

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: P188181

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P188181
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27183)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FMB-N-2-LD4-2STD/2STD-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: 4117.0 lumens
Efficiency: N/A
Efficacy: 59.5 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.18 / 1.28
Luminous Opening: Rectangular w/ Sides (W: 1.75' x L: 0.29' x H: 0.67')
CIE Type: General Diffuse

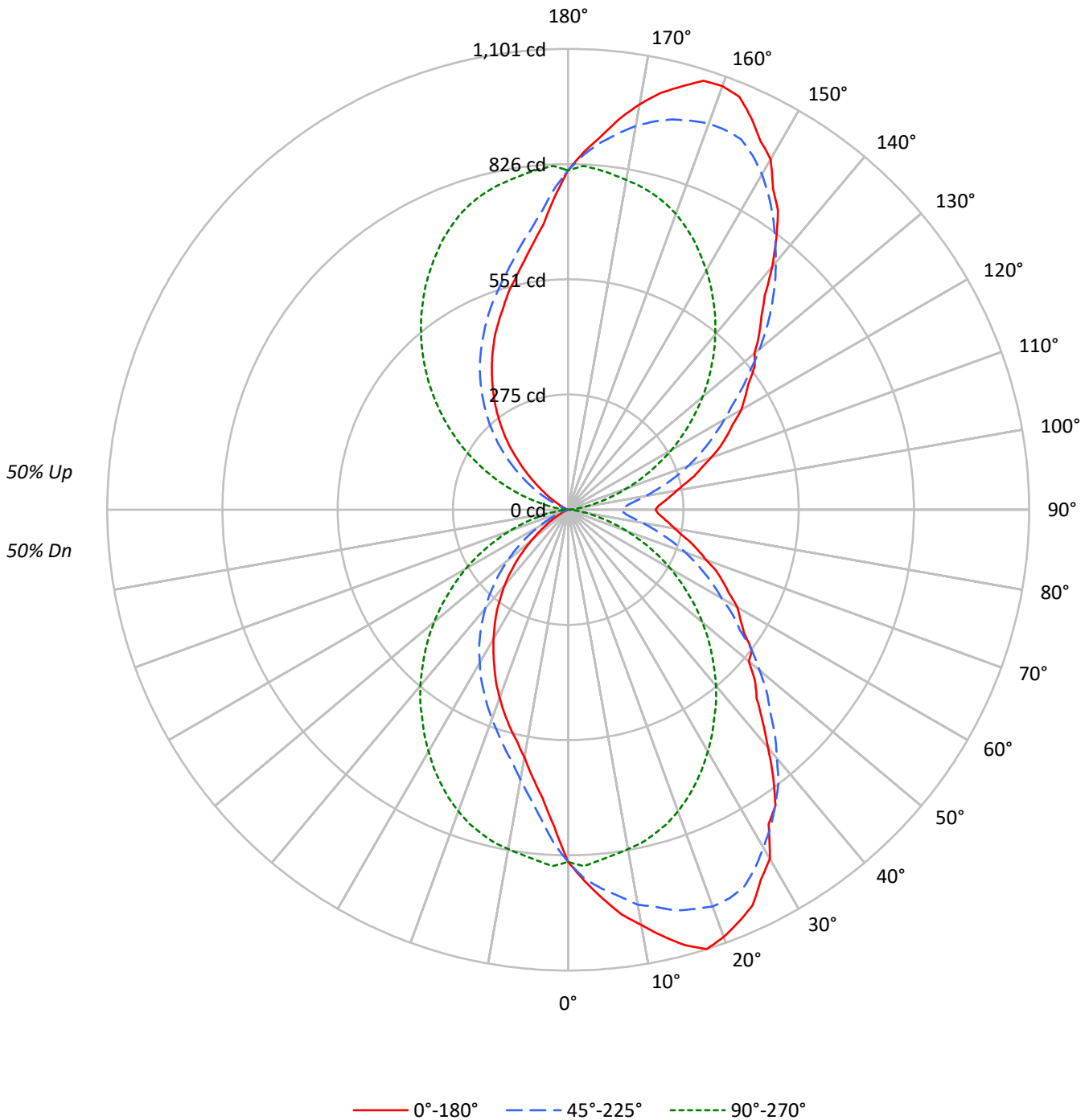
Input Watts (W): 69.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50				
1	98	93	89	86	90	86	83	80	73	70	68	61	59	57	49	48	47	42				
2	89	81	75	70	82	75	70	65	64	60	56	53	50	48	44	42	40	35				
3	81	72	64	59	75	66	60	55	57	52	48	47	44	41	39	36	34	30				
4	74	64	56	50	68	59	52	47	50	45	41	42	38	35	35	32	30	26				
5	68	57	49	43	63	53	46	40	45	40	35	38	34	31	31	28	26	23				
6	63	51	43	37	58	48	40	35	41	35	31	35	30	27	29	25	23	20				
7	58	46	38	33	54	43	36	31	37	31	27	31	27	24	26	23	20	18				
8	54	42	34	29	50	39	32	27	34	28	24	29	24	21	24	21	18	16				
9	51	38	31	26	47	36	29	25	31	26	22	27	22	19	22	19	17	14				
10	47	35	28	23	44	33	26	22	29	23	20	25	20	17	21	17	15	13				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	17748	17748	17748
5°	16428	17241	12231
10°	15382	16526	9176
15°	14582	15864	7280
20°	13304	15109	5858
25°	11746	14246	4698
30°	10109	13318	3746
35°	8542	12352	2944
40°	7002	11455	2237
45°	5776	10450	1590
50°	4959	9429	1012
55°	4418	8303	562
60°	3970	7184	264
65°	3451	5885	110
70°	2967	4468	0
75°	2591	2988	0
80°	2247	1564	7
85°	2035	515	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	78.5	1.9
10°-20°	224.3	5.4
20°-30°	332.9	8.1
30°-40°	375.5	9.1
40°-50°	352.8	8.6
50°-60°	287.8	7.0
60°-70°	206.1	5.0
70°-80°	127.5	3.1
80°-90°	76.3	1.9
90°-100°	77.3	1.9
100°-110°	130.2	3.2
110°-120°	207.6	5.0
120°-130°	287.9	7.0
130°-140°	352.1	8.6
140°-150°	374.3	9.1
150°-160°	329.7	8.0
160°-170°	219.9	5.3
170°-180°	76.2	1.9
0°-30°	635.7	15.4
0°-40°	1011.2	24.6
0°-60°	1651.8	40.1
0°-90°	2061.6	50.1
90°-120°	415.1	10.1
90°-150°	1429.5	34.7
90°-180°	2055.0	49.9
0°-180°	4117.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	842	842	842	842	842	
5°	931	908	842	741	693	91
15°	1077	992	801	588	538	304
25°	1043	994	721	477	417	476
35°	863	862	608	367	297	533
45°	636	682	484	248	175	498
55°	512	500	349	133	65	463
65°	408	359	214	41	13	405
75°	303	235	89	2	0	320
85°	228	140	11	2	0	192
90°	209	129	3	2	0	116
95°	231	145	11	2	1	195
105°	312	243	88	2	1	329
115°	418	367	215	38	11	415
125°	526	508	352	132	64	474
135°	653	687	484	248	174	508
145°	873	853	605	364	302	541
155°	1034	977	710	473	424	475
165°	1047	965	781	580	543	297
