

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: P709194

Luminaire Tested: **4APN-32-34L940-UNV**

Issue Date: 09/12/2023



**Test Information**

Test Method: LM-79-08  
Report Number: P709194  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 09/12/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: 4APN-32-34L940-UNV  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

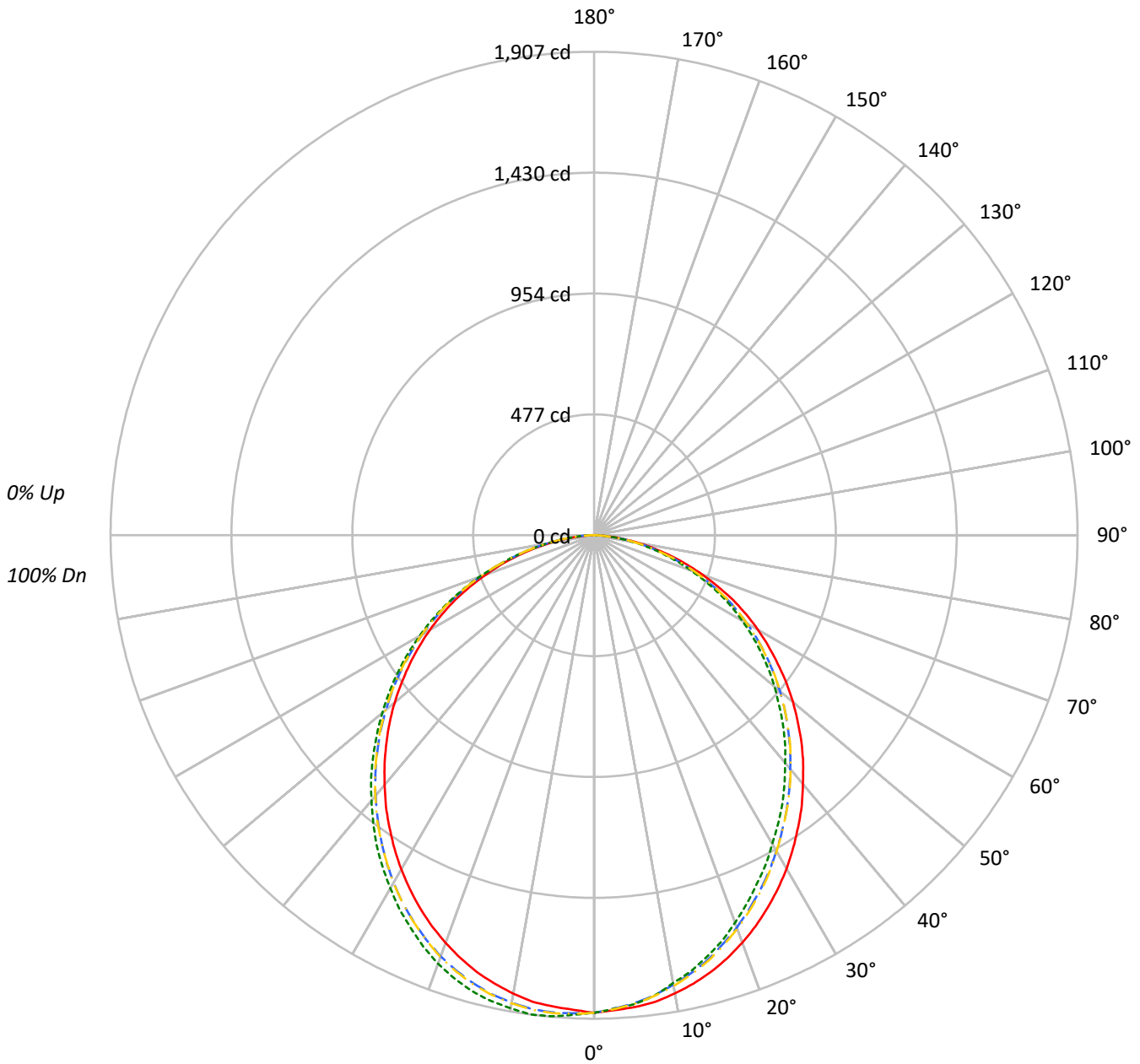
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4978.8 lumens  
Efficiency: N/A  
Efficacy: 68.2 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: P709194  
CATALOG NUMBER: 4APN-32-34L940-UNV

