

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: P188227

Luminaire Tested: **MPBL-3-LD4-UNV-2UP-LO-40**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P188227
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27371)
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-2UP-LO-40
Description:
Light Source: (168) NICHIA ELM 4000K LED
2UT217042A8404A
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4131.8 lumens
Efficiency: N/A
Efficacy: 79.6 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

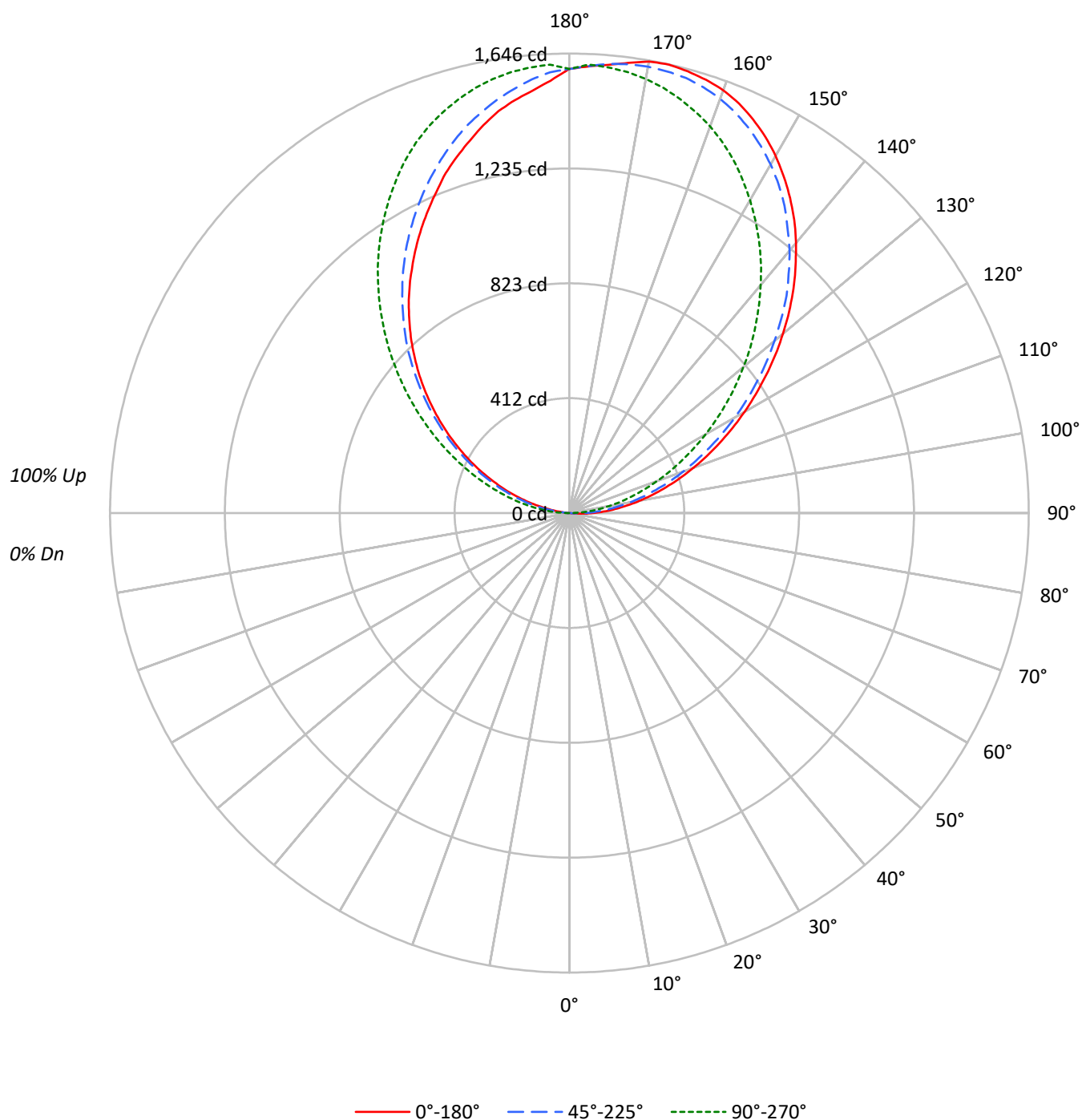
Input Watts (W): 51.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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CATALOG NUMBER: MPBL-3-LD4-UNV-2UP-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°	186	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°	7.6	0.2
90°-100°	88.9	2.2
100°-110°	261.1	6.3
110°-120°	454.8	11.0
120°-130°	626.7	15.2
130°-140°	734.4	17.8
140°-150°	742.3	18.0
150°-160°	637.0	15.4
160°-170°	428.5	10.4
170°-180°	150.5	3.6
0°-30°	0.0	0.0
0°-40°	0.0	0.0
0°-60°	0.0	0.0
0°-90°	7.6	0.2
90°-120°	804.8	19.5
90°-150°	2908.2	70.4
90°-180°	4124.0	99.8
0°-180°	4131.8	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°	17	2	1	1	1	11
90°	83	54	1	5	7	46
95°	165	130	68	18	11	153
105°	359	321	233	176	150	381
115°	594	553	444	366	344	589
125°	860	821	687	584	561	770
135°	1135	1100	942	815	784	875
145°	1378	1344	1185	1040	998	861
155°	1556	1521	1393	1251	1198	717
165°	1638	1613	1535	1433	1381	463
175°	1611	1615	1602	1559	1519	155
180°	1591	1591	1591	1591	1591	



