

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: P251903

Luminaire Tested: **LD4B10D010 EU4B10209040 4LBDW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251903  
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 EU4B10209040 4LBDW1H  
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 804.0 lumens  
Efficiency: N/A  
Efficacy: 80.0 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

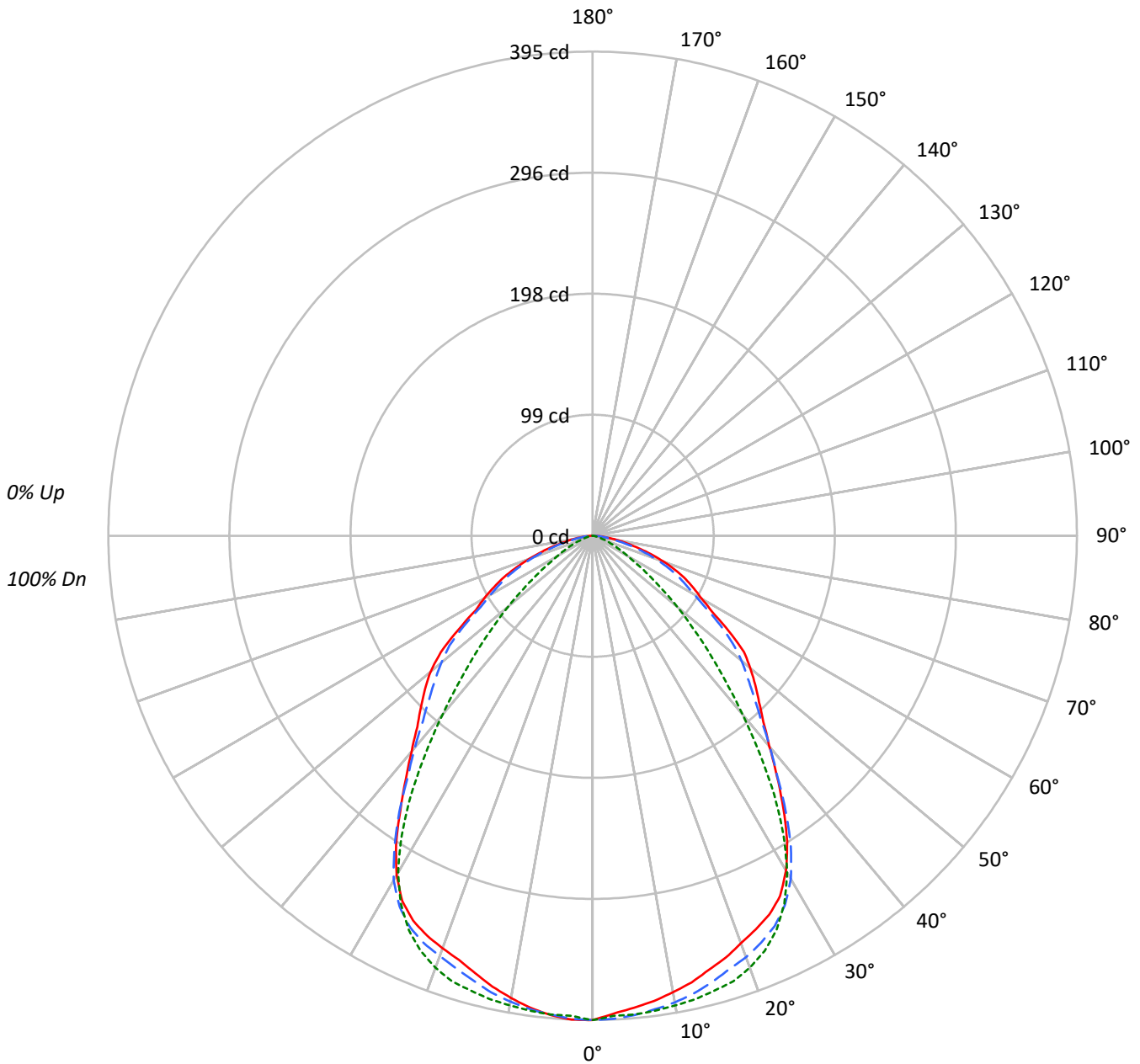
Input Watts (W): 10.05  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	38506	38506	38506
5°	37811	38349	38408
10°	37407	38496	37892
15°	36978	38754	37281
20°	36683	38892	37129
25°	36669	38163	37249
30°	35494	35707	35977
35°	32254	30731	32539
40°	28536	24198	29223
45°	26476	18427	27303
50°	25426	13646	26169
55°	23023	9396	22717
60°	20018	6393	19901
65°	19348	4635	18356
70°	17496	3106	15587
75°	14422	2071	12351
80°	11618	1347	9204
85°	9505	671	6150



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	37.3	4.6
10°-20°	106.6	13.3
20°-30°	161.1	20.0
30°-40°	168.6	21.0
40°-50°	136.5	17.0
50°-60°	99.3	12.4
60°-70°	61.3	7.6
70°-80°	27.7	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°	305.0	37.9
0°-40°	473.6	58.9
0°-60°	709.5	88.2
0°-90°	804.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	804.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	395	395	395	395	395	
5°	386	393	392	392	393	37
15°	366	377	384	376	370	104
25°	341	351	355	352	346	156
35°	271	275	258	275	274	169
45°	192	186	134	188	198	149
55°	136	127	55	128	134	121
65°	84	75	20	74	80	82
75°	38	33	6	29	33	42
85°	8	7	1	5	6	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°	395.1	395.1	395.1	395.1	395.1	395.1	395.1	395.1	395.1	395.1	395.1
2.5°	390.2	390.2	393.8	398.1	394.4	390.8	393.2	392.0	396.3	396.3	394.4
5°	386.5	387.8	390.8	394.4	391.4	387.8	390.8	389.6	393.8	393.8	392.6
