

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: P188221

Luminaire Tested: **MPBL-2-LD4-UNV-2LO/2LO-40**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P188221
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27360)
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-2LO/2LO-40
Description:
Light Source: (168) NICHIA ELM 4000K LED
2UT217042A8404A
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4635.7 lumens
Efficiency: N/A
Efficacy: 93.8 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.19 / 1.34
Luminous Opening: Rectangular w/ Sides (W: 2' x L: 0.42' x H: 0.29')
CIE Type: General Diffuse

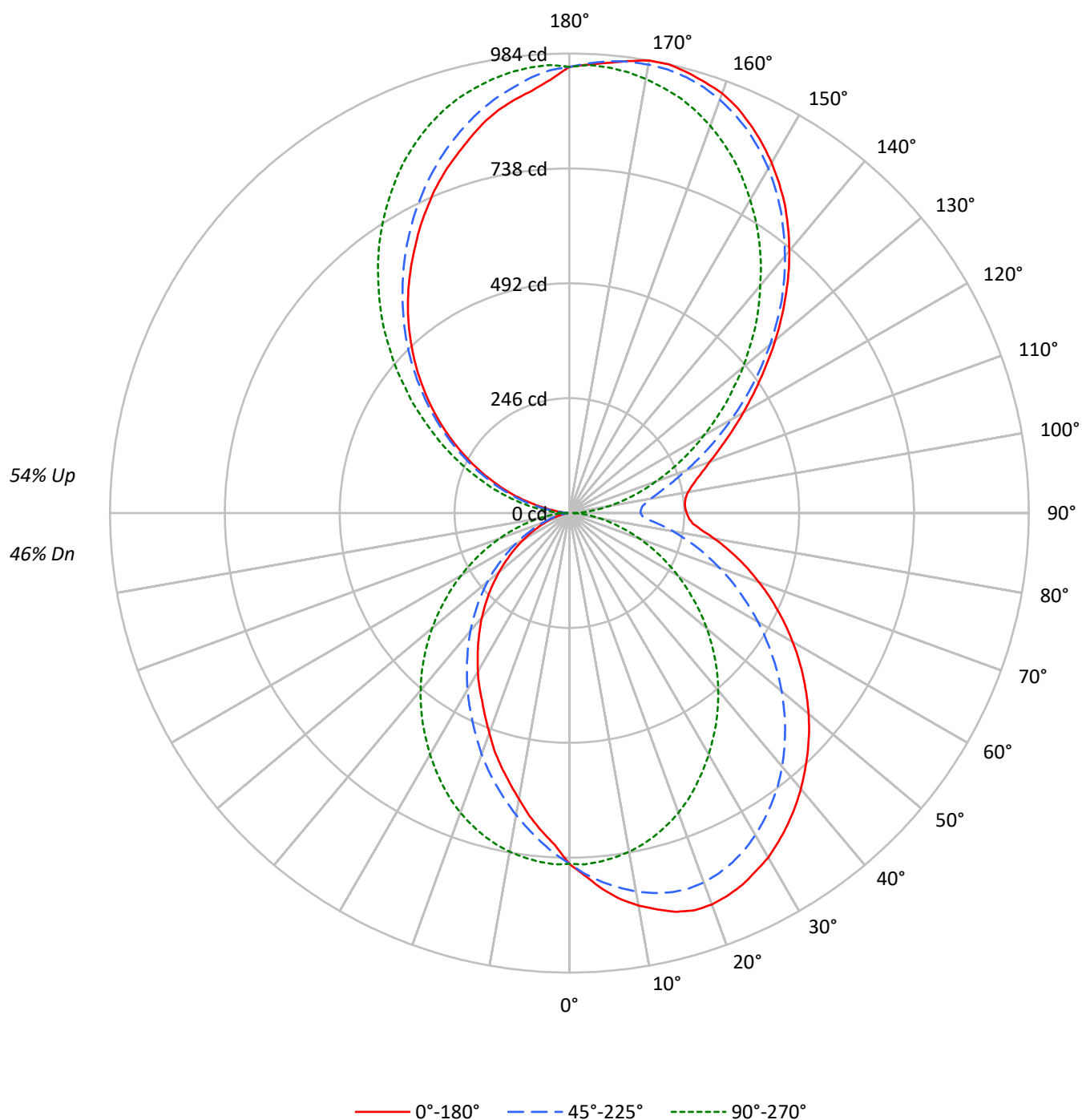
Input Watts (W): 49.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P188221

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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	92	88	84	88	84	81	77	70	67	65		57	55	54		45
2	87	80	73	68	80	73	68	63	61	57	54		50	47	44		39
3	80	70	62	56	73	64	58	53	54	49	45		44	40	37		35
4	73	62	54	48	66	57	50	44	48	42	38		39	35	32		31
5	67	55	47	41	61	51	43	38	43	37	33		35	31	28		28
6	61	49	41	35	56	45	38	33	38	33	28		32	27	24		25
7	57	44	36	31	52	41	34	29	35	29	25		29	24	21		23
8	53	40	32	27	48	37	30	25	32	26	22		26	22	19		21
9	49	37	29	24	45	34	27	23	29	24	20		24	20	17		20
10	46	34	26	22	42	31	25	20	27	21	18		22	18	15		18