175°	894	880	816	716	684	88
180°	811	811	811	811	811	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	841.6	841.6	841.6	841.6	841.6	841.6	841.6	841.6	841.6	841.6	841.6
2.5°	887.2	888.8	885.6	887.2	887.2	888.0	886.4	888.0	885.6	884.8	881.5
5°	931.2	929.6	925.5	925.5	923.9	923.9	923.0	919.0	914.9	912.5	908.4
7.5°	975.2	973.6	971.1	969.5	966.2	964.6	961.3	956.4	948.3	941.0	931.2
10°	1007.8	1007.0	1002.9	999.6	993.9	992.3	989.0	983.3	976.0	967.8	958.1
12.5°	1043.6	1042.0	1038.7	1035.5	1030.6	1027.3	1023.2	1012.7	1001.3	988.2	971.9
15°	1077.0	1077.0	1073.8	1068.1	1061.5	1057.5	1051.8	1035.5	1021.6	1009.4	991.5
17.5°	1100.6	1099.0	1095.8	1089.2	1081.1	1076.2	1071.3	1058.3	1042.8	1021.6	1000.4
20°	1086.0	1085.2	1081.1	1081.1	1081.1	1080.3	1077.8	1067.2	1047.7	1030.6	1008.6
22.5°	1065.6	1068.9	1068.9	1066.4	1064.0	1058.3	1053.4	1047.7	1044.4	1029.8	1005.3
25°	1042.8	1042.8	1035.5	1027.3	1028.1	1026.5	1029.0	1027.3	1013.5	1007.8	993.9
27.5°	996.4	997.2	998.8	1007.8	1012.7	1007.0	999.6	987.4	987.4	977.6	966.2
30°	963.0	967.0	965.4	960.5	956.4	955.6	958.9	966.2	953.2	943.4	932.0
32.5°	890.5	892.9	891.3	903.5	926.3	925.5	925.5	914.1	917.3	910.0	899.4
35°	862.8	862.8	866.0	867.6	859.5	856.2	860.3	878.2	872.5	871.7	861.9
37.5°	804.1	802.5	800.0	803.3	822.8	830.2	831.0	815.5	824.5	826.9	824.5
40°	742.2	748.7	756.0	774.8	774.8	768.3	768.3	782.1	778.8	780.5	775.6
42.5°	687.6	683.5	682.7	686.8	708.8	723.4	734.8	729.1	735.7	732.4	731.6
45°	636.3	636.3	647.7	655.8	658.3	654.2	651.8	682.7	690.0	690.0	681.9
47.5°	605.3	602.9	597.2	597.2	606.9	615.9	624.9	619.2	633.0	644.4	642.8
50°	562.9	562.9	567.0	571.9	573.5	567.0	565.4	580.9	578.4	593.9	596.4
52.5°	553.2	549.1	546.7	536.9	531.2	534.4	538.5	532.8	541.0	538.5	554.0
55°	512.4	511.6	508.4	511.6	511.6	509.2	502.7	502.7	499.4	501.8	500.2
57.5°	487.2	492.1	490.4	487.2	477.4	474.1	476.6	473.3	466.0	461.9	465.2
60°	466.8	463.6	458.7	453.0	452.2	452.2	450.5	440.7	437.5	429.3	423.6
62.5°	433.4	432.6	431.0	431.8	426.1	421.2	417.1	414.7	405.7	400.0	391.9
65°	408.2	409.8	408.2	403.3	395.1	392.7	392.7	383.7	378.0	369.9	359.3
67.5°	382.9	382.1	378.0	373.9	369.9	365.8	362.5	355.2	347.1	339.7	329.1
70°	350.3	350.3	348.7	346.2	341.4	336.5	334.8	325.9	316.9	308.8	297.4
72.5°	326.7	326.7	324.2	320.2	312.0	308.8	305.5	296.5	286.8	277.8	265.6
75°	303.1	302.2	299.8	295.7	290.0	285.1	283.5	271.3	259.1	246.0	234.6
77.5°	277.0	277.0	275.4	269.7	264.0	260.7	256.6	244.4	234.6	221.6	206.1
80°	258.3	257.4	255.0	250.1	242.8	238.7	233.8	221.6	209.4	193.9	179.2
82.5°	242.0	240.3	237.9	233.0	224.9	220.8	215.9	202.9	189.0	173.5	156.4
85°	228.1	227.3	224.0	219.2	212.6	207.7	202.9	189.8	175.2	158.9	140.1
87.5°	215.1	214.3	212.6	209.4	202.9	198.8	193.9	182.5	167.8	149.9	131.2
