Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

IF03RMx xx PC 835 030 DLSPGN MW

Nominal 3" diam round recessed Infinium downlight

Test Number

SP-00760_1_M-30L

Test Date

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

Summary of Results

Power

Input Watts	20.4 W

Lumen Output

Output Lumens	2107
Efficacy	103.28 lm/W

Luminous Dimensions

0° - 180° Size	-0.2
90° - 270° Size	-0.2
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.38
Two luminaires, plane 90°	0.38
Four luminaires	0.41

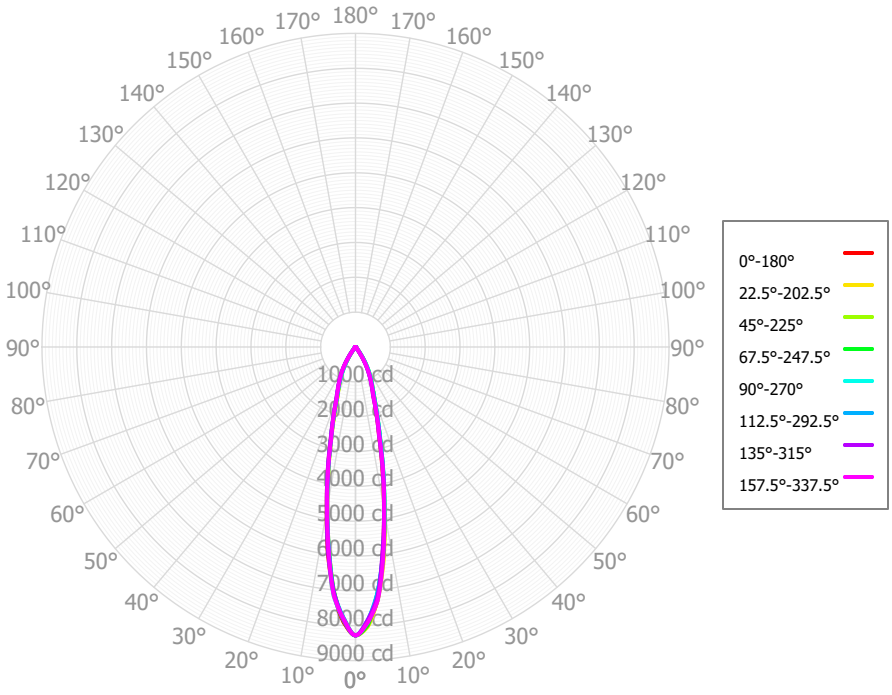
Full Beam Angle

0° - 180°	23°
90° - 270°	23°

IES File Header Contents

Keyword	Value
TEST	SP-00760_1_M-30L
TESTLAB	Spectrum Lighting Photometric lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/8/2019
UPDATE	2/18/2021
LUMCAT	IF03RMx xx PC 835 030 DLSPGN MW
LUMINAIRE	Nominal 3" diam round recessed Infinium downlight
OTHER	Beam Angle: 23 degrees
OTHER	Spot optic, Open aperture / no lens
OTHER	Aluminum bezel
LAMPCAT	N/A
LAMP	N/A, CRI: 80, Philips
OTHER	CCT Multipliers: 27K x 0.96, 30K x 0.98, 40K x 1.04
OTHER	Total luminaire wattages is approximate
OTHER	This report prepared by Spectrum Lighting, scaled from 20L
_CRI	80
_CCTMULT	27K x 0.96, 30K x 0.98, 40K x 1.04
_CCTMULTA	27HK x 0.87, 30HK x 0.81
_LAMPMULT	N/A. 30L only

