

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: P188182

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P188182
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27214)
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-LD4-1UP/LO-40-UNV-80/86
Description:
Light Source: (84) NICHIA ELM 4000K LED
2UT217042A8404A
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1888.0 lumens
Efficiency: N/A
Efficacy: 76.4 lumens/watt
Spacing Criteria (0/90/45): - / - / -
Luminous Opening: Rectangular w/ Sides (W: 3.67' x L: 0.29' x H: 0.04')
CIE Type: Indirect

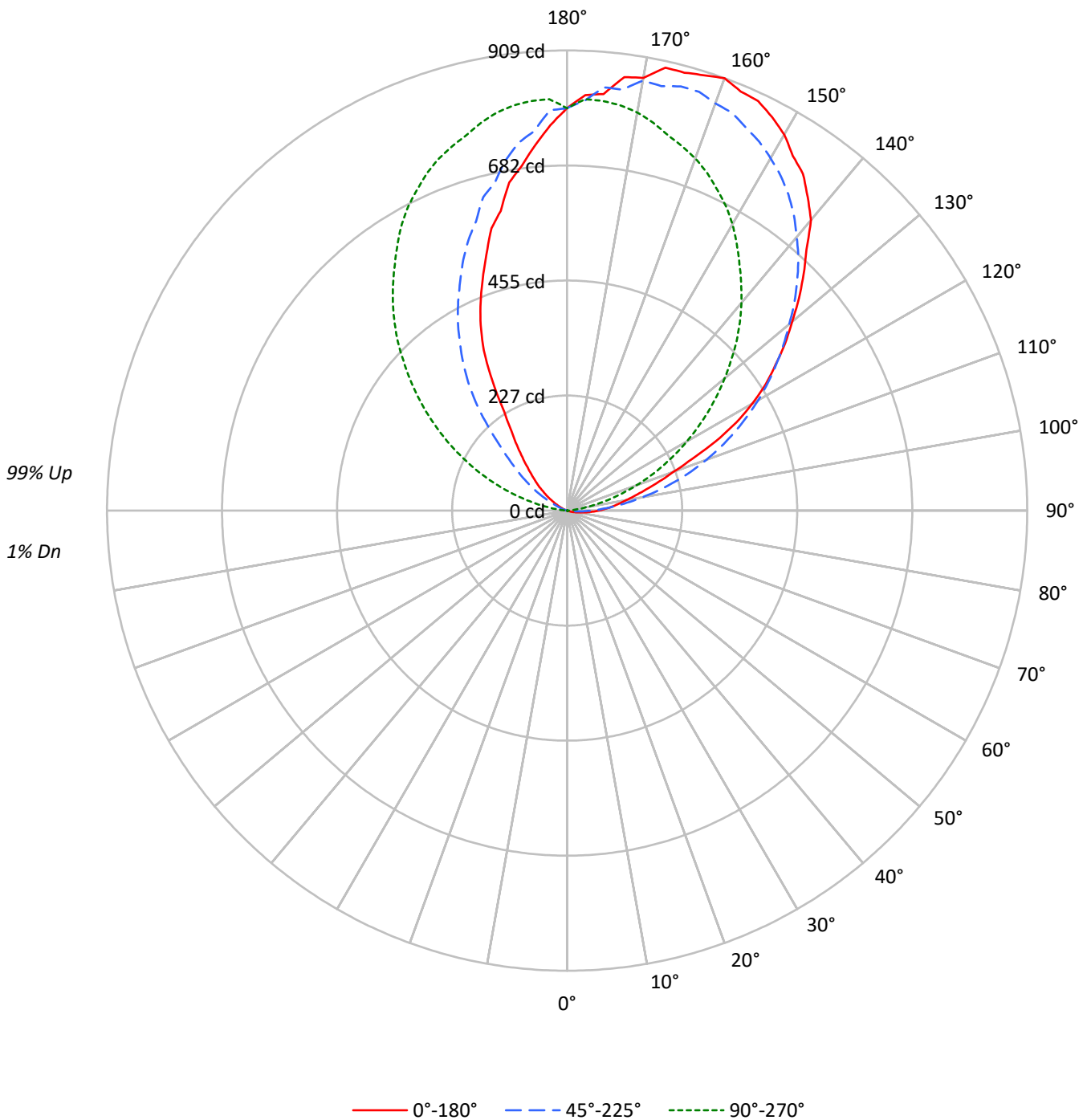
Input Watts (W): 24.7
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P188182

