

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P274321

Luminaire Tested: **LD4B20DE010W2N2765 EU4B1020W2N902765 4LBSW0LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P274321
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1808-906-2)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B20DE010W2N2765 EU4B1020W2N902765 4LBSW0LI
Description: PORTFOLIO 4" W2N RN DOWNLIGHT, SINGLE WALLWASH WITH SPECULAR FINISH
Light Source: W2N 2700K-6500K CCT TUNING RANGE
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1516.0 lumens
Efficiency: N/A
Efficacy: 54.1 lumens/watt
Spacing Criteria (0/90/45): 1.24 / 1.29 / 1.17
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

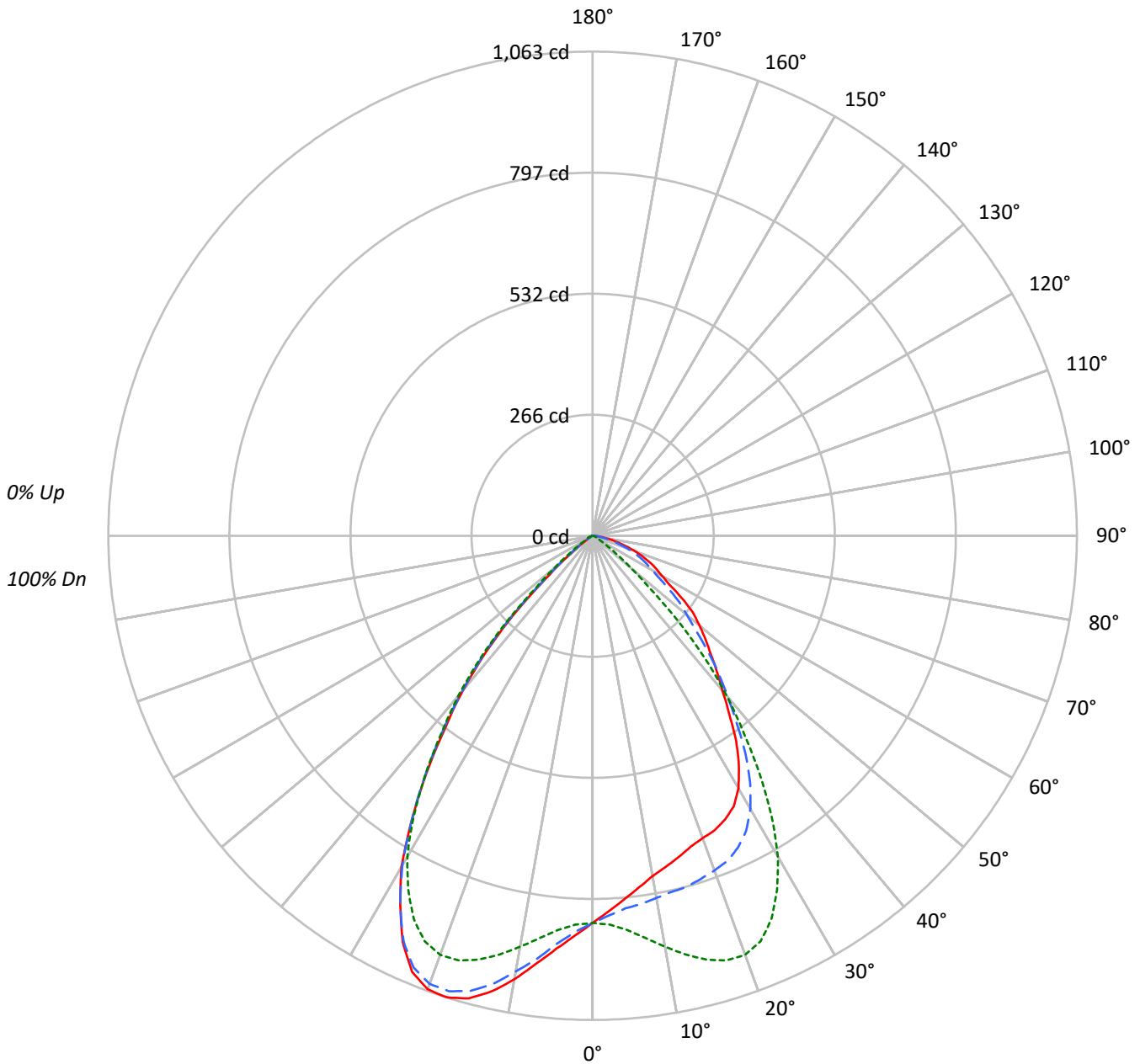
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	112	109	106	103	109	106	104	101	102	100	98	98	97	95	95	94	92	90																			
2	105	99	94	89	102	97	92	88	94	90	86	91	87	85	88	85	83	81																			
3	98	90	84	79	96	88	83	78	86	81	77	83	79	76	81	77	74	73																			
4	92	82	75	70	90	81	75	70	79	73	69	77	72	68	75	71	67	65																			
5	86	75	68	63	84	74	68	63	72	67	62	71	66	62	69	65	61	59																			
6	80	69	62	57	79	69	62	57	67	61	56	65	60	56	64	59	55	54																			
7	75	64	57	52	74	63	56	52	62	56	51	61	55	51	59	54	51	49																			
8	71	59	52	47	69	59	52	47	58	51	47	56	51	47	55	50	47	45																			
9	67	55	48	43	65	55	48	43	54	47	43	53	47	43	52	47	43	41																			
10	63	51	45	40	62	51	44	40	50	44	40	49	44	40	48	43	40	38																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	82820	82820	82820
5°	78352	84985	88996
10°	75052	90649	97833
15°	73654	97193	106102
20°	73252	101545	109884
25°	73918	99855	105963
30°	72034	91547	94394
35°	65281	76155	75596
40°	56360	58166	56360
45°	50417	36731	33905
50°	46380	16253	11947
55°	40711	6966	3483
60°	34110	3080	916
65°	31985	2537	738
70°	28295	1795	912
75°	21953	1205	602
80°	16837	898	898
85°	14089	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	83.2	5.5
10°-20°	260.0	17.1
20°-30°	397.9	26.2
30°-40°	380.6	25.1
40°-50°	227.2	15.0
50°-60°	92.0	6.1
60°-70°	48.8	3.2
70°-80°	21.8	1.4
80°-90°	4.6	0.3
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	741.0	48.9
0°-40°	1121.6	74.0
0°-60°	1440.8	95.0
