

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: P188251

Luminaire Tested: **FMB-N-4-LD4-1LO/1LO-40-UNV-80/86**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P188251
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27216)
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-LD4-1LO/1LO-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: 3697.0 lumens
Efficiency: N/A
Efficacy: 74.8 lumens/watt
Spacing Criteria (0/90/45): 1.07 / 1.19 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 3.67' x L: 0.29' x H: 0.67')
CIE Type: General Diffuse

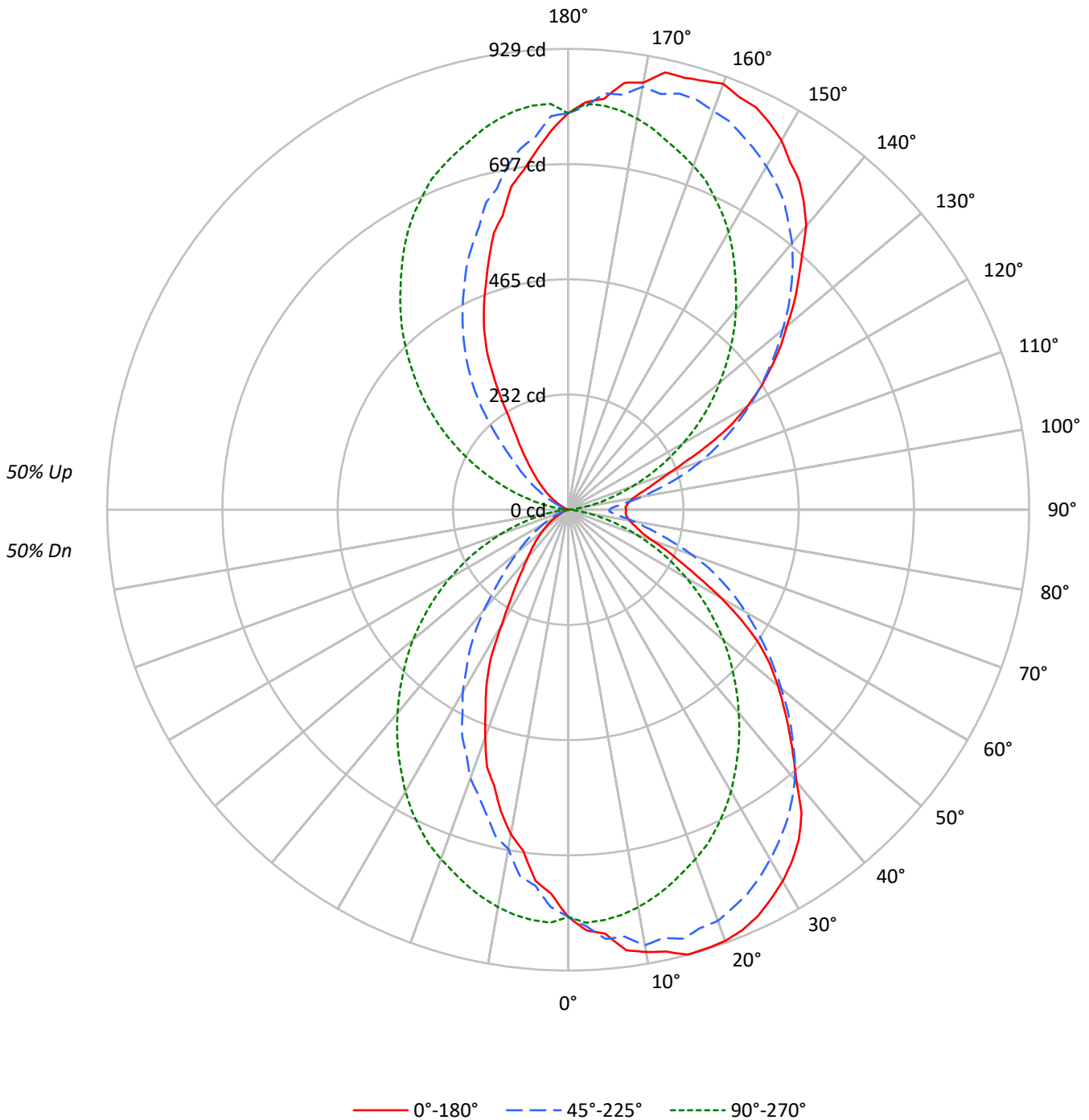
Input Watts (W): 49.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	98	94	90	86	90	87	83	80	73	71	69	61	59	58	50	49	48	42
2	89	82	76	71	82	76	71	66	65	61	57	54	51	49	44	42	41	36
3	82	72	65	60	75	67	61	56	57	53	49	48	45	42	39	37	35	31
4	75	64	57	51	69	60	53	48	51	46	42	43	39	36	35	33	30	27
5	69	58	50	44	63	53	46	41	46	40	36	39	35	31	32	29	27	23
6	64	52	44	38	59	48	41	36	41	36	32	35	31	28	29	26	24	21
7	59	47	39	33	54	44	37	32	38	32	28	32	28	25	27	24	21	19
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	25	21	19	17
9	51	39	32	27	47	36	30	25	32	26	23	27	23	20	23	20	17	15
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	21	18	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	8261	8261	8261
5°	7223	8258	6326
10°	6594	8057	4840
15°	6001	7798	3724
20°	5408	7530	2858
25°	4860	7243	2093
30°	4331	6900	1339
35°	3830	6504	849
40°	3221	6099	575
45°	2725	5679	413
50°	2318	5259	285
55°	1930	4757	187
60°	1442	4201	107
65°	1008	3603	58
70°	724	2869	7
75°	589	2013	2
80°	522	1110	2
85°	497	360	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	77.1	2.1
10°-20°	215.5	5.8
20°-30°	309.9	8.4
30°-40°	342.5	9.3
40°-50°	321.4	8.7
50°-60°	264.6	7.2
60°-70°	176.4	4.8
70°-80°	92.2	2.5
80°-90°	46.5	1.3
90°-100°	47.9	1.3
100°-110°	98.5	2.7
110°-120°	183.4	5.0
120°-130°	265.6	7.2
130°-140°	321.6	8.7
140°-150°	340.4	9.2
150°-160°	306.3	8.3
160°-170°	211.6	5.7
170°-180°	75.5	2.0
0°-30°	602.4	16.3
0°-40°	945.0	25.6
0°-60°	1531.0	41.4
0°-90°	1846.1	49.9
90°-120°	329.8	8.9
90°-150°	1257.4	34.0
90°-180°	1851.0	50.1
0°-180°	3697.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	821	821	821	821	821	
5°	858	869	830	761	751	84
15°	929	895	785	636	576	261
25°	904	854	708	506	389	416
35°	811	768	597	346	180	503
45°	629	637	472	187	95	487
55°	469	485	342	90	46	413
65°	250	342	210	30	14	254
75°	144	189	87	3	1	155
85°	117	92	10	1	0	98
90°	117	83	1	1	0	64
95°	119	102	7	0	0	100
105°	165	214	82	0	0	178
115°	315	354	201	24	8	311
125°	498	493	334	88	39	446
135°	656	636	463	190	91	508
145°	811	758	586	352	183	505
155°	895	832	696	496	401	411
165°	902	868	769	640	578	256
