

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: P188253

Luminaire Tested: **MPBL-3-LD4-UNV-1STD-1STD-40**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P188253
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27363)
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-1STD-1STD-40
Description:
Light Source: (168) NICHIA ELM 4000K LED
2UT217042A8404A
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5884.4 lumens
Efficiency: N/A
Efficacy: 103.6 lumens/watt
Spacing Criteria (0/90/45): 1.32 / 1.18 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 3' x L: 0.42' x H: 0.29')
CIE Type: General Diffuse

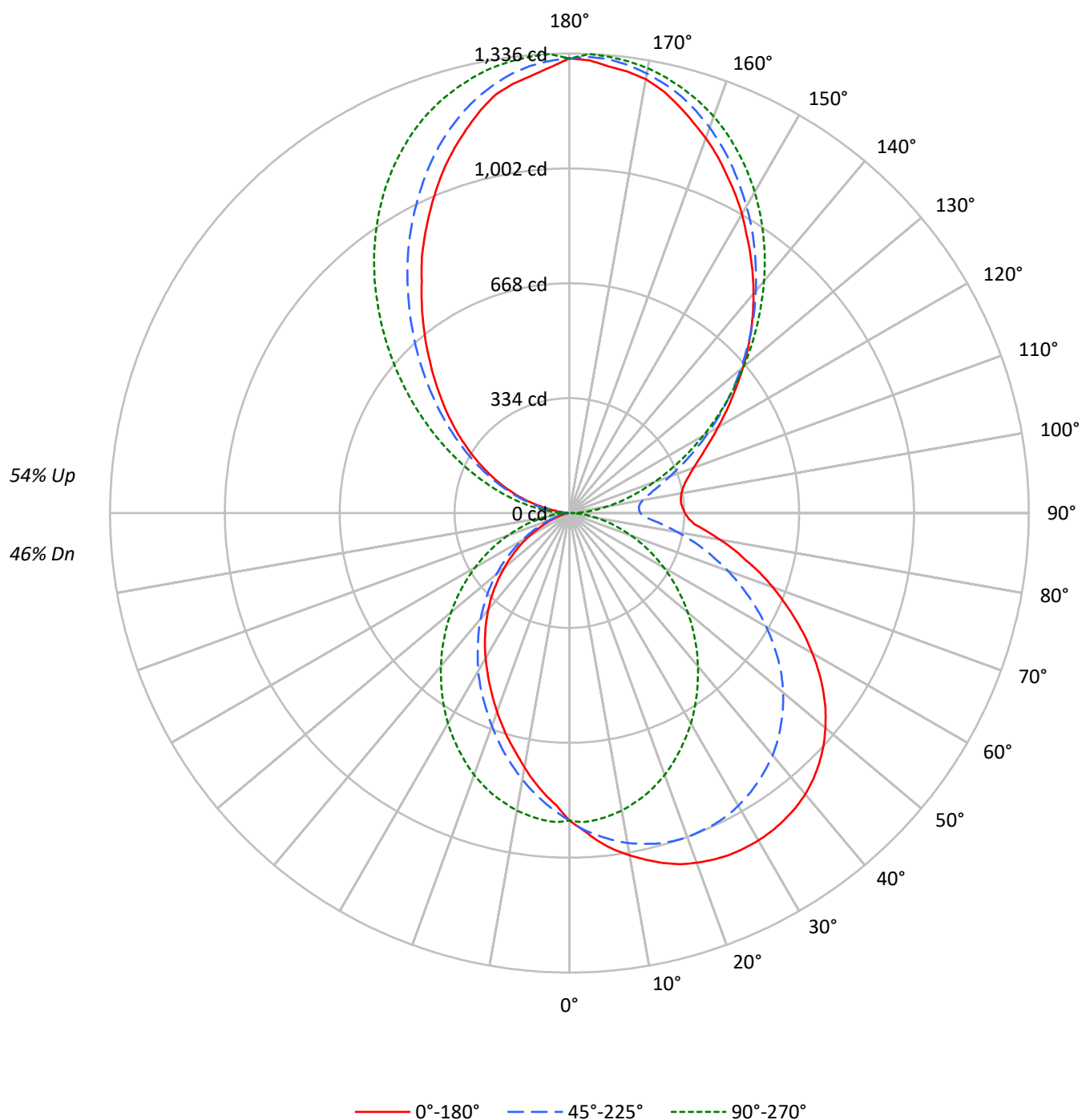
Input Watts (W): 56.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RCR																	
0	106	106	106	106	97	97	97	97	81	81	81		66	66	66		52
1	96	91	87	84	88	84	80	77	70	67	65		57	55	54		45
2	87	79	73	68	80	73	67	63	61	57	53		50	47	44		39
3	79	70	62	56	72	64	57	52	53	48	44		44	40	37		35
4	72	61	53	47	66	57	49	44	47	42	38		39	35	31		31
5	66	55	46	40	61	50	43	38	42	37	32		35	30	27		28
6	61	49	41	35	56	45	38	32	38	32	28		31	27	24		25
7	56	44	36	30	52	41	33	28	34	29	25		28	24	21		23
8	52	40	32	27	48	37	30	25	31	26	22		26	22	18		21
9	49	36	29	24	45	34	27	22	29	23	19		24	20	17		19
10	45	33	26	21	42	31	24	20	26	21	17		22	18	15		18

