

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: P188188

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P188188  
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/LO-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: 3153.0 lumens  
Efficiency: N/A  
Efficacy: 63.8 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

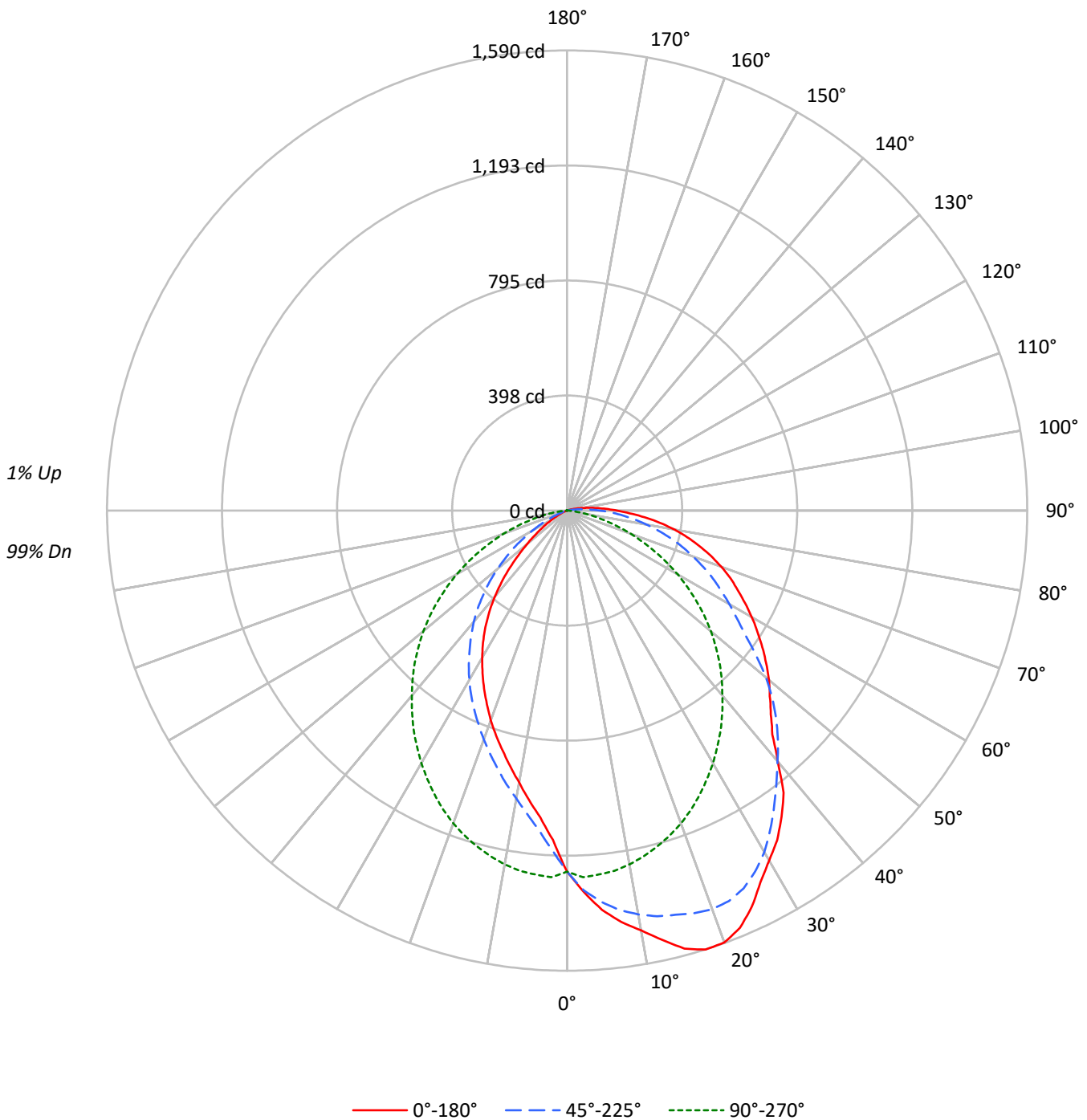
Input Watts (W): 49.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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

