

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SN24 30L 30HK xx xx TW FCI
24" x 23.5" Spin Pendant 30L 30HK TW FCI

Test Number

SP-01612_2

Test Date

11/6/2023

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

Summary of Results

Power

Input Watts	30.7 W
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Lumen Output

Output Lumens	2935
Efficacy	95.61 lm/W

Luminous Dimensions

0° - 180° Size	-2
90° - 270° Size	-2
Height	0

Spacing Criterion

Two luminaires, plane 0°	1.14
Two luminaires, plane 90°	1.13
Four luminaires	1.21

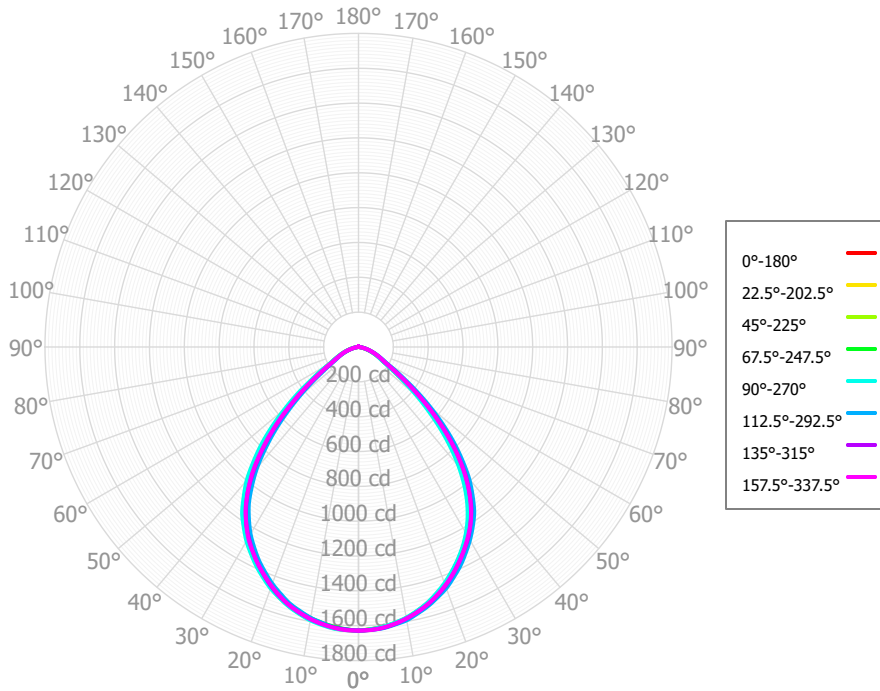
Full Beam Angle

0° - 180°	86°
90° - 270°	86°

IES File Header Contents

Keyword	Value
TEST	SP-01612_2
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/6/2023
ISSUEDATE	11/07/2023
LUMCAT	SN24 30L 30HK xx xx TW FCI
LUMINAIRE	24" x 23.5" Spin Pendant 30L 30HK TW FCI
OTHER	Beam Angle: 86 deg
OTHER	90 CRI, 3000K tested
OTHER	Total luminaire wattages are approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	90+
_CCTMULT	27HK x 0.99, 35HK x 1.01
_LAMPMULT	20L x .66, 10L x .35

