

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: P251906

Luminaire Tested: **LD4B10D010 EU4B10209730 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251906
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 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: 692.0 lumens
Efficiency: N/A
Efficacy: 68.9 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

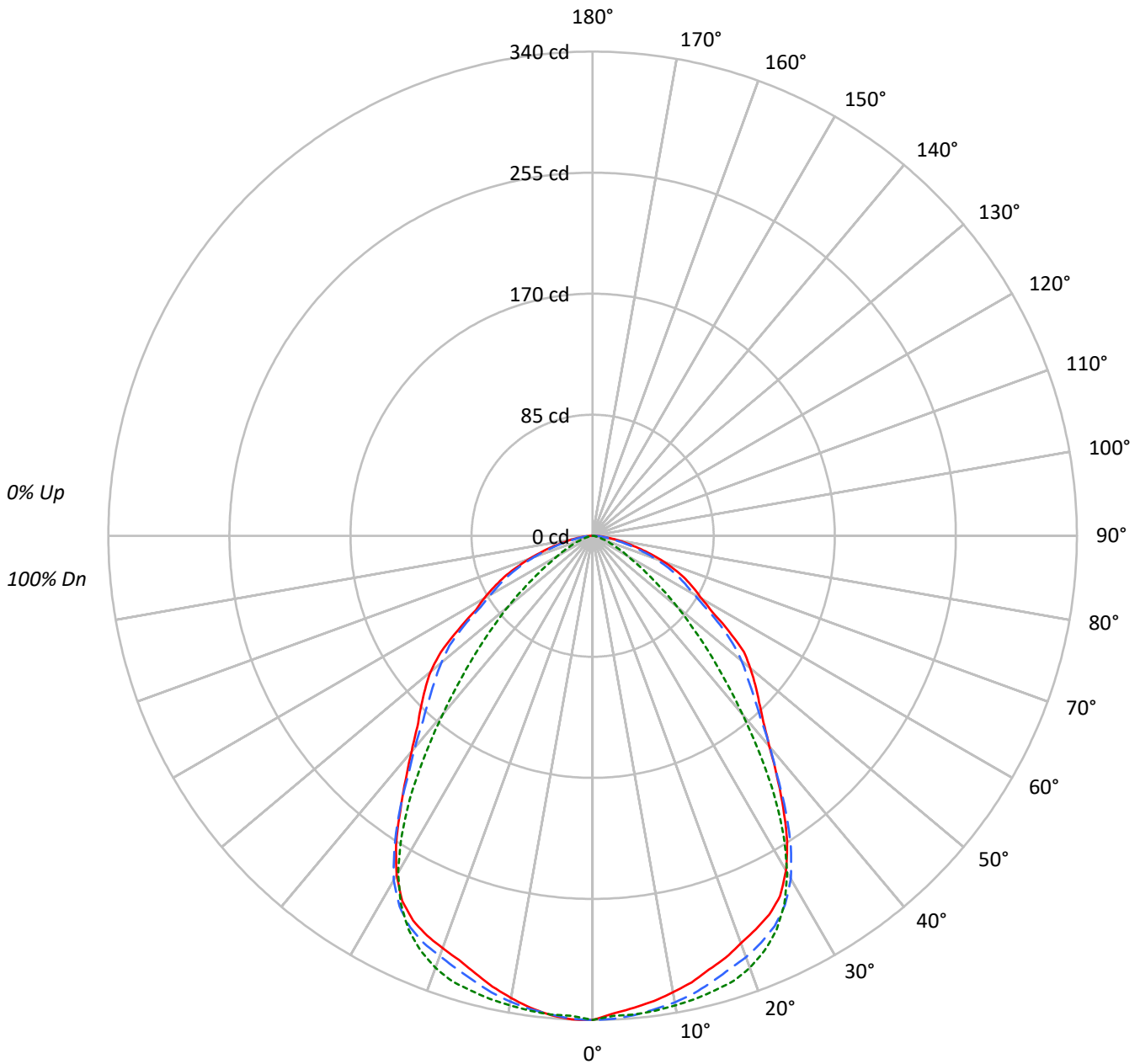
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	33136	33136	33136
5°	32548	33008	33057
10°	32202	33132	32618
15°	31823	33356	32095
20°	31581	33478	31954
25°	31561	32851	32066
30°	30553	30733	30970
35°	27757	26448	28007
40°	24554	20826	25152
45°	22783	15864	23499
50°	21894	11735	22530
55°	19829	8088	19557
60°	17231	5497	17133
65°	16650	3989	15796
70°	15045	2679	13421
75°	12426	1770	10619
80°	9990	1179	7913
85°	8163	559	5256



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.1	4.6
10°-20°	91.8	13.3
20°-30°	138.6	20.0
30°-40°	145.1	21.0
40°-50°	117.5	17.0
50°-60°	85.5	12.4
60°-70°	52.7	7.6
70°-80°	23.8	3.4
80°-90°	4.8	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°	262.5	37.9
0°-40°	407.6	58.9
0°-60°	610.6	88.2
0°-90°	692.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	692.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	340	340	340	340	340	
5°	333	338	337	337	338	32
15°	315	324	331	323	318	89
25°	294	302	306	303	298	134
35°	233	236	222	236	235	145
45°	165	160	115	162	170	128
55°	117	109	48	110	115	104
65°	72	65	17	64	68	71
75°	33	28	5	25	28	36
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°	340.0	340.0	340.0	340.0	340.0	340.0	340.0	340.0	340.0	340.0	340.0
2.5°	335.8	335.8	339.0	342.6	339.5	336.4	338.5	337.4	341.1	341.1	339.5
5°	332.7	333.7	336.4	339.5	336.9	333.7	336.4	335.3	339.0	339.0	337.9
7.5°	329.6	330.1	333.2	336.9	334.3	331.1	333.2	332.7	335.8	336.4	335.3
10°	325.4	325.9	329.0	332.7	330.1	327.5	329.6	329.0	333.2	333.2	332.7
12.5°	321.2	321.7	324.9	328.0	325.4	322.8	324.9	324.9	329.0	329.6	329.0
15°	315.4	316.5	319.1	322.2	320.7	317.5	319.6	319.6	323.3	324.3	324.3
17.5°	310.7	311.3	313.9	317.0	314.9	312.3	314.4	314.4	318.1	319.1	319.1
