

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: P188252

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P188252
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27219)
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-LD4-2LO/2LO-40-UNV-80/86
Description:
Light Source: (336) NICHIA ELM 4000K LED
2UT217042A8404A
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6268.0 lumens
Efficiency: N/A
Efficacy: 63.4 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.19 / 1.29
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')
CIE Type: General Diffuse

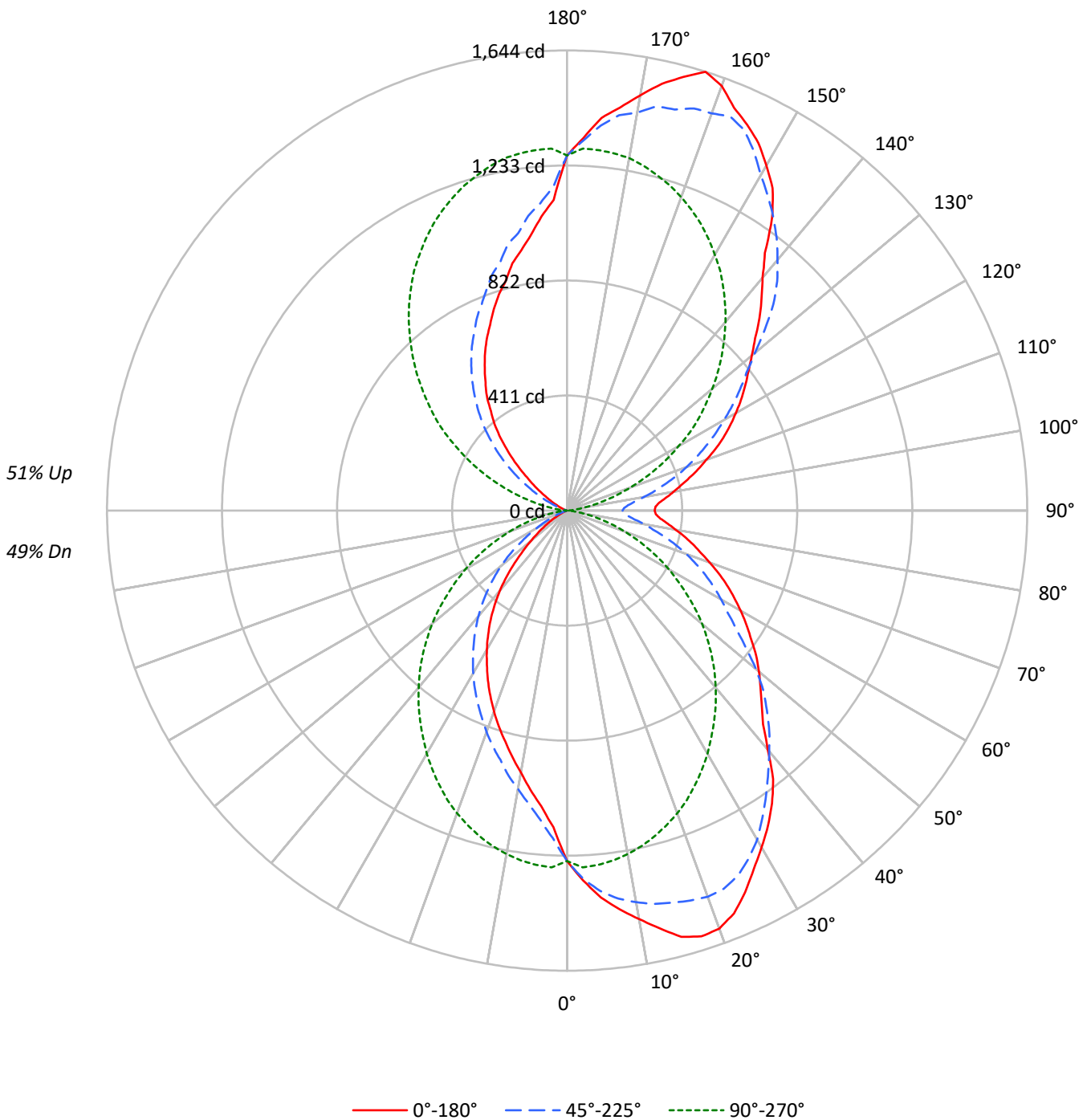
Input Watts (W): 98.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P188252

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

Luminous Intensity Polar Plot





TEST NUMBER: P188252

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

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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	49
1	97	93	89	85	90	86	82	79	72	70	68	60	58	57	49	48	46	41
2	89	81	75	70	82	75	70	65	64	60	56	53	50	48	43	41	39	35
3	81	72	64	58	74	66	60	55	56	51	47	47	43	40	38	36	34	29
4	74	63	56	50	68	59	52	47	50	45	41	42	38	35	34	31	29	25
5	68	57	49	43	63	53	45	40	45	39	35	38	34	30	31	28	25	22
6	63	51	43	37	58	47	40	35	41	35	31	34	30	27	28	25	23	20
7	58	46	38	33	54	43	36	31	37	31	27	31	27	24	26	23	20	17
8	54	42	34	29	50	39	32	27	34	28	24	29	24	21	24	21	18	16
9	50	38	31	26	46	36	29	24	31	25	22	26	22	19	22	19	16	14
10	47	35	28	23	43	33	26	22	28	23	20	24	20	17	20	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	6738	6738	6738
5°	7495	6864	5728
10°	8099	6809	5195
15°	8785	6715	4759
20°	9102	6590	4374
25°	8935	6421	3973
30°	8633	6231	3567
35°	8387	6018	3133
40°	7832	5795	2635
45°	7482	5553	2015
50°	7493	5272	1424
55°	7532	4895	933
60°	7711	4513	509
65°	8018	4028	267
70°	8521	3440	9
75°	9665	2678	12
80°	12218	1782	19
85°	20674	889	37



