

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: P251593

Luminaire Tested: **LD4B10D010 EU4B10209727 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251593
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B10D010 EU4B10209727 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE 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: 680.0 lumens
Efficiency: N/A
Efficacy: 67.7 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

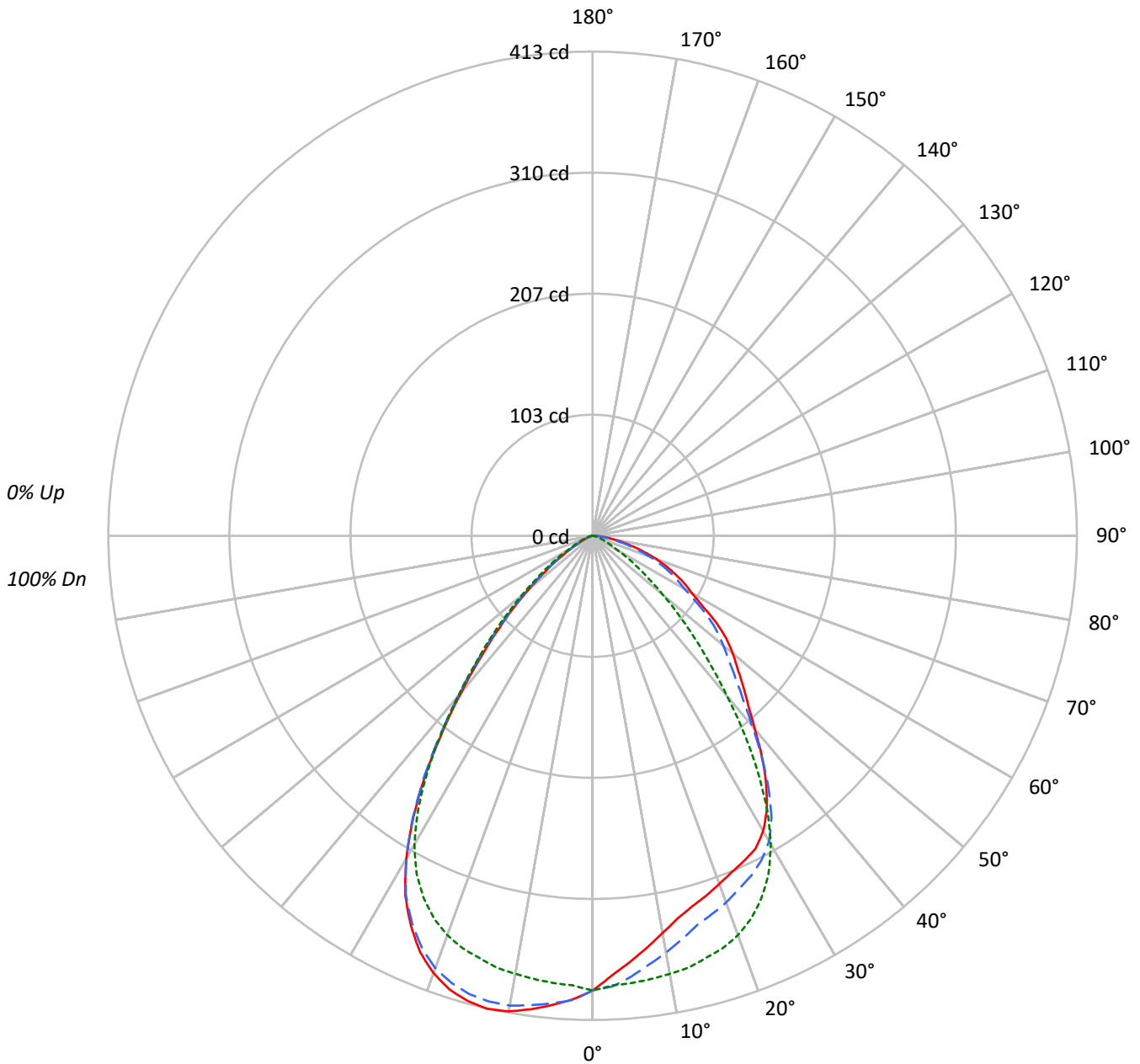
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89																			
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79																			
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70																			
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62																			
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56																			
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50																			
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46																			
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42																			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38																			
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	37804	37804	37804
5°	35698	37459	39318
10°	34033	37546	40762
15°	33033	37624	41458
20°	32763	37585	41164
25°	32894	36658	39454
30°	32736	34199	35775
35°	30695	29208	29506
40°	27353	22646	22137
45°	25016	16884	15850
50°	23652	11826	10689
55°	21749	7986	6712
60°	19004	4678	3703
65°	17987	2998	2075
70°	16385	2137	1282
75°	13556	1506	941
80°	10664	842	561
85°	9505	559	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.6	5.4
10°-20°	105.1	15.5
20°-30°	155.9	22.9
30°-40°	156.1	23.0
40°-50°	109.1	16.0
50°-60°	64.9	9.5
60°-70°	33.9	5.0
70°-80°	15.1	2.2
80°-90°	3.3	0.5
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°	297.7	43.8
0°-40°	453.8	66.7
0°-60°	627.8	92.3
0°-90°	680.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	680.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	388	388	388	388	388	
5°	365	377	383	400	402	34
15°	327	344	373	405	411	93
25°	306	320	341	364	367	141
35°	258	261	246	250	248	160
45°	182	172	122	118	115	141
55°	128	120	47	41	40	114
