

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: P709182

Luminaire Tested: **4APN-32-34L930-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709182
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-32-34L930-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

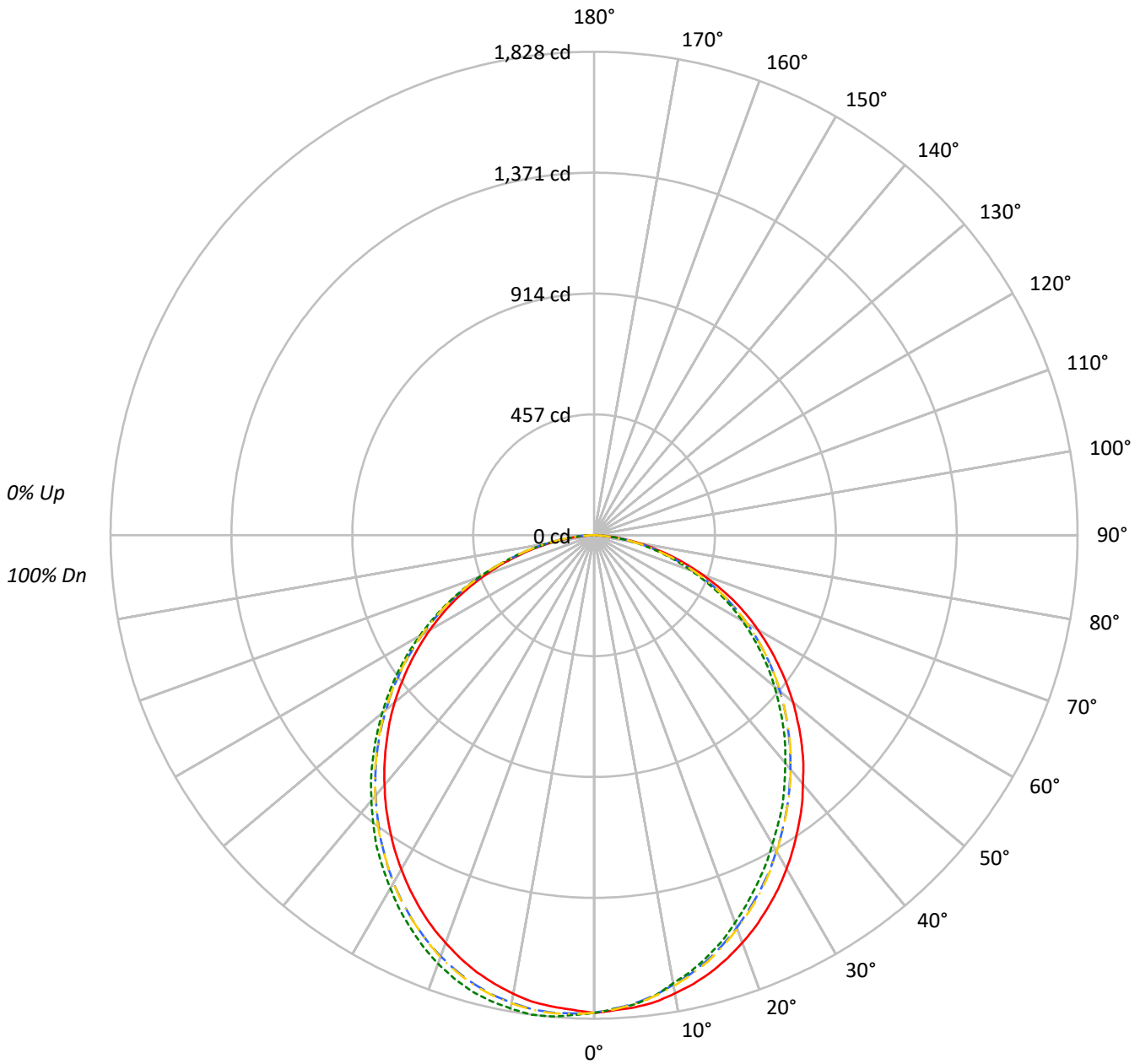
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4774.4 lumens
Efficiency: N/A
Efficacy: 65.4 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

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Luminous Intensity Polar Plot



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



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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°	16664	16664	16664	16664
5°	16591	16483	16571	16915
10°	16484	16117	16494	17021
15°	16330	15763	16340	17050
20°	16099	15308	16109	16932
25°	15818	14824	15850	16692
30°	15514	14361	15536	16417
35°	15159	13989	15195	16150
40°	14792	13540	14843	15775
45°	14475	13174	14488	15416
50°	14096	12787	14127	15011
55°	13648	12368	13700	14586
60°	13210	11939	13230	14052
65°	12664	11415	12664	13428
70°	11759	10558	11729	12474
75°	10662	9564	10587	11229
80°	9186	8225	9016	9638
85°	7071	6288	6849	7749