0°-90°	1516.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1516.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	850	850	850	850	850	
5°	801	821	869	899	910	75
15°	730	798	963	1034	1052	206
25°	687	755	929	982	985	315
35°	549	585	640	640	635	340
45°	366	358	266	257	246	285
55°	240	205	41	22	20	214
65°	139	117	11	3	3	136
75°	58	46	3	2	2	64
85°	13	10	0	0	0	15
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	849.8	849.8	849.8	849.8	849.8	849.8	849.8	849.8	849.8	849.8	849.8
2.5°	824.6	826.2	826.2	827.7	826.2	829.3	827.7	832.5	830.9	832.5	834.0
5°	800.9	800.9	800.9	804.1	804.1	807.2	807.2	810.4	815.1	818.3	821.4
7.5°	778.9	777.3	780.4	780.4	783.6	786.7	789.9	796.2	800.9	807.2	815.1
10°	758.4	758.4	761.5	764.7	766.2	771.0	774.1	780.4	786.7	797.8	807.2
12.5°	744.2	742.6	745.7	748.9	753.6	756.8	759.9	769.4	777.3	789.9	800.9
15°	730.0	730.0	733.1	736.3	741.0	745.7	748.9	759.9	769.4	783.6	797.8
17.5°	715.8	715.8	718.9	723.7	728.4	733.1	736.3	747.3	759.9	775.7	789.9
20°	706.3	704.8	709.5	712.6	718.9	725.3	728.4	739.4	750.5	766.2	782.0
22.5°	700.0	698.5	701.6	704.8	711.1	717.4	720.5	730.0	742.6	755.2	772.6
25°	687.4	687.4	690.6	693.7	700.0	704.8	707.9	717.4	728.4	741.0	755.2
27.5°	670.1	668.5	671.6	673.2	679.5	684.3	687.4	695.3	706.3	714.2	730.0
30°	640.1	640.1	640.1	643.3	646.4	652.7	654.3	662.2	670.1	681.1	692.1
32.5°	597.5	599.1	599.1	602.3	605.4	610.2	611.7	618.0	625.9	632.2	643.3
35°	548.7	545.5	547.1	548.7	553.4	556.6	556.6	564.4	566.0	573.9	584.9
37.5°	491.9	493.5	493.5	495.1	499.8	499.8	504.5	506.1	510.8	515.6	520.3
40°	443.0	444.6	446.2	446.2	449.3	449.3	450.9	454.1	455.6	460.4	460.4
42.5°	403.6	400.5	402.0	400.5	403.6	405.2	406.8	406.8	408.3	408.3	408.3
45°	365.8	365.8	365.8	365.8	365.8	365.8	367.4	368.9	365.8	362.6	357.9
47.5°	335.8	335.8	334.2	334.2	332.7	332.7	331.1	326.4	321.6	315.3	305.9
50°	305.9	305.9	305.9	302.7	302.7	299.6	299.6	294.8	288.5	280.6	269.6
52.5°	277.5	275.9	277.5	274.3	271.2	271.2	269.6	264.9	258.6	249.1	239.6
55°	239.6	239.6	238.1	234.9	233.3	233.3	233.3	228.6	222.3	216.0	205.0
57.5°	200.2	200.2	200.2	197.1	195.5	195.5	193.9	192.3	187.6	181.3	173.4
60°	175.0	175.0	175.0	173.4	170.3	170.3	168.7	165.5	162.4	156.1	149.8
62.5°	157.7	156.1	156.1	156.1	152.9	152.9	152.9	149.8	145.1	140.3	134.0
65°	138.7	138.7	138.7	137.2	135.6	135.6	134.0	132.4	127.7	124.6	116.7
67.5°	118.2	119.8	118.2	116.7	115.1	116.7	115.1	111.9	108.8	105.6	99.3
