

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: P188242

Luminaire Tested: **FCC-N-4-LD4-2LO-40-UNV-80/86**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P188242
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27011)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FCC-N-4-LD4-2LO-40-UNV-80/86
Description:
Light Source: (168) NICHIA ELM 4000K LED
2UT217042A8404A
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4481.6 lumens
Efficiency: N/A
Efficacy: 90.7 lumens/watt
Spacing Criteria (0/90/45): 1.69 / 1.29 / 1.57
Luminous Opening: Rectangular w/ Sides (W: 1.92' x L: 0.38' x H: 0.52')
CIE Type: Direct

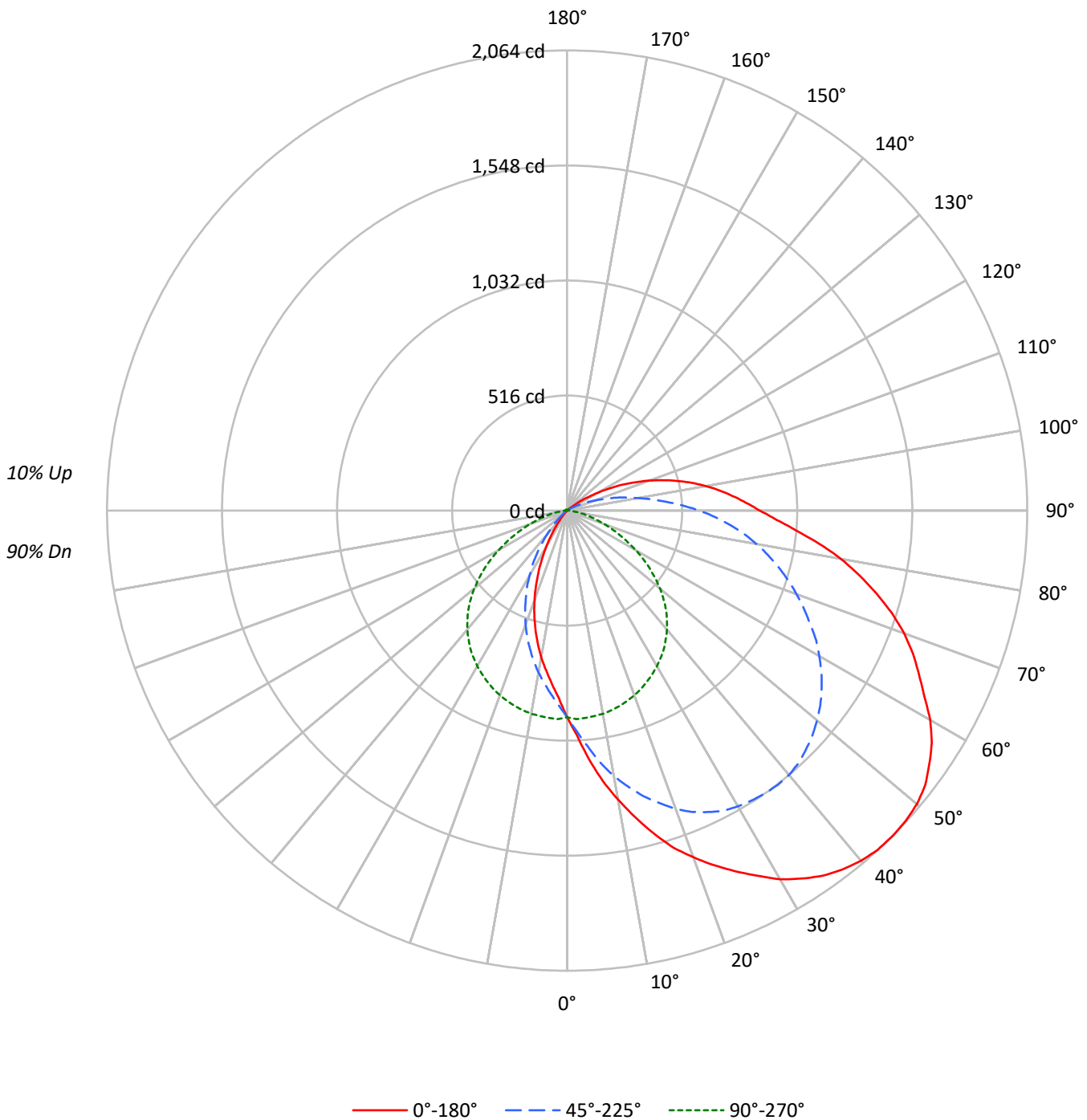
Input Watts (W): 49.4
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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	0
RCR																		
0	117	117	117	117	113	113	113	113	106	106	106	99	99	99	93	93	93	90
1	103	97	91	86	99	94	89	84	88	83	80	82	79	75	77	74	72	69
2	92	83	74	68	89	80	72	66	75	68	63	70	65	60	65	61	57	54
3	83	71	62	55	80	69	60	53	65	57	51	60	54	49	57	51	47	44
4	76	63	53	45	73	60	51	44	57	49	43	53	46	41	50	44	39	37
5	69	55	46	38	66	54	44	38	50	42	36	47	40	35	44	39	34	31
6	64	50	40	33	61	48	39	32	45	37	31	43	36	30	40	34	29	27
7	59	45	35	29	57	43	35	28	41	33	27	39	32	27	36	30	26	23
8	55	41	32	25	53	39	31	25	37	30	24	35	28	24	33	27	23	21
9	51	37	28	23	49	36	28	22	34	27	22	32	26	21	31	25	20	18
10	48	34	26	20	46	33	25	20	31	24	19	30	23	19	28	23	18	17

