

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P709170

Luminaire Tested: **4APN-32-34L840-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709170
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-32-34L840-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

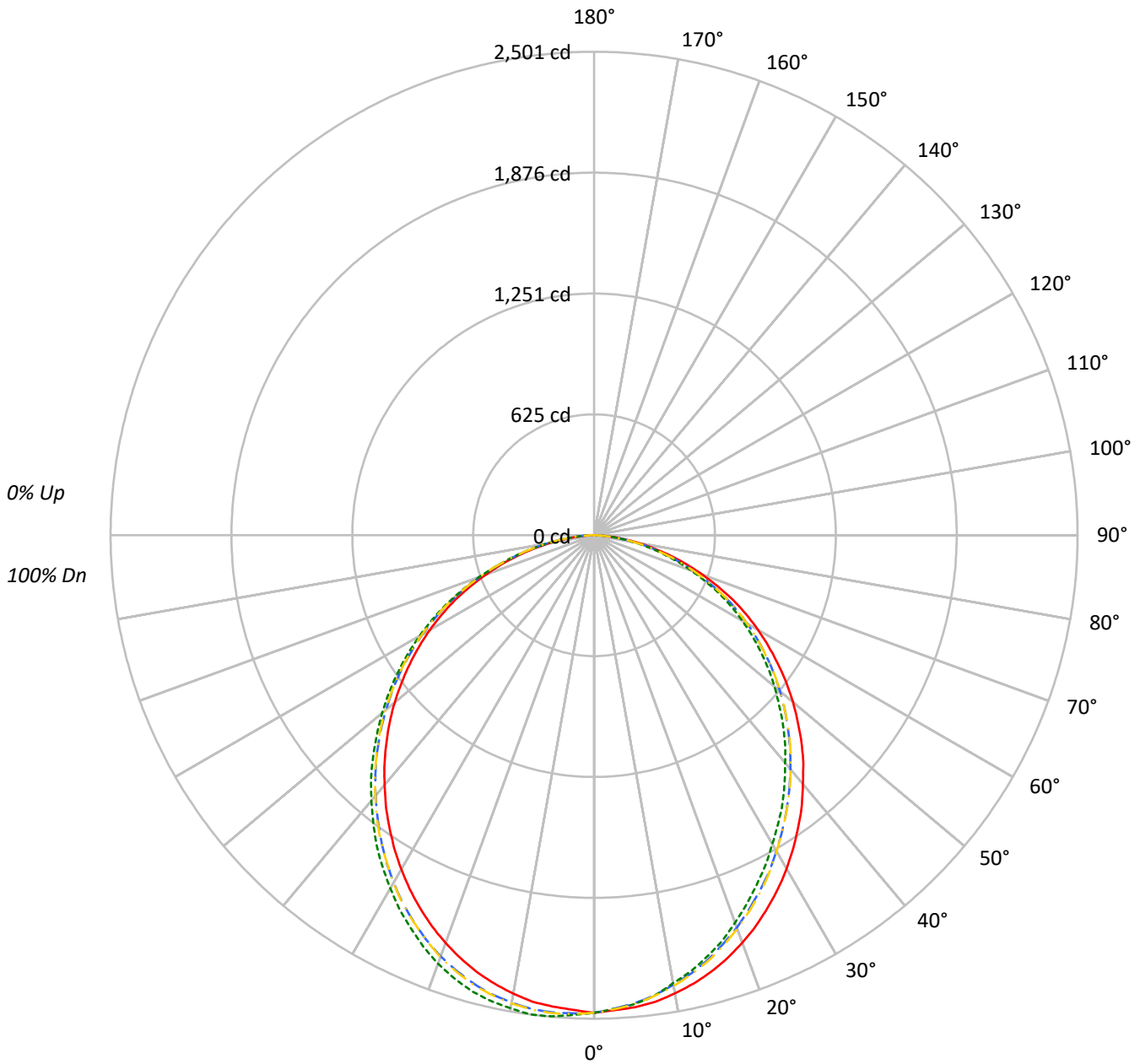
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6530.5 lumens
Efficiency: N/A
Efficacy: 89.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.19 / 1.32
Luminous Opening: Rectangular (W 0.29' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 73
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT

