

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: P251905

Luminaire Tested: **LD4B10D010 EU4B10209727 4LBDW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251905  
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 EU4B10209727 4LBDW1H  
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 97CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 662.0 lumens  
Efficiency: N/A  
Efficacy: 65.9 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

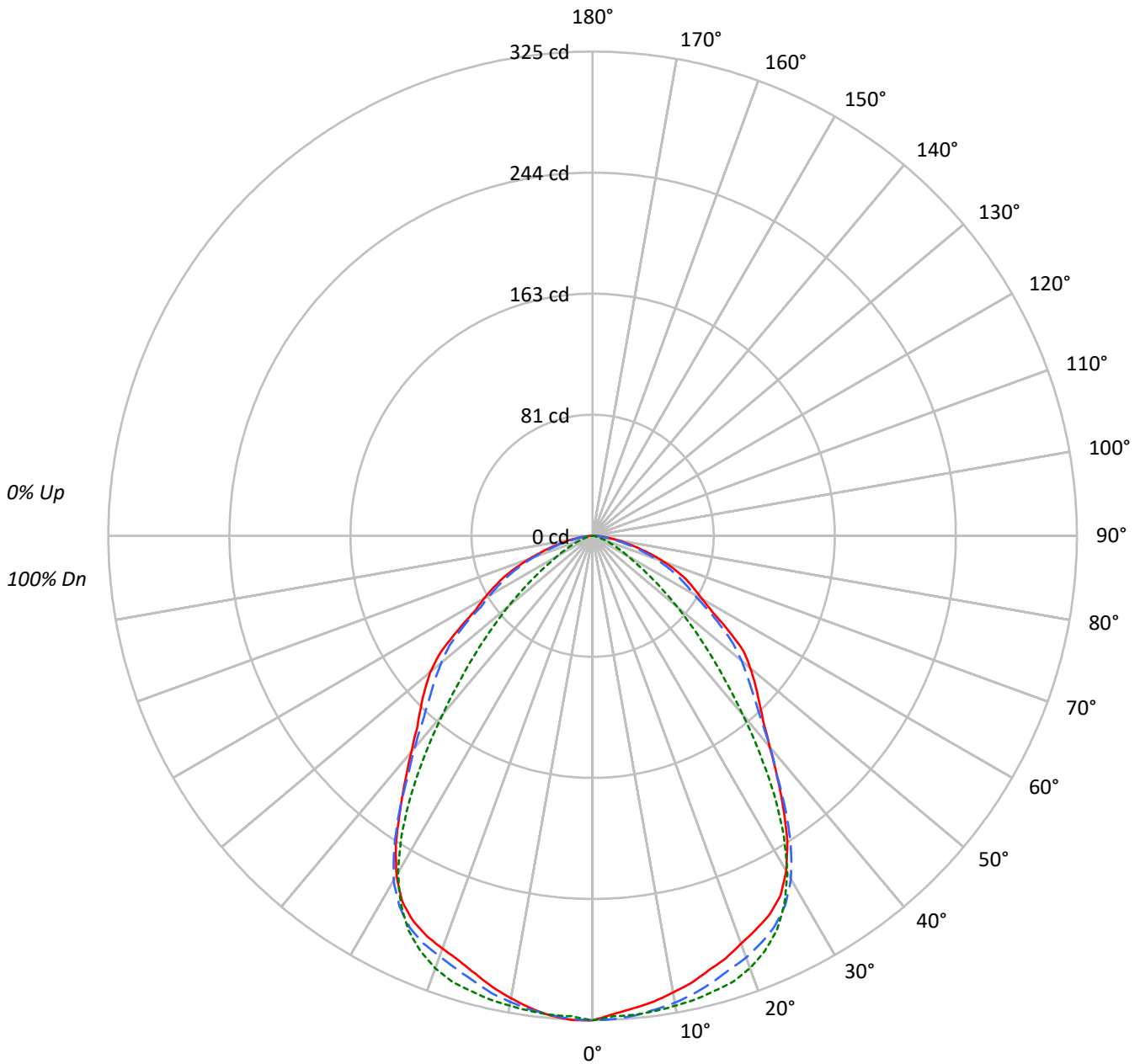
Input Watts (W): 10.05  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	31703	31703	31703
5°	31139	31580	31629
10°	30807	31697	31203
15°	30450	31913	30703
20°	30212	32026	30575
25°	30185	31432	30668
30°	29225	29394	29619
35°	26555	25306	26793
40°	23498	19923	24070
45°	21790	15175	22480
50°	20938	11235	21545
55°	18962	7731	18707
60°	16490	5263	16392
65°	15935	3805	15128
70°	14390	2565	12823
75°	11861	1694	10167
80°	9541	1122	7577
85°	7827	559	5032



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	30.7	4.6
10°-20°	87.8	13.3
20°-30°	132.6	20.0
30°-40°	138.8	21.0
40°-50°	112.4	17.0
50°-60°	81.8	12.4
60°-70°	50.4	7.6
70°-80°	22.8	3.4
80°-90°	4.6	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°	251.2	37.9
0°-40°	390.0	58.9
0°-60°	584.2	88.2
0°-90°	662.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	662.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	325	325	325	325	325	
5°	318	323	323	323	323	30
15°	302	310	316	309	304	85
25°	281	289	292	290	285	129
35°	223	226	213	226	225	139
45°	158	153	110	155	163	123
55°	112	105	46	106	110	100
65°	69	62	16	61	66	68
75°	32	27	4	24	27	34
85°	7	6	0	4	4	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°	325.3	325.3	325.3	325.3	325.3	325.3	325.3	325.3	325.3	325.3	325.3
2.5°	321.3	321.3	324.3	327.8	324.8	321.8	323.8	322.8	326.3	326.3	324.8
5°	318.3	319.3	321.8	324.8	322.3	319.3	321.8	320.8	324.3	324.3	323.3
7.5°	315.3	315.8	318.8	322.3	319.8	316.8	318.8	318.3	321.3	321.8	320.8
10°	311.3	311.8	314.8	318.3	315.8	313.3	315.3	314.8	318.8	318.8	318.3
12.5°	307.3	307.8	310.8	313.8	311.3	308.8	310.8	310.8	314.8	315.3	314.8
