

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: P188180

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P188180  
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-LD4-2LO/2LO-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: 3027.0 lumens  
Efficiency: N/A  
Efficacy: 61.3 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

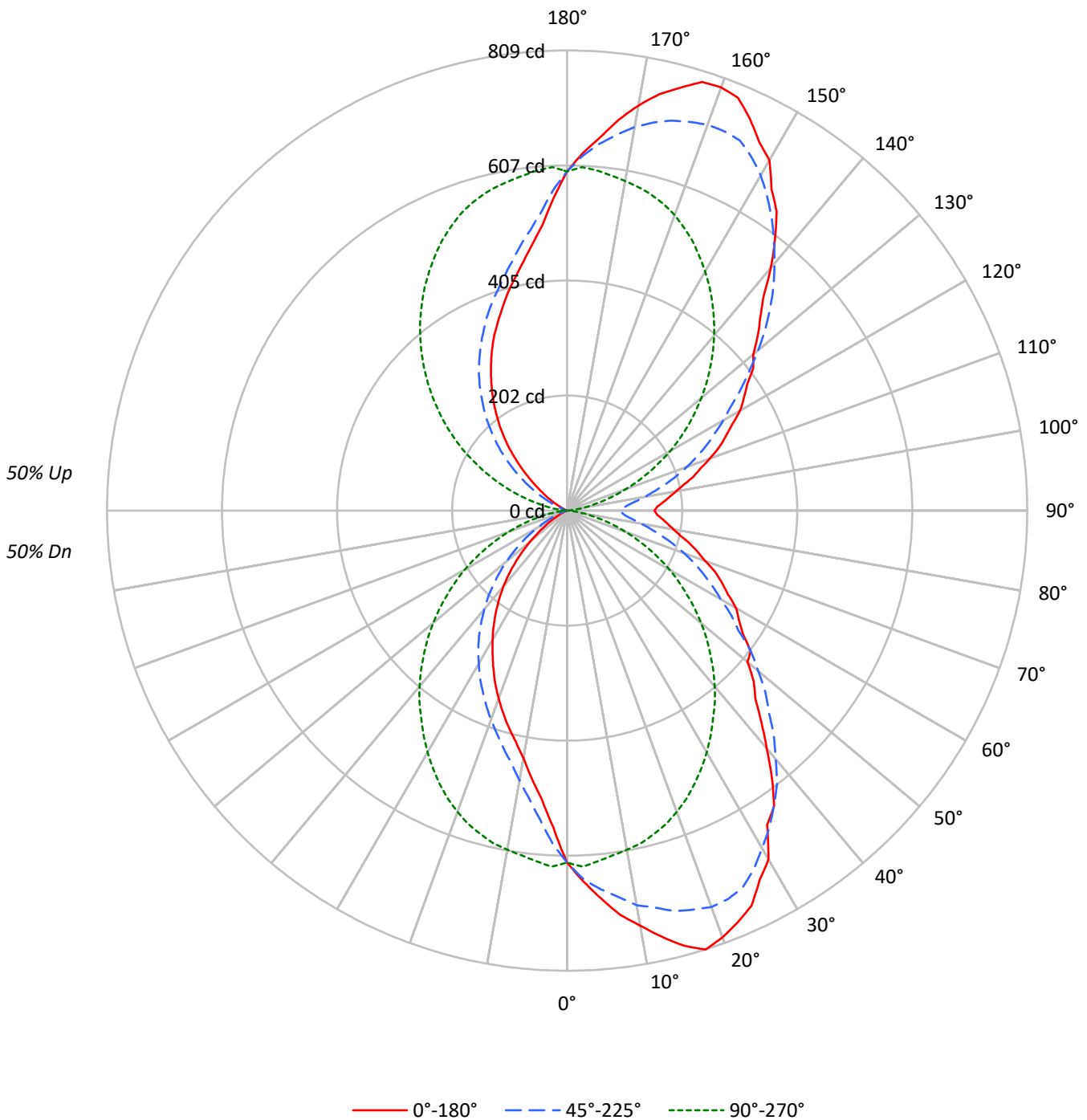
Input Watts (W): 49.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P188180

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

### Luminous Intensity Polar Plot





TEST NUMBER: P188180

CATALOG NUMBER: FMB-N-2-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	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	34	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°	13050	13050	13050
5°	12079	12677	8992
10°	11310	12152	6748
15°	10722	11664	5352
20°	9782	11110	4307
25°	8636	10474	3454
30°	7432	9793	2755
35°	6279	9082	2164
40°	5148	8421	1644
45°	4246	7684	1169
50°	3646	6934	744
55°	3249	6105	413
60°	2919	5283	194
65°	2537	4325	81
70°	2182	3284	0
75°	1905	2197	0
80°	1652	1149	5
85°	1496	380	0



