

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: P251932

Luminaire Tested: **LD4B20D010 EU4B10209730 4LBDW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251932  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-15)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B20D010 EU4B10209730 4LBDW1H  
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 97CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1305.0 lumens  
Efficiency: N/A  
Efficacy: 62.7 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

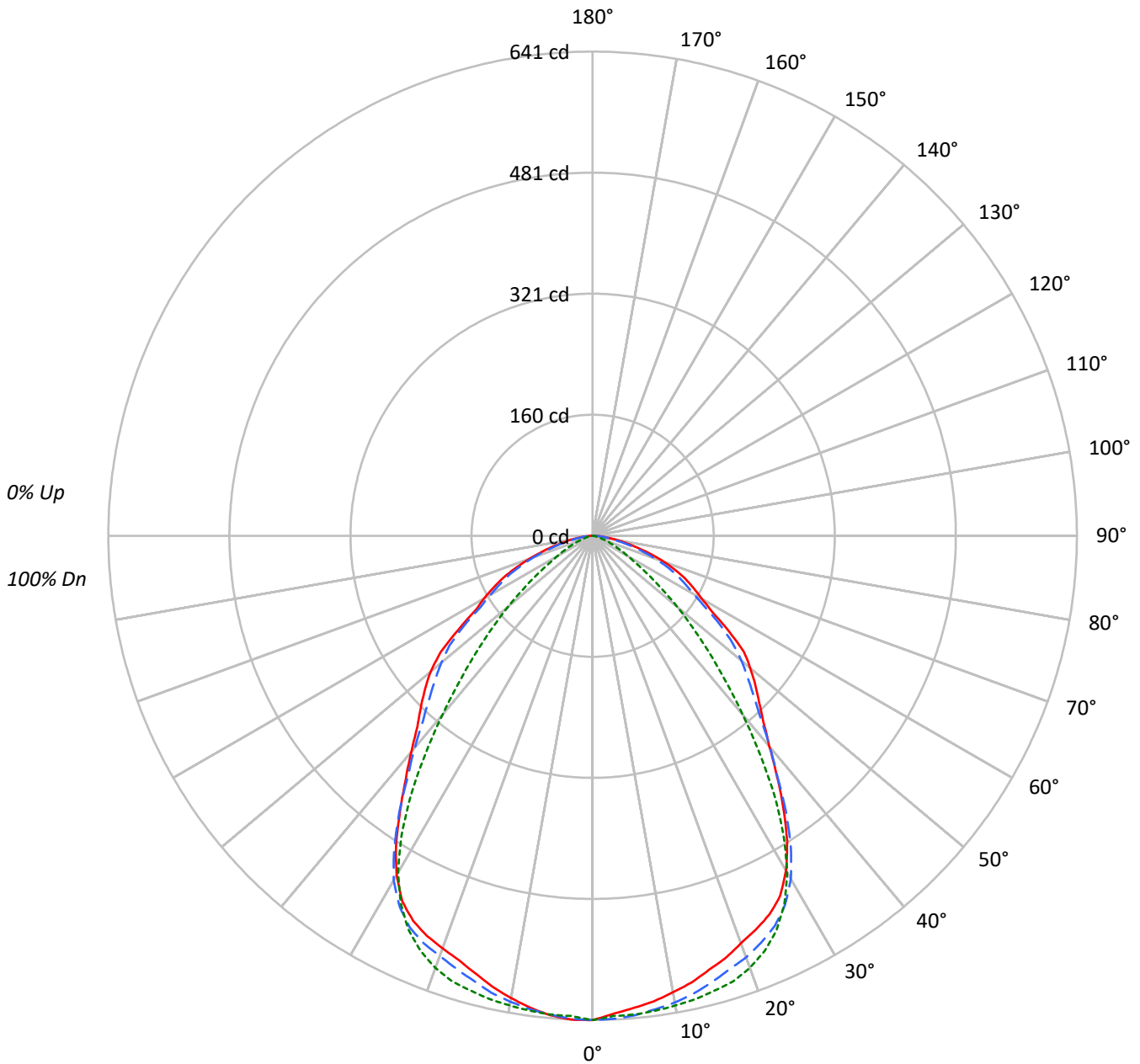
Input Watts (W): 20.8  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20				20	
RC	80				70				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				100
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88				88
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76				76
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66				66
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58				58
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51				51
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46				46
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41				41
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37				37
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34				34
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31				31

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	62490	62490	62490
5°	61379	62249	62347
10°	60723	62484	61505
15°	60023	62909	60517
20°	59541	63130	60257
25°	59509	61950	60466
30°	57618	57955	58394
35°	52349	49886	52813
40°	46309	39286	47441
45°	42961	29908	44325
50°	41286	22136	42483
55°	37381	15258	36871
60°	32493	10389	32298
65°	31385	7518	29794
70°	28381	5072	25303
75°	23384	3351	20070
80°	18801	2189	14929
85°	15431	1118	9952



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	60.5	4.6
10°-20°	173.1	13.3
20°-30°	261.5	20.0
30°-40°	273.6	21.0
40°-50°	221.6	17.0
50°-60°	161.2	12.4
60°-70°	99.4	7.6
70°-80°	44.9	3.4
80°-90°	9.1	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°	495.1	37.9
0°-40°	768.7	58.9
0°-60°	1151.5	88.2
0°-90°	1305.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1305.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	641	641	641	641	641	
5°	627	637	636	636	637	60
15°	595	612	624	610	600	168
25°	553	570	576	572	562	254
35°	440	446	419	446	444	274
45°	312	302	217	306	322	242