### Luminous Intensity Polar Plot



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



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 CATALOG NUMBER: 4APN-32-34L940-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°	17378	17378	17378	17378
5°	17300	17188	17280	17638
10°	17190	16806	17201	17750
15°	17030	16437	17040	17779
20°	16788	15963	16799	17657
25°	16495	15458	16528	17407
30°	16177	14976	16202	17120
35°	15808	14587	15845	16842
40°	15426	14120	15479	16451
45°	15095	13738	15109	16076
50°	14701	13334	14732	15652
55°	14232	12899	14285	15210
60°	13777	12450	13797	14653
65°	13208	11904	13208	14005
70°	12263	11009	12233	13008
75°	11118	9974	11040	11710
80°	9580	8581	9404	10047
85°	7378	6553	7145	8077



TEST NUMBER: P709194  
 CATALOG NUMBER: 4APN-32-34L940-UNV

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	177.9	3.6
10°-20°	503.6	10.1
20°-30°	745.6	15.0
30°-40°	874.8	17.6
40°-50°	886.6	17.8
50°-60°	786.9	15.8
60°-70°	590.7	11.9
70°-80°	328.0	6.6
80°-90°	84.7	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°	1427.1	28.7
0°-40°	2301.9	46.2
0°-60°	3975.4	79.8
0°-90°	4978.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4978.8	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1884	1884	1884	1884	1884	
5°	1868	1856	1866	1904	1868	177
15°	1783	1721	1784	1861	1783	502
25°	1620	1518	1624	1710	1620	747
35°	1404	1295	1407	1495	1404	878
45°	1157	1053	1158	1232	1157	892
55°	885	802	888	946	885	792
65°	605	545	605	642	605	596
75°	312	280	310	328	312	332
85°	70	62	68	76	70	84
90°	0	0	0	0	0	