CATALOG NUMBER: FMB-N-4-LD4-1UP/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	95	95	95	95	82	82	82	82	56	56	56	32	32	32	11	11	11	1
1	87	82	79	75	74	71	68	65	48	47	45	28	27	26	9	9	9	0
2	79	72	66	61	67	62	57	53	42	39	37	24	23	22	8	8	7	0
3	72	63	56	51	61	54	49	44	37	34	31	22	20	18	7	6	6	0
4	65	55	48	43	56	48	42	37	33	29	26	19	17	15	6	6	5	0
5	60	49	42	36	51	42	36	31	29	25	22	17	15	13	6	5	4	0
6	55	44	36	31	47	38	31	27	26	22	19	15	13	11	5	4	4	0
7	50	39	32	27	43	34	28	23	23	19	16	14	11	10	4	4	3	0
8	46	35	28	23	40	30	24	20	21	17	14	12	10	9	4	3	3	0
9	43	32	25	20	37	27	22	18	19	15	13	11	9	8	4	3	2	0
10	40	29	22	18	34	25	19	16	17	14	11	10	8	7	3	3	2	0

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	0	0	0
5°	0	0	0
10°	0	0	0
15°	0	0	0
20°	0	0	0
25°	0	0	0
30°	0	0	0
35°	0	0	0
40°	0	0	0
45°	0	0	0
50°	0	0	0
55°	0	0	0
60°	0	0	0
65°	0	0	0
70°	0	34	13
75°	259	22	15
80°	653	33	19
85°	1706	61	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	0.0	0.0
10°-20°	0.0	0.0
20°-30°	0.0	0.0
30°-40°	0.0	0.0
40°-50°	0.0	0.0
50°-60°	0.0	0.0
60°-70°	0.1	0.0
70°-80°	2.4	0.1
80°-90°	11.7	0.6
90°-100°	40.7	2.2
100°-110°	101.7	5.4
110°-120°	190.6	10.1
120°-130°	273.1	14.5
130°-140°	328.2	17.4
140°-150°	344.7	18.3
150°-160°	308.0	16.3
160°-170°	211.6	11.2
170°-180°	75.3	4.0
0°-30°	0.0	0.0
0°-40°	0.0	0.0
0°-60°	0.0	0.0
0°-90°	14.2	0.8
90°-120°	333.1	17.6
90°-150°	1279.0	67.7
90°-180°	1874.0	99.3
0°-180°	1888.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	0	0	0	0	0	
5°	0	0	0	0	0	0
15°	0	0	0	0	0	0
25°	0	0	0	0	0	0
35°	0	0	0	0	0	0
45°	0	0	0	0	0	0
55°	0	0	0	0	0	0
65°	0	0	0	0	0	0
75°	10	1	1	1	1	10
85°	39	20	1	0	0	28
90°	62	47	0	0	0	34
95°	89	92	9	0	0	79
105°	161	221	87	2	0	174
115°	324	364	208	28	11	319
125°	503	505	340	95	44	450
135°	661	643	473	198	98	511
145°	812	762	594	359	192	505
155°	892	835	700	500	404	410
165°	896	867	768	641	577	254
175°	826	839	812	752	724	81
180°	795	795	795	795	795	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70°	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6
72.5°	4.2	4.2	3.6	2.4	1.2	0.6	0.6	0.0	0.6	0.6	0.6
75°	10.2	10.2	10.2	9.6	9.0	8.4	7.8	5.4	2.4	0.6	0.6
77.5°	14.4	14.4	13.8	13.2	12.0	11.4	10.8	9.6	8.4	7.2	4.2
80°	20.4	20.4	19.8	19.2	18.0	16.8	16.2	13.8	12.0	10.2	8.4
82.5°	28.8	28.8	28.2	27.0	25.2	24.6	23.4	21.0	18.0	15.6	12.6
85°	38.9	38.3	37.7	37.1	34.7	33.5	32.3	29.4	26.4	22.8	19.8
87.5°	50.3	50.3	49.1	47.9	46.1	45.5	44.3	40.7	37.7	34.1	31.7
90°	62.3	62.3	61.7	60.5	59.3	57.5	56.9	54.5	51.5	49.1	47.3
92.5°	75.5	75.5	74.9	73.1	73.1	71.9	71.3	70.1	68.9	67.7	67.7
