

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: P251901

Luminaire Tested: **LD4B10D010 EU4B10209030 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251901
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 EU4B10209030 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 792.0 lumens
Efficiency: N/A
Efficacy: 78.8 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

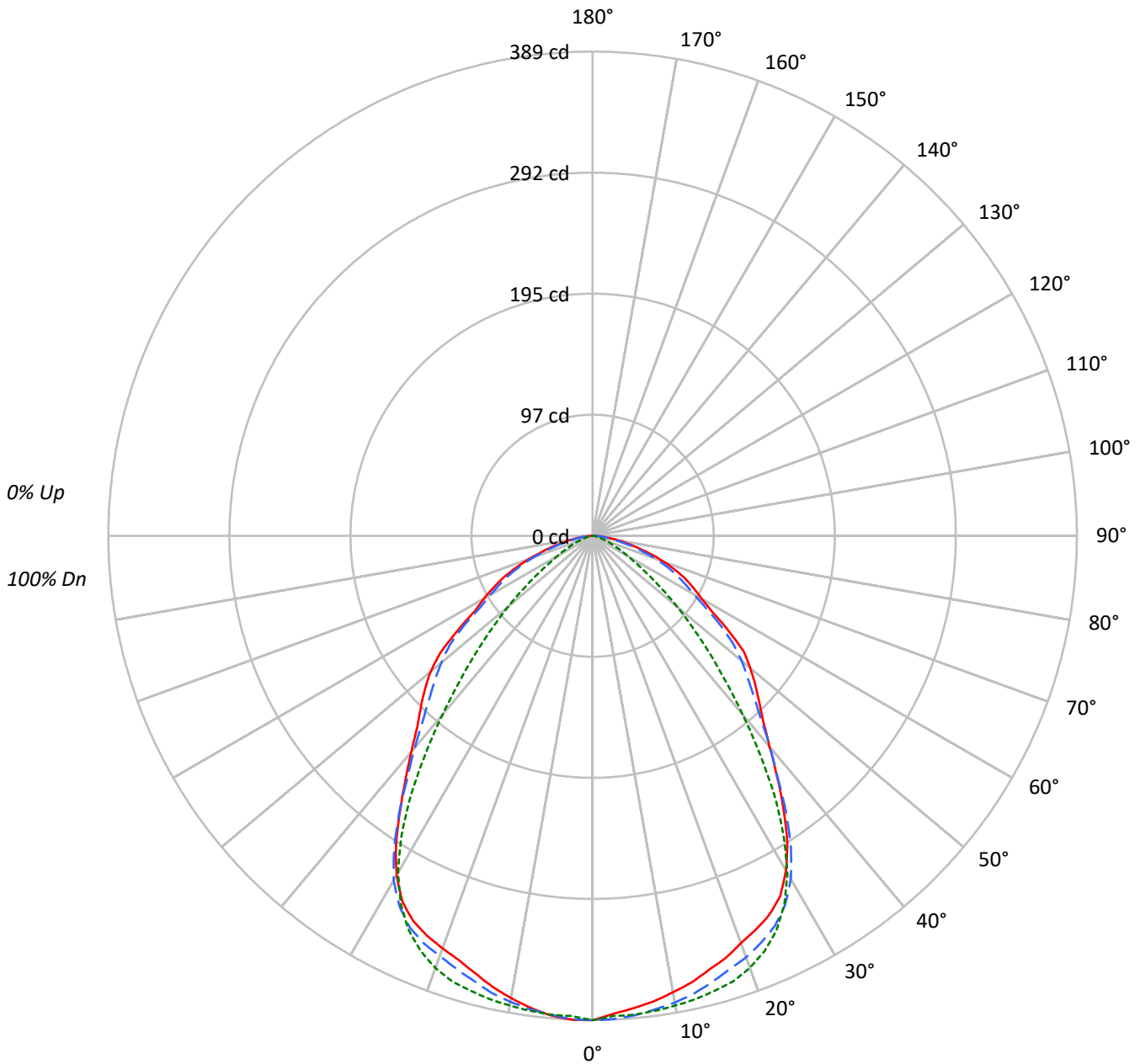
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	37931	37931	37931
5°	37254	37782	37841
10°	36853	37922	37328
15°	36423	38179	36726
20°	36134	38311	36569
25°	36120	37594	36701
30°	34965	35167	35437
35°	31766	30267	32052
40°	28103	23841	28790
45°	26077	18152	26904
50°	25047	13433	25775
55°	22683	9260	22378
60°	19726	6296	19609
65°	19048	4566	18079
70°	17239	3077	15359
75°	14196	2033	12163
80°	11449	1347	9092
85°	9393	671	6038



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.7	4.6
10°-20°	105.0	13.3
20°-30°	158.7	20.0
30°-40°	166.1	21.0
40°-50°	134.5	17.0
50°-60°	97.8	12.4
60°-70°	60.3	7.6
70°-80°	27.3	3.4
80°-90°	5.6	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°	300.5	37.9
0°-40°	466.5	58.9
0°-60°	698.9	88.2
0°-90°	792.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	792.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	389	389	389	389	389	
5°	381	387	386	386	387	36
15°	361	371	378	370	364	102
25°	336	346	350	347	341	154
35°	267	271	254	271	269	166
45°	189	183	132	186	195	147
55°	134	125	54	126	132	119
65°	83	74	20	73	78	81
75°	38	32	5	28	32	41
85°	8	7	1	5	5	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°	389.2	389.2	389.2	389.2	389.2	389.2	389.2	389.2	389.2	389.2	389.2
2.5°	384.4	384.4	388.0	392.2	388.6	385.0	387.4	386.2	390.4	390.4	388.6
5°	380.8	382.0	385.0	388.6	385.6	382.0	385.0	383.8	388.0	388.0	386.8
7.5°	377.2	377.8	381.4	385.6	382.6	379.0	381.4	380.8	384.4	385.0	383.8
10°	372.4	373.0	376.6	380.8	377.8	374.8	377.2	376.6	381.4	381.4	380.8
12.5°	367.6	368.2	371.8	375.4	372.4	369.4	371.8	371.8	376.6	377.2	376.6
15°	361.0	362.2	365.2	368.8	367.0	363.4	365.8	365.8	370.0	371.2	371.2
17.5°	355.6	356.2	359.2	362.8	360.4	357.4	359.8	359.8	364.0	365.2	365.2
