

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: P188216

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P188216
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27358)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MPBL-2-LD4-UNV-2UP-STD-40
Description:
Light Source: (84) NICHIA ELM 4000K LED
2UT217042A8404A
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3377.5 lumens
Efficiency: N/A
Efficacy: 97.6 lumens/watt
Spacing Criteria (0/90/45): - / - / -
Luminous Opening: Rectangular w/ Sides (W: 2' x L: 0.42' x H: 0.29')
CIE Type: Indirect

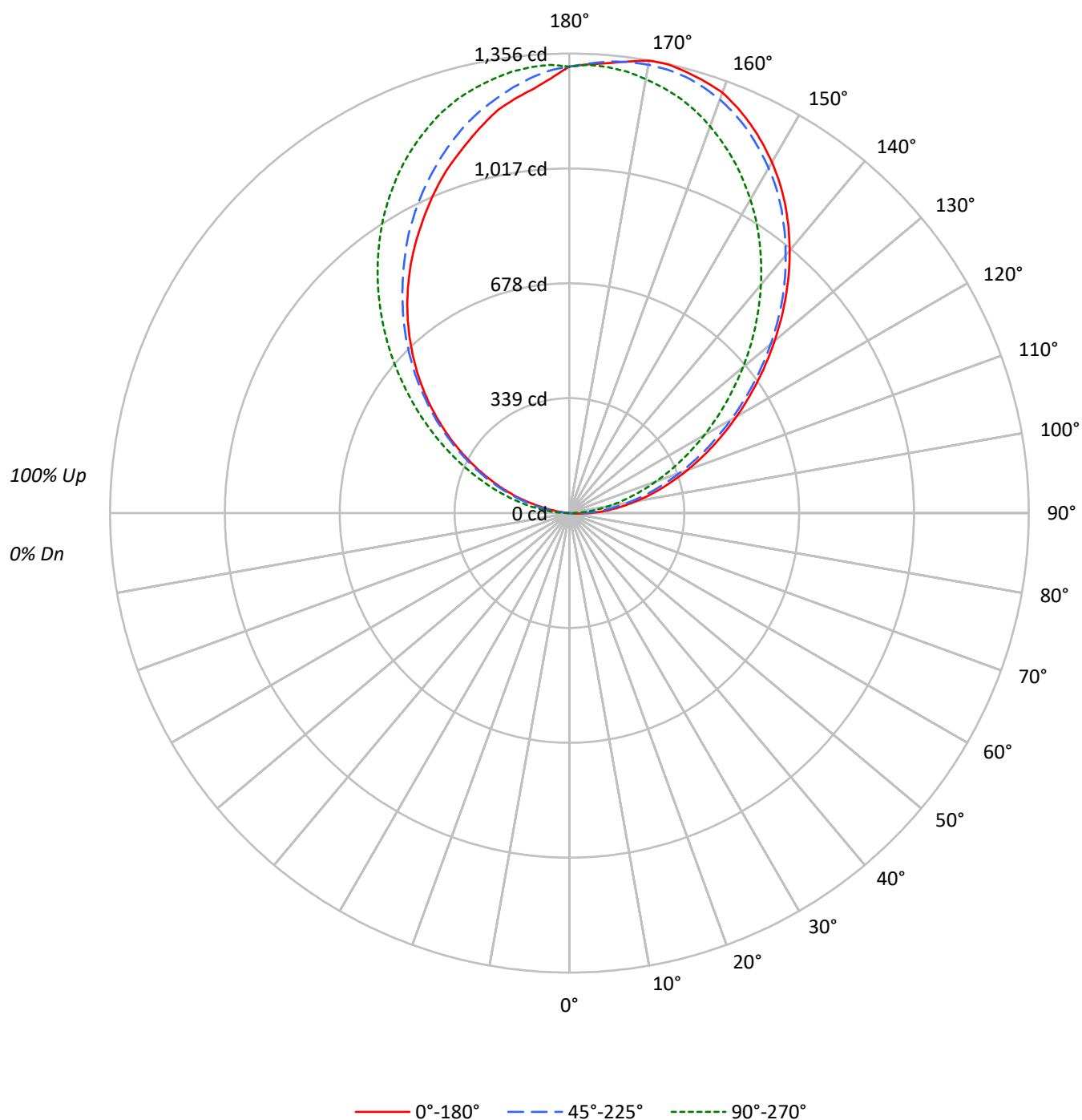
Input Watts (W): 34.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P188216

