

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

AP12XT 10L 35K XX MWI
Nom 12" diam x 12" H Aluminum reflector pendant

Test Number

SP-00684_4_M-10L

Test Date

10/14/2019

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

Summary of Results

Power

Input Watts	7.8 W
-------------	-------

Lumen Output

Output Lumens	543
Efficacy	69.62 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

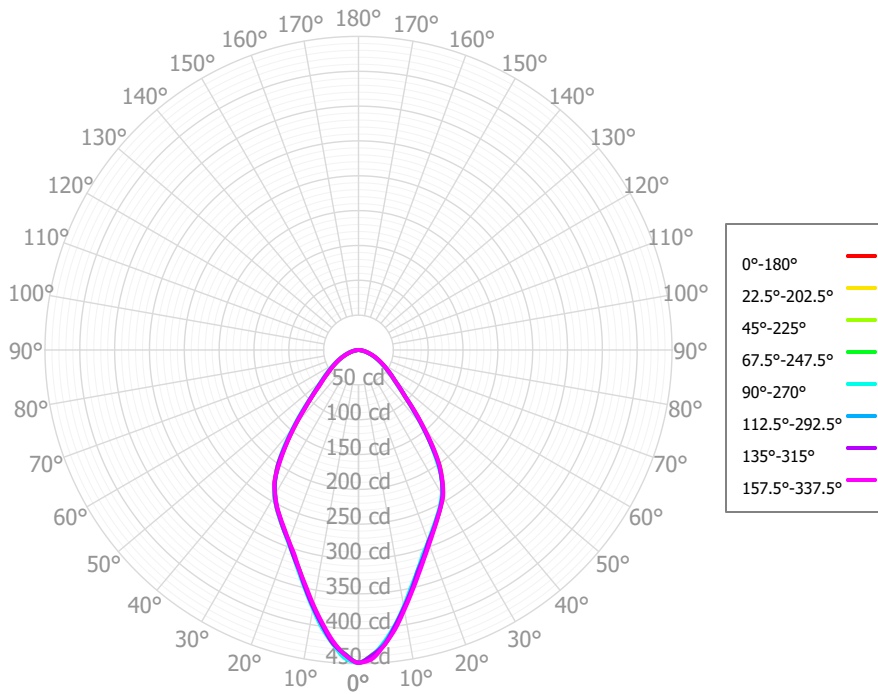
Full Beam Angle

0° - 180°	65°
90° - 270°	65°

IES File Header Contents

Keyword	Value
TEST	SP-00684_4_M-10L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	10/14/2019
ISSUEDATE	5/15/2020
LUMCAT	AP12XT 10L 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°	39.26	7.23%	90.00° - 100.00°	0.03	0.01%
10.00° - 20.00°	92.40	17.02%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	122.64	22.59%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	122.42	22.55%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	75.75	13.95%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	46.09	8.49%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	28.20	5.19%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	13.31	2.45%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	2.91	0.54%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	542.98	99.99%	0.00° - 180.00°	543.01	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°	448.81	448.81	448.81	448.81	448.81	448.81	448.81	448.81	448.81	448.81	448.81	448.81	448.81	448.81	448.81	448.81	448.81
2.50°	438.94	441.77	438.13	439.24	440.06	437.19	437.80	438.55	437.10	437.50	437.65	437.23	443.03	438.65	439.17	444.01	438.94
5.00°	425.11	425.02	424.72	424.18	420.96	422.34	422.47	419.37	421.69	420.78	423.71	422.56	423.41	423.09	425.07	425.20	425.11
7.50°	400.83	402.68	400.38	400.99	398.60	398.64	398.54	395.64	397.55	396.07	398.79	398.80	402.23	399.73	400.41	404.07	400.83
10.00°	376.62	377.44	376.13	376.16	373.77	374.75	374.62	371.69	373.46	371.87	373.93	374.64	376.98	375.36	375.84	378.86	376.62
12.50°	353.16	353.94	352.42	352.36	348.58	350.31	350.80	347.69	349.84	348.20	350.40	349.63	352.69	351.61	352.45	355.08	353.16
15.00°	330.31	331.16	329.60	328.71	327.82	327.73	327.93	326.91	327.17	326.99	327.42	327.11	330.39	327.90	329.70	333.34	330.31
17.50°	311.45	312.61	310.44	310.73	307.43	309.29	309.89	306.76	309.49	307.93	309.34	308.87	310.45	310.55	311.25	313.78	311.45
20.00°	293.60	295.41	292.79	293.19	292.59	292.70	292.85	291.83	292.77	292.12	292.01	292.64	294.40	293.44	293.67	296.78	293.60
22.50°	280.13	281.11	279.73	279.89	277.97	279.35	279.41	277.62	279.83	278.62	278.88	279.22	279.87	279.69	280.21	281.52	280.13
25.00°	266.91	267.52	266.89	266.69	265.52	266.27	266.34	265.32	267.05	265.98	265.99	266.31	267.43	266.09	267.04	267.94	266.91
27.50°	254.46	255.11	254.57	254.15	252.97	253.58	254.24	253.17	254.75	253.83	254.10	254.00	254.68	254.19	254.84	255.11	254.46
30.00°	240.73	242.90	240.65	241.16	239.11	239.20	240.55	239.22	240.94	239.66	240.89	239.44	241.58	241.38	241.06	242.87	240.73
32.50°	223.75	224.12	223.66	222.43	223.80	222.84	223.32	224.85	223.71	224.54	223.63	222.77	223.80	222.35	223.20	224.87	223.75
35.00°	202.42	204.66	201.65	202.36	197.20	200.07	201.54	197.00	201.91	199.16	202.49	199.29	201.77	201.47	201.47	203.16	202.42
