

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: P188223

Luminaire Tested: **MPBL-3-LD4-UNV-1UP-LO-40**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P188223
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27361)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MPBL-3-LD4-UNV-1UP-LO-40
Description:
Light Source: (84) NICHIA ELM 4000K LED
2UT217042A8404A
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2309.1 lumens
Efficiency: N/A
Efficacy: 89.0 lumens/watt
Spacing Criteria (0/90/45): - / - / -
Luminous Opening: Rectangular w/ Sides (W: 3' x L: 0.42' x H: 0.29')
CIE Type: Indirect

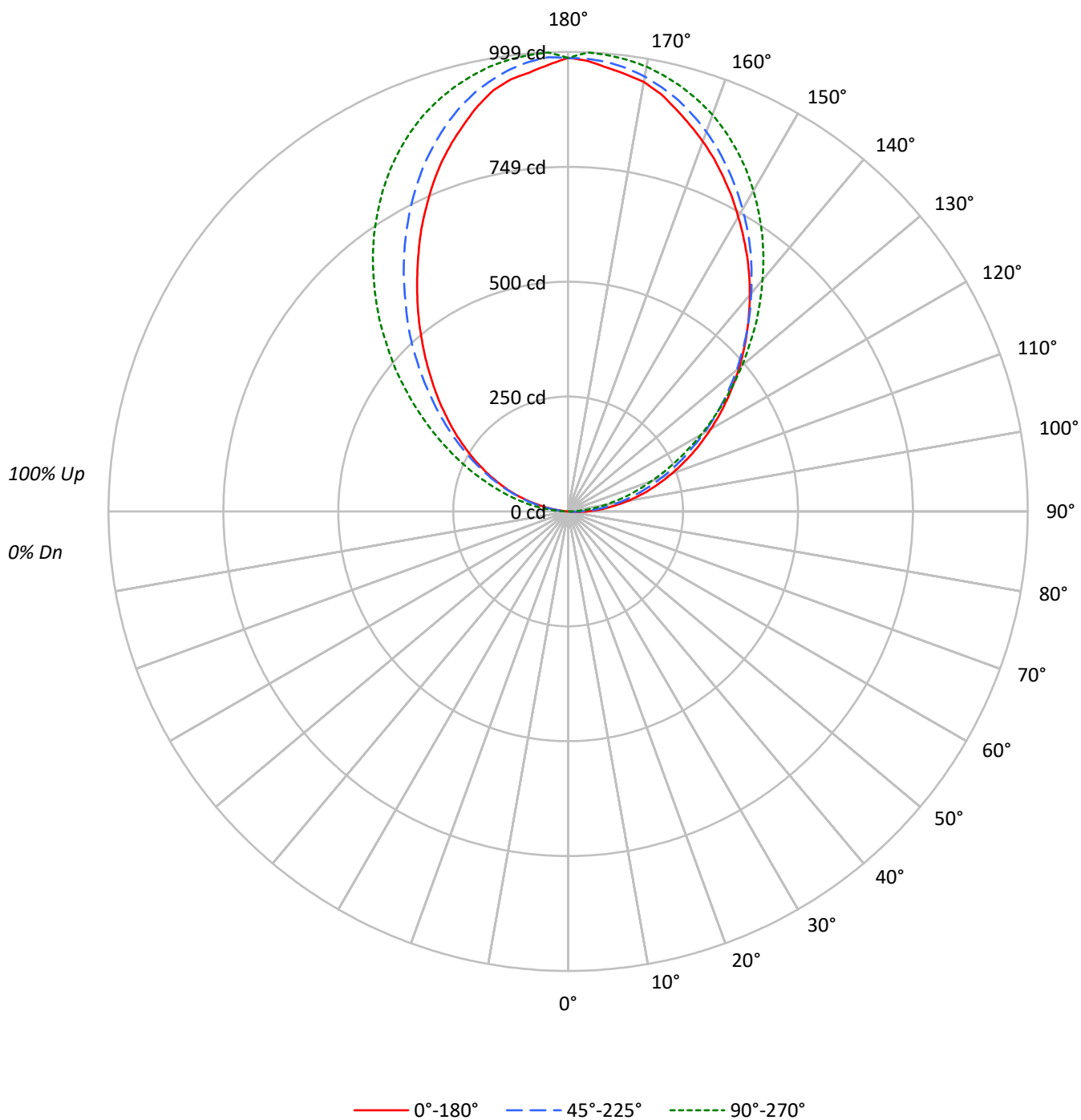
Input Watts (W): 25.95
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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CATALOG NUMBER: MPBL-3-LD4-UNV-1UP-LO-40

