

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: P188254

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P188254
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-1LO-1LO-40
Description:
Light Source: (168) NICHIA ELM 4000K LED
2UT217042A8404A
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4370.4 lumens
Efficiency: N/A
Efficacy: 104.8 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

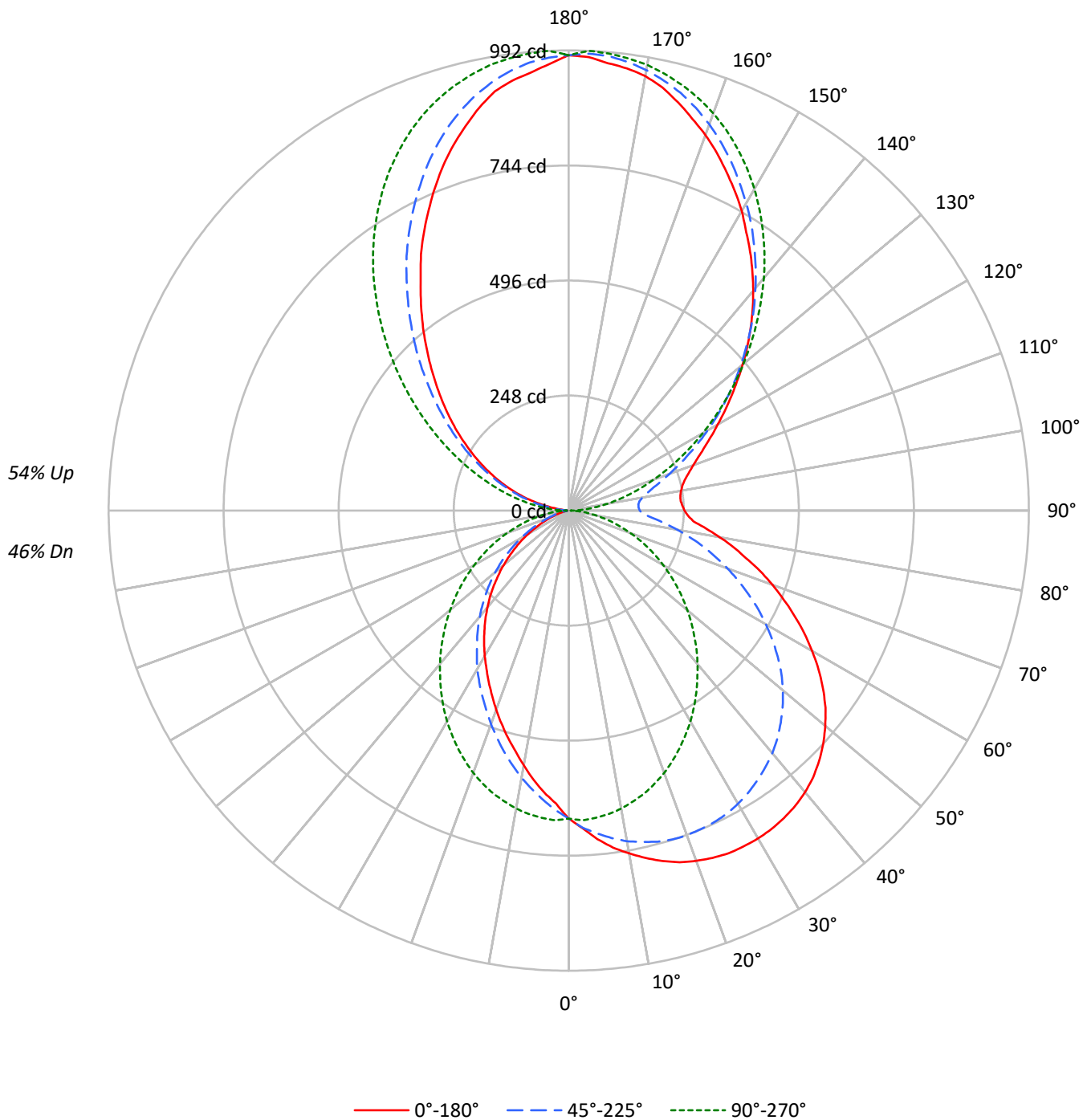
Input Watts (W): 41.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P188254

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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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52
1	96	91	87	84	88	84	80	77	70	67	65	57	55	54	45	44	43
2	87	79	73	68	80	73	67	63	61	57	53	50	47	44	39	37	35
3	79	70	62	56	72	64	57	52	53	48	44	44	40	37	35	32	30
4	72	61	53	47	66	57	49	44	47	42	38	39	35	31	31	28	26
5	66	55	46	40	61	50	43	38	42	37	32	35	30	27	28	25	22
6	61	49	41	35	56	45	38	32	38	32	28	31	27	24	25	22	19
7	56	44	36	30	52	41	33	28	34	29	25	28	24	21	23	20	17
8	52	40	32	27	48	37	30	25	31	26	22	26	22	18	21	18	15
9	49	36	29	24	45	34	27	22	29	23	19	24	20	17	19	16	14
10	45	33	26	21	42	31	24	20	26	21	17	22	18	15	18	15	12