37.50°	172.38	175.12	171.87	172.95	170.25	171.17	171.73	169.10	171.64	170.03	172.23	170.57	175.64	172.17	171.71	176.21	172.38
40.00°	143.47	145.07	143.40	144.13	141.49	143.13	143.16	140.79	142.86	141.91	143.20	142.96	146.41	143.71	143.18	146.50	143.47
42.50°	116.37	118.94	116.57	118.24	114.60	115.76	116.36	113.58	116.29	114.08	116.49	116.05	120.61	118.02	116.72	120.28	116.37
45.00°	94.34	93.50	94.98	94.87	94.45	95.14	94.74	93.73	94.72	94.60	94.50	95.90	96.92	95.45	94.99	95.51	94.34
47.50°	78.98	80.19	78.89	80.36	76.93	78.91	79.28	75.61	79.17	76.85	79.74	79.22	81.24	81.04	79.68	80.42	78.98
50.00°	66.80	67.40	66.85	67.51	66.87	67.47	67.02	65.76	66.77	66.66	67.73	67.84	69.48	68.58	67.64	68.42	66.80
52.50°	58.08	59.14	58.26	59.09	57.59	58.53	57.87	56.58	57.55	57.50	59.15	58.60	60.40	60.15	59.21	59.75	58.08
55.00°	50.62	51.22	50.55	51.23	50.06	50.79	50.08	49.77	49.89	50.27	51.50	51.49	52.39	52.27	51.73	51.90	50.62
57.50°	44.27	45.15	43.45	44.58	43.18	43.57	43.37	43.35	43.49	43.19	44.80	45.04	45.94	45.28	45.12	45.48	44.27
60.00°	38.56	39.21	37.62	38.38	37.44	37.97	37.67	37.95	37.81	37.72	38.75	39.13	39.96	39.03	39.31	39.31	38.56
62.50°	33.30	33.80	32.54	32.94	32.06	32.91	32.62	32.59	32.59	32.30	33.25	33.35	34.50	33.79	34.11	34.28	33.30
65.00°	28.62	28.69	28.06	27.96	27.19	27.87	27.83	27.29	27.90	27.31	28.31	28.45	29.16	28.95	29.16	29.36	28.62
67.50°	24.29	24.43	23.85	23.58	22.86	22.83	23.16	22.57	23.49	22.48	23.75	23.70	24.76	24.54	24.37	25.14	24.29
70.00°	20.21	20.18	19.63	19.31	19.03	18.96	19.05	18.63	19.12	18.57	19.74	19.72	20.51	20.19	20.14	20.92	20.21
72.50°	16.21	15.94	15.54	15.12	15.31	15.34	15.19	15.12	14.95	15.05	15.96	15.89	16.66	15.88	16.13	16.55	16.21
75.00°	12.72	12.63	12.66	12.01	11.76	12.32	12.23	11.85	12.02	12.04	12.78	12.54	13.10	12.52	13.04	12.93	12.72
77.50°	9.56	9.77	9.54	9.07	8.69	9.44	9.16	8.81	8.86	8.93	9.54	9.40	10.03	9.44	9.94	10.17	9.56
80.00°	6.80	7.27	6.45	6.31	5.89	6.57	6.28	6.09	5.87	6.04	6.48	6.52	6.95	6.70	6.84	6.82	6.80
82.50°	4.31	4.82	4.08	3.84	3.72	3.74	3.99	3.56	3.64	3.63	4.29	4.08	4.50	4.25	3.90	4.75	4.31
85.00°	2.27	2.28	2.36	2.32	1.64	2.01	2.11	2.11	2.09	1.92	2.23	2.54	2.84	2.27	2.49	2.96	2.27
87.50°	1.01	1.01	1.06	0.98	0.86	0.98	0.98	0.80	0.97	0.80	1.14	1.04	1.36	0.96	1.30	1.07	1.01
90.00°	0.50	0.48	0.46	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.39	0.61	0.00	0.43	0.40	0.50
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%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	0	646	646	646	646	631	631	631	631	603	603	603	578	578	578	554	554	543
	1	605	586	568	552	591	574	558	543	551	538	526	531	520	511	512	503	496
	2	564	529	501	477	551	520	494	471	501	480	461	484	466	451	469	454	445
	3	526	480	445	418	514	472	440	414	457	430	407	443	420	400	430	411	402
	4	490	438	400	370	479	431	396	368	419	388	363	407	380	359	396	373	366
	5	459	401	361	332	448	396	358	330	385	352	327	375	346	324	366	341	334
	6	430	369	329	300	420	365	327	299	356	322	297	347	317	294	339	313	307
	7	403	341	301	273	395	337	299	272	330	296	271	323	292	269	316	288	283
	8	380	317	277	250	372	313	276	250	307	273	248	301	270	247	295	267	262
	9	358	295	257	231	351	292	255	230	286	253	229	281	250	228	276	248	244
	10	338	276	238	214	332	273	237	213	268	235	212	264	233	212	259	231	228