175°	832	842	818	755	727	81
180°	799	799	799	799	799	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	820.8	820.8	820.8	820.8	820.8	820.8	820.8	820.8	820.8	820.8	820.8
2.5°	848.9	847.1	852.5	853.1	853.7	851.3	850.7	848.9	851.9	849.5	840.5
5°	857.9	857.3	861.5	862.7	861.5	861.5	862.7	864.5	866.9	869.3	868.7
7.5°	895.7	895.7	898.1	899.9	896.3	893.3	892.1	889.7	886.1	878.3	868.1
10°	905.2	902.9	904.0	903.5	898.1	894.5	893.3	892.7	893.9	895.1	891.5
12.5°	912.4	913.6	916.6	918.4	916.0	914.8	913.6	912.4	906.4	895.1	884.3
15°	928.6	928.0	929.8	929.2	922.0	915.4	911.8	907.0	904.0	902.3	895.1
17.5°	927.4	925.0	925.6	926.8	922.6	920.8	918.4	915.4	909.4	897.5	884.3
20°	925.0	924.4	926.2	927.4	922.6	918.4	914.8	906.4	899.3	892.1	881.9
22.5°	917.2	917.8	918.4	918.4	911.2	905.8	902.3	895.1	890.9	881.3	868.1
25°	904.0	904.6	905.2	904.6	897.5	892.7	889.1	882.5	874.1	863.9	854.3
27.5°	884.9	884.3	884.9	886.1	881.3	877.7	873.5	865.7	856.1	848.9	835.2
30°	864.5	863.9	865.1	867.5	862.1	857.3	851.3	846.5	838.7	828.6	814.2
32.5°	839.9	840.5	839.9	840.5	836.4	834.6	830.4	822.6	814.8	805.8	791.4
35°	810.6	808.8	811.8	816.6	813.0	810.6	804.6	796.8	791.4	782.4	767.5
37.5°	772.2	772.8	774.6	778.8	780.0	777.6	773.4	771.0	762.7	754.9	739.9
40°	715.3	717.1	718.3	726.1	733.3	733.3	732.7	731.5	729.7	723.1	710.5
42.5°	671.0	672.2	672.8	678.8	681.8	682.4	683.0	686.0	685.4	687.2	675.2
45°	629.1	631.5	632.1	635.7	636.8	641.6	641.6	641.0	641.6	645.2	637.4
47.5°	589.5	592.5	593.1	598.5	600.9	600.9	600.3	602.1	601.5	604.5	599.7
50°	551.2	556.6	557.2	559.6	562.0	562.0	563.8	566.2	562.6	565.6	560.2
52.5°	512.8	517.0	517.0	521.2	527.8	527.8	528.4	529.0	526.6	527.8	523.0
55°	469.1	472.7	474.5	481.7	485.9	488.9	489.5	493.1	490.7	489.5	485.3
57.5°	413.4	419.4	421.8	433.8	445.7	448.1	450.5	455.9	455.3	454.1	449.3
60°	355.3	361.9	364.9	377.4	389.4	396.6	403.2	416.4	417.6	417.6	413.4
62.5°	297.2	302.5	310.3	321.1	334.9	342.1	349.3	368.4	378.6	381.0	378.0
65°	249.8	254.6	257.0	267.8	281.0	288.8	300.8	318.1	332.5	342.1	342.1
67.5°	214.5	218.7	221.7	228.3	237.8	243.2	252.8	270.2	285.8	298.4	306.1
70°	179.1	182.1	186.9	193.5	203.1	207.3	213.3	227.7	242.0	256.4	265.4
72.5°	155.8	155.8	158.2	162.4	170.7	175.5	182.1	192.9	203.7	216.9	225.3
75°	144.4	143.2	144.4	146.2	149.8	153.4	157.0	165.4	172.5	180.9	188.7
77.5°	133.6	133.0	132.4	132.4	133.0	133.6	135.4	141.4	149.8	156.4	157.6
80°	125.8	125.8	124.6	123.4	122.2	121.6	121.0	121.6	125.2	130.6	133.6
82.5°	120.4	119.8	118.6	117.4	115.0	113.8	112.6	110.2	107.8	109.0	110.2
85°	116.8	116.2	115.0	112.6	109.6	108.4	106.6	103.0	98.9	94.7	92.3
87.5°	116.2	115.6	113.8	111.4	108.4	106.0	103.6	98.9	94.1	88.7	83.3