95°	88.6	89.2	88.6	88.1	88.1	87.5	88.1	88.6	89.2	90.4	91.6
97.5°	103.0	103.6	103.6	103.0	104.8	105.4	106.6	109.0	113.2	116.2	119.2
100°	118.6	119.2	119.8	121.0	125.2	126.4	128.8	135.4	142.0	145.0	150.3
102.5°	137.8	139.0	140.2	142.6	149.1	150.9	155.1	164.1	171.9	178.5	185.1
105°	161.1	162.9	165.3	169.5	177.3	179.7	184.5	194.1	208.4	215.0	221.0
107.5°	190.5	192.3	195.3	199.5	209.0	213.8	220.4	233.6	249.2	254.6	257.0
110°	223.4	225.2	229.4	236.6	251.0	257.0	264.8	277.3	289.9	291.7	292.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	267.1	270.7	277.9	286.3	300.7	305.5	311.5	321.1	328.8	327.6	328.2
115°	323.5	326.4	332.4	338.4	349.2	352.8	355.8	361.2	365.4	363.6	363.6
117.5°	376.8	378.0	382.8	386.9	392.9	394.1	396.5	400.7	401.9	400.1	399.5
120°	422.3	424.1	426.5	428.9	433.7	435.5	436.7	439.7	437.3	436.7	435.5
122.5°	465.4	464.8	467.8	468.4	472.0	473.8	474.4	476.2	474.4	473.2	470.2
125°	503.1	503.7	507.3	508.5	510.9	510.3	510.3	513.9	511.5	510.9	504.9
127.5°	542.7	543.3	544.5	543.9	546.3	547.5	551.1	549.9	548.7	546.3	539.1
130°	579.8	582.2	584.0	584.6	584.6	583.4	587.0	588.2	584.6	582.2	572.6
132.5°	621.1	620.5	619.4	620.5	622.9	624.1	625.9	624.1	622.9	617.6	609.2
135°	660.7	660.7	663.1	663.1	661.3	660.7	663.7	665.5	659.5	654.7	642.7
137.5°	699.6	701.4	700.2	703.8	706.2	706.2	708.6	703.2	699.0	689.4	676.3
140°	749.3	751.7	749.9	750.5	745.1	742.7	742.1	740.3	729.0	720.0	705.6
142.5°	780.5	781.7	780.5	780.5	778.1	775.7	773.3	765.5	757.7	745.1	735.6
145°	812.2	812.2	809.8	805.0	799.6	796.6	795.5	791.9	782.3	769.7	761.9
147.5°	830.2	830.8	829.0	829.0	826.6	824.2	822.4	813.4	805.0	793.1	784.7
150°	857.7	859.5	855.9	850.0	846.4	844.0	842.2	835.0	824.2	811.6	803.8
152.5°	876.3	876.3	873.9	869.1	863.7	860.7	857.7	850.0	840.4	828.4	821.8
155°	892.5	891.9	887.7	882.3	878.1	874.5	870.9	862.5	855.4	846.4	835.0
157.5°	896.1	895.5	892.5	889.5	887.7	886.5	885.9	878.7	865.5	854.8	850.6
160°	908.7	906.9	902.1	894.3	887.7	885.9	883.5	878.7	875.1	869.1	855.9
162.5°	901.5	902.7	899.7	897.3	897.3	897.3	894.9	886.5	873.3	866.7	867.3
165°	895.5	893.7	890.1	883.5	881.7	881.7	881.7	881.1	881.1	879.9	867.3
167.5°	896.1	896.1	894.3	890.7	888.9	888.9	885.9	877.5	866.1	860.1	858.9
170°	867.9	867.9	864.3	860.1	861.3	861.9	863.1	865.5	867.9	869.1	862.5
172.5°	863.7	863.1	861.9	858.3	857.7	858.9	857.1	853.6	846.4	845.2	838.6
175°	826.0	827.2	826.6	826.0	829.6	831.4	832.0	833.8	835.0	839.2	839.2
177.5°	821.2	821.2	818.8	814.0	818.2	817.0	817.0	816.4	814.0	812.2	811.0
180°	794.9	794.9	794.9	794.9	794.9	794.9	794.9	794.9	794.9	794.9	794.9