15°	301.8	302.8	305.3	308.3	306.8	303.8	305.8	305.8	309.3	310.3	310.3
17.5°	297.3	297.8	300.3	303.3	301.3	298.8	300.8	300.8	304.3	305.3	305.3
20°	291.3	292.3	294.8	297.8	296.3	294.3	295.8	295.8	299.8	300.8	301.3
22.5°	286.2	287.2	289.2	293.3	290.8	289.2	291.3	290.8	295.3	295.8	295.8
25°	280.7	281.7	284.2	286.7	285.2	283.7	285.2	285.2	288.7	289.2	289.2
27.5°	272.7	273.2	275.7	278.2	276.7	274.7	276.7	276.2	279.7	280.2	279.7
30°	259.7	260.7	261.7	265.2	263.7	262.2	264.2	263.2	266.7	266.7	266.2
32.5°	243.2	243.2	245.2	247.7	245.7	244.7	246.2	246.7	249.2	249.2	247.7
35°	223.2	224.2	225.7	227.2	225.7	224.7	226.2	225.7	228.7	227.7	226.2
37.5°	203.2	203.7	205.2	207.2	205.2	203.7	204.2	203.7	206.2	206.2	203.7
40°	184.7	185.7	186.7	188.7	186.7	185.7	186.2	184.7	187.7	186.7	185.2
42.5°	169.6	170.1	171.6	172.6	170.6	170.1	170.6	169.6	171.1	170.1	167.1
45°	158.1	158.1	158.6	160.1	158.1	157.6	157.6	156.6	158.1	156.1	153.1
47.5°	148.1	148.6	149.1	150.1	148.6	147.1	147.6	145.6	146.6	145.1	141.1
50°	138.1	139.1	139.6	140.6	139.1	138.1	138.6	136.6	136.6	134.1	130.6
52.5°	128.1	128.6	128.1	129.1	128.1	126.6	127.1	125.1	125.1	122.1	118.6
55°	111.6	112.1	112.6	113.6	112.6	111.1	112.1	110.6	110.6	108.6	104.6
57.5°	95.1	95.6	96.1	96.6	96.6	95.6	96.1	95.1	94.6	93.1	90.1
60°	84.6	84.6	84.6	85.1	84.6	84.1	84.1	83.1	83.1	81.1	78.1
62.5°	76.6	77.1	77.1	77.6	77.1	76.6	76.1	75.1	74.6	72.6	70.1
65°	69.1	69.1	68.6	69.6	69.1	68.6	68.6	67.6	66.6	64.6	62.1
67.5°	60.1	60.6	60.1	60.6	60.6	60.1	59.6	58.6	58.1	56.5	53.5
70°	50.5	50.5	50.5	51.0	50.5	50.5	51.0	49.5	49.0	47.0	44.5
72.5°	41.0	41.5	41.5	41.0	41.5	40.5	40.5	40.5	40.0	38.0	35.5
75°	31.5	32.0	32.0	32.5	32.0	31.5	31.5	31.0	30.5	29.0	27.0
77.5°	23.5	23.5	24.0	24.0	24.0	23.5	23.5	22.5	22.5	21.5	19.5
80°	17.0	17.0	16.5	17.0	17.0	16.5	16.5	16.0	16.0	15.0	13.5
82.5°	11.0	11.5	11.5	11.5	11.5	11.0	11.0	11.0	10.5	10.0	9.0
85°	7.0	7.0	7.0	7.0	7.5	7.0	7.5	7.0	7.0	6.0	5.5
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°	325.3	325.3	325.3	325.3	325.3	325.3	325.3	325.3	325.3	325.3	325.3
2.5°	324.8	325.3	323.8	325.8	324.3	324.8	325.3	324.8	322.8	322.8	328.3