TEST NUMBER: P709194

CATALOG NUMBER: 4APN-32-34L940-UNV

**CANDELA DISTRIBUTION (FULL):**

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	1883.5	1883.5	1883.5	1883.5	1883.5	1883.5	1883.5	1883.5	1883.5	1883.5	1883.5
2.5°	1874.7	1879.1	1884.6	1879.1	1870.3	1865.8	1865.8	1864.7	1868.0	1869.1	1868.0
5°	1868.0	1870.3	1871.4	1864.7	1854.8	1849.2	1847.0	1845.9	1850.3	1855.9	1850.3
7.5°	1855.9	1854.8	1853.7	1844.8	1833.8	1826.0	1822.7	1821.6	1826.0	1831.5	1827.1
10°	1834.9	1833.8	1830.4	1819.4	1805.0	1795.0	1791.7	1788.4	1791.7	1793.9	1791.7
12.5°	1811.6	1807.2	1802.8	1790.6	1775.1	1764.1	1758.5	1754.1	1758.5	1761.9	1759.7
15°	1782.9	1776.2	1768.5	1755.2	1739.7	1727.6	1720.9	1716.5	1719.8	1720.9	1720.9
17.5°	1748.6	1740.9	1733.1	1716.5	1697.7	1684.4	1676.7	1671.2	1675.6	1677.8	1677.8
20°	1709.9	1701.0	1691.1	1673.4	1653.5	1639.1	1630.3	1623.6	1624.7	1625.8	1625.8
22.5°	1667.9	1656.8	1644.6	1625.8	1604.8	1589.3	1580.5	1572.7	1572.7	1573.8	1573.8
25°	1620.3	1608.1	1596.0	1577.2	1555.0	1538.5	1527.4	1519.7	1519.7	1518.5	1520.8
27.5°	1571.6	1558.4	1546.2	1526.3	1503.1	1486.5	1475.4	1467.7	1466.6	1465.5	1467.7
30°	1518.5	1503.1	1489.8	1468.8	1446.7	1430.1	1419.0	1410.2	1407.9	1405.7	1407.9
32.5°	1462.1	1447.8	1433.4	1411.3	1389.1	1372.6	1361.5	1352.6	1351.5	1350.4	1352.6
35°	1403.5	1388.0	1374.8	1353.8	1331.6	1315.0	1302.9	1295.1	1295.1	1295.1	1295.1
37.5°	1346.0	1330.5	1316.1	1295.1	1273.0	1256.4	1244.3	1236.5	1234.3	1233.2	1234.3
40°	1280.8	1267.5	1254.2	1234.3	1212.2	1195.6	1185.6	1176.8	1174.6	1172.4	1175.7
42.5°	1221.0	1207.8	1193.4	1174.6	1152.5	1135.9	1124.8	1117.1	1116.0	1114.9	1116.0
45°	1156.9	1141.4	1127.0	1109.3	1089.4	1073.9	1062.9	1055.1	1054.0	1052.9	1054.0
47.5°	1089.4	1077.2	1065.1	1047.4	1027.5	1012.0	1002.0	993.2	991.0	988.8	991.0
50°	1024.2	1010.9	998.7	982.1	963.3	949.0	940.1	932.4	930.2	929.0	930.2
52.5°	955.6	943.4	932.4	915.8	900.3	885.9	876.0	869.3	868.2	867.1	868.2
55°	884.8	873.7	863.8	850.5	835.0	821.8	812.9	805.2	804.1	801.9	804.1
57.5°	816.2	807.4	797.4	783.1	768.7	756.5	748.8	742.1	741.0	739.9	741.0
60°	746.6	737.7	728.9	716.7	702.3	690.1	683.5	678.0	675.8	674.7	675.8
62.5°	676.9	668.0	661.4	649.2	636.0	626.0	619.4	613.8	611.6	610.5	611.6
65°	605.0	597.2	589.5	578.4	568.5	560.7	554.1	548.6	546.4	545.3	545.3
67.5°	528.7	522.0	516.5	506.6	495.5	487.7	481.1	476.7	474.5	473.4	474.5
70°	454.6	449.0	443.5	435.8	426.9	420.3	415.9	411.4	409.2	408.1	408.1
72.5°	383.8	379.4	373.8	367.2	360.6	353.9	349.5	346.2	344.0	342.9	342.9
75°	311.9	307.5	305.3	299.7	293.1	288.7	284.2	282.0	279.8	279.8	279.8
77.5°	244.4	242.2	240.0	234.5	230.0	225.6	222.3	221.2	219.0	219.0	219.0
80°	180.3	179.2	178.1	174.7	170.3	165.9	163.7	162.6	161.5	161.5	161.5
82.5°	121.7	121.7	120.6	117.2	113.9	112.8	110.6	109.5	109.5	109.5	109.5
85°	69.7	69.7	69.7	68.6	66.4	66.4	64.1	63.0	61.9	61.9	61.9
87.5°	27.7	28.8	29.9	28.8	26.5	26.5	26.5	26.5	26.5	26.5	26.5
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: P709194