TEST NUMBER: P188252

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

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	117.6	1.9
10°-20°	336.6	5.4
20°-30°	496.6	7.9
30°-40°	560.2	8.9
40°-50°	528.0	8.4
50°-60°	433.4	6.9
60°-70°	312.2	5.0
70°-80°	194.4	3.1
80°-90°	114.9	1.8
90°-100°	114.5	1.8
100°-110°	196.3	3.1
110°-120°	320.7	5.1
120°-130°	447.4	7.1
130°-140°	546.2	8.7
140°-150°	579.2	9.2
150°-160°	509.3	8.1
160°-170°	342.2	5.5
170°-180°	118.4	1.9
0°-30°	950.8	15.2
0°-40°	1510.9	24.1
0°-60°	2472.3	39.4
0°-90°	3093.8	49.4
90°-120°	631.6	10.1
90°-150°	2204.3	35.2
90°-180°	3174.0	50.6
0°-180°	6268.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1252	1252	1252	1252	1252	
5°	1387	1365	1270	1108	1060	135
15°	1577	1450	1205	922	854	444
25°	1505	1441	1081	757	669	691
35°	1276	1239	916	582	477	793
45°	983	1009	730	401	265	764
55°	803	737	522	211	99	720
65°	630	545	316	62	21	623
75°	465	359	129	4	1	492
85°	335	217	14	2	1	287
90°	313	198	2	2	1	172
95°	331	218	15	2	1	283
105°	452	359	141	7	0	480
115°	615	548	349	73	28	608
125°	776	754	573	229	116	696
135°	972	1042	780	418	298	750
145°	1277	1283	973	595	501	790
155°	1522	1499	1130	762	678	701
165°	1604	1483	1241	921	848	453
175°	1408	1381	1293	1102	1054	137
180°	1269	1269	1269	1269	1269	