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.2	1.2
72.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
75°	0.6	0.6	0.6	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	0.6	0.6	0.6	0.6	0.6
80°	6.6	4.2	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
82.5°	9.6	7.2	5.4	2.4	0.6	0.6	0.6	0.6	0.6	0.6	0.6
85°	16.2	13.2	9.0	6.0	4.8	3.6	0.6	0.6	0.6	0.6	0.6
87.5°	27.6	23.4	18.0	12.0	9.6	7.2	3.6	1.2	0.6	0.6	0.6
90°	43.1	38.3	31.7	23.4	19.2	15.6	9.6	4.8	1.2	0.0	0.0
92.5°	63.5	59.3	50.3	38.9	32.9	28.8	19.8	13.2	6.6	1.8	0.0
95°	88.6	83.3	72.5	58.7	52.7	46.7	35.9	27.0	17.4	9.0	4.2
97.5°	116.8	110.8	98.2	82.7	75.5	68.9	56.3	46.1	32.9	21.6	13.2
100°	148.5	140.8	128.8	109.6	101.8	94.6	82.7	69.5	54.5	39.5	26.4
102.5°	182.1	173.1	159.3	139.6	131.8	124.6	111.4	97.0	79.7	61.7	44.3
105°	215.6	206.1	191.7	171.3	164.1	156.3	143.2	127.6	108.4	86.9	67.1
107.5°	250.4	238.4	224.0	205.5	198.3	190.5	176.7	160.5	139.6	115.0	91.0
110°	285.1	272.5	258.2	240.2	232.4	224.6	210.8	193.5	171.3	145.0	118.6



TEST NUMBER: P188182

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

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	319.9	307.3	293.5	274.9	267.7	259.4	243.8	227.6	205.5	176.1	147.9
115°	355.2	343.2	328.8	309.7	302.5	294.7	278.5	261.2	237.8	207.8	179.1
117.5°	390.5	378.6	363.6	345.0	336.0	330.6	313.9	295.3	270.1	240.2	211.4
120°	425.9	413.3	397.7	380.4	373.2	365.4	348.0	329.4	303.1	273.1	244.4
122.5°	460.0	447.4	432.5	413.9	407.3	399.5	381.6	362.4	336.0	306.1	280.9
125°	493.6	481.0	467.2	448.0	440.9	433.1	413.3	395.3	369.0	339.6	315.7
127.5°	527.1	514.5	500.8	481.6	473.2	465.4	446.8	426.5	401.9	373.2	349.8
130°	561.2	548.7	533.1	512.7	505.5	497.2	478.6	458.8	433.7	406.1	383.4
132.5°	596.6	582.2	565.4	543.3	536.7	528.9	509.7	488.8	467.2	439.1	416.9
135°	630.7	615.8	596.6	572.6	566.0	558.3	540.3	522.3	499.0	473.2	449.8
137.5°	662.5	643.3	624.7	601.4	596.6	588.8	570.8	551.7	528.9	504.9	482.2
140°	691.8	673.3	651.1	631.3	625.9	617.6	601.4	581.6	559.5	535.5	512.7
142.5°	720.0	699.6	678.6	660.1	654.1	646.9	630.7	611.6	590.0	564.8	540.9
145°	746.3	725.4	705.0	686.4	682.8	675.7	659.5	640.3	618.8	593.6	569.0
147.5°	767.9	746.9	728.4	712.8	709.8	702.6	687.6	667.9	646.3	623.5	598.4
150°	787.1	767.3	749.3	740.3	733.2	727.8	714.6	696.6	673.3	653.5	628.3
152.5°	806.8	784.7	773.3	759.5	756.5	752.9	736.8	720.6	699.0	678.6	654.7
155°	819.4	803.2	787.7	782.3	778.1	770.3	760.7	743.9	721.8	700.2	681.0
157.5°	836.2	813.4	807.4	799.0	791.9	786.5	780.5	760.1	746.3	722.4	705.0
160°	840.4	830.8	818.2	808.0	806.8	806.8	793.7	775.1	764.3	740.3	727.8
162.5°	857.1	836.2	821.2	824.2	823.6	817.6	800.2	793.7	779.3	754.7	748.1
165°	848.2	836.2	838.0	830.2	823.0	817.0	812.2	807.4	787.7	767.9	764.3
167.5°	855.4	847.6	834.4	824.2	821.8	822.4	825.4	814.6	794.3	784.7	778.1
170°	845.8	830.8	824.2	827.8	831.4	833.2	830.2	814.6	798.4	798.4	790.1
172.5°	830.2	826.6	832.6	835.0	835.0	833.2	824.8	811.6	802.6	807.4	800.8
175°	835.0	835.0	827.2	823.0	821.2	820.0	816.4	809.8	807.4	812.2	811.6
177.5°	802.6	797.8	799.0	809.2	811.6	812.8	812.2	809.2	807.4	813.4	815.8
180°	794.9	794.9	794.9	794.9	794.9	794.9	794.9	794.9	794.9	794.9	794.9