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	170.6	3.6
10°-20°	482.9	10.1
20°-30°	715.0	15.0
30°-40°	838.9	17.6
40°-50°	850.2	17.8
50°-60°	754.6	15.8
60°-70°	566.5	11.9
70°-80°	314.6	6.6
80°-90°	81.2	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°	1368.5	28.7
0°-40°	2207.4	46.2
0°-60°	3812.1	79.8
0°-90°	4774.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4774.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1806	1806	1806	1806	1806	
5°	1791	1780	1789	1826	1791	170
15°	1710	1650	1711	1785	1710	482
25°	1554	1456	1557	1640	1554	716
35°	1346	1242	1349	1434	1346	842
45°	1109	1010	1110	1182	1109	855
55°	848	769	852	907	848	760
65°	580	523	580	615	580	572
75°	299	268	297	315	299	318
85°	67	59	65	73	67	81
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	1806.2	1806.2	1806.2	1806.2	1806.2	1806.2	1806.2	1806.2	1806.2	1806.2	1806.2
2.5°	1797.7	1802.0	1807.3	1802.0	1793.5	1789.2	1789.2	1788.2	1791.4	1792.4	1791.4
5°	1791.4	1793.5	1794.5	1788.2	1778.6	1773.3	1771.2	1770.1	1774.4	1779.7	1774.4
7.5°	1779.7	1778.6	1777.6	1769.1	1758.5	1751.0	1747.9	1746.8	1751.0	1756.4	1752.1
10°	1759.5	1758.5	1755.3	1744.7	1730.9	1721.4	1718.2	1715.0	1718.2	1720.3	1718.2
12.5°	1737.3	1733.0	1728.8	1717.1	1702.3	1691.7	1686.4	1682.1	1686.4	1689.5	1687.4
15°	1709.7	1703.3	1695.9	1683.2	1668.3	1656.7	1650.3	1646.0	1649.2	1650.3	1650.3
17.5°	1676.8	1669.4	1662.0	1646.0	1628.0	1615.3	1607.9	1602.6	1606.8	1608.9	1608.9
20°	1639.7	1631.2	1621.7	1604.7	1585.6	1571.8	1563.3	1557.0	1558.0	1559.1	1559.1
22.5°	1599.4	1588.8	1577.1	1559.1	1538.9	1524.1	1515.6	1508.2	1508.2	1509.2	1509.2
25°	1553.8	1542.1	1530.4	1512.4	1491.2	1475.3	1464.7	1457.3	1457.3	1456.2	1458.3
27.5°	1507.1	1494.4	1482.7	1463.6	1441.4	1425.4	1414.8	1407.4	1406.4	1405.3	1407.4
30°	1456.2	1441.4	1428.6	1408.5	1387.3	1371.4	1360.7	1352.3	1350.1	1348.0	1350.1
32.5°	1402.1	1388.3	1374.5	1353.3	1332.1	1316.2	1305.6	1297.1	1296.1	1295.0	1297.1
35°	1345.9	1331.1	1318.3	1298.2	1277.0	1261.1	1249.4	1242.0	1242.0	1242.0	1242.0
37.5°	1290.7	1275.9	1262.1	1242.0	1220.7	1204.8	1193.2	1185.7	1183.6	1182.6	1183.6
40°	1228.2	1215.4	1202.7	1183.6	1162.4	1146.5	1137.0	1128.5	1126.4	1124.2	1127.4
42.5°	1170.9	1158.2	1144.4	1126.4	1105.1	1089.2	1078.6	1071.2	1070.1	1069.1	1070.1
45°	1109.4	1094.5	1080.7	1063.8	1044.7	1029.8	1019.2	1011.8	1010.8	1009.7	1010.8
47.5°	1044.7	1033.0	1021.4	1004.4	985.3	970.4	960.9	952.4	950.3	948.2	950.3
50°	982.1	969.4	957.7	941.8	923.8	910.0	901.5	894.1	892.0	890.9	892.0
52.5°	916.4	904.7	894.1	878.2	863.3	849.5	840.0	833.6	832.6	831.5	832.6
55°	848.5	837.9	828.3	815.6	800.8	788.0	779.5	772.1	771.1	768.9	771.1
57.5°	782.7	774.2	764.7	750.9	737.1	725.4	718.0	711.7	710.6	709.5	710.6
60°	715.9	707.4	698.9	687.3	673.5	661.8	655.4	650.1	648.0	647.0	648.0
62.5°	649.1	640.6	634.2	622.6	609.8	600.3	593.9	588.6	586.5	585.5	586.5
65°	580.1	572.7	565.3	554.7	545.1	537.7	531.4	526.1	523.9	522.9	522.9
67.5°	507.0	500.6	495.3	485.8	475.1	467.7	461.4	457.1	455.0	453.9	455.0
70°	435.9	430.6	425.3	417.9	409.4	403.0	398.8	394.5	392.4	391.4	391.4