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	9703	9703	9703
5°	9871	9593	8351
10°	9966	9418	7261
15°	9955	9189	6337
20°	9772	8914	5490
25°	9434	8575	4757
30°	9048	8211	4164
35°	8620	7842	3600
40°	8193	7447	3095
45°	7757	7027	2614
50°	7328	6576	2157
55°	6886	6068	1723
60°	6450	5533	1317
65°	6012	4954	946
70°	5577	4290	630
75°	5154	3545	387
80°	4718	2707	174
85°	4376	1795	81



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	71.1	1.5
10°-20°	203.1	4.4
20°-30°	301.8	6.5
30°-40°	354.1	7.6
40°-50°	358.1	7.7
50°-60°	317.7	6.9
60°-70°	247.2	5.3
70°-80°	166.6	3.6
80°-90°	98.6	2.1
90°-100°	97.0	2.1
100°-110°	172.0	3.7
110°-120°	273.6	5.9
120°-130°	370.7	8.0
130°-140°	434.9	9.4
140°-150°	441.3	9.5
150°-160°	380.5	8.2
160°-170°	257.0	5.5
170°-180°	90.4	1.9
0°-30°	576.0	12.4
0°-40°	930.1	20.1
0°-60°	1605.9	34.6
0°-90°	2118.3	45.7
90°-120°	542.6	11.7
90°-150°	1789.5	38.6
90°-180°	2517.0	54.3
0°-180°	4635.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	751	751	751	751	751	
5°	808	793	749	706	684	78
15°	884	841	714	604	563	250
25°	878	826	643	491	443	405
35°	815	757	548	382	340	510
45°	722	654	441	279	243	558
55°	612	530	326	180	153	547
65°	492	403	213	94	77	488
75°	373	282	110	34	28	394
85°	266	172	32	6	5	228
90°	251	152	4	6	7	138
95°	248	156	42	12	7	205
105°	282	214	138	106	90	301
115°	370	329	262	220	208	368
125°	499	479	408	349	338	448
135°	655	643	563	486	471	505
145°	805	790	709	621	599	503
155°	918	904	834	750	721	423
165°	977	966	920	860	829	276
175°	968	971	958	936	908	93
180°	955	955	955	955	955	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	751.2	751.2	751.2	751.2	751.2	751.2	751.2	751.2	751.2	751.2	751.2
2.5°	777.4	776.2	776.2	777.4	775.6	776.2	777.4	777.4	776.2	775.6	773.7
5°	807.9	807.3	806.7	806.0	803.6	803.6	803.6	801.8	798.7	795.7	792.6
7.5°	833.5	833.5	831.7	831.7	828.0	827.4	826.8	823.7	818.2	814.0	808.5
10°	853.6	853.0	852.4	850.6	846.9	845.7	845.1	840.8	835.3	829.2	823.1
12.5°	869.5	870.1	867.6	867.0	863.4	861.5	860.3	855.4	848.7	842.0	833.5
15°	884.1	883.5	881.7	880.4	876.2	873.7	872.5	866.4	858.5	850.6	840.8
17.5°	892.0	890.8	889.6	887.1	882.9	881.0	878.6	871.9	864.0	854.2	843.9
20°	892.0	891.4	890.2	887.1	883.5	881.0	878.6	871.3	863.4	853.6	842.0
22.5°	886.5	885.9	884.7	881.7	878.0	875.6	873.1	865.2	857.3	847.5	835.3
25°	878.0	876.8	875.6	873.1	868.9	867.0	863.4	856.0	848.1	837.8	825.6
27.5°	864.6	865.2	864.0	861.5	856.7	854.8	851.8	845.7	835.9	825.6	812.8
30°	851.8	849.9	849.3	846.9	841.4	839.6	835.9	829.8	820.1	809.7	796.3
32.5°	834.1	832.9	831.7	829.2	823.7	821.3	817.6	811.5	800.6	790.2	777.4
35°	814.6	813.4	811.5	809.1	802.4	800.6	797.5	790.8	779.8	769.5	756.7
37.5°	793.9	792.6	790.8	787.8	782.3	779.2	776.2	768.2	757.3	746.9	734.1
40°	771.3	770.1	768.2	765.2	759.1	755.4	752.4	744.5	732.9	721.9	708.5
42.5°	746.9	746.3	744.5	740.8	734.7	730.4	726.8	718.9	706.7	695.1	681.7
45°	721.9	721.3	718.9	715.8	708.5	704.2	701.2	690.8	679.8	667.6	653.6
47.5°	696.3	694.5	692.6	689.0	681.1	676.8	673.1	662.8	651.2	638.4	623.7
50°	668.9	667.6	664.0	659.7	653.0	648.1	644.5	634.1	621.9	608.5	593.3
52.5°	640.2	639.6	635.9	631.1	624.4	620.7	615.2	604.8	591.4	578.0	562.2
55°	611.5	610.3	607.3	602.4	594.5	590.8	585.3	575.0	561.6	546.3	529.8
57.5°	582.3	580.5	577.4	572.5	565.8	560.3	554.8	543.9	530.5	514.6	498.1
60°	552.4	550.6	546.9	542.7	535.3	529.8	523.7	512.8	498.8	483.5	466.4
62.5°	522.5	520.7	517.7	512.2	504.8	499.4	493.3	481.7	467.7	451.2	434.7