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	5718	5718	5718
5°	5790	5702	4966
10°	5841	5608	4342
15°	5872	5482	3804
20°	5869	5326	3335
25°	5839	5137	2922
30°	5781	4942	2565
35°	5708	4716	2236
40°	5613	4487	1930
45°	5468	4250	1633
50°	5272	4004	1340
55°	5026	3745	1057
60°	4717	3468	783
65°	4375	3166	526
70°	4022	2798	315
75°	3639	2397	157
80°	3298	1870	61
85°	2965	1310	26



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.9	1.4
10°-20°	179.9	4.1
20°-30°	271.7	6.2
30°-40°	328.0	7.5
40°-50°	342.7	7.8
50°-60°	313.0	7.2
60°-70°	247.0	5.7
70°-80°	166.3	3.8
80°-90°	98.4	2.3
90°-100°	92.2	2.1
100°-110°	156.5	3.6
110°-120°	246.0	5.6
120°-130°	334.4	7.7
130°-140°	397.9	9.1
140°-150°	414.7	9.5
150°-160°	369.3	8.4
160°-170°	257.2	5.9
170°-180°	92.3	2.1
0°-30°	514.5	11.8
0°-40°	842.4	19.3
0°-60°	1498.1	34.3
0°-90°	2009.9	46.0
90°-120°	494.7	11.3
90°-150°	1641.8	37.6
90°-180°	2361.0	54.0
0°-180°	4370.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	664	664	664	664	664	
5°	711	699	665	627	610	69
15°	782	739	631	538	507	222
25°	815	741	565	441	408	376
35°	809	710	479	344	317	507
45°	763	646	383	252	228	589
55°	669	550	284	162	141	598
65°	537	428	188	80	65	532
75°	395	300	98	23	17	420
85°	270	180	28	4	2	235
90°	249	153	4	5	5	137
95°	242	151	40	10	5	199
105°	260	188	135	94	84	277
115°	323	284	261	194	182	322
125°	427	413	411	314	290	383
135°	554	555	573	455	413	428
145°	682	697	730	610	556	427
155°	805	829	861	765	715	371
165°	911	932	949	894	858	256
175°	968	983	989	969	948	92
180°	982	982	982	982	982	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	664.0	664.0	664.0	664.0	664.0	664.0	664.0	664.0	664.0	664.0	664.0
2.5°	685.3	682.9	685.3	684.7	686.5	687.7	687.7	688.3	687.7	685.9	684.1
5°	710.9	709.1	709.7	707.9	707.9	708.5	707.9	707.2	705.4	701.8	698.7
7.5°	732.9	731.6	731.6	729.2	728.0	728.6	727.4	725.5	721.3	717.0	712.1
10°	750.5	749.3	749.3	746.9	745.0	745.0	743.8	740.8	735.9	729.8	723.7
12.5°	767.0	765.8	765.2	762.1	759.7	759.1	757.9	754.2	747.5	740.2	731.6
15°	782.2	781.6	780.4	777.4	774.3	772.5	771.3	765.8	757.9	748.7	739.0
17.5°	795.0	793.8	792.6	788.9	784.7	782.8	781.0	774.9	765.2	754.8	743.2
20°	803.6	803.0	800.5	796.9	792.6	790.2	787.7	780.4	770.7	758.5	745.0
22.5°	810.3	809.1	806.6	801.8	796.9	793.8	790.8	782.8	771.9	758.5	743.2
25°	815.2	813.3	810.3	806.0	799.9	796.3	792.6	783.5	771.9	757.2	741.4
27.5°	816.4	815.2	812.1	807.2	800.5	796.9	793.2	783.5	770.7	754.8	737.1
30°	816.4	815.2	811.5	806.0	798.7	795.0	790.2	779.8	765.8	749.3	729.8
32.5°	813.9	812.7	809.1	803.0	795.0	790.2	785.3	773.1	758.5	740.8	720.7
35°	809.1	807.8	803.6	797.5	788.3	782.8	778.0	765.2	749.3	730.4	709.7
37.5°	802.4	800.5	796.3	789.6	779.8	774.9	768.8	755.4	739.0	719.4	696.9
40°	792.6	790.8	785.9	778.6	769.4	763.3	757.9	743.2	725.5	705.4	682.9
42.5°	779.8	778.0	773.1	765.8	756.0	749.9	743.2	728.0	711.5	689.6	665.8
45°	763.3	761.5	757.2	749.3	739.0	732.2	725.5	710.3	691.4	670.1	646.3
47.5°	744.4	742.6	738.3	729.8	720.1	714.0	706.0	690.8	672.5	649.9	625.5
50°	721.9	720.1	715.8	707.9	698.1	690.8	683.5	667.6	649.3	626.8	602.4
52.5°	697.5	695.1	690.8	682.9	673.7	667.0	659.1	642.6	624.3	602.4	578.0
55°	669.4	667.6	663.3	655.4	646.3	639.6	631.6	614.6	596.3	574.9	549.9
57.5°	639.0	636.5	632.9	624.9	616.4	609.7	601.8	586.5	567.0	545.7	521.3
60°	606.0	604.2	599.9	592.6	582.3	578.0	570.1	554.2	535.9	514.6	490.8
62.5°	572.5	570.7	566.4	559.1	549.3	545.1	537.8	523.1	503.6	483.5	460.3