90°	208.6	207.7	206.9	203.7	199.6	196.3	191.5	180.9	166.2	148.3	128.7
92.5°	215.9	215.9	214.3	211.0	204.5	199.6	195.5	183.3	168.6	151.5	133.6
95°	230.6	229.7	227.3	223.2	215.1	210.2	205.3	193.9	178.4	162.1	145.0
97.5°	246.0	246.0	242.8	237.9	229.7	225.7	220.8	208.6	193.9	179.2	163.8
100°	264.0	264.0	260.7	255.8	248.5	244.4	241.1	229.7	215.9	201.2	189.0
102.5°	285.1	285.1	283.5	279.4	272.9	268.8	265.6	255.8	242.0	227.3	213.4
105°	312.0	312.0	310.4	306.3	299.0	294.1	290.8	279.4	265.6	253.4	242.8
107.5°	334.0	333.2	332.4	327.5	322.6	318.5	316.1	307.1	295.7	283.5	273.7
110°	362.5	362.5	361.7	357.6	351.1	347.9	344.6	336.5	325.1	314.5	304.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	392.7	391.1	389.4	385.3	378.8	375.6	373.9	365.0	354.4	343.8	334.8
115°	417.9	418.7	417.9	413.9	406.5	403.3	400.0	392.7	382.1	373.1	366.6
117.5°	444.0	443.2	441.6	436.7	434.2	431.0	426.9	420.4	411.4	403.3	397.6
120°	477.4	472.5	470.1	464.4	460.3	458.7	457.0	448.9	440.7	434.2	431.0
122.5°	501.0	497.8	498.6	492.9	488.0	484.7	482.3	478.2	470.9	467.6	464.4
125°	525.5	523.0	521.4	518.1	518.1	514.9	513.3	508.4	505.9	502.7	507.6
127.5°	561.3	557.2	555.6	549.1	543.4	543.4	545.8	544.2	541.0	541.8	549.1
130°	580.9	578.4	582.5	581.7	582.5	580.9	580.1	580.9	582.5	590.6	596.4
132.5°	618.3	617.5	615.9	612.6	615.9	619.2	623.2	621.6	633.8	639.5	642.8
135°	652.6	650.9	658.3	659.1	660.7	659.1	664.0	679.5	685.2	688.4	686.8
137.5°	694.9	693.3	695.7	697.4	713.7	721.8	730.0	730.0	735.7	732.4	730.8
140°	757.7	756.0	769.9	773.1	775.6	773.1	775.6	782.1	777.2	776.4	771.5
142.5°	816.3	813.1	814.7	813.9	826.1	828.5	831.8	822.8	824.5	817.1	812.2
145°	873.3	875.8	876.6	873.3	868.5	866.0	868.5	872.5	862.8	860.3	853.0
147.5°	910.0	908.4	910.8	910.8	917.3	919.8	917.3	905.9	905.1	896.2	890.5
150°	967.0	962.1	962.1	954.8	948.3	948.3	949.9	949.9	941.0	934.4	925.5
152.5°	993.9	993.9	996.4	994.7	994.7	992.3	986.6	977.6	976.0	965.4	954.0
155°	1033.8	1031.4	1028.1	1022.4	1019.2	1020.8	1020.0	1015.9	1005.3	995.5	976.8
157.5°	1068.1	1065.6	1063.2	1059.1	1051.8	1048.5	1043.6	1036.3	1026.5	1006.1	981.7
160°	1077.0	1075.4	1074.6	1068.9	1066.4	1064.0	1058.3	1042.8	1023.2	1004.5	981.7
162.5°	1074.6	1072.9	1067.2	1060.7	1050.1	1042.8	1037.9	1024.1	1010.2	993.1	974.4
165°	1046.9	1043.6	1038.7	1034.7	1026.5	1020.8	1016.7	1006.1	993.9	980.9	965.4
167.5°	1020.0	1015.1	1011.8	1007.8	1002.1	998.0	994.7	987.4	976.0	964.6	949.9
170°	983.3	978.4	977.6	974.4	968.7	965.4	963.0	957.3	949.1	941.0	931.2
172.5°	942.6	936.9	937.7	936.1	932.0	929.6	928.7	925.5	919.8	914.1	905.9
175°	894.5	891.3	892.9	892.9	890.5	889.6	891.3	889.6	887.2	884.8	879.9
177.5°	855.4	852.2	853.8	854.6	853.8	853.0	855.4	854.6	855.4	852.2	848.9
180°	810.6	810.6	810.6	810.6	810.6	810.6	810.6	810.6	810.6	810.6	810.6



