

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: P251899

Luminaire Tested: **LD4B10D010 EU4B10209024 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251899
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: LD4B10D010 EU4B10209024 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2400K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 670.0 lumens
Efficiency: N/A
Efficacy: 66.7 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

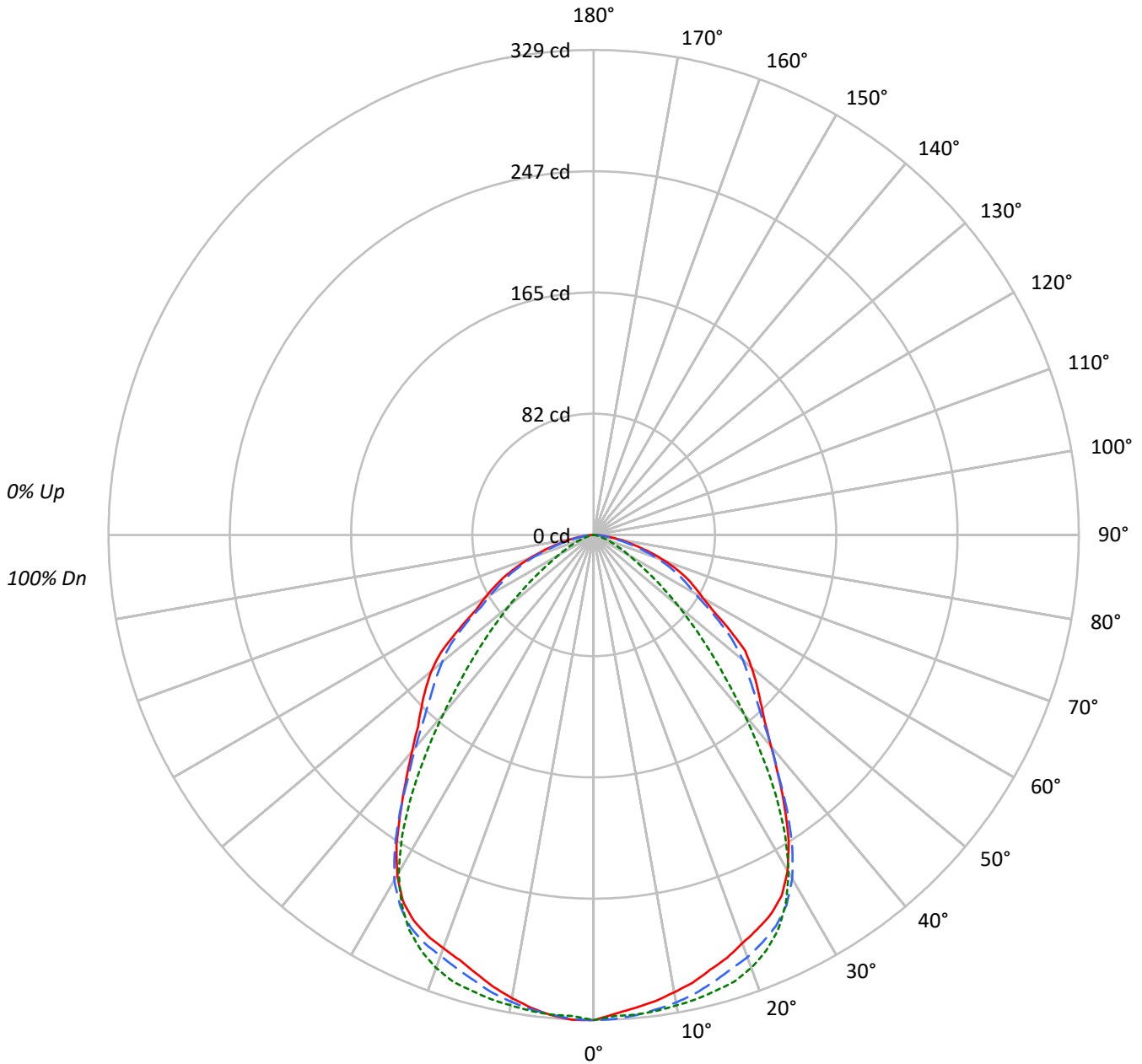
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	32083	32083	32083
5°	31511	31961	32010
10°	31173	32073	31579
15°	30814	32297	31066
20°	30575	32410	30938
25°	30550	31808	31045
30°	29585	29754	29979
35°	26876	25615	27114
40°	23778	20165	24350
45°	22052	15354	22755
50°	21196	11371	21803
55°	19183	7833	18928
60°	16685	5321	16587
65°	16119	3851	15289
70°	14589	2593	12994
75°	12012	1732	10280
80°	9653	1122	7689
85°	7939	559	5144



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	31.1	4.6
10°-20°	88.9	13.3
20°-30°	134.2	20.0
30°-40°	140.5	21.0
40°-50°	113.8	17.0
50°-60°	82.8	12.4
60°-70°	51.0	7.6
70°-80°	23.1	3.4
80°-90°	4.7	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°	254.2	37.9
0°-40°	394.7	58.9
0°-60°	591.2	88.2
0°-90°	670.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	670.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	329	329	329	329	329	
5°	322	327	327	327	327	31
15°	305	314	320	313	308	86
25°	284	293	296	294	289	130
35°	226	229	215	229	228	141
45°	160	155	111	157	165	124
55°	113	106	46	107	111	101
65°	70	63	17	62	66	68
75°	32	27	5	24	27	35
85°	7	6	0	4	5	8
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°	329.2	329.2	329.2	329.2	329.2	329.2	329.2	329.2	329.2	329.2	329.2
2.5°	325.2	325.2	328.2	331.7	328.7	325.7	327.7	326.7	330.2	330.2	328.7
5°	322.1	323.1	325.7	328.7	326.2	323.1	325.7	324.7	328.2	328.2	327.2
7.5°	319.1	319.6	322.6	326.2	323.6	320.6	322.6	322.1	325.2	325.7	324.7
10°	315.0	315.5	318.6	322.1	319.6	317.1	319.1	318.6	322.6	322.6	322.1
12.5°	311.0	311.5	314.5	317.6	315.0	312.5	314.5	314.5	318.6	319.1	318.6
15°	305.4	306.4	309.0	312.0	310.5	307.4	309.5	309.5	313.0	314.0	314.0
