

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

AP12XT 30L 35HK XX MWI
Nom 12" diam x 12" H Aluminum reflector pendant

Test Number

SP-00684_2

Test Date

10/15/2019

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

Summary of Results

Power

Input Watts	35.9 W
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Lumen Output

Output Lumens	1617
Efficacy	45.03 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

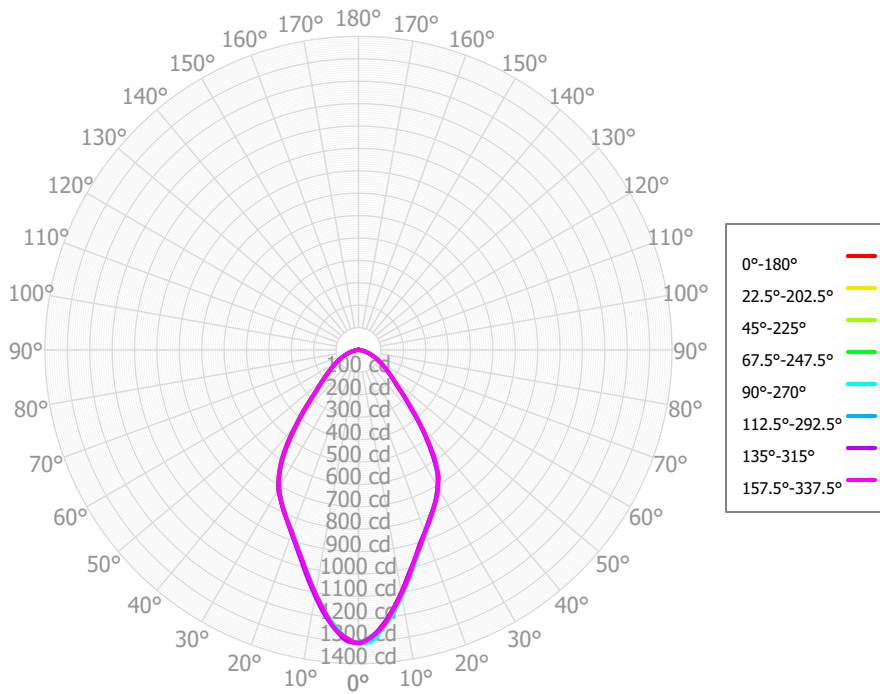
Full Beam Angle

0° - 180°	66°
90° - 270°	65°

IES File Header Contents

Keyword	Value
TEST	SP-00684_2
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	10/15/2019
ISSUEDATE	10/23/2019
LUMCAT	AP12XT 30L 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
_CRI	95
_CCTMULT	Same for all available CCT's
_LAMPMULT	13L x 0.43, 20L x 0.65

