

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

AP12XT 13L 35HK XX MWI
Nom 12" diam x 12" H Aluminum reflector pendant

Test Number

SP-00684_2_M-13L

Test Date

10/15/2019

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

Summary of Results

Power

Input Watts	15.6 W
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Lumen Output

Output Lumens	695
Efficacy	44.56 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.82
Two luminaires, plane 90°	0.82
Four luminaires	0.98

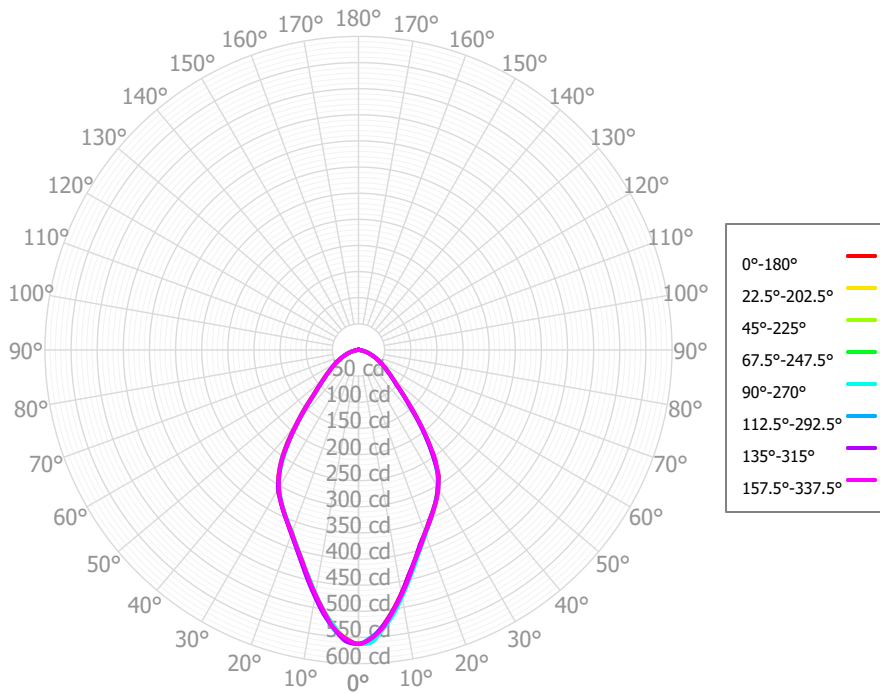
Full Beam Angle

0° - 180°	66°
90° - 270°	65°

IES File Header Contents

Keyword	Value
TEST	SP-00684_2_M-13L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	10/15/2019
ISSUEDATE	5/15/2020
LUMCAT	AP12XT 13L 35HK 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: 65.6 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°	49.65	7.14%	90.00° - 100.00°	0.67	0.10%
10.00° - 20.00°	117.43	16.89%	100.00° - 110.00°	0.62	0.09%
20.00° - 30.00°	155.86	22.42%	100.00° - 120.00°	1.23	0.18%
30.00° - 40.00°	154.72	22.26%	120.00° - 130.00°	0.53	0.08%
40.00° - 50.00°	96.34	13.86%	130.00° - 140.00°	0.48	0.07%
50.00° - 60.00°	59.34	8.54%	140.00° - 150.00°	0.39	0.06%
60.00° - 70.00°	36.45	5.24%	150.00° - 160.00°	0.30	0.04%
70.00° - 80.00°	17.50	2.52%	160.00° - 170.00°	0.18	0.03%
80.00° - 90.00°	4.03	0.58%	170.00° - 180.00°	0.06	0.01%
0.00° - 90.00°	691.29	99.45%	0.00° - 180.00°	695.12	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°	562.40	562.40	562.40	562.40	562.40	562.40	562.40	562.40	562.40	562.40	562.40	562.40	562.40	562.40	562.40	562.40	562.40
2.50°	552.42	551.83	559.00	552.62	560.29	554.99	558.04	552.47	556.71	551.46	555.80	553.04	555.37	550.40	552.89	552.27	552.42
5.00°	530.06	535.02	533.67	535.26	536.36	536.92	535.33	535.29	533.39	533.97	530.35	532.29	531.31	531.86	530.75	533.71	530.06
7.50°	502.11	505.81	507.92	506.79	510.96	509.40	509.99	504.96	507.42	504.23	504.52	504.49	504.86	503.61	503.94	505.03	502.11
10.00°	472.38	476.45	476.97	477.27	479.87	478.98	479.35	474.76	476.75	474.52	473.84	474.15	474.16	474.75	473.33	475.67	472.38
12.50°	442.16	446.19	446.48	446.27	449.63	449.71	449.61	445.10	447.31	445.13	443.75	445.10	443.20	444.90	441.88	446.06	442.16