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	13878	13878	13878
5°	14990	13708	10458
10°	16085	13428	8177
15°	16936	13115	6218
20°	17518	12784	4521
25°	17901	12426	3048
30°	18326	12051	1799
35°	18535	11627	850
40°	18512	11091	259
45°	18301	10440	0
50°	17969	9563	0
55°	17357	8496	12
60°	16541	7220	12
65°	15508	5852	24
70°	14624	4427	25
75°	13437	3105	25
80°	12115	1860	26
85°	10509	858	27



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	90.8	2.0
10°-20°	276.3	6.2
20°-30°	442.4	9.9
30°-40°	562.1	12.5
40°-50°	625.0	13.9
50°-60°	634.1	14.1
60°-70°	583.6	13.0
70°-80°	487.0	10.9
80°-90°	352.0	7.9
90°-100°	224.7	5.0
100°-110°	128.6	2.9
110°-120°	56.3	1.3
120°-130°	14.9	0.3
130°-140°	3.5	0.1
140°-150°	0.3	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	809.5	18.1
0°-40°	1371.6	30.6
0°-60°	2630.6	58.7
0°-90°	4053.2	90.4
90°-120°	409.6	9.1
90°-150°	428.4	9.6
90°-180°	428.0	9.6
0°-180°	4481.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	927	927	927	927	927	
5°	1118	1062	934	827	780	113
15°	1499	1326	908	643	550	429
25°	1785	1492	847	439	304	829
35°	2000	1548	757	237	92	1253
45°	2064	1515	627	70	0	1595
55°	1983	1394	452	4	1	1773
65°	1741	1202	261	4	3	1728
75°	1436	981	108	6	3	1515
85°	1032	732	20	6	3	889
90°	864	593	7	6	3	475
95°	746	448	6	6	3	587
105°	513	220	6	6	3	544
115°	275	64	6	6	3	275
125°	75	3	7	6	3	75
135°	0	3	6	6	3	5
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	926.7	926.7	926.7	926.7	926.7	926.7	926.7	926.7	926.7	926.7	926.7
2.5°	1008.8	1003.3	1003.3	1000.6	1000.6	1000.6	999.2	1003.3	993.8	996.5	991.0
5°	1118.3	1114.2	1112.9	1114.2	1103.3	1101.9	1097.8	1096.4	1085.5	1075.9	1062.2
7.5°	1222.4	1221.0	1218.2	1215.5	1204.6	1201.8	1195.0	1188.1	1171.7	1158.0	1140.2
10°	1316.8	1311.3	1312.7	1304.5	1292.2	1288.1	1281.2	1270.3	1251.1	1233.3	1210.0
12.5°	1408.5	1401.7	1398.9	1388.0	1375.7	1368.8	1360.6	1345.5	1322.3	1299.0	1268.9
15°	1498.9	1494.8	1492.0	1479.7	1459.2	1450.9	1440.0	1419.5	1389.4	1360.6	1326.4
17.5°	1585.1	1576.9	1574.1	1559.1	1539.9	1530.3	1518.0	1490.6	1456.4	1419.5	1375.7
20°	1654.9	1649.4	1642.6	1628.9	1607.0	1596.0	1581.0	1552.2	1515.3	1471.5	1423.6
22.5°	1722.0	1717.9	1709.7	1691.9	1670.0	1653.5	1637.1	1602.9	1564.6	1516.7	1463.3
25°	1784.9	1780.8	1771.3	1750.7	1724.7	1706.9	1690.5	1649.4	1604.3	1550.9	1492.0