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	115.46	7.14%	90.00° - 100.00°	1.56	0.10%
10.00° - 20.00°	273.09	16.89%	100.00° - 110.00°	1.45	0.09%
20.00° - 30.00°	362.45	22.42%	100.00° - 120.00°	2.85	0.18%
30.00° - 40.00°	359.81	22.26%	120.00° - 130.00°	1.23	0.08%
40.00° - 50.00°	224.05	13.86%	130.00° - 140.00°	1.11	0.07%
50.00° - 60.00°	138.00	8.54%	140.00° - 150.00°	0.90	0.06%
60.00° - 70.00°	84.76	5.24%	150.00° - 160.00°	0.69	0.04%
70.00° - 80.00°	40.69	2.52%	160.00° - 170.00°	0.42	0.03%
80.00° - 90.00°	9.36	0.58%	170.00° - 180.00°	0.15	0.01%
0.00° - 90.00°	1,607.66	99.45%	0.00° - 180.00°	1,616.57	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°	1,307.91	1,307.91	1,307.91	1,307.91	1,307.91	1,307.91	1,307.91	1,307.91	1,307.91	1,307.91	1,307.91	1,307.91	1,307.91	1,307.91	1,307.91	1,307.91	1,307.91
2.50°	1,284.70	1,283.32	1,300.01	1,285.17	1,303.01	1,290.67	1,297.76	1,284.82	1,294.67	1,282.48	1,292.56	1,286.13	1,291.56	1,280.00	1,285.79	1,284.35	1,284.70
5.00°	1,232.71	1,244.23	1,241.09	1,244.80	1,247.35	1,248.66	1,244.94	1,244.86	1,240.45	1,241.78	1,233.37	1,237.87	1,235.62	1,236.88	1,234.29	1,241.18	1,232.71
7.50°	1,167.70	1,176.29	1,181.20	1,178.57	1,188.27	1,184.65	1,186.02	1,174.31	1,180.04	1,172.63	1,173.30	1,173.24	1,174.09	1,171.19	1,171.95	1,174.48	1,167.70
10.00°	1,098.55	1,108.02	1,109.24	1,109.93	1,115.98	1,113.91	1,114.77	1,104.10	1,108.72	1,103.53	1,101.96	1,102.68	1,102.70	1,104.07	1,100.77	1,106.21	1,098.55
12.50°	1,028.27	1,037.65	1,038.33	1,037.84	1,045.65	1,045.84	1,045.60	1,035.11	1,040.26	1,035.18	1,031.97	1,035.11	1,030.69	1,034.65	1,027.62	1,037.35	1,028.27
15.00°	967.59	970.47	974.63	973.49	981.03	978.40	979.82	970.10	975.82	968.56	971.65	968.36	972.05	970.93	967.44	969.05	967.59
17.50°	908.89	916.91	914.12	918.06	921.33	922.88	921.41	916.28	919.48	916.57	913.89	915.00	914.04	914.67	909.31	917.81	908.89
20.00°	864.33	866.67	869.04	869.64	873.03	869.27	872.75	866.99	872.44	866.54	868.83	864.39	869.67	866.21	865.63	867.57	864.33
22.50°	821.69	827.15	825.52	828.00	827.93	828.02	829.57	827.63	829.87	827.05	825.66	825.69	825.88	826.05	823.30	828.34	821.69
25.00°	785.17	788.15	787.42	787.59	788.73	787.94	792.29	788.91	791.63	788.34	789.22	788.59	788.15	787.40	785.96	789.35	785.17
27.50°	749.10	750.45	748.77	748.15	749.54	749.84	754.31	751.34	753.91	752.58	751.52	751.65	749.62	750.11	748.74	752.04	749.10
30.00°	707.80	708.53	708.69	703.46	710.37	711.66	715.70	708.51	716.61	712.19	710.38	714.73	706.13	705.20	706.26	711.76	707.80
32.50°	665.28	658.26	658.81	655.44	656.46	653.96	660.52	658.09	663.19	658.08	659.09	654.33	656.51	654.76	661.39	657.87	665.28
35.00°	583.22	594.04	587.87	584.67	584.93	594.43	593.23	590.86	599.53	594.36	585.71	592.65	579.70	581.70	580.08	596.29	583.22
37.50°	501.01	507.75	510.80	501.95	505.69	506.28	513.31	503.89	520.54	508.56	508.15	505.59	501.11	495.38	498.54	509.12	501.01
40.00°	417.20	424.72	423.21	420.79	418.73	419.52	425.95	421.19	433.51	425.36	423.34	419.57	416.72	413.80	415.10	425.05	417.20