20°	304.5	305.5	308.1	311.3	309.7	307.6	309.2	309.2	313.3	314.4	314.9
22.5°	299.2	300.3	302.4	306.5	303.9	302.4	304.5	303.9	308.6	309.2	309.2
25°	293.5	294.5	297.1	299.7	298.2	296.6	298.2	298.2	301.8	302.4	302.4
27.5°	285.1	285.6	288.2	290.8	289.3	287.2	289.3	288.8	292.4	292.9	292.4
30°	271.5	272.5	273.6	277.2	275.7	274.1	276.2	275.2	278.8	278.8	278.3
32.5°	254.2	254.2	256.3	258.9	256.8	255.8	257.4	257.9	260.5	260.5	258.9
35°	233.3	234.4	235.9	237.5	235.9	234.9	236.4	235.9	239.1	238.0	236.4
37.5°	212.4	212.9	214.5	216.6	214.5	212.9	213.4	212.9	215.5	215.5	212.9
40°	193.0	194.1	195.1	197.2	195.1	194.1	194.6	193.0	196.2	195.1	193.6
42.5°	177.3	177.9	179.4	180.5	178.4	177.9	178.4	177.3	178.9	177.9	174.7
45°	165.3	165.3	165.8	167.4	165.3	164.8	164.8	163.7	165.3	163.2	160.1
47.5°	154.8	155.4	155.9	156.9	155.4	153.8	154.3	152.2	153.3	151.7	147.5
50°	144.4	145.4	145.9	147.0	145.4	144.4	144.9	142.8	142.8	140.2	136.5
52.5°	133.9	134.4	133.9	135.0	133.9	132.3	132.9	130.8	130.8	127.6	124.0
55°	116.7	117.2	117.7	118.7	117.7	116.1	117.2	115.6	115.6	113.5	109.3
57.5°	99.4	99.9	100.4	101.0	101.0	99.9	100.4	99.4	98.9	97.3	94.2
60°	88.4	88.4	88.4	88.9	88.4	87.9	87.9	86.8	86.8	84.7	81.6
62.5°	80.0	80.6	80.6	81.1	80.6	80.0	79.5	78.5	77.9	75.9	73.2
65°	72.2	72.2	71.7	72.7	72.2	71.7	71.7	70.6	69.6	67.5	64.9
67.5°	62.8	63.3	62.8	63.3	63.3	62.8	62.3	61.2	60.7	59.1	56.0
70°	52.8	52.8	52.8	53.4	52.8	52.8	53.4	51.8	51.3	49.2	46.6
72.5°	42.9	43.4	43.4	42.9	43.4	42.4	42.4	42.4	41.8	39.8	37.1
75°	33.0	33.5	33.5	34.0	33.5	33.0	33.0	32.4	31.9	30.3	28.2
77.5°	24.6	24.6	25.1	25.1	25.1	24.6	24.6	23.5	23.5	22.5	20.4
80°	17.8	17.8	17.3	17.8	17.8	17.3	17.3	16.7	16.7	15.7	14.1
82.5°	11.5	12.0	12.0	12.0	12.0	11.5	11.5	11.5	11.0	10.5	9.4
85°	7.3	7.3	7.3	7.3	7.8	7.3	7.8	7.3	7.3	6.3	5.8
87.5°	3.1	3.1	3.1	3.7	3.7	3.1	3.1	3.1	3.1	3.1	2.6
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°	340.0	340.0	340.0	340.0	340.0	340.0	340.0	340.0	340.0	340.0	340.0
2.5°	339.5	340.0	338.5	340.5	339.0	339.5	340.0	339.5	337.4	337.4	343.2
5°	337.4	338.5	336.9	339.5	338.5	338.5	339.5	339.0	336.9	337.4	342.6