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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	95	95	95	95	81	81	81	81	56	56	56	32	32	32	10	10	10
1	87	83	79	76	74	71	68	65	48	47	45	28	27	26	9	9	8
2	79	72	66	62	67	62	57	53	42	40	37	24	23	22	8	7	7
3	72	63	56	51	61	54	49	44	37	34	31	21	20	18	7	6	6
4	65	56	48	43	56	48	42	37	33	29	26	19	17	16	6	6	5
5	60	49	42	36	51	42	36	32	29	25	22	17	15	13	5	5	4
6	55	44	36	31	47	38	32	27	26	22	19	15	13	11	5	4	4
7	50	39	32	27	43	34	28	23	23	19	17	14	11	10	4	4	3
8	47	35	28	23	40	30	24	20	21	17	14	12	10	9	4	3	3
9	43	32	25	20	37	27	22	18	19	15	13	11	9	8	4	3	3
10	40	29	22	18	34	25	19	16	17	14	11	10	8	7	3	3	2

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	0	0
75°	0	0	0
80°	0	0	0
85°	33	28	7



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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°	0.0	0.0
70°-80°	0.0	0.0
80°-90°	3.5	0.2
90°-100°	47.0	2.0
100°-110°	140.4	6.1
110°-120°	242.9	10.5
120°-130°	335.6	14.5
130°-140°	400.2	17.3
140°-150°	417.1	18.1
150°-160°	371.2	16.1
160°-170°	258.3	11.2
170°-180°	92.7	4.0
0°-30°	0.0	0.0
0°-40°	0.0	0.0
0°-60°	0.0	0.0
0°-90°	3.5	0.2
90°-120°	430.4	18.6
90°-150°	1583.2	68.6
90°-180°	2306.0	99.9
0°-180°	2309.1	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°	0	0	0	0	0	0
85°	3	1	1	1	1	4
90°	42	27	1	2	4	23
95°	82	66	38	10	5	78
105°	184	162	134	97	91	195
115°	297	278	260	199	191	295
125°	420	408	411	321	301	377
135°	550	549	577	466	426	424
145°	678	691	735	623	572	424
155°	800	822	867	780	730	368
165°	906	926	955	909	872	255
175°	968	981	996	981	958	92
180°	986	986	986	986	986	



