

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: P709160

Luminaire Tested: **4APN-24-26L830-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709160
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-24-26L830-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

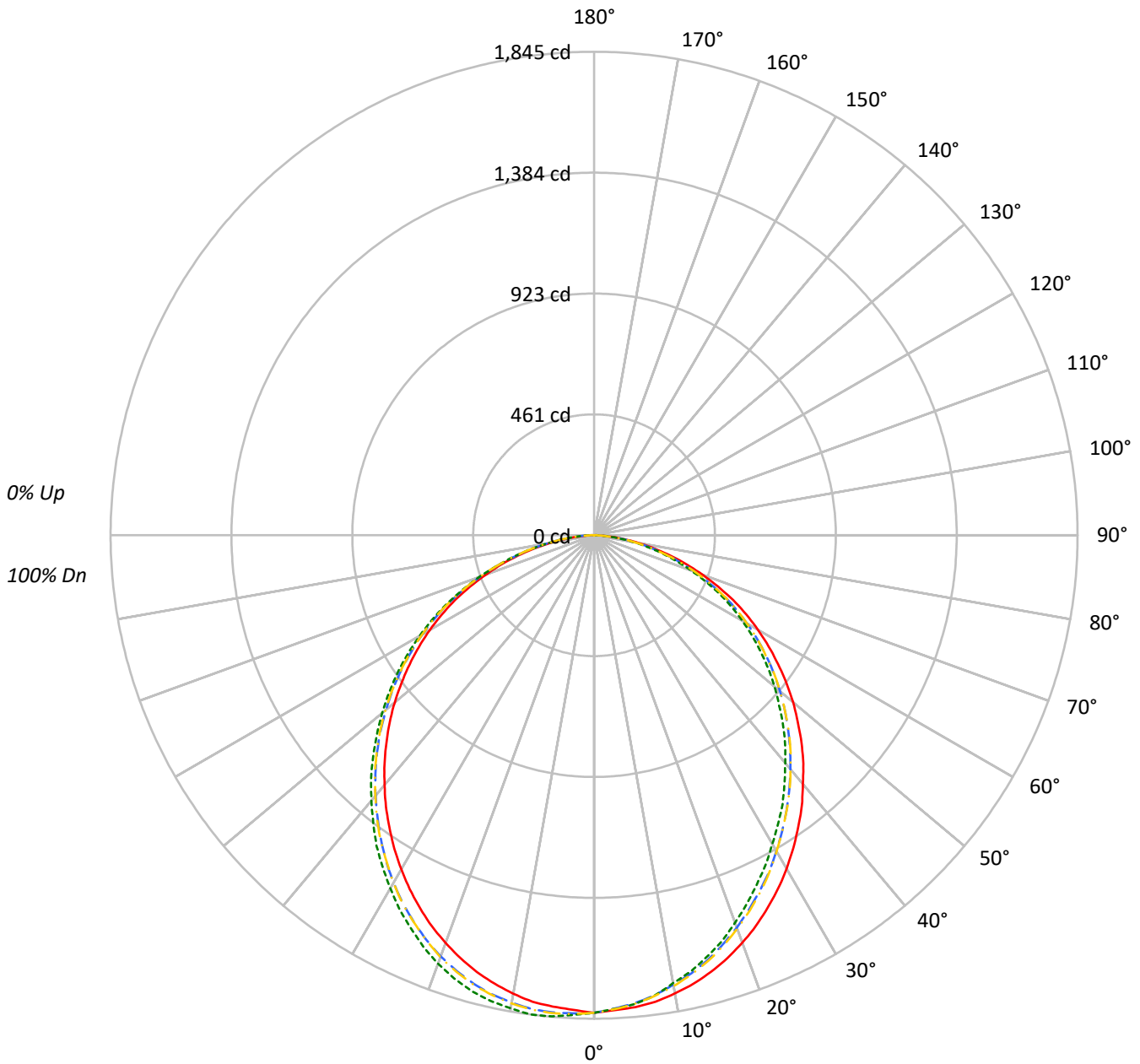
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4817.9 lumens
Efficiency: N/A
Efficacy: 86.0 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): 56
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				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	100	100	100	100
1	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	84	84	84	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	72	70	70	70	70
3	90	80	72	66	88	78	71	65	75	69	64	73	67	63	70	66	62	59	59	59	59
4	83	71	62	56	81	70	62	55	67	60	54	65	59	54	63	57	53	51	51	51	51
5	76	64	55	48	74	62	54	48	60	53	47	58	52	47	56	51	46	44	44	44	44
6	71	57	48	42	69	56	48	42	55	47	41	53	46	41	51	45	41	39	39	39	39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	34	34	34	34
8	61	48	39	33	59	47	39	33	45	38	33	44	38	33	43	37	32	31	31	31	31
9	57	44	35	30	56	43	35	30	42	35	30	41	34	30	40	34	29	28	28	28	28
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25	25	25	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	16816	16816	16816	16816
5°	16741	16633	16722	17069
10°	16634	16263	16644	17175
15°	16479	15906	16489	17204
20°	16245	15447	16256	17086
25°	15961	14958	15994	16844
30°	15654	14492	15678	16567
35°	15296	14116	15334	16298
40°	14926	13664	14978	15920
45°	14607	13294	14620	15557
50°	14224	12904	14256	15147
55°	13772	12481	13824	14720
60°	13330	12046	13350	14179
65°	12780	11518	12780	13551
70°	11867	10653	11837	12587
75°	10758	9653	10683	11332
80°	9271	8304	9096	9723
85°	7135	6341	6913	7812



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.1	3.6
10°-20°	487.3	10.1
20°-30°	721.5	15.0
30°-40°	846.5	17.6
40°-50°	857.9	17.8
50°-60°	761.4	15.8
60°-70°	571.6	11.9
70°-80°	317.4	6.6
80°-90°	82.0	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°	1381.0	28.7