7.5°	335.3	336.9	335.8	338.5	336.9	336.9	337.9	337.9	335.8	336.4	341.1
10°	332.2	334.3	333.7	336.4	334.8	334.8	336.4	336.4	334.3	334.8	339.5
12.5°	329.6	331.7	331.1	333.7	332.7	333.2	333.7	334.8	332.2	333.2	337.4
15°	325.4	327.5	327.5	330.1	329.0	330.1	331.1	332.7	330.6	330.6	334.8
17.5°	320.7	323.3	323.3	325.4	325.4	325.9	328.0	329.6	327.5	328.0	331.7
20°	315.4	318.6	318.6	321.2	320.7	321.7	323.3	324.9	322.8	322.8	326.9
22.5°	310.2	312.8	313.3	314.9	314.9	315.4	317.0	318.1	315.4	315.4	319.6
25°	302.9	305.5	306.0	307.1	306.0	306.0	307.1	308.1	305.5	305.5	309.2
27.5°	292.9	295.6	295.6	295.0	294.0	294.5	294.0	294.5	291.9	291.4	295.0
30°	278.3	279.9	279.9	279.3	277.8	277.8	276.2	276.7	273.1	273.1	276.2
32.5°	258.4	260.0	258.9	257.9	255.8	254.8	253.7	253.2	249.5	249.5	253.2
35°	234.9	235.9	234.4	232.3	229.6	228.1	226.5	224.4	221.8	222.3	224.4
37.5°	210.8	210.8	208.7	204.5	202.4	199.8	197.2	197.2	193.0	192.5	194.1
40°	190.4	188.3	184.7	178.9	175.2	172.6	169.0	166.9	163.7	163.7	166.3
42.5°	172.1	167.9	163.2	155.4	151.7	148.6	143.9	141.8	138.1	137.6	139.1
45°	155.9	151.7	144.9	136.5	131.8	128.2	121.4	118.7	115.6	115.1	116.1
47.5°	142.8	138.1	129.7	118.7	114.0	109.3	102.5	98.9	96.3	94.7	96.3
50°	131.3	125.0	116.1	104.6	98.3	94.2	85.8	82.1	78.5	77.4	77.9
52.5°	118.7	112.5	103.1	91.0	85.3	79.0	71.1	65.9	62.8	61.2	62.8
55°	105.1	98.9	89.5	77.4	71.1	65.4	57.0	52.8	49.2	47.6	49.2
57.5°	90.5	84.7	76.4	64.3	58.6	53.4	45.5	41.3	37.7	36.6	37.7
60°	77.9	73.2	64.9	53.4	48.6	42.9	36.1	31.9	28.8	28.2	28.8
62.5°	69.6	64.3	56.5	45.5	40.8	36.1	29.8	25.6	23.0	22.5	23.0
65°	61.2	55.4	48.1	38.7	34.0	30.3	24.1	20.4	17.8	17.3	17.8
67.5°	51.8	46.6	40.3	31.9	28.2	24.6	19.4	15.7	13.6	13.1	13.6
70°	42.9	38.2	31.9	25.6	22.0	19.4	14.6	12.0	9.9	9.4	9.9
72.5°	34.0	29.8	24.6	19.4	17.3	14.6	11.5	8.9	7.3	6.8	7.3
75°	26.2	23.0	18.8	14.1	12.6	11.0	7.8	6.3	5.2	4.7	5.2
77.5°	18.3	16.2	13.1	10.5	8.9	7.8	5.8	4.2	3.7	3.1	3.7
80°	12.6	11.0	8.9	6.8	5.8	4.7	3.7	2.6	2.1	2.1	2.1
82.5°	8.4	6.8	5.2	4.2	3.7	3.1	2.1	1.6	1.6	1.0	1.0
85°	4.7	4.2	3.1	2.6	2.1	1.6	1.0	1.0	0.5	0.5	0.5