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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	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	3.0	3.6	4.2	3.0	2.4	1.8	1.8	1.2	0.6	0.6	0.6
87.5°	20.5	21.8	22.4	19.9	18.7	18.7	17.5	15.7	13.3	10.9	9.1
90°	42.3	41.1	42.3	39.3	38.7	37.5	36.3	34.4	32.0	29.0	26.6
92.5°	62.8	61.6	62.8	59.8	59.2	57.4	56.8	54.4	52.0	48.3	46.5
95°	82.2	84.0	84.6	82.2	81.0	79.1	77.9	75.5	73.1	69.5	66.5
97.5°	105.7	106.9	108.1	105.1	103.9	102.1	100.9	98.5	95.5	91.8	88.8
100°	132.3	131.7	132.3	129.3	128.1	126.3	125.1	122.0	119.6	115.4	112.4
102.5°	157.7	157.1	158.3	154.7	153.5	151.6	149.8	147.4	144.4	140.2	137.1
105°	184.3	183.7	184.9	181.3	180.0	177.6	176.4	173.4	171.0	166.1	162.5
107.5°	210.9	210.9	212.1	208.4	206.6	204.2	203.6	200.6	197.6	192.7	189.1
110°	239.3	239.3	240.5	236.8	235.0	232.6	232.0	229.0	226.0	221.1	217.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	267.6	269.5	269.5	265.2	264.0	261.6	260.4	258.0	254.4	250.1	246.5
115°	297.3	299.1	299.1	294.8	293.0	290.6	290.0	287.6	284.6	281.5	277.9
117.5°	327.5	328.7	328.7	323.2	321.4	320.8	319.6	317.8	314.8	310.5	307.5
120°	357.7	359.5	359.5	355.9	354.0	351.6	351.0	348.6	346.2	342.0	340.8
122.5°	389.1	390.9	390.9	386.7	385.5	383.0	382.4	380.6	378.2	376.4	374.6
125°	420.5	422.9	422.3	418.7	417.5	415.7	414.5	413.3	410.8	409.6	408.4
127.5°	452.5	454.3	454.3	448.9	449.5	447.7	447.7	445.9	444.7	443.5	442.9
130°	485.2	487.0	487.0	483.3	482.1	480.9	480.9	479.7	478.5	478.5	478.5
132.5°	517.2	519.0	517.2	514.2	514.8	514.2	513.5	513.5	512.9	512.9	512.3
135°	549.8	551.0	551.6	546.2	548.0	547.4	546.8	546.8	547.4	548.0	548.6
137.5°	581.8	583.6	583.6	578.8	581.2	580.6	580.0	580.6	581.8	583.0	584.2
140°	614.4	615.7	615.7	611.4	613.8	613.8	613.2	613.8	615.0	617.5	619.3
142.5°	646.5	647.7	647.7	643.4	646.5	645.9	645.9	647.1	649.5	651.9	654.9
145°	677.9	678.5	679.1	675.5	679.1	679.1	679.1	680.9	683.9	687.6	691.2
147.5°	708.7	709.3	709.9	706.9	711.1	711.7	711.7	714.1	717.2	721.4	725.6
150°	739.5	740.1	740.7	737.7	741.9	742.5	742.5	744.9	749.2	753.4	758.2
152.5°	770.9	770.9	769.7	767.9	772.7	772.7	773.3	774.6	780.6	785.4	790.9
155°	799.9	800.5	800.5	798.1	802.9	803.6	804.2	806.6	811.4	816.8	821.7
157.5°	829.5	829.5	828.3	827.7	832.6	833.2	833.8	836.8	841.0	846.4	851.3
160°	856.1	856.7	856.7	856.1	859.7	860.3	860.9	864.6	868.2	873.6	878.5
162.5°	880.9	880.9	880.9	880.9	884.5	885.7	886.3	889.9	893.6	897.8	903.2
165°	905.7	905.7	905.1	905.1	909.3	909.9	910.5	913.5	916.5	921.4	925.6
167.5°	929.8	929.8	928.6	928.0	931.0	931.6	931.6	933.4	936.5	938.9	943.7
170°	947.9	947.9	946.1	946.7	948.6	948.6	948.6	949.8	952.8	955.2	960.0
172.5°	958.8	958.2	956.4	958.8	961.2	961.8	962.4	963.7	966.7	968.5	972.1
175°	968.5	967.9	967.3	969.1	972.1	972.1	972.7	973.3	975.7	977.6	980.6
177.5°	980.6	980.0	976.9	976.9	978.8	978.8	978.8	977.6	980.0	981.8	984.8
180°	986.0	986.0	986.0	986.0	986.0	986.0	986.0	986.0	986.0	986.0	986.0



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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°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
87.5°	5.4	3.6	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
90°	23.6	21.1	18.1	14.5	13.3	11.5	7.9	5.4	1.2	0.6	0.6
92.5°	42.9	40.5	37.5	35.0	32.0	30.8	27.2	24.8	20.5	17.5	14.5
95°	62.8	61.0	57.4	53.8	52.6	50.8	47.7	44.7	40.5	37.5	34.4
97.5°	85.2	82.8	79.1	76.7	74.9	72.5	68.9	66.5	61.6	58.6	55.6
100°	108.1	105.7	102.1	99.7	97.3	94.9	91.8	88.2	84.6	81.6	77.9
102.5°	132.9	130.5	126.9	122.0	122.0	120.2	117.2	113.6	109.4	106.3	102.7
105°	158.9	156.5	152.9	149.2	148.6	146.2	143.8	142.0	136.5	134.1	128.7
107.5°	185.5	183.7	180.0	175.8	176.4	174.6	172.2	169.2	165.5	162.5	157.1
110°	214.5	212.1	209.0	204.8	204.8	204.2	202.4	200.0	196.4	192.1	187.3