70°	99.3	97.8	97.8	96.2	96.2	94.6	94.6	91.4	88.3	85.1	80.4
72.5°	77.3	77.3	77.3	75.7	74.1	74.1	72.5	72.5	69.4	64.6	61.5
75°	58.3	58.3	58.3	56.8	56.8	55.2	53.6	53.6	52.0	48.9	45.7
77.5°	42.6	42.6	42.6	41.0	41.0	39.4	39.4	37.8	36.3	34.7	31.5
80°	30.0	30.0	30.0	28.4	28.4	28.4	26.8	26.8	25.2	23.6	20.5
82.5°	20.5	20.5	20.5	20.5	18.9	18.9	18.9	17.3	17.3	15.8	14.2
85°	12.6	12.6	12.6	12.6	12.6	12.6	12.6	11.0	11.0	9.5	9.5
87.5°	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	4.7	4.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	849.8	849.8	849.8	849.8	849.8	849.8	849.8	849.8	849.8	849.8	849.8
2.5°	834.0	838.8	838.8	841.9	843.5	845.1	845.1	849.8	851.4	854.5	854.5
5°	826.2	830.9	837.2	843.5	843.5	848.2	851.4	857.7	862.4	868.7	873.5
7.5°	821.4	829.3	838.8	846.7	851.4	856.1	864.0	871.9	879.8	890.8	897.1
10°	818.3	829.3	841.9	854.5	860.8	867.2	879.8	887.6	901.8	916.0	923.9
12.5°	815.1	829.3	846.7	862.4	870.3	879.8	897.1	908.1	925.5	941.3	953.9
15°	813.5	829.3	849.8	870.3	879.8	889.2	911.3	927.1	944.4	963.3	979.1
17.5°	807.2	829.3	851.4	876.6	886.1	897.1	919.2	938.1	957.0	977.5	991.7
20°	802.5	823.0	849.8	875.0	887.6	897.1	922.3	941.3	960.2	979.1	994.9
22.5°	793.0	812.0	838.8	864.0	875.0	884.5	908.1	928.6	944.4	963.3	974.4
25°	775.7	796.2	818.3	841.9	851.4	859.3	878.2	897.1	911.3	928.6	941.3
27.5°	747.3	764.7	786.7	804.1	815.1	818.3	834.0	851.4	862.4	876.6	884.5
30°	706.3	720.5	736.3	753.6	763.1	763.1	777.3	791.5	799.4	813.5	818.3
32.5°	652.7	663.8	678.0	687.4	692.1	695.3	704.8	714.2	722.1	731.6	734.7
35°	591.2	602.3	607.0	616.5	614.9	618.0	624.3	629.1	637.0	640.1	643.3
37.5°	523.4	529.8	534.5	534.5	537.6	532.9	537.6	537.6	542.4	543.9	551.8
40°	460.4	462.0	458.8	458.8	458.8	454.1	454.1	452.5	452.5	457.2	454.1
42.5°	405.2	398.9	391.0	384.7	380.0	373.7	368.9	367.4	362.6	365.8	362.6
45°	351.6	339.0	324.8	309.0	301.1	293.3	282.2	274.3	269.6	266.5	266.5
47.5°	294.8	277.5	257.0	233.3	220.7	209.7	195.5	179.7	173.4	167.1	160.8
50°	253.8	234.9	211.3	184.5	171.9	159.2	138.7	124.6	113.5	107.2	102.5
52.5°	223.9	201.8	178.2	149.8	135.6	123.0	100.9	86.7	74.1	66.2	61.5
55°	192.3	173.4	149.8	123.0	108.8	94.6	74.1	58.3	47.3	41.0	36.3
57.5°	162.4	146.6	124.6	97.8	83.6	72.5	53.6	39.4	30.0	23.6	20.5
60°	138.7	124.6	105.6	82.0	69.4	58.3	41.0	30.0	20.5	15.8	12.6
62.5°	124.6	110.4	91.4	70.9	61.5	52.0	34.7	25.2	17.3	12.6	9.5