90°	116.8	116.2	114.4	112.0	109.0	106.6	104.2	99.5	94.1	88.7	83.3
92.5°	115.6	115.0	113.8	111.4	108.4	106.6	104.8	100.6	96.5	91.7	87.5
95°	119.2	118.6	117.4	115.6	113.2	112.0	110.8	108.4	106.6	104.8	102.4
97.5°	124.6	124.0	123.4	122.2	121.6	121.0	120.4	121.0	123.4	123.4	122.8
100°	132.4	131.8	132.4	132.4	133.6	134.8	135.4	140.2	145.6	147.4	150.4
102.5°	145.6	145.0	146.8	148.6	152.8	155.2	157.6	164.2	171.9	177.3	179.1
105°	165.4	164.2	167.7	170.7	176.7	179.7	182.7	189.9	200.7	209.1	213.9
107.5°	186.9	185.7	189.9	193.5	200.1	206.1	210.3	225.3	240.2	246.8	249.8
110°	216.9	215.7	222.3	227.7	239.6	247.4	252.8	268.4	281.0	284.6	284.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	258.8	257.6	267.2	275.6	288.2	296.0	300.2	312.7	320.5	322.3	318.7
115°	315.1	315.1	319.9	328.3	337.3	343.3	348.1	354.1	357.1	357.1	353.5
117.5°	369.6	368.4	371.4	377.4	382.8	387.0	387.0	393.0	393.6	393.0	387.6
120°	416.4	415.8	417.0	421.2	424.2	427.8	429.6	431.4	430.2	427.8	423.0
122.5°	460.1	457.7	457.1	461.9	462.5	466.1	467.3	468.5	465.5	463.1	458.3
125°	498.5	497.3	496.7	502.0	502.6	503.8	503.8	505.6	503.2	500.3	493.1
127.5°	539.2	538.0	536.2	538.0	537.4	540.4	542.2	542.2	539.8	535.0	529.0
130°	574.5	575.7	573.3	577.5	576.3	577.5	577.5	579.3	575.1	570.3	563.8
132.5°	617.7	615.3	612.9	613.5	613.5	616.5	617.1	615.3	612.9	606.9	600.9
135°	656.0	656.0	656.0	656.6	654.2	654.8	654.8	656.0	650.0	644.6	635.7
137.5°	697.4	697.4	694.4	696.8	696.8	699.8	699.8	696.8	690.2	681.8	669.8
140°	745.9	748.3	744.1	744.7	739.9	737.5	736.3	733.9	721.9	713.5	701.6
142.5°	780.0	780.6	776.4	775.2	772.2	771.6	768.1	760.3	750.7	742.9	729.1
145°	811.2	811.2	808.2	802.8	796.8	794.4	790.2	787.8	778.2	768.7	757.9
147.5°	831.6	830.4	826.8	826.8	823.2	821.4	819.0	810.6	801.6	793.8	780.0
150°	859.7	860.9	856.1	849.5	844.7	842.3	838.7	832.2	821.4	811.8	799.2
152.5°	878.9	878.3	873.5	868.1	862.7	860.9	856.1	847.7	838.7	829.2	816.6
155°	895.1	893.9	889.7	884.3	879.5	876.5	871.1	862.1	855.5	848.3	831.6
157.5°	900.5	899.9	895.1	891.5	889.1	888.5	886.1	880.1	868.1	856.7	847.7
160°	913.6	912.4	905.2	896.9	890.9	887.9	884.9	878.9	876.5	870.5	854.9
162.5°	906.4	905.8	901.7	899.9	899.9	899.3	896.9	887.9	876.5	869.3	865.7
165°	901.7	902.3	896.9	888.5	886.1	885.5	884.3	883.1	884.3	881.9	868.1
167.5°	902.9	902.9	898.7	894.5	893.9	892.1	889.7	879.5	869.9	863.3	858.5
170°	874.1	873.5	869.9	863.9	864.5	865.1	866.3	869.9	872.3	871.7	865.7
172.5°	868.1	868.7	868.1	862.1	863.3	862.7	860.3	855.5	850.7	850.1	843.5
175°	831.6	832.2	831.0	830.4	834.0	835.2	836.4	836.9	839.3	842.3	842.3
177.5°	822.6	824.4	823.2	816.6	820.2	819.6	819.6	817.2	816.6	816.6	813.6
180°	799.2	799.2	799.2	799.2	799.2	799.2	799.2	799.2	799.2	799.2	799.2