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	841.6	841.6	841.6	841.6	841.6	841.6	841.6	841.6	841.6	841.6	841.6
2.5°	879.0	875.8	871.7	870.9	870.9	871.7	871.7	869.3	859.5	852.2	846.5
5°	904.3	901.9	900.2	892.9	889.6	888.0	878.2	866.8	853.8	841.6	832.6
7.5°	923.0	914.9	910.0	903.5	899.4	895.3	881.5	865.2	848.1	831.8	818.8
10°	946.7	933.6	918.2	905.1	899.4	894.5	882.3	863.6	843.2	823.6	806.5
12.5°	958.9	945.0	929.6	910.0	900.2	891.3	875.8	859.5	837.5	814.7	794.3
15°	969.5	949.1	932.0	912.5	901.9	888.8	866.8	849.7	827.7	800.8	776.4
17.5°	979.3	955.6	929.6	906.7	896.2	883.9	857.9	836.7	814.7	786.2	757.7
20°	980.1	955.6	927.9	899.4	886.4	874.2	848.9	820.4	796.8	766.6	734.8
22.5°	980.1	950.7	921.4	892.1	876.6	860.3	831.8	803.3	776.4	745.4	711.2
25°	967.8	940.2	908.4	879.0	864.4	845.6	813.1	782.9	752.8	721.0	686.0
27.5°	953.2	926.3	894.5	861.1	844.8	826.9	789.4	758.5	725.1	694.9	658.3
30°	921.4	901.0	871.7	840.8	822.8	804.9	766.6	731.6	697.4	667.2	629.8
32.5°	886.4	870.9	843.2	814.7	799.2	781.3	742.2	706.3	669.7	638.7	602.1
35°	850.5	834.2	809.8	782.1	769.9	753.6	716.1	677.0	641.2	607.8	573.5
37.5°	812.2	799.2	776.4	747.9	734.8	720.2	686.8	649.3	613.5	580.1	544.2
40°	773.1	760.1	738.1	712.9	701.4	688.4	656.6	620.8	581.7	549.1	514.1
42.5°	726.7	720.2	703.9	678.6	665.6	655.8	627.3	589.8	552.4	516.5	483.1
45°	680.3	676.2	665.6	642.0	629.8	618.3	593.9	557.2	520.6	483.9	451.3
47.5°	635.5	631.4	626.5	606.9	595.5	584.1	558.9	525.5	487.2	452.2	418.7
50°	595.5	588.2	583.3	568.7	558.1	546.7	523.8	492.1	454.6	417.9	384.5
52.5°	552.4	545.0	538.5	530.4	521.4	510.0	488.0	458.7	420.4	384.5	350.3
55°	511.6	505.9	494.5	487.2	482.3	473.3	451.3	424.5	386.2	348.7	314.5
57.5°	470.1	464.4	456.2	444.0	439.1	435.0	414.7	389.4	353.6	316.1	281.1
60°	424.5	423.6	413.9	400.8	395.9	395.1	376.4	352.8	319.4	282.7	248.5
62.5°	387.8	384.5	376.4	361.7	356.8	352.8	338.1	315.3	284.3	248.5	215.1
65°	350.3	340.5	337.3	320.2	316.1	311.2	299.8	278.6	249.3	214.3	182.5
67.5°	318.5	303.9	299.0	284.3	277.0	270.5	260.7	241.1	214.3	180.9	150.7
70°	286.8	268.0	259.9	246.0	238.7	232.2	221.6	202.0	179.2	148.3	120.6
72.5°	255.0	236.3	221.6	211.8	202.0	195.5	182.5	166.2	145.0	118.1	92.1
75°	224.0	205.3	188.2	175.2	167.8	160.5	145.8	131.2	112.4	88.8	66.8
77.5°	192.3	175.2	157.2	141.8	135.2	127.9	113.2	99.4	82.3	62.7	44.8
80°	167.0	148.3	128.7	112.4	105.1	98.6	84.7	70.9	56.2	40.7	26.9
82.5°	141.8	124.6	105.9	86.4	77.4	71.7	59.5	47.3	35.0	23.6	13.8
85°	123.0	105.1	86.4	68.4	60.3	53.0	38.3	28.5	18.7	11.4	6.5
87.5°	112.4	92.9	73.3	55.4	47.3	39.1	26.9	16.3	9.0	4.9	3.3
90°	109.2	88.8	69.2	51.3	43.2	35.0	22.0	12.2	5.7	3.3	3.3
92.5°	112.4	92.9	73.3	56.2	48.1	40.7	27.7	16.3	9.0	4.1	2.4
95°	124.6	105.9	86.4	70.9	61.9	54.6	41.5	28.5	18.7	10.6	5.7
97.5°	144.2	126.3	105.9	91.2	82.3	75.8	63.5	48.1	35.0	22.8	13.0
100°	168.6	149.9	131.2	117.3	110.0	104.3	89.6	71.7	55.4	39.9	26.9
102.5°	193.1	178.4	160.5	147.5	140.1	134.4	119.8	100.2	81.5	61.9	44.8
105°	224.0	210.2	193.1	180.0	172.7	167.8	153.2	131.2	110.8	88.0	67.6
107.5°	255.8	242.0	226.5	212.6	206.9	202.0	188.2	165.4	142.6	117.3	93.7
110°	289.2	275.4	261.5	248.5	243.6	238.7	224.9	200.4	175.2	149.1	122.2



