Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SR3Mx 25L 35HK XW xx xx RDD3F 25L 35HK XW MW SO

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

Test Number

SP-01408_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	1848
Efficacy	70.28 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.96
Two luminaires, plane 90°	0.98
Four luminaires	0.92

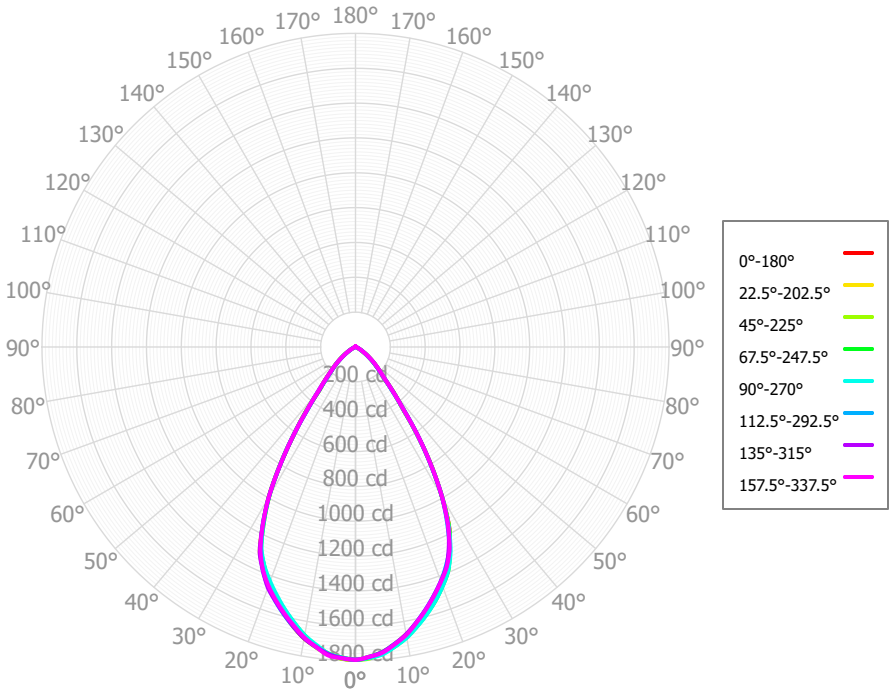
Full Beam Angle

0° - 180°	63°
90° - 270°	63°

IES File Header Contents

Keyword	Value
TEST	SP-01408_3
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/19/2022
ISSUEDATE	10/25/2022
LUMCAT	SR3Mx 25L 35HK XW xx xx RDD3F 25L 35HK XW MW SO
LUMINAIRE	Nom. 3" Round Deep Downlight A-Spec, Xtra Wide Beam
OTHER	Matte White Trim, Solite lens
OTHER	63 Degree Beam Angle
LAMP	N/A, 19mm LES
LAMPCAT	N/A, Min. 90 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	90

