

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: P188230

Luminaire Tested: **MPBL-4-LD4-UNV-1UP-STD-40**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P188230
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27377)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MPBL-4-LD4-UNV-1UP-STD-40
Description:
Light Source: (84) NICHIA ELM 4000K LED
2UT217042A8404A
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3567.9 lumens
Efficiency: N/A
Efficacy: 103.1 lumens/watt
Spacing Criteria (0/90/45): - / - / -
Luminous Opening: Rectangular w/ Sides (W: 4' x L: 0.42' x H: 0.29')
CIE Type: Indirect

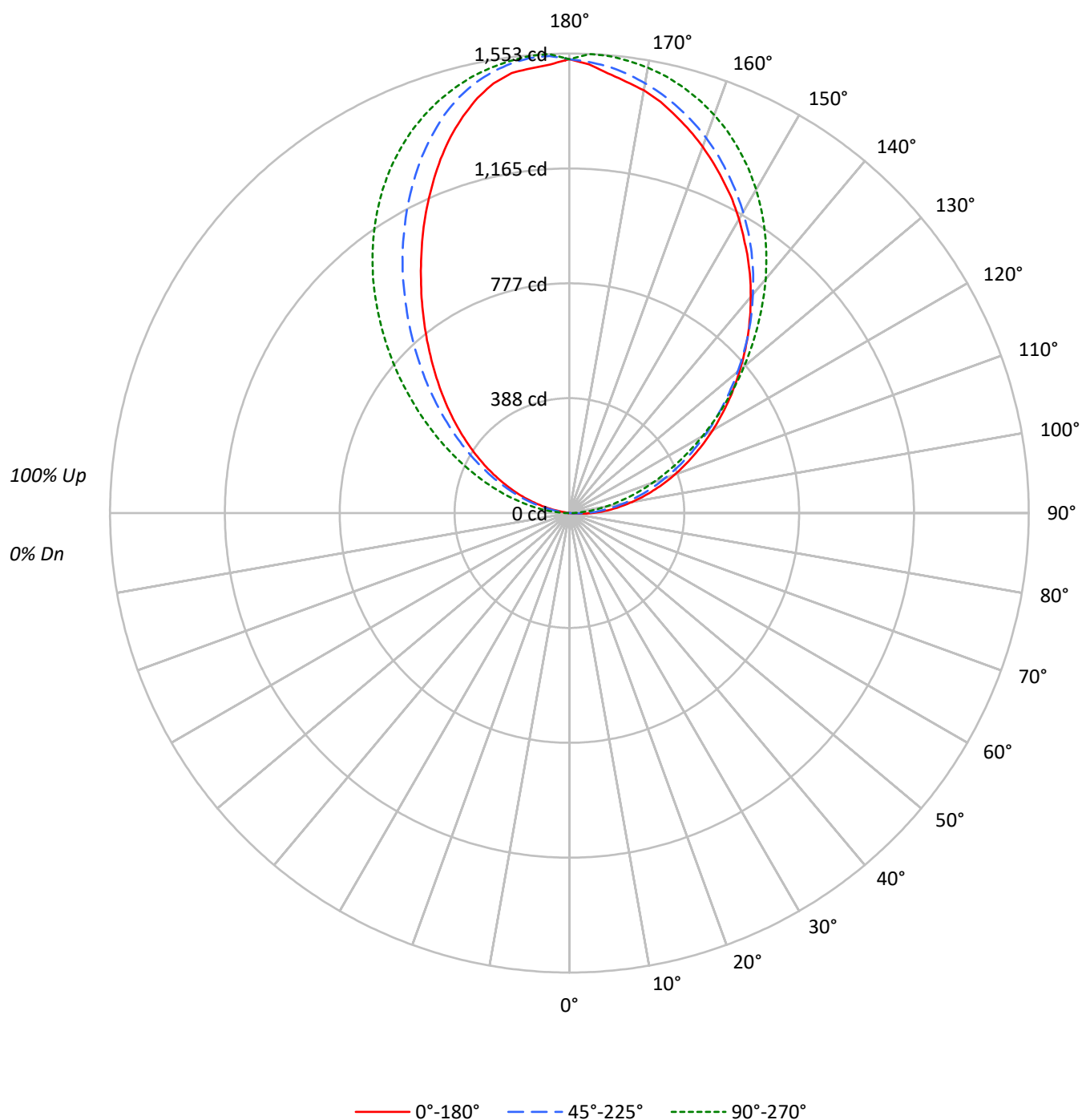
Input Watts (W): 34.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P188230

