

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: P188189

Luminaire Tested: **FMB-N-4-LD4-2DN/STD-40-UNV-80/86**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P188189  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27217)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FMB-N-4-LD4-2DN/STD-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: 4289.0 lumens  
Efficiency: N/A  
Efficacy: 62.0 lumens/watt  
Spacing Criteria (0/90/45): 1.18 / 1.2 / 1.3  
Luminous Opening: Rectangular w/ Sides (W: 3.67' x L: 0.29' x H: 0.04')  
CIE Type: Direct

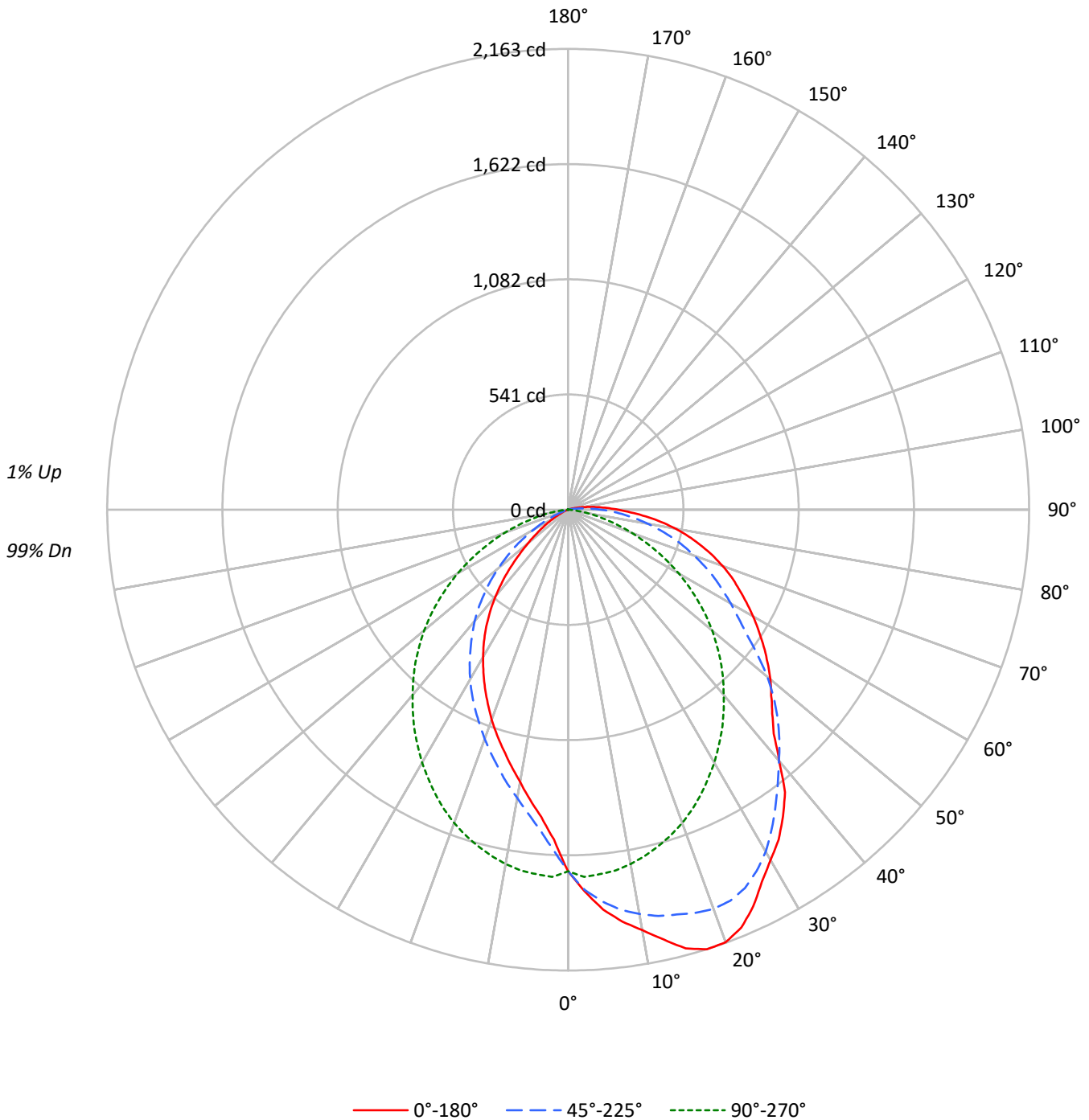
Input Watts (W): 69.2  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	101	101	101	99
1	108	104	99	95	106	101	97	94	97	94	91	93	90	88	89	87	85	83
2	99	91	84	78	96	89	83	77	85	80	75	82	77	73	78	75	72	69
3	91	80	72	66	88	78	71	65	75	69	64	72	67	63	70	65	61	59
4	83	71	63	56	81	70	62	56	67	60	55	65	59	54	63	57	53	51
5	77	64	55	49	75	63	55	48	61	53	48	59	52	47	57	51	47	45
6	71	58	49	43	69	57	49	43	55	48	42	53	47	42	52	46	41	39
7	66	53	44	38	64	52	44	38	50	43	38	49	42	37	47	41	37	35
8	62	48	40	34	60	48	40	34	46	39	34	45	38	34	44	38	33	31
9	58	44	36	31	56	44	36	31	43	36	31	41	35	30	40	34	30	28
10	54	41	33	28	53	41	33	28	39	33	28	38	32	28	38	32	28	26