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	168.27	9.10%	90.00° - 100.00°	2.14	0.12%
10.00° - 20.00°	441.30	23.87%	100.00° - 110.00°	2.08	0.11%
20.00° - 30.00°	575.46	31.13%	100.00° - 120.00°	4.04	0.22%
30.00° - 40.00°	391.33	21.17%	120.00° - 130.00°	1.86	0.10%
40.00° - 50.00°	161.05	8.71%	130.00° - 140.00°	1.64	0.09%
50.00° - 60.00°	69.42	3.76%	140.00° - 150.00°	1.42	0.08%
60.00° - 70.00°	20.71	1.12%	150.00° - 160.00°	1.08	0.06%
70.00° - 80.00°	5.36	0.29%	160.00° - 170.00°	0.65	0.04%
80.00° - 90.00°	2.53	0.14%	170.00° - 180.00°	0.22	0.01%
0.00° - 90.00°	1835.44	99.29%	0.00° - 180.00°	1848.49	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°	1795.59	1795.59	1795.59	1795.59	1795.59	1795.59	1795.59	1795.59	1795.59	1795.59	1795.59	1795.59	1795.59	1795.59	1795.59	1795.59	1795.59
2.50°	1784.70	1779.63	1790.90	1786.55	1787.32	1785.95	1787.95	1788.29	1790.64	1783.85	1792.21	1785.86	1784.24	1780.09	1781.88	1780.24	1784.70
5.00°	1759.35	1758.08	1764.08	1767.06	1772.15	1769.86	1770.54	1778.64	1769.39	1767.55	1772.04	1767.34	1767.56	1758.34	1758.95	1762.67	1759.35
7.50°	1722.78	1719.42	1729.51	1734.34	1735.55	1736.64	1736.12	1736.80	1737.92	1731.50	1739.84	1728.89	1724.58	1719.08	1720.16	1721.96	1722.78
10.00°	1676.17	1674.98	1683.27	1691.57	1695.52	1696.92	1697.63	1693.21	1699.17	1690.13	1689.65	1680.44	1680.40	1676.84	1674.38	1678.67	1676.17
12.50°	1623.56	1622.62	1634.28	1640.39	1642.70	1645.06	1643.36	1637.95	1646.09	1633.82	1634.08	1623.88	1620.96	1618.21	1618.28	1620.21	1623.56
15.00°	1564.62	1567.82	1576.50	1585.13	1587.74	1589.75	1586.92	1581.90	1585.52	1575.10	1572.35	1564.34	1560.89	1558.29	1559.08	1560.84	1564.62
17.50°	1502.85	1510.48	1517.55	1527.31	1527.16	1529.72	1529.23	1522.72	1521.76	1515.79	1512.82	1504.93	1497.03	1495.55	1496.37	1498.26	1502.85
20.00°	1440.88	1446.72	1454.22	1461.21	1462.61	1463.40	1471.07	1459.78	1456.81	1456.42	1455.16	1445.56	1432.24	1432.09	1431.48	1434.62	1440.88
22.50°	1378.84	1377.91	1389.74	1391.36	1390.62	1390.63	1389.64	1386.61	1377.93	1381.50	1377.02	1365.66	1363.94	1358.41	1364.74	1368.36	1378.84
25.00°	1276.38	1277.86	1279.43	1282.81	1292.10	1286.40	1302.12	1291.62	1295.44	1301.30	1285.84	1282.66	1277.56	1276.07	1267.57	1279.02	1276.38
27.50°	1165.57	1159.65	1163.25	1161.69	1156.07	1157.31	1152.47	1154.34	1151.36	1152.24	1148.43	1140.21	1145.10	1139.38	1150.68	1147.88	1165.57
30.00°	994.71	996.16	989.16	991.04	995.49	993.49	996.44	996.39	997.84	998.06	988.90	993.51	994.53	992.94	990.94	994.34	994.71
32.50°	817.28	813.06	813.05	810.05	809.02	809.36	805.51	809.05	812.44	811.43	808.87	807.69	809.92	809.87	810.95	810.90	817.28
35.00°	628.80	628.47	626.10	625.98	626.78	627.32	620.94	629.95	624.90	629.50	621.98	623.95	630.58	630.24	631.28	630.89	628.80
37.50°	443.35	443.44	455.42	441.54	447.87	446.16	458.00	459.84	469.59	465.37	467.24	464.33	458.52	459.68	451.71	454.30	443.35
40.00°	339.92	336.86	339.25	338.75	329.17	335.46	323.52	339.71	321.65	327.63	319.50	319.24	332.47	323.77	339.70	332.75	339.92
42.50°	243.45	244.95	244.74	241.09	246.63	245.94	255.54	260.35	261.52	259.81	254.54	255.33	253.94	252.84	242.83	253.42	243.45
45.00°	202.36	201.33	200.22	199.20	196.10	198.51	199.07	205.91	204.75	202.73	200.16	198.06	199.46	196.28	198.24	202.07	202.36
47.50°	163.05	162.61	159.95	158.20	159.47	159.02	162.61	167.02	168.10	165.88	164.70	163.75	164.08	160.15	160.14	166.57	163.05
50.00°	131.61	131.13	126.97	125.07	126.03	126.65	128.86	133.19	132.91	131.98	130.23	130.95	131.63	128.18	129.89	133.75	131.61
52.50°	101.53	100.18	97.60	93.72	93.56	94.99	98.59	101.65	103.03	102.16	102.86	101.86	100.91	100.60	100.16	102.07	101.53
55.00°	75.54	76.21	72.83	70.81	71.92	72.11	73.83	77.76	76.13	76.89	76.13	75.87	76.37	76.73	77.76	77.31	75.54
57.50°	53.27	53.38	52.76	50.33	52.42	49.98	54.37	56.27	56.59	56.47	55.27	55.32	54.45	55.79	56.16	54.55	53.27
60.00°	38.83	39.03	37.31	37.28	39.24	38.00	39.09	40.47	39.92	40.63	36.57	38.74	39.35	39.97	41.77	40.65	38.83
62.50°	27.29	26.03	26.29	26.01	26.71	26.56	26.89	25.86	28.51	28.43	28.46	27.49	26.33	27.25	28.54	28.34	27.29
65.00°	20.34	18.72	18.51	18.68	19.54	19.21	18.94	19.43	19.66	20.17	20.67	19.02	18.77	19.57	20.91	20.49	20.34
67.50°	14.38	12.28	13.53	12.49	12.66	12.60	13.29	13.92	14.24	14.24	13.92	13.33	12.25	14.09	14.15	13.07	14.38
70.00°	9.61	8.38	10.05	8.15	8.62	9.18	9.71	9.73	10.18	9.82	8.58	8.96	8.70	9.99	10.20	9.54	9.61
72.50°	6.34	5.27	7.06	5.42	4.97	6.22	6.96	5.69	7.50	6.08	6.41	5.57	5.44	6.32	6.83	6.20	6.34
75.00°	4.40	3.79	4.28	4.60	4.20	4.58	5.21	4.33	5.58	4.56	4.62	4.13	4.18	4.85	4.77	4.95	4.40
77.50°	3.25	2.90	3.60	3.60	3.49	3.37	3.73	3.09	4.27	3.73	3.42	3.82	3.01	3.82	3.32	3.76	3.25
80.00°	2.63	2.89	3.48	2.45	3.04	3.03	3.10	2.84	3.33	3.17	2.63	3.14	2.85	3.26	2.88	3.10	2.63
82.50°	2.35	2.66	3.08	1.94	2.59	2.73	2.60	2.58	2.61	2.68	2.35	2.32	2.67	2.75	2.46	2.48	2.35
85.00°	2.24	2.18	2.62	1.87	2.16	2.50	2.33	2.32	2.33	2.23	2.19	2.09	2.43	2.15	2.09	2.07	2.24
87.50°	2.10	1.92	2.18	1.84	1.86	2.36	2.08	2.10	2.23	1.79	2.14	2.03	2.21	1.58	2.05	1.82	2.10
90.00°	1.94	1.85	1.75	1.83	1.81	2.33	1.92	2.02	2.12	1.87	2.15	1.98	2.09	1.72	2.31	1.97	1.94
92.50°	1.86	1.93	1.83	1.96	1.84	2.12	1.78	2.05	2.02	1.96	2.23	1.93	1.96	1.87	2.28	2.04	1.86
95.00°	1.79	2.12	1.89	2.13	2.02	1.76	2.07	2.31	1.94	1.83	1.97	1.87	1.80	2.08	2.03	1.95	1.79
97.50°	1.98	2.10	1.71	1.87	2.05	1.77	2.31	2.45	1.87	1.73	1.55	1.81	1.70	2.22	2.05	1.95	1.98
100.00°	2.20	1.99	1.57	1.50	1.91	2.01	2.26	2.38	1.79	1.87	1.81	1.85	1.75	2.04	2.21	2.06	2.20