5°	322.8	323.8	322.3	324.8	323.8	323.8	324.8	324.3	322.3	322.8	327.8
7.5°	320.8	322.3	321.3	323.8	322.3	322.3	323.3	323.3	321.3	321.8	326.3
10°	317.8	319.8	319.3	321.8	320.3	320.3	321.8	321.8	319.8	320.3	324.8
12.5°	315.3	317.3	316.8	319.3	318.3	318.8	319.3	320.3	317.8	318.8	322.8
15°	311.3	313.3	313.3	315.8	314.8	315.8	316.8	318.3	316.3	316.3	320.3
17.5°	306.8	309.3	309.3	311.3	311.3	311.8	313.8	315.3	313.3	313.8	317.3
20°	301.8	304.8	304.8	307.3	306.8	307.8	309.3	310.8	308.8	308.8	312.8
22.5°	296.8	299.3	299.8	301.3	301.3	301.8	303.3	304.3	301.8	301.8	305.8
25°	289.8	292.3	292.8	293.8	292.8	292.8	293.8	294.8	292.3	292.3	295.8
27.5°	280.2	282.7	282.7	282.2	281.2	281.7	281.2	281.7	279.2	278.7	282.2
30°	266.2	267.7	267.7	267.2	265.7	265.7	264.2	264.7	261.2	261.2	264.2
32.5°	247.2	248.7	247.7	246.7	244.7	243.7	242.7	242.2	238.7	238.7	242.2
35°	224.7	225.7	224.2	222.2	219.7	218.2	216.7	214.7	212.2	212.7	214.7
37.5°	201.7	201.7	199.7	195.7	193.7	191.2	188.7	188.7	184.7	184.2	185.7
40°	182.2	180.2	176.7	171.1	167.6	165.1	161.6	159.6	156.6	156.6	159.1
42.5°	164.6	160.6	156.1	148.6	145.1	142.1	137.6	135.6	132.1	131.6	133.1
45°	149.1	145.1	138.6	130.6	126.1	122.6	116.1	113.6	110.6	110.1	111.1
47.5°	136.6	132.1	124.1	113.6	109.1	104.6	98.1	94.6	92.1	90.6	92.1
50°	125.6	119.6	111.1	100.1	94.1	90.1	82.1	78.6	75.1	74.1	74.6
52.5°	113.6	107.6	98.6	87.1	81.6	75.6	68.1	63.1	60.1	58.6	60.1
55°	100.6	94.6	85.6	74.1	68.1	62.6	54.5	50.5	47.0	45.5	47.0
57.5°	86.6	81.1	73.1	61.6	56.0	51.0	43.5	39.5	36.0	35.0	36.0
60°	74.6	70.1	62.1	51.0	46.5	41.0	34.5	30.5	27.5	27.0	27.5
62.5°	66.6	61.6	54.0	43.5	39.0	34.5	28.5	24.5	22.0	21.5	22.0
65°	58.6	53.0	46.0	37.0	32.5	29.0	23.0	19.5	17.0	16.5	17.0
67.5°	49.5	44.5	38.5	30.5	27.0	23.5	18.5	15.0	13.0	12.5	13.0
70°	41.0	36.5	30.5	24.5	21.0	18.5	14.0	11.5	9.5	9.0	9.5
72.5°	32.5	28.5	23.5	18.5	16.5	14.0	11.0	8.5	7.0	6.5	7.0
75°	25.0	22.0	18.0	13.5	12.0	10.5	7.5	6.0	5.0	4.5	5.0
77.5°	17.5	15.5	12.5	10.0	8.5	7.5	5.5	4.0	3.5	3.0	3.5
80°	12.0	10.5	8.5	6.5	5.5	4.5	3.5	2.5	2.0	2.0	2.0
82.5°	8.0	6.5	5.0	4.0	3.5	3.0	2.0	1.5	1.5	1.0	1.0