### 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°	12558	12558	12558
5°	13819	12739	10621
10°	14684	12660	9513
15°	15726	12483	8621
20°	16168	12268	7849
25°	15723	11970	7067
30°	14985	11633	6302
35°	14426	11275	5500
40°	13282	10860	4562
45°	12400	10480	3491
50°	12183	10013	2429
55°	12003	9423	1571
60°	11890	8704	860
65°	11848	7758	416
70°	11976	6666	51
75°	12003	5208	0
80°	12027	3588	0
85°	11772	1778	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	117.2	3.7
10°-20°	335.7	10.6
20°-30°	497.4	15.8
30°-40°	565.0	17.9
40°-50°	536.8	17.0
50°-60°	444.7	14.1
60°-70°	323.6	10.3
70°-80°	200.9	6.4
80°-90°	97.0	3.1
90°-100°	29.6	0.9
100°-110°	4.8	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°	950.4	30.1
0°-40°	1515.4	48.1
0°-60°	2496.9	79.2
0°-90°	3118.5	98.9
90°-120°	34.5	1.1
90°-150°	34.5	1.1
90°-180°	35.0	1.1
0°-180°	3153.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1248	1248	1248	1248	1248	
5°	1385	1357	1262	1109	1064	135
15°	1567	1446	1202	925	859	442
25°	1510	1441	1084	760	679	693
35°	1292	1247	925	588	492	803
45°	996	1022	745	407	280	775
55°	824	752	546	225	108	737
65°	650	556	334	69	23	646
75°	473	371	140	6	0	499
85°	268	193	17	1	0	242
90°	172	113	1	1	0	95
95°	101	51	1	1	0	72
105°	20	1	1	1	0	23
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°	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7
2.5°	1319.0	1319.6	1322.6	1323.8	1326.2	1323.2	1322.0	1320.8	1323.2	1325.6	1313.0
5°	1384.9	1382.5	1386.7	1381.3	1381.3	1377.1	1375.3	1371.1	1371.1	1369.3	1357.4
7.5°	1433.4	1432.2	1432.2	1429.2	1427.4	1423.3	1420.3	1414.3	1411.3	1407.7	1392.1
10°	1473.0	1474.8	1476.0	1470.0	1465.2	1459.2	1455.0	1446.0	1441.2	1435.2	1416.7
12.5°	1519.1	1519.7	1517.9	1511.3	1502.3	1494.5	1488.5	1477.2	1468.2	1456.8	1435.8
15°	1567.0	1568.8	1565.8	1558.0	1546.7	1536.5	1528.7	1510.1	1491.5	1471.8	1446.0
17.5°	1590.4	1592.2	1588.6	1583.2	1572.4	1565.2	1556.2	1538.3	1516.1	1493.3	1458.6
20°	1588.0	1589.8	1586.8	1581.4	1570.6	1565.8	1557.4	1540.1	1523.9	1499.3	1465.8
22.5°	1561.0	1560.4	1559.8	1553.8	1545.5	1540.1	1534.7	1523.9	1508.9	1489.1	1460.4
25°	1510.1	1510.7	1513.1	1510.1	1505.9	1502.3	1498.1	1488.5	1476.0	1464.6	1441.2
27.5°	1447.2	1449.6	1452.0	1447.2	1444.8	1446.0	1447.8	1441.2	1434.0	1422.1	1406.5
30°	1395.7	1395.1	1397.5	1393.3	1391.5	1390.9	1387.3	1380.7	1376.5	1372.9	1362.8