TEST NUMBER: P188182

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

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70°	1.2	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
72.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
75°	0.6	0.6	0.6	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	0.6	0.6	0.6	0.6	0.6
80°	0.6	0.6	0.6	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	0.6	0.6	0.6
85°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0
87.5°	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	6.6	3.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100°	16.8	9.6	5.4	4.2	3.0	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	31.1	20.4	12.6	10.2	7.8	5.4	2.4	0.0	0.0	0.0	0.0
105°	49.7	34.7	24.6	20.4	16.2	10.2	7.2	6.0	1.8	0.0	0.0
107.5°	72.5	53.9	41.3	35.3	29.4	19.8	12.6	9.6	7.8	7.2	3.6
110°	97.6	76.7	61.1	54.5	46.1	32.9	22.2	15.6	12.0	10.2	9.0



TEST NUMBER: P188182

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

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	125.2	102.4	83.9	76.1	67.7	49.7	34.7	25.2	18.6	15.0	12.6
115°	155.7	131.2	110.8	101.2	92.2	70.1	50.9	38.3	28.2	22.8	19.2
117.5°	188.1	162.3	139.6	128.8	119.2	94.6	70.1	54.5	41.3	33.5	28.2
120°	220.4	194.7	170.1	158.7	147.9	121.6	92.2	72.5	57.5	46.7	39.5
122.5°	252.2	227.6	201.9	189.3	177.9	150.9	116.8	92.8	75.5	61.7	52.7
125°	286.9	261.2	234.8	221.0	209.0	182.7	145.0	115.0	94.6	79.1	67.7
127.5°	320.5	294.7	267.7	253.4	240.2	213.8	176.7	140.2	116.2	98.2	84.5
130°	354.6	328.2	300.7	286.9	272.5	246.2	209.0	169.5	139.0	118.6	103.6
132.5°	388.1	361.8	333.6	319.9	305.5	277.3	243.8	204.9	165.9	141.4	124.6
135°	420.5	393.5	366.0	353.4	339.0	309.7	277.9	243.2	198.3	167.1	145.6
137.5°	451.6	425.3	396.5	383.4	370.8	341.4	309.7	280.9	239.6	198.9	171.9
140°	483.4	455.2	427.1	414.5	401.9	372.6	342.0	316.3	282.1	242.0	203.7
142.5°	513.3	485.2	457.6	445.0	432.5	406.7	375.0	350.4	322.3	291.1	250.4
145°	542.1	514.5	487.6	475.6	464.2	440.3	407.9	384.5	358.8	334.8	303.7
147.5°	570.2	543.3	516.9	504.9	494.2	470.8	442.6	419.3	394.7	374.4	349.8
150°	599.0	572.0	546.3	534.9	523.5	501.9	475.0	454.0	431.9	411.5	389.9
152.5°	625.9	600.8	572.0	563.6	552.3	533.7	508.5	488.8	466.0	447.4	428.3
155°	652.9	625.9	600.8	589.4	581.6	562.4	539.7	521.7	499.6	485.2	464.2
157.5°	677.5	650.5	630.1	617.6	606.8	595.4	569.6	555.9	536.1	520.5	506.7
160°	702.0	672.7	657.7	646.3	633.1	621.7	603.2	582.2	569.6	559.5	540.3
162.5°	725.4	696.0	682.2	675.7	663.7	646.3	635.5	620.5	599.0	590.0	581.6
165°	745.7	716.4	702.0	699.0	693.0	678.6	657.7	649.9	640.9	630.7	609.8
167.5°	764.3	738.5	719.4	715.2	712.8	709.8	693.0	675.1	662.5	661.3	654.7
170°	779.9	760.7	741.5	734.4	729.0	727.8	724.2	716.4	702.0	693.0	678.6
172.5°	790.7	778.7	764.9	757.7	749.9	744.5	737.4	734.4	733.2	733.2	726.6
175°	800.2	791.9	785.3	782.9	778.7	775.7	766.7	759.5	751.7	749.9	744.5
177.5°	807.4	797.2	793.1	791.9	792.5	795.5	795.5	793.1	791.3	789.5	786.5
180°	794.9	794.9	794.9	794.9	794.9	794.9	794.9	794.9	794.9	794.9	794.9