17.5°	300.8	301.4	303.9	306.9	304.9	302.4	304.4	304.4	307.9	309.0	309.0
20°	294.8	295.8	298.3	301.4	299.8	297.8	299.3	299.3	303.4	304.4	304.9
22.5°	289.7	290.7	292.7	296.8	294.3	292.7	294.8	294.3	298.8	299.3	299.3
25°	284.1	285.1	287.7	290.2	288.7	287.2	288.7	288.7	292.2	292.7	292.7
27.5°	276.0	276.5	279.1	281.6	280.1	278.1	280.1	279.6	283.1	283.6	283.1
30°	262.9	263.9	264.9	268.4	266.9	265.4	267.4	266.4	270.0	270.0	269.4
32.5°	246.1	246.1	248.2	250.7	248.7	247.7	249.2	249.7	252.2	252.2	250.7
35°	225.9	226.9	228.4	229.9	228.4	227.4	228.9	228.4	231.5	230.4	228.9
37.5°	205.6	206.1	207.7	209.7	207.7	206.1	206.6	206.1	208.7	208.7	206.1
40°	186.9	187.9	188.9	190.9	188.9	187.9	188.4	186.9	189.9	188.9	187.4
42.5°	171.7	172.2	173.7	174.7	172.7	172.2	172.7	171.7	173.2	172.2	169.2
45°	160.0	160.0	160.6	162.1	160.0	159.5	159.5	158.5	160.0	158.0	155.0
47.5°	149.9	150.4	150.9	151.9	150.4	148.9	149.4	147.4	148.4	146.9	142.8
50°	139.8	140.8	141.3	142.3	140.8	139.8	140.3	138.3	138.3	135.7	132.2
52.5°	129.7	130.2	129.7	130.7	129.7	128.1	128.6	126.6	126.6	123.6	120.0
55°	112.9	113.5	114.0	115.0	114.0	112.4	113.5	111.9	111.9	109.9	105.9
57.5°	96.2	96.7	97.2	97.8	97.8	96.7	97.2	96.2	95.7	94.2	91.2
60°	85.6	85.6	85.6	86.1	85.6	85.1	85.1	84.1	84.1	82.0	79.0
62.5°	77.5	78.0	78.0	78.5	78.0	77.5	77.0	76.0	75.5	73.4	70.9
65°	69.9	69.9	69.4	70.4	69.9	69.4	69.4	68.4	67.4	65.3	62.8
67.5°	60.8	61.3	60.8	61.3	61.3	60.8	60.3	59.3	58.8	57.2	54.2
70°	51.2	51.2	51.2	51.7	51.2	51.2	51.7	50.1	49.6	47.6	45.1
72.5°	41.5	42.0	42.0	41.5	42.0	41.0	41.0	41.0	40.5	38.5	36.0
75°	31.9	32.4	32.4	32.9	32.4	31.9	31.9	31.4	30.9	29.4	27.3
77.5°	23.8	23.8	24.3	24.3	24.3	23.8	23.8	22.8	22.8	21.8	19.8
80°	17.2	17.2	16.7	17.2	17.2	16.7	16.7	16.2	16.2	15.2	13.7
82.5°	11.1	11.6	11.6	11.6	11.6	11.1	11.1	11.1	10.6	10.1	9.1
85°	7.1	7.1	7.1	7.1	7.6	7.1	7.6	7.1	7.1	6.1	5.6
87.5°	3.0	3.0	3.0	3.5	3.5	3.0	3.0	3.0	3.0	3.0	2.5
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°	329.2	329.2	329.2	329.2	329.2	329.2	329.2	329.2	329.2	329.2	329.2
2.5°	328.7	329.2	327.7	329.7	328.2	328.7	329.2	328.7	326.7	326.7	332.3
5°	326.7	327.7	326.2	328.7	327.7	327.7	328.7	328.2	326.2	326.7	331.7