15.00°	416.06	417.30	419.09	418.60	421.84	420.71	421.32	417.14	419.60	416.48	417.81	416.40	417.98	417.50	416.00	416.69	416.06
17.50°	390.82	394.27	393.07	394.76	396.17	396.84	396.21	394.00	395.37	394.13	392.97	393.45	393.04	393.31	391.00	394.66	390.82
20.00°	371.66	372.67	373.69	373.94	375.40	373.78	375.28	372.81	375.15	372.61	373.60	371.69	373.96	372.47	372.22	373.06	371.66
22.50°	353.33	355.67	354.97	356.04	356.01	356.05	356.72	355.88	356.85	355.63	355.03	355.04	355.13	355.20	354.02	356.18	353.33
25.00°	337.62	338.90	338.59	338.66	339.15	338.82	340.68	339.23	340.40	338.99	339.37	339.09	338.90	338.58	337.96	339.42	337.62
27.50°	322.11	322.69	321.97	321.70	322.30	322.43	324.35	323.07	324.18	323.61	323.15	323.21	322.33	322.55	321.96	323.38	322.11
30.00°	304.36	304.67	304.74	302.49	305.46	306.01	307.75	304.66	308.14	306.24	305.46	307.33	303.63	303.24	303.69	306.06	304.36
32.50°	286.07	283.05	283.29	281.84	282.28	281.20	284.03	282.98	285.17	282.97	283.41	281.36	282.30	281.55	284.40	282.88	286.07
35.00°	250.78	255.44	252.79	251.41	251.52	255.61	255.09	254.07	257.80	255.57	251.86	254.84	249.27	250.13	249.44	256.41	250.78
37.50°	215.44	218.33	219.64	215.84	217.45	217.70	220.73	216.67	223.83	218.68	218.50	217.40	215.48	213.02	214.37	218.92	215.44
40.00°	179.40	182.63	181.98	180.94	180.05	180.39	183.16	181.11	186.41	182.90	182.03	180.42	179.19	177.94	178.49	182.77	179.40
42.50°	144.92	148.78	148.75	146.32	147.86	148.23	151.04	147.36	153.77	149.14	149.34	148.60	145.87	143.80	144.46	150.01	144.92
45.00°	120.86	121.85	121.61	121.41	119.90	118.49	121.56	121.25	123.11	121.51	121.92	118.80	119.93	119.41	120.32	121.67	120.86
47.50°	98.86	102.33	100.74	99.59	100.58	101.87	102.71	101.27	104.10	103.13	100.84	102.36	98.39	98.69	98.61	102.44	98.86
50.00°	86.53	87.14	87.08	85.82	86.97	86.52	87.91	86.63	88.79	87.87	87.16	86.87	85.71	85.26	86.16	86.26	86.53
52.50°	74.82	75.71	75.27	74.04	75.58	75.98	76.29	75.45	77.16	76.43	75.67	75.85	74.45	73.92	74.52	75.08	74.82
55.00°	65.23	65.96	65.19	64.76	65.42	65.98	65.58	65.74	66.45	66.44	66.26	65.49	65.50	65.07	65.21	65.26	65.23
57.50°	56.27	57.43	56.81	55.90	56.83	57.54	57.81	56.81	58.22	57.87	57.82	57.37	57.09	56.72	56.52	57.22	56.27
