

## Indoor Distribution Test Report

# Spectrum Lighting Inc.

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## Spectrum Lighting Photometric Lab

### Luminaire

SAZI4XT 20L 35K WD xx SA4NXT MW SOX (aimed at 0 deg - nadir)  
Nom 4 inch square adj accent downlight (measured at nadir) with WD optic

### Test Number

SP-01257\_1

### Test Date

8/4/2021

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

### Summary of Results

#### Power

Input Watts	24.6 W
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#### Lumen Output

Output Lumens	1604
Efficacy	65.19 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.72
Two luminaires, plane 90°	0.71
Four luminaires	0.77

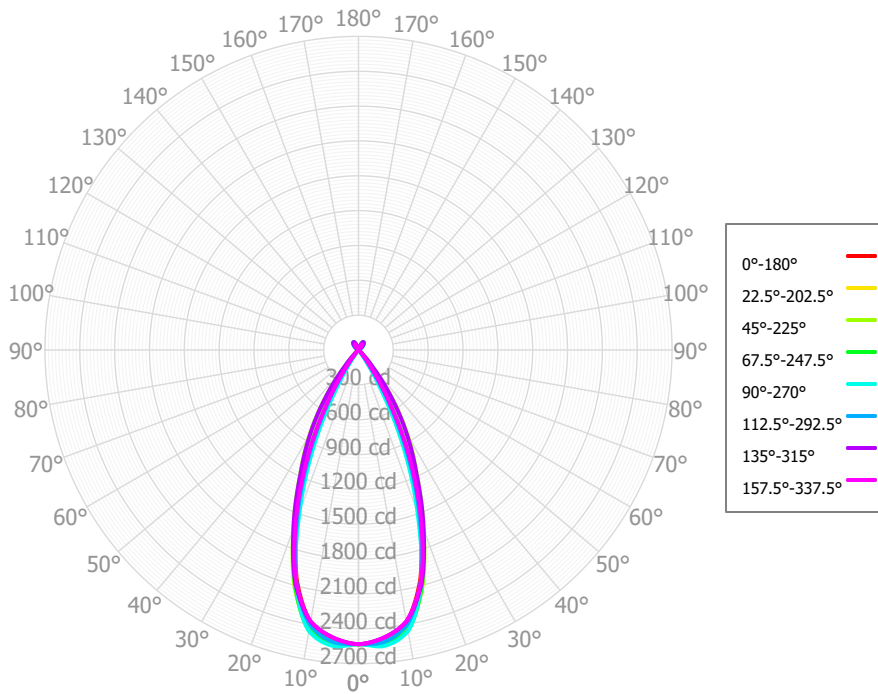
#### Full Beam Angle

0° - 180°	44°
90° - 270°	44°

### IES File Header Contents

Keyword	Value
TEST	SP-01257_1
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	8/4/2021
ISSUEDATE	8/4/2021
LUMCAT	SAZI4XT 20L 35K WD xx SA4NXT MW SOX (aimed at 0 deg - nadir)
LUMINAIRE	Nom 4 inch square adj accent downlight (measured at nadir) with WD optic
OTHER	Matte white finish, Solite lens
OTHER	Beam Angle: 44 deg
LAMP	N/A
LAMPCAT	N/A, 19mm LES
OTHER	LEDXT lumen output is the same for all available CCT's
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	83
_CCTMULT	Same for all available CCT's
_LAMPMULT	10L x 0.48, 13L x 0.65