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

Luminous Intensity Polar Plot





TEST NUMBER: P188216

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

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°	175	44	13



TEST NUMBER: P188216

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

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°	5.7	0.2
90°-100°	70.6	2.1
100°-110°	210.7	6.2
110°-120°	368.7	10.9
120°-130°	509.5	15.1
130°-140°	599.9	17.8
140°-150°	609.0	18.0
150°-160°	524.6	15.5
160°-170°	354.2	10.5
170°-180°	124.5	3.7
0°-30°	0.0	0.0
0°-40°	0.0	0.0
0°-60°	0.0	0.0
0°-90°	5.7	0.2
90°-120°	650.0	19.2
90°-150°	2368.4	70.1
90°-180°	3372.0	99.8
0°-180°	3377.5	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°	11	2	1	1	1	7
90°	61	40	1	4	6	34
95°	126	103	56	16	8	118
105°	281	256	190	145	126	298
115°	467	445	361	302	289	463
125°	678	661	561	480	468	607
135°	903	888	776	669	652	697
145°	1110	1092	978	856	829	694
155°	1266	1246	1148	1034	992	583
165°	1346	1332	1267	1186	1140	380
175°	1333	1338	1321	1290	1254	128
180°	1317	1317	1317	1317	1317	



TEST NUMBER: P188216

CATALOG NUMBER: MPBL-2-LD4-UNV-2UP-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°	10.6	11.4	10.6	9.8	9.0	8.2	7.4	5.7	4.1	2.5	1.6
87.5°	31.9	32.7	31.9	30.2	28.6	27.0	26.1	22.9	20.4	17.2	13.9
90°	61.3	62.1	61.3	59.7	58.0	56.4	55.6	51.5	48.2	44.1	40.0
92.5°	93.2	94.0	92.3	91.5	89.1	87.4	86.6	82.5	78.4	74.4	70.3
95°	125.8	127.5	125.8	124.2	122.6	120.1	119.3	115.2	111.1	107.1	103.0
97.5°	161.8	162.6	161.8	160.2	157.7	156.1	154.4	150.4	146.3	141.4	137.3
100°	199.4	201.0	199.4	197.8	195.3	193.7	190.4	188.0	183.9	179.0	174.1
102.5°	238.6	240.3	238.6	237.8	235.3	232.9	232.1	227.2	223.1	219.0	214.1
105°	281.1	282.7	280.3	277.0	277.0	275.4	272.1	268.9	264.8	260.7	255.8
107.5°	324.4	326.1	326.1	322.8	321.2	319.5	316.2	315.4	311.3	304.8	299.9
110°	370.2	371.8	371.8	367.7	366.9	365.3	362.0	361.2	357.1	350.6	346.5