55°	220	206	90	208	217	196
65°	136	122	33	120	129	133
75°	62	53	9	46	53	67
85°	14	11	1	8	9	16
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°	641.2	641.2	641.2	641.2	641.2	641.2	641.2	641.2	641.2	641.2	641.2
2.5°	633.3	633.3	639.3	646.2	640.2	634.3	638.3	636.3	643.2	643.2	640.2
5°	627.4	629.4	634.3	640.2	635.3	629.4	634.3	632.3	639.3	639.3	637.3
7.5°	621.5	622.5	628.4	635.3	630.4	624.5	628.4	627.4	633.3	634.3	632.3
10°	613.6	614.6	620.5	627.4	622.5	617.5	621.5	620.5	628.4	628.4	627.4
12.5°	605.7	606.7	612.6	618.5	613.6	608.7	612.6	612.6	620.5	621.5	620.5
15°	594.9	596.8	601.8	607.7	604.7	598.8	602.8	602.8	609.7	611.6	611.6
17.5°	586.0	587.0	591.9	597.8	593.9	588.9	592.9	592.9	599.8	601.8	601.8
20°	574.1	576.1	581.0	587.0	584.0	580.1	583.0	583.0	590.9	592.9	593.9
22.5°	564.3	566.3	570.2	578.1	573.2	570.2	574.1	573.2	582.0	583.0	583.0
25°	553.4	555.4	560.3	565.3	562.3	559.3	562.3	562.3	569.2	570.2	570.2
27.5°	537.6	538.6	543.6	548.5	545.5	541.6	545.5	544.5	551.5	552.4	551.5
30°	512.0	514.0	515.9	522.8	519.9	516.9	520.9	518.9	525.8	525.8	524.8
32.5°	479.4	479.4	483.4	488.3	484.4	482.4	485.4	486.3	491.3	491.3	488.3
35°	440.0	442.0	444.9	447.9	444.9	442.9	445.9	444.9	450.8	448.9	445.9
37.5°	400.5	401.5	404.5	408.4	404.5	401.5	402.5	401.5	406.4	406.4	401.5
40°	364.0	366.0	368.0	371.9	368.0	366.0	367.0	364.0	369.9	368.0	365.0
42.5°	334.4	335.4	338.4	340.3	336.4	335.4	336.4	334.4	337.4	335.4	329.5
45°	311.7	311.7	312.7	315.7	311.7	310.7	310.7	308.8	311.7	307.8	301.9
47.5°	292.0	293.0	294.0	296.0	293.0	290.0	291.0	287.1	289.0	286.1	278.2
50°	272.3	274.2	275.2	277.2	274.2	272.3	273.3	269.3	269.3	264.4	257.5
52.5°	252.5	253.5	252.5	254.5	252.5	249.6	250.6	246.6	246.6	240.7	233.8
55°	220.0	221.0	222.0	223.9	222.0	219.0	221.0	218.0	218.0	214.1	206.2
57.5°	187.4	188.4	189.4	190.4	190.4	188.4	189.4	187.4	186.4	183.5	177.6
60°	166.7	166.7	166.7	167.7	166.7	165.7	165.7	163.8	163.8	159.8	153.9
62.5°	150.9	151.9	151.9	152.9	151.9	150.9	149.9	148.0	147.0	143.0	138.1
65°	136.1	136.1	135.2	137.1	136.1	135.2	135.2	133.2	131.2	127.3	122.3
67.5°	118.4	119.4	118.4	119.4	119.4	118.4	117.4	115.4	114.4	111.5	105.6
70°	99.6	99.6	99.6	100.6	99.6	99.6	100.6	97.7	96.7	92.7	87.8
72.5°	80.9	81.9	81.9	80.9	81.9	79.9	79.9	79.9	78.9	75.0	70.0
75°	62.1	63.1	63.1	64.1	63.1	62.1	62.1	61.2	60.2	57.2	53.3
77.5°	46.4	46.4	47.4	47.4	47.4	46.4	46.4	44.4	44.4	42.4	38.5