42.50°	337.02	346.00	345.92	340.27	343.85	344.73	351.25	342.69	357.61	346.84	347.30	345.59	339.23	334.43	335.95	348.87	337.02
45.00°	281.08	283.37	282.81	282.34	278.83	275.55	282.69	281.98	286.31	282.59	283.53	276.28	278.92	277.70	279.80	282.96	281.08
47.50°	229.90	237.99	234.27	231.60	233.91	236.91	238.87	235.51	242.09	239.84	234.51	238.05	228.80	229.51	229.32	238.24	229.90
50.00°	201.23	202.65	202.50	199.59	202.25	201.20	204.44	201.46	206.48	204.36	202.70	202.03	199.32	198.29	200.37	200.60	201.23
52.50°	174.00	176.08	175.04	172.19	175.78	176.71	177.42	175.46	179.45	177.75	175.98	176.40	173.15	171.91	173.31	174.61	174.00
55.00°	151.69	153.40	151.60	150.60	152.13	153.44	152.52	152.87	154.52	154.50	154.10	152.30	152.31	151.31	151.64	151.76	151.69
57.50°	130.85	133.56	132.12	130.00	132.16	133.82	134.45	132.11	135.39	134.58	134.47	133.42	132.76	131.91	131.44	133.07	130.85
60.00°	113.87	115.75	115.64	113.59	113.79	115.29	117.87	114.87	117.25	116.43	116.60	115.44	114.89	115.20	114.57	115.83	113.87
62.50°	97.85	99.11	99.84	97.61	99.52	99.27	101.98	99.13	101.16	99.76	99.93	99.78	99.23	98.88	98.29	100.19	97.85
65.00°	83.84	84.29	84.44	84.38	86.63	84.65	86.20	84.53	85.29	85.22	84.01	84.85	85.98	85.31	83.11	85.85	83.84
67.50°	70.22	70.30	70.75	71.30	73.15	72.60	72.75	70.29	72.17	72.11	71.04	71.45	73.00	71.96	69.56	72.68	70.22
70.00°	57.23	58.75	57.93	59.38	59.51	61.34	59.48	58.67	59.20	60.45	59.61	58.92	60.25	60.02	58.39	60.00	57.23
72.50°	45.98	48.10	46.95	47.56	48.62	51.28	48.86	47.71	49.64	49.59	48.82	47.84	48.65	48.14	47.84	47.69	45.98
75.00°	37.08	37.19	36.71	37.57	38.22	40.87	38.37	37.37	40.09	39.58	38.29	37.60	37.86	37.89	38.03	37.15	37.08
77.50°	28.21	26.19	28.08	27.78	29.64	30.01	29.65	27.14	30.76	29.96	28.23	28.51	28.27	27.76	28.35	27.69	28.21
80.00°	19.36	18.31	19.93	19.69	21.27	20.74	21.06	19.67	21.61	21.03	18.31	20.33	19.40	19.29	18.81	19.97	19.36
82.50°	12.29	11.07	13.23	12.14	13.74	13.04	14.32	12.50	14.02	12.34	11.66	13.20	12.48	11.34	11.68	13.09	12.29
85.00°	6.86	6.85	6.87	7.68	6.26	7.72	7.95	7.60	7.13	7.57	5.81	7.79	6.49	7.08	6.48	7.99	6.86
87.50°	3.68	3.07	4.23	3.81	3.91	4.38	4.48	2.83	4.22	3.81	3.30	3.95	3.49	3.35	3.40	3.57	3.68
90.00°	2.19	2.01	2.19	2.31	1.70	2.53	1.57	1.94	1.80	2.45	1.35	1.97	1.61	2.29	1.75	2.06	2.19
92.50°	1.59	1.17	1.57	1.20	1.67	1.68	1.42	1.11	1.34	1.54	1.26	1.39	1.09	1.42	1.21	1.44	1.59
95.00°	1.54	1.24	1.08	1.24	1.63	1.52	1.28	1.29	1.03	1.37	1.36	1.11	0.96	1.30	1.26	1.44	1.54
97.50°	1.49	1.33	1.32	1.39	1.45	1.74	1.14	1.43	1.12	1.31	1.55	1.03	1.20	1.20	1.28	1.58	1.49
100.00°	1.45	1.38	1.59	1.80	1.30	1.59	1.11	1.22	1.16	1.38	1.75	1.01	1.52	1.20	1.29	1.53	1.45
102.50°	1.49	1.41	1.27	1.97	1.31	1.28	1.42	1.07	1.09	1.46	1.66	1.01	1.57	1.25	1.24	1.46	1.49
105.00°	1.56	1.33	0.98	1.71	1.32	1.21	1.60	1.25	1.05	1.51	1.57	1.04	1.57	1.44	1.16	1.51	1.56
107.50°	1.42	1.25	1.23	1.47	1.28	1.23	1.50	1.40	1.08	1.57	1.42	1.09	1.43	1.50	1.46	1.57	1.42
110.00°	1.21	1.25	1.46	1.25	1.26	1.20	1.43	1.38	1.13	1.77	1.27	1.02	1.29	1.36	1.84	1.75	1.21
112.50°	1.36	1.26	1.52	1.33	1.24	1.15	1.40	1.40	1.23	1.93	1.16	0.93	1.53	1.33	1.58	1.92	1.36