0°-40°	2227.5	46.2
0°-60°	3846.8	79.8
0°-90°	4817.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4817.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1823	1823	1823	1823	1823	
5°	1808	1796	1806	1843	1808	172
15°	1725	1665	1726	1801	1725	486
25°	1568	1469	1571	1655	1568	722
35°	1358	1253	1361	1447	1358	850
45°	1120	1019	1120	1192	1120	863
55°	856	776	859	915	856	766
65°	585	528	585	621	585	577
75°	302	271	300	318	302	321
85°	67	60	65	74	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°	1822.6	1822.6	1822.6	1822.6	1822.6	1822.6	1822.6	1822.6	1822.6	1822.6	1822.6
2.5°	1814.1	1818.3	1823.7	1818.3	1809.8	1805.5	1805.5	1804.4	1807.6	1808.7	1807.6
5°	1807.6	1809.8	1810.9	1804.4	1794.8	1789.5	1787.3	1786.2	1790.5	1795.9	1790.5
7.5°	1795.9	1794.8	1793.7	1785.2	1774.5	1767.0	1763.8	1762.7	1767.0	1772.3	1768.0
10°	1775.5	1774.5	1771.3	1760.6	1746.6	1737.0	1733.8	1730.6	1733.8	1735.9	1733.8
12.5°	1753.1	1748.8	1744.5	1732.7	1717.7	1707.0	1701.7	1697.4	1701.7	1704.9	1702.8
15°	1725.2	1718.8	1711.3	1698.5	1683.5	1671.7	1665.3	1661.0	1664.2	1665.3	1665.3
17.5°	1692.1	1684.6	1677.1	1661.0	1642.8	1630.0	1622.5	1617.1	1621.4	1623.6	1623.6
20°	1654.6	1646.0	1636.4	1619.3	1600.0	1586.1	1577.5	1571.1	1572.2	1573.3	1573.3
22.5°	1613.9	1603.2	1591.5	1573.3	1552.9	1537.9	1529.4	1521.9	1521.9	1523.0	1523.0
25°	1567.9	1556.1	1544.4	1526.2	1504.8	1488.7	1478.0	1470.5	1470.5	1469.4	1471.6
27.5°	1520.8	1508.0	1496.2	1476.9	1454.5	1438.4	1427.7	1420.2	1419.1	1418.1	1420.2
30°	1469.4	1454.5	1441.6	1421.3	1399.9	1383.8	1373.1	1364.6	1362.4	1360.3	1362.4
32.5°	1414.9	1401.0	1387.0	1365.6	1344.2	1328.2	1317.5	1308.9	1307.8	1306.8	1308.9
35°	1358.1	1343.2	1330.3	1310.0	1288.6	1272.5	1260.7	1253.3	1253.3	1253.3	1253.3
37.5°	1302.5	1287.5	1273.6	1253.3	1231.9	1215.8	1204.0	1196.5	1194.4	1193.3	1194.4
40°	1239.3	1226.5	1213.7	1194.4	1173.0	1156.9	1147.3	1138.7	1136.6	1134.5	1137.7
42.5°	1181.6	1168.7	1154.8	1136.6	1115.2	1099.1	1088.4	1080.9	1079.9	1078.8	1079.9