27.5°	1846.5	1842.4	1832.8	1809.6	1776.7	1757.6	1738.4	1691.9	1639.8	1581.0	1518.0
30°	1909.5	1905.4	1890.3	1864.3	1828.7	1805.5	1782.2	1727.5	1667.2	1602.9	1531.7
32.5°	1957.4	1951.9	1936.9	1910.9	1871.2	1847.9	1821.9	1763.0	1693.2	1620.7	1541.3
35°	1999.8	1990.3	1975.2	1945.1	1902.7	1875.3	1850.6	1787.7	1713.8	1634.4	1548.1
37.5°	2028.6	2021.7	2001.2	1967.0	1924.6	1894.4	1868.4	1802.7	1726.1	1644.0	1550.9
40°	2050.5	2042.3	2020.4	1983.4	1935.5	1909.5	1883.5	1821.9	1738.4	1644.0	1548.1
42.5°	2062.8	2053.2	2028.6	1988.9	1936.9	1910.9	1879.4	1820.5	1734.3	1634.4	1535.8
45°	2064.2	2054.6	2031.3	1984.8	1928.7	1898.6	1863.0	1790.4	1711.0	1620.7	1515.3
47.5°	2060.1	2050.5	2021.7	1975.2	1916.3	1882.1	1847.9	1771.3	1689.1	1597.4	1492.0
50°	2047.8	2036.8	2009.4	1961.5	1901.3	1864.3	1828.7	1749.4	1664.5	1567.3	1463.3
52.5°	2024.5	2012.2	1984.8	1938.2	1875.3	1841.1	1806.8	1723.3	1634.4	1534.4	1431.8
55°	1983.4	1976.6	1949.2	1904.0	1843.8	1809.6	1772.6	1691.9	1598.8	1497.5	1393.5
57.5°	1939.6	1930.0	1909.5	1863.0	1801.4	1769.9	1731.6	1650.8	1553.6	1455.1	1352.4
60°	1880.8	1871.2	1849.3	1806.8	1750.7	1715.1	1679.5	1598.8	1501.6	1405.8	1305.9
62.5°	1806.8	1805.5	1786.3	1748.0	1691.9	1659.0	1624.8	1542.7	1452.3	1355.1	1259.3
65°	1741.1	1734.3	1719.2	1682.3	1627.5	1594.7	1560.5	1485.2	1392.1	1303.1	1201.8
67.5°	1679.5	1671.3	1653.5	1615.2	1564.6	1531.7	1501.6	1423.6	1336.0	1247.0	1149.8
70°	1608.4	1602.9	1586.5	1555.0	1503.0	1468.7	1442.7	1360.6	1278.5	1190.9	1095.1
72.5°	1526.2	1520.8	1504.3	1478.3	1430.4	1404.4	1374.3	1300.4	1219.6	1133.4	1038.9
75°	1435.9	1429.0	1416.7	1388.0	1349.7	1322.3	1301.7	1233.3	1160.8	1071.8	981.4
77.5°	1342.8	1337.3	1322.3	1297.6	1263.4	1244.3	1221.0	1160.8	1093.7	1012.9	922.6
80°	1247.0	1242.9	1225.1	1204.6	1178.6	1158.0	1137.5	1084.1	1022.5	947.2	862.4
82.5°	1140.2	1140.2	1125.2	1108.7	1088.2	1071.8	1049.9	1002.0	948.6	877.4	800.8
85°	1032.1	1030.7	1019.8	1006.1	984.2	974.6	956.8	918.5	870.6	804.9	732.3
87.5°	939.0	936.3	924.0	908.9	891.1	878.8	861.0	826.8	787.1	729.6	663.9
90°	863.7	862.4	848.7	832.2	807.6	796.7	778.9	741.9	702.2	650.2	592.7
92.5°	803.5	800.8	785.7	769.3	744.6	729.6	709.0	669.4	622.8	569.4	518.8
95°	746.0	743.3	729.6	711.8	685.8	669.4	648.8	607.8	557.1	499.6	447.6