CATALOG NUMBER: 4APN-32-34L940-UNV

**CANDELA DISTRIBUTION (continued):**

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	1883.5	1883.5	1883.5	1883.5	1883.5	1883.5	1883.5	1883.5	1883.5	1883.5	1883.5
2.5°	1864.7	1866.9	1868.0	1873.6	1880.2	1884.6	1879.1	1873.6	1882.4	1892.4	1892.4
5°	1845.9	1848.1	1851.5	1858.1	1866.9	1872.5	1870.3	1865.8	1879.1	1890.2	1891.3
7.5°	1822.7	1824.9	1829.3	1836.0	1847.0	1854.8	1854.8	1855.9	1868.0	1881.3	1884.6
10°	1788.4	1793.9	1800.6	1810.5	1821.6	1831.5	1834.9	1836.0	1851.5	1865.8	1870.3
12.5°	1756.3	1761.9	1768.5	1779.6	1792.8	1803.9	1807.2	1811.6	1828.2	1844.8	1851.5
15°	1719.8	1725.4	1733.1	1744.2	1758.5	1770.7	1777.3	1784.0	1800.6	1818.3	1826.0
17.5°	1676.7	1682.2	1690.0	1703.2	1719.8	1734.2	1742.0	1749.7	1768.5	1787.3	1795.0
20°	1625.8	1633.6	1644.6	1657.9	1676.7	1693.3	1702.1	1711.0	1730.9	1749.7	1758.5
22.5°	1573.8	1582.7	1594.9	1610.3	1630.3	1647.9	1659.0	1670.1	1690.0	1708.8	1718.7
25°	1521.9	1531.8	1544.0	1560.6	1579.4	1597.1	1610.3	1623.6	1643.5	1663.4	1673.4
27.5°	1468.8	1477.6	1489.8	1506.4	1527.4	1546.2	1559.5	1573.8	1593.8	1614.8	1624.7
30°	1410.2	1420.1	1431.2	1447.8	1471.0	1492.0	1505.3	1520.8	1540.7	1561.7	1571.6
32.5°	1353.8	1362.6	1373.7	1390.2	1413.5	1435.6	1450.0	1465.5	1485.4	1506.4	1515.2
35°	1295.1	1304.0	1316.1	1332.7	1356.0	1377.0	1391.4	1406.8	1425.6	1445.5	1455.5
37.5°	1237.6	1246.5	1258.6	1275.2	1297.3	1318.4	1332.7	1348.2	1367.0	1385.8	1394.7
40°	1177.9	1186.7	1196.7	1213.3	1235.4	1256.4	1269.7	1285.2	1304.0	1323.9	1332.7
42.5°	1117.1	1125.9	1138.1	1154.7	1175.7	1194.5	1208.9	1223.2	1240.9	1258.6	1267.5
45°	1056.2	1064.0	1076.1	1091.6	1111.5	1129.2	1143.6	1158.0	1174.6	1191.2	1200.0
47.5°	993.2	1002.0	1012.0	1027.5	1047.4	1066.2	1080.6	1093.8	1109.3	1125.9	1133.7
50°	932.4	940.1	950.1	964.4	983.2	1000.9	1013.1	1026.4	1040.8	1056.2	1062.9
52.5°	869.3	877.1	887.0	901.4	916.9	933.5	944.5	956.7	971.1	985.5	992.1
55°	805.2	810.7	819.5	832.8	849.4	864.9	876.0	888.1	900.3	912.5	920.2
57.5°	742.1	748.8	757.6	769.8	784.2	798.5	808.5	818.4	830.6	842.8	848.3
60°	678.0	683.5	690.1	701.2	715.6	727.8	737.7	747.7	757.6	768.7	774.2
62.5°	612.7	618.3	624.9	636.0	648.1	659.2	668.0	676.9	685.7	695.7	701.2
65°	547.5	553.0	559.6	567.4	577.3	587.3	596.1	605.0	611.6	618.3	623.8
67.5°	476.7	482.2	488.9	495.5	504.3	514.3	520.9	528.7	535.3	543.0	546.4
70°	410.3	414.8	421.4	426.9	434.7	441.3	446.8	453.5	457.9	464.5	470.1
72.5°	345.1	349.5	355.0	360.6	365.0	370.5	377.1	382.7	388.2	394.8	397.1
75°	282.0	284.2	288.7	293.1	297.5	301.9	305.3	309.7	314.1	318.5	321.8
77.5°	220.1	222.3	226.7	230.0	233.4	236.7	238.9	241.1	245.5	248.9	252.2
80°	161.5	163.7	167.0	170.3	173.6	177.0	177.0	177.0	182.5	186.9	188.0
82.5°	109.5	110.6	112.8	115.0	117.2	119.4	119.4	118.3	121.7	125.0	127.2
85°	63.0	64.1	66.4	66.4	67.5	67.5	67.5	67.5	69.7	73.0	75.2
87.5°	25.4	25.4	26.5	26.5	27.7	27.7	26.5	25.4	27.7	31.0	32.1
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: P709194