TEST NUMBER: P188216

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

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	417.6	419.2	419.2	415.9	415.1	413.5	410.2	409.4	405.3	398.8	394.7
115°	466.6	469.1	469.1	465.0	465.0	463.3	460.1	459.3	455.2	449.4	445.4
117.5°	517.3	518.9	518.9	515.6	515.6	514.0	510.7	510.7	506.7	500.9	496.8
120°	569.6	572.0	572.0	569.6	568.8	567.1	564.7	564.7	560.6	555.7	550.8
122.5°	623.5	622.7	626.8	623.5	622.7	621.9	618.6	619.4	615.3	609.6	605.5
125°	678.3	680.7	679.9	679.1	678.3	677.4	674.2	672.5	671.7	665.2	661.1
127.5°	734.6	737.1	736.3	736.3	734.6	733.8	730.6	729.7	728.9	724.0	718.3
130°	791.0	795.9	793.5	793.5	791.0	791.0	789.4	786.9	782.9	781.2	775.5
132.5°	847.4	852.3	849.9	849.0	849.9	847.4	845.0	843.3	840.1	836.8	831.9
135°	903.0	908.7	905.4	905.4	905.4	903.0	901.3	899.7	895.6	893.2	888.3
137.5°	958.6	960.2	961.0	960.2	960.2	957.7	956.1	952.8	950.4	947.1	942.2
140°	1011.7	1015.8	1013.3	1013.3	1012.5	1010.0	1007.6	1005.1	1001.0	997.8	992.9
142.5°	1062.3	1064.0	1064.8	1064.0	1063.2	1060.7	1058.2	1055.8	1051.7	1048.4	1043.5
145°	1110.5	1114.6	1112.2	1112.2	1108.9	1110.5	1106.5	1104.0	1100.7	1097.5	1091.8
147.5°	1155.5	1157.9	1157.9	1157.1	1154.7	1155.5	1152.2	1149.0	1145.7	1142.4	1136.7
150°	1195.5	1198.0	1198.0	1195.5	1194.7	1194.7	1192.3	1189.0	1185.7	1182.5	1175.9
152.5°	1232.3	1234.8	1234.8	1232.3	1230.7	1230.7	1228.2	1225.0	1221.7	1218.4	1211.9
155°	1265.8	1269.1	1268.3	1265.8	1265.0	1264.2	1261.7	1259.3	1256.0	1252.7	1246.2
157.5°	1295.2	1298.5	1297.7	1296.0	1294.4	1292.8	1291.1	1288.7	1285.4	1281.3	1274.8
160°	1320.6	1320.6	1320.6	1318.1	1316.5	1315.7	1313.2	1310.8	1308.3	1304.2	1298.5
162.5°	1334.5	1336.1	1334.5	1333.6	1332.0	1332.0	1329.6	1327.9	1326.3	1322.2	1317.3
165°	1345.9	1348.3	1347.5	1346.7	1345.1	1344.3	1342.6	1341.8	1339.4	1336.1	1332.0
167.5°	1355.7	1357.3	1356.5	1354.9	1353.2	1352.4	1350.8	1349.2	1346.7	1343.4	1340.2
170°	1355.7	1356.5	1355.7	1354.9	1353.2	1352.4	1351.6	1350.0	1348.3	1345.1	1343.4
172.5°	1344.3	1345.1	1345.1	1345.9	1345.1	1344.3	1344.3	1344.3	1344.3	1342.6	1342.6
175°	1332.8	1333.6	1334.5	1335.3	1335.3	1335.3	1336.1	1336.9	1337.7	1336.9	1337.7
177.5°	1325.5	1326.3	1326.3	1326.3	1325.5	1325.5	1325.5	1326.3	1327.1	1327.1	1327.9
180°	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3



TEST NUMBER: P188216

CATALOG NUMBER: MPBL-2-LD4-UNV-2UP-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	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
87.5°	9.8	7.4	4.1	2.5	1.6	0.8	0.8	0.8	0.8	0.8	0.8
90°	35.1	32.7	27.0	22.1	20.4	17.2	13.1	7.4	2.5	0.8	0.8
92.5°	65.4	61.3	56.4	51.5	49.0	46.6	40.9	36.0	31.1	27.0	21.2
95°	96.4	93.2	86.6	81.7	79.3	76.0	70.3	64.6	59.7	55.6	49.0
97.5°	130.7	126.7	120.1	114.4	112.0	108.7	103.0	96.4	89.9	85.8	79.3
100°	167.5	163.4	156.1	150.4	147.1	143.0	136.5	131.6	122.6	117.7	110.3
102.5°	206.7	200.2	194.5	188.0	184.7	180.6	173.2	165.9	158.5	152.8	144.6
105°	248.4	241.9	236.2	229.6	225.5	221.5	210.8	204.3	196.1	189.6	180.6
107.5°	292.6	284.4	281.1	272.1	268.9	263.9	256.6	245.2	237.0	229.6	219.8
110°	338.3	330.1	326.9	317.9	313.8	308.9	298.3	288.5	279.5	271.3	260.7