97.5°	689.9	687.1	673.5	654.3	629.7	611.9	592.7	548.9	496.9	439.4	381.9
100°	632.4	628.3	616.0	596.8	573.5	554.4	535.2	491.4	440.8	381.9	323.0
102.5°	573.5	570.8	559.8	540.7	514.7	498.3	477.7	436.7	384.6	327.1	271.0
105°	513.3	510.6	498.3	481.8	455.8	439.4	420.2	379.2	329.9	273.8	220.4
107.5°	453.1	451.7	442.1	423.0	398.3	381.9	364.1	324.4	276.5	225.9	173.8
110°	392.9	390.1	381.9	364.1	339.5	324.4	306.6	269.7	225.9	176.6	132.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	332.6	331.3	318.9	305.2	283.3	268.3	251.9	217.6	177.9	132.8	95.8
115°	275.1	272.4	261.4	247.8	227.2	213.5	198.5	167.0	132.8	94.4	64.3
117.5°	217.6	216.3	205.3	193.0	173.8	162.9	147.8	121.8	93.1	64.3	41.1
120°	164.3	162.9	154.7	143.7	125.9	116.3	104.0	83.5	60.2	39.7	24.6
122.5°	116.3	115.0	108.1	97.2	84.9	76.7	68.4	52.0	35.6	23.3	15.1
125°	75.3	75.3	68.4	63.0	52.0	46.5	39.7	30.1	20.5	13.7	2.7
127.5°	43.8	43.8	39.7	35.6	28.7	26.0	23.3	17.8	12.3	2.7	2.7
130°	23.3	23.3	20.5	19.2	16.4	13.7	12.3	4.1	1.4	2.7	2.7
132.5°	12.3	12.3	12.3	9.6	1.4	1.4	1.4	1.4	1.4	2.7	2.7
135°	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4	1.4	2.7	2.7
137.5°	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4	1.4	2.7	2.7
140°	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4	1.4	2.7	2.7
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	926.7	926.7	926.7	926.7	926.7	926.7	926.7	926.7	926.7	926.7	926.7
2.5°	984.2	981.4	974.6	969.1	965.0	963.6	956.8	950.0	943.1	936.3	929.4
5°	1048.5	1037.6	1021.1	1006.1	997.9	992.4	977.3	962.3	948.6	933.5	919.8
7.5°	1117.0	1097.8	1073.2	1048.5	1034.8	1022.5	997.9	974.6	951.3	929.4	908.9
10°	1181.3	1153.9	1122.4	1089.6	1070.4	1054.0	1018.4	985.5	954.1	925.3	897.9
12.5°	1237.4	1203.2	1167.6	1126.5	1104.6	1084.1	1040.3	996.5	955.4	917.1	884.3
15°	1286.7	1247.0	1203.2	1159.4	1133.4	1108.7	1056.7	1004.7	952.7	907.5	866.5
17.5°	1330.5	1284.0	1233.3	1184.0	1156.7	1129.3	1070.4	1010.2	951.3	895.2	848.7
20°	1371.6	1315.4	1259.3	1203.2	1173.1	1143.0	1080.0	1012.9	945.9	881.5	828.1
22.5°	1405.8	1344.2	1279.8	1215.5	1185.4	1152.5	1084.1	1012.9	936.3	865.1	804.9
25°	1431.8	1367.5	1297.6	1226.5	1189.5	1155.3	1082.7	1007.5	926.7	847.3	780.2
27.5°	1448.2	1381.1	1307.2	1230.6	1192.2	1152.5	1075.9	999.2	915.7	826.8	752.9