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	17083	17083	17083
5°	18799	17329	14449
10°	19975	17220	12940
15°	21392	16981	11727
20°	21993	16688	10677
25°	21388	16283	9612
30°	20384	15824	8573
35°	19623	15336	7481
40°	18068	14773	6204
45°	16867	14254	4749
50°	16571	13620	3304
55°	16329	12818	2138
60°	16172	11839	1170
65°	16118	10553	565
70°	16289	9069	70
75°	16327	7084	0
80°	16359	4879	0
85°	16010	2412	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	159.5	3.7
10°-20°	456.7	10.6
20°-30°	676.7	15.8
30°-40°	768.6	17.9
40°-50°	730.2	17.0
50°-60°	605.0	14.1
60°-70°	440.2	10.3
70°-80°	273.3	6.4
80°-90°	132.0	3.1
90°-100°	40.3	0.9
100°-110°	6.5	0.2
110°-120°	0.1	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°	1292.8	30.1
0°-40°	2061.4	48.1
0°-60°	3396.5	79.2
0°-90°	4242.0	98.9
90°-120°	47.0	1.1
90°-150°	47.0	1.1
90°-180°	47.0	1.1
0°-180°	4289.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1697	1697	1697	1697	1697	
5°	1884	1846	1717	1508	1448	183
15°	2132	1967	1635	1258	1168	601
25°	2054	1960	1474	1033	923	942
35°	1757	1696	1258	799	670	1093
45°	1354	1390	1013	554	381	1055
55°	1120	1023	742	306	147	1003
65°	884	756	454	94	31	878
75°	644	504	190	8	0	679
85°	365	262	24	1	0	329
90°	235	154	2	1	0	130
95°	137	69	2	1	0	98
105°	27	2	2	1	0	32
115°	0	0	0	0	0	0
125°	0	0	0	0	0	0
135°	0	0	0	0	0	0
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°	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3
2.5°	1794.3	1795.1	1799.2	1800.8	1804.0	1800.0	1798.3	1796.7	1800.0	1803.2	1786.1
5°	1883.9	1880.6	1886.3	1879.0	1879.0	1873.3	1870.9	1865.2	1865.2	1862.7	1846.4
7.5°	1949.9	1948.3	1948.3	1944.2	1941.7	1936.0	1932.0	1923.8	1919.7	1914.9	1893.7
10°	2003.7	2006.1	2007.7	1999.6	1993.1	1984.9	1979.2	1967.0	1960.5	1952.3	1927.1
12.5°	2066.4	2067.2	2064.8	2055.8	2043.6	2033.0	2024.9	2009.4	1997.2	1981.7	1953.2
15°	2131.6	2134.0	2130.0	2119.4	2103.9	2090.0	2079.5	2054.2	2028.9	2002.0	1967.0
17.5°	2163.4	2165.8	2160.9	2153.6	2138.9	2129.2	2116.9	2092.5	2062.3	2031.4	1984.1
20°	2160.1	2162.6	2158.5	2151.2	2136.5	2130.0	2118.6	2094.9	2072.9	2039.5	1993.9
22.5°	2123.5	2122.6	2121.8	2113.7	2102.3	2094.9	2087.6	2072.9	2052.6	2025.7	1986.6
25°	2054.2	2055.0	2058.3	2054.2	2048.5	2043.6	2037.9	2024.9	2007.7	1992.3	1960.5
27.5°	1968.6	1971.9	1975.2	1968.6	1965.4	1967.0	1969.5	1960.5	1950.7	1934.4	1913.2
30°	1898.6	1897.7	1901.0	1895.3	1892.9	1892.0	1887.2	1878.2	1872.5	1867.6	1853.7
