

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: P251686

Luminaire Tested: **LD4B20D010 EU4B10208027 4LBLWW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251686
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-11)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B20D010 EU4B10208027 4LBLWW1LI
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1568.0 lumens
Efficiency: N/A
Efficacy: 75.4 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.03 / 1.12
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

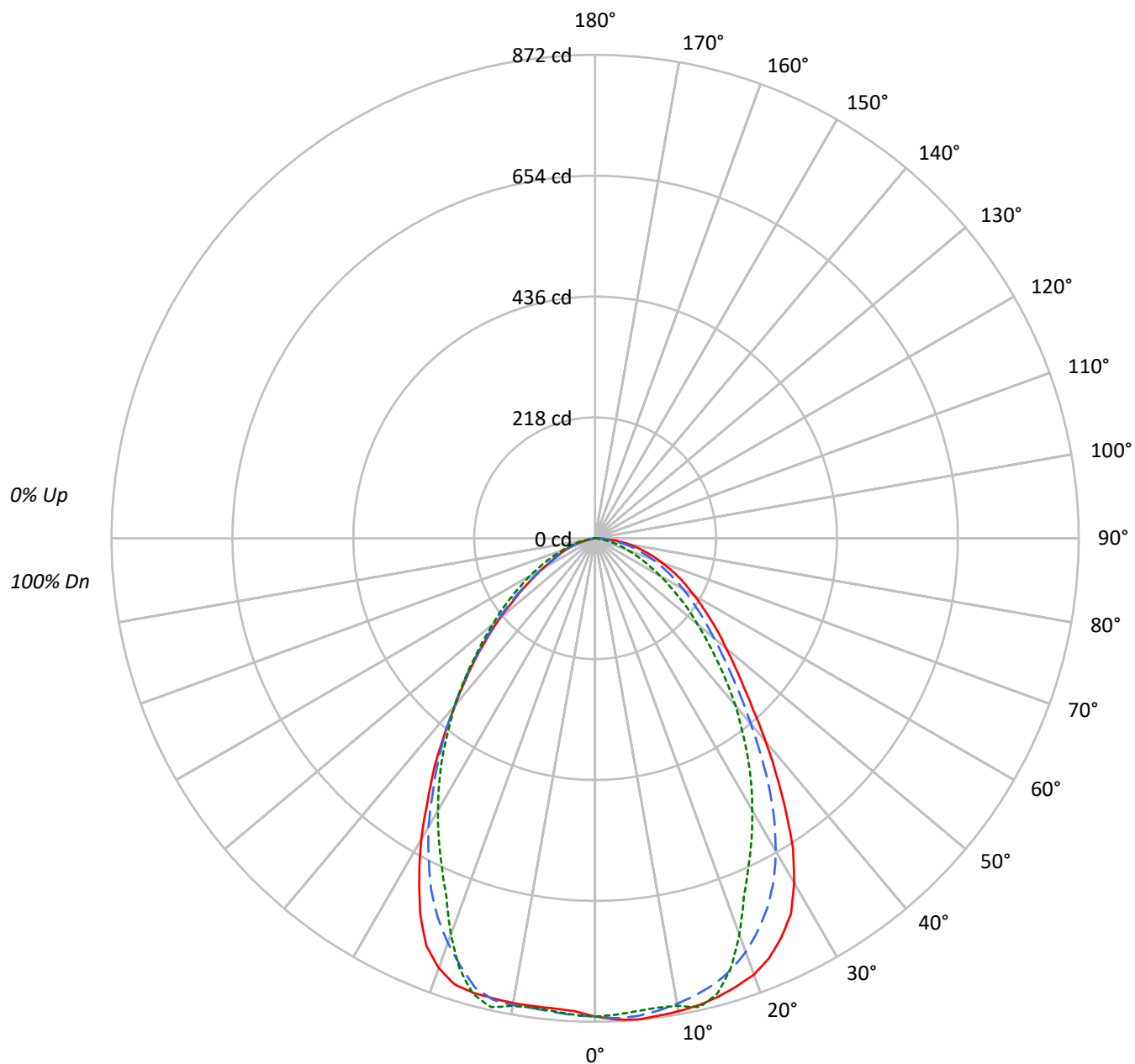
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251686

CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBLWW1LI

Luminous Intensity Polar Plot





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CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBLWW1LI