20°	348.4	349.6	352.6	356.2	354.4	352.0	353.8	353.8	358.6	359.8	360.4
22.5°	342.5	343.7	346.1	350.8	347.8	346.1	348.4	347.8	353.2	353.8	353.8
25°	335.9	337.1	340.1	343.1	341.3	339.5	341.3	341.3	345.5	346.1	346.1
27.5°	326.3	326.9	329.9	332.9	331.1	328.7	331.1	330.5	334.7	335.3	334.7
30°	310.7	311.9	313.1	317.3	315.5	313.7	316.1	314.9	319.1	319.1	318.5
32.5°	291.0	291.0	293.4	296.4	294.0	292.8	294.6	295.2	298.2	298.2	296.4
35°	267.0	268.2	270.0	271.8	270.0	268.8	270.6	270.0	273.6	272.4	270.6
37.5°	243.1	243.7	245.5	247.9	245.5	243.7	244.3	243.7	246.7	246.7	243.7
40°	220.9	222.1	223.3	225.7	223.3	222.1	222.7	220.9	224.5	223.3	221.5
42.5°	203.0	203.6	205.4	206.6	204.2	203.6	204.2	203.0	204.8	203.6	200.0
45°	189.2	189.2	189.8	191.6	189.2	188.6	188.6	187.4	189.2	186.8	183.2
47.5°	177.2	177.8	178.4	179.6	177.8	176.0	176.6	174.2	175.4	173.6	168.8
50°	165.2	166.4	167.0	168.2	166.4	165.2	165.8	163.4	163.4	160.5	156.3
52.5°	153.3	153.9	153.3	154.5	153.3	151.5	152.1	149.7	149.7	146.1	141.9
55°	133.5	134.1	134.7	135.9	134.7	132.9	134.1	132.3	132.3	129.9	125.1
57.5°	113.8	114.4	115.0	115.5	115.5	114.4	115.0	113.8	113.2	111.4	107.8
60°	101.2	101.2	101.2	101.8	101.2	100.6	100.6	99.4	99.4	97.0	93.4
62.5°	91.6	92.2	92.2	92.8	92.2	91.6	91.0	89.8	89.2	86.8	83.8
65°	82.6	82.6	82.0	83.2	82.6	82.0	82.0	80.8	79.6	77.2	74.2
67.5°	71.8	72.4	71.8	72.4	72.4	71.8	71.2	70.0	69.4	67.7	64.1
70°	60.5	60.5	60.5	61.1	60.5	60.5	61.1	59.3	58.7	56.3	53.3
72.5°	49.1	49.7	49.7	49.1	49.7	48.5	48.5	48.5	47.9	45.5	42.5
75°	37.7	38.3	38.3	38.9	38.3	37.7	37.7	37.1	36.5	34.7	32.3
77.5°	28.1	28.1	28.7	28.7	28.7	28.1	28.1	26.9	26.9	25.7	23.3
80°	20.4	20.4	19.8	20.4	20.4	19.8	19.8	19.2	19.2	18.0	16.2
82.5°	13.2	13.8	13.8	13.8	13.8	13.2	13.2	13.2	12.6	12.0	10.8
85°	8.4	8.4	8.4	8.4	9.0	8.4	9.0	8.4	8.4	7.2	6.6
87.5°	3.6	3.6	3.6	4.2	4.2	3.6	3.6	3.6	3.6	3.6	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°	389.2	389.2	389.2	389.2	389.2	389.2	389.2	389.2	389.2	389.2	389.2
2.5°	388.6	389.2	387.4	389.8	388.0	388.6	389.2	388.6	386.2	386.2	392.8
5°	386.2	387.4	385.6	388.6	387.4	387.4	388.6	388.0	385.6	386.2	392.2
7.5°	383.8	385.6	384.4	387.4	385.6	385.6	386.8	386.8	384.4	385.0	390.4