87.5°	2.1	1.6	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°	340.0	340.0	340.0	340.0	340.0	340.0	340.0	340.0	340.0	340.0	340.0
2.5°	341.6	340.0	342.1	340.0	339.0	340.0	339.0	342.1	339.5	337.4	339.5
5°	341.1	339.0	341.1	339.5	337.9	338.5	337.4	340.5	337.4	335.8	336.9
7.5°	340.0	338.5	339.5	337.9	336.4	336.9	335.8	338.5	335.3	333.7	334.8
10°	338.5	336.9	337.4	336.4	334.8	334.8	333.7	335.8	332.2	330.1	331.1
12.5°	336.4	334.3	335.3	333.7	331.7	331.7	330.6	332.2	328.5	326.4	326.9
15°	333.7	331.7	331.7	330.1	328.0	328.0	325.9	327.5	323.3	321.2	321.2
17.5°	330.6	328.0	328.0	326.4	323.8	323.3	321.7	323.3	318.6	316.5	316.5
20°	325.9	323.8	323.3	322.2	319.6	319.1	317.0	317.5	313.9	312.3	311.8
22.5°	319.6	317.5	318.1	316.5	314.4	313.9	311.8	313.3	309.7	308.1	308.6
25°	308.6	307.6	308.6	308.1	306.5	306.5	305.5	306.5	303.4	302.4	302.9
27.5°	296.1	295.6	296.1	296.1	295.0	295.0	295.0	296.6	293.5	292.9	292.9
30°	277.8	277.8	278.3	278.8	278.8	279.9	279.3	281.4	279.3	278.3	279.3
32.5°	253.7	255.8	257.4	257.4	257.4	258.4	259.5	261.0	258.9	259.5	259.5
35°	226.5	228.1	229.1	231.7	230.2	233.8	234.9	237.0	236.4	237.5	237.0
37.5°	196.2	198.3	200.4	204.0	203.5	207.7	209.8	214.0	212.9	215.0	216.0
40°	167.9	171.1	174.2	176.8	178.9	183.1	187.3	192.5	194.1	195.6	196.2
42.5°	140.7	143.9	149.1	152.7	155.9	162.7	168.4	174.7	176.3	179.4	180.5
45°	118.7	121.4	127.6	132.3	135.0	144.9	151.7	159.5	162.2	165.8	167.4
47.5°	98.3	103.1	109.3	115.1	118.7	129.2	138.1	146.5	150.1	154.3	156.4
50°	80.6	85.8	94.2	99.4	104.6	116.1	126.1	135.0	138.6	143.3	145.4
52.5°	65.9	71.7	79.5	85.3	91.0	103.1	113.5	121.9	126.6	129.7	132.9
55°	51.8	58.1	65.9	72.2	76.9	90.0	98.9	107.2	110.4	113.0	114.6
57.5°	40.3	45.0	52.8	58.1	63.8	75.3	84.2	90.5	93.1	96.3	97.3
60°	31.4	36.1	43.4	48.6	53.9	64.9	73.8	80.0	82.7	85.3	86.8
62.5°	25.1	29.8	36.6	41.3	46.0	56.0	63.8	70.1	73.2	75.9	77.4
65°	19.9	24.1	29.8	34.5	38.2	47.1	54.9	60.7	63.8	66.4	68.0
67.5°	15.7	19.4	24.6	27.7	31.4	38.7	45.5	50.7	53.4	56.5	58.1
70°	12.0	14.6	19.4	22.0	24.6	30.9	36.1	41.3	43.9	46.0	47.1
72.5°	8.9	11.0	14.6	16.7	18.3	23.5	27.7	31.4	33.5	35.6	36.6
75°	6.3	7.8	10.5	12.0	13.1	16.7	20.4	23.0	24.6	26.2	27.7