CATALOG NUMBER: 4APN-32-34L940-UNV

**CANDELA DISTRIBUTION (continued):**

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	1883.5	1883.5	1883.5	1883.5	1883.5	1883.5	1883.5	1883.5	1883.5	1883.5	1883.5
2.5°	1888.0	1886.8	1890.2	1891.3	1893.5	1893.5	1894.6	1894.6	1892.4	1889.1	1890.2
5°	1889.1	1889.1	1892.4	1895.7	1900.1	1904.5	1901.2	1897.9	1895.7	1892.4	1891.3
7.5°	1883.5	1885.7	1889.1	1894.6	1900.1	1906.8	1902.3	1897.9	1892.4	1888.0	1885.7
10°	1870.3	1872.5	1878.0	1883.5	1889.1	1894.6	1890.2	1885.7	1881.3	1875.8	1873.6
12.5°	1853.7	1857.0	1863.6	1869.1	1874.7	1881.3	1875.8	1870.3	1864.7	1859.2	1855.9
15°	1829.3	1833.8	1841.5	1848.1	1855.9	1861.4	1857.0	1852.6	1845.9	1838.2	1832.7
17.5°	1798.4	1805.0	1812.7	1820.5	1827.1	1832.7	1829.3	1824.9	1817.2	1808.3	1801.7
20°	1764.1	1770.7	1777.3	1785.1	1792.8	1798.4	1793.9	1788.4	1780.7	1774.0	1767.4
22.5°	1724.3	1730.9	1738.6	1745.3	1751.9	1757.4	1751.9	1745.3	1738.6	1732.0	1725.4
25°	1678.9	1685.6	1694.4	1701.0	1705.5	1709.9	1705.5	1699.9	1693.3	1686.7	1680.0
27.5°	1631.4	1638.0	1646.8	1653.5	1657.9	1662.3	1657.9	1652.4	1645.7	1639.1	1632.5
30°	1578.3	1584.9	1593.8	1600.4	1603.7	1607.0	1602.6	1598.2	1592.6	1586.0	1579.4
32.5°	1521.9	1528.5	1535.1	1541.8	1547.3	1551.7	1547.3	1542.9	1536.2	1527.4	1520.8
35°	1462.1	1468.8	1476.5	1483.2	1489.8	1495.3	1488.7	1480.9	1475.4	1469.9	1464.4
37.5°	1399.1	1406.8	1415.7	1423.4	1425.6	1430.1	1425.6	1421.2	1415.7	1410.2	1403.5
40°	1337.2	1343.8	1351.5	1359.3	1362.6	1365.9	1361.5	1357.1	1350.4	1344.9	1338.3
42.5°	1273.0	1279.6	1286.3	1292.9	1297.3	1301.8	1297.3	1290.7	1286.3	1281.9	1276.3
45°	1206.7	1213.3	1218.8	1225.5	1228.8	1232.1	1227.7	1222.1	1217.7	1214.4	1208.9
47.5°	1139.2	1144.7	1150.2	1155.8	1158.0	1161.3	1156.9	1153.6	1150.2	1146.9	1142.5
50°	1068.4	1073.9	1080.6	1086.1	1087.2	1090.5	1086.1	1082.8	1079.5	1076.1	1072.8
52.5°	998.7	1003.1	1008.7	1014.2	1016.4	1018.6	1014.2	1009.8	1006.5	1004.3	1000.9
55°	925.7	930.2	935.7	940.1	943.4	945.6	941.2	936.8	933.5	932.4	929.0
57.5°	852.7	857.2	862.7	867.1	869.3	871.5	867.1	862.7	860.5	858.3	856.0
60°	778.6	783.1	787.5	790.8	793.0	794.1	789.7	786.4	785.3	784.2	781.9
62.5°	705.6	707.8	712.3	714.5	716.7	717.8	714.5	712.3	711.2	710.1	708.9
65°	629.3	634.8	638.2	640.4	640.4	641.5	638.2	637.1	636.0	634.8	632.6
67.5°	550.8	555.2	557.4	559.6	559.6	559.6	559.6	559.6	558.5	556.3	554.1
70°	475.6	478.9	481.1	482.2	482.2	482.2	480.0	478.9	480.0	480.0	478.9
72.5°	399.3	401.5	402.6	403.7	402.6	402.6	402.6	404.8	404.8	403.7	401.5
75°	325.2	327.4	328.5	329.6	328.5	328.5	328.5	330.7	329.6	329.6	328.5
77.5°	255.5	256.6	256.6	257.7	256.6	256.6	257.7	259.9	258.8	258.8	258.8
80°	189.1	189.1	189.1	190.2	189.1	189.1	190.2	192.4	191.3	191.3	191.3
82.5°	128.3	129.4	129.4	129.4	130.5	131.6	131.6	131.6	131.6	131.6	130.5
85°	76.3	77.4	76.3	76.3	76.3	76.3	77.4	78.5	78.5	78.5	78.5
87.5°	33.2	34.3	33.2	32.1	31.0	31.0	33.2	35.4	35.4	34.3	34.3
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: P709194  
 CATALOG NUMBER: 4APN-32-34L940-UNV

