57	3079.57
2.50°	3084.51	3080.03	3078.27	3075.57	3080.26	3080.58	3077.46	3075.37	3076.42	3074.20	3076.73	3075.37	3082.73	3082.09	3083.46	3081.35	3084.51
5.00°	3077.35	3080.25	3069.01	3071.06	3071.99	3070.58	3069.10	3063.74	3066.06	3068.36	3070.51	3071.06	3079.94	3079.56	3079.53	3079.74	3077.35
7.50°	3068.44	3062.58	3054.18	3060.04	3061.24	3059.22	3058.52	3051.37	3053.56	3060.95	3061.12	3066.28	3075.25	3072.72	3073.63	3073.58	3068.44
10.00°	3034.86	3031.25	3021.22	3029.52	3028.58	3023.87	3029.19	3023.31	3027.67	3038.07	3049.01	3046.09	3053.30	3054.31	3049.03	3050.76	3034.86
12.50°	2997.34	2987.96	2979.02	2988.41	2990.03	2986.71	2994.24	2993.35	2996.55	3006.27	3019.27	3024.50	3027.51	3028.34	3019.72	3017.68	2997.34
15.00°	2934.14	2937.85	2911.12	2924.00	2923.01	2914.79	2932.15	2930.79	2945.34	2952.60	2977.84	2974.14	2982.78	2987.26	2965.91	2958.72	2934.14
17.50°	2861.09	2854.20	2833.81	2841.17	2843.87	2839.07	2856.99	2861.65	2881.16	2889.71	2909.93	2919.66	2926.50	2926.42	2900.48	2885.32	2861.09
20.00°	2747.53	2756.11	2713.04	2728.51	2725.07	2712.44	2740.67	2743.41	2781.79	2788.21	2829.01	2823.51	2831.81	2836.30	2796.37	2785.52	2747.53
22.50°	2618.22	2610.73	2581.49	2587.28	2588.46	2578.26	2607.41	2614.59	2660.74	2674.89	2708.03	2717.96	2719.82	2718.47	2674.78	2660.27	2618.22
25.00°	2445.25	2451.10	2392.71	2411.32	2410.96	2394.09	2436.53	2439.94	2497.37	2508.55	2572.99	2560.09	2567.53	2569.70	2511.79	2499.30	2445.25
27.50°	2243.84	2234.36	2194.89	2196.40	2206.69	2195.09	2239.42	2247.16	2307.27	2331.76	2373.57	2381.10	2379.60	2376.54	2316.50	2300.36	2243.84
30.00°	1985.83	2006.57	1921.68	1944.61	1957.38	1937.00	1998.19	1999.99	2078.40	2073.79	2158.31	2128.04	2130.91	2145.31	2064.46	2061.19	1985.83
32.50°	1708.55	1712.60	1643.02	1666.08	1685.75	1667.79	1732.77	1734.94	1814.31	1807.28	1870.32	1859.49	1854.51	1867.21	1788.20	1785.26	1708.55
35.00°	1402.00	1411.30	1346.49	1368.41	1385.13	1368.54	1436.82	1431.77	1510.54	1504.65	1571.66	1553.22	1541.72	1558.43	1480.13	1479.84	1402.00
37.50°	1119.53	1127.93	1054.76	1094.17	1106.53	1089.10	1159.49	1149.33	1224.78	1202.99	1275.71	1256.68	1243.77	1261.74	1190.44	1192.82	1119.53
40.00°	864.64	849.62	832.26	832.40	849.55	849.44	899.94	899.45	954.35	955.50	980.31	977.94	960.56	970.93	919.26	917.21	864.64
42.50°	672.58	681.96	625.25	656.97	662.88	656.18	705.95	700.30	751.01	720.40	781.86	750.61	745.77	762.71	714.94	720.44	672.58
