

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: P188240

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P188240  
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-LD4-2HI-40-UNV-80/86  
Description:  
Light Source: (168) NICHIA ELM 4000K LED  
2UT217042A8404A  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

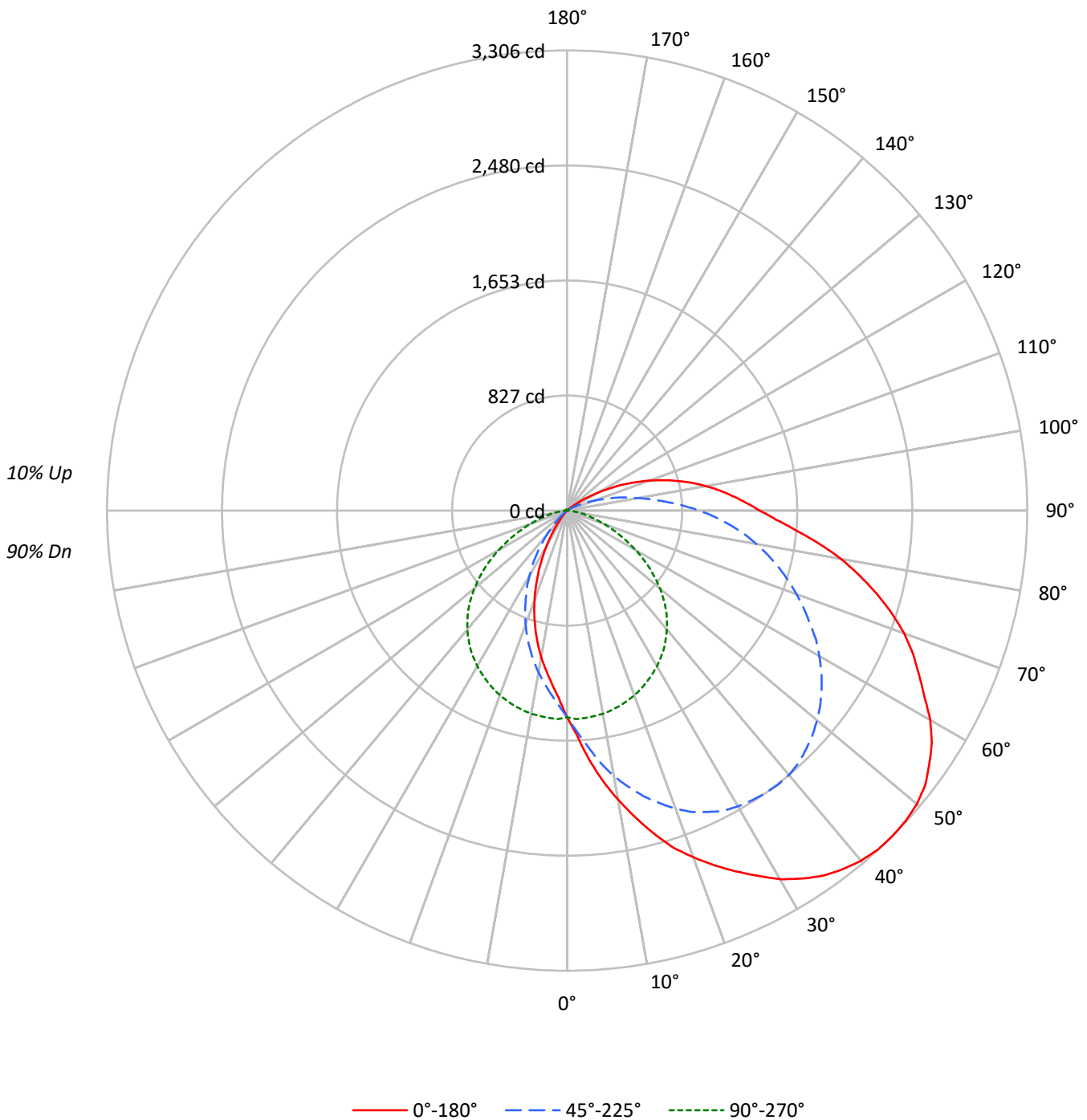
Lumens per Lamp: N/A  
Luminaire Lumens: 7177.9 lumens  
Efficiency: N/A  
Efficacy: 79.8 lumens/watt  
Spacing Criteria (0/90/45): 1.69 / 1.29 / 1.57  
Luminous Opening: Rectangular w/ Sides (W: 1.92' x L: 0.38' x H: 0.52')  
CIE Type: Direct