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	2197	2197	2197	2197	2145	2145	2145	2145	2047	2047	2047	1957	1957	1957	1874	1874	1874	1835
	1	2086	2031	1982	1938	2039	1990	1946	1906	1912	1877	1844	1841	1813	1787	1775	1754	1733	1717
	2	1973	1876	1796	1729	1930	1843	1770	1708	1780	1720	1668	1722	1673	1630	1669	1630	1594	1596
	3	1864	1736	1637	1558	1824	1709	1618	1545	1658	1581	1518	1610	1546	1492	1566	1513	1468	1483
	4	1760	1610	1500	1417	1725	1588	1486	1407	1546	1458	1389	1506	1432	1371	1470	1406	1354	1379
RCR	5	1663	1498	1382	1297	1631	1479	1371	1290	1444	1349	1277	1411	1329	1265	1380	1309	1252	1284
	6	1573	1397	1279	1194	1544	1381	1270	1189	1351	1253	1180	1323	1237	1170	1297	1221	1161	1199
	7	1489	1306	1188	1104	1462	1293	1181	1101	1267	1167	1094	1243	1154	1087	1221	1141	1080	1121
	8	1411	1224	1107	1026	1387	1213	1101	1023	1191	1090	1018	1171	1079	1013	1151	1069	1008	1051
	9	1340	1151	1035	957	1318	1141	1030	955	1122	1021	951	1104	1012	947	1087	1004	943	988
	10	1273	1084	971	895	1253	1075	967	894	1059	959	890	1043	952	887	1029	945	884	930