65°	537.1	535.3	531.0	523.7	513.4	510.9	503.6	489.0	471.9	450.6	428.0
67.5°	501.8	500.0	495.7	487.1	480.4	476.2	468.9	455.4	438.4	417.6	395.7
70°	467.0	464.0	459.7	451.8	445.1	438.4	434.1	421.3	404.8	384.7	364.0
72.5°	432.3	429.2	425.0	418.3	410.9	404.8	400.0	387.2	370.7	351.8	331.1
75°	395.1	394.5	390.2	382.9	376.2	371.9	365.8	353.0	337.8	318.9	300.0
77.5°	363.4	360.3	356.1	349.4	342.6	337.2	332.3	320.1	305.5	288.4	268.3
80°	330.5	327.4	323.7	317.0	309.7	304.8	300.0	287.8	273.8	257.3	237.2
82.5°	298.8	295.7	293.3	285.3	278.0	273.8	268.3	256.7	242.0	227.4	208.5
85°	270.1	267.0	264.6	256.7	249.4	244.5	239.0	226.8	212.8	198.2	180.5
87.5°	257.3	255.5	251.8	245.1	236.0	230.5	225.0	211.6	195.7	178.6	159.7
90°	249.4	247.5	243.9	236.6	228.0	222.5	216.4	203.0	187.8	170.7	153.0
92.5°	245.1	243.3	239.6	232.9	223.8	218.9	212.8	199.4	184.1	167.7	150.6
95°	242.0	240.8	236.6	230.5	221.3	216.4	210.3	197.5	182.9	167.1	150.6
97.5°	242.7	241.4	237.2	231.1	222.5	217.1	211.6	199.4	184.7	170.1	153.6
100°	245.7	244.5	240.8	234.7	226.2	221.3	215.8	203.6	190.8	176.2	161.6
102.5°	251.2	250.0	247.5	240.8	232.9	228.0	223.1	211.6	199.4	186.6	173.2
105°	259.7	258.5	255.5	250.0	242.7	237.8	233.5	222.5	211.6	200.0	187.8
107.5°	271.3	270.1	267.0	262.8	255.5	251.2	246.9	237.2	226.8	217.7	207.3
110°	285.3	284.7	281.7	278.0	271.3	267.7	264.0	255.5	247.5	239.0	230.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	302.4	301.8	300.0	295.7	290.2	286.6	284.1	276.2	270.1	262.8	256.1
115°	323.1	322.5	320.1	318.3	312.2	309.1	306.7	300.6	295.1	289.6	284.1
117.5°	345.7	345.1	343.3	341.4	337.2	334.1	332.3	326.8	323.1	318.9	314.0
120°	370.7	370.1	368.9	367.6	363.4	360.9	359.7	355.5	352.4	348.7	345.7
122.5°	398.1	397.5	396.3	394.5	393.3	389.6	388.4	385.9	384.1	381.7	378.6
125°	426.8	426.8	425.6	424.3	423.1	421.3	421.3	417.6	417.0	415.2	412.8
127.5°	457.3	457.9	456.7	455.4	454.8	452.4	453.6	450.6	448.7	448.7	447.5
130°	489.0	489.6	488.4	487.8	487.8	486.5	485.9	484.1	482.9	482.9	482.9
132.5°	521.9	521.9	521.3	520.1	519.5	517.6	518.9	518.2	517.6	517.6	518.2
135°	554.2	554.8	554.2	553.6	553.0	551.2	553.0	552.4	552.4	553.6	554.8
137.5°	586.5	586.5	585.9	585.3	585.9	584.1	585.9	585.9	586.5	588.4	590.8
140°	618.8	618.8	618.2	618.2	618.2	617.6	618.8	619.5	620.7	622.5	626.2
142.5°	650.5	650.5	649.9	649.9	651.2	649.9	651.8	653.0	654.8	657.3	661.5
145°	681.6	681.6	681.0	681.6	682.9	684.1	685.3	687.1	689.0	692.6	696.9
147.5°	712.1	712.7	712.1	712.7	715.8	716.4	718.2	720.7	723.7	728.0	732.2
150°	745.7	743.8	743.2	743.8	746.9	747.5	749.9	752.4	756.0	760.3	765.2
152.5°	776.1	774.3	773.7	774.3	776.8	778.0	779.8	782.8	786.5	791.4	796.9
155°	804.8	803.0	803.0	803.6	807.2	809.7	810.9	813.9	817.6	823.1	829.2
157.5°	834.7	832.2	832.2	833.5	837.1	839.6	840.8	843.8	848.1	853.0	858.5
160°	861.5	860.3	859.7	860.9	865.2	867.6	868.8	871.3	875.5	880.4	885.9
162.5°	885.9	883.4	884.1	885.3	889.5	892.0	893.2	896.9	900.5	904.8	910.3
165°	910.9	909.1	907.8	909.7	913.3	915.8	917.0	919.4	923.1	927.3	932.2
167.5°	934.1	931.0	931.0	931.6	934.7	935.9	937.7	939.5	942.6	945.6	949.3
170°	951.1	949.9	948.7	949.3	952.3	953.6	954.8	956.6	959.1	960.9	963.9
172.5°	961.5	960.3	959.7	960.3	963.9	965.8	967.0	969.4	971.2	973.1	975.5
175°	968.2	967.6	967.0	968.8	973.1	974.9	976.1	978.0	979.8	981.0	983.4
177.5°	978.6	976.7	974.9	974.9	978.0	979.2	979.8	981.0	982.8	984.0	985.9
180°	981.6	981.6	981.6	981.6	981.6	981.6	981.6	981.6	981.6	981.6	981.6