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	7698	7698	7698
5°	7797	7676	6686
10°	7865	7551	5846
15°	7906	7382	5121
20°	7901	7171	4491
25°	7862	6917	3934
30°	7784	6654	3453
35°	7684	6350	3012
40°	7557	6041	2598
45°	7363	5721	2199
50°	7098	5390	1805
55°	6767	5042	1423
60°	6352	4671	1054
65°	5892	4262	709
70°	5416	3767	425
75°	4899	3227	212
80°	4439	2519	82
85°	3992	1769	36



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	84.7	1.4
10°-20°	242.2	4.1
20°-30°	365.9	6.2
30°-40°	441.6	7.5
40°-50°	461.4	7.8
50°-60°	421.5	7.2
60°-70°	332.6	5.7
70°-80°	224.0	3.8
80°-90°	132.5	2.3
90°-100°	124.1	2.1
100°-110°	210.8	3.6
110°-120°	331.2	5.6
120°-130°	450.2	7.7
130°-140°	535.8	9.1
140°-150°	558.4	9.5
150°-160°	497.2	8.4
160°-170°	346.2	5.9
170°-180°	124.3	2.1
0°-30°	692.7	11.8
0°-40°	1134.3	19.3
0°-60°	2017.1	34.3
0°-90°	2706.2	46.0
90°-120°	666.0	11.3
90°-150°	2210.5	37.6
90°-180°	3178.0	54.0
0°-180°	5884.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	894	894	894	894	894	
5°	957	941	896	844	821	93
15°	1053	995	850	725	682	299
25°	1098	998	761	594	549	507
35°	1089	956	645	464	427	683
45°	1028	870	516	339	307	793
55°	901	740	382	218	190	805
65°	723	576	253	108	87	716
75°	532	404	132	31	23	565
85°	364	243	38	5	3	316
90°	336	206	6	7	7	185
95°	326	203	54	13	7	268
105°	350	253	182	126	112	373
115°	435	382	351	261	245	433
125°	575	556	553	423	391	516
135°	746	747	772	612	557	576
145°	918	938	983	821	749	574
155°	1084	1116	1159	1029	962	499
165°	1226	1255	1277	1204	1156	345
175°	1304	1324	1332	1305	1276	124
180°	1322	1322	1322	1322	1322	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	894.0	894.0	894.0	894.0	894.0	894.0	894.0	894.0	894.0	894.0	894.0
2.5°	922.7	919.4	922.7	921.9	924.3	926.0	926.0	926.8	926.0	923.5	921.0
5°	957.2	954.7	955.5	953.1	953.1	953.9	953.1	952.2	949.8	944.9	940.7
7.5°	986.7	985.1	985.1	981.8	980.2	981.0	979.3	976.9	971.1	965.4	958.8
10°	1010.5	1008.9	1008.9	1005.6	1003.1	1003.1	1001.5	997.4	990.8	982.6	974.4
12.5°	1032.7	1031.0	1030.2	1026.1	1022.8	1022.0	1020.4	1015.5	1006.4	996.6	985.1
15°	1053.2	1052.4	1050.7	1046.6	1042.5	1040.1	1038.4	1031.0	1020.4	1008.1	994.9
17.5°	1070.5	1068.8	1067.2	1062.2	1056.5	1054.0	1051.6	1043.4	1030.2	1016.3	1000.7
20°	1081.9	1081.1	1077.8	1072.9	1067.2	1063.9	1060.6	1050.7	1037.6	1021.2	1003.1
22.5°	1091.0	1089.3	1086.0	1079.5	1072.9	1068.8	1064.7	1054.0	1039.3	1021.2	1000.7
25°	1097.5	1095.1	1091.0	1085.2	1077.0	1072.1	1067.2	1054.9	1039.3	1019.6	998.2
27.5°	1099.2	1097.5	1093.4	1086.9	1077.8	1072.9	1068.0	1054.9	1037.6	1016.3	992.5
30°	1099.2	1097.5	1092.6	1085.2	1075.4	1070.5	1063.9	1049.9	1031.0	1008.9	982.6
32.5°	1095.9	1094.3	1089.3	1081.1	1070.5	1063.9	1057.3	1040.9	1021.2	997.4	970.3
35°	1089.3	1087.7	1081.9	1073.7	1061.4	1054.0	1047.5	1030.2	1008.9	983.4	955.5
37.5°	1080.3	1077.8	1072.1	1063.1	1049.9	1043.4	1035.2	1017.1	994.9	968.7	938.3
40°	1067.2	1064.7	1058.1	1048.3	1036.0	1027.8	1020.4	1000.7	976.9	949.8	919.4
42.5°	1049.9	1047.5	1040.9	1031.0	1017.9	1009.7	1000.7	980.2	958.0	928.4	896.4
45°	1027.8	1025.3	1019.6	1008.9	994.9	985.9	976.9	956.3	930.9	902.2	870.2
47.5°	1002.3	999.9	994.1	982.6	969.5	961.3	950.6	930.1	905.5	875.1	842.2
50°	971.9	969.5	963.7	953.1	939.9	930.1	920.2	898.9	874.3	843.9	811.0
52.5°	939.1	935.8	930.1	919.4	907.1	898.1	887.4	865.2	840.6	811.0	778.2
55°	901.3	898.9	893.1	882.5	870.2	861.1	850.5	827.5	802.8	774.1	740.4
57.5°	860.3	857.0	852.1	841.4	829.9	820.9	810.2	789.7	763.4	734.7	701.9