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	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	111	107	103	100	108	105	102	99	101	98	96	97	95	93	93	91	90	88		
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77		
3	95	86	79	74	93	84	78	73	82	76	72	79	74	70	77	73	69	67		
4	88	78	70	64	86	76	69	64	74	68	63	72	67	62	70	65	62	60		
5	82	71	63	57	80	70	62	57	68	61	56	66	60	56	64	59	55	53		
6	76	65	57	51	75	64	56	51	62	55	50	60	54	50	59	54	50	48		
7	71	59	51	46	70	59	51	46	57	50	46	56	50	45	54	49	45	43		
8	67	55	47	42	65	54	47	42	53	46	41	52	46	41	51	45	41	39		
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38	36		
10	59	47	40	35	58	47	40	35	46	39	35	45	39	35	44	39	35	33		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	84067	84067	84067
5°	85259	83772	83273
10°	85740	84741	84236
15°	86397	85883	85630
20°	86839	78842	85532
25°	85414	70316	80252
30°	80710	63762	70604
35°	71182	57036	60189
40°	60825	50049	49884
45°	52126	42712	41665
50°	46607	36434	33947
55°	42988	31162	26863
60°	40192	26372	21207
65°	38511	21884	17503
70°	36388	17667	14789
75°	35245	14271	10468
80°	34067	7801	2862
85°	29744	4249	1454



TEST NUMBER: P251686

CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBLWW1LI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	81.9	5.2
10°-20°	235.8	15.0
20°-30°	327.0	20.9
30°-40°	322.8	20.6
40°-50°	253.2	16.1
50°-60°	175.4	11.2
60°-70°	107.5	6.9
70°-80°	53.7	3.4
80°-90°	10.8	0.7
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°	644.7	41.1
0°-40°	967.5	61.7
0°-60°	1396.1	89.0
0°-90°	1568.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1568.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	863	863	863	863	863	
5°	872	865	856	858	851	83
15°	856	832	851	839	849	242
25°	794	735	654	700	746	364
35°	598	546	479	495	506	373
45°	378	347	310	306	302	296
55°	253	226	183	163	158	228
65°	167	144	95	71	76	165
75°	94	78	38	29	28	99
85°	27	15	4	1	1	30
90°	0	0	0	0	0	



TEST NUMBER: P251686

CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBLWW1LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	862.6	862.6	862.6	862.6	862.6	862.6	862.6	862.6	862.6	862.6	862.6
2.5°	868.9	866.4	865.1	868.9	867.7	870.2	868.9	867.7	865.1	866.4	866.4
5°	871.5	867.7	866.4	868.9	868.9	871.5	870.2	867.7	865.1	866.4	865.1
7.5°	868.9	866.4	866.4	867.7	866.4	868.9	866.4	863.9	861.4	862.6	860.1
10°	866.4	862.6	862.6	862.6	862.6	865.1	862.6	858.8	855.0	855.0	852.5
12.5°	862.6	858.8	858.8	860.1	857.6	860.1	857.6	851.2	847.4	846.2	843.6
15°	856.3	852.5	852.5	852.5	850.0	851.2	847.4	841.1	836.1	836.1	832.3
17.5°	847.4	843.6	842.4	842.4	838.6	839.9	836.1	829.7	822.1	819.6	815.8
20°	837.3	832.3	829.7	829.7	825.9	827.2	822.1	814.6	804.4	800.6	794.3
22.5°	819.6	817.1	813.3	812.0	808.2	807.0	801.9	791.8	782.9	776.6	766.5
25°	794.3	793.1	789.3	788.0	782.9	780.4	775.3	764.0	755.1	745.0	734.9
27.5°	764.0	758.9	756.4	752.6	747.5	746.3	739.9	729.8	715.9	709.6	696.9
30°	717.2	714.6	712.1	708.3	703.2	700.7	696.9	685.5	674.2	662.8	651.4
32.5°	664.0	659.0	655.2	656.5	650.1	647.6	641.3	631.2	621.0	613.4	600.8
35°	598.3	597.0	595.7	593.2	588.1	586.9	581.8	574.2	562.9	554.0	546.4
37.5°	536.3	532.5	530.0	530.0	524.9	524.9	521.1	512.3	505.9	499.6	489.5
40°	478.1	471.8	471.8	471.8	466.7	468.0	465.5	456.6	450.3	442.7	436.4
42.5°	423.7	421.2	419.9	417.4	414.9	414.9	412.3	407.3	401.0	395.9	389.6
45°	378.2	376.9	375.7	374.4	371.9	370.6	369.3	361.7	357.9	352.9	346.6
47.5°	341.5	339.0	337.7	336.4	333.9	332.7	330.1	325.1	321.3	316.2	311.1
50°	307.4	306.1	304.8	304.8	302.3	301.0	298.5	294.7	288.4	285.9	279.5
52.5°	280.8	278.3	275.7	275.7	273.2	273.2	269.4	265.6	259.3	256.8	251.7
55°	253.0	251.7	250.4	250.4	247.9	246.6	245.4	240.3	235.3	231.5	226.4
57.5°	228.9	227.7	226.4	226.4	223.9	222.6	221.3	217.6	212.5	210.0	203.6
60°	206.2	206.2	204.9	203.6	202.4	201.1	199.8	196.0	192.3	188.5	183.4
62.5°	185.9	184.7	183.4	182.1	182.1	180.9	179.6	174.5	172.0	168.2	163.2
65°	167.0	164.4	164.4	163.2	163.2	161.9	160.6	155.6	153.0	149.3	144.2
67.5°	146.7	145.5	144.2	144.2	142.9	142.9	141.7	137.9	134.1	131.5	126.5
70°	127.7	127.7	126.5	126.5	125.2	124.0	124.0	121.4	117.6	113.8	108.8
72.5°	111.3	110.0	108.8	108.8	107.5	107.5	106.2	103.7	101.2	98.7	92.3
75°	93.6	92.3	92.3	92.3	91.1	91.1	89.8	87.3	84.7	82.2	78.4
77.5°	77.2	77.2	75.9	75.9	74.6	74.6	74.6	72.1	69.6	67.0	62.0
80°	60.7	60.7	60.7	59.4	58.2	58.2	58.2	55.7	53.1	50.6	46.8
82.5°	44.3	43.0	43.0	41.7	40.5	40.5	40.5	37.9	36.7	32.9	30.4
85°	26.6	25.3	25.3	24.0	22.8	22.8	22.8	21.5	19.0	17.7	15.2
87.5°	10.1	10.1	10.1	10.1	10.1	8.9	8.9	7.6	7.6	6.3	6.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P251686

CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBLWW1LI

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	862.6	862.6	862.6	862.6	862.6	862.6	862.6	862.6	862.6	862.6	862.6
2.5°	866.4	865.1	865.1	863.9	865.1	862.6	862.6	862.6	862.6	860.1	860.1
5°	863.9	863.9	862.6	861.4	862.6	860.1	861.4	860.1	860.1	856.3	856.3
7.5°	858.8	857.6	855.0	853.8	855.0	853.8	853.8	853.8	856.3	853.8	853.8
10°	850.0	848.7	846.2	844.9	844.9	843.6	846.2	848.7	853.8	856.3	861.4
12.5°	841.1	838.6	837.3	837.3	838.6	838.6	843.6	850.0	862.6	866.4	871.5
15°	829.7	828.5	828.5	832.3	837.3	841.1	851.2	855.0	856.3	851.2	848.7
17.5°	814.6	814.6	815.8	819.6	823.4	823.4	824.7	822.1	819.6	813.3	805.7
20°	789.3	788.0	785.5	785.5	785.5	780.4	782.9	774.1	767.8	760.2	748.8
22.5°	757.6	751.3	742.5	736.1	732.3	729.8	723.5	713.4	705.8	700.7	695.7
25°	723.5	713.4	700.7	690.6	684.3	683.0	674.2	665.3	660.2	653.9	651.4
27.5°	684.3	672.9	657.7	647.6	642.5	638.7	631.2	622.3	616.0	610.9	607.1
30°	638.7	627.4	614.7	602.1	597.0	590.7	583.1	576.8	570.4	566.6	564.1
32.5°	588.1	576.8	564.1	555.3	548.9	543.9	537.6	531.2	526.2	523.6	521.1
35°	536.3	524.9	514.8	505.9	500.9	497.1	492.0	484.4	480.6	479.4	476.8
37.5°	480.6	473.0	464.2	456.6	452.8	447.8	445.2	438.9	438.9	433.8	433.8
40°	428.8	423.7	414.9	408.5	406.0	402.2	398.4	395.9	394.6	393.4	392.1
42.5°	383.2	375.7	370.6	365.5	361.7	359.2	359.2	355.4	354.2	350.4	349.1
45°	341.5	337.7	328.9	325.1	323.8	320.0	318.7	316.2	312.4	309.9	308.6
47.5°	304.8	301.0	296.0	290.9	288.4	285.9	283.3	279.5	277.0	273.2	271.9
50°	274.5	268.1	263.1	259.3	255.5	254.2	251.7	246.6	244.1	240.3	240.3
52.5°	246.6	241.6	235.3	231.5	227.7	225.1	221.3	217.6	213.8	212.5	208.7
55°	222.6	216.3	210.0	204.9	201.1	197.3	196.0	191.0	185.9	183.4	180.9
57.5°	199.8	193.5	185.9	179.6	177.1	174.5	170.8	165.7	161.9	158.1	155.6
60°	177.1	172.0	164.4	158.1	155.6	151.8	148.0	142.9	139.1	135.3	132.8
62.5°	158.1	150.5	144.2	137.9	134.1	131.5	126.5	122.7	117.6	113.8	110.0
65°	139.1	131.5	125.2	118.9	116.4	112.6	108.8	103.7	98.7	94.9	89.8
67.5°	120.2	113.8	107.5	101.2	98.7	96.1	91.1	86.0	80.9	77.2	72.1
70°	103.7	97.4	91.1	86.0	83.5	80.9	75.9	70.8	67.0	62.0	58.2
72.5°	88.5	83.5	77.2	72.1	69.6	67.0	62.0	58.2	53.1	50.6	46.8
75°	73.4	68.3	63.2	58.2	55.7	53.1	49.3	45.5	41.7	37.9	35.4
77.5°	58.2	53.1	48.1	44.3	41.7	40.5	36.7	32.9	29.1	26.6	22.8
80°	43.0	37.9	34.2	30.4	27.8	26.6	22.8	20.2	17.7	13.9	12.6
82.5°	26.6	22.8	20.2	17.7	16.4	15.2	12.6	10.1	8.9	7.6	6.3
85°	13.9	12.6	10.1	8.9	7.6	7.6	6.3	5.1	3.8	3.8	2.5
87.5°	5.1	3.8	3.8	2.5	2.5	2.5	2.5	1.3	1.3	1.3	1.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P251686

CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBLWW1LI

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	862.6	862.6	862.6	862.6	862.6	862.6	862.6	862.6	862.6	862.6	862.6
2.5°	857.6	858.8	860.1	861.4	860.1	860.1	862.6	857.6	861.4	861.4	856.3
5°	855.0	857.6	856.3	858.8	856.3	856.3	857.6	855.0	857.6	857.6	853.8
7.5°	852.5	855.0	855.0	856.3	855.0	855.0	856.3	852.5	855.0	855.0	851.2
10°	863.9	866.4	865.1	863.9	860.1	857.6	858.8	852.5	855.0	855.0	851.2
12.5°	867.7	866.4	861.4	858.8	856.3	853.8	855.0	850.0	852.5	852.5	850.0
15°	842.4	839.9	836.1	837.3	834.8	833.5	836.1	833.5	838.6	841.1	838.6
17.5°	799.4	798.1	795.6	795.6	795.6	796.8	800.6	800.6	808.2	813.3	815.8
20°	743.7	742.5	743.7	746.3	747.5	752.6	761.4	766.5	776.6	785.5	791.8
22.5°	693.1	695.7	699.5	704.5	705.8	712.1	723.5	728.5	741.2	751.3	757.6
25°	650.1	653.9	656.5	660.2	661.5	669.1	679.2	685.5	699.5	707.0	714.6
27.5°	607.1	612.2	613.4	618.5	618.5	626.1	634.9	641.3	650.1	657.7	664.0
30°	565.4	566.6	570.4	571.7	574.2	581.8	586.9	590.7	600.8	604.6	608.4
32.5°	519.8	524.9	527.4	528.7	527.4	533.8	538.8	541.4	545.1	550.2	552.7
35°	476.8	479.4	480.6	483.2	484.4	485.7	488.2	489.5	494.6	495.8	497.1
37.5°	433.8	437.6	436.4	437.6	437.6	438.9	441.4	440.2	444.0	445.2	444.0
40°	390.8	390.8	393.4	392.1	393.4	392.1	394.6	394.6	394.6	395.9	394.6
42.5°	347.8	349.1	347.8	350.4	347.8	349.1	349.1	347.8	349.1	347.8	347.8
45°	308.6	308.6	308.6	308.6	306.1	306.1	308.6	307.4	306.1	304.8	303.6
47.5°	270.7	271.9	269.4	270.7	269.4	268.1	266.9	266.9	265.6	263.1	261.8
50°	239.1	236.5	235.3	236.5	235.3	234.0	232.7	230.2	228.9	226.4	225.1
52.5°	207.4	204.9	202.4	202.4	201.1	198.6	197.3	194.8	193.5	191.0	191.0
55°	179.6	177.1	174.5	173.3	170.8	168.2	167.0	164.4	163.2	160.6	158.1
57.5°	153.0	149.3	146.7	145.5	144.2	140.4	139.1	136.6	134.1	131.5	130.3
60°	129.0	125.2	121.4	120.2	118.9	115.1	113.8	110.0	108.8	106.2	105.0
62.5°	106.2	103.7	98.7	97.4	94.9	92.3	88.5	87.3	86.0	87.3	87.3
65°	86.0	82.2	78.4	77.2	74.6	72.1	70.8	69.6	70.8	70.8	72.1
67.5°	68.3	64.5	60.7	60.7	59.4	56.9	56.9	56.9	58.2	58.2	59.4
70°	54.4	51.9	49.3	48.1	48.1	46.8	48.1	48.1	49.3	49.3	49.3
72.5°	43.0	41.7	40.5	39.2	39.2	39.2	39.2	39.2	39.2	39.2	40.5
75°	32.9	31.6	30.4	30.4	29.1	29.1	29.1	29.1	29.1	29.1	27.8
77.5°	21.5	20.2	19.0	19.0	17.7	16.4	16.4	15.2	15.2	15.2	15.2
80°	11.4	10.1	8.9	7.6	7.6	6.3	6.3	6.3	6.3	5.1	5.1
82.5°	5.1	3.8	3.8	3.8	3.8	2.5	2.5	2.5	2.5	2.5	2.5
85°	2.5	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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



