

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: P188226

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P188226
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-STD-40
Description:
Light Source: (168) NICHIA ELM 4000K LED
2UT217042A8404A
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5588.8 lumens
Efficiency: N/A
Efficacy: 94.3 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

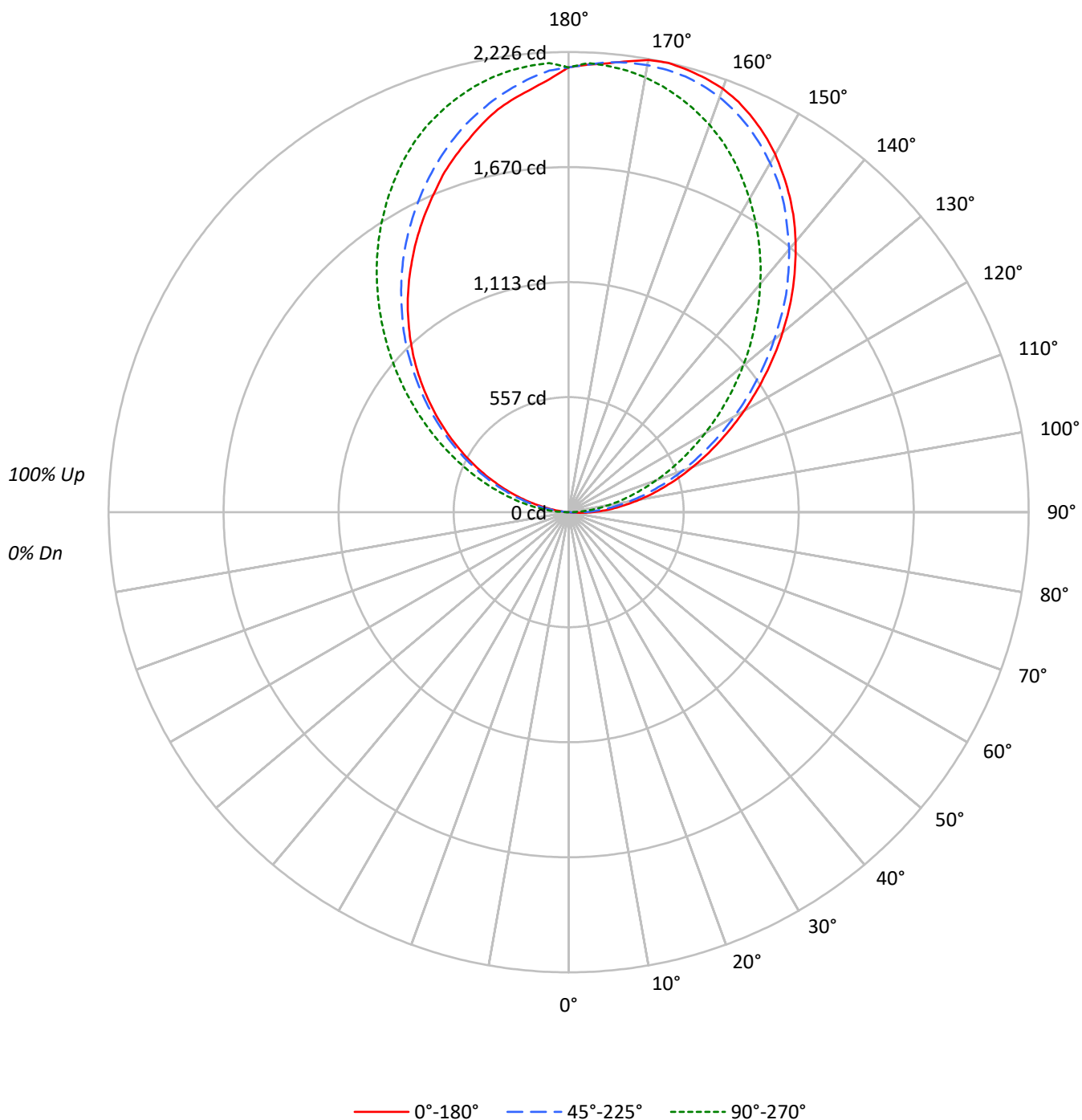
Input Watts (W): 59.28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	251	37	9