CATALOG NUMBER: MPBL-4-LD4-UNV-1UP-STD-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	31	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°	114	0	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°	7.1	0.2
90°-100°	72.1	2.0
100°-110°	209.9	5.9
110°-120°	368.4	10.3
120°-130°	514.7	14.4
130°-140°	618.7	17.3
140°-150°	648.9	18.2
150°-160°	579.8	16.2
160°-170°	403.7	11.3
170°-180°	144.6	4.1
0°-30°	0.0	0.0
0°-40°	0.0	0.0
0°-60°	0.0	0.0
0°-90°	7.1	0.2
90°-120°	650.4	18.2
90°-150°	2432.8	68.2
90°-180°	3561.0	99.8
0°-180°	3567.9	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°	14	1	0	1	1	10
90°	76	53	0	2	4	42
95°	142	116	56	2	3	131
105°	293	262	206	125	102	311
115°	466	435	404	285	253	462
125°	655	633	641	482	428	586
135°	854	855	902	717	630	659
145°	1052	1074	1153	982	869	658
155°	1235	1267	1356	1243	1140	569
165°	1389	1420	1489	1452	1388	391
175°	1492	1515	1550	1544	1509	141
180°	1534	1534	1534	1534	1534	



TEST NUMBER: P188230

CATALOG NUMBER: MPBL-4-LD4-UNV-1UP-STD-40

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°	13.9	13.9	14.7	11.4	9.0	8.2	6.5	4.1	3.3	0.8	0.8
87.5°	44.9	44.9	46.6	42.5	40.0	39.2	37.6	34.3	31.1	28.6	23.7
90°	76.0	76.0	76.8	74.4	70.3	69.5	67.8	64.6	62.1	58.0	53.1
92.5°	107.9	107.9	107.1	106.2	101.3	101.3	99.7	96.4	90.7	88.3	83.4
95°	142.2	142.2	141.4	138.9	134.8	134.8	132.4	129.1	122.6	120.9	116.0
97.5°	177.3	177.3	176.5	174.1	170.0	170.0	167.5	163.4	156.9	155.3	149.6
100°	214.9	215.7	214.9	211.7	207.6	206.8	204.3	201.0	193.7	191.2	185.5
102.5°	253.3	254.2	250.9	250.1	245.2	245.2	242.7	238.6	232.1	228.8	219.8
105°	293.4	293.4	292.6	290.1	285.2	284.4	281.9	277.9	270.5	268.0	261.5
107.5°	335.1	335.1	334.2	331.0	326.9	326.1	323.6	318.7	311.4	310.5	300.7
110°	377.6	377.6	376.7	373.5	369.4	368.6	365.3	361.2	353.9	353.9	344.0