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	820.8	820.8	820.8	820.8	820.8	820.8	820.8	820.8	820.8	820.8	820.8
2.5°	834.6	834.6	831.0	825.6	823.8	822.6	822.0	825.6	831.6	833.4	833.4
5°	864.5	863.9	857.9	845.3	839.9	835.2	826.2	824.4	828.0	830.4	829.8
7.5°	857.3	856.1	855.5	854.3	851.9	847.7	835.2	823.8	823.2	823.8	822.6
10°	878.9	866.9	853.7	845.9	844.7	844.7	840.5	828.6	817.2	813.6	810.6
12.5°	875.9	877.7	866.9	845.9	837.5	832.8	833.4	828.0	810.6	800.4	795.6
15°	877.7	865.1	859.7	851.3	841.1	829.2	816.0	818.4	802.8	784.8	777.6
17.5°	873.5	866.9	849.5	837.5	834.0	828.0	806.4	801.0	793.8	766.9	758.5
20°	862.7	851.9	844.1	823.2	815.4	811.2	799.2	781.2	778.8	749.5	736.9
22.5°	853.7	841.7	826.2	814.2	804.0	793.2	783.0	764.5	757.3	730.9	712.3
25°	836.9	823.8	811.2	793.2	786.6	777.0	759.1	745.3	732.7	707.5	686.0
27.5°	819.0	803.4	792.0	773.4	762.7	754.3	735.7	723.7	704.5	683.0	658.4
30°	798.6	781.8	769.8	750.7	741.1	729.7	712.3	696.2	678.2	656.0	628.5
32.5°	775.8	757.9	744.7	726.1	714.7	705.7	684.8	668.0	649.4	626.1	599.1
35°	750.1	731.5	720.1	699.8	687.2	677.0	654.8	639.8	620.7	596.7	568.6
37.5°	724.3	703.9	692.0	670.4	658.4	648.2	625.5	610.5	588.9	566.2	539.2
40°	694.4	675.2	661.4	640.4	629.1	618.3	596.1	579.9	559.0	535.0	508.6
42.5°	662.6	645.2	629.1	611.1	600.3	588.3	567.4	548.8	527.8	503.2	475.7
45°	627.3	612.3	597.9	580.5	569.7	557.8	536.8	517.6	496.1	471.5	443.9
47.5°	591.3	578.1	565.0	548.8	538.0	529.0	506.2	486.5	464.3	440.3	412.8
50°	555.4	543.4	531.4	514.6	506.2	497.3	475.1	454.1	431.4	408.6	379.8
52.5°	518.2	508.6	496.7	480.5	473.3	464.3	442.7	422.4	398.4	374.4	346.3
55°	481.7	473.3	461.3	445.7	438.5	429.6	409.8	389.4	364.9	341.5	312.1
57.5°	444.5	435.5	426.0	410.4	403.8	395.4	377.4	356.5	333.1	308.5	278.6
60°	408.6	399.0	390.6	375.0	369.0	360.7	342.7	322.9	299.6	274.4	245.6
62.5°	372.6	361.9	352.9	339.1	334.3	325.3	307.9	288.8	266.0	242.0	213.3
65°	336.7	326.5	315.7	304.9	297.2	290.0	273.2	254.6	233.1	210.3	179.7
67.5°	301.9	291.2	279.8	266.6	261.2	254.6	238.4	220.5	200.1	176.1	149.2
70°	266.0	255.8	244.4	231.3	225.3	218.1	203.7	186.9	166.0	146.2	119.8
72.5°	228.3	221.7	209.7	195.3	189.9	182.1	170.1	154.0	135.4	115.6	91.7
75°	191.1	187.5	176.1	161.8	156.4	150.4	136.6	121.6	104.8	86.9	66.5
77.5°	157.0	152.2	144.4	130.6	124.0	118.6	104.8	92.3	76.7	61.1	44.3
80°	131.8	123.4	112.6	101.8	94.7	88.7	76.7	65.3	52.1	38.9	27.0
82.5°	106.6	100.6	89.9	75.5	68.9	62.9	52.7	42.5	31.8	21.6	13.2
85°	87.5	80.3	69.5	56.3	50.3	44.3	33.0	24.6	16.8	9.6	5.4
87.5°	77.3	68.3	56.9	43.1	36.5	31.2	21.6	12.6	6.6	3.0	1.8
90°	76.1	65.3	52.7	39.5	33.0	27.0	16.8	9.0	3.6	1.2	1.2
92.5°	79.7	70.1	57.5	43.1	36.5	30.6	21.0	11.4	4.8	1.2	0.6
95°	95.3	85.7	72.5	58.1	50.9	45.5	33.0	23.4	15.0	7.2	3.0
97.5°	117.4	108.4	94.7	77.3	70.1	64.7	53.3	41.3	30.0	18.6	10.8
100°	145.6	133.0	118.6	103.6	95.9	89.9	76.7	64.7	50.3	35.3	24.0
102.5°	173.7	163.6	149.2	133.0	125.2	119.2	106.0	91.1	74.9	56.9	41.3
105°	207.3	197.7	180.9	165.4	157.0	151.6	137.2	120.4	102.4	81.5	62.9
107.5°	240.8	230.7	213.9	198.3	189.9	183.9	167.7	152.2	133.0	109.0	85.7
110°	276.2	264.2	247.4	232.5	224.1	217.5	201.3	184.5	164.2	138.4	114.4