60°	816.0	813.5	807.8	797.9	784.0	778.2	767.5	746.2	721.6	692.8	660.8
62.5°	770.8	768.4	762.6	752.8	739.6	733.9	724.0	704.3	678.1	651.0	619.8
65°	723.2	720.7	715.0	705.2	691.2	687.9	678.1	658.4	635.4	606.6	576.3
67.5°	675.6	673.1	667.4	655.9	646.9	641.1	631.3	613.2	590.2	562.3	532.8
70°	628.8	624.7	619.0	608.3	599.3	590.2	584.5	567.2	545.1	518.0	490.1
72.5°	582.0	577.9	572.2	563.1	553.3	545.1	538.5	521.3	499.1	473.7	445.7
75°	531.9	531.1	525.4	515.5	506.5	500.7	492.5	475.3	454.8	429.3	403.9
77.5°	489.3	485.2	479.4	470.4	461.3	454.0	447.4	431.0	411.3	388.3	361.2
80°	444.9	440.8	435.9	426.9	417.0	410.4	403.9	387.5	368.6	346.4	319.3
82.5°	402.2	398.1	394.9	384.2	374.3	368.6	361.2	345.6	325.9	306.2	280.7
85°	363.7	359.6	356.3	345.6	335.7	329.2	321.8	305.4	286.5	266.8	243.0
87.5°	346.4	344.0	339.0	330.0	317.7	310.3	302.9	284.9	263.5	240.5	215.1
90°	335.7	333.3	328.4	318.5	307.0	299.6	291.4	273.4	252.8	229.9	206.0
92.5°	330.0	327.5	322.6	313.6	301.3	294.7	286.5	268.4	247.9	225.7	202.8
95°	325.9	324.3	318.5	310.3	298.0	291.4	283.2	266.0	246.3	224.9	202.8
97.5°	326.7	325.1	319.3	311.1	299.6	292.2	284.9	268.4	248.7	229.0	206.9
100°	330.8	329.2	324.3	316.0	304.6	298.0	290.6	274.2	256.9	237.2	217.5
102.5°	338.2	336.6	333.3	324.3	313.6	307.0	300.4	284.9	268.4	251.2	233.1
105°	349.7	348.1	344.0	336.6	326.7	320.2	314.4	299.6	284.9	269.3	252.8
107.5°	365.3	363.7	359.6	353.8	344.0	338.2	332.5	319.3	305.4	293.1	279.1
110°	384.2	383.4	379.3	374.3	365.3	360.4	355.4	344.0	333.3	321.8	310.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	407.2	406.3	403.9	398.1	390.7	385.8	382.5	371.9	363.7	353.8	344.8
115°	435.1	434.3	431.0	428.5	420.3	416.2	412.9	404.7	397.3	389.9	382.5
117.5°	465.4	464.6	462.2	459.7	454.0	449.9	447.4	440.0	435.1	429.3	422.8
120°	499.1	498.3	496.6	495.0	489.3	486.0	484.3	478.6	474.5	469.6	465.4
122.5°	536.0	535.2	533.6	531.1	529.5	524.6	522.9	519.6	517.2	513.9	509.8
125°	574.6	574.6	573.0	571.3	569.7	567.2	567.2	562.3	561.5	559.0	555.7
127.5°	615.7	616.5	614.9	613.2	612.4	609.1	610.7	606.6	604.2	604.2	602.5
130°	658.4	659.2	657.5	656.7	656.7	655.1	654.3	651.8	650.2	650.2	650.2
132.5°	702.7	702.7	701.9	700.2	699.4	696.9	698.6	697.8	696.9	696.9	697.8
135°	746.2	747.0	746.2	745.4	744.6	742.1	744.6	743.7	743.7	745.4	747.0
137.5°	789.7	789.7	788.9	788.1	788.9	786.4	788.9	788.9	789.7	792.2	795.4
140°	833.2	833.2	832.4	832.4	832.4	831.6	833.2	834.0	835.7	838.1	843.1
142.5°	875.9	875.9	875.1	875.1	876.7	875.1	877.5	879.2	881.6	884.9	890.7
145°	917.8	917.8	916.9	917.8	919.4	921.0	922.7	925.2	927.6	932.5	938.3
147.5°	958.8	959.6	958.8	959.6	963.7	964.6	967.0	970.3	974.4	980.2	985.9
150°	1004.0	1001.5	1000.7	1001.5	1005.6	1006.4	1009.7	1013.0	1017.9	1023.7	1030.2
152.5°	1045.0	1042.5	1041.7	1042.5	1045.8	1047.5	1049.9	1054.0	1059.0	1065.5	1072.9
155°	1083.6	1081.1	1081.1	1081.9	1086.9	1090.2	1091.8	1095.9	1100.8	1108.2	1116.4
157.5°	1123.8	1120.5	1120.5	1122.2	1127.1	1130.4	1132.0	1136.1	1141.9	1148.4	1155.8
160°	1159.9	1158.3	1157.5	1159.1	1164.9	1168.1	1169.8	1173.1	1178.8	1185.4	1192.8
162.5°	1192.8	1189.5	1190.3	1191.9	1197.7	1201.0	1202.6	1207.5	1212.5	1218.2	1225.6
165°	1226.4	1224.0	1222.3	1224.8	1229.7	1233.0	1234.6	1237.9	1242.8	1248.6	1255.2
167.5°	1257.6	1253.5	1253.5	1254.3	1258.4	1260.1	1262.5	1265.0	1269.1	1273.2	1278.1
170°	1280.6	1279.0	1277.3	1278.1	1282.2	1283.9	1285.5	1288.0	1291.3	1293.7	1297.8
