

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SN32 20L 30HK xx xx xx MWI
32" x 11" Spin Pendant 30L 30HK MWI

Test Number

SP-01614_1

Test Date

11/8/2023

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

Summary of Results

Power

Input Watts	18.4 W
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Lumen Output

Output Lumens	2036
Efficacy	110.66 lm/W

Luminous Dimensions

0° - 180° Size	-2.67
90° - 270° Size	-2.67
Height	0

Spacing Criterion

Two luminaires, plane 0°	1.34
Two luminaires, plane 90°	1.31
Four luminaires	1.45

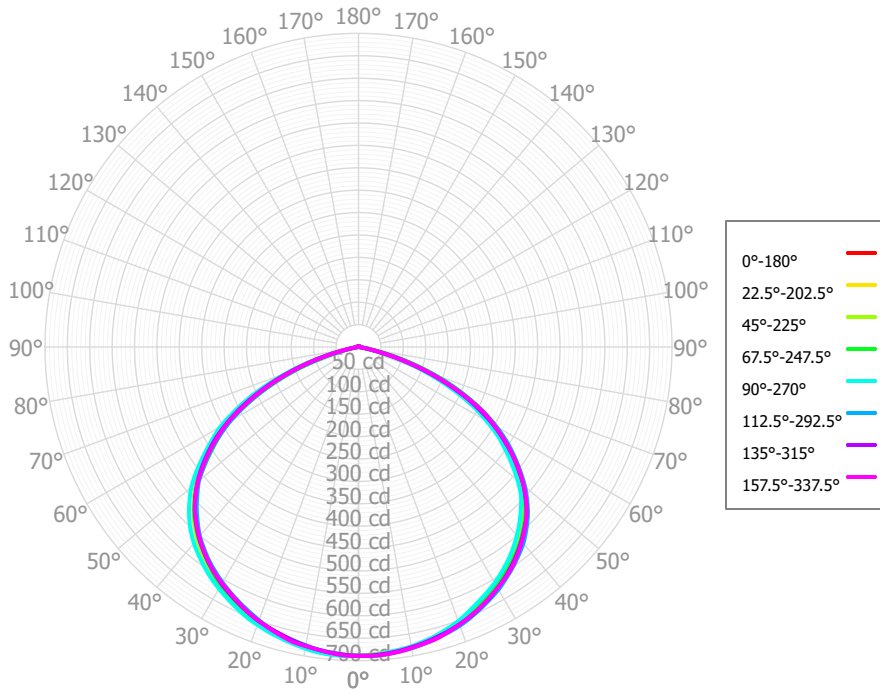
Full Beam Angle

0° - 180°	120°
90° - 270°	120°

IES File Header Contents

Keyword	Value
TEST	SP-01614_1
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/8/2023
ISSUE DATE	11/10/2023
LUMCAT	SN32 20L 30HK xx xx xx MWI
LUMINAIRE	32" x 11" Spin Pendant 30L 30HK MWI
OTHER	Beam Angle: 120 deg
OTHER	90 CRI, 3000K tested
OTHER	CCT Output Multipliers: 27HK x 0.99, 35HK x 1.01
OTHER	Total luminaire wattages are 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°	66.36	3.26%	90.00° - 100.00°	1.56	0.08%
10.00° - 20.00°	189.08	9.29%	100.00° - 110.00°	1.52	0.07%
20.00° - 30.00°	293.78	14.43%	100.00° - 120.00°	2.99	0.15%
30.00° - 40.00°	369.41	18.14%	120.00° - 130.00°	1.37	0.07%
40.00° - 50.00°	402.11	19.75%	130.00° - 140.00°	1.17	0.06%
50.00° - 60.00°	367.57	18.05%	140.00° - 150.00°	0.93	0.05%
60.00° - 70.00°	252.82	12.42%	150.00° - 160.00°	0.69	0.03%
70.00° - 80.00°	81.02	3.98%	160.00° - 170.00°	0.44	0.02%
80.00° - 90.00°	4.62	0.23%	170.00° - 180.00°	0.15	0.01%
0.00° - 90.00°	2026.77	99.54%	0.00° - 180.00°	2036.06	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°	689.53	689.53	689.53	689.53	689.53	689.53	689.53	689.53	689.53	689.53	689.53	689.53	689.53	689.53	689.53	689.53	689.53
2.50°	690.11	690.46	687.00	688.90	688.41	688.10	688.04	689.48	688.92	689.25	687.33	689.30	690.80	690.70	689.25	690.12	690.11
5.00°	688.44	688.60	685.04	686.54	685.49	684.99	685.53	686.42	687.67	686.69	686.08	687.21	689.95	688.93	687.41	689.11	688.44
7.50°	685.23	685.70	682.64	684.21	682.18	681.68	682.03	682.09	684.26	683.84	683.51	684.86	687.99	686.57	684.70	686.40	685.23
10.00°	681.14	681.18	679.52	681.94	678.68	676.32	677.69	678.30	679.76	679.17	679.34	679.97	683.82	682.96	680.76	682.47	681.14
12.50°	676.65	675.99	676.29	677.19	673.21	670.98	671.69	674.68	673.86	674.35	674.41	674.90	678.51	678.72	676.53	678.33	676.65
15.00°	670.45	670.13	669.76	669.20	667.22	665.77	664.83	667.36	667.55	668.66	668.91	668.73	672.89	673.69	671.11	674.11	670.45
17.50°	663.81	663.89	662.97	661.29	659.37	659.32	658.12	659.52	660.08	662.34	661.73	661.99	667.17	668.12	665.54	667.05	663.81
20.00°	656.63	657.42	654.33	653.45	651.28	649.10	651.46	650.84	652.45	653.21	653.75	653.57	660.18	662.12	658.88	659.35	656.63
22.50°	649.32	649.00	645.70	645.55	640.36	638.96	642.02	641.89	644.22	644.13	644.78	644.49	653.02	653.98	651.82	650.77	649.32
25.00°	639.52	639.86	637.12	637.63	629.50	628.96	632.22	630.71	635.59	635.17	635.57	634.30	643.32	644.79	642.56	642.05	639.52
27.50°	629.61	629.25	627.84	627.18	619.02	618.35	621.72	619.68	624.15	625.11	625.37	624.28	633.55	635.14	632.75	631.58	629.61
30.00°	618.99	618.38	617.25	616.02	607.98	607.07	610.98	609.18	612.26	613.53	615.02	614.44	623.27	625.37	621.41	621.10	618.99