65°	108.8	94.6	78.8	59.9	52.0	44.1	30.0	20.5	14.2	11.0	7.9
67.5°	89.9	78.8	64.6	50.5	42.6	36.3	25.2	17.3	11.0	9.5	6.3
70°	72.5	63.1	52.0	39.4	33.1	28.4	18.9	12.6	9.5	6.3	4.7
72.5°	55.2	47.3	39.4	30.0	25.2	22.1	14.2	9.5	7.9	4.7	3.2
75°	41.0	34.7	26.8	20.5	18.9	15.8	11.0	7.9	4.7	3.2	3.2
77.5°	28.4	23.6	18.9	14.2	12.6	11.0	7.9	4.7	3.2	3.2	1.6
80°	18.9	15.8	12.6	9.5	7.9	7.9	4.7	3.2	3.2	1.6	1.6
82.5°	12.6	9.5	7.9	6.3	4.7	4.7	3.2	1.6	1.6	1.6	1.6
85°	7.9	6.3	4.7	3.2	3.2	1.6	1.6	1.6	0.0	0.0	0.0
87.5°	4.7	3.2	1.6	1.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	849.8	849.8	849.8	849.8	849.8	849.8	849.8	849.8	849.8	849.8	849.8
2.5°	857.7	859.3	862.4	862.4	864.0	864.0	867.2	870.3	870.3	871.9	873.5
5°	875.0	881.3	882.9	884.5	889.2	889.2	892.4	897.1	898.7	900.3	900.3
7.5°	903.4	908.1	912.9	916.0	919.2	922.3	928.6	933.4	936.5	936.5	938.1
10°	931.8	939.7	949.1	952.3	955.4	958.6	966.5	968.1	971.2	972.8	975.9
12.5°	964.9	972.8	982.2	985.4	990.1	994.9	1001.2	1002.7	1007.5	1010.6	1012.2
15°	990.1	999.6	1009.0	1012.2	1016.9	1021.7	1028.0	1029.5	1034.3	1035.9	1040.6
17.5°	1004.3	1013.8	1023.2	1028.0	1031.1	1035.9	1045.3	1045.3	1048.5	1050.0	1053.2
20°	1002.7	1015.4	1024.8	1028.0	1032.7	1037.4	1043.7	1045.3	1046.9	1050.0	1051.6
22.5°	987.0	998.0	1002.7	1007.5	1012.2	1013.8	1021.7	1023.2	1026.4	1026.4	1029.5
25°	949.1	957.0	964.9	966.5	972.8	974.4	975.9	975.9	982.2	980.7	983.8
27.5°	894.0	900.3	905.0	906.6	909.7	909.7	912.9	911.3	914.4	912.9	917.6
30°	823.0	829.3	832.5	834.0	834.0	834.0	835.6	834.0	835.6	830.9	830.9
32.5°	737.9	744.2	742.6	744.2	747.3	744.2	744.2	736.3	737.9	739.4	739.4
35°	644.8	646.4	654.3	651.2	649.6	644.8	644.8	643.3	640.1	637.0	635.4
37.5°	550.2	553.4	551.8	548.7	548.7	550.2	545.5	545.5	540.8	539.2	539.2
40°	455.6	457.2	450.9	452.5	454.1	452.5	450.9	450.9	444.6	443.0	443.0
42.5°	362.6	357.9	359.5	361.1	357.9	359.5	361.1	357.9	354.7	351.6	353.2
45°	266.5	258.6	258.6	257.0	258.6	258.6	260.1	258.6	257.0	250.7	253.8
47.5°	160.8	156.1	152.9	152.9	152.9	151.4	148.2	151.4	149.8	146.6	148.2
50°	99.3	93.0	93.0	89.9	88.3	89.9	86.7	85.1	83.6	80.4	82.0
52.5°	58.3	55.2	52.0	52.0	50.5	48.9	48.9	45.7	45.7	45.7	45.7
55°	31.5	28.4	25.2	23.6	23.6	22.1	22.1	22.1	22.1	20.5	20.5
57.5°	17.3	15.8	12.6	11.0	9.5	9.5	7.9	7.9	7.9	6.3	7.9
60°	9.5	7.9	6.3	6.3	4.7	4.7	4.7	4.7	4.7	4.7	4.7
62.5°	7.9	6.3	4.7	4.7	4.7	3.2	3.2	3.2	3.2	3.2	3.2