7.5°	382.9	383.5	387.2	391.4	388.4	384.7	387.2	386.5	390.2	390.8	389.6
10°	378.0	378.6	382.3	386.5	383.5	380.5	382.9	382.3	387.2	387.2	386.5
12.5°	373.2	373.8	377.4	381.1	378.0	375.0	377.4	377.4	382.3	382.9	382.3
15°	366.5	367.7	370.7	374.4	372.6	368.9	371.4	371.4	375.6	376.8	376.8
17.5°	361.0	361.6	364.7	368.3	365.9	362.8	365.3	365.3	369.5	370.7	370.7
20°	353.7	354.9	358.0	361.6	359.8	357.4	359.2	359.2	364.1	365.3	365.9
22.5°	347.6	348.9	351.3	356.2	353.1	351.3	353.7	353.1	358.6	359.2	359.2
25°	341.0	342.2	345.2	348.3	346.4	344.6	346.4	346.4	350.7	351.3	351.3
27.5°	331.2	331.8	334.9	337.9	336.1	333.7	336.1	335.5	339.7	340.4	339.7
30°	315.4	316.7	317.9	322.1	320.3	318.5	320.9	319.7	323.9	323.9	323.3
32.5°	295.4	295.4	297.8	300.8	298.4	297.2	299.0	299.6	302.7	302.7	300.8
35°	271.1	272.3	274.1	275.9	274.1	272.9	274.7	274.1	277.8	276.5	274.7
37.5°	246.8	247.4	249.2	251.6	249.2	247.4	248.0	247.4	250.4	250.4	247.4
40°	224.3	225.5	226.7	229.1	226.7	225.5	226.1	224.3	227.9	226.7	224.9
42.5°	206.0	206.6	208.5	209.7	207.3	206.6	207.3	206.0	207.9	206.6	203.0
45°	192.1	192.1	192.7	194.5	192.1	191.4	191.4	190.2	192.1	189.6	186.0
47.5°	179.9	180.5	181.1	182.3	180.5	178.7	179.3	176.9	178.1	176.3	171.4
50°	167.7	169.0	169.6	170.8	169.0	167.7	168.4	165.9	165.9	162.9	158.6
52.5°	155.6	156.2	155.6	156.8	155.6	153.8	154.4	151.9	151.9	148.3	144.0
55°	135.5	136.1	136.7	138.0	136.7	134.9	136.1	134.3	134.3	131.9	127.0
57.5°	115.5	116.1	116.7	117.3	117.3	116.1	116.7	115.5	114.9	113.0	109.4
60°	102.7	102.7	102.7	103.3	102.7	102.1	102.1	100.9	100.9	98.5	94.8
62.5°	93.0	93.6	93.6	94.2	93.6	93.0	92.4	91.2	90.6	88.1	85.1
65°	83.9	83.9	83.3	84.5	83.9	83.3	83.3	82.0	80.8	78.4	75.4
67.5°	72.9	73.5	72.9	73.5	73.5	72.9	72.3	71.1	70.5	68.7	65.0
70°	61.4	61.4	61.4	62.0	61.4	61.4	62.0	60.2	59.6	57.1	54.1
72.5°	49.8	50.4	50.4	49.8	50.4	49.2	49.2	49.2	48.6	46.2	43.2