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	604.17	28.68%	90.00° - 100.00°	0.12	0.01%
10.00° - 20.00°	761.89	36.16%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	483.00	22.93%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	182.37	8.66%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	20.14	0.96%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	20.15	0.96%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	23.68	1.12%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	8.73	0.41%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	2.58	0.12%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	2106.71	99.99%	0.00° - 180.00°	2106.83	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°	8277.61	8277.61	8277.61	8277.61	8277.61	8277.61	8277.61	8277.61	8277.61	8277.61	8277.61	8277.61	8277.61	8277.61	8277.61	8277.61	8277.61
2.50°	7963.59	8036.95	7932.01	7998.01	7872.60	7788.18	7852.27	7815.15	7903.52	7847.06	7797.30	7865.10	7826.60	7869.34	7858.31	7929.21	7963.59
5.00°	7284.33	7270.92	7297.37	7129.16	7146.18	7091.97	7083.72	7161.90	7111.03	7066.52	7130.17	7063.38	7170.18	7122.57	7206.42	7304.02	7284.33
7.50°	5967.26	6180.71	6090.77	6077.35	6011.74	5847.19	5980.99	5897.77	6023.77	5836.67	5883.78	5861.85	5922.73	6031.60	5945.56	6094.48	5967.26
10.00°	4709.20	4787.56	4733.86	4791.10	4746.68	4669.07	4734.27	4671.73	4749.99	4666.45	4672.63	4708.88	4713.40	4751.56	4722.03	4736.71	4709.20
12.50°	3560.70	3636.14	3661.07	3660.85	3700.17	3634.57	3699.31	3638.71	3679.01	3571.24	3636.20	3600.00	3651.86	3672.80	3602.79	3650.67	3560.70
15.00°	2594.30	2722.21	2668.69	2740.92	2729.53	2720.72	2761.12	2675.68	2743.25	2661.56	2666.38	2718.67	2682.44	2710.75	2609.70	2638.98	2594.30
17.50°	1989.70	2043.51	2063.40	2026.37	2092.85	2082.39	2126.15	2102.06	2078.14	1997.51	2058.61	2054.52	2099.44	2055.55	1992.85	2018.03	1989.70
20.00°	1499.60	1607.77	1575.76	1603.30	1579.82	1559.63	1637.92	1574.62	1603.09	1507.81	1503.90	1577.14	1572.74	1588.04	1466.38	1512.07	1499.60
22.50°	1250.25	1279.41	1292.25	1270.79	1287.92	1317.04	1334.57	1331.15	1290.51	1261.05	1267.52	1289.23	1302.55	1263.20	1228.32	1230.51	1250.25
25.00°	1015.89	1067.65	1075.21	1075.19	1083.19	1087.38	1125.87	1094.37	1098.05	1040.73	1036.86	1038.55	1040.70	1030.36	997.08	1019.77	1015.89
27.50°	814.93	854.78	864.84	877.41	885.14	891.06	921.57	903.40	902.09	859.21	844.37	827.60	820.36	811.69	789.23	809.68	814.93
30.00°	609.21	640.64	656.79	676.16	689.89	694.81	719.65	709.85	703.40	665.94	650.75	622.43	604.95	602.65	584.23	599.80	609.21
32.50°	392.26	437.13	456.02	482.12	499.98	498.79	519.41	496.01	500.22	454.52	448.68	423.76	416.47	412.24	389.92	404.23	392.26
35.00°	209.39	246.36	257.95	300.21	312.43	317.51	320.14	290.90	293.36	274.08	256.46	259.13	240.20	235.15	215.70	213.80	209.39
37.50°	112.13	115.74	142.63	156.95	183.43	179.40	181.47	164.67	153.41	144.12	147.97	134.64	137.37	124.43	122.68	115.08	112.13
40.00°	38.29	61.07	60.00	82.21	82.02	68.10	79.35	48.00	71.04	54.08	48.31	56.58	46.43	63.67	44.50	51.55	38.29
42.50°	27.05	26.76	28.29	30.17	36.42	40.77	32.20	31.39	27.40	32.65	34.92	36.11	34.98	32.87	31.32	27.27	27.05
45.00°	18.31	19.49	18.24	20.63	18.65	18.82	20.00	15.98	18.82	18.20	22.40	23.35	24.41	25.79	20.18	19.03	18.31