Input Watts (W): 90  
Input Voltage (V): NR  
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





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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°	22227	22227	22227
5°	24008	21954	16750
10°	25762	21506	13095
15°	27124	21006	9958
20°	28058	20475	7241
25°	28670	19901	4881
30°	29350	19300	2882
35°	29686	18620	1362
40°	29648	17765	415
45°	29309	16722	0
50°	28777	15316	0
55°	27799	13609	19
60°	26492	11564	19
65°	24838	9374	39
70°	23420	7090	40
75°	21520	4976	41
80°	19404	2976	43
85°	16832	1377	45



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	145.4	2.0
10°-20°	442.5	6.2
20°-30°	708.5	9.9
30°-40°	900.3	12.5
40°-50°	1000.9	13.9
50°-60°	1015.6	14.1
60°-70°	934.6	13.0
70°-80°	780.0	10.9
80°-90°	563.8	7.9
90°-100°	359.9	5.0
100°-110°	206.0	2.9
110°-120°	90.2	1.3
120°-130°	24.0	0.3
130°-140°	5.6	0.1
140°-150°	0.5	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1296.4	18.1
0°-40°	2196.7	30.6
0°-60°	4213.2	58.7
0°-90°	6491.6	90.4
90°-120°	656.1	9.1
90°-150°	686.3	9.6
90°-180°	686.0	9.6
0°-180°	7177.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1484	1484	1484	1484	1484	
5°	1791	1701	1495	1324	1250	181
15°	2400	2124	1454	1030	881	686
25°	2859	2390	1357	704	487	1328
35°	3203	2480	1212	379	147	2006
45°	3306	2427	1004	112	0	2554
55°	3177	2232	724	7	2	2840
65°	2789	1925	419	7	4	2768
75°	2300	1572	173	9	4	2426
85°	1653	1173	33	9	4	1424
90°	1383	949	11	9	4	762
95°	1195	717	9	9	4	940
105°	822	353	9	9	4	871
115°	441	103	9	9	4	441
125°	121	4	11	9	4	120
135°	0	4	9	9	4	8
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°	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2
2.5°	1615.7	1606.9	1606.9	1602.6	1602.6	1602.6	1600.4	1606.9	1591.6	1596.0	1587.2
5°	1791.1	1784.5	1782.3	1784.5	1767.0	1764.8	1758.2	1756.0	1738.5	1723.1	1701.2
7.5°	1957.7	1955.5	1951.1	1946.7	1929.2	1924.8	1913.9	1902.9	1876.6	1854.7	1826.2
10°	2109.0	2100.2	2102.4	2089.2	2069.5	2062.9	2052.0	2034.4	2003.7	1975.2	1938.0
12.5°	2255.8	2244.9	2240.5	2223.0	2203.2	2192.3	2179.1	2155.0	2117.7	2080.5	2032.2
15°	2400.5	2394.0	2389.6	2369.8	2337.0	2323.8	2306.3	2273.4	2225.2	2179.1	2124.3
17.5°	2538.7	2525.5	2521.1	2497.0	2466.3	2451.0	2431.2	2387.4	2332.6	2273.4	2203.2
20°	2650.5	2641.7	2630.7	2608.8	2573.7	2556.2	2532.1	2486.0	2426.8	2356.7	2280.0
22.5°	2757.9	2751.3	2738.1	2709.6	2674.6	2648.3	2622.0	2567.2	2505.8	2429.0	2343.5