172.5°	1294.6	1292.9	1292.1	1292.9	1297.8	1300.3	1301.9	1305.2	1307.7	1310.2	1313.4
175°	1303.6	1302.8	1301.9	1304.4	1310.2	1312.6	1314.3	1316.7	1319.2	1320.8	1324.1
177.5°	1317.5	1315.1	1312.6	1312.6	1316.7	1318.4	1319.2	1320.8	1323.3	1324.9	1327.4
180°	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	894.0	894.0	894.0	894.0	894.0	894.0	894.0	894.0	894.0	894.0	894.0
2.5°	918.6	914.5	909.6	905.5	904.6	903.8	901.3	902.2	901.3	899.7	896.4
5°	936.6	930.1	922.7	916.9	913.7	911.2	906.3	903.8	900.5	895.6	889.0
7.5°	952.2	943.2	933.4	924.3	920.2	916.1	908.7	903.0	897.2	888.2	879.2
10°	964.6	953.9	940.7	929.3	923.5	916.9	907.1	898.9	889.0	878.4	866.0
12.5°	974.4	960.5	944.9	930.1	922.7	916.1	902.2	890.7	878.4	864.4	850.5
15°	981.0	965.4	947.3	929.3	920.2	912.0	895.6	880.8	866.0	849.6	833.2
17.5°	984.3	965.4	944.9	924.3	914.5	903.8	884.9	868.5	850.5	830.7	811.9
20°	984.3	963.7	940.7	917.8	905.5	894.0	872.6	852.1	831.6	810.2	788.9
22.5°	981.0	958.0	932.5	906.3	894.0	880.8	856.2	834.0	811.0	786.4	763.4
25°	975.2	949.8	922.7	894.8	880.0	866.0	839.0	813.5	788.1	761.0	736.3
27.5°	967.0	939.9	909.6	879.2	863.6	848.0	819.3	791.3	762.6	733.9	708.4
30°	955.5	926.8	894.0	861.9	844.7	828.3	797.1	766.7	736.3	706.8	678.1
32.5°	939.9	909.6	875.9	841.4	823.4	806.1	772.5	740.4	708.4	676.4	648.5
35°	922.7	890.7	856.2	819.3	800.4	781.5	747.0	712.5	678.9	645.2	615.7
37.5°	904.6	871.8	834.9	796.3	776.6	756.9	719.9	683.8	648.5	613.2	583.7
40°	884.1	848.8	810.2	770.8	750.3	729.8	691.2	653.4	616.5	581.2	550.8
42.5°	860.3	823.4	784.0	742.9	721.6	701.0	660.8	622.2	584.5	549.2	518.8
45°	832.4	794.6	755.2	713.4	691.2	669.9	629.6	590.2	551.6	515.5	485.2
47.5°	804.5	765.1	724.9	682.2	660.0	637.8	597.6	555.7	518.8	482.7	453.1
50°	772.5	734.7	692.0	648.5	626.3	605.0	563.1	523.7	483.5	449.0	418.7
52.5°	739.6	701.0	658.4	614.0	592.7	571.3	529.5	487.6	450.7	416.2	386.6
55°	703.5	664.9	620.6	578.7	556.6	536.0	493.4	454.0	417.0	382.5	353.8
57.5°	664.1	628.0	586.1	541.0	519.6	500.7	458.9	419.5	382.5	349.7	321.0
60°	623.9	586.9	545.9	502.4	481.9	461.3	421.1	384.2	348.1	316.9	289.0
62.5°	583.7	549.2	508.1	464.6	444.1	425.2	386.6	348.9	315.2	284.9	257.8
65°	541.0	507.3	467.9	426.9	405.5	388.3	350.5	314.4	282.4	252.8	226.6
67.5°	498.3	466.3	428.5	387.5	368.6	351.3	314.4	280.7	249.6	221.6	196.2
70°	455.6	424.4	388.3	349.7	330.8	314.4	279.1	246.3	217.5	189.6	166.6
72.5°	413.7	383.4	348.1	311.1	294.7	278.3	244.6	213.4	185.5	160.1	137.9
75°	371.9	342.3	309.5	274.2	257.8	242.2	210.1	180.6	155.1	132.2	110.8
77.5°	330.8	302.9	270.9	237.2	223.3	207.7	177.3	150.2	126.4	104.3	85.4
80°	291.4	264.3	234.8	202.8	188.8	174.9	146.1	120.7	99.3	78.8	62.4
82.5°	252.8	227.4	198.7	169.1	156.8	143.7	117.4	94.4	74.7	57.5	42.7
85°	215.9	192.1	165.0	137.9	125.6	114.1	90.3	69.8	52.5	37.8	23.8
87.5°	188.8	162.5	136.3	109.2	98.5	87.8	66.5	49.3	32.8	18.9	7.4
90°	179.8	153.5	127.2	101.8	89.5	77.2	55.0	36.1	19.7	5.7	4.1
92.5°	178.1	153.5	128.9	105.1	93.6	83.7	64.0	46.0	32.0	27.1	21.3
95°	179.0	156.0	133.8	112.5	102.6	93.6	78.0	64.9	56.6	54.2	47.6
97.5°	185.5	165.0	145.3	126.4	118.2	110.8	101.0	91.1	85.4	82.1	75.5
100°	197.8	179.0	162.5	146.9	141.2	136.3	129.7	122.3	117.4	113.3	105.9
102.5°	215.1	197.8	186.3	174.0	169.9	166.6	162.5	155.1	151.0	146.1	137.9
105°	238.1	225.7	215.1	206.0	203.6	200.3	197.8	191.3	187.2	182.2	173.2
107.5°	266.8	256.1	248.7	241.3	240.5	238.1	237.2	230.7	225.7	220.8	211.0
110°	300.4	291.4	285.7	280.7	279.9	278.3	278.3	272.5	267.6	261.9	252.0