TEST NUMBER: P188180

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

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	57.7	1.9
10°-20°	164.9	5.4
20°-30°	244.8	8.1
30°-40°	276.1	9.1
40°-50°	259.4	8.6
50°-60°	211.6	7.0
60°-70°	151.6	5.0
70°-80°	93.7	3.1
80°-90°	56.1	1.9
90°-100°	56.9	1.9
100°-110°	95.8	3.2
110°-120°	152.6	5.0
120°-130°	211.7	7.0
130°-140°	258.9	8.6
140°-150°	275.2	9.1
150°-160°	242.4	8.0
160°-170°	161.7	5.3
170°-180°	56.1	1.9
0°-30°	467.4	15.4
0°-40°	743.5	24.6
0°-60°	1214.4	40.1
0°-90°	1515.8	50.1
90°-120°	305.2	10.1
90°-150°	1051.0	34.7
90°-180°	1511.0	49.9
0°-180°	3027.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	619	619	619	619	619	
5°	685	668	619	545	510	67
15°	792	729	589	432	395	223
25°	767	731	530	351	307	350
35°	634	634	447	270	219	392
45°	468	501	356	182	129	366
55°	377	368	256	98	48	340
65°	300	264	158	30	10	297
75°	223	172	65	2	0	235
85°	168	103	8	1	0	141
90°	153	95	2	1	0	85
95°	170	107	8	1	1	143
105°	229	178	65	1	1	242
115°	307	270	158	28	8	305
125°	386	373	259	97	47	348
135°	480	505	356	182	128	374
145°	642	627	445	268	222	398
155°	760	718	522	348	312	349
165°	770	710	574	426	399	218
175°	658	647	600	526	503	65
180°	596	596	596	596	596	



TEST NUMBER: P188180

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

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	618.8	618.8	618.8	618.8	618.8	618.8	618.8	618.8	618.8	618.8	618.8
2.5°	652.3	653.5	651.1	652.3	652.3	652.9	651.7	652.9	651.1	650.5	648.1
5°	684.7	683.5	680.5	680.5	679.3	679.3	678.7	675.7	672.7	670.9	667.9
7.5°	717.0	715.8	714.0	712.8	710.4	709.2	706.8	703.2	697.2	691.8	684.7
10°	741.0	740.4	737.4	735.0	730.8	729.6	727.2	723.0	717.6	711.6	704.4
12.5°	767.3	766.1	763.7	761.3	757.7	755.3	752.3	744.6	736.2	726.6	714.6
15°	791.9	791.9	789.5	785.3	780.5	777.5	773.3	761.3	751.1	742.2	729.0
17.5°	809.2	808.0	805.6	800.9	794.9	791.3	787.7	778.1	766.7	751.1	735.6
20°	798.5	797.9	794.9	794.9	794.9	794.3	792.5	784.7	770.3	757.7	741.6
22.5°	783.5	785.9	785.9	784.1	782.3	778.1	774.5	770.3	767.9	757.1	739.2
25°	766.7	766.7	761.3	755.3	755.9	754.7	756.5	755.3	745.1	741.0	730.8
27.5°	732.6	733.2	734.4	741.0	744.6	740.4	735.0	726.0	726.0	718.8	710.4
30°	708.0	711.0	709.8	706.2	703.2	702.6	705.0	710.4	700.8	693.6	685.3
32.5°	654.7	656.5	655.3	664.3	681.1	680.5	680.5	672.1	674.5	669.1	661.3
35°	634.3	634.3	636.7	637.9	631.9	629.5	632.5	645.7	641.5	640.9	633.7
37.5°	591.2	590.0	588.2	590.6	605.0	610.4	611.0	599.6	606.2	608.0	606.2
40°	545.7	550.5	555.9	569.6	569.6	564.9	564.9	575.0	572.6	573.8	570.2
42.5°	505.6	502.6	502.0	505.0	521.1	531.9	540.3	536.1	540.9	538.5	537.9
45°	467.8	467.8	476.2	482.2	484.0	481.0	479.2	502.0	507.3	507.3	501.4
47.5°	445.1	443.3	439.1	439.1	446.3	452.8	459.4	455.2	465.4	473.8	472.6
50°	413.9	413.9	416.9	420.5	421.7	416.9	415.7	427.1	425.3	436.7	438.5
52.5°	406.7	403.7	401.9	394.7	390.5	392.9	395.9	391.7	397.7	395.9	407.3
55°	376.8	376.2	373.8	376.2	376.2	374.4	369.6	369.6	367.2	369.0	367.8
57.5°	358.2	361.8	360.6	358.2	351.0	348.6	350.4	348.0	342.6	339.6	342.0
60°	343.2	340.8	337.2	333.0	332.4	332.4	331.2	324.1	321.7	315.7	311.5
62.5°	318.7	318.1	316.9	317.5	313.3	309.7	306.7	304.9	298.3	294.1	288.1
65°	300.1	301.3	300.1	296.5	290.5	288.7	288.7	282.1	277.9	271.9	264.2
67.5°	281.5	280.9	277.9	274.9	271.9	268.9	266.6	261.2	255.2	249.8	242.0
70°	257.6	257.6	256.4	254.6	251.0	247.4	246.2	239.6	233.0	227.0	218.6
72.5°	240.2	240.2	238.4	235.4	229.4	227.0	224.6	218.0	210.8	204.3	195.3
75°	222.8	222.2	220.4	217.4	213.2	209.6	208.5	199.5	190.5	180.9	172.5
77.5°	203.7	203.7	202.5	198.3	194.1	191.7	188.7	179.7	172.5	162.9	151.5
80°	189.9	189.3	187.5	183.9	178.5	175.5	171.9	162.9	153.9	142.6	131.8
82.5°	177.9	176.7	174.9	171.3	165.3	162.3	158.7	149.1	139.0	127.6	115.0
85°	167.7	167.1	164.7	161.1	156.3	152.7	149.1	139.6	128.8	116.8	103.0
87.5°	158.1	157.5	156.3	153.9	149.1	146.2	142.6	134.2	123.4	110.2	96.4
90°	153.3	152.7	152.1	149.7	146.8	144.4	140.8	133.0	122.2	109.0	94.6
92.5°	158.7	158.7	157.5	155.1	150.3	146.8	143.8	134.8	124.0	111.4	98.2
95°	169.5	168.9	167.1	164.1	158.1	154.5	150.9	142.6	131.2	119.2	106.6
97.5°	180.9	180.9	178.5	174.9	168.9	165.9	162.3	153.3	142.6	131.8	120.4
100°	194.1	194.1	191.7	188.1	182.7	179.7	177.3	168.9	158.7	148.0	139.0
102.5°	209.6	209.6	208.5	205.5	200.7	197.7	195.3	188.1	177.9	167.1	156.9
105°	229.4	229.4	228.2	225.2	219.8	216.2	213.8	205.5	195.3	186.3	178.5
107.5°	245.6	245.0	244.4	240.8	237.2	234.2	232.4	225.8	217.4	208.5	201.3
110°	266.6	266.6	266.0	263.0	258.2	255.8	253.4	247.4	239.0	231.2	224.0