25°	2858.7	2852.1	2836.8	2803.9	2762.3	2733.8	2707.5	2641.7	2569.3	2483.8	2389.6
27.5°	2957.4	2950.8	2935.5	2898.2	2845.6	2814.9	2784.2	2709.6	2626.3	2532.1	2431.2
30°	3058.2	3051.6	3027.5	2985.9	2928.9	2891.6	2854.3	2766.6	2670.2	2567.2	2453.2
32.5°	3135.0	3126.2	3102.1	3060.4	2996.8	2959.6	2917.9	2823.6	2711.8	2595.7	2468.5
35°	3202.9	3187.6	3163.5	3115.2	3047.3	3003.4	2964.0	2863.1	2744.7	2617.6	2479.5
37.5°	3248.9	3238.0	3205.1	3150.3	3082.3	3034.1	2992.5	2887.2	2764.5	2632.9	2483.8
40°	3284.0	3270.9	3235.8	3176.6	3099.9	3058.2	3016.6	2917.9	2784.2	2632.9	2479.5
42.5°	3303.8	3288.4	3248.9	3185.4	3102.1	3060.4	3010.0	2915.7	2777.6	2617.6	2459.7
45°	3305.9	3290.6	3253.3	3178.8	3088.9	3040.7	2983.7	2867.5	2740.3	2595.7	2426.8
47.5°	3299.4	3284.0	3238.0	3163.5	3069.2	3014.4	2959.6	2836.8	2705.3	2558.4	2389.6
50°	3279.6	3262.1	3218.3	3141.5	3045.1	2985.9	2928.9	2801.7	2665.8	2510.2	2343.5
52.5°	3242.4	3222.6	3178.8	3104.3	3003.4	2948.6	2893.8	2760.1	2617.6	2457.5	2293.1
55°	3176.6	3165.6	3121.8	3049.5	2953.0	2898.2	2839.0	2709.6	2560.6	2398.3	2231.7
57.5°	3106.5	3091.1	3058.2	2983.7	2885.0	2834.6	2773.2	2643.9	2488.2	2330.4	2166.0
60°	3012.2	2996.8	2961.8	2893.8	2803.9	2746.9	2689.9	2560.6	2404.9	2251.5	2091.4
62.5°	2893.8	2891.6	2860.9	2799.5	2709.6	2657.0	2602.2	2470.7	2326.0	2170.4	2016.9
65°	2788.6	2777.6	2753.5	2694.3	2606.6	2554.0	2499.2	2378.6	2229.5	2087.0	1924.8
67.5°	2689.9	2676.8	2648.3	2586.9	2505.8	2453.2	2404.9	2280.0	2139.7	1997.2	1841.5
70°	2575.9	2567.2	2540.8	2490.4	2407.1	2352.3	2310.7	2179.1	2047.6	1907.3	1753.8
72.5°	2444.4	2435.6	2409.3	2367.7	2290.9	2249.3	2201.0	2082.7	1953.3	1815.2	1663.9
75°	2299.7	2288.7	2269.0	2223.0	2161.6	2117.7	2084.9	1975.2	1859.0	1716.6	1571.9
77.5°	2150.6	2141.9	2117.7	2078.3	2023.5	1992.8	1955.5	1859.0	1751.6	1622.3	1477.6
80°	1997.2	1990.6	1962.1	1929.2	1887.5	1854.7	1821.8	1736.3	1637.6	1517.1	1381.1
82.5°	1826.2	1826.2	1802.0	1775.7	1742.9	1716.6	1681.5	1604.7	1519.2	1405.2	1282.5
85°	1653.0	1650.8	1633.2	1611.3	1576.2	1560.9	1532.4	1471.0	1394.3	1289.1	1172.9
87.5°	1503.9	1499.5	1479.8	1455.7	1427.2	1407.4	1378.9	1324.1	1260.6	1168.5	1063.3
90°	1383.3	1381.1	1359.2	1332.9	1293.4	1275.9	1247.4	1188.2	1124.6	1041.3	949.3
92.5°	1286.9	1282.5	1258.4	1232.1	1192.6	1168.5	1135.6	1072.0	997.5	912.0	830.9
95°	1194.8	1190.4	1168.5	1140.0	1098.3	1072.0	1039.1	973.4	892.3	800.2	716.9