TEST NUMBER: P188251

CATALOG NUMBER: FMB-N-4-LD4-1LO/1LO-40-UNV-80/86

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	310.3	299.0	282.8	266.0	257.6	251.0	234.3	217.5	196.5	168.9	142.0
115°	344.5	333.7	317.5	300.8	292.4	285.2	269.0	251.6	228.9	201.3	175.5
117.5°	379.8	369.6	352.9	334.9	327.1	321.1	303.7	285.8	262.4	233.7	206.1
120°	415.2	404.4	387.0	369.6	361.9	355.9	338.5	319.9	294.8	266.6	240.8
122.5°	449.9	436.7	421.2	403.8	396.0	389.4	371.4	352.9	327.1	300.8	271.4
125°	484.7	469.7	455.9	437.3	429.6	423.6	405.6	386.4	360.7	334.3	304.9
127.5°	518.2	503.2	488.9	470.9	464.3	456.5	438.5	418.8	393.0	367.3	337.9
130°	553.0	537.4	521.8	505.0	497.3	487.7	470.3	451.1	424.2	398.4	370.8
132.5°	587.7	570.9	554.8	535.6	529.6	519.4	501.5	482.3	456.5	430.8	403.8
135°	621.3	605.7	585.9	565.6	559.0	550.0	532.6	513.4	488.9	463.1	437.3
137.5°	653.6	634.5	616.5	595.5	588.9	580.5	563.8	545.8	520.0	495.5	470.3
140°	683.6	663.2	642.8	624.3	617.7	609.9	594.3	575.1	550.0	526.0	502.6
142.5°	711.7	692.6	671.6	653.6	645.8	639.2	624.9	603.3	580.5	555.4	530.8
145°	739.9	720.1	699.8	681.8	675.2	669.2	654.2	635.1	611.1	585.9	562.0
147.5°	763.3	743.5	724.9	708.7	703.9	698.0	683.0	662.6	640.4	617.1	589.5
150°	783.6	764.5	747.1	735.1	730.3	724.3	711.7	690.8	668.0	646.4	620.7
152.5°	803.4	781.8	770.4	756.1	753.1	748.9	733.9	715.9	693.8	672.8	646.4
155°	817.8	801.0	787.2	778.2	776.4	768.7	758.5	739.3	718.3	696.2	674.0
157.5°	836.4	813.6	807.0	798.6	790.8	785.4	780.0	757.9	744.7	720.7	701.0
160°	841.1	829.2	819.6	806.4	806.4	805.8	793.2	772.8	763.3	737.5	724.3
162.5°	858.5	837.5	822.6	823.8	823.2	818.4	801.0	791.4	778.8	753.7	745.9
165°	851.3	837.5	838.1	832.8	825.0	819.0	813.0	807.6	788.4	769.3	763.3
167.5°	858.5	849.5	838.1	826.2	823.8	823.8	826.8	816.0	795.6	786.6	778.2
170°	848.9	834.0	827.4	829.2	832.8	835.8	832.2	816.6	801.0	800.4	790.2
172.5°	834.6	830.4	835.2	838.1	837.5	836.4	828.0	814.8	807.6	811.2	802.8
175°	838.1	841.1	834.0	828.6	826.8	824.4	820.8	815.4	813.0	817.8	815.4
177.5°	805.8	801.6	802.8	816.6	819.0	820.2	819.6	816.0	814.2	819.0	820.2
180°	799.2	799.2	799.2	799.2	799.2	799.2	799.2	799.2	799.2	799.2	799.2