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	664.0	664.0	664.0	664.0	664.0	664.0	664.0	664.0	664.0	664.0	664.0
2.5°	682.2	679.2	675.5	672.5	671.9	671.3	669.4	670.1	669.4	668.2	665.8
5°	695.7	690.8	685.3	681.0	678.6	676.8	673.1	671.3	668.8	665.2	660.3
7.5°	707.2	700.5	693.2	686.5	683.5	680.4	674.9	670.7	666.4	659.7	653.0
10°	716.4	708.5	698.7	690.2	685.9	681.0	673.7	667.6	660.3	652.4	643.2
12.5°	723.7	713.3	701.8	690.8	685.3	680.4	670.1	661.5	652.4	642.0	631.6
15°	728.6	717.0	703.6	690.2	683.5	677.4	665.2	654.2	643.2	631.0	618.8
17.5°	731.0	717.0	701.8	686.5	679.2	671.3	657.3	645.1	631.6	617.0	603.0
20°	731.0	715.8	698.7	681.6	672.5	664.0	648.1	632.9	617.6	601.8	585.9
22.5°	728.6	711.5	692.6	673.1	664.0	654.2	635.9	619.5	602.4	584.1	567.0
25°	724.3	705.4	685.3	664.6	653.6	643.2	623.1	604.2	585.3	565.2	546.9
27.5°	718.2	698.1	675.5	653.0	641.4	629.8	608.5	587.7	566.4	545.1	526.2
30°	709.7	688.3	664.0	640.2	627.4	615.2	592.0	569.5	546.9	524.9	503.6
32.5°	698.1	675.5	650.5	624.9	611.5	598.7	573.7	549.9	526.2	502.4	481.7
35°	685.3	661.5	635.9	608.5	594.5	580.4	554.8	529.2	504.2	479.2	457.3
37.5°	671.9	647.5	620.1	591.4	576.8	562.1	534.7	507.9	481.7	455.4	433.5
40°	656.6	630.4	601.8	572.5	557.3	542.0	513.4	485.3	457.9	431.7	409.1
42.5°	639.0	611.5	582.3	551.8	535.9	520.7	490.8	462.1	434.1	407.9	385.3
45°	618.2	590.2	560.9	529.8	513.4	497.5	467.6	438.4	409.7	382.9	360.3
47.5°	597.5	568.2	538.4	506.7	490.2	473.7	443.9	412.8	385.3	358.5	336.6
50°	573.7	545.7	514.0	481.7	465.2	449.3	418.3	389.0	359.1	333.5	310.9
52.5°	549.3	520.7	489.0	456.1	440.2	424.3	393.3	362.2	334.7	309.1	287.2
55°	522.5	493.9	460.9	429.8	413.4	398.1	366.4	337.2	309.7	284.1	262.8
57.5°	493.2	466.4	435.3	401.8	385.9	371.9	340.8	311.6	284.1	259.7	238.4
60°	463.4	435.9	405.4	373.1	357.9	342.6	312.8	285.3	258.5	235.3	214.6
62.5°	433.5	407.9	377.4	345.1	329.8	315.8	287.2	259.1	234.1	211.6	191.4
65°	401.8	376.8	347.5	317.0	301.2	288.4	260.3	233.5	209.7	187.8	168.3
67.5°	370.1	346.3	318.3	287.8	273.8	260.9	233.5	208.5	185.3	164.6	145.7
70°	338.4	315.2	288.4	259.7	245.7	233.5	207.3	182.9	161.6	140.8	123.8
72.5°	307.3	284.7	258.5	231.1	218.9	206.7	181.7	158.5	137.8	118.9	102.4
75°	276.2	254.2	229.9	203.6	191.4	179.9	156.1	134.1	115.2	98.2	82.3
77.5°	245.7	225.0	201.2	176.2	165.8	154.3	131.7	111.6	93.9	77.4	63.4
80°	216.4	196.3	174.4	150.6	140.2	129.9	108.5	89.6	73.8	58.5	46.3
82.5°	187.8	168.9	147.5	125.6	116.5	106.7	87.2	70.1	55.5	42.7	31.7
85°	160.4	142.7	122.5	102.4	93.3	84.7	67.1	51.8	39.0	28.0	17.7
87.5°	140.2	120.7	101.2	81.1	73.2	65.2	49.4	36.6	24.4	14.0	5.5
90°	133.5	114.0	94.5	75.6	66.5	57.3	40.8	26.8	14.6	4.3	3.0
92.5°	132.3	114.0	95.7	78.0	69.5	62.2	47.6	34.1	23.8	20.1	15.9
95°	132.9	115.8	99.4	83.5	76.2	69.5	57.9	48.2	42.1	40.2	35.4
97.5°	137.8	122.5	107.9	93.9	87.8	82.3	75.0	67.7	63.4	61.0	56.1
100°	146.9	132.9	120.7	109.1	104.9	101.2	96.3	90.8	87.2	84.1	78.7
102.5°	159.7	146.9	138.4	129.3	126.2	123.8	120.7	115.2	112.2	108.5	102.4
105°	176.8	167.7	159.7	153.0	151.2	148.8	146.9	142.1	139.0	135.4	128.6
107.5°	198.2	190.2	184.7	179.3	178.6	176.8	176.2	171.3	167.7	164.0	156.7
110°	223.1	216.4	212.2	208.5	207.9	206.7	206.7	202.4	198.8	194.5	187.2