TEST NUMBER: P188216

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

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	387.3	379.2	375.1	365.3	361.2	356.3	344.8	334.2	324.4	315.4	304.0
115°	437.2	431.5	424.9	415.1	411.0	405.3	396.3	381.6	371.8	361.2	348.9
117.5°	488.7	483.0	476.4	466.6	461.7	456.0	443.7	430.7	420.0	409.4	395.5
120°	542.6	534.4	531.2	519.7	514.8	509.1	496.8	483.0	470.7	459.3	444.5
122.5°	598.2	589.2	582.6	574.5	568.8	563.0	550.0	535.3	522.2	509.9	494.4
125°	653.7	645.6	639.0	629.2	624.3	617.8	604.7	589.2	574.5	561.4	545.1
127.5°	710.1	702.0	695.4	684.8	679.9	673.4	660.3	643.9	628.4	614.5	597.4
130°	769.0	759.2	749.4	741.2	736.3	731.4	716.7	699.5	684.8	668.5	652.1
132.5°	825.4	816.4	805.7	800.0	792.7	787.8	769.8	755.1	738.7	722.4	705.2
135°	881.7	872.7	865.4	855.6	848.2	843.3	824.5	809.0	792.7	775.5	757.5
137.5°	935.7	925.9	916.1	909.5	902.2	896.4	878.5	862.1	845.8	827.8	809.8
140°	986.3	977.3	967.5	961.0	954.5	947.9	929.9	913.6	897.3	879.3	860.5
142.5°	1037.0	1028.0	1018.2	1011.7	1005.1	999.4	979.8	965.1	947.9	929.9	911.2
145°	1085.2	1077.0	1067.2	1057.4	1052.5	1047.6	1028.0	1013.3	996.1	978.2	960.2
147.5°	1130.2	1122.0	1112.2	1103.2	1098.3	1092.6	1073.8	1059.1	1042.7	1024.7	1007.6
150°	1170.2	1162.8	1153.0	1144.1	1139.1	1134.2	1116.3	1101.6	1086.0	1068.1	1051.7
152.5°	1207.8	1199.6	1191.4	1183.3	1177.6	1171.0	1156.3	1141.6	1126.9	1109.7	1092.6
155°	1242.1	1233.9	1225.8	1217.6	1212.7	1207.0	1191.4	1179.2	1165.3	1148.1	1132.6
157.5°	1270.7	1262.5	1255.2	1247.8	1242.9	1236.4	1222.5	1211.1	1196.4	1182.5	1167.7
160°	1294.4	1287.9	1280.5	1274.0	1268.3	1263.4	1250.3	1239.7	1226.6	1214.3	1200.4
162.5°	1314.0	1309.1	1302.6	1296.9	1292.0	1287.1	1274.8	1265.8	1254.4	1242.9	1230.7
165°	1329.6	1324.6	1319.7	1314.0	1309.9	1305.9	1294.4	1287.1	1277.3	1266.6	1257.6
167.5°	1337.7	1333.6	1329.6	1324.6	1321.4	1317.3	1308.3	1301.8	1293.6	1284.6	1277.3
170°	1341.8	1339.4	1336.1	1332.0	1329.6	1326.3	1318.9	1314.0	1307.5	1300.1	1293.6
172.5°	1341.8	1341.0	1339.4	1336.9	1334.5	1332.0	1326.3	1323.0	1318.1	1313.2	1307.5
175°	1338.5	1338.5	1337.7	1336.9	1335.3	1332.8	1329.6	1327.1	1324.6	1320.6	1317.3
177.5°	1330.4	1331.2	1332.0	1332.0	1331.2	1330.4	1327.9	1327.1	1325.5	1323.8	1322.2
180°	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3