10°	380.2	382.6	382.0	385.0	383.2	383.2	385.0	385.0	382.6	383.2	388.6
12.5°	377.2	379.6	379.0	382.0	380.8	381.4	382.0	383.2	380.2	381.4	386.2
15°	372.4	374.8	374.8	377.8	376.6	377.8	379.0	380.8	378.4	378.4	383.2
17.5°	367.0	370.0	370.0	372.4	372.4	373.0	375.4	377.2	374.8	375.4	379.6
20°	361.0	364.6	364.6	367.6	367.0	368.2	370.0	371.8	369.4	369.4	374.2
22.5°	355.0	358.0	358.6	360.4	360.4	361.0	362.8	364.0	361.0	361.0	365.8
25°	346.6	349.6	350.2	351.4	350.2	350.2	351.4	352.6	349.6	349.6	353.8
27.5°	335.3	338.3	338.3	337.7	336.5	337.1	336.5	337.1	334.1	333.5	337.7
30°	318.5	320.3	320.3	319.7	317.9	317.9	316.1	316.7	312.5	312.5	316.1
32.5°	295.8	297.6	296.4	295.2	292.8	291.6	290.4	289.8	285.6	285.6	289.8
35°	268.8	270.0	268.2	265.8	262.8	261.0	259.2	256.8	253.9	254.4	256.8
37.5°	241.3	241.3	238.9	234.1	231.7	228.7	225.7	225.7	220.9	220.3	222.1
40°	217.9	215.5	211.3	204.8	200.6	197.6	193.4	191.0	187.4	187.4	190.4
42.5°	197.0	192.2	186.8	177.8	173.6	170.0	164.6	162.2	158.1	157.5	159.3
45°	178.4	173.6	165.8	156.3	150.9	146.7	138.9	135.9	132.3	131.7	132.9
47.5°	163.4	158.1	148.5	135.9	130.5	125.1	117.3	113.2	110.2	108.4	110.2
50°	150.3	143.1	132.9	119.7	112.6	107.8	98.2	94.0	89.8	88.6	89.2
52.5°	135.9	128.7	117.9	104.2	97.6	90.4	81.4	75.4	71.8	70.0	71.8
55°	120.3	113.2	102.4	88.6	81.4	74.8	65.3	60.5	56.3	54.5	56.3
57.5°	103.6	97.0	87.4	73.6	67.1	61.1	52.1	47.3	43.1	41.9	43.1
60°	89.2	83.8	74.2	61.1	55.7	49.1	41.3	36.5	32.9	32.3	32.9
62.5°	79.6	73.6	64.7	52.1	46.7	41.3	34.1	29.3	26.3	25.7	26.3
65°	70.0	63.5	55.1	44.3	38.9	34.7	27.5	23.3	20.4	19.8	20.4
67.5°	59.3	53.3	46.1	36.5	32.3	28.1	22.2	18.0	15.6	15.0	15.6
70°	49.1	43.7	36.5	29.3	25.1	22.2	16.8	13.8	11.4	10.8	11.4
72.5°	38.9	34.1	28.1	22.2	19.8	16.8	13.2	10.2	8.4	7.8	8.4
75°	29.9	26.3	21.6	16.2	14.4	12.6	9.0	7.2	6.0	5.4	6.0
77.5°	21.0	18.6	15.0	12.0	10.2	9.0	6.6	4.8	4.2	3.6	4.2
80°	14.4	12.6	10.2	7.8	6.6	5.4	4.2	3.0	2.4	2.4	2.4
82.5°	9.6	7.8	6.0	4.8	4.2	3.6	2.4	1.8	1.8	1.2	1.2
85°	5.4	4.8	3.6	3.0	2.4	1.8	1.2	1.2	0.6	0.6	0.6
87.5°	2.4	1.8	1.2	1.2	0.6	0.6	0.6	0.6	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°	389.2	389.2	389.2	389.2	389.2	389.2	389.2	389.2	389.2	389.2	389.2