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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°	16.9	17.5	15.7	13.9	12.7	11.5	10.3	7.9	5.4	3.6	1.8
87.5°	47.1	48.3	45.9	43.5	41.1	38.7	37.5	33.2	29.0	25.4	21.8
90°	83.4	84.6	81.0	78.5	76.7	73.1	72.5	67.7	62.2	58.6	54.4
92.5°	122.0	123.9	119.6	118.4	115.4	111.8	110.6	106.9	101.5	96.1	89.4
95°	164.9	166.2	160.7	160.1	157.7	154.1	152.3	147.4	143.8	136.5	129.9
97.5°	209.0	211.5	205.4	204.2	201.8	197.6	196.4	190.9	187.3	180.0	173.4
100°	256.8	258.6	252.5	251.9	248.9	244.7	243.5	238.7	235.0	224.8	219.3
102.5°	306.9	308.7	302.7	302.1	299.1	294.2	293.6	288.2	284.6	273.7	268.9
105°	358.9	361.3	354.7	354.1	351.6	347.4	346.8	340.8	337.1	328.7	320.8
107.5°	414.5	416.3	409.0	408.4	404.2	402.4	401.8	395.1	392.1	381.2	375.8
110°	471.3	473.7	467.0	466.4	464.0	459.2	459.2	453.1	450.1	438.6	433.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	531.7	534.1	526.2	526.2	523.8	519.6	519.0	513.0	510.5	502.1	490.6
115°	593.9	595.1	587.9	587.9	586.1	581.8	580.6	575.8	572.8	563.7	552.8
117.5°	658.0	659.2	652.5	648.9	645.9	645.9	644.7	641.0	638.0	627.7	617.5
120°	723.8	725.6	718.4	718.4	716.0	712.3	711.7	706.3	703.9	694.8	683.9
122.5°	791.5	793.3	786.0	782.4	780.0	780.0	779.4	774.6	772.1	763.1	751.6
125°	859.8	861.6	854.9	850.7	848.3	848.9	847.7	844.0	841.0	831.4	821.1
127.5°	929.8	931.0	923.8	920.2	918.4	918.4	917.1	913.5	911.1	900.8	890.6
130°	998.7	1000.5	992.7	989.0	990.3	987.8	986.0	983.0	980.6	970.3	959.4
132.5°	1067.6	1068.8	1062.2	1058.5	1056.1	1056.7	1054.9	1052.5	1050.1	1039.2	1028.9
135°	1135.3	1136.5	1129.8	1126.2	1126.8	1124.4	1122.6	1120.2	1117.1	1106.9	1100.2
137.5°	1199.3	1201.7	1195.1	1191.4	1188.4	1188.4	1187.8	1185.4	1181.8	1170.9	1163.1
140°	1262.7	1265.2	1258.5	1255.5	1251.9	1250.7	1250.7	1247.0	1242.8	1233.1	1227.1
142.5°	1323.8	1325.0	1318.9	1314.7	1311.1	1311.1	1309.9	1306.8	1302.6	1292.3	1283.9
145°	1378.1	1380.0	1373.9	1370.3	1367.3	1366.7	1366.7	1363.0	1359.4	1349.1	1343.7
147.5°	1429.5	1431.3	1425.9	1423.5	1420.4	1419.2	1419.2	1416.2	1412.6	1402.3	1395.7
150°	1477.8	1479.0	1473.0	1470.6	1467.0	1465.7	1465.7	1461.5	1457.3	1448.2	1441.6
152.5°	1520.1	1519.5	1515.3	1512.3	1508.6	1507.4	1504.4	1500.2	1498.4	1489.9	1483.3
155°	1556.4	1556.4	1552.7	1549.7	1546.1	1545.5	1544.9	1540.7	1536.4	1527.4	1520.7
157.5°	1587.8	1587.8	1584.2	1582.4	1579.3	1579.3	1576.3	1573.3	1569.1	1560.6	1552.7
160°	1612.0	1612.6	1608.3	1605.9	1603.5	1603.5	1601.7	1596.9	1592.6	1586.0	1579.3
162.5°	1627.1	1627.1	1623.4	1621.6	1619.8	1619.8	1618.0	1614.4	1611.4	1605.9	1598.7
165°	1637.9	1638.5	1634.9	1633.7	1631.9	1632.5	1631.3	1628.3	1624.0	1619.2	1613.2
167.5°	1645.8	1645.2	1642.2	1640.4	1638.5	1638.5	1637.3	1633.7	1630.1	1625.9	1620.4
170°	1642.2	1640.4	1638.5	1636.7	1635.5	1635.5	1634.3	1632.5	1629.5	1627.7	1623.4
172.5°	1626.5	1624.6	1625.3	1625.9	1626.5	1627.7	1627.7	1627.7	1625.9	1625.3	1621.6
175°	1611.4	1610.1	1610.8	1612.0	1613.8	1615.6	1616.2	1617.4	1616.2	1617.4	1615.0
177.5°	1601.7	1599.9	1598.7	1598.1	1598.1	1599.3	1600.5	1601.7	1600.5	1602.9	1602.3
180°	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8