TEST NUMBER: P188181

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

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	321.8	309.6	297.4	286.0	280.3	276.2	262.3	237.1	210.2	181.7	153.2
115°	354.4	345.4	334.8	322.6	317.7	313.7	299.8	273.7	245.2	215.1	184.9
117.5°	388.6	382.9	373.1	361.7	356.0	351.9	337.3	310.4	281.1	248.5	217.5
120°	426.9	422.8	413.9	402.5	397.6	391.9	375.6	347.1	316.9	284.3	250.9
122.5°	466.0	464.4	453.8	441.6	438.3	431.0	413.0	382.9	351.9	317.7	283.5
125°	510.0	504.3	494.5	481.5	475.8	469.3	450.5	418.7	386.2	351.9	316.1
127.5°	549.9	545.0	534.4	521.4	514.1	506.7	486.4	453.8	421.2	385.3	348.7
130°	592.3	585.8	576.0	559.7	553.2	544.2	523.0	489.6	454.6	418.7	382.1
132.5°	635.5	626.5	615.9	598.8	589.0	581.7	557.2	523.0	488.0	452.2	413.9
135°	677.8	668.9	655.8	637.1	626.5	617.5	591.5	555.6	519.0	483.9	444.8
137.5°	717.7	708.0	693.3	670.5	661.5	651.8	625.7	587.4	550.7	515.7	474.1
140°	760.1	747.9	730.0	709.6	697.4	683.5	656.6	618.3	580.9	546.7	505.1
142.5°	800.0	785.4	765.8	743.8	729.1	715.3	686.0	647.7	611.8	576.8	534.4
145°	840.8	825.3	804.9	777.2	762.5	749.5	715.3	676.2	639.5	605.3	561.3
147.5°	875.0	858.7	835.1	806.5	791.1	774.8	741.4	703.9	668.0	633.8	589.8
150°	909.2	889.6	863.6	833.4	817.1	800.8	767.4	730.0	694.9	659.9	615.9
152.5°	933.6	907.6	880.7	852.2	835.9	819.6	790.2	754.4	721.0	685.2	642.0
155°	950.7	923.0	895.3	867.6	853.0	839.9	809.0	776.4	744.6	710.4	667.2
157.5°	957.3	932.0	905.9	880.7	866.8	851.3	825.3	796.0	765.8	731.6	690.0
160°	958.9	936.9	913.3	888.0	876.6	863.6	839.1	811.4	782.9	752.0	714.5
162.5°	957.3	938.5	916.5	893.7	882.3	870.9	849.7	825.3	798.4	768.3	733.2
165°	949.9	932.0	914.1	894.5	884.8	875.0	855.4	834.2	809.8	781.3	751.1
167.5°	938.5	923.9	908.4	892.1	883.9	874.2	857.1	838.3	816.3	791.9	765.8
170°	922.2	911.6	900.2	887.2	881.5	873.3	859.5	840.8	821.2	800.0	779.7
172.5°	903.5	900.2	892.9	885.6	880.7	875.0	861.9	846.5	828.5	808.2	791.1
175°	876.6	872.5	870.1	866.8	864.4	861.9	853.8	844.8	832.6	816.3	801.7
177.5°	848.1	844.8	840.8	836.7	835.1	835.1	831.8	834.2	831.0	822.0	813.1
180°	810.6	810.6	810.6	810.6	810.6	810.6	810.6	810.6	810.6	810.6	810.6