TEST NUMBER: P188252

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

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9
2.5°	1323.2	1323.8	1330.4	1330.4	1332.8	1329.8	1330.4	1328.0	1326.8	1328.6	1316.6
5°	1387.3	1387.9	1392.1	1389.1	1389.1	1384.9	1384.3	1378.3	1375.3	1374.7	1364.6
7.5°	1437.0	1438.2	1441.2	1438.8	1435.8	1431.0	1428.0	1421.5	1416.7	1414.3	1398.1
10°	1482.0	1482.0	1484.4	1480.2	1474.8	1468.8	1464.0	1455.0	1447.8	1441.2	1420.9
12.5°	1528.7	1527.5	1529.3	1521.5	1510.1	1503.5	1497.5	1484.4	1473.6	1461.6	1439.4
15°	1576.6	1576.0	1574.2	1568.8	1556.8	1547.3	1538.9	1517.3	1496.9	1476.6	1450.2
17.5°	1595.2	1595.2	1596.4	1592.8	1581.4	1574.8	1564.6	1544.3	1522.1	1496.3	1461.0
20°	1589.2	1589.8	1591.6	1589.8	1580.2	1574.2	1564.0	1545.5	1530.5	1502.3	1468.2
22.5°	1557.4	1558.6	1561.0	1560.4	1553.2	1546.7	1540.7	1528.1	1514.3	1492.1	1462.2
25°	1504.7	1504.1	1508.3	1511.9	1509.5	1504.7	1500.5	1488.5	1478.4	1465.2	1440.6
27.5°	1443.6	1440.6	1446.6	1447.8	1446.0	1444.8	1446.0	1437.0	1432.8	1419.1	1402.9
30°	1389.1	1385.5	1390.3	1390.9	1392.1	1389.7	1386.1	1377.1	1373.5	1370.5	1358.0
32.5°	1335.2	1333.4	1337.6	1341.2	1340.6	1337.0	1332.2	1321.4	1314.8	1308.8	1298.7
35°	1276.5	1276.5	1282.5	1286.7	1286.7	1284.9	1284.3	1269.3	1256.7	1250.7	1239.4
37.5°	1208.8	1206.4	1214.8	1223.2	1230.4	1227.4	1228.6	1216.0	1206.4	1195.0	1179.5
40°	1114.8	1113.0	1122.6	1138.7	1158.5	1162.1	1166.3	1159.1	1150.7	1139.9	1123.1
42.5°	1035.7	1036.3	1041.1	1050.1	1067.4	1071.6	1080.0	1090.2	1089.6	1083.0	1069.2
45°	983.0	978.8	983.6	987.8	992.6	995.6	996.8	1003.3	1014.7	1020.1	1008.7
47.5°	936.3	937.5	938.7	936.9	941.0	937.5	935.7	929.7	934.5	944.6	950.6
50°	894.9	891.3	894.9	892.5	890.1	887.7	884.7	872.8	865.0	865.6	880.0
52.5°	851.2	847.6	849.4	847.6	843.4	841.0	838.0	826.0	811.7	799.1	805.1
55°	802.7	802.1	805.1	802.7	799.7	796.1	791.3	778.1	764.3	746.4	737.4
57.5°	758.9	760.7	759.5	758.9	754.8	751.8	745.8	735.0	720.0	700.8	681.1
60°	716.4	718.2	715.8	713.4	710.4	703.8	701.4	690.7	676.3	656.5	635.0
62.5°	672.1	673.9	671.5	671.5	666.1	660.7	659.5	645.7	631.4	612.2	590.6
65°	629.6	629.6	627.2	623.0	620.6	614.6	614.0	600.2	586.4	567.3	545.1
67.5°	585.8	587.0	583.4	579.2	575.1	568.5	567.9	555.3	540.3	520.5	498.4
70°	541.5	542.7	539.7	536.7	530.1	524.1	522.3	509.2	493.6	476.8	452.9
72.5°	499.6	500.2	496.0	492.4	484.6	478.6	476.8	463.6	450.5	430.1	406.1
75°	464.8	466.0	461.8	458.8	449.9	443.3	439.1	422.9	402.5	383.4	358.8
77.5°	429.5	426.5	422.3	417.5	409.1	402.5	397.7	387.0	369.0	344.4	313.9
80°	394.2	392.4	387.6	383.4	372.6	366.0	361.2	348.0	328.9	304.9	279.1
82.5°	362.4	361.2	357.0	352.8	343.2	339.0	331.9	317.5	296.5	270.8	243.2
85°	334.8	333.1	330.7	326.5	318.7	315.1	308.5	294.1	273.7	246.8	217.4
87.5°	317.5	316.3	313.9	309.7	302.5	298.9	292.9	280.3	260.0	233.0	202.5
90°	312.7	312.7	309.7	304.9	298.3	293.5	288.1	273.7	254.6	228.2	197.7
92.5°	315.7	314.5	312.1	307.9	300.7	295.9	291.1	276.7	258.8	233.6	203.7
95°	330.7	329.5	327.7	324.1	316.9	311.5	306.1	289.9	270.8	246.8	218.0
97.5°	357.0	354.6	352.8	347.4	339.6	334.2	328.9	312.1	294.1	269.0	243.2
100°	385.8	384.6	380.4	374.4	366.6	361.8	356.4	341.4	324.7	301.3	278.5
102.5°	416.3	414.5	412.1	406.7	398.3	395.3	390.6	378.0	362.4	343.2	318.7
105°	452.3	451.1	449.3	443.9	437.9	435.5	431.3	418.7	400.7	380.4	359.4
107.5°	490.6	489.4	487.0	482.2	475.6	472.6	467.8	456.4	442.7	426.5	407.3
110°	528.3	528.3	526.5	520.5	516.9	514.0	511.0	500.2	487.6	472.6	454.1



TEST NUMBER: P188252

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

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	572.7	572.1	570.9	564.3	561.9	557.1	553.5	544.5	532.5	518.1	500.2
115°	615.2	614.0	612.2	605.6	603.2	599.0	596.6	588.2	576.8	563.1	547.5
117.5°	655.9	654.7	651.7	646.3	642.7	640.3	638.5	630.2	620.6	607.4	597.2
120°	695.5	694.9	691.3	686.5	684.7	682.9	679.3	673.3	663.7	654.1	647.5
122.5°	736.8	734.4	730.8	726.0	723.6	723.0	720.0	714.6	709.2	705.0	700.2
125°	776.3	774.5	769.7	766.7	764.3	763.1	761.3	760.1	760.7	757.2	753.6
127.5°	815.9	815.9	808.7	806.9	806.3	807.5	808.7	812.3	812.9	811.1	807.5
130°	860.8	860.8	857.8	854.2	856.0	857.2	863.2	866.8	866.2	866.2	875.2
132.5°	911.1	910.5	906.3	910.5	915.9	916.5	918.9	921.9	921.9	929.7	958.4
135°	972.2	972.8	970.4	968.0	971.0	972.8	977.0	979.4	990.8	1023.1	1042.3
137.5°	1027.9	1027.9	1025.5	1027.9	1030.3	1029.7	1034.5	1053.7	1087.2	1107.0	1110.6
140°	1086.0	1084.8	1081.2	1083.6	1096.8	1105.8	1124.9	1155.5	1175.9	1179.5	1169.3
142.5°	1160.9	1165.1	1165.1	1183.6	1204.6	1213.0	1226.2	1241.8	1245.3	1238.8	1229.2
145°	1277.1	1283.1	1281.9	1286.7	1294.5	1298.1	1304.1	1305.2	1299.9	1295.1	1283.1
147.5°	1366.3	1365.7	1362.8	1360.4	1358.6	1357.4	1358.0	1358.6	1355.0	1344.2	1334.0
150°	1423.9	1422.1	1417.3	1411.3	1410.7	1409.5	1410.1	1405.9	1397.5	1390.3	1383.7
152.5°	1480.2	1477.2	1471.8	1461.6	1456.8	1453.8	1453.8	1450.2	1444.2	1440.0	1445.4
155°	1521.5	1517.3	1511.9	1502.9	1499.3	1497.5	1498.1	1496.9	1501.1	1505.9	1498.7
157.5°	1557.4	1554.4	1549.6	1545.5	1551.4	1552.6	1558.6	1562.2	1558.6	1544.9	1523.3
160°	1614.9	1612.5	1608.4	1602.4	1603.0	1600.6	1598.8	1593.4	1578.4	1549.6	1510.1
162.5°	1643.7	1640.1	1632.9	1622.7	1611.9	1606.6	1598.2	1574.2	1547.8	1525.7	1506.5
165°	1603.6	1598.8	1588.6	1577.8	1564.0	1559.8	1556.2	1545.5	1529.3	1508.3	1483.2
167.5°	1561.6	1561.0	1549.6	1540.7	1526.3	1522.7	1517.3	1504.1	1493.3	1486.8	1479.6
170°	1506.5	1504.7	1499.3	1496.3	1493.3	1493.3	1492.7	1487.3	1477.2	1463.4	1443.0
172.5°	1452.6	1455.6	1448.4	1446.0	1440.0	1437.6	1435.8	1430.4	1426.8	1429.8	1425.1
175°	1408.3	1408.9	1407.7	1407.7	1406.5	1405.3	1405.3	1401.7	1397.5	1393.3	1380.7
177.5°	1332.2	1334.0	1330.4	1330.4	1327.4	1326.2	1327.4	1326.8	1326.8	1328.0	1323.2
180°	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7