65°	492.0	490.2	487.2	482.3	473.8	468.9	462.2	451.2	435.9	420.1	403.0
67.5°	462.2	460.3	457.3	451.8	443.3	437.8	431.7	420.7	406.7	389.6	372.5
70°	431.7	430.5	427.4	420.7	413.4	407.9	401.2	389.0	376.2	358.5	341.4
72.5°	402.4	402.4	398.1	391.4	383.5	378.0	371.9	359.7	345.7	328.6	311.6
75°	373.1	371.9	368.9	362.2	354.2	348.8	342.7	330.5	316.4	300.0	282.3
77.5°	343.3	343.3	339.6	332.3	324.4	318.9	314.0	301.2	286.6	270.1	253.0
80°	315.2	314.6	310.3	304.3	295.7	290.8	284.1	272.5	257.9	242.1	225.6
82.5°	286.6	286.0	282.3	275.6	267.7	262.2	257.3	243.9	229.9	214.0	198.2
85°	265.8	265.8	261.0	254.3	245.1	239.6	234.1	220.1	205.5	189.0	171.9
87.5°	256.1	254.9	250.6	242.7	233.5	228.0	221.3	207.3	191.5	174.4	156.7
90°	251.2	250.0	245.7	238.4	229.3	223.2	217.1	203.0	187.8	170.7	152.4
92.5°	248.2	246.9	242.7	236.0	226.2	220.7	214.6	201.2	186.6	170.1	153.0
95°	248.2	246.9	243.3	236.6	227.4	221.9	215.8	203.0	188.4	172.6	156.1
97.5°	251.2	250.6	246.3	240.2	231.1	226.2	220.7	208.5	193.9	179.9	164.6
100°	257.9	257.3	253.6	247.5	239.6	234.1	229.3	217.7	204.9	191.5	176.8
102.5°	268.9	268.3	265.2	259.1	251.8	246.9	242.1	231.7	220.1	207.3	193.9
105°	282.3	282.3	278.6	273.2	267.1	262.2	257.3	248.2	237.2	225.6	214.0
107.5°	300.0	299.4	295.7	292.1	286.0	281.1	277.4	268.9	258.5	248.8	238.4
110°	319.5	319.5	315.8	312.8	307.3	303.0	299.4	292.7	283.5	275.0	265.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	343.3	342.7	340.2	337.2	332.9	328.6	325.6	319.5	311.6	304.3	295.7
115°	369.5	369.5	367.1	364.6	361.0	357.3	354.2	348.8	341.4	336.0	328.6
117.5°	398.8	398.8	396.3	394.5	391.4	387.8	385.3	381.1	374.4	369.5	363.4
120°	429.9	429.9	428.0	426.8	424.4	420.7	418.9	415.8	409.7	405.5	400.0
122.5°	463.4	463.4	462.2	460.9	459.1	455.5	456.1	451.8	446.9	443.9	439.0
125°	498.8	499.4	498.1	497.5	496.3	492.7	493.3	490.2	485.9	482.9	479.2
127.5°	536.6	536.6	536.6	536.6	534.7	531.7	532.3	529.8	526.2	523.7	519.5
130°	575.6	575.6	576.2	576.2	574.4	571.9	571.9	571.3	567.6	564.6	560.9
132.5°	615.2	615.2	615.8	614.0	614.0	612.2	612.8	611.5	608.5	607.3	601.8
135°	654.8	655.4	656.7	654.8	654.8	653.0	653.0	652.4	649.4	647.5	642.6
137.5°	694.5	694.5	695.7	693.9	693.9	691.4	692.0	689.6	688.4	685.9	681.1
140°	732.9	732.9	734.1	731.7	731.7	729.8	729.8	729.2	725.6	723.1	718.2
142.5°	769.5	769.5	770.7	768.2	768.2	766.4	765.8	763.4	761.5	759.7	754.2
145°	804.8	804.8	806.0	803.6	803.6	801.2	801.2	798.7	796.9	793.2	789.6
147.5°	836.5	837.8	837.8	836.5	835.9	833.5	834.1	831.0	829.2	826.2	821.9
150°	866.4	867.6	867.6	866.4	865.2	864.6	863.4	860.9	859.1	855.4	852.4
152.5°	893.2	893.8	893.8	892.6	891.4	891.4	889.6	887.1	885.3	881.7	879.2
155°	917.6	918.8	918.8	917.6	916.4	916.4	914.6	911.5	910.3	906.7	903.6
157.5°	939.6	940.8	940.2	939.0	938.4	937.7	935.9	933.5	931.7	928.0	924.3
160°	956.7	957.3	957.3	956.0	954.8	954.2	953.0	950.6	948.7	945.1	942.0
162.5°	967.0	968.2	967.6	967.0	965.8	965.8	964.6	962.7	961.5	959.1	956.0
165°	976.8	978.0	977.4	976.8	975.6	975.6	974.3	973.1	971.3	968.8	966.4
167.5°	984.1	984.7	984.1	983.5	982.3	981.0	980.4	979.2	977.4	975.6	973.1
170°	984.1	984.7	984.7	983.5	982.3	981.6	981.0	979.8	978.6	976.8	974.9
172.5°	976.2	976.8	976.2	976.8	976.2	976.2	976.2	976.2	976.2	975.6	974.9
175°	967.6	968.2	968.2	968.8	968.8	969.5	970.1	970.7	971.3	971.3	971.3
177.5°	961.5	962.1	961.5	962.1	961.5	962.1	962.1	962.7	963.4	963.4	964.0
180°	955.4	955.4	955.4	955.4	955.4	955.4	955.4	955.4	955.4	955.4	955.4