TEST NUMBER: P188253

CATALOG NUMBER: MPBL-3-LD4-UNV-1STD-1STD-40

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	336.6	330.0	325.9	321.8	321.8	321.0	321.0	316.0	310.3	305.4	293.9
115°	376.0	371.0	370.2	365.3	365.3	364.5	366.1	361.2	357.1	351.3	339.9
117.5°	417.8	414.6	414.6	410.4	411.3	411.3	413.7	409.6	404.7	399.0	387.5
120°	462.2	459.7	458.9	457.2	458.1	458.9	463.0	458.9	454.0	449.0	435.9
122.5°	507.3	506.5	506.5	508.1	507.3	508.1	513.9	510.6	504.9	499.9	486.8
125°	554.1	554.1	555.7	557.4	557.4	561.5	564.0	563.1	557.4	553.3	538.5
127.5°	600.9	603.4	602.5	607.5	609.1	613.2	616.5	614.0	609.9	606.6	594.3
130°	651.0	652.6	653.4	659.2	660.8	665.7	670.7	669.0	664.1	661.6	648.5
132.5°	700.2	703.5	705.2	710.1	714.2	718.3	724.9	724.0	718.3	716.6	702.7
135°	751.1	755.2	757.7	764.3	767.5	773.3	779.9	779.0	773.3	771.6	758.5
137.5°	800.4	805.3	808.6	816.0	820.1	825.8	834.0	834.0	828.3	825.8	813.5
140°	848.8	855.4	858.7	866.9	871.8	877.5	886.6	888.2	882.5	880.8	868.5
142.5°	897.2	904.6	908.7	916.9	922.7	928.4	937.5	939.9	935.0	933.4	921.9
145°	947.3	953.9	958.0	967.0	974.4	978.5	988.4	990.8	985.9	983.4	973.6
147.5°	995.7	1001.5	1005.6	1014.6	1022.0	1026.1	1035.2	1039.3	1034.3	1031.9	1023.7
150°	1040.1	1046.6	1050.7	1059.8	1067.2	1072.1	1081.1	1084.4	1080.3	1077.8	1070.5
152.5°	1081.1	1090.2	1093.4	1104.1	1110.7	1114.8	1123.8	1127.1	1123.8	1120.5	1114.8
155°	1123.0	1131.2	1133.7	1144.3	1150.1	1154.2	1162.4	1165.7	1163.2	1159.1	1155.0
157.5°	1162.4	1166.5	1171.4	1181.3	1187.0	1190.3	1198.5	1201.8	1199.3	1195.2	1191.9
160°	1197.7	1203.4	1205.1	1214.9	1219.0	1223.1	1229.7	1233.8	1231.3	1227.2	1224.8
162.5°	1230.5	1233.0	1235.5	1244.5	1247.8	1251.0	1256.8	1260.1	1257.6	1254.3	1252.7
165°	1260.9	1260.9	1262.5	1269.9	1272.4	1274.9	1279.8	1283.1	1280.6	1277.3	1276.5
167.5°	1283.1	1282.2	1283.9	1290.5	1292.9	1294.6	1299.5	1301.9	1300.3	1297.0	1297.0
170°	1301.9	1299.5	1301.1	1306.9	1309.3	1310.2	1314.3	1317.5	1315.9	1313.4	1313.4
172.5°	1315.9	1312.6	1313.4	1318.4	1320.0	1321.6	1324.9	1327.4	1326.6	1324.1	1325.7
175°	1324.9	1321.6	1321.6	1326.6	1327.4	1328.2	1331.5	1334.0	1334.0	1331.5	1333.1
177.5°	1328.2	1324.9	1324.1	1329.9	1330.7	1331.5	1334.0	1337.2	1337.2	1335.6	1337.2
180°	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6