TEST NUMBER: P188252

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

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9
2.5°	1311.8	1304.1	1299.3	1296.3	1294.5	1289.1	1286.1	1285.5	1281.9	1275.9	1261.5
5°	1355.6	1347.2	1337.6	1328.6	1323.2	1316.0	1305.2	1296.3	1285.5	1270.5	1244.7
7.5°	1383.7	1369.3	1355.0	1341.2	1334.6	1328.0	1314.2	1302.9	1286.7	1260.9	1225.6
10°	1402.9	1384.9	1366.3	1346.6	1337.6	1328.0	1310.6	1298.7	1278.3	1245.9	1204.0
12.5°	1416.7	1395.1	1374.7	1352.6	1340.6	1328.6	1305.8	1287.3	1264.5	1228.0	1180.1
15°	1425.1	1398.7	1374.1	1347.8	1335.2	1322.0	1294.5	1271.1	1245.3	1205.2	1153.1
17.5°	1427.4	1395.1	1367.5	1338.2	1322.0	1307.6	1277.7	1250.1	1223.2	1178.9	1121.4
20°	1430.4	1388.5	1353.2	1319.0	1304.7	1289.7	1256.7	1227.4	1196.8	1150.7	1088.4
22.5°	1422.7	1380.1	1338.8	1301.7	1281.9	1265.1	1230.4	1198.6	1165.7	1118.4	1052.5
25°	1405.3	1366.3	1321.4	1275.9	1254.3	1235.8	1200.4	1165.1	1129.7	1081.2	1011.7
27.5°	1377.7	1339.4	1298.7	1249.5	1223.8	1203.4	1163.3	1128.5	1092.0	1042.9	972.2
30°	1331.6	1305.8	1266.3	1219.6	1191.4	1168.1	1124.3	1087.8	1050.1	1002.7	930.3
32.5°	1281.3	1257.3	1224.4	1180.7	1156.1	1128.5	1082.4	1047.1	1006.3	959.0	888.9
35°	1222.6	1205.8	1174.7	1135.7	1113.6	1087.8	1038.7	1002.1	962.6	915.9	847.6
37.5°	1162.7	1148.9	1121.4	1087.2	1066.2	1042.9	992.0	954.2	918.3	871.6	803.3
40°	1102.8	1086.6	1068.0	1034.5	1015.9	993.2	945.8	905.7	868.6	824.8	759.5
42.5°	1045.9	1026.1	1008.7	984.8	963.8	944.0	900.3	856.6	821.2	778.7	715.2
45°	992.0	967.4	949.4	930.9	914.1	895.5	853.0	806.9	771.5	729.6	669.1
47.5°	937.5	913.5	890.1	874.6	862.6	842.8	805.7	760.1	720.6	679.3	622.4
50°	880.0	862.0	834.4	815.9	802.7	790.7	754.8	710.4	667.9	629.6	573.9
52.5°	819.4	808.1	782.3	760.1	744.6	735.0	702.6	661.3	615.8	576.8	524.1
55°	750.6	751.8	727.8	705.0	688.9	677.5	648.7	609.8	561.9	521.7	473.8
57.5°	681.1	690.1	672.7	651.1	635.0	620.0	594.8	558.9	509.8	470.2	423.5
60°	621.8	625.4	618.2	596.6	581.6	563.7	538.5	505.6	458.2	419.3	372.6
62.5°	570.9	561.9	564.9	541.5	525.9	509.8	482.2	452.3	406.1	368.4	322.3
65°	522.3	505.6	496.6	486.4	473.2	455.8	425.9	398.9	355.2	316.3	273.7
67.5°	476.2	454.1	440.9	430.1	418.1	401.3	371.4	345.6	307.3	266.6	226.4
70°	428.9	405.5	385.2	372.6	364.8	347.4	318.1	292.3	257.0	218.6	180.3
72.5°	381.6	357.6	333.7	314.5	309.1	296.5	266.0	239.6	207.9	172.5	137.2
75°	334.2	309.7	285.7	260.6	254.6	245.0	216.2	191.1	161.1	128.8	98.8
77.5°	288.1	261.8	238.4	212.1	203.1	194.1	171.3	144.4	118.6	90.5	67.1
80°	251.0	219.2	192.9	167.7	157.5	148.0	127.6	104.2	79.1	57.5	40.1
82.5°	214.4	185.7	158.1	127.0	116.8	107.8	89.3	68.9	48.5	31.7	19.8
85°	186.3	156.9	127.0	100.0	88.7	78.5	56.9	40.7	25.8	14.4	8.4
87.5°	170.1	139.0	108.4	80.3	67.7	56.9	38.3	22.2	10.8	4.8	3.6
90°	165.3	133.6	103.0	74.3	61.7	50.3	30.5	15.6	7.2	2.4	2.4
92.5°	170.7	137.8	107.2	80.3	68.3	58.1	38.3	22.2	11.4	5.4	3.6
95°	187.5	156.9	127.0	100.6	89.3	80.3	58.1	40.7	28.2	15.0	10.2
97.5°	215.0	186.9	158.1	130.6	119.8	111.4	89.3	71.3	52.7	34.1	24.0
100°	254.6	223.4	192.3	170.1	162.3	153.9	129.4	109.6	85.7	62.3	46.1
102.5°	291.7	264.2	237.8	218.0	210.3	200.7	177.9	155.1	125.2	98.2	76.7
105°	337.8	311.5	288.7	269.0	261.8	251.6	231.8	204.9	171.3	140.8	113.2
107.5°	386.4	359.4	342.0	322.9	315.1	308.5	288.1	258.8	222.8	188.7	156.3
110°	434.3	414.5	395.9	378.6	373.2	369.0	345.6	315.1	277.3	239.6	203.1