TEST NUMBER: P188251

CATALOG NUMBER: FMB-N-4-LD4-1LO/1LO-40-UNV-80/86

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	820.8	820.8	820.8	820.8	820.8	820.8	820.8	820.8	820.8	820.8	820.8
2.5°	831.6	826.8	819.6	816.0	814.2	807.0	802.2	801.0	801.6	801.0	793.8
5°	826.2	813.6	801.6	794.4	787.2	772.8	763.9	760.3	760.9	763.3	757.3
7.5°	813.6	793.2	773.4	763.9	757.3	747.1	744.7	745.9	744.7	738.7	721.9
10°	796.2	768.1	747.7	742.3	740.5	736.3	722.5	707.5	694.4	690.2	684.2
12.5°	774.6	744.1	729.7	727.9	724.3	702.8	680.0	672.2	674.6	674.0	653.6
15°	751.3	722.5	712.9	705.7	693.8	666.2	657.8	653.0	635.7	621.9	614.1
17.5°	729.7	702.8	689.0	673.4	658.4	644.0	633.9	609.3	602.7	600.3	579.9
20°	704.5	680.0	657.8	639.8	630.9	620.7	592.5	584.7	575.7	554.2	543.4
22.5°	677.6	657.2	626.1	614.1	609.9	584.1	568.0	552.4	535.0	525.4	504.4
25°	651.8	630.9	597.3	590.1	582.9	553.0	539.8	515.8	505.6	477.5	461.3
27.5°	623.1	601.5	571.5	562.6	548.2	527.8	502.6	486.5	461.3	440.3	416.4
30°	595.5	569.7	545.2	530.8	517.6	495.5	473.9	446.3	424.8	395.4	377.4
32.5°	566.8	540.4	515.8	498.5	488.9	461.9	439.1	409.2	381.6	358.3	333.7
35°	537.4	509.8	484.7	468.5	460.1	432.0	402.0	371.4	346.3	316.3	284.6
37.5°	508.6	479.9	453.5	440.3	427.8	398.4	366.7	334.9	305.5	270.2	233.1
40°	478.7	451.1	423.0	409.8	396.0	364.3	331.9	302.5	264.2	224.7	194.7
42.5°	447.5	420.0	393.0	378.6	363.7	330.7	297.8	263.6	221.7	188.1	164.8
45°	417.6	388.8	362.5	346.9	333.7	298.4	265.4	226.5	186.9	160.6	139.6
47.5°	384.6	356.5	330.1	315.7	300.8	265.4	231.9	192.3	159.4	136.0	118.0
50°	352.3	323.5	297.2	283.4	266.6	233.1	198.9	161.8	133.0	113.8	99.5
52.5°	318.1	290.6	264.2	249.2	234.3	202.5	167.2	134.8	111.4	94.7	82.7
55°	284.6	257.0	230.1	216.9	201.3	171.3	137.8	112.6	90.5	77.3	67.1
57.5°	251.6	224.1	197.7	184.5	171.3	142.0	112.6	91.1	71.9	61.1	53.3
60°	218.7	191.1	166.0	153.4	140.2	114.4	89.9	71.3	56.3	47.3	40.7
62.5°	185.7	159.4	135.4	124.6	114.4	89.3	68.9	53.9	41.9	35.3	30.6
65°	154.6	129.4	107.8	97.7	88.7	66.5	50.9	38.3	30.0	25.2	22.2
67.5°	125.2	101.8	82.1	73.7	65.9	47.3	35.3	25.8	20.4	17.4	15.6
70°	97.7	76.1	58.7	52.1	45.5	31.2	22.8	16.8	13.8	12.0	10.8
72.5°	72.5	53.9	40.1	34.7	28.8	19.8	13.8	11.4	10.2	8.4	5.4
75°	50.3	34.7	25.2	21.0	16.8	11.4	9.0	7.2	3.0	1.2	0.6
77.5°	31.8	20.4	13.8	11.4	9.0	7.2	3.6	1.2	1.2	1.2	0.6
80°	17.4	10.8	6.6	6.0	4.8	1.2	1.2	1.2	1.2	1.2	0.6
82.5°	8.4	4.8	2.4	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.6
85°	3.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.6	0.6
87.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.6	0.6
90°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.6	0.6
92.5°	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	5.4	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100°	14.4	9.0	4.2	3.6	1.2	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	28.2	18.6	10.8	8.4	6.6	4.2	0.0	0.0	0.0	0.0	0.0
105°	45.5	33.0	21.6	17.4	13.8	8.4	6.0	4.2	0.0	0.0	0.0
107.5°	66.5	49.7	36.5	30.6	25.2	16.2	10.8	7.8	6.6	4.8	0.0
110°	91.1	71.3	55.7	47.9	40.7	28.2	19.2	13.2	9.6	8.4	7.2



