

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

AP12XT 20L 35K XX MWI
Nom 12" diam x 12" H Aluminum reflector pendant

Test Number

SP-00684_4_M-20L

Test Date

10/14/2019

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

Summary of Results

Power

Input Watts	17.9 W
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Lumen Output

Output Lumens	1120
Efficacy	62.57 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

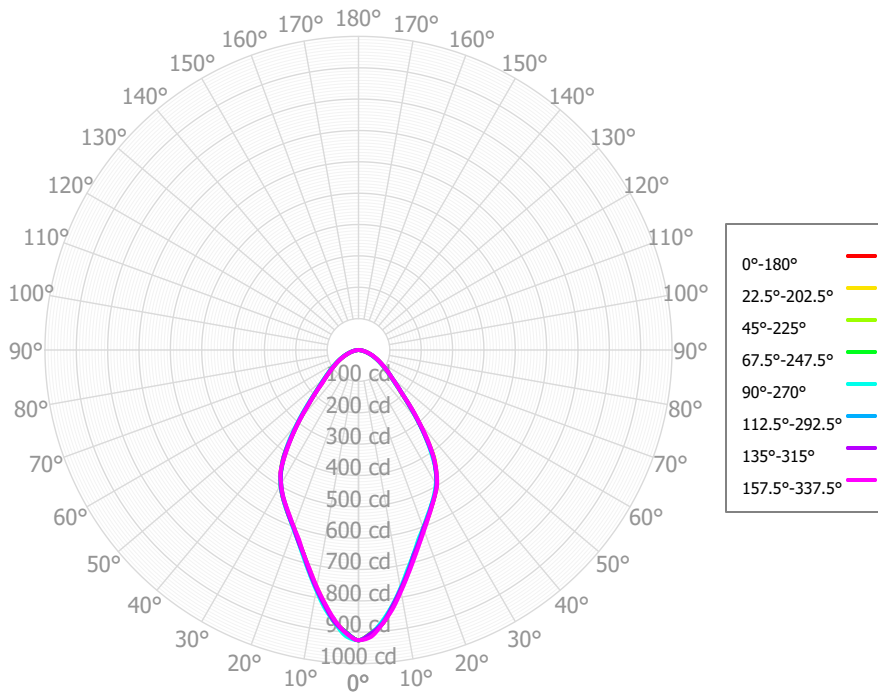
Full Beam Angle

0° - 180°	65°
90° - 270°	65°

IES File Header Contents

Keyword	Value
TEST	SP-00684_4_M-20L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	10/14/2019
ISSUEDATE	5/15/2020
LUMCAT	AP12XT 20L 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, scaled from 30L