32.5°	1836.6	1830.9	1832.6	1827.7	1822.0	1820.3	1813.8	1803.2	1792.6	1785.3	1777.2
35°	1756.8	1759.2	1760.9	1756.8	1751.1	1751.9	1748.6	1734.0	1717.7	1707.1	1696.5
37.5°	1671.2	1672.0	1674.5	1675.3	1676.9	1673.7	1675.3	1662.3	1650.0	1630.5	1615.8
40°	1540.0	1549.0	1557.1	1568.6	1584.0	1587.3	1593.8	1588.1	1577.5	1561.2	1538.4
42.5°	1427.6	1437.4	1439.8	1447.1	1462.6	1470.8	1485.4	1498.5	1497.7	1483.8	1467.5
45°	1354.3	1358.3	1359.1	1358.3	1361.6	1366.5	1369.7	1382.8	1401.5	1400.7	1390.1
47.5°	1292.3	1298.0	1295.6	1289.9	1288.3	1285.0	1281.7	1276.8	1287.4	1303.7	1309.4
50°	1238.5	1240.2	1237.7	1231.2	1221.4	1217.4	1213.3	1197.0	1188.8	1195.4	1219.8
52.5°	1179.1	1181.5	1178.2	1170.1	1165.2	1157.1	1150.5	1129.4	1113.1	1102.5	1119.6
55°	1120.4	1122.8	1120.4	1109.8	1104.1	1096.0	1089.4	1068.2	1047.9	1031.6	1023.4
57.5°	1060.9	1063.4	1059.3	1051.1	1043.8	1036.5	1028.3	1007.9	988.4	967.2	946.8
60°	1002.2	1003.9	999.8	991.7	983.5	977.0	968.8	950.1	928.1	907.7	880.0
62.5°	942.8	945.2	941.9	933.8	925.7	919.1	911.8	890.6	868.6	848.2	817.3
65°	884.1	886.5	882.5	872.7	865.4	858.0	851.5	830.3	809.1	786.3	756.2
67.5°	831.1	827.1	823.8	814.0	808.3	798.5	791.2	773.3	748.8	724.4	691.8
70°	770.8	767.6	765.1	754.5	747.2	738.2	731.7	713.0	687.7	662.5	628.2
72.5°	708.1	705.6	703.2	693.4	685.3	679.6	672.2	652.7	627.4	600.5	567.1
75°	643.7	641.3	635.6	630.7	622.5	619.3	609.5	591.6	566.3	537.8	504.4
77.5°	578.5	575.3	571.2	565.5	558.2	553.3	545.1	529.6	504.4	475.9	440.8
80°	510.9	508.5	505.2	500.3	491.3	486.5	479.1	462.0	442.5	413.1	378.9
82.5°	440.8	437.6	435.9	432.7	427.8	422.9	414.7	397.6	378.9	351.2	318.6
85°	365.0	361.8	362.6	360.2	357.7	353.6	348.7	332.5	316.2	290.1	262.4
87.5°	294.2	292.5	290.9	289.3	287.6	285.2	280.3	266.5	253.4	231.4	205.3
90°	234.7	232.2	231.4	228.2	224.9	221.6	216.7	205.3	194.7	175.2	154.0
92.5°	181.7	180.1	179.3	176.0	170.3	167.0	162.2	150.7	141.8	125.5	107.6
95°	136.9	134.4	133.6	129.6	123.9	120.6	115.7	104.3	96.2	83.1	69.3
97.5°	97.8	97.8	94.5	91.3	85.6	82.3	79.9	68.4	61.1	50.5	40.7
100°	66.0	64.4	63.6	61.1	55.4	53.0	50.5	42.4	36.7	29.3	22.8
102.5°	42.4	41.6	40.7	37.5	35.0	32.6	30.1	26.1	22.0	17.9	13.9
105°	26.9	26.9	26.1	23.6	22.0	21.2	19.6	16.3	9.8	4.1	1.6
107.5°	15.5	15.5	14.7	11.4	9.0	6.5	4.9	2.4	0.8	0.8	0.8
110°	1.6	1.6	1.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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