TEST NUMBER: P188253

CATALOG NUMBER: MPBL-3-LD4-UNV-1STD-1STD-40

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	894.0	894.0	894.0	894.0	894.0	894.0	894.0	894.0	894.0	894.0	894.0
2.5°	892.3	885.7	880.8	879.2	876.7	873.4	871.8	872.6	870.2	869.3	867.7
5°	882.5	873.4	866.0	862.8	859.5	854.6	850.5	848.0	843.9	840.6	837.3
7.5°	870.2	858.7	848.0	844.7	839.8	832.4	826.6	822.5	816.0	811.0	806.9
10°	853.7	839.8	828.3	823.4	817.6	808.6	800.4	795.4	787.2	781.5	775.7
12.5°	834.9	819.3	804.5	798.7	793.0	782.3	773.3	765.9	756.0	749.5	742.9
15°	815.2	797.9	780.7	774.9	766.7	753.6	744.6	735.5	724.9	717.5	710.9
17.5°	793.0	772.5	754.4	748.7	738.8	724.9	712.5	703.5	692.0	683.8	678.1
20°	767.5	747.0	727.3	719.1	709.3	694.5	681.3	671.5	659.2	651.0	642.8
22.5°	740.4	718.3	696.9	688.7	678.1	662.5	649.3	637.8	625.5	616.5	609.1
25°	712.5	688.7	666.6	658.4	646.9	631.3	616.5	605.0	594.3	584.5	576.3
27.5°	683.0	658.4	635.4	626.3	616.5	599.3	584.5	572.2	562.3	552.5	545.1
30°	651.8	627.2	603.4	594.3	582.8	566.4	552.5	540.2	530.3	519.6	513.1
32.5°	619.8	594.3	570.5	561.5	550.8	532.8	518.0	506.5	496.6	487.6	479.4
35°	586.1	560.7	537.7	527.8	518.0	499.9	485.2	473.7	463.8	455.6	448.2
37.5°	554.1	528.7	504.9	495.8	486.0	467.9	454.0	442.5	433.4	424.4	419.5
40°	522.1	495.8	472.8	463.8	454.0	435.9	421.1	410.4	401.4	393.2	388.3
42.5°	490.1	464.6	440.8	431.8	421.9	403.9	389.9	379.3	370.2	362.8	357.1
45°	455.6	431.0	408.0	399.0	389.1	371.9	357.9	348.1	339.0	331.6	326.7
47.5°	422.8	399.0	376.8	367.8	357.9	340.7	327.5	316.9	308.7	300.4	295.5
50°	389.9	366.1	344.8	335.7	326.7	309.5	297.2	284.9	277.5	270.1	265.1
52.5°	357.9	334.9	313.6	304.6	294.7	278.3	266.8	255.3	247.9	241.3	234.8
55°	325.9	302.9	283.2	273.4	264.3	247.9	236.4	224.9	217.5	209.3	205.2
57.5°	293.9	270.9	252.0	243.0	233.1	217.5	206.0	195.4	188.0	181.4	176.5
60°	262.7	240.5	220.8	212.6	202.8	188.0	177.3	166.6	160.1	152.7	149.4
62.5°	231.5	210.1	191.3	183.1	174.0	160.9	149.4	139.6	133.0	127.2	123.1
65°	202.8	180.6	163.4	155.1	146.9	132.2	123.1	114.1	108.4	103.4	99.3
67.5°	173.2	151.9	135.4	128.1	119.9	108.4	98.5	90.3	85.4	80.4	77.2
70°	144.5	124.8	110.0	101.8	95.2	85.4	75.5	69.0	64.9	60.7	57.5
72.5°	117.4	100.1	85.4	78.0	73.1	64.0	56.6	50.1	46.8	43.5	41.0
75°	91.9	76.3	63.2	57.5	52.5	46.0	39.4	34.5	31.2	29.6	27.1
77.5°	69.0	55.0	44.3	38.6	35.3	30.4	25.4	22.2	20.5	18.9	18.1
80°	48.4	36.1	27.9	24.6	21.3	18.1	15.6	14.0	13.1	11.5	11.5
82.5°	29.6	20.5	14.8	13.1	11.5	10.7	9.0	8.2	8.2	7.4	6.6
85°	14.0	9.0	7.4	7.4	6.6	6.6	5.7	5.7	4.9	4.9	4.9
87.5°	4.9	4.9	4.9	4.1	4.9	4.1	4.1	4.9	4.9	4.9	4.9
90°	4.1	4.9	4.9	4.9	5.7	5.7	5.7	6.6	6.6	6.6	6.6
92.5°	16.4	12.3	7.4	6.6	5.7	5.7	5.7	5.7	5.7	5.7	6.6
95°	42.7	38.6	32.8	30.4	27.1	22.2	18.1	14.8	13.1	9.9	8.2
97.5°	70.6	65.7	59.9	58.3	55.0	50.1	44.3	40.2	37.8	33.7	31.2
100°	99.3	94.4	87.8	86.2	82.9	78.8	73.9	69.8	67.3	61.6	59.1
102.5°	131.3	126.4	118.2	115.7	112.5	108.4	104.3	99.3	96.9	92.8	89.5
105°	166.6	159.3	150.2	147.8	143.7	139.6	133.8	128.9	126.4	122.3	121.5
107.5°	203.6	195.4	184.7	181.4	177.3	171.6	165.0	160.1	157.6	153.5	151.9
110°	243.0	234.0	222.5	218.4	213.4	206.0	199.5	193.7	190.4	185.5	183.9