TEST NUMBER: P251686

CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBLWW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	862.6	862.6	862.6	862.6	862.6	862.6	862.6	862.6
2.5°	858.8	856.3	858.8	860.1	857.6	856.3	858.8	853.8
5°	857.6	853.8	855.0	856.3	853.8	852.5	855.0	851.2
7.5°	855.0	853.8	855.0	856.3	852.5	852.5	855.0	851.2
10°	855.0	852.5	853.8	856.3	853.8	853.8	856.3	851.2
12.5°	853.8	850.0	853.8	855.0	852.5	852.5	855.0	850.0
15°	844.9	844.9	846.2	848.7	847.4	848.7	852.5	848.7
17.5°	825.9	828.5	833.5	837.3	839.9	842.4	846.2	843.6
20°	803.2	807.0	813.3	817.1	822.1	823.4	829.7	824.7
22.5°	767.8	775.3	780.4	784.2	788.0	791.8	796.8	795.6
25°	724.8	729.8	733.6	737.4	742.5	745.0	747.5	746.3
27.5°	672.9	675.4	680.5	683.0	685.5	688.1	693.1	686.8
30°	616.0	617.2	619.8	623.6	623.6	626.1	628.6	627.4
32.5°	557.8	557.8	560.3	562.9	561.6	562.9	567.9	561.6
35°	500.9	499.6	503.4	504.7	504.7	503.4	507.2	505.9
37.5°	445.2	446.5	447.8	449.0	446.5	449.0	449.0	446.5
40°	394.6	393.4	395.9	397.2	395.9	397.2	397.2	392.1
42.5°	349.1	346.6	347.8	349.1	347.8	349.1	347.8	345.3
45°	304.8	303.6	303.6	304.8	302.3	302.3	302.3	302.3
47.5°	263.1	261.8	263.1	263.1	260.6	260.6	261.8	260.6
50°	225.1	223.9	223.9	223.9	222.6	222.6	223.9	223.9
52.5°	191.0	188.5	188.5	188.5	188.5	188.5	189.7	187.2
55°	156.8	156.8	156.8	156.8	158.1	158.1	158.1	158.1
57.5°	129.0	130.3	130.3	131.5	130.3	131.5	131.5	130.3
60°	107.5	106.2	107.5	107.5	108.8	108.8	108.8	108.8
62.5°	88.5	88.5	88.5	89.8	89.8	89.8	91.1	89.8
65°	73.4	73.4	74.6	74.6	74.6	75.9	75.9	75.9
67.5°	60.7	60.7	60.7	60.7	62.0	62.0	63.2	62.0
70°	50.6	50.6	50.6	50.6	50.6	51.9	51.9	51.9
72.5°	40.5	40.5	40.5	40.5	41.7	41.7	41.7	41.7
75°	27.8	27.8	27.8	29.1	27.8	27.8	27.8	27.8
77.5°	13.9	13.9	13.9	13.9	13.9	12.6	12.6	12.6
80°	5.1	5.1	5.1	5.1	5.1	5.1	3.8	5.1
82.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.3
85°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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)