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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°	10.3	0.2
90°-100°	120.3	2.2
100°-110°	353.2	6.3
110°-120°	615.2	11.0
120°-130°	847.7	15.2
130°-140°	993.4	17.8
140°-150°	1004.0	18.0
150°-160°	861.6	15.4
160°-170°	579.6	10.4
170°-180°	203.5	3.6
0°-30°	0.0	0.0
0°-40°	0.0	0.0
0°-60°	0.0	0.0
0°-90°	10.3	0.2
90°-120°	1088.6	19.5
90°-150°	3933.7	70.4
90°-180°	5578.0	99.8
0°-180°	5588.8	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°	23	2	1	1	1	15
90°	113	74	1	6	10	62
95°	223	176	92	24	15	207
105°	485	434	316	238	203	516
115°	803	748	601	495	466	797
125°	1163	1111	929	790	758	1041
135°	1536	1488	1274	1102	1060	1183
145°	1864	1818	1603	1407	1349	1165
155°	2105	2057	1884	1692	1620	969
165°	2216	2182	2076	1938	1867	626
175°	2180	2184	2167	2108	2054	209
180°	2152	2152	2152	2152	2152	



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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°	22.9	23.7	21.2	18.8	17.2	15.5	13.9	10.6	7.4	4.9	2.5
87.5°	63.7	65.4	62.1	58.8	55.6	52.3	50.7	44.9	39.2	34.3	29.4
90°	112.8	114.4	109.5	106.2	103.8	98.9	98.1	91.5	84.2	79.3	73.6
92.5°	165.1	167.5	161.8	160.2	156.1	151.2	149.6	144.6	137.3	129.9	120.9
95°	223.1	224.7	217.4	216.6	213.3	208.4	205.9	199.4	194.5	184.7	175.7
97.5°	282.8	286.0	277.9	276.2	273.0	267.2	265.6	258.2	253.3	243.5	234.5
100°	347.3	349.8	341.6	340.8	336.7	331.0	329.3	322.8	317.9	304.0	296.7
102.5°	415.2	417.6	409.4	408.6	404.5	398.0	397.2	389.8	384.9	370.2	363.7
105°	485.4	488.7	479.7	478.9	475.6	469.9	469.1	460.9	456.0	444.6	433.9
107.5°	560.6	563.1	553.3	552.4	546.7	544.3	543.5	534.5	530.4	515.7	508.3
110°	637.4	640.7	631.7	630.9	627.6	621.1	621.1	612.9	608.8	593.3	586.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	719.2	722.4	711.8	711.8	708.5	702.8	702.0	693.8	690.6	679.1	663.6
115°	803.3	805.0	795.2	795.2	792.7	787.0	785.4	778.8	774.7	762.5	747.8
117.5°	890.0	891.6	882.6	877.7	873.6	873.6	872.0	867.1	863.0	849.1	835.2
120°	979.0	981.5	971.7	971.7	968.4	963.5	962.7	955.3	952.1	939.8	925.1
122.5°	1070.6	1073.0	1063.2	1058.3	1055.0	1055.0	1054.2	1047.7	1044.4	1032.2	1016.6
125°	1162.9	1165.4	1156.4	1150.7	1147.4	1148.2	1146.6	1141.7	1137.6	1124.5	1110.6
127.5°	1257.7	1259.3	1249.5	1244.6	1242.2	1242.2	1240.6	1235.6	1232.4	1218.5	1204.6
130°	1350.9	1353.3	1342.7	1337.8	1339.4	1336.2	1333.7	1329.6	1326.4	1312.5	1297.8
132.5°	1444.0	1445.7	1436.7	1431.8	1428.5	1429.3	1426.9	1423.6	1420.3	1405.6	1391.7
135°	1535.6	1537.2	1528.2	1523.3	1524.1	1520.9	1518.4	1515.1	1511.1	1497.2	1488.2
137.5°	1622.2	1625.5	1616.5	1611.6	1607.5	1607.5	1606.7	1603.4	1598.5	1583.8	1573.2
140°	1708.0	1711.3	1702.3	1698.2	1693.3	1691.7	1691.7	1686.8	1681.0	1668.0	1659.8
142.5°	1790.5	1792.2	1784.0	1778.3	1773.4	1773.4	1771.8	1767.7	1761.9	1748.1	1736.6
145°	1864.1	1866.6	1858.4	1853.5	1849.4	1848.6	1848.6	1843.7	1838.8	1824.9	1817.5
147.5°	1933.6	1936.0	1928.7	1925.4	1921.3	1919.7	1919.7	1915.6	1910.7	1896.8	1887.8
150°	1998.9	2000.6	1992.4	1989.1	1984.2	1982.6	1982.6	1976.9	1971.2	1958.9	1949.9
152.5°	2056.1	2055.3	2049.6	2045.5	2040.6	2039.0	2034.9	2029.2	2026.7	2015.3	2006.3
155°	2105.2	2105.2	2100.3	2096.2	2091.3	2090.5	2089.7	2083.9	2078.2	2066.0	2057.0
157.5°	2147.7	2147.7	2142.8	2140.3	2136.2	2136.2	2132.1	2128.1	2122.3	2110.9	2100.3
160°	2180.4	2181.2	2175.5	2172.2	2168.9	2168.9	2166.5	2159.9	2154.2	2145.2	2136.2
162.5°	2200.8	2200.8	2195.9	2193.4	2191.0	2191.0	2188.5	2183.6	2179.5	2172.2	2162.4
165°	2215.5	2216.3	2211.4	2209.8	2207.3	2208.2	2206.5	2202.4	2196.7	2190.2	2182.0
167.5°	2226.1	2225.3	2221.2	2218.8	2216.3	2216.3	2214.7	2209.8	2204.9	2199.2	2191.8
170°	2221.2	2218.8	2216.3	2213.9	2212.2	2212.2	2210.6	2208.2	2204.1	2201.6	2195.9
172.5°	2200.0	2197.5	2198.3	2199.2	2200.0	2201.6	2201.6	2201.6	2199.2	2198.3	2193.4
175°	2179.5	2177.9	2178.7	2180.4	2182.8	2185.3	2186.1	2187.7	2186.1	2187.7	2184.5
177.5°	2166.5	2164.0	2162.4	2161.6	2161.6	2163.2	2164.8	2166.5	2164.8	2168.1	2167.3
180°	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8



