

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: P251587

Luminaire Tested: **LD4B10D010 EU4B10209024 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251587
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 EU4B10209024 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE 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: 688.0 lumens
Efficiency: N/A
Efficacy: 68.5 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

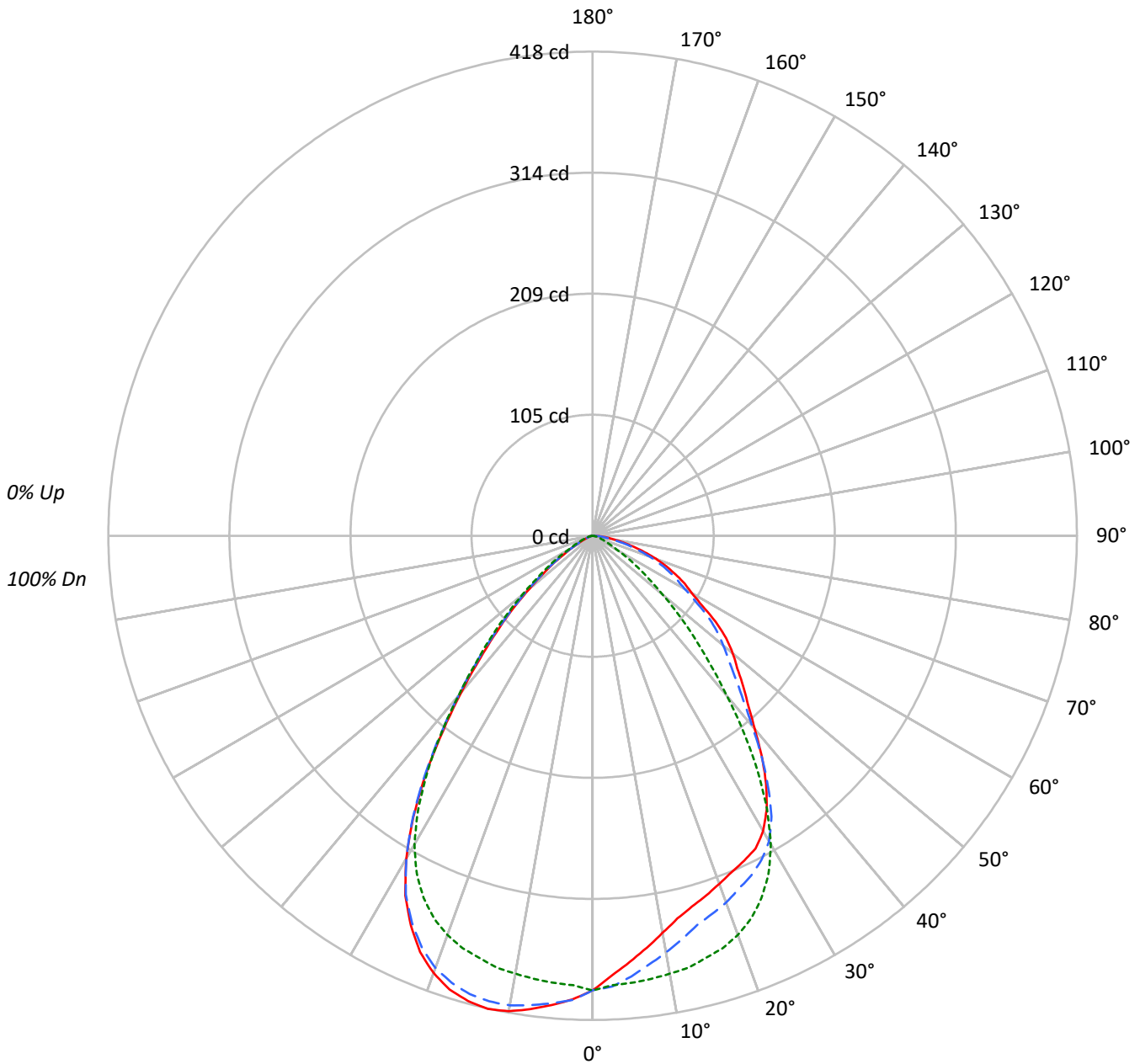
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	38252	38252	38252
5°	36119	37899	39788
10°	34439	37991	41247
15°	33427	38068	41953
20°	33157	38031	41651
25°	33281	37099	39927
30°	33130	34604	36202
35°	31052	29541	29851
40°	27671	22913	22391
45°	25305	17077	16029
50°	23925	11963	10810
55°	22004	8071	6797
60°	19219	4736	3742
65°	18195	3044	2099
70°	16584	2166	1311
75°	13706	1506	941
80°	10776	842	561
85°	9617	559	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.1	5.4
10°-20°	106.4	15.5
20°-30°	157.7	22.9
30°-40°	157.9	23.0
40°-50°	110.4	16.0
50°-60°	65.7	9.5
60°-70°	34.3	5.0
70°-80°	15.2	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°	301.2	43.8
0°-40°	459.1	66.7
0°-60°	635.2	92.3
0°-90°	688.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	688.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	392	392	392	392	392	
5°	369	382	387	405	407	35
15°	331	348	377	410	416	94
25°	310	324	345	369	371	143
35°	261	264	248	253	251	162
45°	184	174	124	120	116	143
55°	130	121	48	42	40	115
65°	79	72	13	10	9	78
75°	36	32	4	2	2	39
85°	9	7	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°	392.5	392.5	392.5	392.5	392.5	392.5	392.5	392.5	392.5	392.5	392.5
2.5°	379.9	384.4	379.9	381.4	387.4	381.9	384.9	384.9	383.4	386.9	389.5
5°	369.2	373.8	369.2	371.3	377.8	372.3	375.8	374.8	375.3	378.3	381.9
7.5°	358.6	362.1	358.1	360.6	366.7	362.1	365.2	365.2	365.7	370.2	373.3
10°	348.0	351.0	348.0	350.0	356.6	352.5	354.6	355.1	356.6	360.6	365.2