TEST NUMBER: P188252

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

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	484.0	467.8	451.7	436.7	434.9	430.7	405.5	372.6	334.2	294.1	252.2
115°	536.1	521.1	506.8	500.8	500.2	492.4	465.4	430.7	392.4	349.2	304.3
117.5°	587.6	576.3	568.5	567.3	562.5	552.9	524.7	490.0	449.9	404.9	357.0
120°	639.1	635.0	633.8	631.4	626.0	616.4	584.6	549.3	507.4	460.0	412.7
122.5°	693.1	694.9	702.6	693.1	685.9	672.7	643.3	607.4	563.7	519.3	461.8
125°	753.0	769.1	770.3	752.4	743.4	731.4	702.0	664.3	620.6	573.3	514.6
127.5°	821.8	838.0	830.8	810.5	799.1	788.3	758.9	719.4	675.1	624.2	567.9
130°	900.3	905.1	890.7	869.8	856.6	845.2	815.9	773.3	729.0	676.9	616.4
132.5°	977.6	966.2	950.0	926.7	914.1	902.7	870.4	827.2	781.7	729.6	666.1
135°	1042.3	1025.5	1006.9	981.8	971.0	960.2	921.9	880.0	833.2	780.5	715.8
137.5°	1101.0	1082.4	1061.5	1037.5	1029.1	1015.9	973.4	932.1	885.3	830.2	764.3
140°	1157.9	1140.5	1116.0	1095.0	1083.0	1066.2	1022.5	983.0	934.5	880.0	812.3
142.5°	1214.8	1193.8	1173.5	1150.7	1133.9	1115.4	1071.6	1030.3	983.6	927.3	857.2
145°	1268.1	1251.9	1233.4	1204.0	1185.4	1162.1	1119.0	1075.8	1029.1	972.8	900.9
147.5°	1320.2	1311.8	1287.3	1247.1	1227.4	1204.0	1162.1	1122.0	1072.8	1017.1	943.4
150°	1380.7	1368.7	1329.2	1280.1	1260.3	1244.2	1200.4	1164.5	1115.4	1055.5	984.8
152.5°	1436.4	1406.5	1355.6	1308.2	1293.9	1278.9	1239.4	1198.0	1158.5	1093.8	1021.9
155°	1468.8	1420.9	1369.3	1338.8	1320.8	1305.2	1275.3	1231.0	1193.2	1130.3	1059.7
157.5°	1473.6	1422.7	1389.7	1356.8	1343.6	1333.4	1298.7	1264.5	1219.6	1162.1	1093.8
160°	1468.8	1434.0	1397.5	1378.3	1370.5	1355.0	1314.8	1291.5	1243.0	1191.4	1122.6
162.5°	1470.0	1431.6	1410.1	1393.3	1380.1	1363.4	1336.4	1306.4	1259.1	1218.4	1152.5
165°	1458.6	1441.2	1416.1	1387.3	1377.7	1371.1	1354.4	1314.8	1274.7	1240.6	1177.1
167.5°	1456.8	1423.3	1399.9	1390.3	1387.9	1380.7	1352.6	1316.0	1292.1	1261.5	1199.8
170°	1420.9	1405.9	1399.3	1391.5	1383.1	1369.9	1339.4	1317.2	1304.1	1278.3	1226.8
172.5°	1411.3	1395.1	1380.1	1364.0	1355.0	1345.4	1329.8	1319.6	1309.4	1287.3	1248.9
175°	1371.7	1354.4	1343.6	1335.8	1332.8	1330.4	1323.8	1318.4	1309.4	1292.7	1268.7
177.5°	1316.6	1313.6	1319.0	1322.0	1322.0	1320.2	1316.0	1311.8	1304.7	1294.5	1284.3
180°	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7