75°	38.3	38.9	38.9	39.5	38.9	38.3	38.3	37.7	37.1	35.3	32.8
77.5°	28.6	28.6	29.2	29.2	29.2	28.6	28.6	27.3	27.3	26.1	23.7
80°	20.7	20.7	20.1	20.7	20.7	20.1	20.1	19.4	19.4	18.2	16.4
82.5°	13.4	14.0	14.0	14.0	14.0	13.4	13.4	13.4	12.8	12.2	10.9
85°	8.5	8.5	8.5	8.5	9.1	8.5	9.1	8.5	8.5	7.3	6.7
87.5°	3.6	3.6	3.6	4.3	4.3	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°	395.1	395.1	395.1	395.1	395.1	395.1	395.1	395.1	395.1	395.1	395.1
2.5°	394.4	395.1	393.2	395.7	393.8	394.4	395.1	394.4	392.0	392.0	398.7
5°	392.0	393.2	391.4	394.4	393.2	393.2	394.4	393.8	391.4	392.0	398.1
7.5°	389.6	391.4	390.2	393.2	391.4	391.4	392.6	392.6	390.2	390.8	396.3
10°	385.9	388.4	387.8	390.8	389.0	389.0	390.8	390.8	388.4	389.0	394.4
12.5°	382.9	385.3	384.7	387.8	386.5	387.2	387.8	389.0	385.9	387.2	392.0
15°	378.0	380.5	380.5	383.5	382.3	383.5	384.7	386.5	384.1	384.1	389.0
17.5°	372.6	375.6	375.6	378.0	378.0	378.6	381.1	382.9	380.5	381.1	385.3
20°	366.5	370.1	370.1	373.2	372.6	373.8	375.6	377.4	375.0	375.0	379.9
22.5°	360.4	363.4	364.1	365.9	365.9	366.5	368.3	369.5	366.5	366.5	371.4
25°	351.9	354.9	355.5	356.8	355.5	355.5	356.8	358.0	354.9	354.9	359.2
27.5°	340.4	343.4	343.4	342.8	341.6	342.2	341.6	342.2	339.1	338.5	342.8
30°	323.3	325.2	325.2	324.6	322.7	322.7	320.9	321.5	317.3	317.3	320.9
32.5°	300.2	302.1	300.8	299.6	297.2	296.0	294.8	294.2	289.9	289.9	294.2
35°	272.9	274.1	272.3	269.9	266.8	265.0	263.2	260.7	257.7	258.3	260.7
37.5°	244.9	244.9	242.5	237.6	235.2	232.2	229.1	229.1	224.3	223.7	225.5
40°	221.2	218.8	214.5	207.9	203.6	200.6	196.3	193.9	190.2	190.2	193.3
42.5°	200.0	195.1	189.6	180.5	176.3	172.6	167.1	164.7	160.5	159.8	161.7
45°	181.1	176.3	168.4	158.6	153.2	148.9	141.0	138.0	134.3	133.7	134.9
47.5°	165.9	160.5	150.7	138.0	132.5	127.0	119.1	114.9	111.8	110.0	111.8
50°	152.6	145.3	134.9	121.6	114.3	109.4	99.7	95.4	91.2	90.0	90.6