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	751.2	751.2	751.2	751.2	751.2	751.2	751.2	751.2	751.2	751.2	751.2
2.5°	772.5	771.3	768.9	766.4	765.2	764.0	761.5	759.1	756.1	753.0	751.2
5°	789.0	785.3	781.1	775.6	773.1	770.7	765.8	760.9	754.8	749.3	744.5
7.5°	803.0	797.5	790.8	782.9	779.2	775.6	768.2	760.9	751.8	743.9	736.5
10°	815.2	807.3	798.7	789.0	783.5	778.6	768.9	758.5	747.5	736.5	726.8
12.5°	824.3	814.0	803.6	791.4	784.7	779.2	766.4	754.2	740.8	726.8	714.6
15°	829.8	817.6	804.8	790.2	782.9	775.6	760.3	745.7	730.4	714.0	700.0
17.5°	831.0	817.6	803.0	786.5	778.0	769.5	753.0	735.9	717.6	699.3	683.5
20°	828.6	814.0	797.5	779.8	770.7	760.9	742.0	723.1	703.0	682.9	664.6
22.5°	821.3	806.0	788.4	768.9	759.1	748.7	728.6	707.9	685.9	664.0	644.5
25°	810.9	795.7	776.8	756.1	745.7	734.7	712.2	689.6	666.4	642.6	621.3
27.5°	798.1	781.7	761.5	740.2	729.2	717.6	693.9	669.5	645.1	620.1	597.5
30°	781.7	765.2	744.5	723.1	711.5	699.3	674.4	648.7	623.1	596.9	573.7
32.5°	761.5	745.7	725.6	702.4	692.0	678.6	653.0	627.4	600.0	572.5	548.1
35°	740.2	724.3	704.2	681.1	669.5	656.1	629.8	602.4	575.0	548.1	522.5
37.5°	717.0	701.2	681.1	657.3	645.7	632.3	604.8	578.6	550.0	522.5	496.3
40°	691.4	675.6	655.4	631.7	620.1	606.7	579.2	553.0	523.7	495.7	470.1
42.5°	664.6	648.7	628.0	604.2	592.6	579.2	551.8	525.6	496.3	468.9	442.0
45°	635.9	619.5	599.4	576.2	564.0	551.2	523.7	497.5	468.3	440.8	415.2
47.5°	606.1	589.6	569.5	545.7	534.1	521.3	493.9	468.3	439.6	412.2	387.2
50°	575.6	557.3	538.4	514.6	503.6	490.8	464.0	439.0	410.3	384.1	359.1
52.5°	543.9	526.2	506.7	482.9	471.9	459.1	433.5	407.3	381.1	354.9	330.5
55°	511.6	493.9	473.1	450.6	439.6	427.4	401.2	377.4	351.2	325.6	302.4
57.5°	479.2	461.6	440.8	418.3	407.3	395.1	371.9	346.9	321.3	296.9	274.4
60°	446.9	429.2	410.3	386.0	375.0	363.4	340.2	315.8	291.4	268.3	246.3
62.5°	418.3	397.5	378.0	356.1	343.3	331.7	309.7	286.6	262.8	240.2	218.9
65°	384.7	365.8	345.1	324.4	312.2	301.2	278.0	256.1	234.1	212.8	192.1
67.5°	355.5	335.3	312.8	293.9	282.3	272.5	250.6	227.4	206.1	186.0	166.5
70°	325.0	304.9	282.9	263.4	252.4	242.7	220.1	199.4	178.6	159.1	140.8
72.5°	295.1	274.4	254.3	234.1	223.2	212.8	194.5	172.6	152.4	134.1	116.5
75°	265.8	245.7	227.4	206.1	195.7	186.6	166.5	146.3	127.4	109.7	93.9
77.5°	236.6	216.5	198.8	178.6	169.5	159.1	140.8	121.3	103.7	87.2	72.6
80°	209.1	189.6	171.9	152.4	143.3	134.1	116.5	97.6	81.7	66.5	53.7
82.5°	182.3	163.4	145.7	127.4	118.9	109.7	93.3	76.8	61.6	48.8	36.6
85°	156.7	137.8	121.3	104.3	96.3	87.8	72.6	57.3	43.9	32.3	20.7
87.5°	137.8	118.9	101.2	83.5	75.6	66.5	53.7	39.6	28.0	16.5	7.9
90°	134.1	115.2	96.9	78.7	69.5	61.0	44.5	29.3	15.2	4.3	3.7
92.5°	135.4	117.1	98.8	82.3	73.8	65.8	51.2	37.2	27.4	21.9	17.7
95°	139.0	121.9	105.5	90.8	82.9	76.2	63.4	52.4	46.3	41.5	37.8
97.5°	148.8	132.9	117.7	104.3	96.9	91.5	81.1	72.6	67.7	62.8	59.8
100°	162.8	148.2	134.7	122.6	116.5	111.6	103.0	96.3	91.5	86.6	82.3
102.5°	181.1	167.7	156.1	145.1	139.6	135.4	128.0	121.9	117.7	111.6	107.3
105°	202.4	190.2	180.5	170.7	165.8	162.8	156.1	150.0	144.5	138.4	133.5
107.5°	228.0	217.1	207.9	200.0	195.7	193.3	187.8	179.3	174.4	167.1	161.6
110°	256.1	246.3	238.4	231.7	227.4	225.0	217.7	211.0	204.9	196.9	190.8