85°	4.5	4.0	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°	325.3	325.3	325.3	325.3	325.3	325.3	325.3	325.3	325.3	325.3	325.3
2.5°	326.8	325.3	327.3	325.3	324.3	325.3	324.3	327.3	324.8	322.8	324.8
5°	326.3	324.3	326.3	324.8	323.3	323.8	322.8	325.8	322.8	321.3	322.3
7.5°	325.3	323.8	324.8	323.3	321.8	322.3	321.3	323.8	320.8	319.3	320.3
10°	323.8	322.3	322.8	321.8	320.3	320.3	319.3	321.3	317.8	315.8	316.8
12.5°	321.8	319.8	320.8	319.3	317.3	317.3	316.3	317.8	314.3	312.3	312.8
15°	319.3	317.3	317.3	315.8	313.8	313.8	311.8	313.3	309.3	307.3	307.3
17.5°	316.3	313.8	313.8	312.3	309.8	309.3	307.8	309.3	304.8	302.8	302.8
20°	311.8	309.8	309.3	308.3	305.8	305.3	303.3	303.8	300.3	298.8	298.3
22.5°	305.8	303.8	304.3	302.8	300.8	300.3	298.3	299.8	296.3	294.8	295.3
25°	295.3	294.3	295.3	294.8	293.3	293.3	292.3	293.3	290.3	289.2	289.8
27.5°	283.2	282.7	283.2	283.2	282.2	282.2	282.2	283.7	280.7	280.2	280.2
30°	265.7	265.7	266.2	266.7	266.7	267.7	267.2	269.2	267.2	266.2	267.2
32.5°	242.7	244.7	246.2	246.2	246.2	247.2	248.2	249.7	247.7	248.2	248.2
35°	216.7	218.2	219.2	221.7	220.2	223.7	224.7	226.7	226.2	227.2	226.7
37.5°	187.7	189.7	191.7	195.2	194.7	198.7	200.7	204.7	203.7	205.7	206.7
40°	160.6	163.6	166.6	169.1	171.1	175.2	179.2	184.2	185.7	187.2	187.7
42.5°	134.6	137.6	142.6	146.1	149.1	155.6	161.1	167.1	168.6	171.6	172.6
45°	113.6	116.1	122.1	126.6	129.1	138.6	145.1	152.6	155.1	158.6	160.1
47.5°	94.1	98.6	104.6	110.1	113.6	123.6	132.1	140.1	143.6	147.6	149.6
50°	77.1	82.1	90.1	95.1	100.1	111.1	120.6	129.1	132.6	137.1	139.1
52.5°	63.1	68.6	76.1	81.6	87.1	98.6	108.6	116.6	121.1	124.1	127.1
55°	49.5	55.5	63.1	69.1	73.6	86.1	94.6	102.6	105.6	108.1	109.6
57.5°	38.5	43.0	50.5	55.5	61.1	72.1	80.6	86.6	89.1	92.1	93.1
60°	30.0	34.5	41.5	46.5	51.5	62.1	70.6	76.6	79.1	81.6	83.1
62.5°	24.0	28.5	35.0	39.5	44.0	53.5	61.1	67.1	70.1	72.6	74.1
65°	19.0	23.0	28.5	33.0	36.5	45.0	52.5	58.1	61.1	63.6	65.1
67.5°	15.0	18.5	23.5	26.5	30.0	37.0	43.5	48.5	51.0	54.0	55.5
70°	11.5	14.0	18.5	21.0	23.5	29.5	34.5	39.5	42.0	44.0	45.0
72.5°	8.5	10.5	14.0	16.0	17.5	22.5	26.5	30.0	32.0	34.0	35.0