7.5°	324.7	326.2	325.2	327.7	326.2	326.2	327.2	327.2	325.2	325.7	330.2
10°	321.6	323.6	323.1	325.7	324.1	324.1	325.7	325.7	323.6	324.1	328.7
12.5°	319.1	321.1	320.6	323.1	322.1	322.6	323.1	324.1	321.6	322.6	326.7
15°	315.0	317.1	317.1	319.6	318.6	319.6	320.6	322.1	320.1	320.1	324.1
17.5°	310.5	313.0	313.0	315.0	315.0	315.5	317.6	319.1	317.1	317.6	321.1
20°	305.4	308.4	308.4	311.0	310.5	311.5	313.0	314.5	312.5	312.5	316.5
22.5°	300.3	302.9	303.4	304.9	304.9	305.4	306.9	307.9	305.4	305.4	309.5
25°	293.3	295.8	296.3	297.3	296.3	296.3	297.3	298.3	295.8	295.8	299.3
27.5°	283.6	286.2	286.2	285.7	284.6	285.1	284.6	285.1	282.6	282.1	285.7
30°	269.4	271.0	271.0	270.5	268.9	268.9	267.4	267.9	264.4	264.4	267.4
32.5°	250.2	251.7	250.7	249.7	247.7	246.7	245.6	245.1	241.6	241.6	245.1
35°	227.4	228.4	226.9	224.9	222.3	220.8	219.3	217.3	214.7	215.3	217.3
37.5°	204.1	204.1	202.1	198.0	196.0	193.5	190.9	190.9	186.9	186.4	187.9
40°	184.4	182.3	178.8	173.2	169.7	167.1	163.6	161.6	158.5	158.5	161.1
42.5°	166.6	162.6	158.0	150.4	146.9	143.8	139.3	137.3	133.7	133.2	134.7
45°	150.9	146.9	140.3	132.2	127.6	124.1	117.5	115.0	111.9	111.4	112.4
47.5°	138.3	133.7	125.6	115.0	110.4	105.9	99.3	95.7	93.2	91.7	93.2
50°	127.1	121.0	112.4	101.3	95.2	91.2	83.1	79.5	76.0	75.0	75.5
52.5°	115.0	108.9	99.8	88.1	82.6	76.5	68.9	63.8	60.8	59.3	60.8
55°	101.8	95.7	86.6	75.0	68.9	63.3	55.2	51.2	47.6	46.1	47.6
57.5°	87.6	82.0	73.9	62.3	56.7	51.7	44.1	40.0	36.5	35.5	36.5
60°	75.5	70.9	62.8	51.7	47.1	41.5	34.9	30.9	27.9	27.3	27.9
62.5°	67.4	62.3	54.7	44.1	39.5	34.9	28.9	24.8	22.3	21.8	22.3
65°	59.3	53.7	46.6	37.5	32.9	29.4	23.3	19.8	17.2	16.7	17.2
67.5°	50.1	45.1	39.0	30.9	27.3	23.8	18.7	15.2	13.2	12.7	13.2
70°	41.5	37.0	30.9	24.8	21.3	18.7	14.2	11.6	9.6	9.1	9.6
72.5°	32.9	28.9	23.8	18.7	16.7	14.2	11.1	8.6	7.1	6.6	7.1
75°	25.3	22.3	18.2	13.7	12.2	10.6	7.6	6.1	5.1	4.6	5.1
77.5°	17.7	15.7	12.7	10.1	8.6	7.6	5.6	4.1	3.5	3.0	3.5
80°	12.2	10.6	8.6	6.6	5.6	4.6	3.5	2.5	2.0	2.0	2.0
82.5°	8.1	6.6	5.1	4.1	3.5	3.0	2.0	1.5	1.5	1.0	1.0
85°	4.6	4.1	3.0	2.5	2.0	1.5	1.0	1.0	0.5	0.5	0.5
87.5°	2.0	1.5	1.0	1.0	0.5	0.5	0.5	0.5	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°	329.2	329.2	329.2	329.2	329.2	329.2	329.2	329.2	329.2	329.2	329.2