97.5°	1104.9	1100.5	1078.6	1047.9	1008.4	979.9	949.3	879.1	795.8	703.7	611.6
100°	1012.8	1006.3	986.5	955.8	918.6	887.9	857.2	787.0	705.9	611.6	517.4
102.5°	918.6	914.2	896.6	865.9	824.3	798.0	765.1	699.3	616.0	524.0	434.1
105°	822.1	817.7	798.0	771.7	730.0	703.7	673.0	607.3	528.3	438.5	353.0
107.5°	725.6	723.5	708.1	677.4	638.0	611.6	583.1	519.6	442.8	361.7	278.4
110°	629.2	624.8	611.6	583.1	543.7	519.6	491.1	431.9	361.7	282.8	212.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	532.7	530.5	510.8	488.9	453.8	429.7	403.4	348.6	285.0	212.7	153.5
115°	440.6	436.3	418.7	396.8	363.9	342.0	317.9	267.5	212.7	151.3	103.0
117.5°	348.6	346.4	328.8	309.1	278.4	260.9	236.8	195.1	149.1	103.0	65.8
120°	263.1	260.9	247.7	230.2	201.7	186.3	166.6	133.7	96.5	63.6	39.5
122.5°	186.3	184.2	173.2	155.7	135.9	122.8	109.6	83.3	57.0	37.3	24.1
125°	120.6	120.6	109.6	100.8	83.3	74.5	63.6	48.2	32.9	21.9	4.4
127.5°	70.2	70.2	63.6	57.0	46.0	41.7	37.3	28.5	19.7	4.4	4.4
130°	37.3	37.3	32.9	30.7	26.3	21.9	19.7	6.6	2.2	4.4	4.4
132.5°	19.7	19.7	19.7	15.3	2.2	2.2	2.2	2.2	2.2	4.4	4.4
135°	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2	4.4	4.4
137.5°	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2	4.4	4.4
140°	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2	4.4	4.4
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°	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2
2.5°	1576.2	1571.9	1560.9	1552.1	1545.6	1543.4	1532.4	1521.4	1510.5	1499.5	1488.6
5°	1679.3	1661.7	1635.4	1611.3	1598.2	1589.4	1565.3	1541.2	1519.2	1495.1	1473.2
7.5°	1788.9	1758.2	1718.7	1679.3	1657.4	1637.6	1598.2	1560.9	1523.6	1488.6	1455.7
10°	1891.9	1848.1	1797.7	1745.0	1714.4	1688.1	1631.1	1578.4	1528.0	1482.0	1438.1
12.5°	1981.8	1927.0	1870.0	1804.2	1769.2	1736.3	1666.1	1596.0	1530.2	1468.8	1416.2
15°	2060.7	1997.2	1927.0	1856.9	1815.2	1775.7	1692.4	1609.1	1525.8	1453.5	1387.7
17.5°	2130.9	2056.4	1975.2	1896.3	1852.5	1808.6	1714.4	1617.9	1523.6	1433.7	1359.2
20°	2196.7	2106.8	2016.9	1927.0	1878.8	1830.5	1729.7	1622.3	1514.9	1411.8	1326.3
22.5°	2251.5	2152.8	2049.8	1946.7	1898.5	1845.9	1736.3	1622.3	1499.5	1385.5	1289.1
25°	2293.1	2190.1	2078.3	1964.3	1905.1	1850.3	1734.1	1613.5	1484.2	1357.0	1249.6
27.5°	2319.4	2212.0	2093.6	1970.9	1909.5	1845.9	1723.1	1600.4	1466.6	1324.1	1205.8
30°	2337.0	2218.6	2093.6	1968.7	1905.1	1839.3	1705.6	1576.2	1435.9	1291.2	1159.7