47.50°	16.67	15.62	15.01	14.73	12.77	15.15	14.55	15.24	14.67	16.40	19.83	20.63	20.61	21.33	18.74	16.32	16.67
50.00°	15.92	16.52	14.86	16.04	13.17	12.83	13.63	14.77	14.73	15.53	17.55	19.75	17.57	19.04	17.93	16.02	15.92
52.50°	17.89	17.99	16.15	17.87	16.18	15.48	14.94	18.23	15.63	16.40	19.04	21.39	21.19	20.07	20.39	17.89	17.89
55.00°	21.04	20.33	18.13	20.83	20.63	18.96	17.82	21.71	17.35	19.81	20.80	24.52	24.93	24.01	23.54	20.75	21.04
57.50°	28.07	23.99	23.31	24.43	25.53	25.69	22.88	25.41	20.99	28.38	27.12	29.80	29.87	29.35	30.58	26.89	28.07
60.00°	32.94	29.73	30.12	29.46	30.69	30.94	29.55	28.90	26.64	33.75	32.98	31.61	34.00	35.98	35.78	34.63	32.94
62.50°	30.22	31.34	29.46	31.14	29.53	29.86	30.11	26.92	28.23	32.17	28.38	28.12	28.43	34.44	29.26	31.51	30.22
65.00°	26.34	26.20	24.82	24.97	24.44	27.80	25.88	24.85	25.33	28.29	23.74	23.07	22.83	24.98	22.77	22.79	26.34
67.50°	18.05	20.49	19.40	18.97	20.32	21.19	21.23	18.89	21.28	19.15	17.82	15.53	16.99	17.54	16.51	16.79	18.05
70.00°	10.80	13.79	13.55	13.41	16.84	15.10	16.24	12.97	15.90	11.70	11.96	10.28	11.32	12.17	10.60	12.27	10.80
72.50°	7.81	8.78	10.22	9.13	13.63	11.63	12.26	10.22	11.96	8.41	9.88	8.90	8.86	8.73	7.55	9.03	7.81
75.00°	5.36	6.80	8.39	8.24	10.61	8.63	9.13	7.50	9.79	6.37	7.82	7.35	6.58	7.36	4.85	6.53	5.36
77.50°	5.15	5.20	7.16	7.13	8.56	7.99	7.77	6.82	7.93	7.30	6.28	5.52	6.08	6.08	4.77	4.81	5.15
80.00°	4.24	4.20	6.28	5.50	7.17	6.56	7.74	5.84	6.41	6.01	4.55	3.78	4.83	4.88	4.33	3.46	4.24
82.50°	2.05	2.81	3.58	3.54	4.24	3.49	4.55	3.61	3.68	2.17	2.34	2.21	2.23	2.89	3.00	2.22	2.05
85.00°	1.62	1.50	1.56	1.59	1.64	2.02	1.97	2.04	1.71	1.65	1.54	1.78	1.27	1.54	2.13	1.90	1.62
87.50°	1.71	1.25	1.82	2.36	1.70	1.32	1.41	1.52	1.51	1.34	1.23	1.70	1.58	1.33	2.17	1.85	1.71
90.00°	1.25	1.44	2.23	1.59	1.65	1.35	1.81	1.98	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.00	1.25
92.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
97.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
102.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
107.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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	2508	2508	2508	2508	2450	2450	2450	2450	2341	2341	2341	2241	2241	2241	2150	2150	2150	2107
	1	2410	2359	2314	2273	2359	2314	2274	2237	2230	2198	2168	2152	2127	2104	2080	2061	2044	2021
	2	2315	2229	2157	2097	2271	2193	2128	2073	2127	2074	2028	2065	2023	1986	2008	1975	1945	1937
	3	2227	2115	2028	1959	2188	2086	2007	1943	2033	1967	1913	1984	1929	1883	1938	1893	1855	1858
	4	2144	2014	1919	1846	2109	1991	1904	1836	1948	1874	1815	1908	1845	1794	1871	1818	1774	1785
	5	2067	1924	1825	1752	2036	1906	1813	1744	1871	1791	1729	1838	1769	1715	1807	1748	1701	1718
	6	1994	1844	1743	1670	1967	1828	1734	1665	1799	1716	1654	1772	1699	1644	1747	1683	1633	1655
	7	1926	1771	1670	1599	1902	1758	1663	1595	1733	1649	1587	1711	1635	1579	1689	1623	1572	1597
	8	1863	1704	1604	1535	1841	1693	1598	1532	1672	1587	1526	1653	1577	1520	1635	1566	1515	1542
	9	1803	1643	1544	1478	1783	1633	1540	1475	1616	1531	1471	1599	1522	1467	1584	1514	1462	1491
	10	1747	1586	1490	1425	1729	1578	1486	1424	1563	1479	1420	1549	1472	1417	1535	1465	1414	1444