45°	1119.5	1104.5	1090.6	1073.5	1054.2	1039.2	1028.5	1021.0	1019.9	1018.9	1019.9
47.5°	1054.2	1042.4	1030.6	1013.5	994.3	979.3	969.6	961.1	958.9	956.8	958.9
50°	991.0	978.2	966.4	950.4	932.2	918.3	909.7	902.2	900.1	899.0	900.1
52.5°	924.7	912.9	902.2	886.2	871.2	857.3	847.6	841.2	840.1	839.1	840.1
55°	856.2	845.5	835.9	823.0	808.0	795.2	786.6	779.1	778.1	775.9	778.1
57.5°	789.8	781.3	771.6	757.7	743.8	732.0	724.6	718.1	717.1	716.0	717.1
60°	722.4	713.9	705.3	693.5	679.6	667.8	661.4	656.1	653.9	652.8	653.9
62.5°	655.0	646.4	640.0	628.2	615.4	605.8	599.3	594.0	591.8	590.8	591.8
65°	585.4	577.9	570.4	559.7	550.1	542.6	536.2	530.8	528.7	527.6	527.6
67.5°	511.6	505.2	499.8	490.2	479.5	472.0	465.6	461.3	459.1	458.1	459.1
70°	439.9	434.5	429.2	421.7	413.1	406.7	402.4	398.1	396.0	394.9	394.9
72.5°	371.4	367.1	361.7	355.3	348.9	342.5	338.2	335.0	332.8	331.8	331.8
75°	301.8	297.5	295.4	290.0	283.6	279.3	275.1	272.9	270.8	270.8	270.8
77.5°	236.5	234.4	232.2	226.9	222.6	218.3	215.1	214.0	211.9	211.9	211.9
80°	174.5	173.4	172.3	169.1	164.8	160.5	158.4	157.3	156.3	156.3	156.3
82.5°	117.7	117.7	116.7	113.4	110.2	109.2	107.0	106.0	106.0	106.0	106.0
85°	67.4	67.4	67.4	66.4	64.2	64.2	62.1	61.0	59.9	59.9	59.9
87.5°	26.8	27.8	28.9	27.8	25.7	25.7	25.7	25.7	25.7	25.7	25.7
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°	1822.6	1822.6	1822.6	1822.6	1822.6	1822.6	1822.6	1822.6	1822.6	1822.6	1822.6
2.5°	1804.4	1806.6	1807.6	1813.0	1819.4	1823.7	1818.3	1813.0	1821.6	1831.2	1831.2
5°	1786.2	1788.4	1791.6	1798.0	1806.6	1811.9	1809.8	1805.5	1818.3	1829.0	1830.1
7.5°	1763.8	1765.9	1770.2	1776.6	1787.3	1794.8	1794.8	1795.9	1807.6	1820.5	1823.7
10°	1730.6	1735.9	1742.4	1752.0	1762.7	1772.3	1775.5	1776.6	1791.6	1805.5	1809.8
12.5°	1699.5	1704.9	1711.3	1722.0	1734.9	1745.6	1748.8	1753.1	1769.1	1785.2	1791.6
15°	1664.2	1669.6	1677.1	1687.8	1701.7	1713.5	1719.9	1726.3	1742.4	1759.5	1767.0
17.5°	1622.5	1627.8	1635.3	1648.2	1664.2	1678.1	1685.6	1693.1	1711.3	1729.5	1737.0
20°	1573.3	1580.8	1591.5	1604.3	1622.5	1638.5	1647.1	1655.7	1674.9	1693.1	1701.7