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	14.8 fc	7.0 ft
6.5 ft	10.6 fc	8.3 ft
7.5 ft	8.0 fc	9.5 ft
8.0 ft	7.0 fc	10.2 ft
10.0 ft	4.5 fc	12.7 ft
12.0 ft	3.1 fc	15.2 ft
14.0 ft	2.3 fc	17.8 ft
16.0 ft	1.8 fc	20.3 ft
20.0 ft	1.1 fc	25.4 ft
24.0 ft	0.8 fc	30.5 ft
28.0 ft	0.6 fc	35.5 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	6,151	6,151	6,151
45.00°	1,828	1,841	1,831
55.00°	1,209	1,208	1,196
65.00°	928	910	882
75.00°	674	670	623
85.00°	357	371	258

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	9.8	11.1	10.2	11.4	11.8	9.7	11.0	10.1	11.3	11.6
	3H	11.1	12.2	11.4	12.6	12.9	10.9	12.1	11.3	12.4	12.8
	4H	11.5	12.5	11.9	12.9	13.3	11.3	12.4	11.7	12.7	13.1
	6H	11.7	12.7	12.1	13.1	13.5	11.5	12.5	11.9	12.9	13.3
	8H	11.7	12.7	12.2	13.1	13.5	11.6	12.5	12.0	12.9	13.3
	12H	11.8	12.7	12.2	13.0	13.5	11.6	12.5	12.0	12.9	13.3
4H	2H	10.2	11.3	10.6	11.7	12.0	10.1	11.2	10.5	11.5	11.9
	3H	11.7	12.6	12.1	13.0	13.4	11.5	12.4	11.9	12.8	13.2
	4H	12.1	12.9	12.6	13.4	13.8	12.0	12.8	12.4	13.2	13.6
	6H	12.5	13.2	12.9	13.6	14.1	12.3	13.0	12.7	13.4	13.9
	8H	12.6	13.2	13.0	13.7	14.1	12.3	13.0	12.8	13.4	13.9
	12H	12.6	13.2	13.1	13.6	14.1	12.4	12.9	12.9	13.4	13.9
8H	4H	12.3	12.9	12.8	13.4	13.8	12.1	12.7	12.6	13.2	13.7
	6H	12.7	13.2	13.2	13.7	14.2	12.5	13.0	13.0	13.5	14.0
	8H	12.8	13.3	13.4	13.8	14.3	12.6	13.1	13.1	13.6	14.1
	12H	12.9	13.3	13.4	13.8	14.4	12.7	13.1	13.2	13.6	14.1
12H	4H	12.3	12.8	12.8	13.3	13.8	12.1	12.7	12.6	13.1	13.6
	6H	12.7	13.2	13.2	13.6	14.2	12.5	13.0	13.0	13.4	14.0
	8H	12.9	13.3	13.4	13.8	14.3	12.6	13.0	13.1	13.5	14.1

Corrected UGR values based on total output lumens

SHR = 1.0