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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°	1.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.6
87.5°	21.2	13.9	8.2	3.3	1.6	1.6	0.8	0.8	0.8	0.8	0.8
90°	62.1	54.8	46.6	37.6	34.3	32.7	22.1	12.3	4.1	0.8	0.8
92.5°	112.0	105.4	96.4	85.8	81.7	80.1	71.1	58.8	50.7	43.3	36.8
95°	165.9	157.7	147.9	137.3	133.2	131.6	120.1	109.5	99.7	91.5	85.0
97.5°	223.9	214.9	204.3	192.9	188.0	185.5	172.4	161.8	150.4	141.4	134.0
100°	286.0	277.0	265.6	252.5	246.8	244.4	231.3	218.2	205.9	195.3	187.1
102.5°	352.2	338.3	330.2	316.3	309.7	307.3	292.6	276.2	264.8	253.3	243.5
105°	422.5	410.2	398.0	384.1	377.6	374.3	357.9	343.2	327.7	315.5	304.8
107.5°	496.1	483.8	470.7	456.0	448.7	446.2	427.4	411.1	395.5	380.8	369.4
110°	573.7	561.4	547.5	531.2	523.8	520.6	501.8	484.6	466.6	450.3	438.0



TEST NUMBER: P188226

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

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	654.6	641.5	627.6	610.5	603.1	599.0	578.6	561.4	541.0	523.8	510.0
115°	738.0	725.7	710.2	697.1	685.7	684.0	659.5	640.7	621.9	600.7	587.6
117.5°	825.4	813.1	797.6	782.9	770.6	769.0	743.7	723.2	701.2	679.1	665.2
120°	915.3	902.2	885.9	871.2	858.9	852.4	829.5	807.4	784.5	760.8	741.2
122.5°	1006.8	993.8	977.4	961.9	948.8	946.4	913.7	893.2	865.4	844.2	826.2
125°	1100.0	1086.9	1069.8	1052.6	1039.5	1036.2	1007.6	981.5	955.3	929.2	909.6
127.5°	1194.0	1180.1	1162.1	1144.9	1131.9	1127.8	1093.5	1069.8	1042.0	1015.0	994.6
130°	1286.3	1272.4	1254.4	1236.5	1222.6	1218.5	1183.3	1158.0	1130.2	1101.6	1079.6
132.5°	1379.5	1365.6	1346.8	1327.2	1314.1	1309.2	1274.1	1247.1	1217.7	1189.1	1164.6
135°	1471.0	1457.1	1437.5	1417.1	1403.2	1397.5	1362.3	1333.7	1304.3	1274.1	1249.5
137.5°	1557.6	1542.9	1523.3	1502.1	1488.2	1484.1	1448.1	1419.5	1389.3	1358.2	1333.7
140°	1640.2	1621.4	1605.9	1585.4	1571.5	1567.4	1533.1	1504.5	1474.3	1442.4	1417.9
142.5°	1719.4	1700.7	1685.9	1665.5	1652.4	1648.4	1614.0	1585.4	1556.8	1524.9	1499.6