32.5°	1350.2	1346.0	1347.2	1343.6	1339.4	1338.2	1333.4	1325.6	1317.8	1312.4	1306.4
35°	1291.5	1293.3	1294.5	1291.5	1287.3	1287.9	1285.5	1274.7	1262.7	1254.9	1247.1
37.5°	1228.6	1229.2	1231.0	1231.6	1232.8	1230.4	1231.6	1222.0	1213.0	1198.6	1187.8
40°	1132.1	1138.7	1144.7	1153.1	1164.5	1166.9	1171.7	1167.5	1159.7	1147.7	1130.9
42.5°	1049.5	1056.7	1058.5	1063.8	1075.2	1081.2	1092.0	1101.6	1101.0	1090.8	1078.8
45°	995.6	998.6	999.2	998.6	1001.0	1004.5	1006.9	1016.5	1030.3	1029.7	1021.9
47.5°	950.0	954.2	952.4	948.2	947.0	944.6	942.2	938.7	946.4	958.4	962.6
50°	910.5	911.7	909.9	905.1	897.9	894.9	891.9	880.0	874.0	878.8	896.7
52.5°	866.8	868.6	866.2	860.2	856.6	850.6	845.8	830.2	818.3	810.5	823.0
55°	823.6	825.4	823.6	815.9	811.7	805.7	800.9	785.3	770.3	758.4	752.4
57.5°	779.9	781.7	778.7	772.7	767.3	761.9	756.0	741.0	726.6	711.0	696.1
60°	736.8	738.0	735.0	729.0	723.0	718.2	712.2	698.4	682.3	667.3	646.9
62.5°	693.1	694.9	692.5	686.5	680.5	675.7	670.3	654.7	638.5	623.6	600.8
65°	649.9	651.7	648.7	641.5	636.2	630.8	626.0	610.4	594.8	578.0	555.9
67.5°	611.0	608.0	605.6	598.4	594.2	587.0	581.6	568.5	550.5	532.5	508.6
70°	566.7	564.3	562.5	554.7	549.3	542.7	537.9	524.1	505.6	487.0	461.8
72.5°	520.5	518.7	516.9	509.8	503.8	499.6	494.2	479.8	461.2	441.5	416.9
75°	473.2	471.4	467.2	463.6	457.6	455.3	448.1	434.9	416.3	395.3	370.8
77.5°	425.3	422.9	419.9	415.7	410.3	406.7	400.7	389.4	370.8	349.8	324.1
80°	375.6	373.8	371.4	367.8	361.2	357.6	352.2	339.6	325.3	303.7	278.5
82.5°	324.1	321.7	320.5	318.1	314.5	310.9	304.9	292.3	278.5	258.2	234.2
85°	268.4	266.0	266.6	264.8	263.0	260.0	256.4	244.4	232.4	213.2	192.9
87.5°	216.2	215.0	213.8	212.6	211.5	209.7	206.1	195.9	186.3	170.1	151.0
90°	172.5	170.7	170.1	167.7	165.3	162.9	159.3	151.0	143.2	128.8	113.2
92.5°	133.6	132.4	131.8	129.4	125.2	122.8	119.2	110.8	104.2	92.2	79.1
95°	100.6	98.8	98.2	95.2	91.1	88.7	85.1	76.7	70.7	61.1	50.9
97.5°	71.9	71.9	69.5	67.1	62.9	60.5	58.7	50.3	44.9	37.1	30.0
100°	48.5	47.3	46.7	44.9	40.7	38.9	37.1	31.1	27.0	21.6	16.8
102.5°	31.1	30.5	30.0	27.6	25.8	24.0	22.2	19.2	16.2	13.2	10.2
105°	19.8	19.8	19.2	17.4	16.2	15.6	14.4	12.0	7.2	3.0	1.2
107.5°	11.4	11.4	10.8	8.4	6.6	4.8	3.6	1.8	0.6	0.6	0.6
110°	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6