22.5°	1523.0	1531.5	1543.3	1558.3	1577.5	1594.7	1605.4	1616.1	1635.3	1653.5	1663.2
25°	1472.7	1482.3	1494.1	1510.1	1528.3	1545.4	1558.3	1571.1	1590.4	1609.6	1619.3
27.5°	1421.3	1429.8	1441.6	1457.7	1478.0	1496.2	1509.0	1523.0	1542.2	1562.6	1572.2
30°	1364.6	1374.2	1384.9	1401.0	1423.4	1443.8	1456.6	1471.6	1490.9	1511.2	1520.8
32.5°	1310.0	1318.5	1329.2	1345.3	1367.8	1389.2	1403.1	1418.1	1437.3	1457.7	1466.2
35°	1253.3	1261.8	1273.6	1289.6	1312.1	1332.5	1346.4	1361.4	1379.5	1398.8	1408.4
37.5°	1197.6	1206.2	1217.9	1234.0	1255.4	1275.7	1289.6	1304.6	1322.8	1341.0	1349.6
40°	1139.8	1148.4	1158.0	1174.1	1195.5	1215.8	1228.6	1243.6	1261.8	1281.1	1289.6
42.5°	1080.9	1089.5	1101.3	1117.3	1137.7	1155.9	1169.8	1183.7	1200.8	1217.9	1226.5
45°	1022.1	1029.6	1041.3	1056.3	1075.6	1092.7	1106.6	1120.5	1136.6	1152.7	1161.2
47.5°	961.1	969.6	979.3	994.3	1013.5	1031.7	1045.6	1058.5	1073.5	1089.5	1097.0
50°	902.2	909.7	919.3	933.3	951.4	968.6	980.3	993.2	1007.1	1022.1	1028.5
52.5°	841.2	848.7	858.3	872.3	887.2	903.3	914.0	925.8	939.7	953.6	960.0
55°	779.1	784.5	793.1	805.9	821.9	836.9	847.6	859.4	871.2	883.0	890.4
57.5°	718.1	724.6	733.1	744.9	758.8	772.7	782.3	792.0	803.8	815.5	820.9
60°	656.1	661.4	667.8	678.5	692.4	704.2	713.9	723.5	733.1	743.8	749.2
62.5°	592.9	598.3	604.7	615.4	627.2	637.9	646.4	655.0	663.6	673.2	678.5
65°	529.8	535.1	541.5	549.0	558.7	568.3	576.9	585.4	591.8	598.3	603.6
67.5°	461.3	466.6	473.0	479.5	488.0	497.7	504.1	511.6	518.0	525.5	528.7
70°	397.1	401.3	407.8	413.1	420.6	427.0	432.4	438.8	443.1	449.5	454.9
72.5°	333.9	338.2	343.5	348.9	353.2	358.5	365.0	370.3	375.7	382.1	384.2
75°	272.9	275.1	279.3	283.6	287.9	292.2	295.4	299.7	303.9	308.2	311.4
77.5°	213.0	215.1	219.4	222.6	225.8	229.0	231.2	233.3	237.6	240.8	244.0
80°	156.3	158.4	161.6	164.8	168.0	171.2	171.2	171.2	176.6	180.9	181.9
82.5°	106.0	107.0	109.2	111.3	113.4	115.6	115.6	114.5	117.7	120.9	123.1
85°	61.0	62.1	64.2	64.2	65.3	65.3	65.3	65.3	67.4	70.6	72.8
87.5°	24.6	24.6	25.7	25.7	26.8	26.8	25.7	24.6	26.8	30.0	31.0