TEST NUMBER: P188221

CATALOG NUMBER: MPBL-2-LD4-UNV-2LO/2LO-40

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	287.8	278.6	271.9	265.8	261.6	259.1	251.8	243.9	237.2	228.6	221.9
115°	321.3	312.8	307.3	301.8	297.5	294.5	288.4	278.0	271.3	262.2	256.7
117.5°	357.3	350.0	344.5	339.0	334.7	331.7	323.2	314.0	306.7	298.2	289.0
120°	395.1	388.4	382.9	376.8	372.5	369.5	361.6	351.2	342.7	332.3	324.4
122.5°	434.7	428.6	423.1	415.8	411.6	408.5	400.0	389.6	380.5	368.9	362.2
125°	474.4	468.9	463.4	455.5	451.2	447.5	439.6	428.6	418.3	408.5	398.8
127.5°	514.6	509.7	504.2	495.7	491.4	487.8	479.2	467.7	456.7	444.5	435.9
130°	557.9	551.2	545.1	535.9	532.3	529.8	520.1	507.9	497.5	485.3	473.8
132.5°	598.7	592.0	585.9	578.6	573.1	570.1	560.3	547.5	536.6	522.5	511.6
135°	639.0	632.3	626.8	618.9	613.4	610.3	600.0	586.6	575.6	562.8	550.0
137.5°	677.4	671.3	665.2	657.9	651.8	649.4	638.4	625.0	613.4	600.0	587.2
140°	714.6	708.5	702.4	695.1	689.6	686.5	675.6	662.8	651.2	635.9	624.4
142.5°	751.2	744.5	739.0	731.7	726.2	722.5	711.5	698.7	687.2	673.7	660.9
145°	786.5	780.4	774.3	767.0	761.5	756.7	746.9	734.1	722.5	709.1	696.3
147.5°	818.9	812.8	806.7	800.0	793.9	789.6	779.2	767.0	754.2	742.6	730.4
150°	848.7	842.6	837.1	830.4	826.2	820.1	810.3	798.7	788.4	774.3	762.8
152.5°	874.3	870.1	865.2	857.3	854.2	848.7	839.6	828.0	816.4	805.4	794.5
155°	899.3	895.1	890.2	882.9	879.8	874.3	865.8	855.4	843.9	834.1	823.1
157.5°	920.7	916.4	911.5	904.8	901.8	896.9	888.4	878.6	869.5	859.1	848.7
160°	938.4	934.7	930.4	924.3	921.3	916.4	908.5	899.9	890.8	882.3	872.5
162.5°	953.0	949.9	945.7	940.2	937.7	933.5	926.2	918.8	910.3	902.4	893.8
165°	964.0	961.5	957.9	953.6	951.2	946.9	940.8	934.1	926.8	919.5	912.1
167.5°	971.3	968.2	965.2	961.5	959.7	956.0	949.9	945.1	939.0	932.3	926.8
170°	974.3	972.5	970.1	967.0	965.8	962.7	957.9	953.6	948.7	943.8	938.4
172.5°	974.9	973.7	972.5	970.7	968.8	967.0	962.7	960.3	956.0	952.4	948.7
175°	971.9	971.9	971.3	970.7	969.5	967.6	965.2	963.4	960.9	957.9	955.4
177.5°	965.8	966.4	966.4	967.0	966.4	965.2	963.4	963.4	962.1	960.3	959.1
180°	955.4	955.4	955.4	955.4	955.4	955.4	955.4	955.4	955.4	955.4	955.4