65°	6.3	4.7	4.7	4.7	3.2	3.2	3.2	3.2	3.2	3.2	3.2
67.5°	4.7	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
70°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
72.5°	3.2	3.2	1.6	3.2	1.6	1.6	1.6	1.6	3.2	1.6	1.6
75°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
77.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
80°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
82.5°	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CATALOG NUMBER: LD4B20DE010W2N2765 EU4B1020W2N902765 4LBSW0LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	849.8	849.8	849.8	849.8	849.8	849.8	849.8	849.8
2.5°	871.9	875.0	876.6	875.0	876.6	876.6	876.6	878.2
5°	905.0	906.6	908.1	905.0	908.1	908.1	908.1	909.7
7.5°	939.7	942.8	944.4	944.4	944.4	946.0	946.0	947.6
10°	980.7	980.7	982.2	982.2	983.8	985.4	982.2	988.6
12.5°	1015.4	1018.5	1018.5	1018.5	1020.1	1020.1	1020.1	1024.8
15°	1042.2	1043.7	1045.3	1045.3	1045.3	1050.0	1048.5	1051.6
17.5°	1056.3	1059.5	1059.5	1057.9	1061.1	1062.7	1061.1	1062.7
20°	1053.2	1056.3	1054.8	1054.8	1056.3	1057.9	1056.3	1059.5
22.5°	1031.1	1031.1	1031.1	1028.0	1032.7	1032.7	1029.5	1035.9
25°	982.2	985.4	983.8	980.7	980.7	982.2	979.1	985.4
27.5°	917.6	917.6	914.4	914.4	911.3	912.9	914.4	914.4
30°	834.0	832.5	832.5	829.3	832.5	830.9	830.9	838.8
32.5°	734.7	736.3	734.7	733.1	736.3	736.3	736.3	737.9
35°	640.1	638.5	635.4	633.8	637.0	632.2	633.8	635.4
37.5°	537.6	534.5	534.5	531.3	534.5	531.3	529.8	531.3
40°	443.0	441.5	441.5	439.9	439.9	441.5	438.3	443.0
42.5°	350.0	346.9	348.4	348.4	345.3	345.3	345.3	346.9
45°	255.4	252.3	253.8	252.3	249.1	247.5	247.5	246.0
47.5°	145.1	145.1	141.9	145.1	145.1	143.5	140.3	137.2
50°	82.0	82.0	80.4	80.4	80.4	78.8	78.8	78.8
52.5°	44.1	44.1	44.1	44.1	42.6	44.1	44.1	44.1
55°	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5
57.5°	6.3	7.9	7.9	6.3	7.9	6.3	7.9	6.3
60°	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
62.5°	4.7	3.2	4.7	4.7	3.2	4.7	4.7	4.7
65°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
67.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
70°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
72.5°	3.2	1.6	3.2	3.2	3.2	3.2	3.2	1.6
75°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
77.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
80°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)