12.5°	338.4	340.9	337.9	340.9	346.5	342.4	345.0	345.5	347.0	351.5	356.6
15°	331.3	333.8	330.8	333.3	338.4	335.3	337.4	338.4	339.4	343.4	348.0
17.5°	325.7	327.8	325.2	328.3	332.3	328.8	331.8	331.8	333.3	337.4	342.4
20°	319.7	321.7	319.7	322.2	326.7	323.7	326.2	326.2	327.8	332.3	336.9
22.5°	314.1	315.1	314.1	316.1	320.7	318.1	319.7	320.2	321.7	325.7	329.8
25°	309.5	311.6	310.6	312.6	315.6	313.1	314.6	315.1	316.6	320.2	323.7
27.5°	304.5	305.5	304.5	307.0	309.5	307.5	309.0	308.5	309.5	312.6	315.6
30°	294.4	295.4	295.4	296.9	298.9	297.9	299.4	297.9	298.9	301.5	304.5
32.5°	279.7	280.2	280.7	282.2	283.7	282.2	283.2	283.2	283.2	285.3	287.3
35°	261.0	262.0	261.5	262.5	264.0	263.5	263.5	263.0	262.0	263.0	264.0
37.5°	239.7	238.2	238.2	239.7	240.8	238.7	239.7	238.7	238.7	239.2	239.2
40°	217.5	216.0	217.5	218.0	218.5	217.5	217.0	216.0	214.5	215.0	214.0
42.5°	198.8	197.8	198.3	198.3	198.8	197.8	198.3	196.2	194.7	193.7	192.2
45°	183.6	182.1	183.6	182.6	182.6	182.1	181.6	180.6	178.5	177.0	174.5
47.5°	169.4	169.4	169.9	169.9	169.9	168.9	168.9	166.9	164.9	162.9	159.3
50°	157.8	156.8	158.8	158.8	157.3	156.8	157.3	154.8	153.3	150.7	147.2
52.5°	145.2	145.2	145.7	145.7	145.2	144.2	144.7	142.6	141.1	138.6	135.0
55°	129.5	128.5	130.0	130.0	129.5	129.0	129.5	128.0	126.4	124.4	121.4
57.5°	111.8	111.3	112.3	112.8	111.8	111.8	112.3	110.8	110.3	108.2	105.2
60°	98.6	98.1	99.1	99.6	98.6	98.6	98.6	96.6	95.6	93.6	91.5
62.5°	89.5	89.0	90.0	89.5	89.0	88.5	89.0	87.0	86.0	84.0	81.9
65°	78.9	79.4	79.9	79.9	79.4	78.9	78.9	77.9	76.9	74.9	72.3
67.5°	68.8	68.8	69.3	69.8	69.3	69.3	69.3	67.8	66.8	65.2	62.2
70°	58.2	57.7	59.2	59.2	58.2	58.7	58.2	57.7	56.6	54.6	52.1
72.5°	47.0	47.0	47.5	47.5	47.0	47.0	47.0	46.5	45.0	44.0	41.5
75°	36.4	36.4	36.9	37.4	36.4	36.4	36.9	35.9	34.9	33.4	31.9
77.5°	27.3	26.8	27.3	27.3	26.8	26.8	26.8	26.3	25.8	24.3	22.8
80°	19.2	18.7	19.2	19.2	19.2	18.7	18.7	18.2	18.2	17.2	15.7
82.5°	13.2	12.6	13.2	13.2	13.2	12.6	12.6	12.6	12.1	11.6	10.6