TEST NUMBER: P188253

CATALOG NUMBER: MPBL-3-LD4-UNV-1STD-1STD-40

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	284.9	274.2	261.9	256.9	251.2	243.8	235.6	230.7	224.9	220.0	217.5
115°	330.0	317.7	302.9	298.8	291.4	282.4	273.4	267.6	261.0	255.3	252.8
117.5°	376.0	362.8	347.2	342.3	334.9	324.3	313.6	307.0	299.6	293.1	289.8
120°	425.2	410.4	393.2	386.6	379.3	366.9	355.4	347.2	339.0	330.8	327.5
122.5°	475.3	457.2	440.8	433.4	425.2	412.9	399.0	391.6	380.1	371.0	366.9
125°	527.0	511.4	490.1	482.7	472.8	459.7	444.9	435.9	422.8	412.9	408.8
127.5°	579.6	563.1	540.2	532.8	524.6	508.1	491.7	481.0	467.1	457.2	450.7
130°	633.7	614.0	595.2	584.5	575.4	558.2	541.0	528.7	513.1	502.4	495.0
132.5°	687.9	668.2	647.7	637.8	627.2	609.9	591.9	577.1	561.5	549.2	541.0
135°	742.9	723.2	702.7	692.0	681.3	663.3	644.4	628.8	612.4	598.4	589.4
137.5°	794.6	777.4	756.9	746.2	735.5	716.6	696.9	680.5	662.5	647.7	638.7
140°	849.6	831.6	811.9	801.2	788.9	770.8	750.3	733.1	714.2	698.6	688.7
142.5°	903.0	884.9	865.2	853.7	843.1	824.2	802.8	786.4	766.7	750.3	739.6
145°	954.7	937.5	918.6	907.9	897.2	878.4	858.7	841.4	820.9	805.3	793.8
147.5°	1007.2	987.5	970.3	959.6	949.8	928.4	912.8	896.4	875.9	860.3	848.8
150°	1053.2	1036.0	1020.4	1008.9	1000.7	982.6	964.6	949.0	928.4	912.8	902.2
152.5°	1098.4	1081.9	1067.2	1057.3	1049.1	1031.9	1015.5	999.9	979.3	965.4	953.9
155°	1139.4	1123.8	1110.7	1103.3	1094.3	1078.7	1063.9	1049.1	1029.4	1016.3	1005.6
157.5°	1177.2	1162.4	1150.9	1144.3	1136.1	1122.2	1109.0	1096.7	1078.7	1067.2	1057.3
160°	1212.5	1197.7	1187.8	1182.9	1175.5	1164.9	1151.7	1141.0	1124.6	1114.0	1104.9
162.5°	1241.2	1228.1	1220.7	1214.1	1210.0	1202.6	1190.3	1180.5	1166.5	1156.6	1148.4
165°	1266.6	1254.3	1248.6	1246.1	1240.4	1233.8	1224.0	1216.6	1204.3	1196.9	1189.5
167.5°	1288.0	1276.5	1270.7	1268.3	1265.0	1260.9	1252.7	1246.9	1237.1	1230.5	1224.8
170°	1306.0	1295.4	1291.3	1288.8	1287.2	1283.9	1277.3	1273.2	1265.0	1259.3	1255.2
172.5°	1318.4	1308.5	1306.0	1304.4	1302.8	1300.3	1296.2	1293.7	1288.0	1283.9	1280.6
175°	1327.4	1318.4	1316.7	1315.9	1315.1	1313.4	1311.0	1309.3	1305.2	1302.8	1300.3
177.5°	1332.3	1324.1	1323.3	1323.3	1322.5	1320.8	1319.2	1318.4	1315.9	1314.3	1311.8
180°	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6