TEST NUMBER: P188254

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

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	250.0	245.1	242.0	239.0	239.0	238.4	238.4	234.7	230.5	226.8	218.3
115°	279.2	275.6	275.0	271.3	271.3	270.7	271.9	268.3	265.2	260.9	252.4
117.5°	310.3	307.9	307.9	304.8	305.5	305.5	307.3	304.2	300.6	296.3	287.8
120°	343.3	341.4	340.8	339.6	340.2	340.8	343.9	340.8	337.2	333.5	323.7
122.5°	376.8	376.2	376.2	377.4	376.8	377.4	381.7	379.2	375.0	371.3	361.5
125°	411.5	411.5	412.8	414.0	414.0	417.0	418.9	418.3	414.0	410.9	400.0
127.5°	446.3	448.1	447.5	451.2	452.4	455.4	457.9	456.1	453.0	450.6	441.4
130°	483.5	484.7	485.3	489.6	490.8	494.5	498.1	496.9	493.2	491.4	481.7
132.5°	520.1	522.5	523.7	527.4	530.4	533.5	538.4	537.8	533.5	532.3	521.9
135°	557.9	560.9	562.7	567.6	570.1	574.3	579.2	578.6	574.3	573.1	563.4
137.5°	594.5	598.1	600.6	606.0	609.1	613.4	619.5	619.5	615.2	613.4	604.2
140°	630.4	635.3	637.7	643.8	647.5	651.8	658.5	659.7	655.4	654.2	645.1
142.5°	666.4	671.9	674.9	681.0	685.3	689.6	696.3	698.1	694.4	693.2	684.7
145°	703.6	708.5	711.5	718.2	723.7	726.8	734.1	735.9	732.2	730.4	723.1
147.5°	739.6	743.8	746.9	753.6	759.1	762.1	768.8	771.9	768.2	766.4	760.3
150°	772.5	777.4	780.4	787.1	792.6	796.3	803.0	805.4	802.4	800.5	795.0
152.5°	803.0	809.7	812.1	820.0	824.9	828.0	834.7	837.1	834.7	832.2	828.0
155°	834.1	840.2	842.0	849.9	854.2	857.2	863.3	865.8	863.9	860.9	857.8
157.5°	863.3	866.4	870.0	877.4	881.6	884.1	890.2	892.6	890.8	887.7	885.3
160°	889.5	893.8	895.0	902.3	905.4	908.4	913.3	916.4	914.5	911.5	909.7
162.5°	913.9	915.8	917.6	924.3	926.7	929.2	933.4	935.9	934.1	931.6	930.4
165°	936.5	936.5	937.7	943.2	945.0	946.9	950.5	953.0	951.1	948.7	948.1
167.5°	953.0	952.3	953.6	958.4	960.3	961.5	965.1	967.0	965.8	963.3	963.3
170°	967.0	965.1	966.4	970.6	972.5	973.1	976.1	978.6	977.3	975.5	975.5
172.5°	977.3	974.9	975.5	979.2	980.4	981.6	984.0	985.9	985.3	983.4	984.7
175°	984.0	981.6	981.6	985.3	985.9	986.5	988.9	990.8	990.8	988.9	990.1
177.5°	986.5	984.0	983.4	987.7	988.3	988.9	990.8	993.2	993.2	992.0	993.2
180°	981.6	981.6	981.6	981.6	981.6	981.6	981.6	981.6	981.6	981.6	981.6