30°	1459.2	1385.2	1307.2	1229.2	1189.5	1148.4	1064.9	984.2	896.6	806.2	724.1
32.5°	1463.3	1383.9	1301.7	1219.6	1179.9	1137.5	1051.3	966.4	880.2	781.6	694.0
35°	1460.5	1375.7	1290.8	1205.9	1164.9	1121.1	1033.5	944.5	855.5	757.0	661.1
37.5°	1453.7	1362.0	1274.4	1188.1	1145.7	1100.5	1010.2	918.5	826.8	726.8	628.3
40°	1442.7	1346.9	1255.2	1166.2	1121.1	1074.5	981.4	889.7	796.7	696.7	595.4
42.5°	1427.7	1329.1	1233.3	1137.5	1092.3	1045.8	951.3	856.9	762.4	662.5	559.8
45°	1409.9	1307.2	1207.3	1107.4	1060.8	1012.9	918.5	821.3	724.1	626.9	521.5
47.5°	1388.0	1282.6	1178.6	1078.6	1030.7	978.7	881.5	781.6	684.4	585.9	483.2
50°	1359.2	1253.8	1148.4	1045.8	993.8	941.7	840.5	740.5	642.0	543.4	443.5
52.5°	1326.4	1219.6	1114.2	1008.8	958.2	903.4	798.0	695.4	596.8	496.9	399.7
55°	1288.1	1184.0	1078.6	971.9	919.8	862.4	755.6	650.2	550.3	451.7	355.9
57.5°	1248.4	1144.3	1038.9	930.8	877.4	821.3	710.4	600.9	501.0	403.8	309.4
60°	1203.2	1100.5	993.8	889.7	836.3	776.1	665.2	553.0	449.0	354.5	264.2
62.5°	1159.4	1056.7	950.0	845.9	793.9	733.7	620.1	506.5	401.1	306.6	221.7
65°	1107.4	1007.5	903.4	800.8	746.0	689.9	574.9	459.9	354.5	261.4	177.9
67.5°	1056.7	955.4	854.1	752.9	700.8	642.0	529.7	414.8	308.0	217.6	142.4
70°	1000.6	902.1	802.1	700.8	651.6	596.8	483.2	369.6	264.2	176.6	108.1
72.5°	944.5	844.6	744.6	647.5	598.2	544.8	433.9	325.8	224.5	141.0	78.0
75°	885.6	785.7	685.8	590.0	542.1	491.4	384.6	284.7	184.8	108.1	54.8
77.5°	828.1	725.5	625.6	529.7	484.6	435.3	332.6	239.5	147.8	79.4	35.6
80°	769.3	666.6	565.3	470.9	424.3	379.2	282.0	195.7	113.6	54.8	21.9
82.5°	709.0	611.9	510.6	410.6	366.8	320.3	231.3	153.3	83.5	34.2	13.7
85°	646.1	550.3	451.7	353.2	309.4	266.9	183.4	115.0	56.1	20.5	8.2
87.5°	583.1	492.8	395.6	299.8	257.3	216.3	139.6	80.8	34.2	11.0	6.8
90°	517.4	432.5	339.5	249.1	208.1	171.1	101.3	52.0	19.2	6.8	6.8
92.5°	451.7	373.7	287.5	201.2	164.3	130.0	69.8	32.9	11.0	6.8	6.8
95°	386.0	312.1	236.8	158.8	125.9	94.4	46.5	19.2	6.8	5.5	6.8
97.5°	321.7	258.7	188.9	120.5	91.7	67.1	28.7	11.0	5.5	5.5	6.8
100°	262.8	204.0	143.7	86.2	63.0	42.4	17.8	6.8	5.5	5.5	6.8
102.5°	210.8	154.7	104.0	57.5	39.7	26.0	11.0	5.5	5.5	5.5	5.5
105°	165.6	112.2	69.8	35.6	24.6	16.4	5.5	5.5	5.5	5.5	5.5
107.5°	124.6	80.8	46.5	21.9	15.1	9.6	5.5	5.5	5.5	5.5	5.5
110°	89.0	53.4	27.4	13.7	8.2	5.5	5.5	5.5	5.5	5.5	5.5