65°	78	72	13	10	9	77
75°	36	32	4	2	2	39
85°	8	6	0	0	0	10
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°	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9
2.5°	375.4	379.9	375.4	376.9	382.9	377.4	380.4	380.4	378.9	382.4	384.9
5°	364.9	369.4	364.9	366.9	373.4	367.9	371.4	370.4	370.9	373.9	377.4
7.5°	354.4	357.9	353.9	356.4	362.4	357.9	360.9	360.9	361.4	365.9	368.9
10°	343.9	346.9	343.9	345.9	352.4	348.4	350.4	350.9	352.4	356.4	360.9
12.5°	334.4	336.9	333.9	336.9	342.4	338.4	340.9	341.4	342.9	347.4	352.4
15°	327.4	329.9	326.9	329.4	334.4	331.4	333.4	334.4	335.4	339.4	343.9
17.5°	321.9	323.9	321.4	324.4	328.4	324.9	327.9	327.9	329.4	333.4	338.4
20°	315.9	317.9	315.9	318.4	322.9	319.9	322.4	322.4	323.9	328.4	332.9
22.5°	310.4	311.4	310.4	312.4	316.9	314.4	315.9	316.4	317.9	321.9	325.9
25°	305.9	307.9	306.9	308.9	311.9	309.4	310.9	311.4	312.9	316.4	319.9
27.5°	300.9	301.9	300.9	303.4	305.9	303.9	305.4	304.9	305.9	308.9	311.9
30°	290.9	291.9	291.9	293.4	295.4	294.4	295.9	294.4	295.4	297.9	300.9
32.5°	276.5	277.0	277.5	279.0	280.5	279.0	280.0	280.0	280.0	282.0	283.9
35°	258.0	259.0	258.5	259.5	261.0	260.5	260.5	260.0	259.0	260.0	261.0
37.5°	237.0	235.5	235.5	237.0	238.0	236.0	237.0	236.0	236.0	236.5	236.5
40°	215.0	213.5	215.0	215.5	216.0	215.0	214.5	213.5	212.0	212.5	211.5
42.5°	196.5	195.5	196.0	196.0	196.5	195.5	196.0	194.0	192.5	191.5	190.0
45°	181.5	180.0	181.5	180.5	180.5	180.0	179.5	178.5	176.5	175.0	172.5
47.5°	167.5	167.5	168.0	168.0	168.0	167.0	167.0	165.0	163.0	161.0	157.5
50°	156.0	155.0	157.0	157.0	155.5	155.0	155.5	153.0	151.5	149.0	145.5
52.5°	143.5	143.5	144.0	144.0	143.5	142.5	143.0	141.0	139.5	137.0	133.5
55°	128.0	127.0	128.5	128.5	128.0	127.5	128.0	126.5	125.0	123.0	120.0
57.5°	110.5	110.0	111.0	111.5	110.5	110.5	111.0	109.5	109.0	107.0	104.0
60°	97.5	97.0	98.0	98.5	97.5	97.5	97.5	95.5	94.5	92.5	90.5
62.5°	88.5	88.0	89.0	88.5	88.0	87.5	88.0	86.0	85.0	83.0	81.0
65°	78.0	78.5	79.0	79.0	78.5	78.0	78.0	77.0	76.0	74.0	71.5
67.5°	68.0	68.0	68.5	69.0	68.5	68.5	68.5	67.0	66.0	64.5	61.5
70°	57.5	57.0	58.5	58.5	57.5	58.0	57.5	57.0	56.0	54.0	51.5
72.5°	46.5	46.5	47.0	47.0	46.5	46.5	46.5	46.0	44.5	43.5	41.0
75°	36.0	36.0	36.5	37.0	36.0	36.0	36.5	35.5	34.5	33.0	31.5