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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3
2.5°	1773.9	1765.7	1758.4	1751.9	1747.0	1741.3	1733.1	1734.0	1731.5	1725.0	1707.1
5°	1830.9	1819.5	1807.3	1794.3	1786.1	1777.2	1760.0	1748.6	1735.6	1716.9	1685.9
7.5°	1870.9	1851.3	1834.2	1815.4	1806.5	1796.7	1776.3	1759.2	1737.2	1707.9	1662.3
10°	1897.7	1873.3	1849.7	1823.6	1809.7	1798.3	1775.5	1756.0	1727.4	1688.3	1633.7
12.5°	1916.5	1888.8	1861.1	1831.7	1815.4	1799.2	1769.8	1745.4	1712.0	1663.9	1602.8
15°	1928.7	1893.7	1860.3	1826.0	1808.9	1791.8	1756.8	1724.2	1687.5	1634.6	1566.9
17.5°	1932.8	1889.6	1851.3	1813.8	1793.4	1773.9	1734.0	1696.5	1659.0	1602.0	1523.7
20°	1937.7	1883.9	1834.2	1789.4	1770.6	1750.3	1706.3	1666.3	1624.8	1564.5	1478.9
22.5°	1930.3	1870.9	1815.4	1767.4	1742.1	1719.3	1672.9	1628.9	1584.8	1521.3	1430.8
25°	1910.0	1854.6	1793.4	1734.8	1707.1	1681.8	1634.6	1585.7	1538.4	1474.0	1378.7
27.5°	1879.8	1820.3	1765.7	1702.2	1669.6	1640.3	1587.3	1538.4	1488.7	1422.7	1326.5
30°	1820.3	1778.8	1724.2	1662.3	1626.4	1594.6	1536.8	1485.4	1434.1	1370.5	1272.0
32.5°	1757.6	1716.0	1671.2	1612.6	1578.3	1543.3	1480.6	1435.7	1377.1	1314.3	1216.5
35°	1681.0	1650.0	1603.6	1553.1	1522.1	1489.5	1423.5	1377.1	1320.8	1258.1	1162.0
37.5°	1600.3	1573.4	1536.0	1488.7	1460.2	1429.2	1361.6	1314.3	1261.4	1197.8	1104.9
40°	1519.7	1492.8	1461.8	1417.8	1392.5	1366.5	1301.3	1249.1	1198.6	1135.1	1047.9
42.5°	1439.0	1410.5	1386.8	1349.4	1327.4	1298.8	1241.0	1184.8	1135.1	1075.6	992.5
45°	1364.8	1333.1	1308.6	1278.5	1256.5	1232.8	1178.2	1118.8	1069.9	1012.8	933.0
47.5°	1289.9	1259.7	1228.8	1202.7	1189.7	1162.8	1113.9	1054.4	1003.1	946.8	871.9
50°	1212.5	1187.2	1156.2	1129.4	1114.7	1094.3	1045.4	982.7	933.0	881.6	809.1
52.5°	1131.8	1115.5	1085.4	1053.6	1037.3	1019.4	976.2	917.5	864.5	813.2	743.1
55°	1039.7	1038.9	1014.5	980.2	962.3	946.0	905.3	849.9	792.8	742.3	677.9
57.5°	946.0	958.2	940.3	908.5	887.4	871.1	832.8	781.4	723.6	670.6	605.4
60°	862.1	871.1	867.0	832.8	813.2	789.6	758.6	710.5	651.1	599.7	537.8
62.5°	792.8	783.9	788.8	761.1	740.7	720.3	682.0	638.0	581.0	526.4	468.5
65°	725.2	706.5	705.6	686.1	665.7	646.2	606.2	564.7	508.5	453.9	398.5
67.5°	664.9	636.4	621.7	609.5	591.6	572.0	530.5	491.3	437.6	383.0	330.8
70°	601.3	569.6	544.3	532.1	516.6	498.7	456.3	417.2	366.7	317.8	264.8
72.5°	536.2	504.4	474.2	453.0	444.1	425.3	384.6	343.9	301.5	251.8	203.7
75°	471.0	440.0	408.2	377.3	369.9	353.6	315.3	275.4	235.5	189.9	148.3
77.5°	407.4	374.8	344.7	309.6	297.4	283.6	249.3	211.9	175.2	136.9	100.2
80°	345.5	312.9	281.9	246.9	233.0	218.4	189.0	154.0	121.4	89.6	60.3
82.5°	288.5	255.0	223.3	193.1	175.2	159.7	132.8	105.1	75.8	51.3	31.0
85°	229.0	198.8	169.5	140.2	125.5	111.6	88.0	63.6	41.6	23.6	12.2
87.5°	176.8	147.5	121.4	96.2	83.1	72.5	51.3	32.6	17.9	7.3	4.1
90°	128.7	103.5	81.5	60.3	49.7	42.4	26.1	13.9	5.7	1.6	1.6
92.5°	87.2	66.8	49.7	34.2	26.9	21.2	11.4	5.7	1.6	1.6	1.6
95°	53.8	39.1	27.7	17.9	13.0	10.6	4.1	1.6	1.6	1.6	1.6
97.5°	30.1	21.2	14.7	9.0	4.1	1.6	1.6	1.6	1.6	1.6	1.6
100°	17.1	12.2	3.3	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
102.5°	5.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
105°	0.8	0.8	0.8	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
107.5°	0.8	0.8	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
110°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6