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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°	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7
2.5°	1304.1	1298.1	1292.7	1287.9	1284.3	1280.1	1274.1	1274.7	1272.9	1268.1	1254.9
5°	1346.0	1337.6	1328.6	1319.0	1313.0	1306.4	1293.9	1285.5	1275.9	1262.1	1239.4
7.5°	1375.3	1361.0	1348.4	1334.6	1328.0	1320.8	1305.8	1293.3	1277.1	1255.5	1222.0
10°	1395.1	1377.1	1359.8	1340.6	1330.4	1322.0	1305.2	1290.9	1269.9	1241.2	1201.0
12.5°	1408.9	1388.5	1368.1	1346.6	1334.6	1322.6	1301.1	1283.1	1258.5	1223.2	1178.3
15°	1417.9	1392.1	1367.5	1342.4	1329.8	1317.2	1291.5	1267.5	1240.6	1201.6	1151.9
17.5°	1420.9	1389.1	1361.0	1333.4	1318.4	1304.1	1274.7	1247.1	1219.6	1177.7	1120.2
20°	1424.5	1384.9	1348.4	1315.4	1301.7	1286.7	1254.3	1225.0	1194.4	1150.1	1087.2
22.5°	1419.1	1375.3	1334.6	1299.3	1280.7	1263.9	1229.8	1197.4	1165.1	1118.4	1051.9
25°	1404.1	1363.4	1318.4	1275.3	1254.9	1236.4	1201.6	1165.7	1130.9	1083.6	1013.5
27.5°	1381.9	1338.2	1298.1	1251.3	1227.4	1205.8	1166.9	1130.9	1094.4	1045.9	975.2
30°	1338.2	1307.6	1267.5	1222.0	1195.6	1172.3	1129.7	1092.0	1054.3	1007.5	935.1
32.5°	1292.1	1261.5	1228.6	1185.4	1160.3	1134.5	1088.4	1055.5	1012.3	966.2	894.3
35°	1235.8	1213.0	1178.9	1141.7	1119.0	1095.0	1046.5	1012.3	971.0	924.9	854.2
37.5°	1176.5	1156.7	1129.1	1094.4	1073.4	1050.7	1001.0	966.2	927.3	880.5	812.3
40°	1117.2	1097.4	1074.6	1042.3	1023.7	1004.5	956.6	918.3	881.1	834.4	770.3
42.5°	1057.9	1036.9	1019.5	992.0	975.8	954.8	912.3	871.0	834.4	790.7	729.6
45°	1003.3	980.0	962.0	939.9	923.7	906.3	866.2	822.4	786.5	744.6	685.9
47.5°	948.2	926.1	903.3	884.1	874.6	854.8	818.9	775.1	737.4	696.1	640.9
50°	891.3	872.8	850.0	830.2	819.5	804.5	768.5	722.4	685.9	648.1	594.8
52.5°	832.0	820.0	797.9	774.5	762.5	749.4	717.6	674.5	635.6	597.8	546.3
55°	764.3	763.7	745.8	720.6	707.4	695.5	665.5	624.8	582.8	545.7	498.4
57.5°	695.5	704.4	691.3	667.9	652.3	640.3	612.2	574.5	531.9	493.0	445.1
60°	633.8	640.3	637.4	612.2	597.8	580.4	557.7	522.3	478.6	440.9	395.3
62.5°	582.8	576.3	579.8	559.5	544.5	529.5	501.4	469.0	427.1	387.0	344.4
65°	533.1	519.3	518.7	504.4	489.4	475.0	445.7	415.1	373.8	333.7	292.9
67.5°	488.8	467.8	457.0	448.1	434.9	420.5	390.0	361.2	321.7	281.5	243.2
70°	442.1	418.7	400.1	391.2	379.8	366.6	335.4	306.7	269.6	233.6	194.7
72.5°	394.2	370.8	348.6	333.1	326.5	312.7	282.7	252.8	221.6	185.1	149.8
75°	346.2	323.5	300.1	277.3	272.0	260.0	231.8	202.5	173.1	139.6	109.0
77.5°	299.5	275.5	253.4	227.6	218.6	208.5	183.3	155.7	128.8	100.6	73.7
80°	254.0	230.0	207.3	181.5	171.3	160.5	139.0	113.2	89.3	65.9	44.3
82.5°	212.1	187.5	164.1	142.0	128.8	117.4	97.6	77.3	55.7	37.7	22.8
85°	168.3	146.2	124.6	103.0	92.2	82.1	64.7	46.7	30.5	17.4	9.0
87.5°	130.0	108.4	89.3	70.7	61.1	53.3	37.7	24.0	13.2	5.4	3.0
90°	94.6	76.1	59.9	44.3	36.5	31.1	19.2	10.2	4.2	1.2	1.2
92.5°	64.1	49.1	36.5	25.2	19.8	15.6	8.4	4.2	1.2	1.2	1.2
95°	39.5	28.8	20.4	13.2	9.6	7.8	3.0	1.2	1.2	1.2	1.2
97.5°	22.2	15.6	10.8	6.6	3.0	1.2	1.2	1.2	1.2	1.2	1.2
100°	12.6	9.0	2.4	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
102.5°	4.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
105°	0.6	0.6	0.6	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
107.5°	0.6	0.6	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
110°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2