TEST NUMBER: P188230

CATALOG NUMBER: MPBL-4-LD4-UNV-1UP-STD-40

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	420.9	420.9	422.5	416.8	411.9	411.1	408.6	404.5	399.6	397.2	388.2
115°	465.8	465.8	466.6	460.9	456.8	456.0	453.6	448.7	447.0	443.7	434.8
117.5°	511.6	509.1	511.6	505.9	502.6	501.8	499.3	495.2	491.1	488.7	482.2
120°	559.0	556.5	559.8	553.3	550.0	550.0	547.5	543.4	543.4	537.7	531.2
122.5°	606.4	603.9	607.2	600.7	597.4	594.9	595.8	592.5	592.5	587.6	581.9
125°	654.6	652.1	655.4	648.9	646.4	644.0	645.6	642.3	643.1	639.1	633.3
127.5°	703.6	702.0	704.4	697.9	696.3	694.6	695.5	693.0	694.6	688.1	687.3
130°	752.7	751.0	754.3	747.8	746.1	744.5	746.9	745.3	743.7	743.7	742.0
132.5°	803.3	801.7	805.0	798.4	797.6	796.0	798.4	798.4	796.8	795.2	798.4
135°	854.0	851.5	854.8	848.3	847.5	847.5	849.9	849.9	849.1	851.5	854.8
137.5°	903.8	901.4	905.5	899.8	898.9	898.9	902.2	902.2	903.0	906.3	911.2
140°	953.7	952.1	955.3	949.6	949.6	950.4	953.7	954.5	954.5	958.6	965.1
142.5°	1003.5	1001.1	1004.4	998.6	1000.3	1001.1	1004.4	1007.6	1006.8	1013.3	1019.9
145°	1051.8	1050.1	1052.6	1046.9	1049.3	1050.9	1055.0	1056.7	1059.1	1067.3	1073.8
147.5°	1098.3	1097.5	1100.8	1095.1	1098.3	1100.8	1104.9	1107.3	1110.6	1119.6	1125.3
150°	1146.6	1144.1	1147.4	1142.5	1145.7	1149.0	1151.5	1153.9	1158.0	1167.8	1174.3
152.5°	1193.1	1190.7	1190.7	1187.4	1190.7	1194.0	1197.2	1200.5	1205.4	1216.8	1221.7
155°	1234.8	1234.0	1234.0	1230.7	1235.6	1239.7	1242.2	1245.4	1251.2	1262.6	1266.7
157.5°	1277.3	1275.7	1275.7	1274.9	1279.8	1283.8	1286.3	1289.6	1295.3	1305.9	1310.0
160°	1317.4	1315.7	1315.7	1314.1	1319.8	1323.1	1325.5	1329.6	1335.3	1346.0	1350.0
162.5°	1354.9	1353.3	1352.5	1349.2	1354.9	1359.0	1362.3	1365.6	1372.9	1383.5	1386.8
165°	1389.3	1388.4	1387.6	1385.2	1391.7	1394.2	1397.4	1400.7	1407.2	1417.1	1419.5
167.5°	1423.6	1422.0	1421.1	1418.7	1425.2	1426.9	1430.1	1431.8	1439.1	1447.3	1449.7
170°	1450.6	1450.6	1448.9	1445.7	1451.4	1454.6	1457.1	1458.7	1466.1	1474.3	1475.1
172.5°	1470.2	1470.2	1469.4	1467.7	1475.1	1479.2	1480.8	1482.4	1489.0	1496.3	1497.1
175°	1492.2	1492.2	1491.4	1490.6	1497.1	1500.4	1502.0	1502.9	1509.4	1514.3	1515.1
177.5°	1517.6	1515.1	1511.0	1506.1	1511.8	1513.5	1514.3	1515.1	1520.8	1525.7	1525.7
180°	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9



TEST NUMBER: P188230

CATALOG NUMBER: MPBL-4-LD4-UNV-1UP-STD-40

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°	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.0	0.8
87.5°	16.3	12.3	7.4	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	45.8	41.7	36.8	32.7	27.0	24.5	18.0	10.6	2.5	0.0	0.0
92.5°	77.6	71.1	66.2	62.1	56.4	53.9	47.4	40.9	32.7	25.3	17.2
95°	108.7	102.2	98.1	94.0	88.3	85.0	78.5	71.9	64.6	56.4	48.2
97.5°	143.0	135.7	131.6	127.5	120.9	118.5	111.1	104.6	97.2	89.1	80.9
100°	178.2	171.6	165.9	162.6	156.9	154.5	147.1	140.6	133.2	125.0	115.2
102.5°	216.6	209.2	204.3	201.0	195.3	192.9	186.3	179.8	172.4	163.4	153.6
105°	255.8	248.4	246.0	241.9	236.2	233.7	227.2	221.5	214.9	205.9	195.3
107.5°	295.8	292.6	287.7	285.2	279.5	277.0	273.8	266.4	260.7	251.7	240.3
110°	339.1	334.2	332.6	331.0	324.4	323.6	318.7	314.6	308.9	299.9	288.5