TEST NUMBER: P188180

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

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	288.7	287.5	286.3	283.3	278.5	276.1	274.9	268.3	260.6	252.8	246.2
115°	307.3	307.9	307.3	304.3	298.9	296.5	294.1	288.7	280.9	274.3	269.5
117.5°	326.5	325.9	324.7	321.1	319.3	316.9	313.9	309.1	302.5	296.5	292.3
120°	351.0	347.4	345.6	341.4	338.4	337.2	336.0	330.0	324.1	319.3	316.9
122.5°	368.4	366.0	366.6	362.4	358.8	356.4	354.6	351.6	346.2	343.8	341.4
125°	386.4	384.6	383.4	381.0	381.0	378.6	377.4	373.8	372.0	369.6	373.2
127.5°	412.7	409.7	408.5	403.7	399.5	399.5	401.3	400.1	397.7	398.3	403.7
130°	427.1	425.3	428.3	427.7	428.3	427.1	426.5	427.1	428.3	434.3	438.5
132.5°	454.6	454.0	452.8	450.4	452.8	455.2	458.2	457.0	466.0	470.2	472.6
135°	479.8	478.6	484.0	484.6	485.8	484.6	488.2	499.6	503.8	506.2	505.0
137.5°	510.9	509.7	511.5	512.7	524.7	530.7	536.7	536.7	540.9	538.5	537.3
140°	557.1	555.9	566.1	568.4	570.2	568.4	570.2	575.0	571.4	570.8	567.2
142.5°	600.2	597.8	599.0	598.4	607.4	609.2	611.6	605.0	606.2	600.8	597.2
145°	642.1	643.9	644.5	642.1	638.5	636.7	638.5	641.5	634.3	632.5	627.1
147.5°	669.1	667.9	669.7	669.7	674.5	676.3	674.5	666.1	665.5	658.9	654.7
150°	711.0	707.4	707.4	702.0	697.2	697.2	698.4	698.4	691.8	687.0	680.5
152.5°	730.8	730.8	732.6	731.4	731.4	729.6	725.4	718.8	717.6	709.8	701.4
155°	760.1	758.3	755.9	751.7	749.3	750.5	749.9	746.9	739.2	732.0	718.2
157.5°	785.3	783.5	781.7	778.7	773.3	770.9	767.3	761.9	754.7	739.8	721.8
160°	791.9	790.7	790.1	785.9	784.1	782.3	778.1	766.7	752.3	738.6	721.8
162.5°	790.1	788.9	784.7	779.9	772.1	766.7	763.1	752.9	742.8	730.2	716.4
165°	769.7	767.3	763.7	760.7	754.7	750.5	747.5	739.8	730.8	721.2	709.8
167.5°	749.9	746.3	744.0	741.0	736.8	733.8	731.4	726.0	717.6	709.2	698.4
170°	723.0	719.4	718.8	716.4	712.2	709.8	708.0	703.8	697.8	691.8	684.7
172.5°	693.0	688.8	689.4	688.2	685.3	683.5	682.9	680.5	676.3	672.1	666.1
175°	657.7	655.3	656.5	656.5	654.7	654.1	655.3	654.1	652.3	650.5	646.9
177.5°	628.9	626.5	627.7	628.3	627.7	627.1	628.9	628.3	628.9	626.5	624.2
180°	596.0	596.0	596.0	596.0	596.0	596.0	596.0	596.0	596.0	596.0	596.0