145°	1796.3	1777.5	1761.9	1741.5	1728.4	1723.5	1691.7	1663.1	1635.3	1603.4	1578.9
147.5°	1867.4	1847.8	1832.2	1812.6	1799.5	1796.3	1764.4	1737.4	1711.3	1678.6	1654.9
150°	1930.3	1912.3	1896.8	1878.8	1865.7	1863.3	1833.9	1807.7	1782.4	1750.5	1728.4
152.5°	1987.5	1969.5	1954.8	1938.5	1926.2	1924.6	1896.8	1869.8	1849.4	1819.2	1797.1
155°	2038.2	2020.2	2005.5	1990.8	1980.1	1979.3	1953.2	1931.9	1910.7	1884.5	1860.8
157.5°	2082.3	2065.1	2051.2	2037.4	2028.4	2027.5	2004.7	1982.6	1967.1	1942.6	1920.5
160°	2119.1	2102.7	2090.5	2079.0	2070.0	2070.9	2050.4	2032.4	2016.9	1994.0	1973.6
162.5°	2147.7	2133.0	2121.5	2111.7	2105.2	2105.2	2086.4	2069.2	2058.6	2037.4	2019.4
165°	2168.1	2155.8	2145.2	2137.1	2132.1	2132.1	2117.4	2103.5	2093.7	2075.8	2059.4
167.5°	2181.2	2169.7	2162.4	2156.7	2153.4	2155.0	2142.8	2131.3	2124.8	2109.3	2095.4
170°	2186.9	2177.9	2172.2	2168.9	2167.3	2168.9	2160.8	2152.6	2148.5	2135.4	2124.0
172.5°	2186.9	2179.5	2176.3	2174.6	2175.5	2177.1	2171.4	2166.5	2164.8	2155.0	2144.4
175°	2180.4	2174.6	2173.0	2173.8	2176.3	2177.9	2176.3	2173.8	2173.8	2167.3	2159.9
177.5°	2165.7	2162.4	2163.2	2166.5	2170.6	2173.8	2173.8	2175.5	2178.7	2174.6	2169.7
180°	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8



TEST NUMBER: P188226

CATALOG NUMBER: MPBL-3-LD4-UNV-2UP-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°	1.6	1.6	1.6	0.8	1.6	0.8	0.8	0.8	0.8	0.8	0.8
87.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.6	1.6
90°	1.6	2.5	3.3	3.3	3.3	4.1	4.9	5.7	6.5	7.4	7.4
92.5°	27.0	18.8	10.6	12.3	6.5	6.5	5.7	6.5	7.4	8.2	9.0
95°	74.4	67.0	56.4	57.2	45.8	41.7	32.7	28.6	24.5	22.1	18.0
97.5°	122.6	115.2	106.2	108.7	98.1	93.2	81.7	74.4	67.8	63.7	55.6
100°	174.9	166.7	157.7	159.4	148.7	146.3	136.5	129.1	124.2	116.0	106.2
102.5°	230.5	221.5	210.8	213.3	201.9	199.4	190.4	183.9	181.4	173.3	163.4
105°	289.3	279.5	268.9	271.3	259.1	255.8	246.0	241.1	237.8	232.1	223.1
107.5°	353.0	341.6	330.2	329.3	319.5	316.3	305.6	300.7	298.3	291.8	286.0
110°	420.1	407.8	394.7	396.4	383.3	379.2	369.4	363.7	361.2	354.7	345.7