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	155.56	5.30%	90.00° - 100.00°	1.51	0.05%
10.00° - 20.00°	430.86	14.68%	100.00° - 110.00°	1.46	0.05%
20.00° - 30.00°	628.02	21.40%	100.00° - 120.00°	2.85	0.10%
30.00° - 40.00°	697.29	23.76%	120.00° - 130.00°	1.40	0.05%
40.00° - 50.00°	555.40	18.92%	130.00° - 140.00°	1.21	0.04%
50.00° - 60.00°	274.07	9.34%	140.00° - 150.00°	1.00	0.03%
60.00° - 70.00°	122.15	4.16%	150.00° - 160.00°	0.79	0.03%
70.00° - 80.00°	52.65	1.79%	160.00° - 170.00°	0.50	0.02%
80.00° - 90.00°	9.86	0.34%	170.00° - 180.00°	0.18	0.01%
0.00° - 90.00°	2925.87	99.68%	0.00° - 180.00°	2935.30	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°	1628.24	1628.24	1628.24	1628.24	1628.24	1628.24	1628.24	1628.24	1628.24	1628.24	1628.24	1628.24	1628.24	1628.24	1628.24	1628.24	1628.24
2.50°	1622.38	1622.87	1621.20	1623.95	1621.64	1623.10	1623.99	1627.00	1626.24	1625.20	1623.25	1622.13	1627.22	1625.46	1625.39	1626.37	1622.38
5.00°	1614.49	1615.12	1614.12	1616.98	1612.21	1615.86	1616.52	1618.53	1620.31	1619.83	1617.33	1612.25	1622.89	1620.76	1618.78	1617.49	1614.49
7.50°	1599.22	1600.47	1599.22	1604.93	1596.86	1597.74	1604.24	1604.12	1605.72	1603.68	1604.02	1597.86	1609.82	1607.23	1603.63	1602.44	1599.22
10.00°	1580.75	1584.87	1581.23	1587.34	1577.82	1579.04	1586.74	1585.92	1588.29	1587.19	1587.11	1580.42	1593.81	1593.14	1583.45	1583.20	1580.75
12.50°	1554.26	1558.64	1554.78	1563.93	1551.63	1552.52	1563.00	1562.13	1566.36	1560.87	1564.02	1555.90	1569.67	1567.18	1558.71	1559.39	1554.26
15.00°	1524.78	1531.19	1525.48	1536.04	1521.32	1524.81	1534.88	1535.19	1540.09	1533.99	1536.72	1527.16	1543.20	1540.71	1531.56	1530.06	1524.78
17.50°	1487.62	1493.72	1489.80	1504.00	1483.91	1485.97	1502.14	1499.54	1507.74	1498.81	1503.09	1491.71	1509.97	1507.80	1497.01	1495.32	1487.62
20.00°	1447.98	1455.07	1452.30	1464.93	1442.86	1446.19	1463.12	1459.59	1470.11	1462.86	1465.88	1452.72	1475.12	1473.76	1459.07	1456.13	1447.98
22.50°	1400.66	1408.96	1405.96	1420.10	1396.31	1399.90	1418.17	1415.69	1425.87	1419.28	1423.87	1407.44	1432.22	1429.90	1413.15	1413.08	1400.66
25.00°	1351.24	1361.55	1357.47	1371.90	1346.89	1352.23	1369.86	1370.07	1380.04	1374.59	1376.78	1359.22	1387.72	1384.91	1364.09	1364.86	1351.24
27.50°	1298.60	1307.62	1304.16	1321.21	1293.57	1297.17	1318.74	1318.96	1332.46	1321.88	1323.57	1307.90	1337.63	1332.77	1313.18	1312.61	1298.60
30.00°	1245.21	1251.46	1249.86	1264.45	1233.68	1239.61	1261.55	1265.75	1279.22	1267.79	1268.14	1255.34	1286.67	1279.61	1261.63	1256.51	1245.21
32.50°	1177.75	1186.23	1181.26	1203.71	1165.79	1171.01	1199.79	1199.93	1220.36	1205.81	1210.35	1191.04	1226.38	1221.17	1197.44	1197.78	1177.75
35.00°	1107.70	1115.47	1110.37	1129.07	1087.15	1097.31	1125.52	1129.99	1150.08	1139.73	1142.21	1122.67	1164.95	1158.28	1129.53	1124.72	1107.70
37.50°	1015.62	1025.68	1018.72	1046.43	996.95	1004.64	1042.98	1042.97	1069.66	1054.89	1064.19	1036.74	1082.31	1076.21	1043.31	1042.88	1015.62