**CANDELA DISTRIBUTION (continued):**

	330°	340°	350°	360°
0°	1883.5	1883.5	1883.5	1883.5
2.5°	1894.6	1894.6	1884.6	1874.7
5°	1893.5	1891.3	1880.2	1868.0
7.5°	1886.8	1883.5	1869.1	1855.9
10°	1871.4	1866.9	1851.5	1834.9
12.5°	1852.6	1845.9	1828.2	1811.6
15°	1828.2	1820.5	1801.7	1782.9
17.5°	1796.2	1787.3	1768.5	1748.6
20°	1761.9	1751.9	1730.9	1709.9
22.5°	1719.8	1711.0	1688.9	1667.9
25°	1674.5	1664.5	1642.4	1620.3
27.5°	1625.8	1614.8	1592.6	1571.6
30°	1572.7	1561.7	1539.6	1518.5
32.5°	1516.3	1507.5	1485.4	1462.1
35°	1458.8	1447.8	1425.6	1403.5
37.5°	1398.0	1388.0	1367.0	1346.0
40°	1333.8	1323.9	1301.8	1280.8
42.5°	1270.8	1262.0	1240.9	1221.0
45°	1203.3	1194.5	1174.6	1156.9
47.5°	1135.9	1127.0	1108.2	1089.4
50°	1067.3	1058.4	1040.8	1024.2
52.5°	995.4	988.8	972.2	955.6
55°	923.5	915.8	899.2	884.8
57.5°	851.6	846.1	830.6	816.2
60°	777.5	770.9	758.7	746.6
62.5°	705.6	700.1	687.9	676.9
65°	629.3	624.9	614.9	605.0
67.5°	550.8	547.5	537.5	528.7
70°	475.6	470.1	462.3	454.6
72.5°	399.3	397.1	390.4	383.8
75°	326.3	324.1	317.4	311.9
77.5°	257.7	255.5	250.0	244.4
80°	190.2	189.1	184.7	180.3
82.5°	130.5	129.4	126.1	121.7
85°	78.5	76.3	73.0	69.7
87.5°	34.3	33.2	29.9	27.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)