45.00°	534.98	523.11	518.18	515.97	528.40	531.97	560.64	562.83	590.69	589.90	590.71	593.41	582.39	583.57	562.33	559.64	534.98
47.50°	435.96	442.33	420.94	433.34	437.77	436.12	461.39	458.90	481.31	469.01	492.01	473.61	470.47	477.46	455.24	457.86	435.96
50.00°	362.88	365.84	362.15	366.77	372.21	372.06	387.67	385.85	396.83	394.46	398.22	392.37	388.32	388.99	374.49	375.11	362.88
52.50°	302.03	310.17	305.42	312.35	316.21	314.59	328.50	322.87	331.46	324.00	333.98	323.15	320.31	323.14	309.15	312.15	302.03
55.00°	247.27	257.00	254.34	260.01	264.19	262.86	275.19	266.89	272.77	266.70	272.89	263.58	258.28	260.53	250.31	253.59	247.27
57.50°	204.61	211.71	208.92	215.96	219.52	218.14	228.30	220.57	225.43	215.90	223.76	214.61	212.14	214.63	205.24	209.20	204.61
60.00°	166.27	173.06	174.71	172.66	176.98	178.02	183.27	179.32	180.75	179.80	180.79	172.01	170.68	169.86	164.38	166.61	166.27
62.50°	142.87	149.73	146.75	150.61	152.25	151.94	157.49	152.44	155.88	149.66	154.11	145.81	145.93	147.43	141.33	145.66	142.87
65.00°	123.21	128.61	127.96	129.09	130.96	132.68	135.24	131.10	133.89	129.42	130.75	126.84	124.49	125.44	121.80	125.75	123.21
67.50°	106.19	111.19	109.74	111.34	113.06	113.81	116.10	113.63	115.66	111.06	113.72	109.51	107.06	108.84	105.36	108.90	106.19
70.00°	89.57	94.02	92.17	93.83	95.51	95.07	97.26	97.18	97.67	95.10	97.37	92.71	90.04	92.53	89.24	92.15	89.57
72.50°	75.53	77.17	76.38	78.23	79.97	80.08	82.63	81.34	82.02	79.77	82.00	76.69	75.23	77.96	75.14	76.50	75.53
75.00°	61.66	62.30	62.13	62.80	64.50	66.00	68.12	65.60	66.57	65.04	67.15	60.83	60.52	63.65	61.18	61.38	61.66
77.50°	48.06	49.37	48.90	48.18	49.66	52.05	54.22	52.18	53.54	51.36	52.88	48.54	46.84	50.29	49.02	49.01	48.06
80.00°	34.58	36.89	36.35	34.35	35.19	38.12	40.58	38.96	40.58	38.44	39.41	36.67	33.48	37.54	36.91	36.78	34.58
82.50°	22.86	24.74	24.84	22.83	23.73	26.34	28.95	27.44	28.10	26.65	26.59	25.14	22.88	26.36	25.16	25.05	22.86
85.00°	12.06	14.93	13.85	12.94	13.15	14.73	17.98	16.18	16.54	15.49	16.30	13.77	13.08	16.38	14.41	14.74	12.06
87.50°	7.00	6.44	7.90	6.53	6.66	8.31	9.99	8.91	8.45	8.71	7.57	7.70	7.14	8.65	8.54	7.86	7.00
90.00°	2.90	3.37	3.74	2.50	1.71	2.36	3.74	2.49	2.47	3.71	3.67	2.23	2.50	3.70	3.85	3.36	2.90

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	4829	4829	4829	4829	4716	4716	4716	4716	4507	4507	4507	4315	4315	4315	4139	4139	4139	4056
	1	4549	4413	4291	4182	4446	4324	4214	4115	4157	4069	3987	4004	3933	3867	3863	3807	3755	3730