TEST NUMBER: P188254

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

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	664.0	664.0	664.0	664.0	664.0	664.0	664.0	664.0	664.0	664.0	664.0
2.5°	662.7	657.9	654.2	653.0	651.2	648.7	647.5	648.1	646.3	645.7	644.4
5°	655.4	648.7	643.2	640.8	638.4	634.7	631.6	629.8	626.8	624.3	621.9
7.5°	646.3	637.7	629.8	627.4	623.7	618.2	614.0	610.9	606.0	602.4	599.3
10°	634.1	623.7	615.2	611.5	607.3	600.6	594.5	590.8	584.7	580.4	576.2
12.5°	620.1	608.5	597.5	593.2	589.0	581.0	574.3	568.8	561.5	556.7	551.8
15°	605.4	592.6	579.8	575.6	569.5	559.7	553.0	546.3	538.4	532.9	528.0
17.5°	589.0	573.7	560.3	556.0	548.7	538.4	529.2	522.5	514.0	507.9	503.6
20°	570.1	554.8	540.2	534.1	526.8	515.8	506.0	498.7	489.6	483.5	477.4
22.5°	549.9	533.5	517.6	511.5	503.6	492.0	482.3	473.7	464.6	457.9	452.4
25°	529.2	511.5	495.1	489.0	480.4	468.9	457.9	449.3	441.4	434.1	428.0
27.5°	507.3	489.0	471.9	465.2	457.9	445.1	434.1	425.0	417.6	410.3	404.8
30°	484.1	465.8	448.1	441.4	432.9	420.7	410.3	401.2	393.9	385.9	381.1
32.5°	460.3	441.4	423.7	417.0	409.1	395.7	384.7	376.2	368.9	362.2	356.1
35°	435.3	416.4	399.4	392.0	384.7	371.3	360.3	351.8	344.5	338.4	332.9
37.5°	411.5	392.6	375.0	368.3	360.9	347.5	337.2	328.6	321.9	315.2	311.6
40°	387.8	368.3	351.2	344.5	337.2	323.7	312.8	304.8	298.1	292.0	288.4
42.5°	364.0	345.1	327.4	320.7	313.4	300.0	289.6	281.7	275.0	269.5	265.2
45°	338.4	320.1	303.0	296.3	289.0	276.2	265.8	258.5	251.8	246.3	242.7
47.5°	314.0	296.3	279.9	273.1	265.8	253.0	243.3	235.3	229.2	223.1	219.5
50°	289.6	271.9	256.1	249.4	242.7	229.9	220.7	211.6	206.1	200.6	196.9
52.5°	265.8	248.8	232.9	226.2	218.9	206.7	198.2	189.6	184.1	179.3	174.4
55°	242.0	225.0	210.3	203.0	196.3	184.1	175.6	167.1	161.6	155.5	152.4
57.5°	218.3	201.2	187.2	180.5	173.2	161.6	153.0	145.1	139.6	134.7	131.1
60°	195.1	178.6	164.0	157.9	150.6	139.6	131.7	123.8	118.9	113.4	111.0
62.5°	171.9	156.1	142.1	136.0	129.3	119.5	111.0	103.6	98.8	94.5	91.5
65°	150.6	134.1	121.3	115.2	109.1	98.2	91.5	84.7	80.5	76.8	73.8
67.5°	128.6	112.8	100.6	95.1	89.0	80.5	73.2	67.1	63.4	59.8	57.3
70°	107.3	92.7	81.7	75.6	70.7	63.4	56.1	51.2	48.2	45.1	42.7
72.5°	87.2	74.4	63.4	57.9	54.3	47.6	42.1	37.2	34.8	32.3	30.5
75°	68.3	56.7	46.9	42.7	39.0	34.1	29.3	25.6	23.2	21.9	20.1
77.5°	51.2	40.8	32.9	28.7	26.2	22.6	18.9	16.5	15.2	14.0	13.4
80°	36.0	26.8	20.7	18.3	15.9	13.4	11.6	10.4	9.8	8.5	8.5
82.5°	21.9	15.2	11.0	9.8	8.5	7.9	6.7	6.1	6.1	5.5	4.9
85°	10.4	6.7	5.5	5.5	4.9	4.9	4.3	4.3	3.7	3.7	3.7
87.5°	3.7	3.7	3.7	3.0	3.7	3.0	3.0	3.7	3.7	3.7	3.7
90°	3.0	3.7	3.7	3.7	4.3	4.3	4.3	4.9	4.9	4.9	4.9
92.5°	12.2	9.1	5.5	4.9	4.3	4.3	4.3	4.3	4.3	4.3	4.9
95°	31.7	28.7	24.4	22.6	20.1	16.5	13.4	11.0	9.8	7.3	6.1
97.5°	52.4	48.8	44.5	43.3	40.8	37.2	32.9	29.9	28.0	25.0	23.2
100°	73.8	70.1	65.2	64.0	61.6	58.5	54.9	51.8	50.0	45.7	43.9
102.5°	97.6	93.9	87.8	86.0	83.5	80.5	77.4	73.8	71.9	68.9	66.5
105°	123.8	118.3	111.6	109.7	106.7	103.6	99.4	95.7	93.9	90.8	90.2
107.5°	151.2	145.1	137.2	134.7	131.7	127.4	122.5	118.9	117.1	114.0	112.8
110°	180.5	173.8	165.2	162.2	158.5	153.0	148.2	143.9	141.4	137.8	136.6