2.5°	330.7	329.2	331.2	329.2	328.2	329.2	328.2	331.2	328.7	326.7	328.7
5°	330.2	328.2	330.2	328.7	327.2	327.7	326.7	329.7	326.7	325.2	326.2
7.5°	329.2	327.7	328.7	327.2	325.7	326.2	325.2	327.7	324.7	323.1	324.1
10°	327.7	326.2	326.7	325.7	324.1	324.1	323.1	325.2	321.6	319.6	320.6
12.5°	325.7	323.6	324.7	323.1	321.1	321.1	320.1	321.6	318.1	316.0	316.5
15°	323.1	321.1	321.1	319.6	317.6	317.6	315.5	317.1	313.0	311.0	311.0
17.5°	320.1	317.6	317.6	316.0	313.5	313.0	311.5	313.0	308.4	306.4	306.4
20°	315.5	313.5	313.0	312.0	309.5	309.0	306.9	307.4	303.9	302.4	301.9
22.5°	309.5	307.4	307.9	306.4	304.4	303.9	301.9	303.4	299.8	298.3	298.8
25°	298.8	297.8	298.8	298.3	296.8	296.8	295.8	296.8	293.8	292.7	293.3
27.5°	286.7	286.2	286.7	286.7	285.7	285.7	285.7	287.2	284.1	283.6	283.6
30°	268.9	268.9	269.4	270.0	270.0	271.0	270.5	272.5	270.5	269.4	270.5
32.5°	245.6	247.7	249.2	249.2	249.2	250.2	251.2	252.7	250.7	251.2	251.2
35°	219.3	220.8	221.8	224.4	222.9	226.4	227.4	229.4	228.9	229.9	229.4
37.5°	189.9	192.0	194.0	197.5	197.0	201.1	203.1	207.2	206.1	208.2	209.2
40°	162.6	165.6	168.7	171.2	173.2	177.3	181.3	186.4	187.9	189.4	189.9
42.5°	136.2	139.3	144.3	147.9	150.9	157.5	163.1	169.2	170.7	173.7	174.7
45°	115.0	117.5	123.6	128.1	130.7	140.3	146.9	154.5	157.0	160.6	162.1
47.5°	95.2	99.8	105.9	111.4	115.0	125.1	133.7	141.8	145.4	149.4	151.4
50°	78.0	83.1	91.2	96.2	101.3	112.4	122.1	130.7	134.2	138.8	140.8
52.5°	63.8	69.4	77.0	82.6	88.1	99.8	109.9	118.0	122.6	125.6	128.6
55°	50.1	56.2	63.8	69.9	74.5	87.1	95.7	103.8	106.9	109.4	110.9
57.5°	39.0	43.6	51.2	56.2	61.8	72.9	81.5	87.6	90.2	93.2	94.2
60°	30.4	34.9	42.0	47.1	52.2	62.8	71.4	77.5	80.0	82.6	84.1
62.5°	24.3	28.9	35.5	40.0	44.6	54.2	61.8	67.9	70.9	73.4	75.0
65°	19.2	23.3	28.9	33.4	37.0	45.6	53.2	58.8	61.8	64.3	65.8
67.5°	15.2	18.7	23.8	26.8	30.4	37.5	44.1	49.1	51.7	54.7	56.2
70°	11.6	14.2	18.7	21.3	23.8	29.9	34.9	40.0	42.5	44.6	45.6
72.5°	8.6	10.6	14.2	16.2	17.7	22.8	26.8	30.4	32.4	34.4	35.5
75°	6.1	7.6	10.1	11.6	12.7	16.2	19.8	22.3	23.8	25.3	26.8
77.5°	4.1	5.1	6.6	7.6	8.6	11.1	13.2	15.2	16.7	18.2	18.7