TEST NUMBER: P188189

CATALOG NUMBER: FMB-N-4-LD4-2DN/STD-40-UNV-80/86

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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: P188189

CATALOG NUMBER: FMB-N-4-LD4-2DN/STD-40-UNV-80/86

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3
2.5°	1681.0	1659.0	1641.9	1637.0	1631.3	1615.0	1603.6	1598.7	1597.9	1596.3	1584.0
5°	1649.2	1616.6	1589.7	1579.1	1568.6	1544.1	1526.2	1515.6	1508.3	1503.4	1486.3
7.5°	1615.0	1572.6	1535.1	1521.3	1509.1	1480.6	1460.2	1447.1	1438.2	1430.0	1412.1
10°	1578.3	1527.8	1486.3	1470.8	1456.1	1424.3	1401.5	1387.7	1374.6	1365.7	1344.5
12.5°	1537.6	1480.6	1436.6	1420.3	1404.0	1370.5	1347.7	1331.4	1317.6	1302.1	1281.7
15°	1493.6	1431.7	1386.0	1368.1	1352.6	1317.6	1289.9	1272.0	1258.1	1243.4	1222.2
17.5°	1443.9	1383.6	1334.7	1316.8	1300.5	1263.0	1236.1	1213.3	1201.1	1184.8	1162.0
20°	1393.4	1331.4	1283.4	1263.8	1243.4	1206.0	1182.3	1161.1	1144.8	1126.1	1103.3
22.5°	1340.4	1276.0	1228.8	1209.2	1188.8	1153.8	1126.1	1104.9	1087.8	1069.1	1047.1
25°	1284.2	1223.1	1173.4	1153.0	1133.4	1098.4	1071.5	1049.5	1033.2	1012.8	986.8
27.5°	1228.0	1167.7	1117.1	1098.4	1077.2	1043.0	1016.1	995.7	977.8	954.2	928.1
30°	1172.5	1111.4	1060.9	1041.4	1021.8	986.8	959.9	940.3	919.1	894.7	867.8
32.5°	1116.3	1054.4	1005.5	986.8	967.2	934.6	905.3	883.3	860.5	834.4	808.3
35°	1060.9	998.2	950.1	930.5	911.0	879.2	849.1	823.8	799.4	774.9	747.2
37.5°	1005.5	942.8	893.1	875.1	853.1	823.8	792.0	766.8	740.7	713.8	686.1
40°	947.7	884.9	836.0	818.1	795.3	766.8	733.3	708.1	682.0	652.7	623.3
42.5°	891.4	828.7	776.5	755.4	736.6	708.1	674.7	648.6	620.9	589.1	560.6