TEST NUMBER: P188180

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

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	618.8	618.8	618.8	618.8	618.8	618.8	618.8	618.8	618.8	618.8	618.8
2.5°	646.3	643.9	640.9	640.3	640.3	640.9	640.9	639.1	631.9	626.5	622.4
5°	664.9	663.1	661.9	656.5	654.1	652.9	645.7	637.3	627.7	618.8	612.2
7.5°	678.7	672.7	669.1	664.3	661.3	658.3	648.1	636.1	623.6	611.6	602.0
10°	696.0	686.4	675.1	665.5	661.3	657.7	648.7	634.9	620.0	605.6	593.0
12.5°	705.0	694.8	683.5	669.1	661.9	655.3	643.9	631.9	615.8	599.0	584.0
15°	712.8	697.8	685.3	670.9	663.1	653.5	637.3	624.8	608.6	588.8	570.8
17.5°	720.0	702.6	683.5	666.7	658.9	649.9	630.7	615.2	599.0	578.0	557.1
20°	720.6	702.6	682.3	661.3	651.7	642.7	624.2	603.2	585.8	563.7	540.3
22.5°	720.6	699.0	677.5	655.9	644.5	632.5	611.6	590.6	570.8	548.1	522.9
25°	711.6	691.2	667.9	646.3	635.5	621.8	597.8	575.6	553.5	530.1	504.4
27.5°	700.8	681.1	657.7	633.1	621.2	608.0	580.4	557.7	533.1	510.9	484.0
30°	677.5	662.5	640.9	618.2	605.0	591.8	563.7	537.9	512.7	490.6	463.0
32.5°	651.7	640.3	620.0	599.0	587.6	574.4	545.7	519.3	492.4	469.6	442.7
35°	625.4	613.4	595.4	575.0	566.1	554.1	526.5	497.8	471.4	446.9	421.7
37.5°	597.2	587.6	570.8	549.9	540.3	529.5	505.0	477.4	451.0	426.5	400.1
40°	568.4	558.9	542.7	524.1	515.7	506.2	482.8	456.4	427.7	403.7	378.0
42.5°	534.3	529.5	517.5	499.0	489.4	482.2	461.2	433.7	406.1	379.8	355.2
45°	500.2	497.2	489.4	472.0	463.0	454.6	436.7	409.7	382.8	355.8	331.8
47.5°	467.2	464.2	460.6	446.3	437.9	429.5	410.9	386.4	358.2	332.4	307.9
50°	437.9	432.5	428.9	418.1	410.3	401.9	385.2	361.8	334.2	307.3	282.7
52.5°	406.1	400.7	395.9	389.9	383.4	375.0	358.8	337.2	309.1	282.7	257.6
55°	376.2	372.0	363.6	358.2	354.6	348.0	331.8	312.1	283.9	256.4	231.2
57.5°	345.6	341.4	335.4	326.5	322.9	319.9	304.9	286.3	260.0	232.4	206.7
60°	312.1	311.5	304.3	294.7	291.1	290.5	276.7	259.4	234.8	207.9	182.7
62.5°	285.1	282.7	276.7	266.0	262.4	259.4	248.6	231.8	209.0	182.7	158.1
65°	257.6	250.4	248.0	235.4	232.4	228.8	220.4	204.9	183.3	157.5	134.2
67.5°	234.2	223.4	219.8	209.0	203.7	198.9	191.7	177.3	157.5	133.0	110.8
70°	210.8	197.1	191.1	180.9	175.5	170.7	162.9	148.6	131.8	109.0	88.7
72.5°	187.5	173.7	162.9	155.7	148.6	143.8	134.2	122.2	106.6	86.9	67.7
75°	164.7	150.9	138.4	128.8	123.4	118.0	107.2	96.4	82.7	65.3	49.1
77.5°	141.4	128.8	115.6	104.2	99.4	94.0	83.3	73.1	60.5	46.1	32.9
80°	122.8	109.0	94.6	82.7	77.3	72.5	62.3	52.1	41.3	29.9	19.8
82.5°	104.2	91.6	77.9	63.5	56.9	52.7	43.7	34.7	25.8	17.4	10.2
85°	90.4	77.3	63.5	50.3	44.3	38.9	28.2	21.0	13.8	8.4	4.8
87.5°	82.7	68.3	53.9	40.7	34.7	28.8	19.8	12.0	6.6	3.6	2.4
90°	80.3	65.3	50.9	37.7	31.7	25.8	16.2	9.0	4.2	2.4	2.4
92.5°	82.7	68.3	53.9	41.3	35.3	29.9	20.4	12.0	6.6	3.0	1.8
95°	91.6	77.9	63.5	52.1	45.5	40.1	30.5	21.0	13.8	7.8	4.2
97.5°	106.0	92.8	77.9	67.1	60.5	55.7	46.7	35.3	25.8	16.8	9.6
100°	124.0	110.2	96.4	86.3	80.9	76.7	65.9	52.7	40.7	29.4	19.8
102.5°	142.0	131.2	118.0	108.4	103.0	98.8	88.1	73.7	59.9	45.5	32.9
105°	164.7	154.5	142.0	132.4	127.0	123.4	112.6	96.4	81.5	64.7	49.7
107.5°	188.1	177.9	166.5	156.3	152.1	148.6	138.4	121.6	104.8	86.3	68.9
110°	212.6	202.5	192.3	182.7	179.1	175.5	165.3	147.4	128.8	109.6	89.8