60.00°	48.97	49.77	49.73	48.84	48.93	49.57	50.68	49.39	50.42	50.07	50.14	49.64	49.40	49.54	49.26	49.81	48.97
62.50°	42.08	42.62	42.93	41.97	42.80	42.69	43.85	42.63	43.50	42.90	42.97	42.91	42.67	42.52	42.27	43.08	42.08
65.00°	36.05	36.24	36.31	36.28	37.25	36.40	37.07	36.35	36.68	36.64	36.12	36.49	36.97	36.68	35.74	36.92	36.05
67.50°	30.19	30.23	30.42	30.66	31.45	31.22	31.28	30.23	31.03	31.01	30.55	30.72	31.39	30.94	29.91	31.25	30.19
70.00°	24.61	25.26	24.91	25.53	25.59	26.38	25.58	25.23	25.46	25.99	25.63	25.33	25.91	25.81	25.11	25.80	24.61
72.50°	19.77	20.68	20.19	20.45	20.91	22.05	21.01	20.51	21.34	21.32	20.99	20.57	20.92	20.70	20.57	20.51	19.77
75.00°	15.95	15.99	15.79	16.16	16.44	17.57	16.50	16.07	17.24	17.02	16.47	16.17	16.28	16.29	16.35	15.97	15.95
77.50°	12.13	11.26	12.07	11.95	12.75	12.91	12.75	11.67	13.23	12.88	12.14	12.26	12.16	11.94	12.19	11.91	12.13
80.00°	8.33	7.87	8.57	8.47	9.15	8.92	9.06	8.46	9.29	9.04	7.87	8.74	8.34	8.30	8.09	8.59	8.33
82.50°	5.29	4.76	5.69	5.22	5.91	5.61	6.16	5.37	6.03	5.31	5.02	5.68	5.36	4.88	5.02	5.63	5.29
85.00°	2.95	2.95	2.95	3.30	2.69	3.32	3.42	3.27	3.06	3.26	2.50	3.35	2.79	3.05	2.79	3.44	2.95
87.50°	1.58	1.32	1.82	1.64	1.68	1.88	1.93	1.22	1.81	1.64	1.42	1.70	1.50	1.44	1.46	1.54	1.58
90.00°	0.94	0.86	0.94	0.99	0.73	1.09	0.67	0.83	0.77	1.05	0.58	0.85	0.69	0.98	0.75	0.89	0.94
92.50°	0.68	0.50	0.67	0.52	0.72	0.72	0.61	0.48	0.58	0.66	0.54	0.60	0.47	0.61	0.52	0.62	0.68
95.00°	0.66	0.53	0.47	0.53	0.70	0.65	0.55	0.55	0.44	0.59	0.59	0.48	0.41	0.56	0.54	0.62	0.66
97.50°	0.64	0.57	0.57	0.60	0.62	0.75	0.49	0.61	0.48	0.56	0.67	0.44	0.52	0.52	0.55	0.68	0.64
100.00°	0.62	0.59	0.68	0.77	0.56	0.68	0.48	0.53	0.50	0.59	0.75	0.43	0.65	0.52	0.56	0.66	0.62
102.50°	0.64	0.61	0.54	0.85	0.56	0.55	0.61	0.46	0.47	0.63	0.71	0.43	0.67	0.54	0.53	0.63	0.64
105.00°	0.67	0.57	0.42	0.74	0.57	0.52	0.69	0.54	0.45	0.65	0.67	0.45	0.67	0.62	0.50	0.65	0.67
107.50°	0.61	0.54	0.53	0.63	0.55	0.53	0.65	0.60	0.46	0.68	0.61	0.47	0.62	0.65	0.63	0.68	0.61
110.00°	0.52	0.54	0.63	0.54	0.54	0.51	0.62	0.59	0.49	0.76	0.55	0.44	0.55	0.59	0.79	0.75	0.52
112.50°	0.58	0.54	0.65	0.57	0.53	0.49	0.60	0.60	0.53	0.83	0.50	0.40	0.66	0.57	0.68	0.83	0.58