TEST NUMBER: P188226

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

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	489.5	476.4	465.8	464.2	450.3	442.9	434.8	429.0	427.4	420.1	414.3
115°	563.1	548.4	536.1	535.3	523.0	511.6	506.7	496.9	495.2	491.2	482.2
117.5°	639.1	623.5	609.7	604.7	595.8	584.3	575.3	568.0	566.3	561.4	553.3
120°	716.7	699.5	686.5	680.8	671.8	657.9	648.9	641.5	639.1	630.9	625.2
122.5°	797.6	778.8	764.9	759.2	748.6	734.7	728.2	715.9	713.4	708.5	699.5
125°	879.3	858.9	844.2	839.3	827.0	813.1	801.7	792.7	790.3	783.7	775.6
127.5°	962.7	940.6	924.3	919.4	907.1	891.6	880.2	870.3	867.1	860.5	851.6
130°	1046.1	1022.4	1005.2	999.5	987.2	971.7	959.4	948.0	944.7	938.2	927.6
132.5°	1131.0	1105.7	1086.9	1081.2	1068.1	1053.4	1039.5	1027.3	1024.0	1015.8	1001.1
135°	1215.2	1188.3	1168.6	1167.0	1150.7	1135.1	1120.4	1107.3	1102.4	1093.5	1079.6
137.5°	1299.4	1270.8	1249.5	1246.3	1231.6	1216.0	1200.5	1185.8	1179.3	1169.5	1155.6
140°	1382.8	1353.3	1330.4	1326.4	1310.8	1294.5	1279.0	1262.6	1254.4	1244.6	1231.6
142.5°	1464.5	1433.4	1408.9	1404.8	1387.7	1372.9	1356.6	1339.4	1331.3	1320.6	1305.9
145°	1544.6	1512.7	1487.4	1482.5	1466.1	1450.6	1434.2	1417.1	1407.3	1396.6	1380.3
147.5°	1621.4	1588.7	1562.5	1556.8	1542.1	1526.6	1510.2	1493.9	1482.5	1471.8	1455.5
150°	1694.1	1663.1	1636.1	1629.6	1614.8	1599.3	1583.8	1566.6	1554.4	1542.9	1527.4
152.5°	1765.2	1734.2	1706.4	1699.8	1685.9	1670.4	1654.9	1637.7	1623.8	1612.4	1595.2
155°	1829.8	1799.5	1773.4	1766.0	1753.0	1737.4	1722.7	1705.6	1692.5	1680.2	1663.1
157.5°	1890.2	1862.5	1835.5	1828.1	1816.7	1801.2	1788.1	1772.6	1758.7	1748.1	1731.7
160°	1945.8	1918.9	1894.3	1887.0	1875.5	1861.6	1849.4	1835.5	1821.6	1811.0	1795.5
162.5°	1994.0	1969.5	1945.8	1938.5	1928.7	1916.4	1905.8	1891.9	1881.3	1869.8	1855.1
165°	2037.4	2014.5	1992.4	1985.9	1977.7	1967.1	1958.1	1945.8	1938.5	1926.2	1912.3
167.5°	2075.8	2056.1	2034.9	2029.2	2021.8	2013.7	2005.5	1995.7	1985.9	1974.4	1964.6
170°	2106.8	2088.8	2070.9	2065.1	2059.4	2052.9	2047.2	2038.2	2032.4	2021.8	2012.0
172.5°	2131.3	2116.6	2101.1	2097.0	2092.1	2087.2	2083.9	2078.2	2071.7	2063.5	2056.1
175°	2150.1	2137.9	2125.6	2121.5	2118.3	2117.4	2115.8	2111.7	2108.5	2101.1	2096.2
177.5°	2162.4	2153.4	2143.6	2141.1	2140.3	2139.5	2140.3	2140.3	2137.9	2133.0	2128.9
180°	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8