2.5°	391.0	389.2	391.6	389.2	388.0	389.2	388.0	391.6	388.6	386.2	388.6
5°	390.4	388.0	390.4	388.6	386.8	387.4	386.2	389.8	386.2	384.4	385.6
7.5°	389.2	387.4	388.6	386.8	385.0	385.6	384.4	387.4	383.8	382.0	383.2
10°	387.4	385.6	386.2	385.0	383.2	383.2	382.0	384.4	380.2	377.8	379.0
12.5°	385.0	382.6	383.8	382.0	379.6	379.6	378.4	380.2	376.0	373.6	374.2
15°	382.0	379.6	379.6	377.8	375.4	375.4	373.0	374.8	370.0	367.6	367.6
17.5°	378.4	375.4	375.4	373.6	370.6	370.0	368.2	370.0	364.6	362.2	362.2
20°	373.0	370.6	370.0	368.8	365.8	365.2	362.8	363.4	359.2	357.4	356.8
22.5°	365.8	363.4	364.0	362.2	359.8	359.2	356.8	358.6	354.4	352.6	353.2
25°	353.2	352.0	353.2	352.6	350.8	350.8	349.6	350.8	347.2	346.1	346.6
27.5°	338.9	338.3	338.9	338.9	337.7	337.7	337.7	339.5	335.9	335.3	335.3
30°	317.9	317.9	318.5	319.1	319.1	320.3	319.7	322.1	319.7	318.5	319.7
32.5°	290.4	292.8	294.6	294.6	294.6	295.8	297.0	298.8	296.4	297.0	297.0
35°	259.2	261.0	262.2	265.2	263.4	267.6	268.8	271.2	270.6	271.8	271.2
37.5°	224.5	226.9	229.3	233.5	232.9	237.7	240.1	244.9	243.7	246.1	247.3
40°	192.2	195.8	199.4	202.4	204.8	209.5	214.3	220.3	222.1	223.9	224.5
42.5°	161.1	164.6	170.6	174.8	178.4	186.2	192.8	200.0	201.8	205.4	206.6
45°	135.9	138.9	146.1	151.5	154.5	165.8	173.6	182.6	185.6	189.8	191.6
47.5°	112.6	117.9	125.1	131.7	135.9	147.9	158.1	167.6	171.8	176.6	179.0
50°	92.2	98.2	107.8	113.8	119.7	132.9	144.3	154.5	158.7	164.0	166.4
52.5°	75.4	82.0	91.0	97.6	104.2	117.9	129.9	139.5	144.9	148.5	152.1
55°	59.3	66.5	75.4	82.6	88.0	103.0	113.2	122.7	126.3	129.3	131.1
57.5°	46.1	51.5	60.5	66.5	73.0	86.2	96.4	103.6	106.6	110.2	111.4
60°	35.9	41.3	49.7	55.7	61.7	74.2	84.4	91.6	94.6	97.6	99.4
62.5°	28.7	34.1	41.9	47.3	52.7	64.1	73.0	80.2	83.8	86.8	88.6
65°	22.8	27.5	34.1	39.5	43.7	53.9	62.9	69.4	73.0	76.0	77.8
67.5°	18.0	22.2	28.1	31.7	35.9	44.3	52.1	58.1	61.1	64.7	66.5
70°	13.8	16.8	22.2	25.1	28.1	35.3	41.3	47.3	50.3	52.7	53.9
72.5°	10.2	12.6	16.8	19.2	21.0	26.9	31.7	35.9	38.3	40.7	41.9
75°	7.2	9.0	12.0	13.8	15.0	19.2	23.3	26.3	28.1	29.9	31.7
77.5°	4.8	6.0	7.8	9.0	10.2	13.2	15.6	18.0	19.8	21.6	22.2