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°	1822.6	1822.6	1822.6	1822.6	1822.6	1822.6	1822.6	1822.6	1822.6	1822.6	1822.6
2.5°	1826.9	1825.8	1829.0	1830.1	1832.3	1832.3	1833.3	1833.3	1831.2	1828.0	1829.0
5°	1828.0	1828.0	1831.2	1834.4	1838.7	1843.0	1839.8	1836.5	1834.4	1831.2	1830.1
7.5°	1822.6	1824.8	1828.0	1833.3	1838.7	1845.1	1840.8	1836.5	1831.2	1826.9	1824.8
10°	1809.8	1811.9	1817.3	1822.6	1828.0	1833.3	1829.0	1824.8	1820.5	1815.1	1813.0
12.5°	1793.7	1796.9	1803.4	1808.7	1814.1	1820.5	1815.1	1809.8	1804.4	1799.1	1795.9
15°	1770.2	1774.5	1782.0	1788.4	1795.9	1801.2	1796.9	1792.7	1786.2	1778.7	1773.4
17.5°	1740.2	1746.6	1754.1	1761.6	1768.0	1773.4	1770.2	1765.9	1758.4	1749.9	1743.4
20°	1707.0	1713.5	1719.9	1727.4	1734.9	1740.2	1735.9	1730.6	1723.1	1716.7	1710.3
22.5°	1668.5	1674.9	1682.4	1688.8	1695.3	1700.6	1695.3	1688.8	1682.4	1676.0	1669.6
25°	1624.6	1631.1	1639.6	1646.0	1650.3	1654.6	1650.3	1645.0	1638.5	1632.1	1625.7
27.5°	1578.6	1585.0	1593.6	1600.0	1604.3	1608.6	1604.3	1598.9	1592.5	1586.1	1579.7
30°	1527.2	1533.7	1542.2	1548.6	1551.9	1555.1	1550.8	1546.5	1541.2	1534.7	1528.3
32.5°	1472.7	1479.1	1485.5	1491.9	1497.3	1501.6	1497.3	1493.0	1486.6	1478.0	1471.6
35°	1414.9	1421.3	1428.8	1435.2	1441.6	1447.0	1440.6	1433.1	1427.7	1422.4	1417.0
37.5°	1353.9	1361.4	1369.9	1377.4	1379.5	1383.8	1379.5	1375.3	1369.9	1364.6	1358.1
40°	1293.9	1300.3	1307.8	1315.3	1318.5	1321.8	1317.5	1313.2	1306.8	1301.4	1295.0
42.5°	1231.9	1238.3	1244.7	1251.1	1255.4	1259.7	1255.4	1249.0	1244.7	1240.4	1235.1
45°	1167.6	1174.1	1179.4	1185.8	1189.0	1192.3	1188.0	1182.6	1178.3	1175.1	1169.8
47.5°	1102.4	1107.7	1113.1	1118.4	1120.5	1123.8	1119.5	1116.3	1113.1	1109.8	1105.6
50°	1033.9	1039.2	1045.6	1051.0	1052.1	1055.3	1051.0	1047.8	1044.6	1041.3	1038.1
52.5°	966.4	970.7	976.1	981.4	983.6	985.7	981.4	977.1	973.9	971.8	968.6
55°	895.8	900.1	905.4	909.7	912.9	915.1	910.8	906.5	903.3	902.2	899.0
57.5°	825.2	829.4	834.8	839.1	841.2	843.4	839.1	834.8	832.7	830.5	828.4
60°	753.5	757.7	762.0	765.2	767.4	768.4	764.2	760.9	759.9	758.8	756.7
62.5°	682.8	685.0	689.2	691.4	693.5	694.6	691.4	689.2	688.2	687.1	686.0