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	273.6 fc	2.2 ft
6.5 ft	195.9 fc	2.6 ft
7.5 ft	147.2 fc	3.0 ft
8.0 ft	129.3 fc	3.2 ft
10.0 ft	82.8 fc	4.0 ft
12.0 ft	57.5 fc	4.8 ft
14.0 ft	42.2 fc	5.6 ft
16.0 ft	32.3 fc	6.4 ft
20.0 ft	20.7 fc	8.0 ft
24.0 ft	14.4 fc	9.6 ft
28.0 ft	10.6 fc	11.2 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	2836123	2836123	2836123
45.00°	8873	8837	9036
55.00°	12571	10831	12326
65.00°	21352	20119	19814
75.00°	7097	11105	14047
85.00°	6350	6120	6452

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	13.1	14.1	13.5	14.4	14.7	13.5	14.5	13.9	14.8	15.1
	3H	14.7	15.5	15.1	15.8	16.2	15.1	15.9	15.5	16.3	16.6
	4H	14.9	15.6	15.3	16.0	16.4	15.5	16.2	15.9	16.6	17.0
	6H	15.0	15.7	15.4	16.1	16.5	15.8	16.5	16.2	16.9	17.3
	8H	15.0	15.7	15.5	16.1	16.5	15.9	16.5	16.3	16.9	17.3
	12H	15.0	15.6	15.5	16.0	16.5	15.9	16.5	16.3	16.9	17.3
4H	2H	14.0	14.7	14.4	15.1	15.5	14.3	15.1	14.8	15.5	15.9
	3H	15.4	16.1	15.8	16.5	16.9	15.8	16.5	16.3	16.9	17.3
	4H	15.7	16.2	16.1	16.6	17.1	16.3	16.8	16.7	17.2	17.7
	6H	15.9	16.3	16.3	16.8	17.3	16.7	17.1	17.1	17.6	18.1
	8H	15.9	16.3	16.4	16.8	17.3	16.8	17.2	17.2	17.6	18.1
	12H	15.9	16.3	16.4	16.8	17.2	16.8	17.1	17.3	17.6	18.1
8H	4H	15.7	16.2	16.2	16.6	17.1	16.3	16.8	16.8	17.2	17.7
	6H	16.0	16.4	16.5	16.9	17.4	16.9	17.2	17.4	17.7	18.2
	8H	16.1	16.4	16.6	16.9	17.4	17.0	17.3	17.5	17.8	18.3
	12H	16.2	16.4	16.7	16.9	17.5	17.1	17.3	17.6	17.8	18.4
12H	4H	15.7	16.1	16.2	16.6	17.0	16.3	16.7	16.8	17.2	17.7
	6H	16.0	16.3	16.6	16.8	17.4	16.9	17.2	17.4	17.7	18.2
	8H	16.1	16.4	16.7	16.9	17.5	17.1	17.3	17.6	17.8	18.4

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0