TEST NUMBER: P188180

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

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	236.6	227.6	218.6	210.2	206.1	203.1	192.9	174.3	154.5	133.6	112.6
115°	260.6	254.0	246.2	237.2	233.6	230.6	220.4	201.3	180.3	158.1	136.0
117.5°	285.7	281.5	274.3	266.0	261.8	258.8	248.0	228.2	206.7	182.7	159.9
120°	313.9	310.9	304.3	295.9	292.3	288.1	276.1	255.2	233.0	209.0	184.5
122.5°	342.6	341.4	333.6	324.7	322.3	316.9	303.7	281.5	258.8	233.6	208.5
125°	375.0	370.8	363.6	354.0	349.8	345.0	331.2	307.9	283.9	258.8	232.4
127.5°	404.3	400.7	392.9	383.4	378.0	372.6	357.6	333.6	309.7	283.3	256.4
130°	435.5	430.7	423.5	411.5	406.7	400.1	384.6	360.0	334.2	307.9	280.9
132.5°	467.2	460.6	452.8	440.3	433.1	427.7	409.7	384.6	358.8	332.4	304.3
135°	498.4	491.8	482.2	468.4	460.6	454.0	434.9	408.5	381.6	355.8	327.1
137.5°	527.7	520.5	509.7	493.0	486.4	479.2	460.0	431.9	404.9	379.2	348.6
140°	558.9	549.9	536.7	521.7	512.7	502.6	482.8	454.6	427.1	401.9	371.4
142.5°	588.2	577.4	563.1	546.9	536.1	525.9	504.4	476.2	449.8	424.1	392.9
145°	618.2	606.8	591.8	571.4	560.7	551.1	525.9	497.2	470.2	445.1	412.7
147.5°	643.3	631.3	614.0	593.0	581.6	569.6	545.1	517.5	491.2	466.0	433.7
150°	668.5	654.1	634.9	612.8	600.8	588.8	564.3	536.7	510.9	485.2	452.8
152.5°	686.4	667.3	647.5	626.5	614.6	602.6	581.0	554.7	530.1	503.8	472.0
155°	699.0	678.7	658.3	637.9	627.1	617.6	594.8	570.8	547.5	522.3	490.6
157.5°	703.8	685.3	666.1	647.5	637.3	625.9	606.8	585.2	563.1	537.9	507.3
160°	705.0	688.8	671.5	652.9	644.5	634.9	617.0	596.6	575.6	552.9	525.3
162.5°	703.8	690.0	673.9	657.1	648.7	640.3	624.8	606.8	587.0	564.9	539.1
165°	698.4	685.3	672.1	657.7	650.5	643.3	628.9	613.4	595.4	574.4	552.3
167.5°	690.0	679.3	667.9	655.9	649.9	642.7	630.1	616.4	600.2	582.2	563.1
170°	678.1	670.3	661.9	652.3	648.1	642.1	631.9	618.2	603.8	588.2	573.2
172.5°	664.3	661.9	656.5	651.1	647.5	643.3	633.7	622.4	609.2	594.2	581.6
175°	644.5	641.5	639.7	637.3	635.5	633.7	627.7	621.2	612.2	600.2	589.4
177.5°	623.6	621.2	618.2	615.2	614.0	614.0	611.6	613.4	611.0	604.4	597.8
180°	596.0	596.0	596.0	596.0	596.0	596.0	596.0	596.0	596.0	596.0	596.0