40.00°	920.28	931.29	924.49	948.51	895.57	906.69	944.13	951.27	976.89	965.45	972.62	945.55	997.87	988.83	952.58	946.54	920.28
42.50°	810.24	823.23	812.86	842.77	783.57	792.29	835.67	841.73	874.42	858.33	869.61	835.96	891.97	882.50	844.42	842.43	810.24
45.00°	698.60	712.42	699.73	728.68	667.71	676.84	721.14	728.05	762.40	748.55	758.76	721.67	784.91	773.51	732.78	728.44	698.60
47.50°	580.87	594.57	581.58	610.89	548.58	558.53	603.48	609.92	643.76	630.25	641.97	605.48	667.78	656.38	615.75	609.76	580.87
50.00°	462.67	480.11	463.15	497.05	438.44	445.50	490.68	490.93	529.20	514.34	527.69	488.90	550.48	540.38	497.85	495.58	462.67
52.50°	361.89	373.06	364.87	384.77	335.16	344.74	380.09	387.94	417.17	405.10	415.07	385.33	440.85	427.30	393.11	383.27	361.89
55.00°	261.84	280.62	267.27	296.88	256.12	258.41	292.78	287.36	322.85	306.68	319.27	283.97	332.59	325.35	290.05	296.27	261.84
57.50°	210.44	216.50	213.23	217.13	193.39	201.63	214.65	226.39	238.28	234.10	233.48	224.09	259.43	248.85	229.60	218.37	210.44
60.00°	160.09	166.52	160.31	176.02	154.91	156.74	172.26	169.82	187.74	176.29	183.65	169.57	189.12	188.00	172.95	177.27	160.09
62.50°	138.50	140.89	137.65	146.00	130.78	133.11	142.14	142.85	153.54	149.52	152.55	143.48	159.98	158.25	148.33	147.40	138.50
65.00°	117.01	117.66	115.19	122.53	109.68	111.20	120.29	118.22	127.32	124.79	127.72	120.12	131.61	131.41	125.57	124.28	117.01
67.50°	97.75	98.05	95.69	100.62	90.19	92.03	100.90	100.09	104.41	103.80	105.78	100.16	110.95	109.70	104.38	102.91	97.75
70.00°	78.65	79.41	76.52	81.52	72.56	73.94	80.81	82.27	84.98	83.93	86.51	80.41	90.65	88.98	83.24	84.42	78.65
72.50°	61.38	62.07	60.50	62.97	55.79	57.39	60.54	64.55	66.83	65.91	68.31	64.87	72.96	69.78	66.98	66.57	61.38
75.00°	44.67	46.64	44.88	48.77	42.35	42.26	45.84	46.90	51.77	49.51	52.43	49.47	55.83	53.32	50.78	50.43	44.67
77.50°	32.91	33.50	32.08	35.24	30.24	28.93	32.25	34.17	37.70	35.49	37.36	36.10	41.75	40.65	36.54	34.57	32.91
80.00°	21.50	22.15	19.97	23.25	19.40	18.55	21.92	21.66	26.56	23.61	25.40	22.85	28.39	28.73	22.66	23.89	21.50
82.50°	12.43	12.69	11.68	11.45	9.01	11.45	12.13	13.88	16.19	14.48	14.35	13.98	18.26	17.74	14.43	13.89	12.43
85.00°	4.52	6.32	4.54	6.74	4.73	6.31	6.99	6.47	9.65	7.87	8.09	5.50	9.35	9.49	6.73	7.98	4.52
87.50°	2.66	2.85	2.75	2.63	2.28	3.11	2.44	3.74	3.95	4.14	3.03	3.22	5.12	4.25	4.17	2.47	2.66
90.00°	1.19	1.28	1.32	1.99	1.61	1.54	1.70	1.32	2.14	2.10	1.90	1.13	1.79	1.52	1.92	1.83	1.19
92.50°	1.41	1.32	1.26	1.53	1.39	1.40	1.29	1.59	1.02	1.80	1.59	1.04	1.36	1.23	1.94	1.52	1.41
95.00°	1.53	1.52	1.25	1.27	1.32	1.17	1.21	1.77	1.19	1.51	1.58	0.96	1.16	1.09	1.90	1.23	1.53
97.50°	1.28	1.84	1.40	1.01	1.28	0.86	1.15	1.28	1.53	1.22	1.61	1.00	1.58	1.08	1.44	0.95	1.28
100.00°	1.10	1.84	1.49	1.30	1.16	1.04	1.17	0.90	1.45	1.20	1.38	1.04	1.84	1.18	1.13	1.40	1.10
102.50°	1.15	1.62	1.47	1.58	1.04	1.57	1.20	1.12	1.32	1.40	1.11	1.17	1.73	1.38	1.47	1.83	1.15
105.00°	1.23	1.57	1.43	1.37	1.27	1.50	1.28	1.34	1.26	1.48	1.10	1.27	1.64	1.46	1.73	1.63	1.23