77.5°	27.0	26.5	27.0	27.0	26.5	26.5	26.5	26.0	25.5	24.0	22.5
80°	19.0	18.5	19.0	19.0	19.0	18.5	18.5	18.0	18.0	17.0	15.5
82.5°	13.0	12.5	13.0	13.0	13.0	12.5	12.5	12.5	12.0	11.5	10.5
85°	8.5	8.0	8.0	8.5	8.0	8.0	8.0	8.0	7.5	7.0	6.5
87.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9
2.5°	382.9	381.9	384.9	383.9	384.4	381.9	385.9	383.9	386.4	383.9	388.9
5°	376.4	375.4	379.9	379.4	379.9	377.9	382.4	381.9	384.9	382.9	388.4
7.5°	369.4	368.4	373.4	373.9	374.9	372.9	378.9	378.9	381.9	381.4	387.4
10°	361.4	361.9	366.9	367.9	369.9	368.9	374.4	375.9	379.9	379.4	386.9
12.5°	353.9	353.9	360.4	362.4	363.9	363.4	369.9	371.9	376.4	377.4	384.4
15°	346.4	346.9	352.9	355.9	357.9	357.4	364.4	366.9	372.4	372.9	381.4
17.5°	340.4	339.9	346.4	348.9	351.9	351.4	358.9	361.9	367.4	368.9	376.9
20°	335.4	334.9	340.9	343.9	345.9	345.4	352.9	356.4	361.4	362.4	370.4
22.5°	329.4	328.4	334.4	336.9	338.9	338.4	344.9	347.4	352.4	353.4	360.9
25°	322.4	321.4	326.9	328.4	329.9	328.9	334.4	335.9	339.9	340.9	348.4
27.5°	314.4	311.9	316.4	316.4	317.4	315.9	319.9	321.4	324.9	324.9	331.9
30°	301.9	298.4	300.9	300.4	300.9	298.9	301.4	301.9	304.4	303.9	308.9
32.5°	284.4	279.5	281.0	279.5	278.0	275.0	278.0	277.0	279.0	277.0	281.5
35°	260.5	255.5	255.0	253.0	251.5	249.0	249.0	246.5	247.0	245.5	248.5
37.5°	234.5	228.0	227.0	223.0	220.5	217.5	217.5	215.5	213.0	212.0	214.5
40°	209.0	202.0	199.5	193.0	190.5	187.5	185.5	183.0	182.0	178.0	180.0
42.5°	187.0	179.5	174.0	167.0	164.5	160.0	157.0	154.0	152.5	148.0	150.0
45°	168.5	159.5	153.5	144.5	141.0	136.0	131.5	128.0	124.5	122.5	121.5
47.5°	153.0	143.5	135.5	125.5	120.0	115.5	109.5	106.0	101.5	99.0	97.5
50°	140.0	129.5	120.5	109.0	103.5	98.5	91.5	86.0	82.0	78.0	77.0
52.5°	128.5	117.5	107.5	94.5	88.0	82.0	74.5	68.5	65.0	60.5	60.0
55°	115.0	105.5	94.5	81.0	74.5	68.5	60.5	54.5	50.0	47.0	46.0
57.5°	100.5	91.5	81.0	67.5	61.0	54.5	47.0	41.5	37.5	35.0	34.5
60°	87.0	78.5	68.5	55.0	48.5	43.0	35.0	29.5	26.0	24.0	23.0
62.5°	77.0	69.0	59.5	47.0	41.0	35.5	28.0	23.0	20.0	18.0	17.0
65°	67.5	59.5	51.0	39.5	34.5	29.5	22.5	18.0	15.0	13.0	12.0
67.5°	57.5	50.5	42.5	33.0	28.0	24.0	18.0	14.0	11.5	10.0	9.0
70°	47.5	41.0	34.5	26.5	23.0	19.0	14.0	11.0	8.5	7.5	6.5
72.5°	37.5	32.5	27.0	20.5	17.5	15.0	11.0	8.0	6.5	5.5	4.5