TEST NUMBER: P709170
CATALOG NUMBER: 4APN-32-34L840-UNV

Luminous Intensity Polar Plot



— 0°-180° - - 45°-225° - - - 90°-270° - · - 135°-315°



TEST NUMBER: P709170
 CATALOG NUMBER: 4APN-32-34L840-UNV

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	86	86	86	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	72	72	72	72	70
3	90	80	72	66	88	78	71	65	75	69	64	73	67	63	70	66	62	62	62	62	59
4	83	71	62	56	81	70	62	55	67	60	54	65	59	54	63	57	53	53	53	53	51
5	76	64	55	48	74	62	54	48	60	53	47	58	52	47	56	51	46	46	46	46	44
6	71	57	48	42	69	56	48	42	55	47	41	53	46	41	51	45	41	41	41	41	39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	36	36	36	34
8	61	48	39	33	59	47	39	33	45	38	33	44	38	33	43	37	32	32	32	32	31
9	57	44	35	30	56	43	35	30	42	35	30	41	34	30	40	34	29	29	29	29	28
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	27	27	27	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	22793	22793	22793	22793
5°	22692	22545	22666	23136
10°	22547	22044	22560	23281
15°	22337	21561	22351	23320
20°	22021	20938	22034	23159
25°	21636	20277	21679	22832
30°	21220	19643	21251	22457
35°	20734	19134	20784	22090
40°	20233	18520	20302	21578
45°	19799	18020	19818	21087
50°	19281	17491	19323	20531
55°	18669	16917	18738	19951
60°	18069	16329	18096	19220
65°	17323	15614	17323	18369
70°	16083	14440	16045	17062
75°	14583	13083	14480	15360
80°	12566	11253	12332	13182
85°	9675	8596	9369	10596



TEST NUMBER: P709170
 CATALOG NUMBER: 4APN-32-34L840-UNV

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	233.3	3.6
10°-20°	660.6	10.1
20°-30°	978.0	15.0
30°-40°	1147.4	17.6
40°-50°	1162.9	17.8
50°-60°	1032.1	15.8
60°-70°	774.8	11.9
70°-80°	430.3	6.6
80°-90°	111.1	1.7
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1871.9	28.7
0°-40°	3019.3	46.2
0°-60°	5214.3	79.8
0°-90°	6530.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6530.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2470	2470	2470	2470	2470	
5°	2450	2434	2447	2498	2450	233
15°	2338	2257	2340	2442	2338	659
25°	2125	1992	2130	2243	2125	979
35°	1841	1699	1845	1961	1841	1152
45°	1517	1381	1519	1616	1517	1170
55°	1161	1052	1165	1240	1161	1039
65°	794	715	794	841	794	782
75°	409	367	406	431	409	435
85°	91	81	88	100	91	110
90°	0	0	0	0	0	