72.5°	368.0	363.8	358.5	352.1	345.8	339.4	335.1	332.0	329.8	328.8	328.8
75°	299.1	294.8	292.7	287.4	281.1	276.8	272.6	270.5	268.3	268.3	268.3
77.5°	234.4	232.3	230.1	224.8	220.6	216.4	213.2	212.1	210.0	210.0	210.0
80°	172.9	171.8	170.8	167.6	163.3	159.1	157.0	155.9	154.8	154.8	154.8
82.5°	116.7	116.7	115.6	112.4	109.2	108.2	106.1	105.0	105.0	105.0	105.0
85°	66.8	66.8	66.8	65.8	63.6	63.6	61.5	60.5	59.4	59.4	59.4
87.5°	26.5	27.6	28.6	27.6	25.5	25.5	25.5	25.5	25.5	25.5	25.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	1806.2	1806.2	1806.2	1806.2	1806.2	1806.2	1806.2	1806.2	1806.2	1806.2	1806.2
2.5°	1788.2	1790.3	1791.4	1796.7	1803.0	1807.3	1802.0	1796.7	1805.1	1814.7	1814.7
5°	1770.1	1772.3	1775.4	1781.8	1790.3	1795.6	1793.5	1789.2	1802.0	1812.6	1813.6
7.5°	1747.9	1750.0	1754.2	1760.6	1771.2	1778.6	1778.6	1779.7	1791.4	1804.1	1807.3
10°	1715.0	1720.3	1726.7	1736.2	1746.8	1756.4	1759.5	1760.6	1775.4	1789.2	1793.5
12.5°	1684.2	1689.5	1695.9	1706.5	1719.2	1729.8	1733.0	1737.3	1753.2	1769.1	1775.4
15°	1649.2	1654.5	1662.0	1672.6	1686.4	1698.0	1704.4	1710.7	1726.7	1743.6	1751.0
17.5°	1607.9	1613.2	1620.6	1633.3	1649.2	1663.0	1670.4	1677.9	1695.9	1713.9	1721.4
20°	1559.1	1566.5	1577.1	1589.8	1607.9	1623.8	1632.3	1640.7	1659.8	1677.9	1686.4
22.5°	1509.2	1517.7	1529.4	1544.2	1563.3	1580.3	1590.9	1601.5	1620.6	1638.6	1648.2
25°	1459.4	1468.9	1480.6	1496.5	1514.5	1531.5	1544.2	1557.0	1576.0	1595.1	1604.7
27.5°	1408.5	1417.0	1428.6	1444.5	1464.7	1482.7	1495.4	1509.2	1528.3	1548.5	1558.0
30°	1352.3	1361.8	1372.4	1388.3	1410.6	1430.7	1443.5	1458.3	1477.4	1497.6	1507.1
32.5°	1298.2	1306.7	1317.3	1333.2	1355.4	1376.7	1390.4	1405.3	1424.4	1444.5	1453.0
35°	1242.0	1250.4	1262.1	1278.0	1300.3	1320.4	1334.2	1349.1	1367.1	1386.2	1395.7
37.5°	1186.8	1195.3	1207.0	1222.9	1244.1	1264.2	1278.0	1292.9	1310.9	1328.9	1337.4
40°	1129.5	1138.0	1147.6	1163.5	1184.7	1204.8	1217.6	1232.4	1250.4	1269.5	1278.0
42.5°	1071.2	1079.7	1091.4	1107.3	1127.4	1145.4	1159.2	1173.0	1190.0	1207.0	1215.4
45°	1012.9	1020.3	1032.0	1046.8	1065.9	1082.9	1096.7	1110.4	1126.4	1142.3	1150.7
47.5°	952.4	960.9	970.4	985.3	1004.4	1022.4	1036.2	1048.9	1063.8	1079.7	1087.1
50°	894.1	901.5	911.1	924.8	942.9	959.8	971.5	984.2	998.0	1012.9	1019.2
52.5°	833.6	841.1	850.6	864.4	879.2	895.1	905.8	917.4	931.2	945.0	951.4
55°	772.1	777.4	785.9	798.6	814.5	829.4	840.0	851.7	863.3	875.0	882.4
57.5°	711.7	718.0	726.5	738.2	752.0	765.8	775.3	784.8	796.5	808.2	813.5
60°	650.1	655.4	661.8	672.4	686.2	697.9	707.4	717.0	726.5	737.1	742.4
62.5°	587.6	592.9	599.2	609.8	621.5	632.1	640.6	649.1	657.6	667.1	672.4
65°	525.0	530.3	536.7	544.1	553.6	563.2	571.7	580.1	586.5	592.9	598.2
67.5°	457.1	462.4	468.8	475.1	483.6	493.2	499.5	507.0	513.3	520.8	523.9
70°	393.5	397.7	404.1	409.4	416.8	423.2	428.5	434.8	439.1	445.5	450.8
72.5°	330.9	335.1	340.5	345.8	350.0	355.3	361.7	367.0	372.3	378.6	380.8
75°	270.5	272.6	276.8	281.1	285.3	289.5	292.7	297.0	301.2	305.5	308.6
77.5°	211.1	213.2	217.4	220.6	223.8	227.0	229.1	231.2	235.5	238.6	241.8
80°	154.8	157.0	160.2	163.3	166.5	169.7	169.7	169.7	175.0	179.2	180.3