32.50°	607.39	606.27	605.11	604.36	595.30	594.74	598.32	597.66	598.86	600.74	602.60	601.39	612.38	613.11	609.36	610.55	607.39
35.00°	593.00	593.92	591.21	592.62	581.73	581.71	585.18	584.12	585.50	586.88	589.88	586.20	599.52	600.56	596.17	598.77	593.00
37.50°	578.23	579.27	576.25	578.13	566.63	566.77	570.42	569.31	572.19	571.53	575.42	570.94	586.13	586.90	581.58	583.72	578.23
40.00°	562.80	564.02	560.53	563.28	550.06	551.04	554.52	552.97	556.99	555.38	559.86	555.65	571.77	572.63	565.58	567.71	562.80
42.50°	545.62	546.32	542.49	545.93	531.94	531.33	536.42	535.31	539.62	537.26	541.14	537.76	554.80	554.33	548.52	550.20	545.62
45.00°	526.59	526.98	523.46	527.37	512.48	510.75	516.54	516.64	519.17	518.52	520.90	519.33	534.90	534.76	530.80	530.33	526.59
47.50°	503.43	504.03	500.30	504.98	492.13	488.14	494.58	493.42	496.54	493.44	498.12	493.40	512.13	511.37	506.84	508.16	503.43
50.00°	477.57	478.60	476.20	480.78	463.97	464.96	468.90	468.08	471.31	467.48	471.30	466.58	487.29	485.48	480.59	481.66	477.57
52.50°	446.90	449.77	447.08	453.25	432.71	433.92	440.51	437.41	444.98	436.98	440.33	432.80	455.93	455.25	450.11	452.50	446.90
55.00°	414.32	419.11	417.39	422.75	400.72	402.21	409.28	405.41	412.21	406.05	407.90	399.27	421.79	424.22	418.83	419.97	414.32
57.50°	382.47	386.90	384.12	388.90	368.58	367.20	376.76	371.54	377.97	371.66	374.51	366.89	388.79	392.30	383.74	386.24	382.47
60.00°	350.77	351.27	349.64	352.63	329.89	330.03	338.37	337.23	340.74	335.43	336.93	330.98	356.05	355.67	348.01	350.32	350.77
62.50°	306.62	313.80	308.46	314.62	290.39	287.31	298.56	293.82	302.85	292.79	297.73	286.58	313.66	315.85	305.97	314.00	306.62
65.00°	261.51	269.41	265.74	271.74	244.59	243.43	254.36	249.86	256.36	248.42	251.62	240.51	270.26	270.86	262.51	266.21	261.51
67.50°	213.10	222.93	218.88	226.76	198.43	197.80	209.70	202.55	209.86	200.73	204.18	192.02	221.27	223.72	212.91	217.95	213.10
70.00°	164.80	174.03	171.84	179.76	150.64	151.61	162.61	155.96	163.36	153.45	155.31	143.67	172.32	173.78	163.40	169.27	164.80
72.50°	117.09	124.82	124.54	132.29	104.37	104.91	116.08	111.46	117.54	106.68	106.77	95.46	123.53	123.25	114.07	121.03	117.09
75.00°	72.52	79.16	80.15	87.73	61.83	63.66	72.66	70.30	73.48	65.28	64.02	55.68	77.49	78.88	69.57	74.65	72.52
77.50°	35.64	36.67	38.69	44.43	29.64	25.67	35.63	34.74	38.12	27.93	26.51	20.63	38.64	36.28	31.82	36.46	35.64
80.00°	11.24	18.50	16.25	22.91	12.40	10.79	16.56	13.16	16.51	11.26	13.14	8.29	12.44	18.71	11.23	16.42	11.24
82.50°	4.97	4.12	5.57	4.65	3.63	3.87	4.36	6.42	4.80	4.28	3.41	3.48	6.31	3.96	5.59	4.10	4.97
85.00°	1.86	2.67	2.15	3.18	2.70	2.45	3.34	2.99	2.76	2.31	2.35	2.26	2.87	3.01	2.93	2.37	1.86
87.50°	1.68	1.64	1.44	2.02	2.00	1.91	2.51	1.75	1.70	1.59	1.71	1.57	2.07	2.27	1.90	1.52	1.68
90.00°	1.44	1.39	1.47	1.66	1.44	1.73	1.84	1.49	1.22	1.39	1.69	1.25	1.70	2.04	1.56	1.43	1.44
92.50°	1.16	1.24	1.63	1.39	1.50	1.59	1.48	1.60	1.13	1.25	1.66	0.99	1.58	1.89	1.42	1.25	1.16
95.00°	1.16	1.22	1.52	1.28	1.75	1.74	1.30	1.41	1.18	1.15	1.62	1.20	1.73	1.89	1.32	1.03	1.16
97.50°	1.27	1.30	1.39	1.21	1.63	1.85	1.38	1.14	1.28	1.08	1.39	1.34	1.97	1.73	1.22	1.19	1.27
100.00°	1.34	1.48	1.36	1.20	1.46	1.80	1.56	1.33	1.37	1.23	1.05	1.28	1.78	1.44	1.44	1.46	1.34
102.50°	1.40	1.38	1.31	1.24	1.52	1.68	1.51	1.53	1.28	1.42	1.14	1.26	1.52	1.52	1.63	1.50	1.40
105.00°	1.16	1.15	1.24	1.30	1.56	1.38	1.42	1.48	1.19	1.74	1.38	1.36	1.75	1.83	1.61	1.51	1.16