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	59.4 fc	6.7 ft
6.5 ft	42.5 fc	7.9 ft
7.5 ft	31.9 fc	9.1 ft
8.0 ft	28.1 fc	9.8 ft
10.0 ft	18.0 fc	12.2 ft
12.0 ft	12.5 fc	14.6 ft
14.0 ft	9.2 fc	17.1 ft
16.0 ft	7.0 fc	19.5 ft
20.0 ft	4.5 fc	24.4 ft
24.0 ft	3.1 fc	29.3 ft
28.0 ft	2.3 fc	34.1 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	393739	393739	393739
45.00°	62753	62091	60812
55.00°	28880	27842	27493
65.00°	10553	9605	10139
75.00°	3727	3624	3558
85.00°	5647	6597	5440

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	16.6	17.7	17.0	18.0	18.3	16.5	17.5	16.9	17.9	18.2
	3H	16.7	17.7	17.1	18.0	18.4	16.6	17.5	17.0	17.9	18.3
	4H	16.7	17.6	17.1	17.9	18.4	16.6	17.4	17.0	17.8	18.2
	6H	16.7	17.5	17.1	17.8	18.3	16.5	17.3	16.9	17.7	18.1
	8H	16.6	17.4	17.1	17.8	18.2	16.5	17.2	16.9	17.6	18.1
	12H	16.6	17.3	17.1	17.7	18.2	16.5	17.2	16.9	17.6	18.0
4H	2H	16.6	17.4	17.0	17.8	18.2	16.5	17.3	16.9	17.7	18.1
	3H	16.8	17.5	17.2	17.9	18.3	16.6	17.3	17.0	17.7	18.2
	4H	16.7	17.4	17.2	17.8	18.3	16.6	17.2	17.0	17.6	18.1
	6H	16.7	17.2	17.2	17.7	18.2	16.6	17.1	17.1	17.6	18.1
	8H	16.7	17.2	17.2	17.6	18.1	16.6	17.1	17.0	17.5	18.0
	12H	16.7	17.1	17.2	17.6	18.1	16.6	17.0	17.1	17.5	18.0
8H	4H	16.6	17.1	17.1	17.6	18.1	16.5	17.0	17.0	17.4	17.9
	6H	16.6	17.0	17.1	17.5	18.0	16.5	16.9	17.0	17.4	17.9
	8H	16.6	17.0	17.2	17.5	18.0	16.5	16.9	17.0	17.4	17.9
	12H	16.7	17.0	17.2	17.5	18.1	16.6	16.9	17.1	17.4	18.0
12H	4H	16.6	17.0	17.1	17.5	18.0	16.4	16.9	16.9	17.4	17.8
	6H	16.6	16.9	17.1	17.4	18.0	16.4	16.8	17.0	17.3	17.8
	8H	16.6	16.9	17.1	17.4	18.0	16.5	16.8	17.0	17.3	17.9

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0