82.5°	105.0	106.1	108.2	110.3	112.4	114.5	114.5	113.5	116.7	119.8	122.0
85°	60.5	61.5	63.6	63.6	64.7	64.7	64.7	64.7	66.8	70.0	72.1
87.5°	24.4	24.4	25.5	25.5	26.5	26.5	25.5	24.4	26.5	29.7	30.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	1806.2	1806.2	1806.2	1806.2	1806.2	1806.2	1806.2	1806.2	1806.2	1806.2	1806.2
2.5°	1810.4	1809.4	1812.6	1813.6	1815.7	1815.7	1816.8	1816.8	1814.7	1811.5	1812.6
5°	1811.5	1811.5	1814.7	1817.9	1822.1	1826.4	1823.2	1820.0	1817.9	1814.7	1813.6
7.5°	1806.2	1808.3	1811.5	1816.8	1822.1	1828.5	1824.2	1820.0	1814.7	1810.4	1808.3
10°	1793.5	1795.6	1800.9	1806.2	1811.5	1816.8	1812.6	1808.3	1804.1	1798.8	1796.7
12.5°	1777.6	1780.7	1787.1	1792.4	1797.7	1804.1	1798.8	1793.5	1788.2	1782.9	1779.7
15°	1754.2	1758.5	1765.9	1772.3	1779.7	1785.0	1780.7	1776.5	1770.1	1762.7	1757.4
17.5°	1724.5	1730.9	1738.3	1745.7	1752.1	1757.4	1754.2	1750.0	1742.6	1734.1	1727.7
20°	1691.7	1698.0	1704.4	1711.8	1719.2	1724.5	1720.3	1715.0	1707.6	1701.2	1694.8
22.5°	1653.5	1659.8	1667.3	1673.6	1680.0	1685.3	1680.0	1673.6	1667.3	1660.9	1654.5
25°	1610.0	1616.4	1624.8	1631.2	1635.4	1639.7	1635.4	1630.1	1623.8	1617.4	1611.0
27.5°	1564.4	1570.7	1579.2	1585.6	1589.8	1594.1	1589.8	1584.5	1578.2	1571.8	1565.4
30°	1513.5	1519.8	1528.3	1534.7	1537.9	1541.0	1536.8	1532.6	1527.3	1520.9	1514.5
32.5°	1459.4	1465.7	1472.1	1478.5	1483.8	1488.0	1483.8	1479.5	1473.2	1464.7	1458.3
35°	1402.1	1408.5	1415.9	1422.3	1428.6	1433.9	1427.6	1420.1	1414.8	1409.5	1404.2
37.5°	1341.7	1349.1	1357.6	1365.0	1367.1	1371.4	1367.1	1362.9	1357.6	1352.3	1345.9
40°	1282.3	1288.6	1296.1	1303.5	1306.7	1309.8	1305.6	1301.4	1295.0	1289.7	1283.3
42.5°	1220.7	1227.1	1233.5	1239.8	1244.1	1248.3	1244.1	1237.7	1233.5	1229.2	1223.9
45°	1157.1	1163.5	1168.8	1175.1	1178.3	1181.5	1177.3	1172.0	1167.7	1164.5	1159.2
47.5°	1092.4	1097.7	1103.0	1108.3	1110.4	1113.6	1109.4	1106.2	1103.0	1099.8	1095.6
50°	1024.5	1029.8	1036.2	1041.5	1042.6	1045.8	1041.5	1038.3	1035.1	1032.0	1028.8
52.5°	957.7	962.0	967.3	972.6	974.7	976.8	972.6	968.3	965.1	963.0	959.8
55°	887.7	892.0	897.3	901.5	904.7	906.8	902.6	898.3	895.1	894.1	890.9
57.5°	817.7	822.0	827.3	831.5	833.6	835.8	831.5	827.3	825.1	823.0	820.9
60°	746.7	750.9	755.1	758.3	760.4	761.5	757.3	754.1	753.0	752.0	749.8
62.5°	676.7	678.8	683.0	685.1	687.3	688.3	685.1	683.0	682.0	680.9	679.8
65°	603.5	608.8	612.0	614.1	614.1	615.1	612.0	610.9	609.8	608.8	606.7
67.5°	528.2	532.4	534.5	536.7	536.7	536.7	536.7	536.7	535.6	533.5	531.4
70°	456.1	459.2	461.4	462.4	462.4	462.4	460.3	459.2	460.3	460.3	459.2
72.5°	382.9	385.0	386.1	387.1	386.1	386.1	386.1	388.2	388.2	387.1	385.0
75°	311.8	313.9	315.0	316.1	315.0	315.0	315.0	317.1	316.1	316.1	315.0
77.5°	245.0	246.1	246.1	247.1	246.1	246.1	247.1	249.2	248.2	248.2	248.2
80°	181.4	181.4	181.4	182.4	181.4	181.4	182.4	184.5	183.5	183.5	183.5
82.5°	123.0	124.1	124.1	124.1	125.2	126.2	126.2	126.2	126.2	126.2	125.2
85°	73.2	74.2	73.2	73.2	73.2	73.2	74.2	75.3	75.3	75.3	75.3
87.5°	31.8	32.9	31.8	30.8	29.7	29.7	31.8	33.9	33.9	32.9	32.9
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: P709182