80°	33.5	33.5	32.6	33.5	33.5	32.6	32.6	31.6	31.6	29.6	26.6
82.5°	21.7	22.7	22.7	22.7	22.7	21.7	21.7	21.7	20.7	19.7	17.8
85°	13.8	13.8	13.8	13.8	14.8	13.8	14.8	13.8	13.8	11.8	10.9
87.5°	5.9	5.9	5.9	6.9	6.9	5.9	5.9	5.9	5.9	5.9	4.9
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°	641.2	641.2	641.2	641.2	641.2	641.2	641.2	641.2	641.2	641.2	641.2
2.5°	640.2	641.2	638.3	642.2	639.3	640.2	641.2	640.2	636.3	636.3	647.1
5°	636.3	638.3	635.3	640.2	638.3	638.3	640.2	639.3	635.3	636.3	646.2
7.5°	632.3	635.3	633.3	638.3	635.3	635.3	637.3	637.3	633.3	634.3	643.2
10°	626.4	630.4	629.4	634.3	631.4	631.4	634.3	634.3	630.4	631.4	640.2
12.5°	621.5	625.4	624.5	629.4	627.4	628.4	629.4	631.4	626.4	628.4	636.3
15°	613.6	617.5	617.5	622.5	620.5	622.5	624.5	627.4	623.5	623.5	631.4
17.5°	604.7	609.7	609.7	613.6	613.6	614.6	618.5	621.5	617.5	618.5	625.4
20°	594.9	600.8	600.8	605.7	604.7	606.7	609.7	612.6	608.7	608.7	616.6
22.5°	585.0	589.9	590.9	593.9	593.9	594.9	597.8	599.8	594.9	594.9	602.8
25°	571.2	576.1	577.1	579.1	577.1	577.1	579.1	581.0	576.1	576.1	583.0
27.5°	552.4	557.4	557.4	556.4	554.4	555.4	554.4	555.4	550.5	549.5	556.4
30°	524.8	527.8	527.8	526.8	523.8	523.8	520.9	521.9	515.0	515.0	520.9
32.5°	487.3	490.3	488.3	486.3	482.4	480.4	478.5	477.5	470.6	470.6	477.5
35°	442.9	444.9	442.0	438.0	433.1	430.1	427.2	423.2	418.3	419.3	423.2
37.5°	397.6	397.6	393.6	385.7	381.8	376.8	371.9	371.9	364.0	363.0	366.0
40°	359.1	355.1	348.2	337.4	330.5	325.5	318.6	314.7	308.8	308.8	313.7
42.5°	324.6	316.7	307.8	293.0	286.1	280.2	271.3	267.3	260.4	259.4	262.4
45°	294.0	286.1	273.3	257.5	248.6	241.7	228.9	223.9	218.0	217.0	219.0
47.5°	269.3	260.4	244.7	223.9	215.1	206.2	193.4	186.4	181.5	178.6	181.5
50°	247.6	235.8	219.0	197.3	185.5	177.6	161.8	154.9	148.0	146.0	147.0
52.5°	223.9	212.1	194.3	171.7	160.8	149.0	134.2	124.3	118.4	115.4	118.4
55°	198.3	186.4	168.7	146.0	134.2	123.3	107.5	99.6	92.7	89.8	92.7
57.5°	170.7	159.8	144.0	121.3	110.5	100.6	85.8	77.9	71.0	69.1	71.0
60°	147.0	138.1	122.3	100.6	91.7	80.9	68.1	60.2	54.3	53.3	54.3
62.5°	131.2	121.3	106.5	85.8	76.9	68.1	56.2	48.3	43.4	42.4	43.4
65°	115.4	104.6	90.8	73.0	64.1	57.2	45.4	38.5	33.5	32.6	33.5
67.5°	97.7	87.8	76.0	60.2	53.3	46.4	36.5	29.6	25.6	24.7	25.6
70°	80.9	72.0	60.2	48.3	41.4	36.5	27.6	22.7	18.7	17.8	18.7
72.5°	64.1	56.2	46.4	36.5	32.6	27.6	21.7	16.8	13.8	12.8	13.8