32.5°	2343.5	2216.4	2084.9	1953.3	1889.7	1821.8	1683.7	1547.7	1409.6	1251.8	1111.5
35°	2339.2	2203.2	2067.3	1931.4	1865.6	1795.5	1655.2	1512.7	1370.2	1212.3	1058.9
37.5°	2328.2	2181.3	2041.0	1902.9	1834.9	1762.6	1617.9	1471.0	1324.1	1164.1	1006.3
40°	2310.7	2157.2	2010.3	1867.8	1795.5	1720.9	1571.9	1425.0	1275.9	1115.9	953.6
42.5°	2286.5	2128.7	1975.2	1821.8	1749.4	1674.9	1523.6	1372.4	1221.1	1061.1	896.6
45°	2258.0	2093.6	1933.6	1773.5	1699.0	1622.3	1471.0	1315.4	1159.7	1004.1	835.3
47.5°	2223.0	2054.2	1887.5	1727.5	1650.8	1567.5	1411.8	1251.8	1096.1	938.3	773.9
50°	2176.9	2008.1	1839.3	1674.9	1591.6	1508.3	1346.1	1186.0	1028.2	870.3	710.3
52.5°	2124.3	1953.3	1784.5	1615.7	1534.6	1446.9	1278.1	1113.7	955.8	795.8	640.1
55°	2062.9	1896.3	1727.5	1556.5	1473.2	1381.1	1210.1	1041.3	881.3	723.5	570.0
57.5°	1999.4	1832.7	1663.9	1490.7	1405.2	1315.4	1137.8	962.4	802.4	646.7	495.5
60°	1927.0	1762.6	1591.6	1425.0	1339.5	1243.0	1065.4	885.7	719.1	567.8	423.1
62.5°	1856.9	1692.4	1521.4	1354.8	1271.5	1175.1	993.1	811.1	642.3	491.1	355.1
65°	1773.5	1613.5	1446.9	1282.5	1194.8	1104.9	920.8	736.6	567.8	418.7	285.0
67.5°	1692.4	1530.2	1368.0	1205.8	1122.4	1028.2	848.4	664.3	493.3	348.6	228.0
70°	1602.6	1444.7	1284.7	1122.4	1043.5	955.8	773.9	591.9	423.1	282.8	173.2
72.5°	1512.7	1352.6	1192.6	1036.9	958.0	872.5	695.0	521.8	359.5	225.8	125.0
75°	1418.4	1258.4	1098.3	944.9	868.1	787.0	616.0	456.0	296.0	173.2	87.7
77.5°	1326.3	1161.9	1001.9	848.4	776.1	697.1	532.7	383.6	236.8	127.2	57.0
80°	1232.1	1067.6	905.4	754.1	679.6	607.3	451.6	313.5	182.0	87.7	35.1
82.5°	1135.6	979.9	817.7	657.7	587.5	513.0	370.5	245.5	133.7	54.8	21.9
85°	1034.8	881.3	723.5	565.6	495.5	427.5	293.8	184.2	89.9	32.9	13.2
87.5°	933.9	789.2	633.6	480.1	412.1	346.4	223.6	129.3	54.8	17.5	11.0
90°	828.7	692.8	543.7	399.0	333.2	274.0	162.2	83.3	30.7	11.0	11.0
92.5°	723.5	598.5	460.4	322.3	263.1	208.3	111.8	52.6	17.5	11.0	11.0
95°	618.2	499.8	379.3	254.3	201.7	151.3	74.5	30.7	11.0	8.8	11.0
97.5°	515.2	414.3	302.5	192.9	146.9	107.4	46.0	17.5	8.8	8.8	11.0
100°	420.9	326.6	230.2	138.1	100.8	68.0	28.5	11.0	8.8	8.8	11.0
102.5°	337.6	247.7	166.6	92.1	63.6	41.7	17.5	8.8	8.8	8.8	8.8
105°	265.3	179.8	111.8	57.0	39.5	26.3	8.8	8.8	8.8	8.8	8.8
107.5°	199.5	129.3	74.5	35.1	24.1	15.3	8.8	8.8	8.8	8.8	8.8
110°	142.5	85.5	43.8	21.9	13.2	8.8	8.8	8.8	8.8	8.8	8.8