TEST NUMBER: P188230

CATALOG NUMBER: MPBL-4-LD4-UNV-1UP-STD-40

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	383.3	379.2	379.2	378.4	372.7	371.8	367.7	364.5	357.1	350.6	339.1
115°	430.7	429.0	426.6	428.2	422.5	423.3	420.9	418.4	410.2	404.5	391.4
117.5°	478.9	475.6	476.4	479.7	474.8	475.6	472.4	470.7	465.8	460.1	447.0
120°	530.4	530.4	529.6	533.6	529.6	531.2	532.0	532.8	524.7	518.9	506.7
122.5°	585.1	583.5	583.5	588.4	585.1	587.6	590.0	591.7	584.3	579.4	566.3
125°	638.2	639.9	638.2	644.8	641.5	645.6	646.4	649.7	645.6	640.7	629.3
127.5°	693.0	695.5	694.6	698.7	699.5	705.3	711.0	715.9	709.3	705.3	693.8
130°	749.4	749.4	751.8	753.5	758.4	764.9	769.8	780.4	773.1	770.6	760.0
132.5°	806.6	807.4	809.9	815.6	818.9	825.4	833.6	840.9	837.6	836.8	827.0
135°	863.0	865.4	866.2	873.6	877.7	885.9	895.7	903.8	902.2	902.2	892.4
137.5°	917.7	921.8	919.4	932.4	937.3	947.2	958.6	966.8	965.9	967.6	958.6
140°	971.7	977.4	974.9	989.6	996.2	1006.0	1019.9	1028.9	1032.1	1032.1	1023.2
142.5°	1027.2	1032.1	1029.7	1046.9	1054.2	1064.8	1079.5	1087.7	1089.3	1093.4	1086.1
145°	1082.8	1085.3	1085.3	1103.2	1111.4	1121.2	1136.7	1145.7	1147.4	1153.1	1147.4
147.5°	1135.1	1135.1	1138.4	1157.2	1162.9	1176.0	1192.3	1200.5	1206.2	1209.5	1203.8
150°	1185.0	1184.1	1189.0	1208.7	1218.5	1228.3	1244.6	1252.0	1257.7	1262.6	1258.5
152.5°	1233.2	1230.7	1238.1	1257.7	1267.5	1277.3	1293.7	1301.0	1306.7	1311.6	1309.2
155°	1277.3	1274.0	1283.0	1302.6	1310.0	1321.4	1338.6	1345.1	1350.0	1355.8	1354.1
157.5°	1319.0	1315.7	1325.5	1345.1	1354.1	1363.1	1380.3	1386.0	1390.1	1396.6	1395.8
160°	1360.7	1354.9	1365.6	1383.5	1391.7	1400.7	1416.2	1422.0	1426.0	1431.8	1433.4
162.5°	1395.8	1390.1	1399.9	1417.1	1425.2	1434.2	1448.9	1453.0	1456.3	1462.8	1464.5
165°	1426.0	1422.0	1431.8	1448.1	1455.5	1464.5	1477.5	1480.8	1483.2	1489.0	1491.4
167.5°	1454.6	1448.9	1459.5	1474.3	1481.6	1490.6	1502.0	1505.3	1506.9	1511.8	1513.5
170°	1478.3	1472.6	1482.4	1496.3	1502.0	1511.0	1521.7	1522.5	1524.1	1528.2	1529.8
172.5°	1497.1	1491.4	1500.4	1512.7	1519.2	1527.4	1536.4	1537.2	1537.2	1541.3	1542.9
175°	1512.7	1506.9	1515.1	1526.6	1531.5	1539.6	1547.8	1547.8	1547.0	1550.3	1551.1
177.5°	1520.8	1515.9	1522.5	1533.1	1538.0	1544.5	1552.7	1551.1	1550.3	1552.7	1553.5
180°	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9