TEST NUMBER: P188254

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

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	211.6	203.6	194.5	190.8	186.6	181.1	175.0	171.3	167.1	163.4	161.6
115°	245.1	236.0	225.0	221.9	216.4	209.7	203.0	198.8	193.9	189.6	187.8
117.5°	279.2	269.5	257.9	254.2	248.8	240.8	232.9	228.0	222.5	217.7	215.2
120°	315.8	304.8	292.0	287.2	281.7	272.5	264.0	257.9	251.8	245.7	243.3
122.5°	353.0	339.6	327.4	321.9	315.8	306.7	296.3	290.8	282.3	275.6	272.5
125°	391.4	379.8	364.0	358.5	351.2	341.4	330.5	323.7	314.0	306.7	303.6
127.5°	430.4	418.3	401.2	395.7	389.6	377.4	365.2	357.3	346.9	339.6	334.7
130°	470.7	456.1	442.0	434.1	427.4	414.6	401.8	392.6	381.1	373.1	367.6
132.5°	510.9	496.3	481.1	473.7	465.8	453.0	439.6	428.6	417.0	407.9	401.8
135°	551.8	537.1	521.9	514.0	506.0	492.6	478.6	467.0	454.8	444.5	437.8
137.5°	590.2	577.4	562.1	554.2	546.3	532.3	517.6	505.4	492.0	481.1	474.3
140°	631.0	617.6	603.0	595.1	585.9	572.5	557.3	544.5	530.4	518.9	511.5
142.5°	670.7	657.3	642.6	634.1	626.2	612.1	596.3	584.1	569.5	557.3	549.3
145°	709.1	696.3	682.2	674.3	666.4	652.4	637.7	624.9	609.7	598.1	589.6
147.5°	748.1	733.5	720.7	712.7	705.4	689.6	678.0	665.8	650.5	639.0	630.4
150°	782.2	769.4	757.9	749.3	743.2	729.8	716.4	704.8	689.6	678.0	670.1
152.5°	815.8	803.6	792.6	785.3	779.2	766.4	754.2	742.6	727.4	717.0	708.5
155°	846.3	834.7	824.9	819.4	812.7	801.1	790.2	779.2	764.6	754.8	746.9
157.5°	874.3	863.3	854.8	849.9	843.8	833.5	823.7	814.6	801.1	792.6	785.3
160°	900.5	889.5	882.2	878.6	873.1	865.2	855.4	847.5	835.3	827.4	820.7
162.5°	921.9	912.1	906.6	901.7	898.7	893.2	884.1	876.7	866.4	859.1	853.0
165°	940.8	931.6	927.3	925.5	921.3	916.4	909.1	903.6	894.4	888.9	883.4
167.5°	956.6	948.1	943.8	942.0	939.5	936.5	930.4	926.1	918.8	913.9	909.7
170°	970.0	962.1	959.1	957.2	956.0	953.6	948.7	945.6	939.5	935.3	932.2
172.5°	979.2	971.9	970.0	968.8	967.6	965.8	962.7	960.9	956.6	953.6	951.1
175°	985.9	979.2	978.0	977.3	976.7	975.5	973.7	972.5	969.4	967.6	965.8
177.5°	989.5	983.4	982.8	982.8	982.2	981.0	979.8	979.2	977.3	976.1	974.3
180°	981.6	981.6	981.6	981.6	981.6	981.6	981.6	981.6	981.6	981.6	981.6