TEST NUMBER: P188242

CATALOG NUMBER: FCC-N-4-LD4-2LO-40-UNV-80/86

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	60.2	32.9	17.8	5.5	4.1	5.5	5.5	5.5	5.5	5.5	5.5
115°	38.3	20.5	11.0	4.1	5.5	5.5	5.5	5.5	5.5	5.5	6.8
117.5°	23.3	13.7	4.1	4.1	5.5	5.5	5.5	5.5	5.5	6.8	6.8
120°	15.1	4.1	4.1	4.1	5.5	5.5	5.5	5.5	5.5	6.8	6.8
122.5°	4.1	4.1	4.1	4.1	4.1	5.5	5.5	5.5	5.5	6.8	6.8
125°	2.7	4.1	4.1	4.1	4.1	5.5	5.5	5.5	5.5	6.8	6.8
127.5°	2.7	4.1	4.1	4.1	4.1	5.5	5.5	5.5	5.5	5.5	6.8
130°	2.7	4.1	4.1	4.1	4.1	4.1	5.5	5.5	5.5	5.5	6.8
132.5°	2.7	4.1	4.1	4.1	4.1	5.5	5.5	5.5	5.5	5.5	6.8
135°	2.7	4.1	4.1	4.1	4.1	4.1	5.5	5.5	5.5	5.5	6.8
137.5°	2.7	4.1	4.1	4.1	4.1	5.5	5.5	5.5	5.5	6.8	6.8
140°	2.7	4.1	4.1	4.1	4.1	4.1	5.5	5.5	5.5	5.5	6.8
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P188242

CATALOG NUMBER: FCC-N-4-LD4-2LO-40-UNV-80/86

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	926.7	926.7	926.7	926.7	926.7	926.7	926.7	926.7	926.7	926.7	926.7
2.5°	921.2	914.4	906.2	903.4	899.3	893.8	885.6	881.5	873.3	867.8	862.4
5°	904.8	892.5	878.8	873.3	867.8	858.2	845.9	837.7	826.8	818.6	810.3
7.5°	889.7	870.6	851.4	844.6	836.3	819.9	806.2	796.7	781.6	772.0	761.1
10°	871.9	848.7	825.4	815.8	806.2	787.1	769.3	755.6	737.8	724.1	711.8
12.5°	852.8	824.0	798.0	787.1	773.4	751.5	729.6	711.8	691.3	677.6	661.1
15°	829.5	796.7	766.5	751.5	739.2	713.2	688.5	668.0	643.3	625.6	609.1
17.5°	804.9	767.9	732.3	720.0	702.2	673.5	646.1	621.4	595.4	576.3	554.4
20°	780.2	739.2	699.5	683.0	662.5	631.0	602.3	574.9	544.8	520.2	498.3
22.5°	751.5	706.3	663.9	646.1	624.2	588.6	554.4	522.9	492.8	464.0	442.1
25°	721.4	672.1	625.6	606.4	584.5	544.8	507.8	473.6	439.4	413.4	387.4
27.5°	688.5	635.1	585.9	565.3	543.4	498.3	459.9	424.3	391.5	361.4	331.3
30°	655.7	598.2	544.8	522.9	499.6	453.1	412.0	373.7	336.7	306.6	277.9
32.5°	621.4	558.5	505.1	480.5	453.1	405.2	362.7	323.0	287.5	253.2	225.9
35°	584.5	517.4	461.3	435.3	407.9	357.3	313.5	273.8	236.8	202.6	175.2
37.5°	546.2	475.0	413.4	388.7	361.4	309.4	265.6	224.5	188.9	156.0	130.0
40°	505.1	433.9	369.6	343.6	314.8	262.8	219.0	177.9	141.0	113.6	90.3
42.5°	466.8	390.1	324.4	297.0	269.7	216.3	173.8	135.5	102.7	76.7	57.5
45°	427.1	347.7	280.6	251.9	224.5	173.8	132.8	97.2	69.8	47.9	32.9
47.5°	387.4	305.2	236.8	208.1	182.1	134.1	95.8	65.7	42.4	27.4	17.8
50°	347.7	262.8	195.7	168.4	143.7	98.6	65.7	41.1	24.6	16.4	9.6
52.5°	306.6	223.1	157.4	131.4	108.1	68.4	41.1	24.6	15.1	5.5	2.7
55°	265.6	183.4	121.8	97.2	78.0	45.2	26.0	15.1	4.1	4.1	4.1
57.5°	225.9	147.8	90.3	69.8	53.4	28.7	16.4	5.5	4.1	4.1	4.1
60°	186.2	115.0	64.3	47.9	34.2	17.8	8.2	4.1	4.1	4.1	4.1
62.5°	147.8	84.9	43.8	31.5	21.9	12.3	5.5	5.5	4.1	4.1	4.1
65°	112.2	60.2	28.7	19.2	15.1	5.5	5.5	5.5	4.1	4.1	4.1
67.5°	82.1	39.7	17.8	13.7	6.8	6.8	5.5	5.5	5.5	5.5	4.1
70°	56.1	24.6	12.3	6.8	6.8	6.8	5.5	5.5	5.5	5.5	4.1
72.5°	37.0	15.1	6.8	6.8	6.8	6.8	5.5	5.5	5.5	5.5	4.1
75°	23.3	9.6	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5	5.5
77.5°	15.1	6.8	6.8	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5
80°	9.6	6.8	6.8	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5
82.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5
85°	6.8	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5	5.5	4.1
87.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5	5.5
90°	6.8	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5	5.5	4.1
92.5°	6.8	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5	5.5	4.1
95°	6.8	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5	5.5	4.1
97.5°	6.8	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5	5.5	4.1
100°	6.8	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5	5.5	4.1
102.5°	6.8	6.8	6.8	5.5	5.5	5.5	5.5	5.5	5.5	4.1	4.1
105°	6.8	6.8	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.1	4.1
107.5°	5.5	6.8	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.1	4.1
110°	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.1	4.1