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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°	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.2
87.5°	15.7	10.3	6.0	2.4	1.2	1.2	0.6	0.6	0.6	0.6	0.6
90°	45.9	40.5	34.4	27.8	25.4	24.2	16.3	9.1	3.0	0.6	0.6
92.5°	82.8	77.9	71.3	63.4	60.4	59.2	52.6	43.5	37.5	32.0	27.2
95°	122.6	116.6	109.4	101.5	98.5	97.3	88.8	81.0	73.7	67.7	62.8
97.5°	165.5	158.9	151.0	142.6	139.0	137.1	127.5	119.6	111.2	104.5	99.1
100°	211.5	204.8	196.4	186.7	182.5	180.7	171.0	161.3	152.3	144.4	138.4
102.5°	260.4	250.1	244.1	233.8	229.0	227.2	216.3	204.2	195.8	187.3	180.0
105°	312.4	303.3	294.2	284.0	279.1	276.7	264.6	253.8	242.3	233.2	225.4
107.5°	366.7	357.7	348.0	337.1	331.7	329.9	316.0	303.9	292.4	281.5	273.1
110°	424.1	415.1	404.8	392.7	387.3	384.9	371.0	358.3	345.0	332.9	323.8



TEST NUMBER: P188227

CATALOG NUMBER: MPBL-3-LD4-UNV-2UP-LO-40

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	484.0	474.3	464.0	451.3	445.9	442.9	427.8	415.1	400.0	387.3	377.0
115°	545.6	536.5	525.0	515.4	506.9	505.7	487.6	473.7	459.8	444.1	434.4
117.5°	610.2	601.2	589.7	578.8	569.7	568.5	549.8	534.7	518.4	502.1	491.8
120°	676.7	667.0	654.9	644.1	635.0	630.2	613.2	596.9	580.0	562.5	548.0
122.5°	744.4	734.7	722.6	711.1	701.5	699.6	675.5	660.4	639.8	624.1	610.8
125°	813.2	803.6	790.9	778.2	768.5	766.1	745.0	725.6	706.3	687.0	672.5
127.5°	882.7	872.4	859.1	846.5	836.8	833.8	808.4	790.9	770.3	750.4	735.3
130°	951.0	940.7	927.4	914.1	903.9	900.8	874.9	856.1	835.6	814.4	798.1
132.5°	1019.9	1009.6	995.7	981.2	971.5	967.9	941.9	922.0	900.2	879.1	861.0
135°	1087.5	1077.3	1062.8	1047.7	1037.4	1033.2	1007.2	986.0	964.3	941.9	923.8
137.5°	1151.6	1140.7	1126.2	1110.5	1100.2	1097.2	1070.6	1049.5	1027.1	1004.2	986.0
140°	1212.6	1198.7	1187.2	1172.1	1161.8	1158.8	1133.4	1112.3	1089.9	1066.4	1048.3
142.5°	1271.2	1257.3	1246.4	1231.3	1221.7	1218.6	1193.3	1172.1	1151.0	1127.4	1108.7
