Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

AP12XT 30L 35K XX MWI

Nom 12" diam x 12" H Aluminum reflector pendant

Test Number

SP-00684_4

Test Date

10/14/2019

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

Summary of Results

Power

Input Watts	30.2 W

Lumen Output

Output Lumens	1697
Efficacy	56.19 lm/W

Luminous Dimensions

0° - 180° Size	-1
90° - 270° Size	-1
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.81
Two luminaires, plane 90°	0.8
Four luminaires	0.98

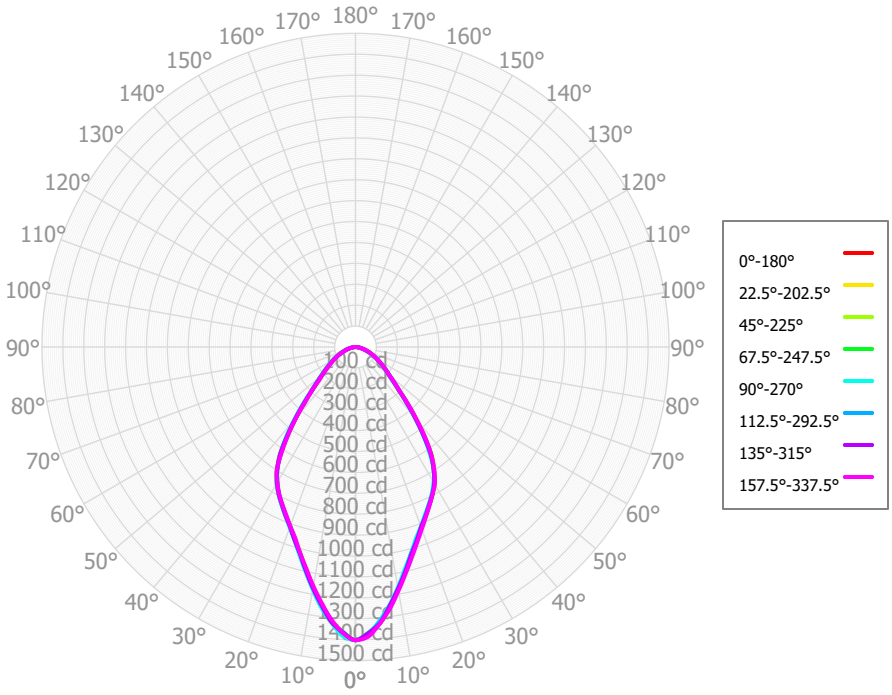
Full Beam Angle

0° - 180°	65°
90° - 270°	65°

IES File Header Contents

Keyword	Value
TEST	SP-00684_4
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	10/14/2019
ISSUEDATE	5/15/2020
LUMCAT	AP12XT 30L 35K XX MWI
LUMINAIRE	Nom 12" diam x 12" H Aluminum reflector pendant
OTHER	Matte White finish - Interior, Khatod closed sphere optic, Open aperture
OTHER	Beam Angle: 64.5 degrees
LAMPCAT	N/A
LAMP	N/A, 19mm LES
OTHER	LEDXT lumen output is the same for all available CCT's
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	83
_CCTMULT	Same for all available CCT's
_LAMPMULT	13L x 0.37, 20L x 0.59