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	80.97	7.23%	90.00° - 100.00°	0.06	0.01%
10.00° - 20.00°	190.57	17.02%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	252.95	22.59%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	252.50	22.55%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	156.23	13.95%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	95.06	8.49%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	58.16	5.19%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	27.46	2.45%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	6.01	0.54%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,119.90	99.99%	0.00° - 180.00°	1,119.96	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°	925.67	925.67	925.67	925.67	925.67	925.67	925.67	925.67	925.67	925.67	925.67	925.67	925.67	925.67	925.67	925.67	925.67
2.50°	905.32	911.15	903.65	905.93	907.62	901.70	902.97	904.52	901.53	902.34	902.66	901.79	913.75	904.72	905.79	915.78	905.32
5.00°	876.79	876.60	875.99	874.87	868.23	871.07	871.35	864.94	869.74	867.86	873.91	871.54	873.27	872.63	876.71	876.98	876.79
7.50°	826.72	830.53	825.78	827.05	822.11	822.20	821.99	816.00	819.94	816.89	822.50	822.53	829.60	824.43	825.84	833.40	826.72
10.00°	776.79	778.46	775.77	775.83	770.91	772.93	772.66	766.61	770.27	766.98	771.22	772.70	777.51	774.17	775.18	781.39	776.79
12.50°	728.39	730.00	726.87	726.75	718.95	722.51	723.53	717.11	721.55	718.17	722.71	721.12	727.42	725.19	726.93	732.35	728.39
15.00°	681.26	683.01	679.79	677.97	676.13	675.95	676.35	674.25	674.78	674.42	675.31	674.66	681.43	676.29	680.01	687.52	681.26
17.50°	642.38	644.77	640.29	640.88	634.08	637.90	639.16	632.69	638.31	635.10	638.02	637.04	640.31	640.52	641.95	647.16	642.38
20.00°	605.55	609.27	603.88	604.71	603.46	603.68	604.00	601.91	603.84	602.49	602.27	603.57	607.19	605.22	605.70	612.11	605.55
22.50°	577.78	579.79	576.95	577.26	573.31	576.16	576.29	572.59	577.15	574.66	575.18	575.88	577.23	576.85	577.94	580.64	577.78
25.00°	550.50	551.76	550.47	550.05	547.63	549.19	549.32	547.23	550.80	548.58	548.59	549.26	551.58	548.81	550.76	552.63	550.50
27.50°	524.82	526.17	525.04	524.19	521.75	523.02	524.37	522.16	525.42	523.52	524.09	523.87	525.28	524.28	525.60	526.17	524.82
30.00°	496.51	500.98	496.34	497.38	493.16	493.36	496.13	493.38	496.93	494.30	496.84	493.85	498.27	497.85	497.19	500.92	496.51
32.50°	461.48	462.24	461.29	458.76	461.58	459.60	460.59	463.76	461.41	463.12	461.23	459.45	461.58	458.60	460.36	463.80	461.48
35.00°	417.50	422.12	415.89	417.37	406.73	412.65	415.67	406.30	416.44	410.78	417.63	411.03	416.14	415.54	415.54	419.02	417.50
37.50°	355.54	361.18	354.47	356.71	351.13	353.05	354.20	348.78	354.02	350.68	355.23	351.81	362.25	355.11	354.16	363.43	355.54
40.00°	295.91	299.22	295.75	297.28	291.83	295.20	295.28	290.39	294.66	292.70	295.34	294.86	301.96	296.40	295.31	302.16	295.91
42.50°	240.01	245.32	240.43	243.88	236.37	238.76	239.98	234.27	239.85	235.29	240.27	239.36	248.77	243.42	240.73	248.08	240.01
45.00°	194.57	192.85	195.90	193.67	194.81	196.23	195.39	193.31	195.36	195.11	194.90	197.80	199.90	196.86	195.91	196.98	194.57
47.50°	162.90	165.40	162.71	165.74	158.68	162.74	163.50	155.95	163.29	158.51	164.47	163.39	167.57	167.14	164.34	165.87	162.90
50.00°	137.78	139.01	137.87	139.23	137.91	139.15	138.23	135.62	137.72	137.48	139.70	139.92	143.30	141.46	139.51	141.12	137.78
52.50°	119.79	121.98	120.17	121.87	118.78	120.71	119.35	116.71	118.70	118.60	122.00	120.87	124.58	124.07	122.12	123.24	119.79
55.00°	104.40	105.64	104.27	105.66	103.25	104.76	103.29	102.65	102.89	103.69	106.21	106.19	108.06	107.81	106.69	107.04	104.40
57.50°	91.31	93.12	89.61	91.95	89.05	89.86	89.46	89.41	89.70	89.08	92.41	92.90	94.75	93.39	93.06	93.81	91.31
60.00°	79.52	80.87	77.60	79.16	77.22	78.31	77.69	78.28	77.97	77.80	79.93	80.71	82.43	80.50	81.08	81.08	79.52
62.50°	68.68	69.71	67.11	67.93	66.11	67.87	67.28	67.22	67.21	66.62	68.57	68.78	71.16	69.70	70.35	70.70	68.68
65.00°	59.04	59.17	57.87	57.66	56.08	57.47	57.39	56.29	57.54	56.33	58.38	58.69	60.14	59.72	60.15	60.56	59.04
67.50°	50.11	50.39	49.20	48.63	47.15	47.09	47.77	46.56	48.45	46.37	48.98	48.89	51.07	50.61	50.27	51.85	50.11
70.00°	41.67	41.62	40.49	39.84	39.25	39.10	39.29	38.41	39.44	38.31	40.71	40.67	42.31	41.64	41.55	43.14	41.67
72.50°	33.44	32.88	32.05	31.20	31.58	31.63	31.33	31.18	30.84	31.03	32.91	32.78	34.36	32.75	33.27	34.14	33.44
75.00°	26.24	26.04	26.11	24.77	24.26	25.41	25.22	24.44	24.80	24.83	26.36	25.85	27.01	25.82	26.90	26.67	26.24
77.50°	19.72	20.15	19.68	18.71	17.93	19.47	18.90	18.17	18.28	18.41	19.68	19.39	20.69	19.48	20.50	20.98	19.72
80.00°	14.02	15.00	13.30	13.01	12.15	13.56	12.95	12.56	12.10	12.46	13.37	13.45	14.33	13.82	14.10	14.06	14.02
82.50°	8.88	9.95	8.41	7.92	7.68	7.71	8.24	7.35	7.51	7.48	8.84	8.41	9.28	8.76	8.03	9.80	8.88
85.00°	4.69	4.70	4.87	4.78	3.38	4.14	4.35	4.35	4.30	3.96	4.60	5.23	5.87	4.68	5.14	6.10	4.69
87.50°	2.09	2.08	2.18	2.03	1.77	2.02	2.03	1.66	2.00	1.65	2.36	2.14	2.81	1.99	2.68	2.21	2.09
90.00°	1.03	0.99	0.96	0.00	0.00	0.74	0.00	0.00	0.00	0.00	0.00	0.80	1.25	0.00	0.89	0.83	1.03
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.