CATALOG NUMBER: 4APN-32-34L930-UNV

CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	1806.2	1806.2	1806.2	1806.2
2.5°	1816.8	1816.8	1807.3	1797.7
5°	1815.7	1813.6	1803.0	1791.4
7.5°	1809.4	1806.2	1792.4	1779.7
10°	1794.5	1790.3	1775.4	1759.5
12.5°	1776.5	1770.1	1753.2	1737.3
15°	1753.2	1745.7	1727.7	1709.7
17.5°	1722.4	1713.9	1695.9	1676.8
20°	1689.5	1680.0	1659.8	1639.7
22.5°	1649.2	1640.7	1619.5	1599.4
25°	1605.7	1596.2	1575.0	1553.8
27.5°	1559.1	1548.5	1527.3	1507.1
30°	1508.2	1497.6	1476.4	1456.2
32.5°	1454.1	1445.6	1424.4	1402.1
35°	1398.9	1388.3	1367.1	1345.9
37.5°	1340.6	1331.1	1310.9	1290.7
40°	1279.1	1269.5	1248.3	1228.2
42.5°	1218.6	1210.1	1190.0	1170.9
45°	1153.9	1145.4	1126.4	1109.4
47.5°	1089.2	1080.7	1062.7	1044.7
50°	1023.5	1015.0	998.0	982.1
52.5°	954.5	948.2	932.3	916.4
55°	885.6	878.2	862.3	848.5
57.5°	816.7	811.4	796.5	782.7
60°	745.6	739.2	727.6	715.9
62.5°	676.7	671.4	659.7	649.1
65°	603.5	599.2	589.7	580.1
67.5°	528.2	525.0	515.5	507.0
70°	456.1	450.8	443.3	435.9
72.5°	382.9	380.8	374.4	368.0
75°	312.9	310.8	304.4	299.1
77.5°	247.1	245.0	239.7	234.4
80°	182.4	181.4	177.1	172.9
82.5°	125.2	124.1	120.9	116.7
85°	75.3	73.2	70.0	66.8
87.5°	32.9	31.8	28.6	26.5
90°	0.0	0.0	0.0	0.0

(END OF REPORT)