TEST NUMBER: P188223

CATALOG NUMBER: MPBL-3-LD4-UNV-1UP-LO-40

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	243.5	241.7	239.3	236.8	236.8	235.6	234.4	232.6	229.0	226.0	219.3
115°	273.7	273.1	270.7	268.9	269.5	268.3	268.3	266.4	263.4	259.8	253.1
117.5°	305.1	305.1	303.3	302.7	303.3	302.1	303.3	302.1	299.1	295.4	288.2
120°	337.7	338.3	337.7	337.7	338.9	338.3	339.5	338.9	336.5	332.9	325.6
122.5°	371.6	372.8	372.8	373.4	375.2	375.2	377.6	377.0	374.6	371.6	363.7
125°	407.8	408.4	409.0	410.2	412.7	413.3	416.3	416.3	416.3	411.4	403.0
127.5°	441.0	442.3	445.9	448.3	450.7	451.9	455.5	456.2	453.7	451.9	442.9
130°	479.1	480.9	483.9	487.0	490.6	491.8	496.0	497.8	497.8	494.2	485.2
132.5°	515.4	518.4	520.2	525.6	528.0	531.1	536.5	538.3	535.9	533.5	526.2
135°	552.8	555.8	560.1	564.9	569.7	570.9	577.0	578.8	578.2	577.0	569.7
137.5°	589.1	592.7	598.1	603.6	607.2	610.8	616.9	619.3	619.3	616.9	609.6
140°	624.7	628.9	634.4	641.6	645.9	649.5	656.7	661.0	659.2	657.3	650.7
142.5°	661.0	665.8	671.8	679.1	683.9	687.6	695.4	698.4	697.8	697.2	692.4
145°	697.2	702.1	708.7	716.6	720.8	725.0	732.3	735.9	735.3	735.3	728.6
147.5°	732.3	736.5	743.1	751.6	756.4	760.7	767.9	772.1	770.9	770.9	765.5
150°	765.5	769.7	777.0	786.0	790.9	795.1	802.3	807.8	805.4	805.4	801.7
152.5°	798.1	802.3	809.0	818.1	823.5	827.7	834.4	838.0	837.4	838.0	833.2
155°	828.3	831.9	838.6	847.7	853.1	856.7	864.0	868.2	864.6	867.0	862.8
157.5°	857.3	860.3	866.4	875.4	880.3	883.9	891.8	894.8	891.8	893.6	890.6
160°	883.9	886.3	891.8	900.2	905.1	908.1	915.3	918.3	914.7	917.7	914.1
162.5°	908.1	909.3	914.1	922.6	926.8	929.8	935.9	938.3	935.3	937.7	934.1
165°	929.2	929.2	932.8	941.3	944.9	947.3	953.4	955.2	952.8	955.2	952.8
167.5°	946.7	946.1	949.2	957.0	960.6	963.1	968.5	969.7	967.3	969.7	967.3
170°	961.2	960.0	962.4	970.3	973.3	975.1	980.0	981.8	979.4	981.8	979.4
172.5°	972.7	970.9	972.7	980.0	983.0	984.2	988.4	989.6	987.8	990.2	988.4
175°	980.0	977.6	979.4	986.0	988.4	989.6	993.9	994.5	992.7	995.7	993.9
177.5°	983.6	981.2	982.4	989.0	991.4	992.7	996.3	997.5	995.7	998.7	997.5
180°	986.0	986.0	986.0	986.0	986.0	986.0	986.0	986.0	986.0	986.0	986.0