TEST NUMBER: P188252

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

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9
2.5°	1241.8	1223.2	1210.6	1206.4	1202.2	1190.2	1183.6	1177.1	1171.7	1172.3	1163.3
5°	1216.0	1191.4	1171.1	1163.9	1155.5	1138.1	1126.7	1115.4	1107.6	1104.0	1092.0
7.5°	1189.6	1156.7	1130.3	1120.2	1110.6	1091.4	1077.6	1063.8	1055.5	1050.7	1037.5
10°	1161.5	1124.3	1094.4	1083.0	1072.2	1050.1	1034.5	1020.1	1009.9	1004.5	987.8
12.5°	1132.1	1088.4	1056.7	1045.3	1033.3	1011.1	995.0	978.2	969.8	957.2	941.0
15°	1098.0	1054.3	1019.5	1007.5	994.4	971.0	952.4	934.5	921.9	912.9	897.3
17.5°	1061.5	1015.9	982.4	968.0	956.0	930.9	909.9	890.1	882.9	869.2	852.4
20°	1024.3	978.2	944.0	929.1	914.7	888.9	869.8	850.6	841.6	825.4	810.5
22.5°	984.8	936.9	902.7	887.7	874.0	848.2	827.8	807.5	798.5	783.5	767.9
25°	941.6	894.3	860.8	845.2	831.4	806.9	786.5	766.1	757.2	740.4	723.0
27.5°	899.1	852.4	818.3	803.9	789.5	764.9	743.4	725.4	715.2	696.7	678.7
30°	854.8	809.9	775.1	760.7	748.2	724.2	700.8	683.5	670.9	652.9	634.4
32.5°	814.7	767.3	734.4	720.6	708.6	682.9	660.1	640.9	626.6	608.0	588.8
35°	772.7	724.8	693.7	679.3	667.3	640.3	617.0	597.8	582.2	563.7	543.3
37.5°	730.2	682.3	651.1	637.3	624.8	598.4	573.9	554.7	537.9	518.7	496.6
40°	686.5	639.7	609.2	594.2	582.2	557.7	530.7	511.6	493.6	473.2	449.3
42.5°	643.3	597.2	566.7	551.7	539.7	513.4	487.0	467.2	448.1	424.1	404.3
45°	599.0	552.9	521.7	507.4	493.6	467.2	441.5	419.9	400.7	377.4	353.4
47.5°	554.7	509.2	476.8	462.4	448.1	423.5	398.3	375.6	354.0	329.5	309.7
50°	509.2	464.2	431.3	416.9	401.9	376.8	352.2	325.9	307.3	282.1	260.6
52.5°	462.4	418.1	385.2	370.2	354.6	330.7	306.1	280.3	261.2	234.8	212.6
55°	415.1	371.4	337.8	324.1	307.9	284.5	259.4	236.6	210.9	188.7	167.1
57.5°	367.8	324.7	294.1	278.5	264.8	239.6	214.4	192.3	167.7	146.2	126.4
60°	320.5	278.5	246.2	230.0	218.0	195.9	171.9	150.4	128.2	107.8	91.0
62.5°	276.1	232.4	203.7	188.1	177.9	154.5	131.8	112.0	93.4	74.9	62.3
65°	230.6	188.7	161.7	146.8	137.8	116.2	95.8	78.5	62.3	49.7	40.1
67.5°	186.3	147.4	123.4	111.4	101.8	82.7	65.3	50.9	38.9	31.1	25.2
70°	144.4	112.0	88.7	77.9	70.1	54.5	40.7	30.5	23.4	19.2	16.8
72.5°	106.6	78.5	59.9	50.9	44.9	32.9	24.0	18.0	15.0	12.0	6.0
75°	73.7	51.5	37.1	30.0	26.4	19.2	14.4	10.8	4.2	1.8	1.8
77.5°	46.1	30.0	21.0	16.8	14.4	11.4	5.4	2.4	2.4	1.8	1.8
80°	25.2	15.6	10.8	9.6	7.2	2.4	2.4	2.4	2.4	1.8	1.8
82.5°	12.0	8.4	3.6	3.0	3.0	3.0	2.4	2.4	2.4	1.8	1.8
85°	6.0	3.0	3.0	3.0	3.0	3.0	2.4	2.4	2.4	1.8	1.8
87.5°	3.0	3.0	3.0	3.0	2.4	2.4	2.4	2.4	2.4	1.8	1.8
90°	2.4	3.0	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.8	1.8
92.5°	3.0	3.0	3.0	3.0	3.0	2.4	2.4	2.4	2.4	1.8	1.8
95°	6.6	3.0	3.0	3.0	3.0	2.4	2.4	2.4	1.8	1.8	1.8
97.5°	13.8	9.6	3.0	2.4	2.4	2.4	2.4	2.4	1.8	1.8	1.8
100°	28.8	18.6	12.6	12.0	9.6	2.4	2.4	2.4	1.8	1.8	1.8
102.5°	52.1	34.1	24.0	20.4	16.8	13.8	7.2	2.4	1.8	1.8	1.8
105°	81.5	57.5	41.3	35.9	30.5	22.2	18.0	15.0	7.2	1.8	1.2
107.5°	117.4	86.9	66.5	58.1	49.7	38.3	28.8	22.8	19.2	16.8	10.2
110°	158.1	121.6	96.4	86.9	77.9	61.1	47.9	37.1	28.8	24.0	21.6