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	122.68	7.23%	90.00° - 100.00°	0.10	0.01%
10.00° - 20.00°	288.74	17.02%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	383.25	22.59%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	382.58	22.55%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	236.71	13.95%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	144.03	8.49%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	88.12	5.19%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	41.60	2.45%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	9.11	0.54%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,696.82	99.99%	0.00° - 180.00°	1,696.92	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°	1,402.54	1,402.54	1,402.54	1,402.54	1,402.54	1,402.54	1,402.54	1,402.54	1,402.54	1,402.54	1,402.54	1,402.54	1,402.54	1,402.54	1,402.54	1,402.54	1,402.54
2.50°	1,371.69	1,380.53	1,369.17	1,372.63	1,375.18	1,366.21	1,368.13	1,370.48	1,365.95	1,367.18	1,367.66	1,366.34	1,384.47	1,370.79	1,372.42	1,387.55	1,371.69
5.00°	1,328.48	1,328.18	1,327.26	1,325.56	1,315.50	1,319.81	1,320.23	1,310.52	1,317.78	1,314.93	1,324.10	1,320.51	1,323.14	1,322.16	1,328.35	1,328.76	1,328.48
7.50°	1,252.60	1,258.38	1,251.19	1,253.10	1,245.63	1,245.77	1,245.44	1,236.36	1,242.34	1,237.71	1,246.21	1,246.25	1,256.97	1,249.14	1,251.27	1,262.72	1,252.60
10.00°	1,176.95	1,179.48	1,175.41	1,175.50	1,168.04	1,171.11	1,170.69	1,161.53	1,167.07	1,162.09	1,168.52	1,170.76	1,178.05	1,172.99	1,174.51	1,183.93	1,176.95
12.50°	1,103.62	1,106.06	1,101.32	1,101.14	1,089.31	1,094.71	1,096.26	1,086.52	1,093.25	1,088.13	1,095.01	1,092.60	1,102.15	1,098.77	1,101.40	1,109.63	1,103.62
15.00°	1,032.22	1,034.87	1,029.99	1,027.23	1,024.44	1,024.17	1,024.77	1,021.59	1,022.40	1,021.85	1,023.20	1,022.21	1,032.47	1,024.69	1,030.31	1,041.70	1,032.22
17.50°	973.30	976.92	970.14	971.03	960.73	966.52	968.42	958.62	967.14	962.27	966.70	965.21	970.17	970.48	972.66	980.55	973.30
20.00°	917.50	923.14	914.96	916.22	914.33	914.67	915.15	911.98	914.91	912.87	912.54	914.50	919.99	917.00	917.73	927.43	917.50
22.50°	875.42	878.47	874.16	874.64	868.64	872.98	873.17	867.57	874.47	870.69	871.49	872.55	874.59	874.02	875.66	879.76	875.42
25.00°	834.09	836.01	834.04	833.40	829.74	832.11	832.30	829.14	834.54	831.19	831.20	832.21	835.73	831.53	834.49	837.32	834.09
27.50°	795.18	797.23	795.52	794.22	790.53	792.45	794.49	791.15	796.09	793.21	794.07	793.74	795.89	794.36	796.36	797.23	795.18
30.00°	752.29	759.07	752.02	753.61	747.21	747.52	751.71	747.55	752.93	748.93	752.79	748.26	754.95	754.32	753.33	758.97	752.29
32.50°	699.21	700.37	698.93	695.10	699.37	696.37	697.86	702.67	699.10	701.69	698.84	696.14	699.36	694.85	697.51	702.72	699.21
35.00°	632.57	639.57	630.14	632.39	616.25	625.23	629.80	615.61	630.97	622.39	632.78	622.77	630.52	629.60	629.60	634.88	632.57
37.50°	538.70	547.25	537.08	540.47	532.02	534.92	536.66	528.45	536.39	531.34	538.23	533.04	548.86	538.04	536.60	550.65	538.70
40.00°	448.35	453.36	448.11	450.42	442.16	447.27	447.39	439.98	446.45	443.48	447.49	446.75	457.52	449.09	447.45	457.82	448.35
42.50°	363.66	371.69	364.28	369.52	358.13	361.75	363.61	354.95	363.41	356.50	364.04	362.67	376.92	368.82	364.74	375.89	363.66