TEST NUMBER: P188223

CATALOG NUMBER: MPBL-3-LD4-UNV-1UP-LO-40

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°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
87.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
90°	0.6	1.2	1.2	1.2	1.2	1.8	1.8	1.8	2.4	2.4	3.0
92.5°	11.5	7.9	4.8	3.6	3.0	1.8	2.4	2.4	2.4	3.0	3.0
95°	31.4	27.8	24.2	22.4	20.5	16.9	14.5	12.1	9.7	7.9	6.6
97.5°	52.0	47.7	44.7	44.1	41.7	38.1	34.4	31.4	29.0	26.6	24.8
100°	74.3	69.5	65.9	63.4	62.8	59.2	56.8	53.8	50.8	48.3	45.9
102.5°	97.9	92.4	88.8	85.8	85.2	81.0	78.5	76.1	73.7	71.9	69.5
105°	123.9	117.8	113.0	111.8	108.8	104.5	101.5	99.1	96.7	94.9	93.0
107.5°	152.3	145.0	139.6	137.8	134.7	129.3	125.7	122.6	120.2	118.4	116.6
110°	181.9	174.6	168.0	164.3	161.9	155.9	151.6	148.0	145.6	143.2	140.8



TEST NUMBER: P188223

CATALOG NUMBER: MPBL-3-LD4-UNV-1UP-LO-40

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	213.9	204.8	198.2	195.1	190.9	183.7	178.8	175.2	171.6	169.2	166.1
115°	247.1	237.4	229.6	226.0	221.7	213.9	207.8	203.0	198.8	195.8	193.3
117.5°	281.5	271.3	262.2	258.6	253.1	244.7	238.0	232.0	227.2	222.3	220.5
120°	317.8	306.9	297.3	293.0	287.6	277.3	269.5	263.4	257.4	253.1	249.5
122.5°	354.7	343.8	332.9	328.7	322.6	311.8	303.3	295.4	288.8	282.1	279.1
125°	393.3	381.8	370.4	366.1	358.9	347.4	337.7	328.7	321.4	315.4	310.5
127.5°	432.6	419.9	408.4	404.2	396.3	383.7	373.4	363.1	355.3	346.2	342.6
130°	473.7	459.8	447.7	443.5	435.6	422.3	410.8	400.0	390.9	383.0	376.4
132.5°	514.2	499.7	487.0	480.9	474.9	461.0	448.9	436.8	427.8	418.7	410.8
135°	554.6	540.1	527.4	523.8	516.0	502.1	488.2	476.1	465.8	455.5	447.1
137.5°	596.3	581.2	568.5	560.7	556.4	544.4	528.7	515.4	505.1	494.2	484.5
140°	636.8	621.1	608.4	600.5	596.9	584.8	568.5	554.0	543.8	532.3	522.6
142.5°	677.3	661.0	647.7	640.4	637.4	625.3	609.0	594.5	581.2	571.5	561.3
145°	716.6	700.2	686.9	680.3	677.3	666.4	650.1	635.6	622.9	612.0	602.4
147.5°	753.4	737.1	724.4	717.8	715.3	706.3	690.6	676.7	663.4	653.1	642.8
150°	788.4	773.3	760.7	754.6	752.8	744.3	730.4	715.9	703.3	693.6	683.3
152.5°	822.3	807.2	796.3	790.9	787.2	782.4	768.5	755.2	742.5	732.9	722.6
155°	852.5	839.2	828.3	823.5	820.5	816.8	804.8	792.1	780.0	770.9	761.3
157.5°	880.3	867.6	857.9	853.7	851.3	848.9	839.2	827.7	816.8	808.4	799.9
160°	905.7	893.6	884.5	880.9	879.1	878.5	870.0	860.3	850.1	843.4	835.0
162.5°	927.4	915.9	908.1	905.1	903.8	905.1	898.4	891.2	881.5	875.4	868.2
165°	945.5	935.9	928.6	926.8	926.2	928.0	923.8	917.7	909.3	904.4	898.4
167.5°	961.2	952.2	946.1	944.3	944.9	947.3	944.3	940.1	933.4	929.8	924.4
170°	973.9	966.1	960.0	958.8	960.0	963.7	962.4	958.8	952.8	949.8	946.7
172.5°	983.0	975.7	970.9	970.3	971.5	976.3	975.7	973.3	969.1	967.3	964.9
175°	989.0	982.4	978.2	977.6	979.4	984.8	986.0	984.2	981.2	980.0	978.8
177.5°	993.3	986.6	982.4	983.0	984.2	990.2	992.1	990.8	988.4	987.2	987.2
180°	986.0	986.0	986.0	986.0	986.0	986.0	986.0	986.0	986.0	986.0	986.0