TEST NUMBER: P709170

CATALOG NUMBER: 4APN-32-34L840-UNV

CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	2470.5	2470.5	2470.5	2470.5	2470.5	2470.5	2470.5	2470.5	2470.5	2470.5	2470.5
2.5°	2458.9	2464.7	2472.0	2464.7	2453.1	2447.3	2447.3	2445.9	2450.2	2451.7	2450.2
5°	2450.2	2453.1	2454.6	2445.9	2432.8	2425.6	2422.6	2421.2	2427.0	2434.3	2427.0
7.5°	2434.3	2432.8	2431.4	2419.7	2405.2	2395.1	2390.7	2389.3	2395.1	2402.3	2396.5
10°	2406.7	2405.2	2400.9	2386.4	2367.5	2354.5	2350.1	2345.8	2350.1	2353.0	2350.1
12.5°	2376.2	2370.4	2364.6	2348.7	2328.4	2313.8	2306.6	2300.8	2306.6	2310.9	2308.0
15°	2338.5	2329.8	2319.7	2302.2	2281.9	2266.0	2257.3	2251.5	2255.8	2257.3	2257.3
17.5°	2293.5	2283.4	2273.2	2251.5	2226.8	2209.4	2199.2	2192.0	2197.8	2200.7	2200.7
20°	2242.8	2231.2	2218.1	2194.9	2168.8	2149.9	2138.3	2129.6	2131.1	2132.5	2132.5
22.5°	2187.6	2173.1	2157.2	2132.5	2104.9	2084.6	2073.0	2062.9	2062.9	2064.3	2064.3
25°	2125.3	2109.3	2093.3	2068.7	2039.7	2017.9	2003.4	1993.2	1993.2	1991.8	1994.7
27.5°	2061.4	2044.0	2028.1	2002.0	1971.5	1949.7	1935.2	1925.1	1923.6	1922.2	1925.1
30°	1991.8	1971.5	1954.1	1926.5	1897.5	1875.7	1861.2	1849.6	1846.7	1843.8	1846.7
32.5°	1917.8	1899.0	1880.1	1851.1	1822.1	1800.3	1785.8	1774.2	1772.7	1771.3	1774.2
35°	1840.9	1820.6	1803.2	1775.6	1746.6	1724.9	1708.9	1698.8	1698.8	1698.8	1698.8
37.5°	1765.5	1745.2	1726.3	1698.8	1669.7	1648.0	1632.0	1621.9	1619.0	1617.5	1619.0
40°	1679.9	1662.5	1645.1	1619.0	1590.0	1568.2	1555.1	1543.5	1540.6	1537.7	1542.1
42.5°	1601.6	1584.2	1565.3	1540.6	1511.6	1489.9	1475.4	1465.2	1463.7	1462.3	1463.7
45°	1517.4	1497.1	1478.3	1455.0	1428.9	1408.6	1394.1	1384.0	1382.5	1381.1	1382.5
47.5°	1428.9	1413.0	1397.0	1373.8	1347.7	1327.4	1314.3	1302.7	1299.8	1296.9	1299.8
50°	1343.3	1325.9	1310.0	1288.2	1263.5	1244.7	1233.1	1222.9	1220.0	1218.6	1220.0
52.5°	1253.4	1237.4	1222.9	1201.2	1180.9	1162.0	1148.9	1140.2	1138.8	1137.3	1138.8
55°	1160.6	1146.0	1133.0	1115.6	1095.3	1077.9	1066.3	1056.1	1054.7	1051.7	1054.7
57.5°	1070.6	1059.0	1045.9	1027.1	1008.2	992.3	982.1	973.4	972.0	970.5	972.0
60°	979.2	967.6	956.0	940.0	921.2	905.2	896.5	889.3	886.4	884.9	886.4
62.5°	887.8	876.2	867.5	851.6	834.1	821.1	812.4	805.1	802.2	800.8	802.2
65°	793.5	783.4	773.2	758.7	745.7	735.5	726.8	719.5	716.6	715.2	715.2
67.5°	693.4	684.7	677.5	664.4	649.9	639.8	631.0	625.2	622.3	620.9	622.3
70°	596.2	589.0	581.7	571.6	560.0	551.3	545.5	539.7	536.8	535.3	535.3
72.5°	503.4	497.6	490.3	481.6	472.9	464.2	458.4	454.1	451.2	449.7	449.7
75°	409.1	403.3	400.4	393.1	384.4	378.6	372.8	369.9	367.0	367.0	367.0
77.5°	320.6	317.7	314.8	307.5	301.7	295.9	291.6	290.1	287.2	287.2	287.2
80°	236.5	235.0	233.6	229.2	223.4	217.6	214.7	213.3	211.8	211.8	211.8
82.5°	159.6	159.6	158.1	153.8	149.4	148.0	145.1	143.6	143.6	143.6	143.6
85°	91.4	91.4	91.4	89.9	87.0	87.0	84.1	82.7	81.2	81.2	81.2
87.5°	36.3	37.7	39.2	37.7	34.8	34.8	34.8	34.8	34.8	34.8	34.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P709170