45.00°	294.80	292.20	296.82	296.47	295.17	297.32	296.05	292.90	296.01	295.62	295.30	299.70	302.88	298.27	296.84	298.46	294.80
47.50°	246.82	250.60	246.53	251.12	240.42	246.58	247.73	236.29	247.41	240.17	249.19	247.57	253.89	253.24	249.00	251.33	246.82
50.00°	208.76	210.61	208.89	210.96	208.96	210.83	209.44	205.49	208.67	208.31	211.67	212.00	217.11	214.33	211.38	213.81	208.76
52.50°	181.50	184.82	182.07	184.65	179.98	182.90	180.83	176.83	179.85	179.70	184.85	183.13	188.75	187.98	185.03	186.72	181.50
55.00°	158.18	160.06	157.98	160.10	156.43	158.73	156.51	155.53	155.89	157.11	160.92	160.89	163.72	163.34	161.65	162.19	158.18
57.50°	138.34	141.09	135.77	139.32	134.93	136.15	135.54	135.46	135.92	134.96	140.01	140.75	143.57	141.50	141.00	142.14	138.34
60.00°	120.49	122.53	117.57	119.93	116.99	118.66	117.72	118.61	118.14	117.88	121.10	122.28	124.89	121.97	122.86	122.85	120.49
62.50°	104.06	105.62	101.69	102.93	100.17	102.83	101.94	101.84	101.83	100.93	103.89	104.22	107.82	105.61	106.59	107.12	104.06
65.00°	89.45	89.66	87.69	87.36	84.97	87.08	86.96	85.29	87.18	85.35	88.46	88.92	91.12	90.48	91.13	91.76	89.45
67.50°	75.92	76.35	74.54	73.69	71.44	71.34	72.38	70.54	73.41	70.25	74.21	74.07	77.38	76.68	76.17	78.55	75.92
70.00°	63.14	63.06	61.35	60.36	59.46	59.24	59.53	58.20	59.76	58.05	61.68	61.63	64.11	63.09	62.95	65.37	63.14
72.50°	50.66	49.81	48.56	47.27	47.84	47.92	47.47	47.25	46.73	47.02	49.87	49.67	52.07	49.63	50.41	51.72	50.66
75.00°	39.76	39.46	39.56	37.53	36.76	38.50	38.21	37.03	37.58	37.62	39.93	39.17	40.93	39.12	40.76	40.41	39.76
77.50°	29.87	30.54	29.82	28.35	27.17	29.50	28.63	27.53	27.70	27.89	29.82	29.38	31.35	29.51	31.06	31.78	29.87
80.00°	21.24	22.73	20.16	19.71	18.41	20.55	19.62	19.03	18.34	18.88	20.26	20.38	21.71	20.94	21.36	21.30	21.24
82.50°	13.46	15.07	12.74	12.00	11.64	11.69	12.48	11.13	11.38	11.33	13.40	12.74	14.06	13.27	12.17	14.84	13.46
85.00°	7.10	7.11	7.37	7.25	5.13	6.27	6.60	6.60	6.52	6.00	6.97	7.93	8.89	7.08	7.79	9.24	7.10
87.50°	3.17	3.15	3.31	3.08	2.68	3.06	3.08	2.51	3.03	2.50	3.58	3.25	4.25	3.01	4.06	3.35	3.17
90.00°	1.56	1.50	1.45	0.00	0.00	1.12	0.00	0.00	0.00	0.00	0.00	1.21	1.89	0.00	1.35	1.26	1.56
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	2,020	2,020	2,020	2,020	1,973	1,973	1,973	1,973	1,885	1,885	1,885	1,805	1,805	1,805	1,731	1,731	1,731	1,697
	1	1,892	1,831	1,775	1,726	1,848	1,793	1,743	1,698	1,723	1,682	1,645	1,658	1,626	1,596	1,599	1,573	1,549	1,541
	2	1,763	1,655	1,565	1,490	1,722	1,624	1,542	1,473	1,567	1,498	1,440	1,514	1,457	1,408	1,465	1,419	1,378	1,389
	3	1,643	1,501	1,392	1,305	1,605	1,476	1,375	1,294	1,429	1,343	1,272	1,385	1,312	1,251	1,344	1,283	1,231	1,257
	4	1,533	1,369	1,249	1,157	1,498	1,348	1,236	1,150	1,309	1,212	1,135	1,272	1,189	1,121	1,238	1,166	1,107	1,143
	5	1,433	1,254	1,129	1,037	1,401	1,237	1,120	1,032	1,204	1,101	1,022	1,173	1,083	1,012	1,144	1,065	1,002	1,045
	6	1,342	1,154	1,028	938	1,314	1,140	1,020	934	1,111	1,006	927	1,085	991	920	1,061	978	913	959
	7	1,260	1,067	942	854	1,234	1,054	935	851	1,030	924	846	1,008	912	841	987	901	836	885
	8	1,186	990	867	782	1,162	979	862	780	959	852	776	940	843	772	921	834	769	820
	9	1,119	922	802	721	1,097	913	798	719	895	790	716	879	782	713	863	775	710	762
	10	1,057	862	745	667	1,038	854	742	666	839	735	664	824	729	662	810	723	659	711