TEST NUMBER: P188216

CATALOG NUMBER: MPBL-2-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°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
87.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
90°	1.6	1.6	2.5	2.5	2.5	2.5	3.3	3.3	4.1	4.1	4.1
92.5°	17.2	13.1	8.2	5.7	4.9	4.1	4.1	4.1	4.9	4.9	5.7
95°	45.8	41.7	36.0	32.7	30.2	23.7	21.2	17.2	15.5	13.1	10.6
97.5°	75.2	71.1	65.4	62.1	61.3	54.8	51.5	44.9	40.9	37.6	33.5
100°	106.2	101.3	96.4	93.2	91.5	87.4	84.2	78.4	74.4	70.3	67.0
102.5°	139.7	134.0	129.1	125.8	124.2	120.1	116.9	112.8	109.5	106.2	102.1
105°	173.2	169.2	163.4	160.2	159.3	154.4	151.2	147.1	144.6	142.2	138.9
107.5°	213.3	205.9	201.0	196.9	195.3	190.4	188.0	183.9	181.4	178.1	175.7
110°	252.5	246.0	240.3	236.2	234.5	228.8	225.5	222.3	219.8	217.4	214.1



TEST NUMBER: P188216

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

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	295.0	287.6	281.1	276.2	275.4	269.7	266.4	264.8	259.9	257.4	255.0
115°	339.9	331.0	324.4	320.3	317.9	311.3	308.1	305.6	301.5	299.1	296.6
117.5°	385.7	376.7	368.5	363.6	362.0	354.7	348.1	348.9	342.4	342.4	339.1
120°	433.9	424.1	415.9	410.2	407.8	399.6	396.3	393.9	388.2	385.7	383.3
122.5°	483.0	472.3	463.3	457.6	456.8	447.0	442.1	438.8	433.1	430.7	428.2
125°	533.6	522.2	514.0	505.8	502.6	494.4	488.7	485.4	479.7	476.4	474.8
127.5°	585.9	572.8	563.0	554.9	554.0	542.6	534.4	532.0	526.3	523.0	520.5
130°	637.4	624.3	612.9	604.7	603.1	591.6	583.5	579.4	574.5	568.8	567.9
132.5°	690.5	675.8	663.5	655.4	652.9	641.5	632.5	626.8	621.9	617.8	614.5
135°	742.8	727.3	714.2	706.0	703.6	692.2	681.5	675.8	669.3	665.2	661.1
137.5°	794.3	778.8	764.9	755.9	753.4	741.2	730.6	724.0	716.7	712.6	707.7
140°	845.0	828.6	813.9	805.7	802.5	789.4	778.0	770.6	763.2	757.5	753.4
142.5°	895.6	876.8	863.8	854.8	851.5	838.4	826.2	818.8	809.8	804.1	799.2
145°	944.7	925.0	912.0	902.2	899.7	886.6	873.6	865.4	856.4	849.9	844.1
147.5°	989.6	972.4	959.4	949.6	947.1	934.0	921.0	912.8	903.0	894.0	889.9
150°	1034.5	1020.7	1004.3	997.0	992.1	979.0	966.7	956.9	949.6	938.1	932.4
152.5°	1077.9	1062.3	1048.4	1041.1	1035.4	1023.1	1010.0	1001.0	992.1	979.8	974.1
155°	1117.9	1104.8	1090.1	1083.6	1077.9	1065.6	1052.5	1043.5	1034.5	1023.1	1017.4
157.5°	1154.7	1142.4	1127.7	1120.4	1113.8	1104.8	1093.4	1084.4	1074.6	1064.0	1058.2
160°	1188.2	1177.6	1163.7	1157.9	1150.6	1142.4	1131.8	1122.8	1113.8	1103.2	1097.5
162.5°	1219.2	1208.6	1196.4	1191.4	1185.7	1177.6	1167.7	1160.4	1150.6	1140.8	1134.2
165°	1246.2	1238.0	1226.6	1221.7	1216.0	1209.4	1200.4	1193.1	1185.7	1175.9	1169.4
167.5°	1267.4	1260.1	1250.3	1244.6	1241.3	1235.6	1228.2	1222.5	1216.0	1207.8	1202.1
170°	1286.2	1279.7	1270.7	1265.8	1263.4	1259.3	1253.6	1248.6	1242.1	1236.4	1231.5
172.5°	1301.8	1296.9	1290.3	1285.4	1283.8	1281.3	1276.4	1272.3	1267.4	1261.7	1256.8
175°	1313.2	1309.9	1304.2	1300.9	1300.1	1298.5	1296.0	1293.6	1289.5	1284.6	1279.7
177.5°	1319.7	1318.1	1314.0	1311.6	1311.6	1311.6	1310.8	1309.9	1307.5	1304.2	1300.9
180°	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3