85°	8.6	8.1	8.1	8.6	8.1	8.1	8.1	8.1	7.6	7.1	6.6
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°	392.5	392.5	392.5	392.5	392.5	392.5	392.5	392.5	392.5	392.5	392.5
2.5°	387.4	386.4	389.5	388.4	389.0	386.4	390.5	388.4	391.0	388.4	393.5
5°	380.9	379.9	384.4	383.9	384.4	382.4	386.9	386.4	389.5	387.4	393.0
7.5°	373.8	372.8	377.8	378.3	379.3	377.3	383.4	383.4	386.4	385.9	392.0
10°	365.7	366.2	371.3	372.3	374.3	373.3	378.8	380.4	384.4	383.9	391.5
12.5°	358.1	358.1	364.7	366.7	368.2	367.7	374.3	376.3	380.9	381.9	389.0
15°	350.5	351.0	357.1	360.1	362.1	361.6	368.7	371.3	376.8	377.3	385.9
17.5°	344.4	343.9	350.5	353.0	356.1	355.6	363.2	366.2	371.8	373.3	381.4
20°	339.4	338.9	345.0	348.0	350.0	349.5	357.1	360.6	365.7	366.7	374.8
22.5°	333.3	332.3	338.4	340.9	342.9	342.4	349.0	351.5	356.6	357.6	365.2
25°	326.2	325.2	330.8	332.3	333.8	332.8	338.4	339.9	343.9	345.0	352.5
27.5°	318.1	315.6	320.2	320.2	321.2	319.7	323.7	325.2	328.8	328.8	335.8
30°	305.5	302.0	304.5	304.0	304.5	302.5	305.0	305.5	308.0	307.5	312.6
32.5°	287.8	282.7	284.3	282.7	281.2	278.2	281.2	280.2	282.2	280.2	284.8
35°	263.5	258.5	258.0	255.9	254.4	251.9	251.9	249.4	249.9	248.3	251.4
37.5°	237.2	230.6	229.6	225.6	223.1	220.0	220.0	218.0	215.5	214.5	217.0
40°	211.4	204.3	201.8	195.2	192.7	189.7	187.6	185.1	184.1	180.1	182.1
42.5°	189.2	181.6	176.0	168.9	166.4	161.9	158.8	155.8	154.3	149.7	151.7
45°	170.5	161.3	155.3	146.2	142.6	137.6	133.0	129.5	125.9	123.9	122.9
47.5°	154.8	145.2	137.1	127.0	121.4	116.8	110.8	107.2	102.7	100.1	98.6
50°	141.6	131.0	121.9	110.3	104.7	99.6	92.6	87.0	83.0	78.9	77.9
52.5°	130.0	118.9	108.7	95.6	89.0	83.0	75.4	69.3	65.8	61.2	60.7
55°	116.3	106.7	95.6	81.9	75.4	69.3	61.2	55.1	50.6	47.5	46.5
57.5°	101.7	92.6	81.9	68.3	61.7	55.1	47.5	42.0	37.9	35.4	34.9
60°	88.0	79.4	69.3	55.6	49.1	43.5	35.4	29.8	26.3	24.3	23.3
62.5°	77.9	69.8	60.2	47.5	41.5	35.9	28.3	23.3	20.2	18.2	17.2
65°	68.3	60.2	51.6	40.0	34.9	29.8	22.8	18.2	15.2	13.2	12.1