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	827	827	827	827	807	807	807	807	770	770	770	737	737	737	706	706	691
	1	774	748	726	705	755	733	712	694	703	687	671	676	663	650	651	641	631
	2	721	676	639	608	704	663	630	601	639	611	587	617	594	573	596	577	561
	3	671	613	568	533	656	603	561	528	583	547	518	564	534	509	547	522	501
	4	626	559	510	472	612	550	504	469	533	494	462	518	484	456	504	474	450
	5	585	512	461	423	572	505	456	421	490	448	416	477	441	412	465	433	407
	6	548	471	419	382	536	465	416	380	453	410	377	442	403	374	431	397	371
	7	515	435	384	348	504	430	381	347	420	376	344	410	371	342	401	366	339
	8	484	404	353	319	474	399	351	318	391	347	316	382	343	314	375	339	312
	9	457	376	327	293	448	372	325	293	365	322	291	358	318	290	351	315	289
	10	432	352	304	272	423	348	302	271	342	299	270	335	296	269	329	294	268

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	18.6 fc	7.1 ft
6.5 ft	13.3 fc	8.4 ft
7.5 ft	10.0 fc	9.7 ft
8.0 ft	8.8 fc	10.3 ft
10.0 ft	5.6 fc	12.9 ft
12.0 ft	3.9 fc	15.5 ft
14.0 ft	2.9 fc	18.1 ft
16.0 ft	2.2 fc	20.7 ft
20.0 ft	1.4 fc	25.8 ft
24.0 ft	1.0 fc	31.0 ft
28.0 ft	0.7 fc	36.2 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	7,708	7,708	7,708
45.00°	2,343	2,357	2,324
55.00°	1,558	1,558	1,563
65.00°	1,169	1,178	1,208
75.00°	844	836	870
85.00°	464	465	424

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	10.6	11.9	10.9	12.2	12.5	10.6	11.9	11.0	12.2	12.6
	3H	11.8	12.9	12.2	13.3	13.7	11.8	13.0	12.2	13.4	13.7
	4H	12.2	13.2	12.6	13.6	14.0	12.3	13.3	12.7	13.7	14.1
	6H	12.4	13.4	12.8	13.8	14.2	12.5	13.5	12.9	13.9	14.3
	8H	12.4	13.4	12.9	13.8	14.2	12.5	13.5	13.0	13.9	14.3
	12H	12.4	13.3	12.9	13.7	14.2	12.6	13.5	13.0	13.9	14.3
4H	2H	11.0	12.0	11.4	12.4	12.8	11.0	12.1	11.4	12.5	12.8
	3H	12.4	13.3	12.8	13.7	14.1	12.4	13.3	12.9	13.8	14.2
	4H	12.8	13.6	13.3	14.1	14.5	13.0	13.8	13.4	14.2	14.6
	6H	13.1	13.8	13.6	14.3	14.8	13.3	14.0	13.8	14.4	14.9
	8H	13.2	13.9	13.7	14.3	14.8	13.4	14.0	13.9	14.5	15.0
	12H	13.2	13.8	13.7	14.3	14.8	13.4	14.0	13.9	14.5	15.0
8H	4H	13.0	13.6	13.5	14.1	14.6	13.1	13.8	13.6	14.2	14.7
	6H	13.4	13.9	13.9	14.4	14.9	13.5	14.0	14.0	14.6	15.0
	8H	13.5	13.9	14.0	14.5	15.0	13.6	14.1	14.2	14.6	15.1
	12H	13.5	14.0	14.1	14.5	15.0	13.7	14.1	14.2	14.6	15.2
12H	4H	13.0	13.5	13.5	14.0	14.5	13.1	13.7	13.6	14.2	14.6
	6H	13.4	13.8	13.9	14.3	14.9	13.5	14.0	14.1	14.5	15.0
	8H	13.5	13.9	14.0	14.4	15.0	13.7	14.1	14.2	14.6	15.2

Corrected UGR values based on total output lumens

SHR = 1.0