75°	28.0	24.5	20.0	15.5	13.0	11.0	8.0	6.0	5.0	4.0	3.5
77.5°	20.0	17.0	14.0	10.5	9.5	8.0	5.5	4.5	3.5	2.5	2.0
80°	13.5	12.0	9.5	7.5	6.0	5.5	4.0	3.0	2.0	1.5	1.5
82.5°	9.0	7.5	6.0	4.5	4.0	3.5	2.5	2.0	1.5	1.0	1.0
85°	5.5	4.5	3.5	2.5	2.5	2.0	1.5	1.0	0.5	0.5	0.5
87.5°	2.5	2.0	1.5	1.0	1.0	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°	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9
2.5°	392.9	389.9	387.9	390.4	391.4	389.9	391.4	393.9	396.4	396.9	389.9
5°	393.4	390.4	389.4	392.4	392.9	392.4	393.9	397.4	400.4	401.4	394.4
7.5°	393.4	391.4	390.9	394.4	394.9	394.4	396.9	400.9	403.9	405.9	398.9
10°	392.4	391.4	391.9	394.9	395.9	395.9	399.4	403.9	406.9	408.9	401.9
12.5°	390.9	390.9	390.9	394.4	395.4	395.9	398.9	404.9	406.9	409.9	402.9
15°	388.4	388.4	388.4	391.9	393.4	393.4	396.9	402.4	404.9	407.9	400.9
17.5°	383.9	383.9	384.4	387.4	388.9	388.9	392.4	398.4	399.9	403.4	396.4
20°	377.4	377.4	377.9	380.9	382.4	381.4	385.9	390.9	392.4	395.4	388.4
22.5°	367.9	367.9	367.9	370.9	371.9	371.4	375.9	380.4	380.4	384.4	376.9
25°	353.9	354.9	353.9	356.9	357.9	357.4	361.4	365.4	364.4	368.9	361.4
27.5°	336.9	336.4	336.4	338.9	338.9	338.4	341.4	345.9	344.9	347.9	340.9
30°	313.4	314.9	312.4	315.9	314.4	313.4	315.4	319.4	317.9	320.4	314.9
32.5°	286.4	284.4	284.4	284.4	285.4	282.9	284.9	286.9	285.4	287.9	282.0
35°	251.0	251.5	250.0	250.5	251.0	248.0	250.0	252.0	250.0	251.5	246.0
37.5°	215.5	216.0	212.5	214.5	212.5	211.5	213.5	214.5	212.5	214.0	208.0
40°	180.0	179.0	178.5	178.5	179.0	176.5	178.0	179.5	178.0	179.0	173.5
42.5°	149.0	148.5	147.5	148.0	146.5	146.0	146.5	148.0	146.5	147.5	143.5
45°	122.0	121.0	119.5	120.0	120.0	117.5	119.0	120.0	118.5	119.0	115.5
47.5°	97.0	95.5	95.5	95.0	95.0	94.0	95.5	95.0	93.5	94.5	91.0
50°	75.5	74.5	74.5	74.5	74.5	73.0	73.5	74.5	73.0	73.0	71.0
52.5°	59.0	57.5	56.5	56.5	56.5	56.0	56.0	56.5	55.0	55.0	54.5
55°	44.5	44.0	42.5	42.5	42.5	41.0	41.5	41.5	41.0	41.0	39.5
57.5°	33.0	31.5	30.5	30.5	29.5	29.5	29.0	29.5	28.5	28.5	27.5
60°	22.0	21.0	20.5	20.0	20.0	19.5	20.0	19.5	19.5	19.0	18.5
62.5°	16.0	15.0	14.0	14.0	14.0	13.5	13.5	13.5	13.5	13.5	13.0
65°	11.5	10.5	10.5	10.0	10.0	9.5	9.5	9.5	9.5	9.5	9.0
67.5°	8.0	7.5	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5