CATALOG NUMBER: 4APN-32-34L840-UNV

CANDELA DISTRIBUTION (continued):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	2470.5	2470.5	2470.5	2470.5	2470.5	2470.5	2470.5	2470.5	2470.5	2470.5	2470.5
2.5°	2445.9	2448.8	2450.2	2457.5	2466.2	2472.0	2464.7	2457.5	2469.1	2482.1	2482.1
5°	2421.2	2424.1	2428.5	2437.2	2448.8	2456.0	2453.1	2447.3	2464.7	2479.2	2480.7
7.5°	2390.7	2393.6	2399.4	2408.1	2422.6	2432.8	2432.8	2434.3	2450.2	2467.6	2472.0
10°	2345.8	2353.0	2361.7	2374.8	2389.3	2402.3	2406.7	2408.1	2428.5	2447.3	2453.1
12.5°	2303.7	2310.9	2319.7	2334.2	2351.6	2366.1	2370.4	2376.2	2398.0	2419.7	2428.5
15°	2255.8	2263.1	2273.2	2287.7	2306.6	2322.6	2331.3	2340.0	2361.7	2384.9	2395.1
17.5°	2199.2	2206.5	2216.7	2234.1	2255.8	2274.7	2284.8	2295.0	2319.7	2344.3	2354.5
20°	2132.5	2142.7	2157.2	2174.6	2199.2	2221.0	2232.6	2244.2	2270.3	2295.0	2306.6
22.5°	2064.3	2075.9	2091.9	2112.2	2138.3	2161.5	2176.0	2190.5	2216.7	2241.3	2254.4
25°	1996.1	2009.2	2025.2	2046.9	2071.6	2094.8	2112.2	2129.6	2155.7	2181.8	2194.9
27.5°	1926.5	1938.1	1954.1	1975.8	2003.4	2028.1	2045.5	2064.3	2090.4	2118.0	2131.1
30°	1849.6	1862.7	1877.2	1899.0	1929.4	1957.0	1974.4	1994.7	2020.8	2048.4	2061.4
32.5°	1775.6	1787.2	1801.8	1823.5	1854.0	1883.0	1901.9	1922.2	1948.3	1975.8	1987.4
35°	1698.8	1710.4	1726.3	1748.1	1778.5	1806.1	1825.0	1845.3	1869.9	1896.0	1909.1
37.5°	1623.3	1634.9	1650.9	1672.6	1701.7	1729.2	1748.1	1768.4	1793.1	1817.7	1829.3
40°	1545.0	1556.6	1569.6	1591.4	1620.4	1648.0	1665.4	1685.7	1710.4	1736.5	1748.1
42.5°	1465.2	1476.8	1492.8	1514.5	1542.1	1566.7	1585.6	1604.5	1627.7	1650.9	1662.5
45°	1385.4	1395.6	1411.5	1431.8	1457.9	1481.2	1500.0	1518.9	1540.6	1562.4	1574.0
47.5°	1302.7	1314.3	1327.4	1347.7	1373.8	1398.5	1417.3	1434.7	1455.0	1476.8	1487.0
50°	1222.9	1233.1	1246.1	1265.0	1289.7	1312.9	1328.8	1346.2	1365.1	1385.4	1394.1
52.5°	1140.2	1150.4	1163.5	1182.3	1202.6	1224.4	1238.9	1254.8	1273.7	1292.6	1301.3
55°	1056.1	1063.4	1075.0	1092.4	1114.1	1134.4	1148.9	1164.9	1180.9	1196.8	1207.0
57.5°	973.4	982.1	993.7	1009.7	1028.5	1047.4	1060.5	1073.5	1089.5	1105.4	1112.7
60°	889.3	896.5	905.2	919.7	938.6	954.6	967.6	980.7	993.7	1008.2	1015.5
62.5°	803.7	810.9	819.6	834.1	850.1	864.6	876.2	887.8	899.4	912.5	919.7
65°	718.1	725.3	734.0	744.2	757.3	770.3	781.9	793.5	802.2	810.9	818.2
67.5°	625.2	632.5	641.2	649.9	661.5	674.6	683.3	693.4	702.1	712.3	716.6
70°	538.2	544.0	552.7	560.0	570.1	578.8	586.1	594.8	600.6	609.3	616.5
72.5°	452.6	458.4	465.7	472.9	478.7	486.0	494.7	501.9	509.2	517.9	520.8
75°	369.9	372.8	378.6	384.4	390.2	396.0	400.4	406.2	412.0	417.8	422.2
77.5°	288.7	291.6	297.4	301.7	306.1	310.4	313.3	316.3	322.1	326.4	330.8
80°	211.8	214.7	219.1	223.4	227.8	232.1	232.1	232.1	239.4	245.2	246.6
82.5°	143.6	145.1	148.0	150.9	153.8	156.7	156.7	155.2	159.6	163.9	166.8
85°	82.7	84.1	87.0	87.0	88.5	88.5	88.5	88.5	91.4	95.7	98.6
87.5°	33.4	33.4	34.8	34.8	36.3	36.3	34.8	33.4	36.3	40.6	42.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P709170