TEST NUMBER: P188242

CATALOG NUMBER: FCC-N-4-LD4-2LO-40-UNV-80/86

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	5.5	6.8	5.5	5.5	6.8	5.5	5.5	5.5	5.5	4.1	4.1
115°	6.8	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5	5.5	4.1
117.5°	6.8	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5	5.5	4.1
120°	6.8	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5	5.5	4.1
122.5°	6.8	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5	5.5	4.1
125°	6.8	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5	5.5	4.1
127.5°	6.8	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5	5.5	4.1
130°	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5	5.5	5.5	4.1
132.5°	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5	5.5	5.5	4.1
135°	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5	5.5	4.1	4.1
137.5°	6.8	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5	5.5	4.1
140°	6.8	6.8	6.8	6.8	6.8	5.5	5.5	5.5	5.5	4.1	4.1
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P188242

CATALOG NUMBER: FCC-N-4-LD4-2LO-40-UNV-80/86

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	926.7	926.7	926.7	926.7	926.7	926.7	926.7	926.7
2.5°	858.2	852.8	851.4	848.7	844.6	841.8	841.8	843.2
5°	804.9	798.0	795.3	792.5	788.4	784.3	783.0	780.2
7.5°	752.9	744.6	741.9	737.8	733.7	729.6	726.8	722.7
10°	700.8	689.9	687.1	681.7	677.6	670.7	666.6	669.4
12.5°	647.5	635.1	629.7	624.2	616.0	613.2	607.8	609.1
15°	592.7	579.0	573.5	568.1	558.5	550.3	548.9	550.3
17.5°	536.6	521.5	516.0	509.2	498.3	492.8	487.3	490.0
20°	479.1	462.7	455.8	449.0	436.7	429.8	425.7	427.1
22.5°	421.6	401.1	395.6	386.0	375.1	368.2	364.1	365.5
25°	364.1	343.6	336.7	327.1	314.8	308.0	303.9	303.9
27.5°	308.0	286.1	279.2	269.7	256.0	249.1	245.0	243.6
30°	251.9	230.0	223.1	213.5	199.8	193.0	188.9	187.5
32.5°	198.5	179.3	169.7	162.9	149.2	141.0	136.9	136.9