TEST NUMBER: P188181

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

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	841.6	841.6	841.6	841.6	841.6	841.6	841.6	841.6	841.6	841.6	841.6
2.5°	836.7	829.4	822.8	821.2	817.9	813.1	805.7	800.8	796.8	789.4	784.5
5°	818.8	809.0	799.2	793.5	788.6	777.2	762.5	750.3	741.4	730.0	721.0
7.5°	804.1	787.8	771.5	763.4	752.8	735.7	717.7	703.9	694.9	683.5	675.4
10°	787.0	763.4	738.9	729.1	716.9	698.2	680.3	667.2	655.0	642.8	633.0
12.5°	769.9	738.9	708.0	696.6	684.3	665.6	646.0	629.8	617.5	608.6	599.6
15°	746.3	709.6	677.8	666.4	654.2	633.0	612.6	598.8	588.2	579.2	568.7
17.5°	721.8	680.3	648.5	636.3	624.1	602.9	584.9	570.3	558.9	549.9	540.1
20°	694.9	650.9	619.2	606.9	594.7	574.4	557.2	543.4	532.0	523.0	511.6
22.5°	667.2	622.4	591.5	579.2	567.0	548.3	530.4	516.5	505.1	495.3	484.7
25°	639.5	593.9	563.8	551.5	539.3	521.4	503.5	490.4	477.4	466.8	457.0
27.5°	610.2	564.6	534.4	523.8	513.3	494.5	478.2	464.4	451.3	439.1	429.3
30°	580.1	536.9	507.6	497.0	487.2	467.6	450.5	436.7	422.0	410.6	400.0
32.5°	553.2	509.2	481.5	472.5	461.1	441.6	424.5	409.8	395.9	382.1	371.5
35°	524.7	481.5	454.6	444.0	434.2	414.7	396.8	381.3	367.4	355.2	343.0
37.5°	497.8	453.8	428.5	417.1	407.3	387.8	369.1	352.8	337.3	325.9	312.8
40°	470.1	426.9	401.6	391.1	381.3	361.7	340.5	324.2	308.0	296.5	282.7
42.5°	439.9	397.6	373.9	363.4	354.4	333.2	312.0	295.7	279.4	266.4	252.6
45°	409.0	369.1	345.4	335.7	326.7	304.7	282.7	266.4	247.7	236.3	223.2
47.5°	378.0	338.9	316.9	307.1	298.2	275.4	255.0	236.3	219.2	206.9	193.9
50°	346.2	308.8	288.4	277.8	268.0	245.2	224.9	206.9	189.0	177.6	164.6
52.5°	314.5	277.8	257.4	247.7	238.7	215.1	195.5	177.6	160.5	149.1	136.1
55°	281.1	246.9	226.5	216.7	207.7	184.9	166.2	147.5	132.8	121.4	108.4
57.5°	248.5	215.9	194.7	187.4	176.0	155.6	137.7	120.6	106.7	94.5	83.1
60°	215.9	184.9	164.6	155.6	146.6	127.1	110.0	94.5	81.5	70.9	60.3
62.5°	184.9	154.8	135.2	127.9	118.1	100.2	84.7	70.9	60.3	49.7	41.5
65°	154.0	125.5	106.7	100.2	91.2	75.0	61.9	49.7	40.7	33.4	26.9
67.5°	123.8	98.6	81.5	75.0	66.8	53.8	42.4	33.4	26.1	20.4	16.3
70°	95.3	74.1	58.7	53.0	46.4	35.8	26.9	20.4	16.3	13.0	9.8
72.5°	70.1	52.1	39.9	35.0	30.1	22.8	16.3	12.2	9.8	4.1	1.6
75°	48.9	34.2	25.3	22.0	17.9	13.0	9.8	4.9	2.4	1.6	1.6
77.5°	30.1	21.2	14.7	12.2	10.6	8.1	2.4	2.4	1.6	1.6	1.6
80°	17.1	11.4	8.1	7.3	3.3	2.4	2.4	2.4	1.6	1.6	1.6
82.5°	9.0	6.5	3.3	3.3	3.3	2.4	2.4	2.4	1.6	1.6	1.6
85°	4.1	3.3	3.3	3.3	2.4	2.4	2.4	1.6	1.6	1.6	1.6
87.5°	3.3	3.3	2.4	2.4	2.4	2.4	1.6	1.6	1.6	1.6	0.8
90°	3.3	2.4	2.4	2.4	2.4	2.4	1.6	1.6	1.6	1.6	0.8
92.5°	1.6	2.4	2.4	2.4	1.6	1.6	1.6	1.6	1.6	1.6	1.6
95°	3.3	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0.8
97.5°	7.3	4.9	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0.8
100°	16.3	9.8	6.5	5.7	3.3	1.6	1.6	1.6	1.6	1.6	0.8
102.5°	30.1	19.6	13.0	10.6	8.1	5.7	2.4	1.6	1.6	1.6	1.6
105°	48.1	34.2	23.6	19.6	16.3	10.6	8.1	5.7	1.6	1.6	1.6
107.5°	70.1	53.0	39.1	32.6	27.7	20.4	13.8	9.8	7.3	5.7	1.6
110°	95.3	75.0	57.8	50.5	44.0	33.4	25.3	18.7	13.0	10.6	8.1