TEST NUMBER: P188188

CATALOG NUMBER: FMB-N-4-LD4-2DN/LO-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: P188188

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

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7
2.5°	1235.8	1219.6	1207.0	1203.4	1199.2	1187.2	1178.9	1175.3	1174.7	1173.5	1164.5
5°	1212.4	1188.4	1168.7	1160.9	1153.1	1135.1	1122.0	1114.2	1108.8	1105.2	1092.6
7.5°	1187.2	1156.1	1128.5	1118.4	1109.4	1088.4	1073.4	1063.8	1057.3	1051.3	1038.1
10°	1160.3	1123.1	1092.6	1081.2	1070.4	1047.1	1030.3	1020.1	1010.5	1003.9	988.4
12.5°	1130.3	1088.4	1056.1	1044.1	1032.1	1007.5	990.8	978.8	968.6	957.2	942.2
15°	1098.0	1052.5	1018.9	1005.7	994.4	968.6	948.2	935.1	924.9	914.1	898.5
17.5°	1061.5	1017.1	981.2	968.0	956.0	928.5	908.7	891.9	882.9	871.0	854.2
20°	1024.3	978.8	943.4	929.1	914.1	886.5	869.2	853.6	841.6	827.8	811.1
22.5°	985.4	938.1	903.3	888.9	874.0	848.2	827.8	812.3	799.7	785.9	769.7
25°	944.0	899.1	862.6	847.6	833.2	807.5	787.7	771.5	759.5	744.6	725.4
27.5°	902.7	858.4	821.2	807.5	791.9	766.7	747.0	732.0	718.8	701.4	682.3
30°	862.0	817.1	779.9	765.5	751.2	725.4	705.6	691.3	675.7	657.7	637.9
32.5°	820.6	775.1	739.2	725.4	711.0	687.1	665.5	649.3	632.6	613.4	594.2
35°	779.9	733.8	698.4	684.1	669.7	646.3	624.2	605.6	587.6	569.7	549.3
37.5°	739.2	693.1	656.5	643.3	627.2	605.6	582.2	563.7	544.5	524.7	504.4
40°	696.7	650.5	614.6	601.4	584.6	563.7	539.1	520.5	501.4	479.8	458.2
42.5°	655.3	609.2	570.9	555.3	541.5	520.5	496.0	476.8	456.4	433.1	412.1
45°	612.8	566.1	528.3	511.6	497.8	476.2	450.5	431.3	407.3	386.4	364.8
47.5°	569.7	522.9	483.4	466.6	455.8	430.7	405.5	384.6	363.0	339.6	319.3
50°	525.9	478.6	438.5	421.7	410.9	385.2	359.4	337.2	313.9	292.3	270.8
52.5°	483.4	433.7	393.0	376.8	365.4	339.6	313.3	291.1	267.8	245.6	222.2
55°	434.9	388.8	347.4	331.9	319.9	293.5	267.2	245.6	224.6	199.5	176.1
57.5°	387.6	342.0	304.9	286.3	274.9	248.0	221.6	201.3	179.7	156.3	134.2
60°	339.6	295.9	260.6	241.4	231.2	204.3	179.1	157.5	138.4	115.0	97.6
62.5°	292.3	249.8	216.8	202.5	186.9	162.3	138.4	119.2	101.2	81.5	67.1
65°	245.0	205.5	173.7	160.5	146.2	123.4	102.4	84.5	68.9	53.3	43.7
67.5°	198.9	162.3	134.2	122.2	108.4	89.3	70.7	55.1	43.1	32.3	27.0
70°	155.1	122.8	97.6	87.5	76.1	59.9	44.9	33.5	25.2	19.8	16.8
72.5°	115.0	87.5	67.1	58.1	49.1	36.5	25.8	19.8	15.0	12.6	8.4
75°	80.3	56.3	41.3	34.7	28.8	20.4	14.4	11.4	6.0	1.2	0.6
77.5°	50.9	33.5	22.8	18.6	15.0	10.8	6.6	1.2	0.6	0.6	0.6
80°	28.8	17.4	11.4	9.6	8.4	1.8	1.2	1.2	0.6	0.6	0.6
82.5°	13.2	7.8	4.8	1.8	1.2	1.2	1.2	1.2	0.6	0.6	0.6
85°	5.4	1.8	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.6
87.5°	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.6
90°	1.2	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.6	0.6
92.5°	1.2	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.6	0.6
95°	1.2	1.2	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.6
97.5°	1.2	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.6	0.6
100°	1.2	1.2	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.6
102.5°	1.2	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.6	0.6
105°	1.2	1.2	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.6
107.5°	1.2	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.6	0.6
110°	1.2	1.2	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.6