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

RCR	ptc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	pcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	0	3492	3492	3492	3492	3410	3410	3410	3410	3256	3256	3256	3116	3116	3116	2987	2987	2926
	1	3271	3164	3069	2983	3194	3099	3012	2934	2975	2906	2841	2862	2806	2754	2758	2714	2657
	2	3042	2853	2697	2565	2970	2799	2656	2535	2698	2579	2476	2605	2507	2420	2519	2439	2388
	3	2826	2578	2386	2233	2760	2534	2356	2213	2450	2299	2174	2373	2245	2137	2301	2194	2148
	4	2628	2338	2126	1964	2566	2301	2103	1951	2231	2060	1925	2166	2019	1899	2106	1979	1939
	5	2446	2129	1907	1744	2390	2098	1890	1734	2039	1856	1716	1984	1824	1699	1933	1793	1758
	6	2282	1947	1722	1561	2230	1920	1708	1554	1870	1682	1541	1823	1656	1529	1780	1632	1600
	7	2133	1788	1564	1407	2086	1765	1553	1402	1722	1532	1393	1682	1511	1383	1644	1491	1464
	8	1998	1648	1428	1277	1956	1629	1419	1273	1592	1402	1266	1557	1385	1259	1525	1369	1344
	9	1876	1525	1310	1165	1838	1509	1303	1162	1477	1289	1157	1446	1275	1151	1418	1261	1240
	10	1766	1417	1208	1069	1731	1402	1202	1067	1375	1190	1062	1348	1178	1058	1323	1167	1148

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	53.8 fc	10.3 ft
6.5 ft	38.5 fc	12.2 ft
7.5 ft	28.9 fc	14.1 ft
8.0 ft	25.4 fc	15.0 ft
10.0 ft	16.3 fc	18.7 ft
12.0 ft	11.3 fc	22.5 ft
14.0 ft	8.3 fc	26.2 ft
16.0 ft	6.4 fc	30.0 ft
20.0 ft	4.1 fc	37.5 ft
24.0 ft	2.8 fc	45.0 ft
28.0 ft	2.1 fc	52.5 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	5579	5579	5579
45.00°	3385	3391	3235
55.00°	1564	1597	1530
65.00°	949	934	889
75.00°	591	594	561
85.00°	178	179	186

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	9.9	11.3	10.3	11.6	11.9	9.9	11.2	10.3	11.6	11.9
	3H	10.8	12.0	11.2	12.4	12.7	10.8	12.0	11.2	12.3	12.7
	4H	11.1	12.2	11.5	12.5	12.9	11.1	12.2	11.5	12.5	12.9
	6H	11.2	12.2	11.6	12.6	13.0	11.2	12.2	11.6	12.6	13.0
	8H	11.2	12.1	11.6	12.5	13.0	11.2	12.2	11.6	12.6	13.0
	12H	11.2	12.1	11.6	12.5	12.9	11.2	12.1	11.6	12.5	13.0
4H	2H	10.2	11.3	10.6	11.7	12.1	10.2	11.3	10.6	11.7	12.1
	3H	11.3	12.2	11.7	12.6	13.0	11.3	12.2	11.7	12.6	13.0
	4H	11.6	12.4	12.1	12.9	13.3	11.6	12.4	12.1	12.9	13.3
	6H	11.8	12.5	12.3	13.0	13.4	11.8	12.5	12.3	13.0	13.4
	8H	11.8	12.5	12.3	12.9	13.4	11.8	12.5	12.3	12.9	13.4
	12H	11.8	12.4	12.3	12.9	13.3	11.8	12.4	12.3	12.9	13.4
8H	4H	11.7	12.4	12.2	12.8	13.3	11.7	12.4	12.2	12.8	13.3
	6H	11.9	12.5	12.4	13.0	13.5	11.9	12.5	12.4	13.0	13.5
	8H	12.0	12.4	12.5	13.0	13.5	12.0	12.4	12.5	13.0	13.5
	12H	12.0	12.4	12.5	12.9	13.5	12.0	12.4	12.5	12.9	13.5
12H	4H	11.7	12.3	12.2	12.8	13.2	11.7	12.3	12.2	12.7	13.2
	6H	11.9	12.4	12.4	12.9	13.4	11.9	12.4	12.4	12.9	13.4
	8H	12.0	12.4	12.5	12.9	13.5	12.0	12.4	12.5	12.9	13.5

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0