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	46.4 fc	7.0 ft
6.5 ft	33.2 fc	8.3 ft
7.5 ft	24.9 fc	9.5 ft
8.0 ft	21.9 fc	10.2 ft
10.0 ft	14.0 fc	12.7 ft
12.0 ft	9.7 fc	15.2 ft
14.0 ft	7.2 fc	17.8 ft
16.0 ft	5.5 fc	20.3 ft
20.0 ft	3.5 fc	25.4 ft
24.0 ft	2.4 fc	30.5 ft
28.0 ft	1.8 fc	35.5 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	19,222	19,222	19,222
45.00°	5,714	5,753	5,721
55.00°	3,780	3,775	3,738
65.00°	2,901	2,844	2,755
75.00°	2,105	2,095	1,947
85.00°	1,117	1,160	806

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	13.8	15.1	14.1	15.4	15.7	13.7	15.0	14.0	15.3	15.6
	3H	15.0	16.2	15.4	16.5	16.9	14.9	16.0	15.2	16.4	16.7
	4H	15.4	16.5	15.8	16.9	17.2	15.2	16.3	15.6	16.7	17.1
	6H	15.7	16.7	16.1	17.0	17.4	15.5	16.5	15.9	16.8	17.2
	8H	15.7	16.7	16.1	17.0	17.4	15.5	16.5	15.9	16.9	17.3
	12H	15.7	16.6	16.1	17.0	17.4	15.5	16.4	16.0	16.8	17.2
4H	2H	14.2	15.3	14.6	15.6	16.0	14.1	15.1	14.5	15.5	15.9
	3H	15.6	16.5	16.0	16.9	17.3	15.4	16.3	15.8	16.7	17.1
	4H	16.1	16.9	16.5	17.3	17.8	15.9	16.7	16.4	17.1	17.6
	6H	16.4	17.1	16.9	17.6	18.0	16.2	16.9	16.7	17.4	17.8
	8H	16.5	17.2	17.0	17.6	18.1	16.3	17.0	16.8	17.4	17.9
	12H	16.6	17.1	17.0	17.6	18.1	16.3	16.9	16.8	17.4	17.9
8H	4H	16.2	16.9	16.7	17.3	17.8	16.1	16.7	16.5	17.2	17.6
	6H	16.7	17.2	17.2	17.7	18.2	16.5	17.0	17.0	17.5	18.0
	8H	16.8	17.3	17.3	17.8	18.3	16.6	17.0	17.1	17.5	18.0
	12H	16.9	17.3	17.4	17.8	18.4	16.6	17.0	17.1	17.5	18.1
12H	4H	16.2	16.8	16.7	17.3	17.8	16.0	16.6	16.5	17.1	17.6
	6H	16.7	17.1	17.2	17.6	18.1	16.5	16.9	17.0	17.4	17.9
	8H	16.8	17.2	17.3	17.7	18.3	16.6	17.0	17.1	17.5	18.1

Corrected UGR values based on total output lumens

SHR = 1.0