TEST NUMBER: P188230

CATALOG NUMBER: MPBL-4-LD4-UNV-1UP-STD-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°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8
90°	0.0	0.0	0.0	0.0	0.0	0.8	0.8	1.6	1.6	2.5	2.5
92.5°	10.6	5.7	0.0	0.0	0.0	0.0	0.8	0.8	1.6	1.6	2.5
95°	40.9	36.0	27.0	23.7	20.4	12.3	5.7	3.3	1.6	1.6	1.6
97.5°	72.7	67.8	58.0	53.1	51.5	44.1	36.8	31.9	25.3	18.8	14.7
100°	107.1	101.3	90.7	85.8	84.2	74.4	68.6	63.7	58.0	52.3	48.2
102.5°	144.6	138.1	126.7	120.9	118.5	108.7	102.2	97.2	90.7	85.0	81.7
105°	185.5	178.2	165.1	158.5	156.1	146.3	137.3	131.6	125.0	119.3	116.0
107.5°	229.6	221.5	207.6	200.2	196.9	184.7	174.1	169.2	161.8	155.3	151.2
110°	277.0	267.2	251.7	243.5	240.3	227.2	215.7	209.2	200.2	193.7	188.8



TEST NUMBER: P188230

CATALOG NUMBER: MPBL-4-LD4-UNV-1UP-STD-40

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	328.5	316.3	299.1	290.1	286.8	271.3	258.2	250.9	241.1	233.7	227.2
115°	379.2	366.9	349.8	340.0	335.9	318.7	305.6	295.8	285.2	275.4	268.0
117.5°	433.9	420.9	402.9	392.3	387.4	371.0	354.7	340.8	331.0	321.2	311.4
120°	492.0	478.1	459.3	447.8	442.9	421.7	406.2	390.6	380.0	367.7	357.1
122.5°	550.8	536.9	517.3	505.9	500.1	476.4	459.3	442.9	429.9	416.8	405.3
125°	612.1	596.6	577.8	565.5	559.0	536.9	514.0	496.9	482.2	468.3	454.4
127.5°	675.0	658.7	639.1	626.8	620.3	596.6	572.9	553.3	537.7	522.2	505.9
130°	740.4	723.2	702.0	689.7	683.2	657.9	632.5	612.1	594.9	577.8	560.6
132.5°	806.6	789.4	768.2	755.1	749.4	722.4	694.6	670.9	655.4	635.8	617.0
135°	872.8	854.0	832.7	820.5	814.8	787.8	759.2	737.1	716.7	696.3	675.8
137.5°	939.0	921.0	898.9	886.7	881.0	855.6	825.4	801.7	781.3	759.2	737.1
140°	1005.2	986.4	964.3	952.9	947.2	918.6	891.6	867.1	845.8	822.9	800.9
142.5°	1068.1	1050.1	1028.9	1017.4	1012.5	985.6	957.0	932.4	912.0	888.3	864.6
145°	1131.0	1113.9	1093.4	1082.0	1077.9	1053.4	1025.6	1001.1	981.5	957.0	933.3
147.5°	1189.9	1173.5	1153.9	1143.3	1136.7	1118.8	1091.8	1068.9	1050.1	1026.4	1002.7
150°	1245.4	1229.9	1211.9	1202.9	1196.4	1181.7	1157.2	1135.1	1114.7	1094.3	1071.4
152.5°	1297.7	1283.8	1265.1	1260.1	1254.4	1242.2	1220.9	1199.7	1180.9	1162.1	1139.2
155°	1344.3	1332.1	1318.2	1310.8	1306.7	1297.7	1278.9	1260.1	1243.0	1226.6	1204.6
157.5°	1386.8	1375.4	1363.1	1358.2	1354.1	1349.2	1334.5	1316.5	1303.5	1289.6	1270.8
160°	1424.4	1414.6	1404.8	1400.7	1397.4	1395.8	1383.5	1369.7	1358.2	1347.6	1332.1
162.5°	1457.1	1448.1	1439.9	1436.7	1435.0	1436.7	1428.5	1415.4	1409.7	1399.1	1386.0
165°	1484.1	1475.9	1469.4	1466.9	1466.1	1471.0	1465.3	1456.3	1452.2	1444.8	1434.2
167.5°	1506.9	1499.6	1493.1	1492.2	1493.1	1498.8	1496.3	1489.0	1486.5	1482.4	1475.9
170°	1524.9	1517.6	1513.5	1511.8	1512.7	1520.8	1520.0	1513.5	1512.7	1510.2	1506.1
172.5°	1537.2	1529.8	1526.6	1525.7	1526.6	1535.5	1536.4	1531.5	1531.5	1530.6	1528.2
175°	1546.2	1538.8	1534.7	1533.9	1535.5	1544.5	1546.2	1542.9	1543.7	1543.7	1542.9
177.5°	1547.8	1539.6	1537.2	1536.4	1538.0	1546.2	1548.6	1545.4	1546.2	1547.8	1547.0
180°	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9