CATALOG NUMBER: 4APN-32-34L840-UNV

CANDELA DISTRIBUTION (continued):

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	2470.5	2470.5	2470.5	2470.5	2470.5	2470.5	2470.5	2470.5	2470.5	2470.5	2470.5
2.5°	2476.3	2474.9	2479.2	2480.7	2483.6	2483.6	2485.0	2485.0	2482.1	2477.8	2479.2
5°	2477.8	2477.8	2482.1	2486.5	2492.3	2498.1	2493.7	2489.4	2486.5	2482.1	2480.7
7.5°	2470.5	2473.4	2477.8	2485.0	2492.3	2501.0	2495.2	2489.4	2482.1	2476.3	2473.4
10°	2453.1	2456.0	2463.3	2470.5	2477.8	2485.0	2479.2	2473.4	2467.6	2460.4	2457.5
12.5°	2431.4	2435.7	2444.4	2451.7	2458.9	2467.6	2460.4	2453.1	2445.9	2438.6	2434.3
15°	2399.4	2405.2	2415.4	2424.1	2434.3	2441.5	2435.7	2429.9	2421.2	2411.0	2403.8
17.5°	2358.8	2367.5	2377.7	2387.8	2396.5	2403.8	2399.4	2393.6	2383.5	2371.9	2363.2
20°	2313.8	2322.6	2331.3	2341.4	2351.6	2358.8	2353.0	2345.8	2335.6	2326.9	2318.2
22.5°	2261.6	2270.3	2280.5	2289.2	2297.9	2305.1	2297.9	2289.2	2280.5	2271.8	2263.1
25°	2202.1	2210.8	2222.5	2231.2	2237.0	2242.8	2237.0	2229.7	2221.0	2212.3	2203.6
27.5°	2139.8	2148.5	2160.1	2168.8	2174.6	2180.4	2174.6	2167.3	2158.6	2149.9	2141.2
30°	2070.1	2078.8	2090.4	2099.1	2103.5	2107.9	2102.0	2096.2	2089.0	2080.3	2071.6
32.5°	1996.1	2004.9	2013.6	2022.3	2029.5	2035.3	2029.5	2023.7	2015.0	2003.4	1994.7
35°	1917.8	1926.5	1936.7	1945.4	1954.1	1961.3	1952.6	1942.5	1935.2	1928.0	1920.7
37.5°	1835.1	1845.3	1856.9	1867.0	1869.9	1875.7	1869.9	1864.1	1856.9	1849.6	1840.9
40°	1753.9	1762.6	1772.7	1782.9	1787.2	1791.6	1785.8	1780.0	1771.3	1764.0	1755.3
42.5°	1669.7	1678.4	1687.2	1695.9	1701.7	1707.5	1701.7	1693.0	1687.2	1681.3	1674.1
45°	1582.7	1591.4	1598.7	1607.4	1611.7	1616.1	1610.3	1603.0	1597.2	1592.9	1585.6
47.5°	1494.2	1501.5	1508.7	1516.0	1518.9	1523.2	1517.4	1513.1	1508.7	1504.4	1498.6
50°	1401.4	1408.6	1417.3	1424.6	1426.0	1430.4	1424.6	1420.2	1415.9	1411.5	1407.2
52.5°	1310.0	1315.8	1323.0	1330.3	1333.2	1336.1	1330.3	1324.5	1320.1	1317.2	1312.9
55°	1214.2	1220.0	1227.3	1233.1	1237.4	1240.3	1234.5	1228.7	1224.4	1222.9	1218.6
57.5°	1118.5	1124.3	1131.5	1137.3	1140.2	1143.1	1137.3	1131.5	1128.6	1125.7	1122.8
60°	1021.3	1027.1	1032.9	1037.2	1040.1	1041.6	1035.8	1031.4	1030.0	1028.5	1025.6
62.5°	925.5	928.4	934.2	937.1	940.0	941.5	937.1	934.2	932.8	931.3	929.9
65°	825.4	832.7	837.0	839.9	839.9	841.4	837.0	835.6	834.1	832.7	829.8
67.5°	722.4	728.2	731.1	734.0	734.0	734.0	734.0	734.0	732.6	729.7	726.8
70°	623.8	628.1	631.0	632.5	632.5	632.5	629.6	628.1	629.6	629.6	628.1
72.5°	523.7	526.6	528.1	529.5	528.1	528.1	528.1	531.0	531.0	529.5	526.6
75°	426.5	429.4	430.9	432.3	430.9	430.9	430.9	433.8	432.3	432.3	430.9
77.5°	335.1	336.6	336.6	338.0	336.6	336.6	338.0	340.9	339.5	339.5	339.5
80°	248.1	248.1	248.1	249.5	248.1	248.1	249.5	252.4	251.0	251.0	251.0
82.5°	168.3	169.7	169.7	169.7	171.2	172.6	172.6	172.6	172.6	172.6	171.2
85°	100.1	101.5	100.1	100.1	100.1	100.1	101.5	103.0	103.0	103.0	103.0
87.5°	43.5	45.0	43.5	42.1	40.6	40.6	43.5	46.4	46.4	45.0	45.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P709170
 CATALOG NUMBER: 4APN-32-34L840-UNV

CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	2470.5	2470.5	2470.5	2470.5
2.5°	2485.0	2485.0	2472.0	2458.9
5°	2483.6	2480.7	2466.2	2450.2
7.5°	2474.9	2470.5	2451.7	2434.3
10°	2454.6	2448.8	2428.5	2406.7
12.5°	2429.9	2421.2	2398.0	2376.2
15°	2398.0	2387.8	2363.2	2338.5
17.5°	2355.9	2344.3	2319.7	2293.5
20°	2310.9	2297.9	2270.3	2242.8
22.5°	2255.8	2244.2	2215.2	2187.6
25°	2196.3	2183.3	2154.3	2125.3
27.5°	2132.5	2118.0	2089.0	2061.4
30°	2062.9	2048.4	2019.4	1991.8
32.5°	1988.9	1977.3	1948.3	1917.8
35°	1913.5	1899.0	1869.9	1840.9
37.5°	1833.7	1820.6	1793.1	1765.5
40°	1749.5	1736.5	1707.5	1679.9
42.5°	1666.8	1655.2	1627.7	1601.6
45°	1578.3	1566.7	1540.6	1517.4
47.5°	1489.9	1478.3	1453.6	1428.9
50°	1399.9	1388.3	1365.1	1343.3
52.5°	1305.6	1296.9	1275.2	1253.4
55°	1211.3	1201.2	1179.4	1160.6
57.5°	1117.0	1109.8	1089.5	1070.6
60°	1019.8	1011.1	995.2	979.2
62.5°	925.5	918.3	902.3	887.8
65°	825.4	819.6	806.6	793.5
67.5°	722.4	718.1	705.0	693.4
70°	623.8	616.5	606.4	596.2
72.5°	523.7	520.8	512.1	503.4
75°	428.0	425.1	416.3	409.1
77.5°	338.0	335.1	327.9	320.6
80°	249.5	248.1	242.3	236.5
82.5°	171.2	169.7	165.4	159.6
85°	103.0	100.1	95.7	91.4
87.5°	45.0	43.5	39.2	36.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)