80°	2.5	3.5	4.6	5.1	5.6	7.1	9.1	10.1	11.1	12.2	12.7
82.5°	1.5	2.0	2.5	3.0	3.5	4.6	5.6	6.6	7.1	8.1	8.6
85°	0.5	1.0	1.0	1.5	1.5	2.5	3.0	3.5	4.1	4.6	5.1
87.5°	0.0	0.0	0.5	0.5	0.5	0.5	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	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	329.2	329.2	329.2	329.2	329.2	329.2	329.2	329.2
2.5°	330.7	329.2	328.2	327.7	331.2	326.7	328.7	329.2
5°	328.7	327.2	326.2	325.7	328.7	324.7	326.2	327.2
7.5°	325.7	324.7	323.1	322.6	325.7	321.1	323.1	323.6
10°	322.1	320.6	319.6	319.1	321.6	317.1	319.1	319.1
12.5°	317.6	316.5	314.5	314.5	316.5	312.5	314.0	314.0
15°	311.5	310.5	308.4	308.4	310.5	306.4	307.9	307.9
17.5°	306.4	305.4	303.9	303.4	305.4	301.4	302.9	302.4
20°	302.4	301.4	299.3	299.3	300.8	296.8	298.3	298.3
22.5°	298.8	298.3	296.3	296.3	298.3	294.3	295.3	294.3
25°	293.3	292.7	290.7	291.2	292.2	288.2	289.7	288.7
27.5°	284.1	284.1	282.1	281.6	283.1	279.6	280.6	280.1
30°	270.0	270.5	267.9	267.9	268.4	265.4	266.9	266.4
32.5°	250.7	251.2	249.2	248.7	250.2	247.7	248.7	248.7
35°	229.4	229.9	228.4	228.4	229.9	228.4	228.4	227.9
37.5°	208.2	209.2	208.2	208.7	209.7	208.2	209.2	208.7
40°	190.9	192.0	190.4	191.4	192.5	190.9	192.5	191.4
42.5°	175.2	176.8	175.7	176.8	177.8	176.8	177.8	176.3
45°	163.6	164.6	164.1	164.6	165.6	165.1	165.6	165.1
47.5°	152.5	154.5	153.5	154.5	156.0	155.0	156.0	154.5
50°	142.3	143.8	143.3	144.3	144.9	144.3	145.4	143.8
52.5°	129.2	130.7	130.2	130.2	131.2	130.2	131.2	130.2
55°	111.9	112.4	112.4	112.9	112.4	111.9	112.4	111.4
57.5°	95.2	96.2	94.7	96.2	95.7	95.2	95.2	94.2
60°	84.6	86.1	85.1	86.1	85.6	85.6	85.6	85.1
62.5°	76.0	77.0	76.0	76.5	76.5	76.5	76.0	75.5
65°	66.3	67.9	66.9	67.4	66.9	66.3	66.9	66.3
67.5°	56.7	57.2	57.2	56.7	56.7	56.7	56.7	55.7
70°	46.1	46.6	46.1	47.1	46.6	46.1	46.6	45.6
72.5°	36.0	36.5	36.0	36.5	36.0	36.0	36.0	36.0
75°	26.8	27.3	27.3	27.3	27.3	27.3	26.3	27.3
77.5°	19.2	19.2	19.2	19.8	19.2	19.2	19.2	19.2
80°	13.2	13.2	13.2	13.7	13.2	13.7	13.2	13.7
82.5°	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
85°	4.6	5.1	5.1	4.6	4.6	4.6	4.6	4.6
87.5°	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5
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)