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	250.13	15.60%	90.00° - 100.00°	1.51	0.09%
10.00° - 20.00°	557.58	34.77%	100.00° - 110.00°	1.52	0.09%
20.00° - 30.00°	470.20	29.32%	100.00° - 120.00°	4.80	0.30%
30.00° - 40.00°	170.47	10.63%	120.00° - 130.00°	11.59	0.72%
40.00° - 50.00°	28.21	1.76%	130.00° - 140.00°	25.24	1.57%
50.00° - 60.00°	10.39	0.65%	140.00° - 150.00°	34.41	2.15%
60.00° - 70.00°	7.41	0.46%	150.00° - 160.00°	20.92	1.30%
70.00° - 80.00°	4.16	0.26%	160.00° - 170.00°	4.27	0.27%
80.00° - 90.00°	2.04	0.13%	170.00° - 180.00°	0.31	0.02%
0.00° - 90.00°	1500.60	93.57%	0.00° - 180.00°	1603.65	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°	2533.15	2533.15	2533.15	2533.15	2533.15	2533.15	2533.15	2533.15	2533.15	2533.15	2533.15	2533.15	2533.15	2533.15	2533.15	2533.15	2533.15
5.00°	2491.53	2517.73	2526.81	2545.32	2557.62	2523.46	2487.10	2487.74	2491.53	2517.73	2526.81	2545.32	2557.62	2523.46	2487.10	2487.74	2491.53
10.00°	2376.89	2410.49	2437.03	2451.40	2458.11	2404.01	2375.52	2372.71	2376.89	2410.49	2437.03	2451.40	2458.11	2404.01	2375.52	2372.71	2376.89
15.00°	2052.92	2081.68	2120.85	2107.43	2082.93	2068.49	2091.51	2072.67	2052.92	2081.68	2120.85	2107.43	2082.93	2068.49	2091.51	2072.67	2052.92
20.00°	1524.10	1566.08	1639.56	1575.31	1485.35	1546.29	1638.01	1578.15	1524.10	1566.08	1639.56	1575.31	1485.35	1546.29	1638.01	1578.15	1524.10
25.00°	940.04	1036.01	1192.80	1062.87	906.15	1012.58	1184.37	1058.76	940.04	1036.01	1192.80	1062.87	906.15	1012.58	1184.37	1058.76	940.04
30.00°	430.82	540.27	842.44	584.83	360.12	523.88	825.31	566.39	430.82	540.27	842.44	584.83	360.12	523.88	825.31	566.39	430.82
35.00°	127.43	193.37	492.33	197.17	73.65	168.39	480.64	211.62	127.43	193.37	492.33	197.17	73.65	168.39	480.64	211.62	127.43
40.00°	36.43	55.78	185.50	43.49	28.12	38.07	187.42	60.43	36.43	55.78	185.50	43.49	28.12	38.07	187.42	60.43	36.43
45.00°	22.00	23.78	45.17	21.64	19.75	19.50	49.68	23.94	22.00	23.78	45.17	21.64	19.75	19.50	49.68	23.94	22.00
50.00°	15.76	16.21	17.51	15.38	13.64	14.32	16.79	15.98	15.76	16.21	17.51	15.38	13.64	14.32	16.79	15.98	15.76
55.00°	11.34	11.61	11.94	11.32	9.84	10.18	11.52	11.40	11.34	11.61	11.94	11.32	9.84	10.18	11.52	11.40	11.34
60.00°	9.57	9.10	8.75	8.86	8.33	8.17	9.17	8.64	9.57	9.10	8.75	8.86	8.33	8.17	9.17	8.64	9.57