67.5°	58.2	51.1	43.0	33.4	28.3	24.3	18.2	14.2	11.6	10.1	9.1
70°	48.1	41.5	34.9	26.8	23.3	19.2	14.2	11.1	8.6	7.6	6.6
72.5°	37.9	32.9	27.3	20.7	17.7	15.2	11.1	8.1	6.6	5.6	4.6
75°	28.3	24.8	20.2	15.7	13.2	11.1	8.1	6.1	5.1	4.0	3.5
77.5°	20.2	17.2	14.2	10.6	9.6	8.1	5.6	4.6	3.5	2.5	2.0
80°	13.7	12.1	9.6	7.6	6.1	5.6	4.0	3.0	2.0	1.5	1.5
82.5°	9.1	7.6	6.1	4.6	4.0	3.5	2.5	2.0	1.5	1.0	1.0
85°	5.6	4.6	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°	392.5	392.5	392.5	392.5	392.5	392.5	392.5	392.5	392.5	392.5	392.5
2.5°	397.6	394.5	392.5	395.0	396.0	394.5	396.0	398.6	401.1	401.6	394.5
5°	398.1	395.0	394.0	397.0	397.6	397.0	398.6	402.1	405.1	406.2	399.1
7.5°	398.1	396.0	395.5	399.1	399.6	399.1	401.6	405.6	408.7	410.7	403.6
10°	397.0	396.0	396.5	399.6	400.6	400.6	404.1	408.7	411.7	413.7	406.7
12.5°	395.5	395.5	395.5	399.1	400.1	400.6	403.6	409.7	411.7	414.8	407.7
15°	393.0	393.0	393.0	396.5	398.1	398.1	401.6	407.2	409.7	412.7	405.6
17.5°	388.4	388.4	389.0	392.0	393.5	393.5	397.0	403.1	404.6	408.2	401.1
20°	381.9	381.9	382.4	385.4	386.9	385.9	390.5	395.5	397.0	400.1	393.0
22.5°	372.3	372.3	372.3	375.3	376.3	375.8	380.4	384.9	384.9	389.0	381.4
25°	358.1	359.1	358.1	361.1	362.1	361.6	365.7	369.7	368.7	373.3	365.7
27.5°	340.9	340.4	340.4	342.9	342.9	342.4	345.5	350.0	349.0	352.0	345.0
30°	317.1	318.6	316.1	319.7	318.1	317.1	319.2	323.2	321.7	324.2	318.6
32.5°	289.8	287.8	287.8	287.8	288.8	286.3	288.3	290.3	288.8	291.3	285.3
35°	253.9	254.4	252.9	253.4	253.9	250.9	252.9	254.9	252.9	254.4	248.9
37.5°	218.0	218.5	215.0	217.0	215.0	214.0	216.0	217.0	215.0	216.5	210.4
40°	182.1	181.1	180.6	180.6	181.1	178.5	180.1	181.6	180.1	181.1	175.5
42.5°	150.7	150.2	149.2	149.7	148.2	147.7	148.2	149.7	148.2	149.2	145.2
45°	123.4	122.4	120.9	121.4	121.4	118.9	120.4	121.4	119.9	120.4	116.8
47.5°	98.1	96.6	96.6	96.1	96.1	95.1	96.6	96.1	94.6	95.6	92.1
50°	76.4	75.4	75.4	75.4	75.4	73.8	74.4	75.4	73.8	73.8	71.8
52.5°	59.7	58.2	57.2	57.2	57.2	56.6	56.6	57.2	55.6	55.6	55.1