TEST NUMBER: P188230

CATALOG NUMBER: MPBL-4-LD4-UNV-1UP-STD-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°	0.8	0.8	0.8	0.8	0.8	0.8	0.0	0.8
87.5°	1.6	1.6	1.6	2.5	2.5	2.5	2.5	2.5
90°	3.3	3.3	3.3	3.3	3.3	4.1	4.1	4.1
92.5°	2.5	3.3	3.3	3.3	3.3	3.3	3.3	3.3
95°	1.6	2.5	2.5	2.5	3.3	3.3	3.3	3.3
97.5°	11.4	9.0	8.2	7.4	5.7	5.7	4.9	4.9
100°	43.3	39.2	38.4	36.0	34.3	31.9	31.1	29.4
102.5°	78.5	75.2	74.4	71.9	71.1	68.6	67.8	66.2
105°	112.0	109.5	109.5	107.1	105.4	103.8	103.8	102.2
107.5°	147.1	145.5	145.5	143.8	141.4	141.4	140.6	138.1
110°	184.7	183.1	182.2	180.6	179.0	177.3	178.2	175.7



TEST NUMBER: P188230

CATALOG NUMBER: MPBL-4-LD4-UNV-1UP-STD-40

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	223.1	221.5	221.5	219.0	219.0	217.4	216.6	214.1
115°	265.6	261.5	260.7	259.1	258.2	256.6	256.6	253.3
117.5°	307.3	304.0	304.0	301.6	299.9	297.5	297.5	295.8
120°	353.0	348.1	347.3	344.9	343.2	341.6	340.8	338.3
122.5°	398.8	393.9	393.1	390.6	387.4	384.9	384.9	382.5
125°	447.8	441.3	439.7	437.2	433.9	430.7	430.7	428.2
127.5°	498.5	491.1	489.5	486.2	482.2	478.9	478.1	475.6
130°	550.8	542.6	541.0	536.9	532.8	527.9	527.1	525.5
132.5°	603.9	597.4	594.9	590.8	585.9	577.8	579.4	577.0
135°	660.3	653.0	650.5	645.6	639.9	633.3	632.5	630.1
137.5°	720.0	711.8	705.3	703.6	697.9	687.3	688.1	685.6
140°	782.9	773.1	769.8	764.9	757.6	746.9	746.9	744.5
142.5°	845.8	835.2	829.5	827.0	819.7	808.2	808.2	805.0
145°	912.8	901.4	894.9	892.4	885.0	872.8	872.8	868.7
147.5°	981.5	968.4	962.7	959.4	952.1	939.0	937.3	934.1
150°	1050.9	1037.0	1031.3	1028.1	1020.7	1006.8	1005.2	1001.1
152.5°	1118.0	1104.9	1099.2	1096.7	1090.2	1077.1	1074.6	1071.4
155°	1185.0	1171.9	1167.0	1164.5	1159.6	1145.7	1142.5	1140.0
157.5°	1252.8	1239.7	1234.8	1233.2	1229.1	1214.4	1210.3	1207.0
160°	1315.7	1303.5	1299.4	1298.6	1295.3	1280.6	1275.7	1273.2
162.5°	1370.5	1359.8	1356.6	1356.6	1354.1	1341.9	1336.1	1334.5
165°	1420.3	1410.5	1406.4	1407.2	1407.2	1395.0	1390.1	1388.4
167.5°	1462.8	1454.6	1453.8	1453.8	1454.6	1444.0	1439.1	1436.7
170°	1494.7	1488.1	1488.1	1489.0	1492.2	1482.4	1477.5	1475.1
172.5°	1518.4	1511.8	1511.8	1513.5	1515.9	1507.8	1502.0	1499.6
175°	1533.9	1527.4	1528.2	1529.0	1529.8	1520.0	1512.7	1508.6
177.5°	1538.0	1532.3	1531.5	1533.1	1535.5	1527.4	1520.8	1516.8
180°	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9	1533.9

(END OF REPORT)