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	2422	2422	2422	2422	2364	2364	2364	2364	2257	2257	2257	2159	2159	2159	2069	2069	2027
	1	2232	2144	2064	1993	2177	2097	2025	1959	2010	1950	1896	1929	1881	1837	1855	1817	1778
	2	2036	1877	1745	1635	1982	1838	1717	1615	1765	1663	1576	1697	1613	1539	1635	1565	1531
	3	1856	1649	1489	1361	1806	1616	1468	1348	1555	1428	1323	1498	1390	1299	1445	1354	1324
	4	1698	1459	1284	1151	1651	1432	1268	1142	1380	1238	1125	1331	1209	1109	1286	1181	1155
	5	1559	1301	1120	987	1516	1277	1108	981	1233	1084	970	1192	1061	958	1154	1039	1017
	6	1437	1168	988	858	1398	1148	978	854	1111	959	846	1076	941	837	1043	923	903
	7	1330	1057	879	755	1295	1040	871	751	1007	856	745	977	841	739	949	827	810
	8	1237	962	789	670	1204	947	783	668	920	770	663	894	758	658	869	746	731
	9	1154	881	714	601	1124	868	708	599	844	698	595	822	688	592	800	678	665
	10	1080	811	650	543	1054	800	645	541	779	637	538	760	628	535	741	620	609