TEST NUMBER: P188240

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

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	96.5	52.6	28.5	8.8	6.6	8.8	8.8	8.8	8.8	8.8	8.8
115°	61.4	32.9	17.5	6.6	8.8	8.8	8.8	8.8	8.8	8.8	11.0
117.5°	37.3	21.9	6.6	6.6	8.8	8.8	8.8	8.8	8.8	11.0	11.0
120°	24.1	6.6	6.6	6.6	8.8	8.8	8.8	8.8	8.8	11.0	11.0
122.5°	6.6	6.6	6.6	6.6	6.6	8.8	8.8	8.8	8.8	11.0	11.0
125°	4.4	6.6	6.6	6.6	6.6	8.8	8.8	8.8	8.8	11.0	11.0
127.5°	4.4	6.6	6.6	6.6	6.6	8.8	8.8	8.8	8.8	8.8	11.0
130°	4.4	6.6	6.6	6.6	6.6	6.6	8.8	8.8	8.8	8.8	11.0
132.5°	4.4	6.6	6.6	6.6	6.6	8.8	8.8	8.8	8.8	8.8	11.0
135°	4.4	6.6	6.6	6.6	6.6	6.6	8.8	8.8	8.8	8.8	11.0
137.5°	4.4	6.6	6.6	6.6	6.6	8.8	8.8	8.8	8.8	11.0	11.0
140°	4.4	6.6	6.6	6.6	6.6	6.6	8.8	8.8	8.8	8.8	11.0
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: P188240

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

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2
2.5°	1475.4	1464.4	1451.3	1446.9	1440.3	1431.6	1418.4	1411.8	1398.7	1389.9	1381.1
5°	1449.1	1429.4	1407.4	1398.7	1389.9	1374.6	1354.8	1341.7	1324.1	1311.0	1297.8
7.5°	1425.0	1394.3	1363.6	1352.6	1339.5	1313.2	1291.2	1275.9	1251.8	1236.4	1218.9
10°	1396.5	1359.2	1321.9	1306.6	1291.2	1260.6	1232.1	1210.1	1181.6	1159.7	1140.0
12.5°	1365.8	1319.7	1278.1	1260.6	1238.6	1203.6	1168.5	1140.0	1107.1	1085.2	1058.9
15°	1328.5	1275.9	1227.7	1203.6	1183.8	1142.2	1102.7	1069.8	1030.4	1001.9	975.6
17.5°	1289.1	1229.9	1172.9	1153.1	1124.6	1078.6	1034.8	995.3	953.6	922.9	887.9
20°	1249.6	1183.8	1120.3	1093.9	1061.1	1010.6	964.6	920.8	872.5	833.1	798.0
22.5°	1203.6	1131.2	1063.3	1034.8	999.7	942.7	887.9	837.4	789.2	743.2	708.1
25°	1155.3	1076.4	1001.9	971.2	936.1	872.5	813.3	758.5	703.7	662.1	620.4
27.5°	1102.7	1017.2	938.3	905.4	870.3	798.0	736.6	679.6	627.0	578.8	530.5
30°	1050.1	958.0	872.5	837.4	800.2	725.6	659.9	598.5	539.3	491.1	445.0
32.5°	995.3	894.4	808.9	769.5	725.6	648.9	581.0	517.4	460.4	405.6	361.7
35°	936.1	828.7	738.8	697.1	653.3	572.2	502.0	438.5	379.3	324.5	280.6