45°	833.6	770.0	718.7	695.9	677.1	647.8	612.8	586.7	554.1	525.6	496.2
47.5°	774.9	711.3	657.6	634.8	620.1	585.9	551.6	523.1	493.8	462.0	434.3
50°	715.4	651.1	596.5	573.6	559.0	523.9	488.9	458.8	427.0	397.6	368.3
52.5°	657.6	589.9	534.5	512.5	497.0	462.0	426.2	396.0	364.2	334.1	302.3
55°	591.6	528.8	472.6	451.4	435.1	399.3	363.4	334.1	305.6	271.3	239.6
57.5°	527.2	465.3	414.7	389.5	374.0	337.3	301.5	273.8	244.4	212.7	182.5
60°	462.0	402.5	354.5	328.4	314.5	277.9	243.6	214.3	188.2	156.4	132.8
62.5°	397.6	339.8	295.0	275.4	254.2	220.8	188.2	162.2	137.7	110.8	91.3
65°	333.3	279.5	236.3	218.4	198.8	167.9	139.3	114.9	93.7	72.5	59.5
67.5°	270.5	220.8	182.5	166.2	147.5	121.4	96.2	75.0	58.7	44.0	36.7
70°	211.0	167.0	132.8	119.0	103.5	81.5	61.1	45.6	34.2	26.9	22.8
72.5°	156.4	119.0	91.3	79.0	66.8	49.7	35.0	26.9	20.4	17.1	11.4
75°	109.2	76.6	56.2	47.3	39.1	27.7	19.6	15.5	8.1	1.6	0.8
77.5°	69.3	45.6	31.0	25.3	20.4	14.7	9.0	1.6	0.8	0.8	0.8
80°	39.1	23.6	15.5	13.0	11.4	2.4	1.6	1.6	0.8	0.8	0.8
82.5°	17.9	10.6	6.5	2.4	1.6	1.6	1.6	1.6	0.8	0.8	0.8
85°	7.3	2.4	1.6	1.6	1.6	1.6	0.8	0.8	0.8	0.8	0.8
87.5°	1.6	1.6	1.6	1.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8
90°	1.6	1.6	1.6	1.6	1.6	0.8	0.8	0.8	0.8	0.8	0.8
92.5°	1.6	1.6	1.6	1.6	1.6	0.8	0.8	0.8	0.8	0.8	0.8
95°	1.6	1.6	1.6	1.6	1.6	1.6	0.8	0.8	0.8	0.8	0.8
97.5°	1.6	1.6	1.6	1.6	1.6	0.8	0.8	0.8	0.8	0.8	0.8
100°	1.6	1.6	1.6	1.6	1.6	1.6	0.8	0.8	0.8	0.8	0.8
102.5°	1.6	1.6	1.6	1.6	1.6	0.8	0.8	0.8	0.8	0.8	0.8
105°	1.6	1.6	1.6	1.6	1.6	1.6	0.8	0.8	0.8	0.8	0.8
107.5°	1.6	1.6	1.6	1.6	1.6	0.8	0.8	0.8	0.8	0.8	0.8
110°	1.6	1.6	1.6	1.6	1.6	1.6	0.8	0.8	0.8	0.8	0.8