80°	3.0	4.2	5.4	6.0	6.6	8.4	10.8	12.0	13.2	14.4	15.0
82.5°	1.8	2.4	3.0	3.6	4.2	5.4	6.6	7.8	8.4	9.6	10.2
85°	0.6	1.2	1.2	1.8	1.8	3.0	3.6	4.2	4.8	5.4	6.0
87.5°	0.0	0.0	0.6	0.6	0.6	0.6	1.2	1.2	1.2	1.2	1.2
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°	389.2	389.2	389.2	389.2	389.2	389.2	389.2	389.2
2.5°	391.0	389.2	388.0	387.4	391.6	386.2	388.6	389.2
5°	388.6	386.8	385.6	385.0	388.6	383.8	385.6	386.8
7.5°	385.0	383.8	382.0	381.4	385.0	379.6	382.0	382.6
10°	380.8	379.0	377.8	377.2	380.2	374.8	377.2	377.2
12.5°	375.4	374.2	371.8	371.8	374.2	369.4	371.2	371.2
15°	368.2	367.0	364.6	364.6	367.0	362.2	364.0	364.0
17.5°	362.2	361.0	359.2	358.6	361.0	356.2	358.0	357.4
20°	357.4	356.2	353.8	353.8	355.6	350.8	352.6	352.6
22.5°	353.2	352.6	350.2	350.2	352.6	347.8	349.0	347.8
25°	346.6	346.1	343.7	344.3	345.5	340.7	342.5	341.3
27.5°	335.9	335.9	333.5	332.9	334.7	330.5	331.7	331.1
30°	319.1	319.7	316.7	316.7	317.3	313.7	315.5	314.9
32.5°	296.4	297.0	294.6	294.0	295.8	292.8	294.0	294.0
35°	271.2	271.8	270.0	270.0	271.8	270.0	270.0	269.4
37.5°	246.1	247.3	246.1	246.7	247.9	246.1	247.3	246.7
40°	225.7	226.9	225.1	226.3	227.5	225.7	227.5	226.3
42.5°	207.2	208.9	207.8	208.9	210.1	208.9	210.1	208.3
45°	193.4	194.6	194.0	194.6	195.8	195.2	195.8	195.2
47.5°	180.2	182.6	181.4	182.6	184.4	183.2	184.4	182.6
50°	168.2	170.0	169.4	170.6	171.2	170.6	171.8	170.0
52.5°	152.7	154.5	153.9	153.9	155.1	153.9	155.1	153.9
55°	132.3	132.9	132.9	133.5	132.9	132.3	132.9	131.7
57.5°	112.6	113.8	112.0	113.8	113.2	112.6	112.6	111.4
60°	100.0	101.8	100.6	101.8	101.2	101.2	101.2	100.6
62.5°	89.8	91.0	89.8	90.4	90.4	90.4	89.8	89.2
65°	78.4	80.2	79.0	79.6	79.0	78.4	79.0	78.4
67.5°	67.1	67.7	67.7	67.1	67.1	67.1	67.1	65.9
70°	54.5	55.1	54.5	55.7	55.1	54.5	55.1	53.9
72.5°	42.5	43.1	42.5	43.1	42.5	42.5	42.5	42.5
75°	31.7	32.3	32.3	32.3	32.3	32.3	31.1	32.3
77.5°	22.8	22.8	22.8	23.3	22.8	22.8	22.8	22.8
80°	15.6	15.6	15.6	16.2	15.6	16.2	15.6	16.2
82.5°	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
85°	5.4	6.0	6.0	5.4	5.4	5.4	5.4	5.4
87.5°	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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)