TEST NUMBER: P188180

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

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	618.8	618.8	618.8	618.8	618.8	618.8	618.8	618.8	618.8	618.8	618.8
2.5°	615.2	609.8	605.0	603.8	601.4	597.8	592.4	588.8	585.8	580.4	576.8
5°	602.0	594.8	587.6	583.4	579.8	571.4	560.7	551.7	545.1	536.7	530.1
7.5°	591.2	579.2	567.2	561.3	553.5	540.9	527.7	517.5	510.9	502.6	496.6
10°	578.6	561.3	543.3	536.1	527.1	513.3	500.2	490.6	481.6	472.6	465.4
12.5°	566.1	543.3	520.5	512.1	503.2	489.4	475.0	463.0	454.0	447.4	440.9
15°	548.7	521.7	498.4	490.0	481.0	465.4	450.4	440.3	432.5	425.9	418.1
17.5°	530.7	500.2	476.8	467.8	458.8	443.3	430.1	419.3	410.9	404.3	397.1
20°	510.9	478.6	455.2	446.3	437.3	422.3	409.7	399.5	391.1	384.6	376.2
22.5°	490.6	457.6	434.9	425.9	416.9	403.1	389.9	379.8	371.4	364.2	356.4
25°	470.2	436.7	414.5	405.5	396.5	383.4	370.2	360.6	351.0	343.2	336.0
27.5°	448.6	415.1	392.9	385.2	377.4	363.6	351.6	341.4	331.8	322.9	315.7
30°	426.5	394.7	373.2	365.4	358.2	343.8	331.2	321.1	310.3	301.9	294.1
32.5°	406.7	374.4	354.0	347.4	339.0	324.7	312.1	301.3	291.1	280.9	273.1
35°	385.8	354.0	334.2	326.5	319.3	304.9	291.7	280.3	270.1	261.2	252.2
37.5°	366.0	333.6	315.1	306.7	299.5	285.1	271.3	259.4	248.0	239.6	230.0
40°	345.6	313.9	295.3	287.5	280.3	266.0	250.4	238.4	226.4	218.0	207.9
42.5°	323.5	292.3	274.9	267.2	260.6	245.0	229.4	217.4	205.5	195.9	185.7
45°	300.7	271.3	254.0	246.8	240.2	224.0	207.9	195.9	182.1	173.7	164.1
47.5°	277.9	249.2	233.0	225.8	219.2	202.5	187.5	173.7	161.1	152.1	142.6
50°	254.6	227.0	212.0	204.3	197.1	180.3	165.3	152.1	139.0	130.6	121.0
52.5°	231.2	204.3	189.3	182.1	175.5	158.1	143.8	130.6	118.0	109.6	100.0
55°	206.7	181.5	166.5	159.3	152.7	136.0	122.2	108.4	97.6	89.3	79.7
57.5°	182.7	158.7	143.2	137.8	129.4	114.4	101.2	88.7	78.5	69.5	61.1
60°	158.7	136.0	121.0	114.4	107.8	93.4	80.9	69.5	59.9	52.1	44.3
62.5°	136.0	113.8	99.4	94.0	86.9	73.7	62.3	52.1	44.3	36.5	30.5
65°	113.2	92.2	78.5	73.7	67.1	55.1	45.5	36.5	29.9	24.6	19.8
67.5°	91.0	72.5	59.9	55.1	49.1	39.5	31.1	24.6	19.2	15.0	12.0
70°	70.1	54.5	43.1	38.9	34.1	26.4	19.8	15.0	12.0	9.6	7.2
72.5°	51.5	38.3	29.4	25.8	22.2	16.8	12.0	9.0	7.2	3.0	1.2
75°	35.9	25.2	18.6	16.2	13.2	9.6	7.2	3.6	1.8	1.2	1.2
77.5°	22.2	15.6	10.8	9.0	7.8	6.0	1.8	1.8	1.2	1.2	1.2
80°	12.6	8.4	6.0	5.4	2.4	1.8	1.8	1.8	1.2	1.2	1.2
82.5°	6.6	4.8	2.4	2.4	2.4	1.8	1.8	1.8	1.2	1.2	1.2
85°	3.0	2.4	2.4	2.4	1.8	1.8	1.8	1.2	1.2	1.2	1.2
87.5°	2.4	2.4	1.8	1.8	1.8	1.8	1.2	1.2	1.2	1.2	0.6
90°	2.4	1.8	1.8	1.8	1.8	1.8	1.2	1.2	1.2	1.2	0.6
92.5°	1.2	1.8	1.8	1.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2
95°	2.4	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.6
97.5°	5.4	3.6	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.6
100°	12.0	7.2	4.8	4.2	2.4	1.2	1.2	1.2	1.2	1.2	0.6
102.5°	22.2	14.4	9.6	7.8	6.0	4.2	1.8	1.2	1.2	1.2	1.2
105°	35.3	25.2	17.4	14.4	12.0	7.8	6.0	4.2	1.2	1.2	1.2
107.5°	51.5	38.9	28.8	24.0	20.4	15.0	10.2	7.2	5.4	4.2	1.2
110°	70.1	55.1	42.5	37.1	32.3	24.6	18.6	13.8	9.6	7.8	6.0