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	22.8 fc	19.1 ft
6.5 ft	16.3 fc	22.5 ft
7.5 ft	12.3 fc	26.0 ft
8.0 ft	10.8 fc	27.7 ft
10.0 ft	6.9 fc	34.6 ft
12.0 ft	4.8 fc	41.6 ft
14.0 ft	3.5 fc	48.5 ft
16.0 ft	2.7 fc	55.4 ft
20.0 ft	1.7 fc	69.3 ft
24.0 ft	1.2 fc	83.1 ft
28.0 ft	0.9 fc	97.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1326	1326	1326
45.00°	1432	1423	1393
55.00°	1389	1399	1343
65.00°	1190	1209	1113
75.00°	539	595	459
85.00°	41	47	59

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	12.9	14.5	13.3	14.9	15.2	12.6	14.2	13.0	14.6	14.9
	3H	14.2	15.7	14.6	16.0	16.4	13.8	15.3	14.2	15.6	16.0
	4H	14.4	15.8	14.8	16.1	16.5	14.0	15.4	14.4	15.7	16.1
	6H	14.4	15.7	14.8	16.0	16.5	14.0	15.3	14.4	15.6	16.0
	8H	14.4	15.6	14.8	16.0	16.4	14.0	15.2	14.4	15.6	16.0
	12H	14.4	15.5	14.8	15.9	16.3	14.0	15.1	14.4	15.5	15.9
4H	2H	13.5	14.8	13.9	15.2	15.6	13.2	14.5	13.6	14.9	15.3
	3H	14.9	16.0	15.3	16.4	16.8	14.5	15.6	14.9	16.0	16.4
	4H	15.1	16.2	15.6	16.6	17.0	14.7	15.7	15.1	16.1	16.6
	6H	15.2	16.0	15.6	16.5	16.9	14.7	15.6	15.1	16.0	16.5
	8H	15.1	15.9	15.6	16.4	16.9	14.6	15.5	15.1	15.9	16.4
	12H	15.1	15.8	15.6	16.3	16.8	14.6	15.3	15.1	15.8	16.3
8H	4H	15.2	16.0	15.7	16.5	16.9	14.7	15.5	15.2	16.0	16.5
	6H	15.2	15.9	15.7	16.4	16.9	14.7	15.4	15.2	15.9	16.4
	8H	15.2	15.8	15.7	16.3	16.8	14.7	15.3	15.2	15.8	16.3
	12H	15.1	15.7	15.7	16.2	16.7	14.6	15.2	15.2	15.7	16.2
12H	4H	15.2	15.9	15.7	16.4	16.9	14.7	15.4	15.2	15.9	16.4
	6H	15.2	15.8	15.7	16.2	16.8	14.7	15.3	15.2	15.7	16.3
	8H	15.1	15.7	15.7	16.2	16.7	14.7	15.2	15.2	15.7	16.2

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0