65.00°	8.40	8.08	7.30	7.45	7.90	7.22	7.65	7.50	8.40	8.08	7.30	7.45	7.90	7.22	7.65	7.50	8.40
70.00°	6.35	5.45	5.58	5.62	5.98	5.61	5.75	6.15	6.35	5.45	5.58	5.62	5.98	5.61	5.75	6.15	6.35
75.00°	3.85	3.57	3.62	3.89	3.91	3.54	3.86	3.96	3.85	3.57	3.62	3.89	3.91	3.54	3.86	3.96	3.85
80.00°	2.29	2.38	2.46	2.55	2.15	2.32	2.87	2.54	2.29	2.38	2.46	2.55	2.15	2.32	2.87	2.54	2.29
85.00°	1.62	1.67	1.79	1.68	1.81	1.96	2.21	1.79	1.62	1.67	1.79	1.68	1.81	1.96	2.21	1.79	1.62
90.00°	1.20	1.13	1.45	1.42	1.54	1.64	1.69	1.39	1.20	1.13	1.45	1.42	1.54	1.64	1.69	1.39	1.20
95.00°	1.19	1.15	1.56	1.34	1.30	1.32	1.65	1.40	1.19	1.15	1.56	1.34	1.30	1.32	1.65	1.40	1.19
100.00°	1.17	1.27	1.51	1.32	1.30	1.43	1.55	1.37	1.17	1.27	1.51	1.32	1.30	1.43	1.55	1.37	1.17
105.00°	1.21	1.25	1.38	1.47	1.44	1.31	1.46	1.61	1.21	1.25	1.38	1.47	1.44	1.31	1.46	1.61	1.21
110.00°	1.47	1.56	1.43	1.53	1.69	1.64	1.69	1.93	1.47	1.56	1.43	1.53	1.69	1.64	1.69	1.93	1.47
115.00°	1.60	1.42	1.70	2.80	3.11	4.71	2.03	1.60	1.60	1.42	1.70	2.80	3.11	4.71	2.03	1.60	1.60
120.00°	1.68	1.53	2.49	16.78	10.56	17.88	3.90	1.93	1.68	1.53	2.49	16.78	10.56	17.88	3.90	1.93	1.68
125.00°	1.66	1.60	5.17	28.92	22.56	30.45	9.03	1.85	1.66	1.60	5.17	28.92	22.56	30.45	9.03	1.85	1.66
130.00°	1.97	3.43	13.66	40.71	30.44	43.54	22.54	4.58	1.97	3.43	13.66	40.71	30.44	43.54	22.54	4.58	1.97
135.00°	6.22	7.47	38.63	57.42	36.17	60.07	44.22	11.34	6.22	7.47	38.63	57.42	36.17	60.07	44.22	11.34	6.22
140.00°	15.16	18.95	63.16	70.22	41.37	70.98	64.85	34.38	15.16	18.95	63.16	70.22	41.37	70.98	64.85	34.38	15.16
145.00°	22.30	32.91	76.39	77.09	46.12	79.08	78.42	49.18	22.30	32.91	76.39	77.09	46.12	79.08	78.42	49.18	22.30
150.00°	21.18	32.36	74.73	77.44	45.72	77.09	78.79	55.30	21.18	32.36	74.73	77.44	45.72	77.09	78.79	55.30	21.18
155.00°	17.75	26.08	61.36	58.03	35.80	56.04	62.56	44.28	17.75	26.08	61.36	58.03	35.80	56.04	62.56	44.28	17.75
160.00°	12.14	17.04	34.29	34.08	24.12	34.09	34.96	24.42	12.14	17.04	34.29	34.08	24.12	34.09	34.96	24.42	12.14
165.00°	7.62	7.57	11.17	11.70	10.60	12.44	15.09	11.84	7.62	7.57	11.17	11.70	10.60	12.44	15.09	11.84	7.62
170.00°	2.72	3.37	3.20	3.93	3.68	4.20	5.38	4.70	2.72	3.37	3.20	3.93	3.68	4.20	5.38	4.70	2.72
175.00°	1.98	2.22	2.98	2.32	2.24	2.55	2.39	2.05	1.98	2.22	2.98	2.32	2.24	2.55	2.39	2.05	1.98
180.00°	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13

### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

<b>RCR</b>	<b>pfc</b>	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	<b>pcc</b>	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	<b>0</b>	1885	1885	1885	1885	1829	1829	1829	1829	1725	1725	1725	1629	1629	1629	1542	1542	1501
	<b>1</b>	1800	1758	1720	1686	1751	1713	1680	1649	1630	1604	1580	1553	1534	1515	1483	1468	1430
	<b>2</b>	1719	1646	1586	1535	1674	1610	1556	1510	1542	1499	1461	1479	1445	1415	1421	1395	1360
	<b>3</b>	1641	1546	1473	1414	1602	1517	1450	1396	1461	1406	1361	1409	1365	1328	1361	1326	1294
	<b>4</b>	1568	1458	1377	1315	1533	1433	1359	1301	1386	1324	1275	1343	1292	1250	1303	1260	1232
	<b>5</b>	1499	1378	1293	1230	1467	1357	1279	1220	1318	1251	1200	1281	1225	1181	1247	1200	1173
	<b>6</b>	1435	1305	1219	1157	1406	1288	1207	1149	1254	1185	1133	1223	1163	1118	1194	1143	1119
	<b>7</b>	1374	1240	1153	1092	1348	1225	1143	1085	1196	1125	1073	1169	1107	1061	1144	1090	1068
	<b>8</b>	1317	1180	1093	1034	1293	1167	1085	1029	1142	1070	1019	1118	1055	1009	1096	1041	1021
	<b>9</b>	1264	1125	1040	982	1242	1113	1033	978	1091	1020	970	1071	1007	961	1052	995	977
	<b>10</b>	1214	1074	991	935	1194	1064	985	932	1045	974	925	1027	963	918	1010	952	936

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	83.7 fc	4.4 ft
6.5 ft	60.0 fc	5.2 ft
7.5 ft	45.0 fc	6.0 ft
8.0 ft	39.6 fc	6.4 ft
10.0 ft	25.3 fc	8.1 ft
12.0 ft	17.6 fc	9.7 ft
14.0 ft	12.9 fc	11.3 ft
16.0 ft	9.9 fc	12.9 ft
20.0 ft	6.3 fc	16.1 ft
24.0 ft	4.4 fc	19.3 ft
28.0 ft	3.2 fc	22.6 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	250382	250382	250382
<b>45.00°</b>	3075	6315	2761
<b>55.00°</b>	1954	2058	1695
<b>65.00°</b>	1964	1708	1849
<b>75.00°</b>	1472	1384	1492
<b>85.00°</b>	1839	2031	2053

### 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	3.6	4.5	4.1	4.9	5.4	3.1	4.0	3.6	4.4	4.9
	3H	5.5	6.3	6.0	6.7	7.3	5.1	5.8	5.6	6.3	6.8
	4H	6.0	6.8	6.6	7.2	7.8	5.7	6.4	6.2	6.9	7.4
	6H	6.4	7.1	7.0	7.6	8.1	6.1	6.7	6.6	7.2	7.8
	8H	6.6	7.2	7.1	7.7	8.3	6.3	6.9	6.8	7.4	8.0
	12H	6.8	7.3	7.3	7.9	8.4	6.5	7.1	7.1	7.6	8.2
4H	2H	4.1	4.8	4.6	5.3	5.8	3.7	4.4	4.2	4.9	5.5
	3H	6.1	6.7	6.7	7.2	7.8	5.8	6.4	6.3	6.9	7.5
	4H	6.8	7.3	7.3	7.8	8.4	6.5	7.0	7.1	7.6	8.2
	6H	7.3	7.7	7.9	8.3	8.9	7.0	7.5	7.6	8.0	8.7
	8H	7.5	7.9	8.1	8.5	9.1	7.3	7.7	7.9	8.3	8.9
	12H	7.8	8.1	8.4	8.7	9.4	7.6	8.0	8.2	8.6	9.2
8H	4H	7.0	7.4	7.6	7.9	8.6	6.7	7.1	7.3	7.7	8.3
	6H	7.6	8.0	8.3	8.6	9.2	7.4	7.7	8.0	8.4	9.0
	8H	8.0	8.3	8.6	8.9	9.6	7.8	8.1	8.4	8.7	9.4
	12H	8.4	8.7	9.0	9.3	10.0	8.3	8.5	8.9	9.2	9.9
12H	4H	7.0	7.3	7.6	7.9	8.5	6.7	7.1	7.3	7.7	8.3
	6H	7.7	8.0	8.3	8.6	9.3	7.5	7.8	8.1	8.4	9.1
	8H	8.1	8.4	8.8	9.0	9.7	8.0	8.2	8.6	8.8	9.5

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0