35°	149.2	131.4	123.2	116.3	102.7	95.8	91.7	91.7
37.5°	105.4	90.3	82.1	76.7	64.3	58.9	56.1	54.8
40°	69.8	56.1	49.3	45.2	35.6	31.5	30.1	28.7
42.5°	41.1	30.1	26.0	23.3	19.2	15.1	15.1	13.7
45°	21.9	16.4	13.7	12.3	9.6	5.5	1.4	0.0
47.5°	12.3	5.5	2.7	2.7	1.4	1.4	1.4	0.0
50°	2.7	2.7	2.7	2.7	1.4	1.4	1.4	0.0
52.5°	2.7	2.7	2.7	2.7	1.4	1.4	1.4	1.4
55°	2.7	2.7	2.7	2.7	1.4	1.4	1.4	1.4
57.5°	2.7	2.7	2.7	2.7	2.7	1.4	1.4	1.4
60°	2.7	2.7	2.7	2.7	2.7	1.4	1.4	1.4
62.5°	4.1	2.7	2.7	2.7	2.7	1.4	1.4	1.4
65°	4.1	2.7	2.7	2.7	2.7	2.7	2.7	2.7
67.5°	4.1	4.1	2.7	2.7	2.7	2.7	2.7	2.7
70°	4.1	4.1	4.1	2.7	2.7	2.7	2.7	2.7
72.5°	4.1	4.1	4.1	4.1	2.7	2.7	2.7	2.7
75°	4.1	4.1	4.1	4.1	4.1	2.7	2.7	2.7
77.5°	4.1	4.1	4.1	4.1	4.1	2.7	2.7	2.7
80°	5.5	4.1	4.1	4.1	4.1	4.1	2.7	2.7
82.5°	4.1	4.1	4.1	4.1	4.1	2.7	2.7	2.7
85°	4.1	4.1	4.1	4.1	2.7	2.7	2.7	2.7
87.5°	4.1	4.1	4.1	4.1	2.7	2.7	2.7	2.7
90°	4.1	4.1	4.1	4.1	2.7	2.7	2.7	2.7
92.5°	4.1	4.1	4.1	2.7	2.7	2.7	2.7	2.7
95°	4.1	4.1	4.1	2.7	2.7	2.7	2.7	2.7
97.5°	4.1	4.1	4.1	2.7	2.7	2.7	2.7	2.7
100°	4.1	4.1	2.7	2.7	2.7	2.7	2.7	2.7
102.5°	4.1	2.7	2.7	2.7	2.7	2.7	2.7	2.7
105°	4.1	2.7	2.7	2.7	2.7	2.7	2.7	2.7
107.5°	4.1	2.7	2.7	2.7	2.7	2.7	2.7	2.7
110°	4.1	2.7	2.7	2.7	2.7	2.7	1.4	1.4



TEST NUMBER: P188242

CATALOG NUMBER: FCC-N-4-LD4-2LO-40-UNV-80/86

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	4.1	2.7	2.7	2.7	2.7	2.7	2.7	1.4
115°	4.1	4.1	2.7	2.7	2.7	2.7	2.7	2.7
117.5°	4.1	4.1	4.1	2.7	2.7	2.7	2.7	2.7
120°	4.1	4.1	4.1	2.7	2.7	2.7	2.7	2.7
122.5°	4.1	4.1	4.1	2.7	2.7	2.7	2.7	2.7
125°	4.1	4.1	4.1	2.7	2.7	2.7	2.7	2.7
127.5°	4.1	4.1	2.7	2.7	2.7	2.7	2.7	2.7
130°	4.1	4.1	2.7	2.7	2.7	2.7	2.7	2.7
132.5°	4.1	4.1	2.7	2.7	2.7	2.7	2.7	2.7
135°	4.1	2.7	2.7	2.7	2.7	2.7	2.7	2.7
137.5°	4.1	4.1	2.7	2.7	2.7	2.7	2.7	2.7
140°	4.1	4.1	2.7	2.7	2.7	2.7	2.7	2.7
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)