TEST NUMBER: P188252

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

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	202.5	161.1	131.8	120.4	108.4	90.5	74.3	59.9	47.3	37.7	31.1
115°	249.8	204.9	172.5	159.3	147.4	125.8	106.0	88.7	73.1	59.3	49.1
117.5°	298.3	251.0	216.2	201.9	186.9	165.3	143.8	124.0	105.4	88.1	74.3
120°	348.0	298.9	263.0	247.4	231.2	208.5	185.7	162.9	142.0	122.8	106.0
122.5°	398.3	348.0	311.5	296.5	280.3	254.0	230.0	206.1	182.7	162.3	143.8
125°	449.3	397.7	360.6	343.8	328.3	301.3	276.1	251.6	228.8	206.1	186.3
127.5°	498.4	447.5	409.7	391.2	376.2	348.6	322.3	297.7	276.1	251.6	231.8
130°	547.5	496.6	458.8	439.7	423.5	395.3	369.6	344.4	322.9	298.9	279.1
132.5°	595.4	545.7	508.0	488.2	472.0	442.7	416.9	391.2	368.4	346.8	327.1
135°	642.1	593.6	554.7	535.5	518.1	488.8	462.4	437.3	417.5	393.6	372.6
137.5°	688.9	640.3	597.8	579.2	562.5	531.3	506.2	482.2	461.8	439.7	419.9
140°	733.2	684.1	642.1	623.6	605.6	573.3	549.9	526.5	506.2	484.6	465.4
142.5°	776.3	727.2	684.1	667.3	648.1	617.0	593.0	570.3	550.5	530.1	511.0
145°	817.7	769.1	729.0	708.0	691.3	657.7	633.2	611.0	594.8	573.3	555.3
147.5°	859.0	810.5	771.5	748.8	733.8	697.9	675.1	654.1	637.3	618.2	598.4
150°	898.5	851.2	814.7	792.5	773.3	739.2	716.4	693.7	679.9	658.9	640.9
152.5°	938.7	892.5	853.6	833.2	812.9	782.9	753.6	738.0	718.2	703.2	679.9
155°	974.0	933.9	892.5	877.0	856.6	820.0	796.1	775.1	761.9	739.8	724.8
157.5°	1011.1	971.6	926.1	911.7	898.5	857.2	837.4	815.9	797.9	787.1	762.5
160°	1043.5	1008.7	965.6	946.4	935.1	903.9	871.6	860.2	841.0	821.2	808.1
162.5°	1075.2	1036.9	1003.9	983.0	967.4	945.8	918.3	893.7	886.5	872.8	846.4
165°	1105.8	1066.8	1042.3	1024.9	1005.1	975.2	960.8	941.6	920.7	906.9	895.5
167.5°	1132.7	1090.8	1071.6	1062.1	1048.3	1016.5	993.8	983.0	975.8	959.6	932.1
170°	1165.7	1119.0	1095.6	1088.4	1080.6	1060.3	1037.5	1016.5	1006.3	998.0	985.4
172.5°	1198.6	1154.3	1125.5	1116.0	1107.0	1092.6	1081.8	1071.6	1062.1	1049.5	1027.3
175°	1235.2	1195.0	1166.9	1155.5	1144.7	1124.3	1111.2	1103.4	1102.2	1098.6	1088.4
177.5°	1267.5	1244.7	1222.0	1213.6	1205.8	1188.4	1175.3	1161.5	1155.5	1145.9	1136.3
180°	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7