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

	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%
RCR	0	1,922	1,922	1,922	1,922	1,877	1,877	1,877	1,877	1,791	1,791	1,791	1,713	1,713	1,713	1,641	1,641	1,608
	1	1,799	1,741	1,688	1,640	1,757	1,704	1,656	1,613	1,635	1,597	1,561	1,573	1,541	1,513	1,514	1,490	1,459
	2	1,676	1,572	1,487	1,415	1,636	1,543	1,464	1,398	1,486	1,421	1,365	1,435	1,381	1,334	1,387	1,343	1,304
	3	1,561	1,426	1,322	1,238	1,524	1,401	1,305	1,227	1,355	1,273	1,206	1,312	1,243	1,185	1,272	1,214	1,165
	4	1,456	1,300	1,185	1,098	1,423	1,279	1,173	1,090	1,241	1,148	1,075	1,205	1,125	1,061	1,171	1,103	1,047
	5	1,361	1,191	1,071	983	1,330	1,173	1,062	978	1,141	1,043	968	1,110	1,025	957	1,082	1,007	948
	6	1,275	1,095	975	888	1,247	1,081	967	885	1,053	952	877	1,027	938	870	1,003	924	863
	7	1,197	1,012	893	809	1,171	1,000	886	806	976	874	800	954	863	795	933	852	789
	8	1,126	939	822	741	1,103	929	817	739	908	807	734	889	797	730	871	788	726
	9	1,062	875	760	682	1,041	866	756	681	848	748	678	831	740	674	816	732	671
	10	1,004	818	706	632	985	810	703	631	794	696	628	780	689	625	766	683	623

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	43.2 fc	7.1 ft
6.5 ft	31.0 fc	8.4 ft
7.5 ft	23.3 fc	9.7 ft
8.0 ft	20.4 fc	10.3 ft
10.0 ft	13.1 fc	12.9 ft
12.0 ft	9.1 fc	15.5 ft
14.0 ft	6.7 fc	18.1 ft
16.0 ft	5.1 fc	20.7 ft
20.0 ft	3.3 fc	25.8 ft
24.0 ft	2.3 fc	31.0 ft
28.0 ft	1.7 fc	36.2 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	17,925	17,925	17,925
45.00°	5,448	5,481	5,404
55.00°	3,624	3,622	3,635
65.00°	2,719	2,738	2,809
75.00°	1,964	1,944	2,024
85.00°	1,078	1,080	985

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	13.5	14.8	13.9	15.1	15.5	13.5	14.8	13.9	15.2	15.5
	3H	14.7	15.9	15.1	16.2	16.6	14.8	15.9	15.2	16.3	16.7
	4H	15.1	16.2	15.5	16.5	16.9	15.2	16.3	15.6	16.6	17.0
	6H	15.3	16.3	15.7	16.7	17.1	15.4	16.4	15.9	16.8	17.2
	8H	15.3	16.3	15.8	16.7	17.1	15.5	16.4	15.9	16.8	17.2
	12H	15.4	16.3	15.8	16.7	17.1	15.5	16.4	15.9	16.8	17.2
4H	2H	13.9	15.0	14.3	15.3	15.7	13.9	15.0	14.3	15.4	15.8
	3H	15.3	16.2	15.7	16.6	17.0	15.4	16.3	15.8	16.7	17.1
	4H	15.8	16.6	16.2	17.0	17.5	15.9	16.7	16.3	17.1	17.6
	6H	16.1	16.8	16.6	17.2	17.7	16.2	16.9	16.7	17.4	17.9
	8H	16.1	16.8	16.6	17.2	17.7	16.3	17.0	16.8	17.4	17.9
	12H	16.2	16.7	16.7	17.2	17.7	16.3	16.9	16.8	17.4	17.9
8H	4H	15.9	16.6	16.4	17.0	17.5	16.0	16.7	16.5	17.1	17.6
	6H	16.3	16.8	16.8	17.3	17.8	16.5	17.0	17.0	17.5	18.0
	8H	16.4	16.9	16.9	17.4	17.9	16.6	17.0	17.1	17.6	18.1
	12H	16.5	16.9	17.0	17.4	18.0	16.6	17.1	17.2	17.6	18.2
12H	4H	15.9	16.5	16.4	17.0	17.4	16.0	16.6	16.5	17.1	17.6
	6H	16.3	16.8	16.8	17.2	17.8	16.5	16.9	17.0	17.4	18.0
	8H	16.4	16.8	17.0	17.3	17.9	16.6	17.0	17.1	17.5	18.1

Corrected UGR values based on total output lumens

SHR = 1.0