TEST NUMBER: P188188

CATALOG NUMBER: FMB-N-4-LD4-2DN/LO-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: P188188

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

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7	1247.7
2.5°	1156.7	1151.9	1147.1	1148.3	1141.1	1138.1	1133.9	1138.1
5°	1083.0	1077.0	1072.2	1072.2	1066.2	1063.8	1061.5	1064.4
7.5°	1028.5	1022.5	1018.9	1017.7	1011.1	1008.7	1006.3	1008.7
10°	978.2	969.2	965.0	963.8	957.2	954.2	951.2	954.2
12.5°	930.9	923.1	918.3	916.5	909.9	908.1	905.1	906.3
15°	887.7	879.4	874.0	872.2	863.8	860.8	857.2	859.0
17.5°	842.8	835.0	830.2	827.8	821.2	816.5	814.1	815.9
20°	799.1	791.3	785.9	782.9	776.3	770.9	768.5	770.9
22.5°	755.4	746.4	739.8	738.6	731.4	724.8	723.6	724.2
25°	714.0	702.0	696.1	691.9	685.9	682.3	678.1	678.7
27.5°	670.9	658.9	651.1	646.9	640.3	635.6	632.0	632.6
30°	626.0	614.0	606.2	600.8	594.2	590.0	585.8	587.0
32.5°	581.0	567.9	560.7	554.7	548.1	542.7	539.1	540.3
35°	535.5	521.1	514.6	508.6	500.8	494.2	490.6	492.4
37.5°	490.0	474.4	467.8	463.0	452.9	446.3	441.5	442.7
40°	442.7	427.1	418.1	414.5	403.1	395.9	391.2	388.8
42.5°	395.3	378.6	370.2	365.4	352.2	343.2	336.6	335.4
45°	346.2	327.7	317.5	313.3	297.7	288.1	280.9	280.3
47.5°	296.5	276.1	267.2	260.0	245.0	235.4	231.2	228.2
50°	246.2	225.2	216.8	210.3	196.5	188.1	184.5	181.5
52.5°	198.3	178.5	171.9	165.9	154.5	146.8	143.8	142.0
55°	153.9	137.2	131.8	125.2	117.4	111.4	109.6	107.8
57.5°	115.6	102.4	97.6	92.2	86.3	81.5	79.7	77.9
60°	82.7	71.9	68.9	65.3	59.9	56.3	54.5	53.3
62.5°	56.3	49.1	46.1	43.7	39.5	37.1	35.9	34.7
65°	35.9	30.5	29.4	27.6	25.2	24.0	23.4	22.8
67.5°	22.8	19.8	19.2	18.6	17.4	16.2	15.6	15.6
70°	15.0	12.6	11.4	9.6	6.6	4.2	3.0	2.4
72.5°	3.0	0.6	0.6	0.6	0.0	0.0	0.0	0.0
75°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0
77.5°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0
80°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0
82.5°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0
85°	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0
87.5°	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
95°	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100°	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
105°	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110°	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P188188

CATALOG NUMBER: FMB-N-4-LD4-2DN/LO-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)