Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SR3Mx 25L 35K XW xx xx RDD3F 25L 35K XW MW GL

Nom. 3" Round Deep Downlight A-Spec, Xtra Wide Beam

Test Number

SP-01409_3

Test Date

9/19/2022

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

Summary of Results

Power

Input Watts	26.3 W

Lumen Output

Output Lumens	2151
Efficacy	81.8 lm/W

Luminous Dimensions

0° - 180° Size	-0.25
90° - 270° Size	-0.25
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.99
Two luminaires, plane 90°	0.98
Four luminaires	0.92

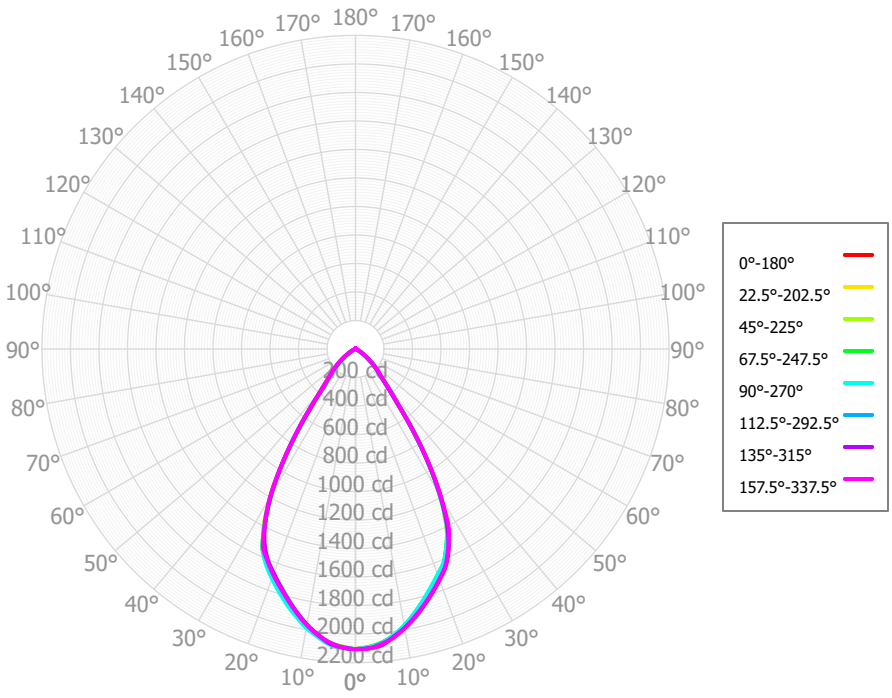
Full Beam Angle

0° - 180°	63°
90° - 270°	63°

IES File Header Contents

Keyword	Value
TEST	SP-01409_3
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/19/2022
ISSUEDATE	10/25/2022
LUMCAT	SR3Mx 25L 35K XW xx xx RDD3F 25L 35K XW MW GL
LUMINAIRE	Nom. 3" Round Deep Downlight A-Spec, Xtra Wide Beam
OTHER	Matte White Trim, Clear Glass lens
OTHER	63 Degree Beam Angle
LAMP	N/A, 19mm LES
LAMPCAT	N/A, Min. 80 CRI
OTHER	Reference project SL167
OTHER	minus 2W, no thermal protection required for 7L, 10L, and 15L (non-IC)
OTHER	minus 2W, no thermal protection required for all (including 20L and 25L) IC luminaires
OTHER	Total Luminaire Watts is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	80

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture
0.00° - 10.00°	197.48	9.18%
10.00° - 20.00°	516.46	24.01%
20.00° - 30.00°	685.06	31.85%
30.00° - 40.00°	451.18	20.97%
40.00° - 50.00°	180.77	8.40%
50.00° - 60.00°	77.69	3.61%
60.00° - 70.00°	21.41	1.00%
70.00° - 80.00°	5.57	0.26%
80.00° - 90.00°	2.55	0.12%
0.00° - 90.00°	2138.18	99.39%