TEST NUMBER: P188253

CATALOG NUMBER: MPBL-3-LD4-UNV-1STD-1STD-40

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	894.0	894.0	894.0	894.0	894.0	894.0	894.0	894.0
2.5°	866.9	862.8	860.3	859.5	854.6	852.9	852.1	851.3
5°	833.2	829.9	827.5	826.6	822.5	820.9	820.9	820.9
7.5°	803.7	797.9	796.3	793.8	788.9	787.2	787.2	787.2
10°	770.0	764.3	761.8	759.3	754.4	751.9	751.9	751.1
12.5°	735.5	729.8	727.3	724.9	719.9	718.3	715.8	715.0
15°	703.5	696.9	694.5	692.0	687.1	683.0	683.0	682.2
17.5°	669.9	663.3	660.8	657.5	653.4	651.0	649.3	648.5
20°	636.2	629.6	627.2	624.7	619.8	617.3	614.9	614.9
22.5°	602.5	595.2	592.7	590.2	586.9	583.7	583.7	581.2
25°	570.5	564.8	560.7	558.2	554.9	550.8	551.6	549.2
27.5°	538.5	532.8	529.5	527.0	523.7	519.6	519.6	517.2
30°	507.3	501.6	498.3	495.0	493.4	489.3	489.3	487.6
32.5°	473.7	469.6	467.1	464.6	461.3	459.7	458.9	457.2
35°	442.5	438.4	435.9	433.4	431.0	429.3	428.5	426.9
37.5°	412.1	408.0	405.5	403.9	402.2	399.8	399.8	397.3
40°	381.7	377.6	375.2	373.5	371.9	369.4	369.4	366.9
42.5°	350.5	347.2	345.6	344.0	341.5	339.9	339.0	338.2
45°	320.2	316.9	315.2	312.8	311.1	309.5	308.7	307.0
47.5°	289.8	287.3	284.9	284.0	281.6	279.1	279.1	276.6
50°	258.6	256.9	254.5	253.7	251.2	249.6	249.6	247.1
52.5°	229.9	226.6	225.7	223.3	221.6	221.6	219.2	217.5
55°	200.3	197.8	196.2	194.6	192.9	192.9	190.4	189.6
57.5°	171.6	169.1	168.3	166.6	165.0	165.0	162.5	164.2
60°	144.5	142.8	142.0	139.6	138.7	138.7	136.3	135.4
62.5°	120.7	117.4	116.6	114.9	113.3	113.3	111.6	110.8
65°	95.2	93.6	92.8	91.9	90.3	89.5	88.7	87.0
67.5°	74.7	72.2	72.2	70.6	69.0	69.0	67.3	66.5
70°	55.8	53.4	53.4	51.7	50.9	50.9	50.1	49.3
72.5°	40.2	37.8	37.8	36.1	35.3	35.3	34.5	34.5
75°	26.3	25.4	24.6	24.6	23.8	23.8	23.0	23.0
77.5°	17.2	16.4	15.6	15.6	15.6	14.8	14.8	14.8
80°	10.7	9.9	9.9	9.9	9.0	9.0	9.0	8.2
82.5°	6.6	5.7	5.7	5.7	5.7	4.9	4.9	4.9
85°	4.1	4.1	4.1	4.1	3.3	3.3	3.3	3.3
87.5°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
90°	5.7	5.7	5.7	5.7	5.7	5.7	6.6	6.6
92.5°	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
95°	8.2	7.4	7.4	6.6	6.6	6.6	6.6	6.6
97.5°	29.6	27.1	27.9	23.8	23.8	23.0	22.2	20.5
100°	57.5	55.0	55.8	51.7	53.4	50.9	50.1	48.4
102.5°	88.7	86.2	87.0	82.9	83.7	81.3	80.4	78.8
105°	119.9	118.2	119.9	115.7	114.9	114.1	114.1	112.5
107.5°	150.2	149.4	151.0	146.9	146.9	147.8	146.9	145.3
110°	182.2	181.4	183.1	179.8	179.0	180.6	179.8	178.1



TEST NUMBER: P188253

CATALOG NUMBER: MPBL-3-LD4-UNV-1STD-1STD-40

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	215.1	214.3	215.9	214.3	212.6	213.4	212.6	211.0
115°	250.4	248.7	251.2	247.9	245.4	247.1	246.3	244.6
117.5°	286.5	284.9	286.5	284.0	281.6	282.4	282.4	279.9
120°	323.4	321.0	322.6	320.2	317.7	318.5	317.7	316.0
122.5°	362.0	359.6	360.4	357.9	354.6	356.3	354.6	352.2
125°	402.2	398.1	399.8	396.5	393.2	394.0	392.4	390.7
127.5°	444.1	438.4	440.0	435.9	432.6	431.8	431.8	430.2
130°	487.6	481.0	481.9	476.9	473.7	472.8	473.7	470.4
132.5°	532.8	526.2	525.4	519.6	516.3	514.7	515.5	512.2
135°	580.4	569.7	571.3	564.8	561.5	559.9	559.9	556.6
137.5°	625.5	616.5	618.1	610.7	607.5	605.0	605.8	601.7
140°	675.6	668.2	667.4	659.2	655.1	652.6	652.6	650.2
142.5°	726.5	715.8	716.6	708.4	704.3	701.9	701.9	698.6
145°	779.0	769.2	768.4	760.2	755.2	751.9	751.9	748.7
147.5°	833.2	822.5	821.7	813.5	807.8	803.7	801.2	799.6
150°	887.4	875.9	875.1	866.9	860.3	856.2	856.2	857.8
152.5°	939.1	928.4	926.8	918.6	912.8	909.6	907.9	910.4
155°	992.5	981.8	979.3	971.9	966.2	962.1	960.5	962.1
157.5°	1045.0	1034.3	1031.9	1024.5	1018.7	1015.5	1013.0	1014.6
160°	1094.3	1084.4	1081.9	1074.6	1069.6	1065.5	1063.9	1065.5
162.5°	1138.6	1129.6	1127.1	1120.5	1114.8	1112.3	1110.7	1112.3
165°	1180.5	1173.1	1170.6	1164.0	1159.1	1156.6	1155.0	1155.8
167.5°	1218.2	1211.6	1210.0	1203.4	1199.3	1198.5	1197.7	1198.5
170°	1250.2	1245.3	1243.7	1237.9	1234.6	1233.8	1233.8	1235.5
172.5°	1276.5	1271.6	1269.9	1263.4	1260.1	1259.3	1259.3	1258.4
175°	1297.8	1292.9	1291.3	1285.5	1280.6	1278.1	1277.3	1275.7
177.5°	1311.8	1308.5	1306.0	1301.1	1298.7	1297.8	1297.8	1297.0
180°	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6	1321.6

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