145°	1328.0	1314.1	1302.6	1287.5	1277.8	1274.2	1250.7	1229.5	1209.0	1185.4	1167.3
147.5°	1380.6	1366.1	1354.6	1340.1	1330.4	1328.0	1304.4	1284.5	1265.2	1241.0	1223.5
150°	1427.1	1413.8	1402.3	1389.0	1379.3	1377.5	1355.8	1336.5	1317.7	1294.2	1277.8
152.5°	1469.4	1456.1	1445.2	1433.1	1424.1	1422.8	1402.3	1382.4	1367.3	1344.9	1328.6
155°	1506.8	1493.5	1482.7	1471.8	1463.9	1463.3	1444.0	1428.3	1412.6	1393.2	1375.7
157.5°	1539.5	1526.8	1516.5	1506.2	1499.6	1499.0	1482.1	1465.7	1454.3	1436.1	1419.8
160°	1566.6	1554.6	1545.5	1537.0	1530.4	1531.0	1515.9	1502.6	1491.1	1474.2	1459.1
162.5°	1587.8	1576.9	1568.5	1561.2	1556.4	1556.4	1542.5	1529.8	1521.9	1506.2	1492.9
165°	1602.9	1593.8	1586.0	1579.9	1576.3	1576.3	1565.4	1555.2	1547.9	1534.6	1522.5
167.5°	1612.6	1604.1	1598.7	1594.4	1592.0	1593.2	1584.2	1575.7	1570.9	1559.4	1549.1
170°	1616.8	1610.1	1605.9	1603.5	1602.3	1603.5	1597.5	1591.4	1588.4	1578.7	1570.3
172.5°	1616.8	1611.4	1608.9	1607.7	1608.3	1609.5	1605.3	1601.7	1600.5	1593.2	1585.4
175°	1612.0	1607.7	1606.5	1607.1	1608.9	1610.1	1608.9	1607.1	1607.1	1602.3	1596.9
177.5°	1601.1	1598.7	1599.3	1601.7	1604.7	1607.1	1607.1	1608.3	1610.8	1607.7	1604.1
180°	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8



TEST NUMBER: P188227

CATALOG NUMBER: MPBL-3-LD4-UNV-2UP-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°	1.2	1.2	1.2	0.6	1.2	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	1.2	1.2
90°	1.2	1.8	2.4	2.4	2.4	3.0	3.6	4.2	4.8	5.4	5.4
92.5°	19.9	13.9	7.9	9.1	4.8	4.8	4.2	4.8	5.4	6.0	6.6
95°	55.0	49.5	41.7	42.3	33.8	30.8	24.2	21.1	18.1	16.3	13.3
97.5°	90.6	85.2	78.5	80.4	72.5	68.9	60.4	55.0	50.1	47.1	41.1
100°	129.3	123.3	116.6	117.8	110.0	108.1	100.9	95.5	91.8	85.8	78.5
102.5°	170.4	163.7	155.9	157.7	149.2	147.4	140.8	135.9	134.1	128.1	120.8
105°	213.9	206.6	198.8	200.6	191.5	189.1	181.9	178.2	175.8	171.6	164.9
107.5°	261.0	252.5	244.1	243.5	236.2	233.8	226.0	222.3	220.5	215.7	211.5
110°	310.5	301.5	291.8	293.0	283.4	280.3	273.1	268.9	267.0	262.2	255.6