TEST NUMBER: P188223

CATALOG NUMBER: MPBL-3-LD4-UNV-1UP-LO-40

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°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
87.5°	0.6	1.2	1.2	1.2	1.2	1.8	1.8	1.8
90°	3.0	3.0	3.0	3.0	3.0	3.6	3.6	3.6
92.5°	3.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6
95°	6.0	5.4	5.4	5.4	4.8	4.8	4.2	4.8
97.5°	23.6	23.0	21.8	22.4	21.1	19.9	19.3	20.5
100°	44.7	44.1	43.5	43.5	42.3	41.7	41.1	42.3
102.5°	68.9	68.3	67.1	65.9	65.9	65.3	64.0	65.9
105°	92.4	92.4	91.2	91.2	91.2	90.6	89.4	90.6
107.5°	116.6	116.6	115.4	115.4	116.0	115.4	114.8	116.0
110°	140.8	140.8	140.2	140.8	140.2	140.2	139.6	140.8



TEST NUMBER: P188223

CATALOG NUMBER: MPBL-3-LD4-UNV-1UP-LO-40

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	166.1	166.1	164.9	166.1	165.5	164.9	164.3	165.5
115°	192.1	191.5	191.5	191.5	190.9	190.9	189.7	190.9
117.5°	218.7	218.1	216.9	218.1	217.5	216.9	215.7	217.5
120°	247.7	246.5	245.9	245.3	244.7	244.1	243.5	244.1
122.5°	276.7	274.9	273.1	273.7	272.5	271.9	270.7	271.9
125°	307.5	304.5	302.7	303.3	302.1	301.5	299.7	300.9
127.5°	338.9	335.9	332.9	333.5	332.3	330.5	329.3	329.9
130°	372.2	367.9	365.5	365.5	361.9	361.9	360.1	361.3
132.5°	406.0	401.2	398.8	396.3	393.9	393.9	393.9	393.3
135°	441.7	435.6	432.6	432.0	429.0	426.5	426.5	426.5
137.5°	478.5	471.9	468.8	465.2	462.2	461.6	459.8	461.0
140°	515.4	509.3	505.1	503.9	498.4	497.2	496.6	496.6
142.5°	554.0	547.4	543.2	541.3	535.3	534.7	533.5	534.1
145°	594.5	586.7	583.0	578.2	574.0	572.8	571.5	571.5
147.5°	635.0	627.1	621.1	618.1	612.6	611.4	610.2	610.2
150°	675.5	667.6	663.4	657.9	652.5	653.1	649.5	650.1
152.5°	714.7	706.9	700.8	697.8	693.0	691.2	687.6	691.2
155°	754.0	746.8	740.1	737.7	731.7	731.1	726.8	729.8
157.5°	792.7	786.0	780.0	777.0	770.9	771.5	766.1	769.1
160°	829.5	822.9	818.7	814.4	808.4	809.6	804.2	806.6
162.5°	863.4	857.3	851.3	848.3	842.8	843.4	839.2	840.4
165°	893.6	888.1	882.7	880.3	874.8	875.4	870.6	872.4
167.5°	921.4	916.5	911.7	909.3	905.1	905.7	902.0	903.8
170°	944.3	940.7	936.5	934.7	932.2	932.2	929.8	930.4
172.5°	963.1	959.4	955.8	954.0	951.0	950.4	948.6	947.9
175°	976.9	973.9	969.7	967.9	964.3	962.4	959.4	958.2
177.5°	986.0	983.0	980.0	978.2	975.1	975.1	973.3	972.1
180°	986.0	986.0	986.0	986.0	986.0	986.0	986.0	986.0

(END OF REPORT)