TEST NUMBER: P188251

CATALOG NUMBER: FMB-N-4-LD4-1LO/1LO-40-UNV-80/86

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	117.4	95.3	77.3	68.3	59.3	43.7	30.6	21.6	15.6	12.0	9.6
115°	146.8	122.8	101.8	92.3	82.1	62.9	45.5	33.5	24.0	19.2	15.6
117.5°	178.5	152.8	129.4	119.2	108.4	86.3	64.1	48.5	36.5	28.8	24.0
120°	210.9	184.5	158.8	147.4	136.0	112.6	85.1	66.5	51.5	41.3	34.1
122.5°	243.2	215.1	189.9	177.3	167.2	141.4	109.0	85.7	68.3	55.7	46.1
125°	278.0	249.2	222.9	209.1	198.3	172.5	137.2	107.8	88.1	73.1	61.1
127.5°	310.9	283.4	255.2	241.4	229.5	204.3	168.9	132.4	109.0	91.7	77.9
130°	344.5	316.9	288.8	273.2	260.6	235.4	201.9	160.6	131.2	110.8	95.9
132.5°	377.4	351.1	322.3	306.7	293.0	267.8	236.6	194.7	157.0	133.6	116.8
135°	411.0	384.0	355.9	341.5	326.5	300.2	270.8	233.1	190.5	158.8	138.4
137.5°	443.3	416.4	388.2	372.6	358.3	332.5	303.7	271.4	231.3	189.3	164.8
140°	474.5	446.9	419.4	404.4	390.0	363.1	334.9	306.7	273.8	230.7	195.3
142.5°	505.0	476.9	450.5	436.1	420.0	397.2	367.9	341.5	313.9	280.4	241.4
145°	535.6	506.8	481.7	468.5	452.9	430.2	402.0	376.2	352.3	324.7	295.4
147.5°	564.4	537.4	512.2	499.1	484.7	462.5	435.5	411.6	388.8	365.5	342.7
150°	593.7	566.8	542.2	530.2	515.8	494.3	469.7	445.7	424.8	402.0	382.8
152.5°	621.3	595.5	570.3	559.6	546.4	526.0	500.9	481.7	460.7	439.1	421.8
155°	649.4	622.5	598.5	586.5	576.3	555.4	534.4	514.6	496.1	477.5	458.9
157.5°	676.4	648.8	628.5	615.9	603.9	590.7	563.8	550.6	533.8	515.2	502.6
160°	701.0	671.0	656.0	644.6	630.3	617.7	599.1	576.9	566.2	553.0	535.6
162.5°	724.3	694.4	681.8	674.6	662.0	642.8	632.1	614.7	597.3	585.9	578.1
165°	746.5	715.9	702.2	699.2	693.8	676.4	656.6	648.2	640.4	624.9	607.5
167.5°	764.5	738.1	719.5	716.5	714.1	709.9	690.2	673.4	663.2	659.0	653.0
170°	781.2	761.5	742.3	736.3	731.5	727.9	723.7	715.9	703.9	689.6	678.2
172.5°	793.2	779.4	765.1	759.7	753.1	745.3	737.5	735.1	734.5	733.3	727.9
175°	804.0	794.4	787.8	785.4	781.8	778.2	769.8	761.5	754.9	750.7	747.1
177.5°	811.8	801.0	796.2	795.0	795.6	798.6	797.4	795.6	794.4	792.6	790.2
180°	799.2	799.2	799.2	799.2	799.2	799.2	799.2	799.2	799.2	799.2	799.2