TEST NUMBER: P188180

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

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	90.4	73.7	59.3	52.7	47.3	37.7	29.4	22.8	17.4	13.2	10.2
115°	112.0	93.4	77.9	70.7	64.7	53.9	43.7	35.9	27.6	22.8	17.4
117.5°	134.8	114.4	97.0	90.4	83.9	70.7	60.5	50.9	42.5	34.7	28.8
120°	157.5	136.6	119.8	110.8	104.8	90.4	79.7	68.9	59.3	50.3	42.5
122.5°	180.9	158.7	141.4	134.2	125.8	110.8	99.4	88.1	77.3	67.7	58.7
125°	204.3	181.5	164.1	155.7	148.0	132.4	120.4	108.4	97.0	86.9	77.3
127.5°	227.0	203.1	186.3	177.9	170.7	154.5	141.4	129.4	117.4	107.8	97.6
130°	250.4	225.8	209.0	200.7	192.9	176.7	163.5	150.9	139.6	129.4	119.2
132.5°	273.1	248.6	231.8	222.8	213.8	198.3	185.7	173.1	161.1	150.9	141.4
135°	295.9	269.5	252.8	243.8	235.4	219.8	206.7	194.7	182.1	172.5	163.5
137.5°	317.5	291.1	273.7	265.4	255.8	240.8	227.6	215.0	204.3	194.7	185.1
140°	338.4	312.1	294.7	285.7	276.7	261.8	248.6	236.6	225.2	216.2	207.3
142.5°	359.4	333.0	314.5	305.5	296.5	282.1	269.5	257.6	246.2	237.8	229.4
145°	379.2	352.8	334.2	325.3	316.9	303.1	290.5	278.5	267.8	259.4	251.0
147.5°	400.1	373.8	354.6	346.2	337.2	322.9	309.7	299.5	288.7	280.3	272.5
150°	419.9	392.9	373.2	364.8	356.4	342.0	330.6	318.7	308.5	300.1	292.9
152.5°	439.1	412.1	392.9	384.6	375.6	361.2	349.2	338.4	328.2	319.9	313.3
155°	458.2	431.9	412.7	404.3	394.7	379.8	367.8	358.2	348.0	340.8	334.2
157.5°	476.2	450.4	430.7	422.9	413.9	398.9	387.0	377.4	368.4	360.6	354.0
160°	494.8	470.2	449.8	442.1	433.1	418.1	406.1	395.3	387.5	380.4	373.8
162.5°	512.7	488.8	469.0	461.8	452.8	437.9	424.7	415.7	406.1	398.3	392.9
165°	528.9	506.7	487.6	481.0	472.6	458.2	445.7	435.5	426.5	418.7	412.7
167.5°	543.3	524.1	505.6	498.4	491.8	478.6	467.2	457.0	448.0	440.9	435.5
170°	557.1	541.5	525.3	519.3	511.5	499.0	488.8	481.6	473.2	465.4	458.8
172.5°	569.0	557.1	545.1	539.1	532.5	521.7	512.1	505.0	497.2	491.2	485.8
175°	580.4	572.6	564.9	561.9	555.9	548.7	539.1	533.7	526.5	520.5	515.1
177.5°	591.8	587.0	584.0	581.6	578.6	575.6	569.6	567.8	563.7	560.1	555.9
180°	596.0	596.0	596.0	596.0	596.0	596.0	596.0	596.0	596.0	596.0	596.0