75°	49.3	43.4	35.5	26.6	23.7	20.7	14.8	11.8	9.9	8.9	9.9
77.5°	34.5	30.6	24.7	19.7	16.8	14.8	10.9	7.9	6.9	5.9	6.9
80°	23.7	20.7	16.8	12.8	10.9	8.9	6.9	4.9	3.9	3.9	3.9
82.5°	15.8	12.8	9.9	7.9	6.9	5.9	3.9	3.0	3.0	2.0	2.0
85°	8.9	7.9	5.9	4.9	3.9	3.0	2.0	2.0	1.0	1.0	1.0
87.5°	3.9	3.0	2.0	2.0	1.0	1.0	1.0	1.0	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°	641.2	641.2	641.2	641.2	641.2	641.2	641.2	641.2	641.2	641.2	641.2
2.5°	644.2	641.2	645.2	641.2	639.3	641.2	639.3	645.2	640.2	636.3	640.2
5°	643.2	639.3	643.2	640.2	637.3	638.3	636.3	642.2	636.3	633.3	635.3
7.5°	641.2	638.3	640.2	637.3	634.3	635.3	633.3	638.3	632.3	629.4	631.4
10°	638.3	635.3	636.3	634.3	631.4	631.4	629.4	633.3	626.4	622.5	624.5
12.5°	634.3	630.4	632.3	629.4	625.4	625.4	623.5	626.4	619.5	615.6	616.6
15°	629.4	625.4	625.4	622.5	618.5	618.5	614.6	617.5	609.7	605.7	605.7
17.5°	623.5	618.5	618.5	615.6	610.6	609.7	606.7	609.7	600.8	596.8	596.8
20°	614.6	610.6	609.7	607.7	602.8	601.8	597.8	598.8	591.9	588.9	588.0
22.5°	602.8	598.8	599.8	596.8	592.9	591.9	588.0	590.9	584.0	581.0	582.0
25°	582.0	580.1	582.0	581.0	578.1	578.1	576.1	578.1	572.2	570.2	571.2
27.5°	558.4	557.4	558.4	558.4	556.4	556.4	556.4	559.3	553.4	552.4	552.4
30°	523.8	523.8	524.8	525.8	525.8	527.8	526.8	530.7	526.8	524.8	526.8
32.5°	478.5	482.4	485.4	485.4	485.4	487.3	489.3	492.3	488.3	489.3	489.3
35°	427.2	430.1	432.1	437.0	434.1	441.0	442.9	446.9	445.9	447.9	446.9
37.5°	369.9	373.9	377.8	384.7	383.7	391.6	395.6	403.5	401.5	405.5	407.4
40°	316.7	322.6	328.5	333.4	337.4	345.3	353.2	363.0	366.0	369.0	369.9
42.5°	265.4	271.3	281.2	288.1	294.0	306.8	317.7	329.5	332.5	338.4	340.3
45°	223.9	228.9	240.7	249.6	254.5	273.3	286.1	300.9	305.8	312.7	315.7
47.5°	185.5	194.3	206.2	217.0	223.9	243.7	260.4	276.2	283.1	291.0	295.0
50°	151.9	161.8	177.6	187.4	197.3	219.0	237.7	254.5	261.4	270.3	274.2
52.5°	124.3	135.2	149.9	160.8	171.7	194.3	214.1	229.9	238.7	244.7	250.6
55°	97.7	109.5	124.3	136.1	145.0	169.7	186.4	202.2	208.2	213.1	216.0
57.5°	76.0	84.8	99.6	109.5	120.4	142.1	158.8	170.7	175.6	181.5	183.5
60°	59.2	68.1	81.9	91.7	101.6	122.3	139.1	150.9	155.9	160.8	163.8
62.5°	47.4	56.2	69.1	77.9	86.8	105.6	120.4	132.2	138.1	143.0	146.0
65°	37.5	45.4	56.2	65.1	72.0	88.8	103.6	114.4	120.4	125.3	128.2
67.5°	29.6	36.5	46.4	52.3	59.2	73.0	85.8	95.7	100.6	106.5	109.5
70°	22.7	27.6	36.5	41.4	46.4	58.2	68.1	77.9	82.9	86.8	88.8