TEST NUMBER: P188251

CATALOG NUMBER: FMB-N-4-LD4-1LO/1LO-40-UNV-80/86

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	820.8	820.8	820.8	820.8	820.8	820.8	820.8	820.8
2.5°	789.0	789.0	784.2	783.0	778.2	775.2	777.6	775.2
5°	756.7	754.9	754.9	753.7	751.3	750.7	751.3	751.3
7.5°	712.9	704.5	702.2	699.2	695.0	693.8	694.4	693.8
10°	684.2	680.6	679.4	677.0	670.4	668.0	667.4	664.4
12.5°	639.8	629.1	625.5	624.3	623.7	623.7	623.1	623.7
15°	613.5	608.1	601.5	596.1	587.1	582.3	579.3	576.3
17.5°	566.8	560.2	557.8	556.0	552.4	547.6	546.4	543.4
20°	536.2	521.2	511.0	505.0	497.3	493.1	490.7	488.9
22.5°	484.1	475.7	468.5	461.9	453.5	442.7	437.9	434.4
25°	443.9	421.8	415.8	412.2	405.0	397.2	391.2	389.4
27.5°	397.2	381.0	372.0	366.1	355.9	346.3	339.1	337.3
30°	351.1	333.1	324.1	316.3	297.2	280.4	270.8	267.2
32.5°	306.1	274.4	260.6	249.8	237.8	226.5	220.5	216.3
35°	248.0	224.1	214.5	207.3	196.5	186.9	181.5	179.7
37.5°	205.5	186.9	179.1	172.5	163.0	155.8	151.6	149.8
40°	173.1	157.6	151.0	145.6	138.4	132.4	128.8	127.6
42.5°	146.2	134.2	128.8	124.6	118.6	113.8	112.0	110.2
45°	124.0	114.4	110.2	106.6	101.8	98.3	96.5	95.3
47.5°	105.4	97.1	94.1	91.1	86.9	83.9	82.1	81.5
50°	88.7	82.1	79.1	76.7	73.1	70.1	68.9	67.7
52.5°	73.7	67.7	65.3	62.9	60.5	58.1	56.9	55.7
55°	59.9	55.1	52.7	51.5	48.5	46.7	45.5	45.5
57.5°	47.3	43.1	41.9	40.7	38.3	36.5	35.3	35.3
60°	36.5	33.0	31.8	31.2	28.8	27.6	27.0	26.4
62.5°	27.0	24.6	23.4	22.8	21.0	20.4	19.8	19.2
65°	19.2	18.0	17.4	16.8	15.6	15.0	14.4	14.4
67.5°	13.8	12.6	12.6	12.0	11.4	11.4	10.8	10.8
70°	10.2	8.4	7.8	6.6	4.2	3.0	2.4	1.8
72.5°	1.8	0.6	0.6	0.6	0.6	0.6	0.6	0.0
75°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
77.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.6
80°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
82.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
85°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.0
87.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.0
90°	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.0
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110°	6.6	3.6	1.8	0.6	0.0	0.0	0.0	0.0



TEST NUMBER: P188251

CATALOG NUMBER: FMB-N-4-LD4-1LO/1LO-40-UNV-80/86

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	8.4	7.2	7.2	6.6	6.6	6.0	5.4	6.0
115°	13.2	11.4	10.2	10.2	9.0	8.4	7.8	8.4
117.5°	19.8	18.0	16.2	15.6	14.4	13.8	12.6	13.2
120°	29.4	26.4	24.6	23.4	21.6	20.4	19.8	19.8
122.5°	40.1	36.5	34.1	33.0	30.6	28.8	28.2	28.2
125°	53.3	48.5	45.5	44.3	41.9	40.7	38.9	38.9
127.5°	67.7	61.1	58.1	56.3	53.3	52.1	50.9	50.9
130°	83.9	76.1	71.9	69.5	66.5	64.7	62.9	62.9
132.5°	103.0	92.9	88.1	85.1	80.3	78.5	76.7	76.1
135°	124.0	112.6	106.6	102.4	97.1	93.5	91.7	91.1
137.5°	146.8	134.2	128.2	123.4	116.8	110.8	109.6	108.4
140°	173.1	158.2	152.8	146.2	139.0	132.4	131.2	129.4
142.5°	207.3	188.1	179.7	173.1	164.8	157.0	155.8	154.6
145°	260.0	230.1	219.3	208.5	196.5	189.3	183.9	183.3
147.5°	317.5	289.4	279.8	263.6	244.4	229.5	223.5	223.5
150°	363.7	343.3	336.7	327.7	312.7	301.3	290.0	287.6
152.5°	402.6	387.0	381.6	375.6	366.1	355.3	351.7	351.1
155°	443.3	429.6	426.0	418.8	409.8	401.4	399.6	400.8
157.5°	485.9	470.3	466.1	460.1	454.1	448.1	446.3	443.9
160°	521.8	513.4	511.0	505.6	498.5	492.5	486.5	484.7
162.5°	565.6	550.6	547.0	542.2	535.6	529.6	530.2	530.2
165°	595.5	588.9	588.9	586.5	584.7	582.3	576.9	578.1
167.5°	642.8	629.1	625.5	621.9	617.1	608.7	606.9	608.1
170°	668.6	662.6	662.0	662.0	662.6	660.2	658.4	660.8
172.5°	718.3	706.9	704.5	702.2	699.2	693.2	687.2	690.2
175°	741.1	736.3	735.7	735.1	735.1	730.9	726.7	726.7
177.5°	783.0	775.8	773.4	775.2	774.6	769.8	766.3	765.7
180°	799.2	799.2	799.2	799.2	799.2	799.2	799.2	799.2

(END OF REPORT)