37.5°	874.7	760.7	662.1	622.6	578.8	495.5	425.3	359.5	302.5	249.9	208.3
40°	808.9	695.0	591.9	550.3	504.2	420.9	350.8	285.0	225.8	182.0	144.7
42.5°	747.6	624.8	519.6	475.7	431.9	346.4	278.4	217.0	164.4	122.8	92.1
45°	684.0	556.8	449.4	403.4	359.5	278.4	212.7	155.7	111.8	76.7	52.6
47.5°	620.4	488.9	379.3	333.2	291.6	214.8	153.5	105.2	68.0	43.8	28.5
50°	556.8	420.9	313.5	269.6	230.2	157.8	105.2	65.8	39.5	26.3	15.3
52.5°	491.1	357.3	252.1	210.5	173.2	109.6	65.8	39.5	24.1	8.8	4.4
55°	425.3	293.8	195.1	155.7	125.0	72.3	41.7	24.1	6.6	6.6	6.6
57.5°	361.7	236.8	144.7	111.8	85.5	46.0	26.3	8.8	6.6	6.6	6.6
60°	298.1	184.2	103.0	76.7	54.8	28.5	13.2	6.6	6.6	6.6	6.6
62.5°	236.8	135.9	70.2	50.4	35.1	19.7	8.8	8.8	6.6	6.6	6.6
65°	179.8	96.5	46.0	30.7	24.1	8.8	8.8	8.8	6.6	6.6	6.6
67.5°	131.5	63.6	28.5	21.9	11.0	11.0	8.8	8.8	8.8	8.8	6.6
70°	89.9	39.5	19.7	11.0	11.0	11.0	8.8	8.8	8.8	8.8	6.6
72.5°	59.2	24.1	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8	6.6
75°	37.3	15.3	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8
77.5°	24.1	11.0	11.0	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8
80°	15.3	11.0	11.0	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8
82.5°	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8
85°	11.0	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8	6.6
87.5°	11.0	11.0	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8
90°	11.0	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8	6.6
92.5°	11.0	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8	6.6
95°	11.0	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8	6.6
97.5°	11.0	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8	6.6
100°	11.0	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8	6.6
102.5°	11.0	11.0	11.0	8.8	8.8	8.8	8.8	8.8	8.8	6.6	6.6
105°	11.0	11.0	8.8	8.8	8.8	8.8	8.8	8.8	8.8	6.6	6.6
107.5°	8.8	11.0	8.8	8.8	8.8	8.8	8.8	8.8	8.8	6.6	6.6
110°	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	6.6	6.6