TEST NUMBER: P188227

CATALOG NUMBER: MPBL-3-LD4-UNV-2UP-LO-40

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	361.9	352.2	344.4	343.2	332.9	327.5	321.4	317.2	316.0	310.5	306.3
115°	416.3	405.4	396.3	395.7	386.7	378.2	374.6	367.3	366.1	363.1	356.5
117.5°	472.5	461.0	450.7	447.1	440.4	432.0	425.3	419.9	418.7	415.1	409.0
120°	529.9	517.2	507.5	503.3	496.6	486.4	479.7	474.3	472.5	466.4	462.2
122.5°	589.7	575.8	565.5	561.3	553.4	543.2	538.3	529.3	527.5	523.8	517.2
125°	650.1	635.0	624.1	620.5	611.4	601.2	592.7	586.1	584.2	579.4	573.4
127.5°	711.7	695.4	683.3	679.7	670.6	659.2	650.7	643.5	641.0	636.2	629.6
130°	773.4	755.8	743.1	738.9	729.9	718.4	709.3	700.9	698.4	693.6	685.7
132.5°	836.2	817.5	803.6	799.3	789.7	778.8	768.5	759.5	757.0	751.0	740.1
135°	898.4	878.5	864.0	862.8	850.7	839.2	828.3	818.7	815.0	808.4	798.1
137.5°	960.6	939.5	923.8	921.4	910.5	899.0	887.5	876.7	871.8	864.6	854.3
140°	1022.3	1000.5	983.6	980.6	969.1	957.0	945.5	933.5	927.4	920.2	910.5
142.5°	1082.7	1059.7	1041.6	1038.6	1025.9	1015.0	1002.9	990.3	984.2	976.4	965.5
145°	1141.9	1118.3	1099.6	1096.0	1083.9	1072.4	1060.3	1047.7	1040.4	1032.5	1020.5
147.5°	1198.7	1174.5	1155.2	1151.0	1140.1	1128.6	1116.5	1104.4	1096.0	1088.1	1076.0
150°	1252.5	1229.5	1209.6	1204.7	1193.9	1182.4	1170.9	1158.2	1149.2	1140.7	1129.2
152.5°	1305.0	1282.1	1261.5	1256.7	1246.4	1234.9	1223.5	1210.8	1200.5	1192.1	1179.4
155°	1352.8	1330.4	1311.1	1305.6	1296.0	1284.5	1273.6	1260.9	1251.3	1242.2	1229.5
157.5°	1397.5	1376.9	1357.0	1351.6	1343.1	1331.6	1322.0	1310.5	1300.2	1292.3	1280.3
160°	1438.6	1418.6	1400.5	1395.1	1386.6	1376.3	1367.3	1357.0	1346.7	1338.9	1327.4
162.5°	1474.2	1456.1	1438.6	1433.1	1425.9	1416.8	1409.0	1398.7	1390.8	1382.4	1371.5
165°	1506.2	1489.3	1473.0	1468.2	1462.1	1454.3	1447.6	1438.6	1433.1	1424.1	1413.8
167.5°	1534.6	1520.1	1504.4	1500.2	1494.7	1488.7	1482.7	1475.4	1468.2	1459.7	1452.5
170°	1557.6	1544.3	1531.0	1526.8	1522.5	1517.7	1513.5	1506.8	1502.6	1494.7	1487.5
172.5°	1575.7	1564.8	1553.4	1550.3	1546.7	1543.1	1540.7	1536.4	1531.6	1525.6	1520.1
175°	1589.6	1580.5	1571.5	1568.5	1566.0	1565.4	1564.2	1561.2	1558.8	1553.4	1549.7
177.5°	1598.7	1592.0	1584.8	1583.0	1582.4	1581.7	1582.4	1582.4	1580.5	1576.9	1573.9
180°	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8