TEST NUMBER: P188181

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

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	123.0	100.2	80.7	71.7	64.4	51.3	39.9	31.0	23.6	17.9	13.8
115°	152.3	127.1	105.9	96.1	88.0	73.3	59.5	48.9	37.5	31.0	23.6
117.5°	183.3	155.6	132.0	123.0	114.1	96.1	82.3	69.2	57.8	47.3	39.1
120°	214.3	185.7	162.9	150.7	142.6	123.0	108.4	93.7	80.7	68.4	57.8
122.5°	246.0	215.9	192.3	182.5	171.1	150.7	135.2	119.8	105.1	92.1	79.8
125°	277.8	246.9	223.2	211.8	201.2	180.0	163.8	147.5	132.0	118.1	105.1
127.5°	308.8	276.2	253.4	242.0	232.2	210.2	192.3	176.0	159.7	146.6	132.8
130°	340.5	307.1	284.3	272.9	262.3	240.3	222.4	205.3	189.8	176.0	162.1
132.5°	371.5	338.1	315.3	303.1	290.8	269.7	252.6	235.4	219.2	205.3	192.3
135°	402.5	366.6	343.8	331.6	320.2	299.0	281.1	264.8	247.7	234.6	222.4
137.5°	431.8	395.9	372.3	360.9	347.9	327.5	309.6	292.5	277.8	264.8	251.7
140°	460.3	424.5	400.8	388.6	376.4	356.0	338.1	321.8	306.3	294.1	281.9
142.5°	488.8	453.0	427.7	415.5	403.3	383.7	366.6	350.3	334.8	323.4	312.0
145°	515.7	479.9	454.6	442.4	431.0	412.2	395.1	378.8	364.2	352.8	341.4
147.5°	544.2	508.4	482.3	470.9	458.7	439.1	421.2	407.3	392.7	381.3	370.7
150°	571.1	534.4	507.6	496.1	484.7	465.2	449.7	433.4	419.6	408.2	398.4
152.5°	597.2	560.5	534.4	523.0	510.8	491.3	475.0	460.3	446.4	435.0	426.1
155°	623.2	587.4	561.3	549.9	536.9	516.5	500.2	487.2	473.3	463.6	454.6
157.5°	647.7	612.6	585.8	575.2	562.9	542.6	526.3	513.3	501.0	490.4	481.5
160°	672.9	639.5	611.8	601.2	589.0	568.7	552.4	537.7	527.1	517.3	508.4
162.5°	697.4	664.8	637.9	628.1	615.9	595.5	577.6	565.4	552.4	541.8	534.4
165°	719.4	689.2	663.2	654.2	642.8	623.2	606.1	592.3	580.1	569.5	561.3
167.5°	738.9	712.9	687.6	677.8	668.9	650.9	635.5	621.6	609.4	599.6	592.3
170°	757.7	736.5	714.5	706.3	695.7	678.6	664.8	655.0	643.6	633.0	624.1
172.5°	774.0	757.7	741.4	733.2	724.3	709.6	696.6	686.8	676.2	668.0	660.7
175°	789.4	778.8	768.3	764.2	756.0	746.3	733.2	725.9	716.1	708.0	700.6
177.5°	804.9	798.4	794.3	791.1	787.0	782.9	774.8	772.3	766.6	761.7	756.0
180°	810.6	810.6	810.6	810.6	810.6	810.6	810.6	810.6	810.6	810.6	810.6