TEST NUMBER: P188221

CATALOG NUMBER: MPBL-2-LD4-UNV-2LO/2LO-40

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	751.2	751.2	751.2	751.2	751.2	751.2	751.2	751.2	751.2	751.2	751.2
2.5°	749.3	746.3	743.2	741.4	739.6	737.8	734.7	732.3	729.8	727.4	724.3
5°	740.2	734.7	729.2	726.8	724.3	719.5	714.6	709.7	706.1	702.4	698.1
7.5°	729.2	721.3	714.0	710.3	706.1	700.0	693.3	687.2	681.7	676.8	671.3
10°	717.0	706.7	698.1	692.6	687.8	679.8	672.5	663.4	656.7	650.0	643.9
12.5°	703.0	690.2	679.2	673.7	667.6	657.9	648.7	638.4	630.5	623.1	615.2
15°	685.3	671.3	658.5	651.8	645.1	634.1	623.7	612.2	604.2	595.7	587.8
17.5°	667.6	651.2	636.5	629.8	621.3	609.1	598.1	585.9	577.4	567.6	559.7
20°	647.5	629.2	613.4	605.5	596.9	583.5	571.3	558.5	549.4	539.6	531.1
22.5°	625.0	605.5	587.8	579.8	571.9	556.7	543.9	529.8	520.1	509.7	501.2
25°	601.2	579.8	562.2	553.0	545.1	528.6	515.2	501.2	491.4	481.1	471.9
27.5°	576.2	554.2	534.1	526.2	517.7	501.2	487.8	475.0	464.0	453.6	444.5
30°	550.6	528.0	507.3	500.0	491.4	473.8	460.3	446.3	436.6	426.2	417.7
32.5°	525.0	501.2	481.1	472.5	464.0	446.3	432.3	420.1	408.5	399.4	390.2
35°	498.1	474.4	453.6	445.1	435.3	419.5	405.5	393.3	381.7	371.3	364.0
37.5°	471.3	447.5	427.4	417.7	409.1	392.7	378.6	367.1	355.5	345.7	338.4
40°	445.1	420.7	400.0	391.4	382.3	365.8	352.4	340.8	329.9	320.1	312.8
42.5°	417.7	393.9	373.1	364.0	355.5	339.6	326.2	314.6	303.6	294.5	287.8
45°	390.2	367.1	346.3	337.8	329.2	313.4	300.6	289.6	278.6	269.5	262.8
47.5°	362.8	339.6	320.1	311.0	303.0	287.2	275.0	264.0	253.0	245.1	238.4
50°	336.0	312.8	293.3	284.7	276.8	261.6	248.8	239.0	228.6	220.1	214.6
52.5°	307.9	286.6	267.1	258.5	250.6	236.6	223.2	214.0	204.3	196.3	190.8
55°	279.9	258.5	240.2	232.3	225.0	210.4	199.4	189.6	179.9	172.6	168.3
57.5°	252.4	232.3	214.6	206.7	200.6	186.0	175.0	165.8	156.7	150.0	146.3
60°	226.8	205.5	189.0	181.7	175.6	161.6	151.2	142.7	134.1	129.3	125.0
62.5°	198.8	180.5	165.8	157.3	151.8	138.4	128.7	120.7	113.4	109.7	105.5
65°	173.2	155.5	139.6	133.5	128.0	115.8	107.3	100.0	93.9	90.8	86.6
67.5°	148.2	131.7	118.3	111.0	106.1	95.1	87.8	81.7	76.2	73.8	70.1
70°	123.2	108.5	96.3	89.6	85.4	76.2	69.5	64.6	59.8	57.9	54.9
72.5°	100.6	87.2	76.2	70.1	66.5	59.1	53.0	49.4	46.3	43.9	42.1
75°	80.5	67.1	57.9	52.4	49.4	43.3	39.0	36.0	34.1	32.9	31.7
77.5°	60.4	49.4	41.5	37.2	34.8	30.5	27.4	25.6	24.4	23.8	22.6
80°	42.7	33.5	27.4	24.4	23.2	20.1	18.3	17.7	16.5	15.9	14.6
82.5°	26.8	20.7	17.1	15.2	14.0	12.8	11.6	11.0	9.8	9.1	8.5
85°	14.0	11.0	9.1	7.9	7.9	6.7	5.5	5.5	5.5	5.5	5.5
87.5°	5.5	4.3	3.7	3.7	3.7	4.3	4.3	4.3	4.3	4.9	4.9
90°	3.7	4.3	4.3	4.3	4.9	4.9	5.5	5.5	6.1	6.1	6.1
92.5°	15.2	10.4	7.3	6.7	5.5	4.9	5.5	5.5	6.1	6.1	6.7
95°	36.0	31.7	28.7	26.2	24.4	20.1	17.1	13.4	12.2	11.0	9.8
97.5°	57.3	53.0	50.0	47.6	46.3	42.1	38.4	34.1	30.5	28.0	26.2
100°	79.9	75.0	72.6	70.1	68.3	65.2	62.2	58.5	54.9	51.8	48.8
102.5°	102.4	98.8	96.3	93.9	92.1	89.0	86.0	83.5	80.5	77.4	74.4
105°	128.0	125.0	121.3	118.9	117.1	114.0	111.0	108.5	105.5	103.7	101.2
107.5°	156.7	151.8	148.2	145.7	143.9	141.5	136.6	135.4	132.3	130.5	127.4
110°	184.1	180.5	176.2	173.8	171.9	168.9	164.0	162.8	160.4	158.5	155.5