TEST NUMBER: P188216

CATALOG NUMBER: MPBL-2-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	1.6	1.6	1.6	2.5	2.5	3.3
90°	4.9	4.9	4.9	4.9	5.7	5.7	5.7	5.7
92.5°	5.7	5.7	5.7	6.5	6.5	6.5	6.5	6.5
95°	10.6	9.8	9.0	8.2	8.2	8.2	7.4	8.2
97.5°	32.7	31.1	30.2	28.6	28.6	27.8	27.0	27.0
100°	62.9	59.7	58.0	56.4	55.6	54.8	53.1	53.9
102.5°	98.9	95.6	94.8	92.3	91.5	89.9	87.4	89.1
105°	138.1	134.0	132.4	129.9	130.7	129.1	125.0	125.8
107.5°	174.9	174.1	170.8	169.2	170.0	169.2	165.1	166.7
110°	214.1	213.3	210.0	208.4	209.2	208.4	205.1	206.7



TEST NUMBER: P188216

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	254.1	253.3	250.1	249.2	249.2	249.2	246.0	246.8
115°	295.8	295.8	292.6	290.9	291.7	290.9	290.1	289.3
117.5°	339.1	339.1	335.9	335.0	335.0	332.6	331.8	332.6
120°	384.1	383.3	380.8	379.2	380.0	377.5	378.4	377.5
122.5°	429.0	428.2	424.9	423.3	424.9	422.5	423.3	422.5
125°	474.8	474.0	470.7	469.1	470.7	468.2	469.1	468.2
127.5°	518.9	519.7	517.3	517.3	517.3	514.8	514.8	514.8
130°	565.5	565.5	563.0	562.2	563.9	560.6	560.6	560.6
132.5°	612.1	611.3	608.8	608.8	609.6	607.2	606.3	607.2
135°	657.8	657.0	654.6	653.7	655.4	652.1	651.3	652.1
137.5°	704.4	700.3	700.3	699.5	700.3	697.9	697.1	697.1
140°	749.4	746.9	745.3	743.6	745.3	742.0	741.2	742.0
142.5°	794.3	791.8	789.4	788.6	789.4	786.1	784.5	786.1
145°	839.2	836.0	832.7	831.9	831.9	829.4	827.0	828.6
147.5°	884.2	880.9	876.8	876.0	876.0	871.9	870.3	871.1
150°	926.7	922.6	918.5	917.7	915.2	913.6	912.0	912.0
152.5°	968.4	963.5	961.0	958.6	955.3	953.6	952.0	951.2
155°	1010.0	1005.9	1002.7	1000.2	998.6	994.5	992.1	992.1
157.5°	1049.3	1046.8	1043.5	1041.1	1037.8	1035.4	1032.9	1032.1
160°	1090.9	1086.0	1082.8	1080.3	1077.9	1073.8	1072.1	1070.5
162.5°	1125.3	1122.0	1117.9	1115.4	1113.8	1108.9	1106.5	1104.8
165°	1162.0	1157.1	1153.9	1151.4	1149.0	1144.1	1141.6	1140.0
167.5°	1193.9	1191.4	1189.0	1186.5	1184.1	1180.0	1177.6	1175.1
170°	1225.8	1222.5	1219.2	1217.6	1216.0	1211.9	1210.2	1208.6
172.5°	1251.1	1247.8	1244.6	1242.9	1240.5	1237.2	1234.8	1233.1
175°	1274.8	1271.5	1268.3	1267.4	1263.4	1258.5	1256.8	1254.4
177.5°	1296.0	1295.2	1292.8	1292.8	1288.7	1287.1	1285.4	1283.0
180°	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3	1317.3

(END OF REPORT)