70°	6.0	5.5	5.0	5.0	5.0	5.0	5.0	4.5	5.0	5.0	4.5
72.5°	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
75°	3.0	3.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
77.5°	2.0	2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
80°	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
85°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	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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CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9
2.5°	397.4	396.9	395.9	397.4	393.4	391.9	391.4	395.9
5°	402.9	401.9	401.9	403.4	398.9	397.9	396.9	401.9
7.5°	407.9	406.9	406.9	408.4	404.4	403.4	402.4	407.4
10°	410.9	410.9	410.9	411.9	408.4	407.4	406.9	411.9
12.5°	412.4	412.4	411.9	413.9	409.4	409.4	408.4	413.4
15°	410.4	410.4	410.4	411.9	407.9	406.9	406.9	410.9
17.5°	405.4	405.4	404.9	406.4	401.9	401.9	401.4	405.9
20°	397.9	397.9	396.9	398.9	394.4	392.9	392.4	396.9
22.5°	385.9	385.4	384.9	385.9	381.9	380.9	380.4	384.4
25°	370.4	369.9	368.9	369.9	365.4	363.9	363.9	366.9
27.5°	348.4	348.4	346.9	348.4	343.4	342.9	342.4	345.9
30°	321.4	319.4	318.4	320.4	315.4	315.4	314.4	317.9
32.5°	287.9	285.9	285.4	286.4	282.0	280.5	282.4	284.4
35°	249.5	250.0	248.0	248.0	244.0	244.5	245.0	248.0
37.5°	212.5	211.5	211.0	211.5	208.5	207.5	206.5	209.5
40°	178.0	175.5	175.0	175.0	172.5	172.0	172.5	174.0
42.5°	145.5	145.0	143.0	144.0	141.5	142.5	142.0	142.0
45°	117.5	118.0	116.0	117.5	115.5	114.0	114.0	115.0
47.5°	93.0	93.0	92.5	92.5	91.0	91.5	90.5	92.0
50°	72.0	72.0	71.0	71.5	70.5	70.5	70.0	70.5
52.5°	55.0	54.5	54.5	54.0	53.0	53.5	54.0	53.0
55°	40.0	40.5	39.5	40.0	39.0	39.5	39.0	39.5
57.5°	27.5	28.0	27.0	28.0	27.0	27.5	27.0	27.0
60°	19.0	19.0	18.5	19.0	18.5	18.5	18.0	19.0
62.5°	13.0	13.0	13.0	13.0	13.0	12.5	13.0	13.0
65°	9.5	9.0	9.0	9.0	9.0	9.0	9.0	9.0
67.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
70°	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
72.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
75°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
77.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
85°	0.5	0.5	0.5	0.0	0.5	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)