Zone	Lumens	% Fixture
90.00° - 100.00°	2.08	0.10%
100.00° - 110.00°	1.95	0.09%
100.00° - 120.00°	3.89	0.18%
120.00° - 130.00°	1.90	0.09%
130.00° - 140.00°	1.70	0.08%
140.00° - 150.00°	1.45	0.07%
150.00° - 160.00°	1.10	0.05%
160.00° - 170.00°	0.67	0.03%
170.00° - 180.00°	0.23	0.01%
0.00° - 180.00°	2151.21	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°	2105.67	2105.67	2105.67	2105.67	2105.67	2105.67	2105.67	2105.67	2105.67	2105.67	2105.67	2105.67	2105.67	2105.67	2105.67	2105.67	2105.67
2.50°	2094.09	2094.46	2093.51	2093.87	2095.06	2097.65	2095.88	2097.13	2091.81	2091.32	2091.15	2092.37	2097.49	2103.74	2101.99	2104.40	2094.09
5.00°	2076.64	2072.21	2074.28	2068.77	2072.74	2068.14	2074.74	2067.75	2071.91	2070.41	2068.12	2070.38	2082.10	2076.56	2088.28	2079.51	2076.64
7.50°	2033.38	2034.93	2030.11	2028.76	2025.99	2026.28	2021.07	2024.10	2021.84	2027.63	2030.02	2029.23	2037.19	2042.50	2038.56	2043.74	2033.38
10.00°	1985.89	1980.56	1976.62	1970.68	1970.26	1964.31	1964.16	1966.45	1968.89	1973.17	1977.02	1976.47	1988.06	1989.37	1986.98	1987.94	1985.89
12.50°	1918.74	1915.05	1908.21	1902.19	1899.57	1895.40	1894.41	1899.53	1901.02	1905.17	1910.78	1911.73	1923.32	1933.56	1924.33	1925.58	1918.74
15.00°	1850.97	1844.68	1836.29	1829.98	1827.45	1818.62	1823.19	1826.26	1832.24	1832.41	1839.98	1842.14	1857.67	1863.71	1860.54	1858.26	1850.97
17.50°	1781.48	1772.08	1766.43	1756.31	1753.67	1746.85	1748.24	1755.70	1760.72	1760.13	1766.35	1772.85	1786.34	1793.36	1792.97	1789.96	1781.48
20.00°	1712.46	1705.14	1696.82	1686.98	1684.10	1679.17	1675.56	1686.46	1690.42	1687.96	1696.90	1703.64	1714.52	1722.95	1724.34	1719.95	1712.46
22.50°	1644.28	1639.85	1622.36	1618.71	1617.92	1604.48	1606.70	1612.24	1622.60	1616.76	1629.24	1625.64	1639.55	1647.67	1653.42	1649.37	1644.28
25.00°	1541.33	1529.13	1541.26	1510.56	1511.86	1525.82	1508.81	1536.47	1524.70	1545.66	1518.12	1546.45	1544.28	1541.11	1547.96	1539.31	1541.33
27.50°	1393.15	1411.20	1368.70	1397.60	1382.68	1369.83	1375.75	1373.87	1385.13	1373.44	1395.23	1369.62	1377.38	1408.95	1391.04	1418.71	1393.15
30.00°	1200.34	1189.84	1186.58	1178.09	1182.81	1183.66	1190.14	1196.00	1198.99	1195.87	1182.01	1186.76	1188.65	1185.73	1194.50	1193.87	1200.34
32.50°	966.83	961.82	952.49	954.77	955.63	957.40	959.86	965.31	967.64	958.48	955.92	949.02	951.11	954.51	956.69	964.47	966.83
35.00°	730.23	717.31	723.00	717.93	726.13	721.58	730.28	731.41	735.41	726.08	714.80	715.20	717.34	704.95	718.94	714.33	730.23
37.50°	491.61	487.31	508.40	498.14	496.07	526.97	501.12	531.07	502.57	518.61	478.90	505.83	489.46	498.22	481.23	496.64	491.61
40.00°	360.85	370.45	342.47	375.09	377.15	337.16	371.78	346.37	371.85	348.56	369.59	330.62	337.97	357.83	350.22	370.78	360.85
42.50°	278.03	268.89	277.82	270.71	271.89	281.64	283.22	290.86	289.89	287.59	269.22	272.08	269.73	263.54	274.36	273.76	278.03
45.00°	228.48	227.78	224.25	228.49	230.17	230.22	234.77	238.51	239.73	234.03	227.24	219.45	217.06	220.53	224.09	230.45	228.48
47.50°	188.28	187.19	186.44	187.38	189.95	191.88	196.46	199.69	199.34	195.08	186.04	180.10	176.63	178.99	182.80	188.17	188.28
50.00°	148.65	147.83	149.22	148.62	151.78	154.08	158.50	161.24	159.29	156.55	147.73	142.73	139.29	138.59	143.80	147.23	148.65
52.50°	109.11	112.25	112.61	113.29	115.13	119.30	120.58	123.72	119.31	118.56	112.28	108.37	103.61	105.49	105.27	111.86	109.11
55.00°	83.35	83.07	83.11	83.11	87.15	87.03	91.09	91.01	89.97	86.76	83.46	78.64	77.00	76.32	78.02	81.67	83.35
57.50°	58.67	58.91	58.71	58.84	61.24	62.94	62.54	66.65	61.56	61.01	58.87	53.99	53.64	54.81	51.79	58.69	58.67
60.00°	42.96	40.66	41.53	40.76	42.03	42.56	45.11	46.54	45.30	42.75	41.06	37.62	39.19	36.13	38.73	40.38	42.96
62.50°	28.19	28.14	27.90	27.53	26.86	29.98	29.00	31.69	29.80	29.62	27.79	27.62	26.72	25.89	26.22	28.71	28.19
65.00°	20.41	20.37	19.29	17.86	20.40	20.20	21.24	21.12	20.82	20.87	19.61	19.50	19.79	17.51	19.28	19.94	20.41
67.50°	13.46	14.41	12.34	12.01	14.69	14.56	14.37	14.29	12.98	14.15	13.70	12.40	13.44	13.37	12.96	14.68	13.46
70.00°	9.68	9.52	8.45	8.14	10.06	10.28	10.61	9.62	9.91	9.92	9.58	8.28	10.04	9.66	9.57	10.43	9.68
72.50°	6.50	6.98	5.14	5.75	7.01	7.41	7.32	6.30	7.00	6.47	6.98	5.24	6.76	6.89	6.64	7.28	6.50
75.00°	4.77	5.36	4.14	3.86	5.57	5.34	5.06	4.73	4.50	4.69	5.23	3.87	4.78	4.31	5.06	4.29	4.77
77.50°	3.46	4.29	3.35	3.39	4.48	3.85	3.39	3.89	2.89	3.20	3.87	2.85	3.09	3.75	3.76	3.76	3.46
80.00°	2.86	3.35	2.66	3.21	3.63	3.11	2.63	3.17	2.84	2.87	2.67	2.28	2.88	3.18	2.96	3.36	2.86
82.50°	2.37	2.85	2.05	2.53	2.96	2.75	2.19	2.47	2.72	2.62	2.53	1.75	2.69	2.60	2.53	2.64	2.37
85.00°	2.01	2.40	2.11	1.80	2.38	2.58	2.10	2.30	2.50	2.29	2.64	1.75	2.53	2.09	2.59	2.02	2.01
87.50°	1.89	2.02	2.11	1.68	2.14	2.48	2.18	2.21	2.26	1.99	2.52	1.76	2.30	1.83	2.37	2.06	1.89
90.00°	1.99	1.67	1.82	1.58	2.02	2.22	2.38	2.06	2.00	1.93	2.37	1.83	1.92	1.74	1.88	2.06	1.99
92.50°	1.98	1.79	1.64	1.68	2.10	1.93	2.22	1.92	1.92	1.85	2.35	1.89	1.77	1.98	1.80	1.90	1.98
95.00°	1.93	1.88	1.81	1.78	2.22	1.75	1.88	1.92	1.94	1.71	2.31	1.84	1.94	2.06	2.00	1.82	1.93
97.50°	1.82	1.77	1.85	1.87	2.08	1.58	1.84	1.93	1.83	1.66	2.04	1.82	2.01	1.94	2.09	1.97	1.82
100.00°	1.69	1.71	1.66	1.90	1.92	1.59	1.92	2.09	1.65	1.81	1.81	1.86	1.99	1.93	2.13	2.00	1.69