TEST NUMBER: P188221

CATALOG NUMBER: MPBL-2-LD4-UNV-2LO/2LO-40

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	215.2	211.0	206.1	203.0	201.2	198.2	193.3	191.5	189.0	187.8	184.7
115°	248.8	242.7	237.8	234.7	232.3	229.3	223.8	221.9	219.5	217.7	216.5
117.5°	280.5	275.6	270.1	266.4	264.6	261.0	255.5	253.6	250.6	249.4	246.3
120°	315.2	309.7	303.6	300.0	297.5	293.3	287.8	285.3	282.3	280.5	278.0
122.5°	350.6	345.1	338.4	334.7	332.9	327.4	321.3	318.3	315.2	313.4	311.0
125°	387.2	381.1	373.1	368.9	365.8	361.6	354.9	351.8	348.8	346.3	343.9
127.5°	424.4	417.7	409.1	404.9	401.2	395.1	389.6	385.3	382.3	379.9	378.0
130°	462.2	454.2	445.1	440.8	438.4	432.3	425.0	419.5	416.4	414.6	411.6
132.5°	500.6	492.0	481.7	477.4	474.4	465.2	460.3	454.9	451.2	448.8	445.7
135°	538.4	529.2	518.3	514.0	511.6	501.2	495.7	489.6	485.9	483.5	479.8
137.5°	575.0	565.8	554.8	550.0	546.9	536.6	531.1	524.4	520.1	517.0	512.8
140°	612.2	602.4	590.8	585.9	582.3	571.9	565.8	558.5	553.6	550.6	546.3
142.5°	648.1	638.4	625.6	620.7	617.6	606.7	600.6	592.6	587.2	583.5	579.2
145°	684.1	673.7	661.5	656.1	653.0	642.0	635.3	628.0	621.3	615.8	612.2
147.5°	718.2	706.7	695.7	689.6	687.2	676.2	669.5	661.5	654.8	648.7	645.7
150°	750.6	741.4	728.6	724.3	720.1	709.1	702.4	693.9	687.2	681.1	676.8
152.5°	782.3	771.9	760.3	756.1	750.6	741.4	734.1	725.6	719.5	711.5	707.3
155°	811.5	802.4	790.8	785.9	781.1	772.5	765.2	756.7	750.0	743.2	737.8
157.5°	837.8	829.8	818.2	813.4	808.5	800.6	793.9	786.5	779.8	773.1	768.2
160°	862.8	854.8	843.9	839.6	835.3	828.0	821.9	814.6	808.5	801.8	796.3
162.5°	885.3	878.0	868.2	864.0	859.7	853.6	847.5	840.8	834.7	828.0	822.5
165°	904.2	898.7	889.6	885.9	882.3	876.2	871.3	865.2	859.7	853.0	848.1
167.5°	920.1	914.6	906.7	903.6	901.2	895.7	892.0	887.1	882.3	876.2	871.3
170°	933.5	928.6	922.5	918.8	917.0	913.4	910.3	906.0	902.4	897.5	892.6
172.5°	944.5	941.4	935.9	933.5	931.7	929.2	926.2	923.1	919.5	915.8	910.9
175°	952.4	950.6	946.3	945.1	943.2	942.6	940.8	938.4	936.5	932.3	928.6
177.5°	957.9	957.3	953.6	952.4	952.4	951.8	951.8	949.9	949.3	946.3	943.8
180°	955.4	955.4	955.4	955.4	955.4	955.4	955.4	955.4	955.4	955.4	955.4