72.5°	16.8	20.7	27.6	31.6	34.5	44.4	52.3	59.2	63.1	67.1	69.1
75°	11.8	14.8	19.7	22.7	24.7	31.6	38.5	43.4	46.4	49.3	52.3
77.5°	7.9	9.9	12.8	14.8	16.8	21.7	25.6	29.6	32.6	35.5	36.5
80°	4.9	6.9	8.9	9.9	10.9	13.8	17.8	19.7	21.7	23.7	24.7
82.5°	3.0	3.9	4.9	5.9	6.9	8.9	10.9	12.8	13.8	15.8	16.8
85°	1.0	2.0	2.0	3.0	3.0	4.9	5.9	6.9	7.9	8.9	9.9
87.5°	0.0	0.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0
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: LD4B20D010 EU4B10209730 4LBDW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	641.2	641.2	641.2	641.2	641.2	641.2	641.2	641.2
2.5°	644.2	641.2	639.3	638.3	645.2	636.3	640.2	641.2
5°	640.2	637.3	635.3	634.3	640.2	632.3	635.3	637.3
7.5°	634.3	632.3	629.4	628.4	634.3	625.4	629.4	630.4
10°	627.4	624.5	622.5	621.5	626.4	617.5	621.5	621.5
12.5°	618.5	616.6	612.6	612.6	616.6	608.7	611.6	611.6
15°	606.7	604.7	600.8	600.8	604.7	596.8	599.8	599.8
17.5°	596.8	594.9	591.9	590.9	594.9	587.0	589.9	588.9
20°	588.9	587.0	583.0	583.0	586.0	578.1	581.0	581.0
22.5°	582.0	581.0	577.1	577.1	581.0	573.2	575.1	573.2
25°	571.2	570.2	566.3	567.2	569.2	561.3	564.3	562.3
27.5°	553.4	553.4	549.5	548.5	551.5	544.5	546.5	545.5
30°	525.8	526.8	521.9	521.9	522.8	516.9	519.9	518.9
32.5°	488.3	489.3	485.4	484.4	487.3	482.4	484.4	484.4
35°	446.9	447.9	444.9	444.9	447.9	444.9	444.9	443.9
37.5°	405.5	407.4	405.5	406.4	408.4	405.5	407.4	406.4
40°	371.9	373.9	370.9	372.9	374.9	371.9	374.9	372.9
42.5°	341.3	344.3	342.3	344.3	346.3	344.3	346.3	343.3
45°	318.6	320.6	319.6	320.6	322.6	321.6	322.6	321.6
47.5°	296.9	300.9	298.9	300.9	303.8	301.9	303.8	300.9
50°	277.2	280.2	279.2	281.2	282.1	281.2	283.1	280.2
52.5°	251.6	254.5	253.5	253.5	255.5	253.5	255.5	253.5
55°	218.0	219.0	219.0	220.0	219.0	218.0	219.0	217.0
57.5°	185.5	187.4	184.5	187.4	186.4	185.5	185.5	183.5
60°	164.7	167.7	165.7	167.7	166.7	166.7	166.7	165.7
62.5°	148.0	149.9	148.0	149.0	149.0	149.0	148.0	147.0
65°	129.2	132.2	130.2	131.2	130.2	129.2	130.2	129.2
67.5°	110.5	111.5	111.5	110.5	110.5	110.5	110.5	108.5
70°	89.8	90.8	89.8	91.7	90.8	89.8	90.8	88.8
72.5°	70.0	71.0	70.0	71.0	70.0	70.0	70.0	70.0
75°	52.3	53.3	53.3	53.3	53.3	53.3	51.3	53.3
77.5°	37.5	37.5	37.5	38.5	37.5	37.5	37.5	37.5
80°	25.6	25.6	25.6	26.6	25.6	26.6	25.6	26.6
82.5°	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8
85°	8.9	9.9	9.9	8.9	8.9	8.9	8.9	8.9
87.5°	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)