TEST NUMBER: P188227

CATALOG NUMBER: MPBL-3-LD4-UNV-2UP-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°	1.2	1.2	1.8	1.8	2.4	3.0	3.0	3.0
90°	6.0	6.0	6.6	6.6	6.6	6.6	7.3	7.3
92.5°	6.6	7.3	7.3	7.3	7.9	7.9	7.9	7.9
95°	12.7	12.1	11.5	10.9	10.9	10.9	10.9	10.9
97.5°	39.3	37.5	36.9	36.3	34.4	33.8	32.6	32.6
100°	73.7	72.5	71.3	68.9	68.9	67.7	65.9	65.3
102.5°	116.0	114.8	113.0	110.0	109.4	108.1	105.7	105.1
105°	162.5	159.5	158.3	154.7	154.1	152.9	151.0	149.8
107.5°	207.2	205.4	204.2	201.2	200.6	199.4	198.2	197.6
110°	256.2	251.3	250.1	247.7	247.7	246.5	245.3	244.7



TEST NUMBER: P188227

CATALOG NUMBER: MPBL-3-LD4-UNV-2UP-LO-40

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	305.1	300.3	299.7	298.5	296.0	295.4	293.6	293.0
115°	355.3	349.8	349.8	348.6	346.8	346.2	344.4	344.4
117.5°	407.8	401.2	404.2	400.6	398.8	398.8	396.9	396.9
120°	461.0	454.9	458.0	453.7	452.5	451.9	450.1	450.1
122.5°	515.4	509.3	512.3	508.1	506.3	506.3	504.5	505.1
125°	571.6	564.3	567.9	563.1	561.9	561.9	559.5	560.7
127.5°	627.1	620.5	620.5	618.7	617.5	616.9	615.1	615.7
130°	683.9	676.7	682.1	674.3	673.1	672.5	671.2	671.9
132.5°	740.7	732.9	735.3	730.5	729.2	729.2	726.8	728.0
135°	796.9	788.5	793.9	785.4	784.8	784.2	781.8	783.6
137.5°	853.1	844.0	848.3	841.0	839.2	839.2	836.2	838.0
140°	908.7	899.0	903.3	896.0	894.2	893.6	891.2	891.8
142.5°	963.7	953.4	957.6	949.8	948.0	947.4	944.3	945.5
145°	1018.7	1007.8	1011.4	1002.9	1000.5	999.3	996.3	997.5
147.5°	1073.0	1061.5	1064.0	1056.7	1052.5	1051.3	1047.7	1047.7
150°	1126.2	1113.5	1115.3	1108.1	1104.4	1102.0	1102.0	1099.0
152.5°	1175.7	1163.7	1165.5	1158.2	1154.6	1152.2	1149.8	1148.6
155°	1225.9	1214.4	1215.6	1208.4	1204.1	1201.1	1198.1	1197.5
157.5°	1276.6	1264.6	1265.2	1257.9	1253.1	1250.1	1247.6	1245.2
160°	1323.8	1312.3	1312.3	1306.2	1300.8	1297.2	1294.2	1296.0
162.5°	1367.3	1356.4	1358.2	1349.1	1343.7	1340.7	1337.7	1338.9
165°	1409.6	1398.7	1400.5	1392.0	1386.0	1383.0	1379.3	1380.6
167.5°	1448.8	1439.2	1439.2	1433.1	1428.9	1423.5	1422.2	1423.5
170°	1484.5	1475.4	1476.0	1470.6	1466.4	1463.9	1461.5	1462.1
172.5°	1517.1	1508.6	1508.6	1503.2	1498.4	1493.5	1492.3	1492.3
175°	1547.3	1538.9	1538.9	1533.4	1527.4	1521.3	1518.3	1518.9
177.5°	1572.7	1566.0	1567.2	1562.4	1558.2	1554.0	1553.4	1550.3
180°	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8	1590.8

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