TEST NUMBER: P188240

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

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	8.8	11.0	8.8	8.8	11.0	8.8	8.8	8.8	8.8	6.6	6.6
115°	11.0	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8	6.6
117.5°	11.0	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8	6.6
120°	11.0	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8	6.6
122.5°	11.0	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8	6.6
125°	11.0	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8	6.6
127.5°	11.0	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8	6.6
130°	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8	8.8	6.6
132.5°	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8	8.8	6.6
135°	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8	6.6	6.6
137.5°	11.0	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8	6.6
140°	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8	6.6	6.6
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: P188240

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

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2
2.5°	1374.6	1365.8	1363.6	1359.2	1352.6	1348.2	1348.2	1350.4
5°	1289.1	1278.1	1273.7	1269.3	1262.7	1256.2	1254.0	1249.6
7.5°	1205.8	1192.6	1188.2	1181.6	1175.1	1168.5	1164.1	1157.5
10°	1122.4	1104.9	1100.5	1091.8	1085.2	1074.2	1067.6	1072.0
12.5°	1036.9	1017.2	1008.4	999.7	986.5	982.1	973.4	975.6
15°	949.3	927.3	918.6	909.8	894.4	881.3	879.1	881.3
17.5°	859.4	835.3	826.5	815.5	798.0	789.2	780.4	784.8
20°	767.3	741.0	730.0	719.1	699.3	688.4	681.8	684.0
22.5°	675.2	642.3	633.6	618.2	600.7	589.7	583.1	585.3
25°	583.1	550.3	539.3	524.0	504.2	493.3	486.7	486.7
27.5°	493.3	458.2	447.2	431.9	410.0	399.0	392.4	390.2
30°	403.4	368.3	357.3	342.0	320.1	309.1	302.5	300.3
32.5°	317.9	287.2	271.8	260.9	239.0	225.8	219.2	219.2
35°	239.0	210.5	197.3	186.3	164.4	153.5	146.9	146.9
37.5°	168.8	144.7	131.5	122.8	103.0	94.3	89.9	87.7
40°	111.8	89.9	78.9	72.3	57.0	50.4	48.2	46.0
42.5°	65.8	48.2	41.7	37.3	30.7	24.1	24.1	21.9
45°	35.1	26.3	21.9	19.7	15.3	8.8	2.2	0.0
47.5°	19.7	8.8	4.4	4.4	2.2	2.2	2.2	0.0
50°	4.4	4.4	4.4	4.4	2.2	2.2	2.2	0.0
52.5°	4.4	4.4	4.4	4.4	2.2	2.2	2.2	2.2
55°	4.4	4.4	4.4	4.4	2.2	2.2	2.2	2.2
57.5°	4.4	4.4	4.4	4.4	4.4	2.2	2.2	2.2
60°	4.4	4.4	4.4	4.4	4.4	2.2	2.2	2.2
62.5°	6.6	4.4	4.4	4.4	4.4	2.2	2.2	2.2
65°	6.6	4.4	4.4	4.4	4.4	4.4	4.4	4.4
67.5°	6.6	6.6	4.4	4.4	4.4	4.4	4.4	4.4
70°	6.6	6.6	6.6	4.4	4.4	4.4	4.4	4.4
72.5°	6.6	6.6	6.6	6.6	4.4	4.4	4.4	4.4
75°	6.6	6.6	6.6	6.6	6.6	4.4	4.4	4.4
77.5°	6.6	6.6	6.6	6.6	6.6	4.4	4.4	4.4
80°	8.8	6.6	6.6	6.6	6.6	6.6	4.4	4.4
82.5°	6.6	6.6	6.6	6.6	6.6	4.4	4.4	4.4
85°	6.6	6.6	6.6	6.6	4.4	4.4	4.4	4.4
87.5°	6.6	6.6	6.6	6.6	4.4	4.4	4.4	4.4
90°	6.6	6.6	6.6	6.6	4.4	4.4	4.4	4.4
92.5°	6.6	6.6	6.6	4.4	4.4	4.4	4.4	4.4
95°	6.6	6.6	6.6	4.4	4.4	4.4	4.4	4.4
97.5°	6.6	6.6	6.6	4.4	4.4	4.4	4.4	4.4
100°	6.6	6.6	4.4	4.4	4.4	4.4	4.4	4.4
102.5°	6.6	4.4	4.4	4.4	4.4	4.4	4.4	4.4
105°	6.6	4.4	4.4	4.4	4.4	4.4	4.4	4.4
107.5°	6.6	4.4	4.4	4.4	4.4	4.4	4.4	4.4
110°	6.6	4.4	4.4	4.4	4.4	4.4	2.2	2.2



TEST NUMBER: P188240

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

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	6.6	4.4	4.4	4.4	4.4	4.4	4.4	2.2
115°	6.6	6.6	4.4	4.4	4.4	4.4	4.4	4.4
117.5°	6.6	6.6	6.6	4.4	4.4	4.4	4.4	4.4
120°	6.6	6.6	6.6	4.4	4.4	4.4	4.4	4.4
122.5°	6.6	6.6	6.6	4.4	4.4	4.4	4.4	4.4
125°	6.6	6.6	6.6	4.4	4.4	4.4	4.4	4.4
127.5°	6.6	6.6	4.4	4.4	4.4	4.4	4.4	4.4
130°	6.6	6.6	4.4	4.4	4.4	4.4	4.4	4.4
132.5°	6.6	6.6	4.4	4.4	4.4	4.4	4.4	4.4
135°	6.6	4.4	4.4	4.4	4.4	4.4	4.4	4.4
137.5°	6.6	6.6	4.4	4.4	4.4	4.4	4.4	4.4
140°	6.6	6.6	4.4	4.4	4.4	4.4	4.4	4.4
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)