55°	45.0	44.5	43.0	43.0	43.0	41.5	42.0	42.0	41.5	41.5	40.0
57.5°	33.4	31.9	30.9	30.9	29.8	29.8	29.3	29.8	28.8	28.8	27.8
60°	22.3	21.2	20.7	20.2	20.2	19.7	20.2	19.7	19.7	19.2	18.7
62.5°	16.2	15.2	14.2	14.2	14.2	13.7	13.7	13.7	13.7	13.7	13.2
65°	11.6	10.6	10.6	10.1	10.1	9.6	9.6	9.6	9.6	9.6	9.1
67.5°	8.1	7.6	7.1	7.1	7.1	7.1	7.1	7.1	6.6	6.6	6.6
70°	6.1	5.6	5.1	5.1	5.1	5.1	5.1	4.6	5.1	5.1	4.6
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°	392.5	392.5	392.5	392.5	392.5	392.5	392.5	392.5
2.5°	402.1	401.6	400.6	402.1	398.1	396.5	396.0	400.6
5°	407.7	406.7	406.7	408.2	403.6	402.6	401.6	406.7
7.5°	412.7	411.7	411.7	413.2	409.2	408.2	407.2	412.2
10°	415.8	415.8	415.8	416.8	413.2	412.2	411.7	416.8
12.5°	417.3	417.3	416.8	418.8	414.2	414.2	413.2	418.3
15°	415.3	415.3	415.3	416.8	412.7	411.7	411.7	415.8
17.5°	410.2	410.2	409.7	411.2	406.7	406.7	406.2	410.7
20°	402.6	402.6	401.6	403.6	399.1	397.6	397.0	401.6
22.5°	390.5	390.0	389.5	390.5	386.4	385.4	384.9	389.0
25°	374.8	374.3	373.3	374.3	369.7	368.2	368.2	371.3
27.5°	352.5	352.5	351.0	352.5	347.5	347.0	346.5	350.0
30°	325.2	323.2	322.2	324.2	319.2	319.2	318.1	321.7
32.5°	291.3	289.3	288.8	289.8	285.3	283.7	285.8	287.8
35°	252.4	252.9	250.9	250.9	246.8	247.3	247.8	250.9
37.5°	215.0	214.0	213.4	214.0	210.9	209.9	208.9	211.9
40°	180.1	177.5	177.0	177.0	174.5	174.0	174.5	176.0
42.5°	147.2	146.7	144.7	145.7	143.1	144.2	143.6	143.6
45°	118.9	119.4	117.3	118.9	116.8	115.3	115.3	116.3
47.5°	94.1	94.1	93.6	93.6	92.1	92.6	91.5	93.1
50°	72.8	72.8	71.8	72.3	71.3	71.3	70.8	71.3
52.5°	55.6	55.1	55.1	54.6	53.6	54.1	54.6	53.6
55°	40.5	41.0	40.0	40.5	39.5	40.0	39.5	40.0
57.5°	27.8	28.3	27.3	28.3	27.3	27.8	27.3	27.3
60°	19.2	19.2	18.7	19.2	18.7	18.7	18.2	19.2
62.5°	13.2	13.2	13.2	13.2	13.2	12.6	13.2	13.2
65°	9.6	9.1	9.1	9.1	9.1	9.1	9.1	9.1
67.5°	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
70°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
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)