TEST NUMBER: P188252

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9	1251.9
2.5°	1159.1	1154.9	1148.3	1144.7	1140.5	1139.3	1133.3	1132.1
5°	1086.0	1080.0	1074.0	1069.8	1067.4	1065.0	1060.3	1060.3
7.5°	1030.3	1024.3	1018.9	1015.3	1012.3	1010.5	1005.1	1005.7
10°	980.0	970.4	965.0	961.4	959.0	956.6	951.2	950.6
12.5°	932.7	923.7	917.7	913.5	911.1	909.3	903.3	902.7
15°	888.3	878.2	872.8	868.6	864.4	861.4	855.4	854.2
17.5°	844.0	834.4	829.6	825.4	820.6	816.5	811.1	809.9
20°	800.9	790.1	784.1	779.9	776.3	769.1	764.3	763.7
22.5°	756.0	744.0	738.0	734.4	729.6	722.4	718.2	717.0
25°	711.0	697.9	692.5	688.9	682.3	675.7	670.3	669.1
27.5°	666.7	652.9	646.9	642.1	636.2	627.2	621.8	620.6
30°	620.6	606.8	600.2	594.8	588.2	579.8	575.1	573.9
32.5°	574.5	560.7	554.1	549.3	540.9	531.9	527.1	525.3
35°	527.7	514.0	507.4	502.0	491.8	482.2	478.6	476.8
37.5°	480.4	464.2	460.0	453.5	445.7	435.5	429.5	425.3
40°	431.9	416.9	410.3	404.3	394.2	382.2	376.2	375.0
42.5°	384.6	369.0	361.2	355.2	342.0	331.3	322.3	319.9
45°	334.8	318.7	309.7	301.9	286.9	275.5	267.2	264.8
47.5°	285.1	266.0	256.4	248.6	234.8	223.4	216.2	214.4
50°	234.8	216.2	207.3	200.1	186.9	177.3	171.3	170.1
52.5°	190.5	170.7	162.9	156.3	145.6	137.8	133.0	131.8
55°	144.4	130.0	124.0	118.6	109.6	103.6	100.0	99.4
57.5°	109.0	95.8	91.6	86.9	79.7	74.9	71.3	71.9
60°	77.9	67.1	63.5	60.5	55.1	50.9	49.1	47.3
62.5°	52.1	44.9	41.9	40.1	35.9	34.1	31.7	31.7
65°	33.5	28.8	27.0	25.8	23.4	22.2	21.0	21.0
67.5°	21.6	19.2	18.6	18.0	16.2	15.6	14.4	15.0
70°	14.4	10.2	8.4	6.6	3.6	1.8	1.2	0.6
72.5°	2.4	1.2	1.2	1.2	1.2	0.6	0.6	0.6
75°	1.8	1.2	1.2	1.2	1.2	1.2	0.6	0.6
77.5°	1.8	1.2	1.2	1.2	1.2	1.2	0.6	0.6
80°	1.8	1.2	1.2	1.2	1.2	0.6	0.6	0.6
82.5°	1.8	1.2	1.2	1.2	1.2	1.2	0.6	0.6
85°	1.8	1.2	1.2	1.2	1.2	1.2	0.6	0.6
87.5°	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6
90°	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6
92.5°	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6
95°	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6
97.5°	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.6
100°	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6
102.5°	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6
105°	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.0
107.5°	4.8	2.4	1.2	0.6	0.6	0.6	0.6	0.0
110°	19.8	18.6	15.0	12.0	8.4	7.2	4.8	5.4



TEST NUMBER: P188252

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	27.0	25.8	24.0	22.8	22.2	21.6	21.0	20.4
115°	41.9	38.3	34.1	31.7	30.5	29.4	28.2	28.2
117.5°	64.1	58.1	51.5	48.5	46.1	42.5	40.7	40.7
120°	92.2	83.9	75.5	71.3	67.7	62.9	61.1	60.5
122.5°	127.0	115.6	104.8	100.0	95.2	89.3	87.5	85.7
125°	167.7	154.5	140.2	134.8	128.2	120.4	116.8	116.2
127.5°	212.6	199.5	186.3	176.1	167.7	158.1	152.7	151.0
130°	260.6	247.4	234.2	224.0	214.4	203.1	196.5	194.1
132.5°	308.5	296.5	284.5	273.7	265.4	254.6	248.6	245.6
135°	358.2	345.0	333.1	322.9	315.1	305.5	300.1	297.7
137.5°	403.1	394.2	381.6	372.6	364.8	355.8	350.4	352.2
140°	451.7	442.1	429.5	421.1	414.5	405.5	400.7	403.1
142.5°	498.4	488.8	477.4	469.0	463.0	455.2	449.9	447.5
145°	543.3	534.9	522.9	517.5	509.2	503.2	498.4	500.8
147.5°	588.2	576.8	567.9	563.1	555.9	549.3	545.1	542.7
150°	628.4	621.8	613.4	607.4	600.8	593.6	591.2	588.8
152.5°	670.9	663.1	654.7	648.1	642.7	638.5	636.8	635.6
155°	714.6	703.8	696.7	691.9	687.1	682.3	680.5	678.1
157.5°	752.4	748.8	741.0	737.4	729.6	723.6	720.6	718.8
160°	800.3	788.9	779.3	774.5	769.7	766.7	766.7	766.1
162.5°	835.0	828.4	823.0	821.2	817.7	813.5	810.5	809.9
165°	887.1	877.6	867.4	862.0	857.8	849.4	847.0	848.2
167.5°	921.3	914.1	907.5	906.3	905.1	902.7	902.7	904.5
170°	980.0	974.0	962.0	960.8	957.2	945.8	942.2	944.0
172.5°	1018.9	1012.3	1002.1	1001.0	999.2	993.2	991.4	992.0
175°	1082.4	1079.4	1069.2	1069.8	1067.4	1056.7	1053.1	1053.7
177.5°	1133.9	1133.9	1119.6	1122.0	1123.7	1112.4	1110.0	1110.6
180°	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7

(END OF REPORT)