TEST NUMBER: P188181

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	841.6	841.6	841.6	841.6	841.6	841.6	841.6	841.6
2.5°	778.0	771.5	769.9	767.4	765.8	760.9	762.5	758.5
5°	713.7	707.1	704.7	703.1	699.8	695.7	695.7	693.3
7.5°	667.2	659.9	658.3	655.0	652.6	647.7	647.7	646.0
10°	624.1	617.5	614.3	611.8	607.8	604.5	603.7	601.2
12.5°	590.6	583.3	580.9	577.6	573.5	571.1	569.5	566.2
15°	559.7	553.2	549.9	548.3	543.4	541.8	540.1	537.7
17.5°	533.6	524.7	521.4	518.1	514.1	511.6	510.8	508.4
20°	504.3	496.1	492.9	492.1	485.6	482.3	480.7	478.2
22.5°	475.8	466.8	463.6	462.7	457.0	452.2	450.5	448.9
25°	446.4	438.3	435.0	433.4	426.1	422.0	419.6	417.1
27.5°	420.4	410.6	404.9	404.1	397.6	392.7	390.2	386.2
30°	391.1	381.3	377.2	374.8	368.2	362.5	359.3	356.8
32.5°	362.5	352.8	347.1	344.6	337.3	332.4	329.1	326.7
35°	332.4	322.6	317.7	314.5	308.0	302.2	299.0	297.4
37.5°	303.1	292.5	287.6	284.3	277.0	271.3	268.0	266.4
40°	272.9	262.3	258.3	254.2	246.9	241.1	237.9	237.1
42.5°	242.8	233.8	228.1	224.0	216.7	210.2	207.7	206.1
45°	212.6	203.7	198.0	193.1	185.7	179.2	176.0	175.2
47.5°	183.3	173.5	167.8	162.9	154.8	149.9	145.0	144.2
50°	154.0	142.6	137.7	133.6	125.5	119.8	115.7	114.9
52.5°	125.5	114.1	110.0	105.9	97.8	93.7	89.6	88.0
55°	98.6	88.8	84.7	79.0	73.3	70.1	66.8	65.2
57.5°	74.1	65.2	61.9	57.8	53.0	49.7	46.4	46.4
60°	53.0	45.6	42.4	39.9	35.8	34.2	31.8	31.0
62.5°	35.0	30.1	27.7	26.1	23.6	22.0	20.4	19.6
65°	22.8	18.7	17.1	16.3	15.5	14.7	13.8	13.0
67.5°	13.8	12.2	11.4	10.6	9.8	9.0	7.3	6.5
70°	7.3	2.4	0.8	0.8	0.8	0.8	0.8	0.0
72.5°	1.6	0.8	0.8	0.8	0.8	0.8	0.8	0.0
75°	1.6	0.8	0.8	0.8	0.8	0.8	0.8	0.0
77.5°	1.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8
80°	1.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	1.6	0.8	0.8	0.8	0.8	0.8	0.8	0.0
85°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.0
87.5°	0.8	0.8	0.8	0.8	0.8	0.0	0.0	0.0
90°	0.8	0.8	0.8	0.8	0.8	0.0	0.0	0.0
92.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
95°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
97.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
100°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
102.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
105°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
107.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.0
110°	7.3	4.9	2.4	2.4	0.8	0.8	0.8	0.8



TEST NUMBER: P188181

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	11.4	9.8	9.8	9.0	8.1	7.3	7.3	7.3
115°	19.6	16.3	14.7	14.7	12.2	11.4	10.6	10.6
117.5°	32.6	27.7	25.3	24.4	21.2	19.6	17.9	17.9
120°	49.7	43.2	40.7	39.1	34.2	31.8	30.1	29.3
122.5°	70.9	62.7	59.5	57.0	50.5	47.3	44.8	45.6
125°	95.3	85.5	81.5	79.0	70.9	67.6	64.4	63.5
127.5°	122.2	111.6	106.7	104.3	95.3	90.4	87.2	86.4
130°	150.7	140.1	135.2	132.0	122.2	118.1	113.2	113.2
132.5°	180.9	170.3	164.6	162.1	152.3	147.5	143.4	142.6
135°	211.8	201.2	195.5	193.9	183.3	178.4	175.2	174.3
137.5°	242.0	232.2	227.3	225.7	215.9	211.8	207.7	207.7
140°	272.1	262.3	258.3	256.6	247.7	243.6	240.3	239.5
142.5°	302.2	292.5	287.6	286.8	278.6	274.5	271.3	271.3
145°	332.4	323.4	319.4	317.7	309.6	305.5	303.9	302.2
147.5°	362.5	354.4	350.3	348.7	340.5	337.3	334.0	333.2
150°	390.2	382.9	379.6	378.0	369.9	366.6	364.2	363.4
152.5°	419.6	410.6	408.2	407.3	400.0	397.6	395.1	394.3
155°	446.4	439.9	436.7	435.9	430.2	426.9	425.3	424.5
157.5°	473.3	467.6	465.2	464.4	457.9	457.0	455.4	454.6
160°	501.8	495.3	493.7	492.1	486.4	485.6	483.1	482.3
162.5°	527.1	523.0	521.4	519.8	514.1	512.4	510.8	510.8
165°	554.0	549.9	548.3	548.3	543.4	543.4	541.8	542.6
167.5°	584.9	580.9	579.2	578.4	574.4	572.7	571.1	571.1
170°	619.2	612.6	611.0	610.2	605.3	604.5	603.7	603.7
172.5°	653.4	650.1	648.5	648.5	642.0	641.2	641.2	641.2
175°	693.3	690.9	690.0	690.0	683.5	683.5	683.5	683.5
177.5°	751.1	750.3	750.3	752.0	744.6	745.4	747.1	747.1
180°	810.6	810.6	810.6	810.6	810.6	810.6	810.6	810.6

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