	2	4267	4029	3832	3667	4172	3957	3777	3625	3822	3673	3544	3697	3574	3466	3582	3482	3392	3411
	3	4002	3690	3449	3257	3915	3632	3409	3230	3521	3332	3176	3418	3259	3125	3323	3190	3076	3126
	4	3756	3393	3127	2924	3677	3345	3097	2906	3253	3039	2870	3167	2984	2835	3088	2931	2801	2873
	5	3530	3132	2854	2648	3457	3091	2830	2636	3014	2786	2611	2942	2743	2586	2875	2702	2562	2650
	6	3321	2900	2618	2415	3256	2866	2600	2406	2801	2565	2388	2740	2531	2371	2683	2499	2354	2453
	7	3130	2695	2413	2216	3070	2666	2399	2209	2611	2371	2196	2559	2344	2184	2510	2318	2171	2277
	8	2955	2513	2235	2043	2901	2488	2223	2038	2440	2200	2029	2396	2178	2019	2354	2157	2010	2121
	9	2795	2350	2077	1893	2745	2328	2067	1889	2287	2049	1882	2248	2031	1874	2212	2013	1867	1981
	10	2647	2203	1937	1760	2603	2185	1929	1757	2149	1914	1752	2115	1899	1746	2083	1884	1741	1855

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	101.8 fc	7.4 ft
6.5 ft	72.9 fc	8.7 ft
7.5 ft	54.7 fc	10.0 ft
8.0 ft	48.1 fc	10.7 ft
10.0 ft	30.8 fc	13.4 ft
12.0 ft	21.4 fc	16.1 ft
14.0 ft	15.7 fc	18.7 ft
16.0 ft	12.0 fc	21.4 ft
20.0 ft	7.7 fc	26.8 ft
24.0 ft	5.3 fc	32.1 ft
28.0 ft	3.9 fc	37.5 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	168823	168823	168823
45.00°	41475	40173	40965
55.00°	23633	24308	25250
65.00°	15983	16598	16988
75.00°	13061	13159	13661
85.00°	7586	8711	8268

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	18.4	19.6	18.8	19.9	20.3	18.7	19.9	19.0	20.2	20.5
	3H	19.6	20.6	20.0	21.0	21.3	19.8	20.8	20.2	21.2	21.5
	4H	20.0	21.0	20.4	21.3	21.7	20.2	21.2	20.6	21.5	21.9
	6H	20.3	21.2	20.7	21.6	22.0	20.5	21.4	20.9	21.7	22.1
	8H	20.4	21.2	20.8	21.6	22.0	20.5	21.4	21.0	21.8	22.2
	12H	20.4	21.2	20.8	21.6	22.0	20.6	21.4	21.0	21.8	22.2
4H	2H	18.7	19.7	19.1	20.1	20.5	19.0	20.0	19.4	20.3	20.7
	3H	20.1	20.9	20.5	21.3	21.7	20.3	21.2	20.8	21.6	22.0
	4H	20.7	21.4	21.1	21.8	22.2	20.9	21.6	21.3	22.0	22.5
	6H	21.1	21.7	21.5	22.1	22.6	21.3	21.9	21.7	22.3	22.8
	8H	21.2	21.7	21.6	22.2	22.7	21.4	21.9	21.8	22.4	22.9
	12H	21.2	21.7	21.7	22.2	22.7	21.4	21.9	21.9	22.4	22.9
8H	4H	20.8	21.4	21.3	21.8	22.3	21.1	21.6	21.5	22.1	22.6
	6H	21.3	21.8	21.8	22.3	22.8	21.6	22.0	22.1	22.5	23.0
	8H	21.5	21.9	22.0	22.4	22.9	21.7	22.1	22.2	22.7	23.2
	12H	21.6	22.0	22.1	22.5	23.0	21.8	22.2	22.3	22.7	23.3
12H	4H	20.8	21.3	21.3	21.8	22.3	21.1	21.6	21.5	22.0	22.5
	6H	21.3	21.8	21.9	22.2	22.8	21.6	22.0	22.1	22.5	23.0
	8H	21.6	21.9	22.1	22.4	23.0	21.8	22.2	22.3	22.7	23.2

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0