TEST NUMBER: P188180

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

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	618.8	618.8	618.8	618.8	618.8	618.8	618.8	618.8
2.5°	572.0	567.2	566.1	564.3	563.1	559.5	560.7	557.7
5°	524.7	519.9	518.1	516.9	514.5	511.5	511.5	509.7
7.5°	490.6	485.2	484.0	481.6	479.8	476.2	476.2	475.0
10°	458.8	454.0	451.6	449.8	446.9	444.5	443.9	442.1
12.5°	434.3	428.9	427.1	424.7	421.7	419.9	418.7	416.3
15°	411.5	406.7	404.3	403.1	399.5	398.3	397.1	395.3
17.5°	392.3	385.8	383.4	381.0	378.0	376.2	375.6	373.8
20°	370.8	364.8	362.4	361.8	357.0	354.6	353.4	351.6
22.5°	349.8	343.2	340.8	340.2	336.0	332.4	331.2	330.0
25°	328.2	322.3	319.9	318.7	313.3	310.3	308.5	306.7
27.5°	309.1	301.9	297.7	297.1	292.3	288.7	286.9	283.9
30°	287.5	280.3	277.3	275.5	270.7	266.6	264.2	262.4
32.5°	266.6	259.4	255.2	253.4	248.0	244.4	242.0	240.2
35°	244.4	237.2	233.6	231.2	226.4	222.2	219.8	218.6
37.5°	222.8	215.0	211.4	209.0	203.7	199.5	197.1	195.9
40°	200.7	192.9	189.9	186.9	181.5	177.3	174.9	174.3
42.5°	178.5	171.9	167.7	164.7	159.3	154.5	152.7	151.5
45°	156.3	149.7	145.6	142.0	136.6	131.8	129.4	128.8
47.5°	134.8	127.6	123.4	119.8	113.8	110.2	106.6	106.0
50°	113.2	104.8	101.2	98.2	92.2	88.1	85.1	84.5
52.5°	92.2	83.9	80.9	77.9	71.9	68.9	65.9	64.7
55°	72.5	65.3	62.3	58.1	53.9	51.5	49.1	47.9
57.5°	54.5	47.9	45.5	42.5	38.9	36.5	34.1	34.1
60°	38.9	33.5	31.1	29.4	26.4	25.2	23.4	22.8
62.5°	25.8	22.2	20.4	19.2	17.4	16.2	15.0	14.4
65°	16.8	13.8	12.6	12.0	11.4	10.8	10.2	9.6
67.5°	10.2	9.0	8.4	7.8	7.2	6.6	5.4	4.8
70°	5.4	1.8	0.6	0.6	0.6	0.6	0.6	0.0
72.5°	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.0
75°	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.0
77.5°	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.6
80°	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.6
82.5°	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.0
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	0.0	0.0	0.0
90°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0
92.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
95°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
97.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
100°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
102.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
105°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
107.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.0
110°	5.4	3.6	1.8	1.8	0.6	0.6	0.6	0.6



TEST NUMBER: P188180

CATALOG NUMBER: FMB-N-2-LD4-2LO/2LO-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	6.0	5.4	5.4	5.4
115°	14.4	12.0	10.8	10.8	9.0	8.4	7.8	7.8
117.5°	24.0	20.4	18.6	18.0	15.6	14.4	13.2	13.2
120°	36.5	31.7	29.9	28.8	25.2	23.4	22.2	21.6
122.5°	52.1	46.1	43.7	41.9	37.1	34.7	32.9	33.5
125°	70.1	62.9	59.9	58.1	52.1	49.7	47.3	46.7
127.5°	89.8	82.1	78.5	76.7	70.1	66.5	64.1	63.5
130°	110.8	103.0	99.4	97.0	89.8	86.9	83.3	83.3
132.5°	133.0	125.2	121.0	119.2	112.0	108.4	105.4	104.8
135°	155.7	148.0	143.8	142.6	134.8	131.2	128.8	128.2
137.5°	177.9	170.7	167.1	165.9	158.7	155.7	152.7	152.7
140°	200.1	192.9	189.9	188.7	182.1	179.1	176.7	176.1
142.5°	222.2	215.0	211.4	210.8	204.9	201.9	199.5	199.5
145°	244.4	237.8	234.8	233.6	227.6	224.6	223.4	222.2
147.5°	266.6	260.6	257.6	256.4	250.4	248.0	245.6	245.0
150°	286.9	281.5	279.1	277.9	271.9	269.5	267.8	267.2
152.5°	308.5	301.9	300.1	299.5	294.1	292.3	290.5	289.9
155°	328.2	323.5	321.1	320.5	316.3	313.9	312.7	312.1
157.5°	348.0	343.8	342.0	341.4	336.6	336.0	334.8	334.2
160°	369.0	364.2	363.0	361.8	357.6	357.0	355.2	354.6
162.5°	387.5	384.6	383.4	382.2	378.0	376.8	375.6	375.6
165°	407.3	404.3	403.1	403.1	399.5	399.5	398.3	398.9
167.5°	430.1	427.1	425.9	425.3	422.3	421.1	419.9	419.9
170°	455.2	450.4	449.2	448.6	445.1	444.5	443.9	443.9
172.5°	480.4	478.0	476.8	476.8	472.0	471.4	471.4	471.4
175°	509.7	507.9	507.3	507.3	502.6	502.6	502.6	502.6
177.5°	552.3	551.7	551.7	552.9	547.5	548.1	549.3	549.3
180°	596.0	596.0	596.0	596.0	596.0	596.0	596.0	596.0

(END OF REPORT)