75°	6.0	7.5	10.0	11.5	12.5	16.0	19.5	22.0	23.5	25.0	26.5
77.5°	4.0	5.0	6.5	7.5	8.5	11.0	13.0	15.0	16.5	18.0	18.5
80°	2.5	3.5	4.5	5.0	5.5	7.0	9.0	10.0	11.0	12.0	12.5
82.5°	1.5	2.0	2.5	3.0	3.5	4.5	5.5	6.5	7.0	8.0	8.5
85°	0.5	1.0	1.0	1.5	1.5	2.5	3.0	3.5	4.0	4.5	5.0
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°	325.3	325.3	325.3	325.3	325.3	325.3	325.3	325.3
2.5°	326.8	325.3	324.3	323.8	327.3	322.8	324.8	325.3
5°	324.8	323.3	322.3	321.8	324.8	320.8	322.3	323.3
7.5°	321.8	320.8	319.3	318.8	321.8	317.3	319.3	319.8
10°	318.3	316.8	315.8	315.3	317.8	313.3	315.3	315.3
12.5°	313.8	312.8	310.8	310.8	312.8	308.8	310.3	310.3
15°	307.8	306.8	304.8	304.8	306.8	302.8	304.3	304.3
17.5°	302.8	301.8	300.3	299.8	301.8	297.8	299.3	298.8
20°	298.8	297.8	295.8	295.8	297.3	293.3	294.8	294.8
22.5°	295.3	294.8	292.8	292.8	294.8	290.8	291.8	290.8
25°	289.8	289.2	287.2	287.7	288.7	284.7	286.2	285.2
27.5°	280.7	280.7	278.7	278.2	279.7	276.2	277.2	276.7
30°	266.7	267.2	264.7	264.7	265.2	262.2	263.7	263.2
32.5°	247.7	248.2	246.2	245.7	247.2	244.7	245.7	245.7
35°	226.7	227.2	225.7	225.7	227.2	225.7	225.7	225.2
37.5°	205.7	206.7	205.7	206.2	207.2	205.7	206.7	206.2
40°	188.7	189.7	188.2	189.2	190.2	188.7	190.2	189.2
42.5°	173.1	174.7	173.6	174.7	175.7	174.7	175.7	174.2
45°	161.6	162.6	162.1	162.6	163.6	163.1	163.6	163.1
47.5°	150.6	152.6	151.6	152.6	154.1	153.1	154.1	152.6
50°	140.6	142.1	141.6	142.6	143.1	142.6	143.6	142.1
52.5°	127.6	129.1	128.6	128.6	129.6	128.6	129.6	128.6
55°	110.6	111.1	111.1	111.6	111.1	110.6	111.1	110.1
57.5°	94.1	95.1	93.6	95.1	94.6	94.1	94.1	93.1
60°	83.6	85.1	84.1	85.1	84.6	84.6	84.6	84.1
62.5°	75.1	76.1	75.1	75.6	75.6	75.6	75.1	74.6
65°	65.6	67.1	66.1	66.6	66.1	65.6	66.1	65.6
67.5°	56.0	56.5	56.5	56.0	56.0	56.0	56.0	55.0
70°	45.5	46.0	45.5	46.5	46.0	45.5	46.0	45.0
72.5°	35.5	36.0	35.5	36.0	35.5	35.5	35.5	35.5
75°	26.5	27.0	27.0	27.0	27.0	27.0	26.0	27.0
77.5°	19.0	19.0	19.0	19.5	19.0	19.0	19.0	19.0
80°	13.0	13.0	13.0	13.5	13.0	13.5	13.0	13.5
82.5°	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
85°	4.5	5.0	5.0	4.5	4.5	4.5	4.5	4.5
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)