TEST NUMBER: P188221

CATALOG NUMBER: MPBL-2-LD4-UNV-2LO/2LO-40

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	751.2	751.2	751.2	751.2	751.2	751.2	751.2	751.2
2.5°	721.3	718.9	717.6	715.8	714.0	711.5	710.9	711.5
5°	694.5	691.4	689.6	687.8	685.3	684.1	682.9	683.5
7.5°	666.4	663.4	660.9	659.1	656.7	654.2	653.6	654.2
10°	637.8	633.5	629.2	628.0	625.6	622.5	621.3	621.9
12.5°	609.1	603.6	600.0	600.0	595.1	592.0	590.2	591.4
15°	580.5	575.0	571.9	570.7	565.8	562.8	560.9	562.8
17.5°	552.4	546.9	542.7	542.0	537.2	534.1	532.3	533.5
20°	523.1	517.0	513.4	512.8	507.3	504.2	502.4	501.2
22.5°	493.9	487.2	483.5	482.9	478.0	474.4	473.8	471.3
25°	464.6	458.5	454.9	454.2	449.4	445.7	445.7	442.7
27.5°	437.2	431.1	427.4	426.8	421.9	418.9	418.3	418.3
30°	410.3	404.2	400.6	400.0	395.7	392.0	392.0	392.0
32.5°	383.5	378.0	375.6	373.8	370.7	366.4	366.4	365.8
35°	357.3	352.4	350.0	348.1	345.1	341.4	341.4	340.2
37.5°	331.7	327.4	325.6	323.8	320.1	316.4	317.1	315.8
40°	306.7	302.4	301.2	298.8	295.7	292.1	292.7	291.4
42.5°	281.7	277.4	276.2	274.4	271.3	268.3	268.3	267.1
45°	257.3	252.4	252.4	250.6	247.5	243.9	244.5	243.3
47.5°	232.9	229.3	228.0	226.8	223.8	220.7	220.7	219.5
50°	209.1	205.5	204.3	203.0	200.6	197.5	198.2	196.9
52.5°	186.0	181.7	181.7	180.5	177.4	176.8	175.6	174.4
55°	162.8	160.4	159.1	158.5	156.1	155.5	153.6	153.0
57.5°	140.8	139.0	138.4	137.2	134.7	134.7	132.9	132.3
60°	121.3	118.9	118.3	117.1	115.2	114.6	113.4	112.8
62.5°	101.8	100.6	99.4	98.2	96.9	96.3	95.1	94.5
65°	83.5	82.9	81.7	80.5	79.3	78.0	77.4	77.4
67.5°	67.7	66.5	65.2	64.6	64.0	62.8	62.2	61.6
70°	53.0	51.8	51.2	50.6	50.0	49.4	49.4	48.8
72.5°	40.9	40.2	39.6	39.6	38.4	38.4	37.8	37.8
75°	30.5	30.5	29.9	29.3	28.7	28.7	28.0	28.0
77.5°	21.9	21.3	20.7	20.7	20.1	20.1	19.5	19.5
80°	14.6	14.0	13.4	12.8	12.2	12.2	11.6	11.6
82.5°	7.9	7.3	6.7	6.7	6.1	6.1	6.1	6.1
85°	5.5	4.9	4.9	4.9	4.9	4.9	4.9	4.9
87.5°	4.9	4.9	4.9	4.9	4.9	4.9	5.5	5.5
90°	6.1	6.1	5.5	5.5	5.5	6.1	6.1	6.7
92.5°	6.7	6.7	6.7	6.7	6.7	6.7	7.3	7.3
95°	8.5	8.5	7.9	7.3	7.3	7.3	7.3	7.3
97.5°	24.4	22.6	23.2	21.9	20.7	21.3	20.7	20.1
100°	45.1	44.5	43.3	42.1	40.9	40.2	39.0	38.4
102.5°	71.3	70.7	69.5	68.3	67.1	65.8	64.6	62.8
105°	98.2	98.2	96.9	95.1	93.9	92.7	91.5	90.2
107.5°	126.8	125.6	125.0	123.8	122.6	121.3	120.7	119.5
110°	154.9	154.3	153.0	151.8	151.2	150.0	149.4	148.2



TEST NUMBER: P188221

CATALOG NUMBER: MPBL-2-LD4-UNV-2LO/2LO-40

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	184.1	183.5	182.3	181.1	180.5	179.3	179.3	177.4
115°	214.6	214.0	213.4	212.2	211.0	209.7	209.7	208.5
117.5°	246.3	245.7	243.3	243.9	242.7	242.1	242.1	240.2
120°	278.0	277.4	276.8	276.2	275.0	274.4	273.8	271.9
122.5°	311.0	310.3	309.1	308.5	307.9	307.3	306.7	304.9
125°	343.9	342.7	342.7	341.4	341.4	340.2	339.6	338.4
127.5°	377.4	375.6	375.6	374.4	375.0	372.5	372.5	371.3
130°	411.0	409.1	409.1	409.1	408.5	407.3	406.1	404.9
132.5°	445.1	442.0	442.7	442.0	441.4	439.0	440.2	438.4
135°	478.6	475.6	475.6	475.6	474.4	471.9	473.8	471.3
137.5°	509.7	510.3	508.5	507.9	505.5	504.8	506.1	503.6
140°	544.5	542.7	541.4	540.2	539.6	537.2	538.4	536.6
142.5°	575.6	573.7	573.1	572.5	569.5	568.9	569.5	568.3
145°	608.5	606.1	604.8	604.8	603.0	600.6	601.2	599.4
147.5°	640.8	637.8	636.5	635.9	632.9	631.7	630.5	630.5
150°	671.9	668.9	667.6	667.0	663.4	663.4	660.9	660.3
152.5°	702.4	698.7	696.9	696.3	693.3	691.4	690.2	692.0
155°	732.9	729.2	726.8	725.0	723.1	721.3	719.5	721.3
157.5°	762.8	759.1	756.7	754.8	752.4	752.4	749.3	751.2
160°	791.4	787.1	785.3	783.5	781.1	779.8	777.4	778.6
162.5°	817.6	813.4	810.3	809.1	806.7	805.4	803.0	803.6
165°	842.6	839.0	836.5	834.7	831.7	830.4	828.0	829.2
167.5°	867.0	864.0	861.5	859.7	857.3	855.4	854.2	854.8
170°	889.0	885.9	884.7	882.9	881.7	879.8	878.0	876.2
172.5°	907.3	904.2	903.0	901.2	898.7	896.9	895.1	893.2
175°	924.3	921.3	920.1	917.6	915.8	912.8	910.3	908.5
177.5°	940.8	939.0	937.7	935.9	934.7	932.9	931.0	928.6
180°	955.4	955.4	955.4	955.4	955.4	955.4	955.4	955.4

(END OF REPORT)