65°	609.0	614.3	617.5	619.7	619.7	620.7	617.5	616.5	615.4	614.3	612.2
67.5°	533.0	537.3	539.4	541.5	541.5	541.5	541.5	541.5	540.5	538.3	536.2
70°	460.2	463.4	465.6	466.6	466.6	466.6	464.5	463.4	464.5	464.5	463.4
72.5°	386.4	388.5	389.6	390.6	389.6	389.6	389.6	391.7	391.7	390.6	388.5
75°	314.7	316.8	317.9	318.9	317.9	317.9	317.9	320.0	318.9	318.9	317.9
77.5°	247.2	248.3	248.3	249.4	248.3	248.3	249.4	251.5	250.4	250.4	250.4
80°	183.0	183.0	183.0	184.1	183.0	183.0	184.1	186.2	185.2	185.2	185.2
82.5°	124.1	125.2	125.2	125.2	126.3	127.4	127.4	127.4	127.4	127.4	126.3
85°	73.8	74.9	73.8	73.8	73.8	73.8	74.9	76.0	76.0	76.0	76.0
87.5°	32.1	33.2	32.1	31.0	30.0	30.0	32.1	34.2	34.2	33.2	33.2
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: P709160

CATALOG NUMBER: 4APN-24-26L830-UNV

CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	1822.6	1822.6	1822.6	1822.6
2.5°	1833.3	1833.3	1823.7	1814.1
5°	1832.3	1830.1	1819.4	1807.6
7.5°	1825.8	1822.6	1808.7	1795.9
10°	1810.9	1806.6	1791.6	1775.5
12.5°	1792.7	1786.2	1769.1	1753.1
15°	1769.1	1761.6	1743.4	1725.2
17.5°	1738.1	1729.5	1711.3	1692.1
20°	1704.9	1695.3	1674.9	1654.6
22.5°	1664.2	1655.7	1634.3	1613.9
25°	1620.4	1610.7	1589.3	1567.9
27.5°	1573.3	1562.6	1541.2	1520.8
30°	1521.9	1511.2	1489.8	1469.4
32.5°	1467.3	1458.7	1437.3	1414.9
35°	1411.7	1401.0	1379.5	1358.1
37.5°	1352.8	1343.2	1322.8	1302.5
40°	1290.7	1281.1	1259.7	1239.3
42.5°	1229.7	1221.2	1200.8	1181.6
45°	1164.4	1155.9	1136.6	1119.5
47.5°	1099.1	1090.6	1072.4	1054.2
50°	1032.8	1024.2	1007.1	991.0
52.5°	963.2	956.8	940.7	924.7
55°	893.7	886.2	870.1	856.2
57.5°	824.1	818.7	803.8	789.8
60°	752.4	746.0	734.2	722.4
62.5°	682.8	677.5	665.7	655.0
65°	609.0	604.7	595.1	585.4
67.5°	533.0	529.8	520.1	511.6
70°	460.2	454.9	447.4	439.9
72.5°	386.4	384.2	377.8	371.4
75°	315.7	313.6	307.2	301.8
77.5°	249.4	247.2	241.9	236.5
80°	184.1	183.0	178.7	174.5
82.5°	126.3	125.2	122.0	117.7
85°	76.0	73.8	70.6	67.4
87.5°	33.2	32.1	28.9	26.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)