77.5°	4.2	5.2	6.8	7.8	8.9	11.5	13.6	15.7	17.3	18.8	19.4
80°	2.6	3.7	4.7	5.2	5.8	7.3	9.4	10.5	11.5	12.6	13.1
82.5°	1.6	2.1	2.6	3.1	3.7	4.7	5.8	6.8	7.3	8.4	8.9
85°	0.5	1.0	1.0	1.6	1.6	2.6	3.1	3.7	4.2	4.7	5.2
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°	340.0	340.0	340.0	340.0	340.0	340.0	340.0	340.0
2.5°	341.6	340.0	339.0	338.5	342.1	337.4	339.5	340.0
5°	339.5	337.9	336.9	336.4	339.5	335.3	336.9	337.9
7.5°	336.4	335.3	333.7	333.2	336.4	331.7	333.7	334.3
10°	332.7	331.1	330.1	329.6	332.2	327.5	329.6	329.6
12.5°	328.0	326.9	324.9	324.9	326.9	322.8	324.3	324.3
15°	321.7	320.7	318.6	318.6	320.7	316.5	318.1	318.1
17.5°	316.5	315.4	313.9	313.3	315.4	311.3	312.8	312.3
20°	312.3	311.3	309.2	309.2	310.7	306.5	308.1	308.1
22.5°	308.6	308.1	306.0	306.0	308.1	303.9	305.0	303.9
25°	302.9	302.4	300.3	300.8	301.8	297.6	299.2	298.2
27.5°	293.5	293.5	291.4	290.8	292.4	288.8	289.8	289.3
30°	278.8	279.3	276.7	276.7	277.2	274.1	275.7	275.2
32.5°	258.9	259.5	257.4	256.8	258.4	255.8	256.8	256.8
35°	237.0	237.5	235.9	235.9	237.5	235.9	235.9	235.4
37.5°	215.0	216.0	215.0	215.5	216.6	215.0	216.0	215.5
40°	197.2	198.3	196.7	197.7	198.8	197.2	198.8	197.7
42.5°	181.0	182.6	181.5	182.6	183.6	182.6	183.6	182.0
45°	169.0	170.0	169.5	170.0	171.1	170.5	171.1	170.5
47.5°	157.5	159.5	158.5	159.5	161.1	160.1	161.1	159.5
50°	147.0	148.6	148.0	149.1	149.6	149.1	150.1	148.6
52.5°	133.4	135.0	134.4	134.4	135.5	134.4	135.5	134.4
55°	115.6	116.1	116.1	116.7	116.1	115.6	116.1	115.1
57.5°	98.3	99.4	97.8	99.4	98.9	98.3	98.3	97.3
60°	87.4	88.9	87.9	88.9	88.4	88.4	88.4	87.9
62.5°	78.5	79.5	78.5	79.0	79.0	79.0	78.5	77.9
65°	68.5	70.1	69.1	69.6	69.1	68.5	69.1	68.5
67.5°	58.6	59.1	59.1	58.6	58.6	58.6	58.6	57.5
70°	47.6	48.1	47.6	48.6	48.1	47.6	48.1	47.1
72.5°	37.1	37.7	37.1	37.7	37.1	37.1	37.1	37.1
75°	27.7	28.2	28.2	28.2	28.2	28.2	27.2	28.2
77.5°	19.9	19.9	19.9	20.4	19.9	19.9	19.9	19.9
80°	13.6	13.6	13.6	14.1	13.6	14.1	13.6	14.1
82.5°	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
85°	4.7	5.2	5.2	4.7	4.7	4.7	4.7	4.7
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)