TEST NUMBER: P188189

CATALOG NUMBER: FMB-N-4-LD4-2DN/STD-40-UNV-80/86

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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: P188189

CATALOG NUMBER: FMB-N-4-LD4-2DN/STD-40-UNV-80/86

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3	1697.3
2.5°	1573.4	1566.9	1560.4	1562.0	1552.3	1548.2	1542.5	1548.2
5°	1473.2	1465.1	1458.6	1458.6	1450.4	1447.1	1443.9	1448.0
7.5°	1399.1	1390.9	1386.0	1384.4	1375.4	1372.2	1368.9	1372.2
10°	1330.6	1318.4	1312.7	1311.1	1302.1	1298.0	1294.0	1298.0
12.5°	1266.3	1255.7	1249.1	1246.7	1237.7	1235.3	1231.2	1232.8
15°	1207.6	1196.2	1188.8	1186.4	1175.0	1170.9	1166.0	1168.5
17.5°	1146.5	1135.9	1129.4	1126.1	1117.1	1110.6	1107.4	1109.8
20°	1087.0	1076.4	1069.1	1065.0	1056.0	1048.7	1045.4	1048.7
22.5°	1027.5	1015.3	1006.3	1004.7	994.9	985.9	984.3	985.1
25°	971.3	955.0	946.8	941.1	933.0	928.1	922.4	923.2
27.5°	912.6	896.3	885.7	880.0	871.1	864.5	859.6	860.5
30°	851.5	835.2	824.6	817.3	808.3	802.6	796.9	798.5
32.5°	790.4	772.5	762.7	754.5	745.6	738.2	733.3	735.0
35°	728.5	708.9	699.9	691.8	681.2	672.2	667.3	669.8
37.5°	666.5	645.3	636.4	629.9	616.0	607.1	600.5	602.2
40°	602.2	581.0	568.8	563.9	548.4	538.6	532.1	528.8
42.5°	537.8	515.0	503.6	497.0	479.1	466.9	457.9	456.3
45°	471.0	445.7	431.9	426.2	405.0	391.9	382.2	381.3
47.5°	403.3	375.6	363.4	353.6	333.3	320.2	314.5	310.5
50°	334.9	306.4	295.0	286.0	267.3	255.9	251.0	246.9
52.5°	269.7	242.8	233.9	225.7	210.2	199.6	195.6	193.1
55°	209.4	186.6	179.3	170.3	159.7	151.6	149.1	146.7
57.5°	157.3	139.3	132.8	125.5	117.3	110.8	108.4	105.9
60°	112.4	97.8	93.7	88.8	81.5	76.6	74.1	72.5
62.5°	76.6	66.8	62.7	59.5	53.8	50.5	48.9	47.3
65°	48.9	41.6	39.9	37.5	34.2	32.6	31.8	31.0
67.5°	31.0	26.9	26.1	25.3	23.6	22.0	21.2	21.2
70°	20.4	17.1	15.5	13.0	9.0	5.7	4.1	3.3
72.5°	4.1	0.8	0.8	0.8	0.0	0.0	0.0	0.0
75°	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0
77.5°	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0
80°	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0
82.5°	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0
85°	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0
87.5°	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
95°	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100°	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
105°	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110°	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P188189

CATALOG NUMBER: FMB-N-4-LD4-2DN/STD-40-UNV-80/86

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)