RCR	pfc	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%	10%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%
	0	1,333	1,333	1,333	1,333	1,302	1,302	1,302	1,302	1,244	1,244	1,244	1,191	1,191	1,191	1,143	1,143	1,143
	1	1,249	1,208	1,172	1,139	1,220	1,183	1,151	1,121	1,137	1,110	1,086	1,094	1,073	1,053	1,055	1,038	1,022
	2	1,163	1,092	1,033	983	1,137	1,072	1,018	972	1,034	989	950	999	962	929	967	936	909
	3	1,084	991	919	861	1,059	974	908	854	943	886	840	914	866	826	887	847	813
	4	1,012	904	824	764	989	890	816	759	864	800	749	839	785	740	817	770	731
	5	946	828	745	685	925	816	739	681	794	726	674	774	715	668	755	703	662
	6	886	762	679	619	867	752	673	616	734	664	612	716	654	607	700	645	602
	7	832	704	621	563	815	696	617	562	680	610	558	665	602	555	651	595	551
	8	783	653	572	516	767	646	569	515	633	563	512	620	556	510	608	550	507
	9	738	609	529	476	724	603	527	475	591	521	473	580	516	471	569	511	469
	10	698	569	492	440	685	564	490	440	553	485	438	544	481	437	535	477	435

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	30.6 fc	7.0 ft
6.5 ft	21.9 fc	8.3 ft
7.5 ft	16.5 fc	9.5 ft
8.0 ft	14.5 fc	10.2 ft
10.0 ft	9.3 fc	12.7 ft
12.0 ft	6.4 fc	15.2 ft
14.0 ft	4.7 fc	17.8 ft
16.0 ft	3.6 fc	20.3 ft
20.0 ft	2.3 fc	25.4 ft
24.0 ft	1.6 fc	30.5 ft
28.0 ft	1.2 fc	35.5 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	12,686	12,686	12,686
45.00°	3,771	3,797	3,776
55.00°	2,494	2,491	2,467
65.00°	1,915	1,877	1,819
75.00°	1,389	1,383	1,285
85.00°	737	765	532

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	12.3	13.6	12.7	14.0	14.3	12.2	13.5	12.6	13.8	14.2
	3H	13.6	14.8	14.0	15.1	15.4	13.4	14.6	13.8	14.9	15.3
	4H	14.0	15.1	14.4	15.4	15.8	13.8	14.9	14.2	15.2	15.6
	6H	14.2	15.2	14.6	15.6	16.0	14.0	15.0	14.4	15.4	15.8
	8H	14.3	15.2	14.7	15.6	16.0	14.1	15.0	14.5	15.4	15.8
	12H	14.3	15.2	14.7	15.6	16.0	14.1	15.0	14.5	15.4	15.8
4H	2H	12.7	13.8	13.1	14.2	14.6	12.6	13.7	13.0	14.1	14.4
	3H	14.2	15.1	14.6	15.5	15.9	14.0	14.9	14.4	15.3	15.7
	4H	14.7	15.5	15.1	15.9	16.3	14.5	15.3	14.9	15.7	16.1
	6H	15.0	15.7	15.5	16.1	16.6	14.8	15.5	15.3	15.9	16.4
	8H	15.1	15.7	15.5	16.2	16.6	14.9	15.5	15.3	16.0	16.4
	12H	15.1	15.7	15.6	16.2	16.6	14.9	15.5	15.4	15.9	16.4
8H	4H	14.8	15.4	15.3	15.9	16.4	14.6	15.3	15.1	15.7	16.2
	6H	15.2	15.7	15.7	16.2	16.7	15.0	15.5	15.5	16.0	16.5
	8H	15.3	15.8	15.9	16.3	16.8	15.1	15.6	15.6	16.1	16.6
	12H	15.4	15.8	15.9	16.3	16.9	15.2	15.6	15.7	16.1	16.7
12H	4H	14.8	15.4	15.3	15.8	16.3	14.6	15.2	15.1	15.7	16.1
	6H	15.2	15.7	15.7	16.2	16.7	15.0	15.5	15.5	15.9	16.5
	8H	15.4	15.8	15.9	16.3	16.9	15.1	15.6	15.7	16.0	16.6

Corrected UGR values based on total output lumens

SHR = 1.0