TEST NUMBER: P188182

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
72.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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	0.6	0.6
80°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
82.5°	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	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°	8.4	7.2	6.0	4.8	1.8	0.0	0.0	0.0



TEST NUMBER: P188182

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	10.8	10.2	9.6	9.6	9.0	9.0	9.0	8.4
115°	16.2	15.0	14.4	13.2	12.6	12.0	12.0	11.4
117.5°	24.6	22.2	21.0	20.4	18.6	18.0	17.4	17.4
120°	34.1	31.1	29.9	28.8	27.0	25.8	25.2	24.6
122.5°	46.1	41.9	40.1	38.9	36.5	35.3	34.7	34.1
125°	59.3	54.5	52.1	50.3	47.3	46.1	45.5	44.3
127.5°	74.3	67.7	64.7	62.9	59.9	58.1	57.5	56.3
130°	91.0	82.7	79.7	76.7	73.1	71.3	70.1	69.5
132.5°	110.8	100.0	96.4	93.4	88.1	85.7	83.9	82.7
135°	131.8	120.4	116.2	112.0	104.2	101.2	99.4	97.6
137.5°	154.5	142.0	137.8	133.6	124.6	120.4	117.4	115.6
140°	181.5	167.1	161.1	156.9	147.4	142.6	139.6	137.2
142.5°	218.0	197.7	190.5	183.3	174.3	168.3	165.3	162.9
145°	270.1	240.2	229.4	219.8	206.1	199.5	195.3	191.7
147.5°	326.4	301.9	289.3	276.1	254.6	244.4	236.6	231.2
150°	372.0	351.6	345.0	337.8	322.3	312.7	307.9	295.3
152.5°	410.3	394.1	389.9	385.7	375.6	367.8	363.0	357.0
155°	448.6	436.1	432.5	427.1	417.5	411.5	407.9	404.3
157.5°	491.2	475.0	470.8	466.6	459.4	456.4	453.4	446.8
160°	526.5	517.5	515.7	512.7	504.9	499.6	494.8	487.0
162.5°	569.6	554.7	551.7	548.1	539.7	535.5	533.7	530.1
165°	597.8	591.8	590.6	590.0	588.2	586.4	582.2	577.4
167.5°	643.9	634.3	630.1	625.3	618.8	614.6	610.4	606.2
170°	669.1	663.1	663.1	663.1	663.7	661.9	660.1	658.3
172.5°	717.0	709.2	706.8	702.6	698.4	695.4	691.8	687.0
175°	738.5	734.4	734.4	733.8	733.8	729.6	726.0	724.2
177.5°	779.9	774.5	775.1	772.1	771.5	769.7	766.1	761.9
180°	794.9	794.9	794.9	794.9	794.9	794.9	794.9	794.9

(END OF REPORT)