TEST NUMBER: P188226

CATALOG NUMBER: MPBL-3-LD4-UNV-2UP-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	0.8	0.8
87.5°	1.6	1.6	2.5	2.5	3.3	4.1	4.1	4.1
90°	8.2	8.2	9.0	9.0	9.0	9.0	9.8	9.8
92.5°	9.0	9.8	9.8	9.8	10.6	10.6	10.6	10.6
95°	17.2	16.3	15.5	14.7	14.7	14.7	14.7	14.7
97.5°	53.1	50.7	49.9	49.0	46.6	45.8	44.1	44.1
100°	99.7	98.1	96.4	93.2	93.2	91.5	89.1	88.3
102.5°	156.9	155.3	152.8	148.7	147.9	146.3	143.0	142.2
105°	219.8	215.7	214.1	209.2	208.4	206.8	204.3	202.7
107.5°	280.3	277.9	276.2	272.1	271.3	269.7	268.1	267.2
110°	346.5	340.0	338.3	335.1	335.1	333.4	331.8	331.0



TEST NUMBER: P188226

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	412.7	406.2	405.3	403.7	400.4	399.6	397.2	396.4
115°	480.5	473.2	473.2	471.5	469.1	468.3	465.8	465.8
117.5°	551.6	542.6	546.7	541.8	539.4	539.4	536.9	536.9
120°	623.5	615.4	619.5	613.7	612.1	611.3	608.8	608.8
122.5°	697.1	688.9	693.0	687.3	684.8	684.8	682.4	683.2
125°	773.1	763.3	768.2	761.7	760.0	760.0	756.8	758.4
127.5°	848.3	839.3	839.3	836.8	835.2	834.4	831.9	832.8
130°	925.1	915.3	922.7	912.0	910.4	909.6	907.9	908.8
132.5°	1001.9	991.3	994.6	988.0	986.4	986.4	983.1	984.8
135°	1077.9	1066.5	1073.8	1062.4	1061.6	1060.8	1057.5	1059.9
137.5°	1153.9	1141.7	1147.4	1137.6	1135.1	1135.1	1131.0	1133.5
140°	1229.1	1216.0	1221.8	1212.0	1209.5	1208.7	1205.4	1206.2
142.5°	1303.5	1289.6	1295.3	1284.7	1282.2	1281.4	1277.3	1279.0
145°	1377.8	1363.1	1368.0	1356.6	1353.3	1351.7	1347.6	1349.2
147.5°	1451.4	1435.9	1439.1	1429.3	1423.6	1422.0	1417.1	1417.1
150°	1523.3	1506.2	1508.6	1498.8	1493.9	1490.6	1490.6	1486.5
152.5°	1590.3	1574.0	1576.4	1566.6	1561.7	1558.5	1555.2	1553.6
155°	1658.2	1642.6	1644.3	1634.5	1628.7	1624.7	1620.6	1619.7
157.5°	1726.8	1710.5	1711.3	1701.5	1694.9	1690.8	1687.6	1684.3
160°	1790.5	1775.0	1775.0	1766.8	1759.5	1754.6	1750.5	1753.0
162.5°	1849.4	1834.7	1837.1	1824.9	1817.5	1813.4	1809.3	1811.0
165°	1906.6	1891.9	1894.3	1882.9	1874.7	1870.6	1865.7	1867.4
167.5°	1959.7	1946.6	1946.6	1938.5	1932.7	1925.4	1923.8	1925.4
170°	2007.9	1995.7	1996.5	1989.1	1983.4	1980.1	1976.9	1977.7
172.5°	2052.1	2040.6	2040.6	2033.3	2026.7	2020.2	2018.6	2018.6
175°	2092.9	2081.5	2081.5	2074.1	2066.0	2057.8	2053.7	2054.5
177.5°	2127.2	2118.3	2119.9	2113.4	2107.6	2101.9	2101.1	2097.0
180°	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8	2151.8

(END OF REPORT)