TEST NUMBER: P188254

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	664.0	664.0	664.0	664.0	664.0	664.0	664.0	664.0
2.5°	643.8	640.8	639.0	638.4	634.7	633.5	632.9	632.3
5°	618.8	616.4	614.6	614.0	610.9	609.7	609.7	609.7
7.5°	596.9	592.6	591.4	589.6	585.9	584.7	584.7	584.7
10°	571.9	567.6	565.8	564.0	560.3	558.5	558.5	557.9
12.5°	546.3	542.0	540.2	538.4	534.7	533.5	531.7	531.0
15°	522.5	517.6	515.8	514.0	510.3	507.3	507.3	506.7
17.5°	497.5	492.6	490.8	488.4	485.3	483.5	482.3	481.7
20°	472.5	467.6	465.8	464.0	460.3	458.5	456.7	456.7
22.5°	447.5	442.0	440.2	438.4	435.9	433.5	433.5	431.7
25°	423.7	419.5	416.4	414.6	412.2	409.1	409.7	407.9
27.5°	400.0	395.7	393.3	391.4	389.0	385.9	385.9	384.1
30°	376.8	372.5	370.1	367.6	366.4	363.4	363.4	362.2
32.5°	351.8	348.7	346.9	345.1	342.6	341.4	340.8	339.6
35°	328.6	325.6	323.7	321.9	320.1	318.9	318.3	317.0
37.5°	306.1	303.0	301.2	300.0	298.8	296.9	296.9	295.1
40°	283.5	280.5	278.6	277.4	276.2	274.4	274.4	272.5
42.5°	260.3	257.9	256.7	255.5	253.6	252.4	251.8	251.2
45°	237.8	235.3	234.1	232.3	231.1	229.9	229.2	228.0
47.5°	215.2	213.4	211.6	211.0	209.1	207.3	207.3	205.5
50°	192.1	190.8	189.0	188.4	186.6	185.3	185.3	183.5
52.5°	170.7	168.3	167.7	165.8	164.6	164.6	162.8	161.6
55°	148.8	146.9	145.7	144.5	143.3	143.3	141.4	140.8
57.5°	127.4	125.6	125.0	123.8	122.5	122.5	120.7	121.9
60°	107.3	106.1	105.5	103.6	103.0	103.0	101.2	100.6
62.5°	89.6	87.2	86.6	85.4	84.1	84.1	82.9	82.3
65°	70.7	69.5	68.9	68.3	67.1	66.5	65.8	64.6
67.5°	55.5	53.7	53.7	52.4	51.2	51.2	50.0	49.4
70°	41.5	39.6	39.6	38.4	37.8	37.8	37.2	36.6
72.5°	29.9	28.0	28.0	26.8	26.2	26.2	25.6	25.6
75°	19.5	18.9	18.3	18.3	17.7	17.7	17.1	17.1
77.5°	12.8	12.2	11.6	11.6	11.6	11.0	11.0	11.0
80°	7.9	7.3	7.3	7.3	6.7	6.7	6.7	6.1
82.5°	4.9	4.3	4.3	4.3	4.3	3.7	3.7	3.7
85°	3.0	3.0	3.0	3.0	2.4	2.4	2.4	2.4
87.5°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
90°	4.3	4.3	4.3	4.3	4.3	4.3	4.9	4.9
92.5°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
95°	6.1	5.5	5.5	4.9	4.9	4.9	4.9	4.9
97.5°	21.9	20.1	20.7	17.7	17.7	17.1	16.5	15.2
100°	42.7	40.8	41.5	38.4	39.6	37.8	37.2	36.0
102.5°	65.8	64.0	64.6	61.6	62.2	60.4	59.8	58.5
105°	89.0	87.8	89.0	86.0	85.4	84.7	84.7	83.5
107.5°	111.6	111.0	112.2	109.1	109.1	109.7	109.1	107.9
110°	135.4	134.7	136.0	133.5	132.9	134.1	133.5	132.3



TEST NUMBER: P188254

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	159.7	159.1	160.4	159.1	157.9	158.5	157.9	156.7
115°	186.0	184.7	186.6	184.1	182.3	183.5	182.9	181.7
117.5°	212.8	211.6	212.8	211.0	209.1	209.7	209.7	207.9
120°	240.2	238.4	239.6	237.8	236.0	236.6	236.0	234.7
122.5°	268.9	267.0	267.7	265.8	263.4	264.6	263.4	261.6
125°	298.8	295.7	296.9	294.5	292.0	292.7	291.4	290.2
127.5°	329.8	325.6	326.8	323.7	321.3	320.7	320.7	319.5
130°	362.2	357.3	357.9	354.2	351.8	351.2	351.8	349.4
132.5°	395.7	390.8	390.2	385.9	383.5	382.3	382.9	380.5
135°	431.1	423.1	424.3	419.5	417.0	415.8	415.8	413.4
137.5°	464.6	457.9	459.1	453.6	451.2	449.3	450.0	446.9
140°	501.8	496.3	495.7	489.6	486.5	484.7	484.7	482.9
142.5°	539.6	531.7	532.3	526.2	523.1	521.3	521.3	518.9
145°	578.6	571.3	570.7	564.6	560.9	558.5	558.5	556.0
147.5°	618.8	610.9	610.3	604.2	599.9	596.9	595.1	593.8
150°	659.1	650.5	649.9	643.8	639.0	635.9	635.9	637.1
152.5°	697.5	689.6	688.3	682.2	678.0	675.5	674.3	676.2
155°	737.1	729.2	727.4	721.9	717.6	714.6	713.3	714.6
157.5°	776.1	768.2	766.4	760.9	756.6	754.2	752.4	753.6
160°	812.7	805.4	803.6	798.1	794.4	791.4	790.2	791.4
162.5°	845.6	838.9	837.1	832.2	828.0	826.1	824.9	826.1
165°	876.7	871.3	869.4	864.5	860.9	859.1	857.8	858.5
167.5°	904.8	899.9	898.7	893.8	890.8	890.2	889.5	890.2
170°	928.6	924.9	923.7	919.4	917.0	916.4	916.4	917.6
172.5°	948.1	944.4	943.2	938.3	935.9	935.3	935.3	934.7
175°	963.9	960.3	959.1	954.8	951.1	949.3	948.7	947.5
177.5°	974.3	971.9	970.0	966.4	964.5	963.9	963.9	963.3
180°	981.6	981.6	981.6	981.6	981.6	981.6	981.6	981.6

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