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%
	0	2558	2558	2558	2558	2497	2497	2497	2497	2383	2383	2383	2279	2279	2279	2183	2183	2183	2138
	1	2429	2366	2309	2258	2375	2318	2267	2221	2228	2187	2150	2146	2113	2083	2070	2044	2021	2002
	2	2299	2187	2094	2016	2249	2148	2064	1993	2076	2006	1947	2009	1952	1903	1947	1902	1861	1863
	3	2172	2025	1911	1820	2127	1993	1888	1804	1934	1846	1773	1880	1806	1743	1829	1767	1715	1732
	4	2053	1880	1753	1656	2012	1854	1736	1645	1805	1704	1624	1759	1673	1603	1717	1644	1583	1612
RCR	5	1940	1749	1616	1517	1903	1728	1603	1509	1687	1578	1494	1649	1554	1480	1613	1531	1465	1502
	6	1836	1632	1496	1397	1802	1614	1485	1392	1580	1466	1381	1547	1447	1371	1517	1429	1360	1403
	7	1738	1527	1390	1294	1708	1511	1382	1290	1482	1366	1281	1455	1351	1274	1429	1336	1266	1313
	8	1648	1432	1296	1202	1620	1419	1289	1199	1394	1277	1193	1370	1264	1187	1348	1253	1181	1232
	9	1565	1346	1212	1122	1540	1335	1207	1119	1313	1196	1115	1292	1186	1110	1273	1176	1105	1158
	10	1488	1269	1137	1050	1465	1259	1133	1048	1240	1124	1044	1222	1116	1041	1205	1107	1037	1090

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	69.6 fc	6.8 ft
6.5 ft	49.8 fc	8.0 ft
7.5 ft	37.4 fc	9.2 ft
8.0 ft	32.9 fc	9.8 ft
10.0 ft	21.1 fc	12.3 ft
12.0 ft	14.6 fc	14.8 ft
14.0 ft	10.7 fc	17.2 ft
16.0 ft	8.2 fc	19.7 ft
20.0 ft	5.3 fc	24.6 ft
24.0 ft	3.7 fc	29.5 ft
28.0 ft	2.7 fc	34.4 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	461732	461732	461732
45.00°	70853	69542	71376
55.00°	31865	31772	33318
65.00°	10588	10010	10587
75.00°	4039	3511	4720
85.00°	5055	5314	5981

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

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0