52.5°	138.0	130.7	119.7	105.8	99.1	91.8	82.7	76.6	72.9	71.1	72.9
55°	122.2	114.9	103.9	90.0	82.7	76.0	66.2	61.4	57.1	55.3	57.1
57.5°	105.1	98.5	88.7	74.8	68.1	62.0	52.9	48.0	43.8	42.5	43.8
60°	90.6	85.1	75.4	62.0	56.5	49.8	41.9	37.1	33.4	32.8	33.4
62.5°	80.8	74.8	65.6	52.9	47.4	41.9	34.6	29.8	26.7	26.1	26.7
65°	71.1	64.4	55.9	45.0	39.5	35.3	28.0	23.7	20.7	20.1	20.7
67.5°	60.2	54.1	46.8	37.1	32.8	28.6	22.5	18.2	15.8	15.2	15.8
70°	49.8	44.4	37.1	29.8	25.5	22.5	17.0	14.0	11.5	10.9	11.5
72.5°	39.5	34.6	28.6	22.5	20.1	17.0	13.4	10.3	8.5	7.9	8.5
75°	30.4	26.7	21.9	16.4	14.6	12.8	9.1	7.3	6.1	5.5	6.1
77.5°	21.3	18.8	15.2	12.2	10.3	9.1	6.7	4.9	4.3	3.6	4.3
80°	14.6	12.8	10.3	7.9	6.7	5.5	4.3	3.0	2.4	2.4	2.4
82.5°	9.7	7.9	6.1	4.9	4.3	3.6	2.4	1.8	1.8	1.2	1.2
85°	5.5	4.9	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°	395.1	395.1	395.1	395.1	395.1	395.1	395.1	395.1	395.1	395.1	395.1
2.5°	396.9	395.1	397.5	395.1	393.8	395.1	393.8	397.5	394.4	392.0	394.4
5°	396.3	393.8	396.3	394.4	392.6	393.2	392.0	395.7	392.0	390.2	391.4
7.5°	395.1	393.2	394.4	392.6	390.8	391.4	390.2	393.2	389.6	387.8	389.0
10°	393.2	391.4	392.0	390.8	389.0	389.0	387.8	390.2	385.9	383.5	384.7
12.5°	390.8	388.4	389.6	387.8	385.3	385.3	384.1	385.9	381.7	379.3	379.9
15°	387.8	385.3	385.3	383.5	381.1	381.1	378.6	380.5	375.6	373.2	373.2
17.5°	384.1	381.1	381.1	379.3	376.2	375.6	373.8	375.6	370.1	367.7	367.7
20°	378.6	376.2	375.6	374.4	371.4	370.7	368.3	368.9	364.7	362.8	362.2
22.5°	371.4	368.9	369.5	367.7	365.3	364.7	362.2	364.1	359.8	358.0	358.6
25°	358.6	357.4	358.6	358.0	356.2	356.2	354.9	356.2	352.5	351.3	351.9
27.5°	344.0	343.4	344.0	344.0	342.8	342.8	342.8	344.6	341.0	340.4	340.4
30°	322.7	322.7	323.3	323.9	323.9	325.2	324.6	327.0	324.6	323.3	324.6
32.5°	294.8	297.2	299.0	299.0	299.0	300.2	301.5	303.3	300.8	301.5	301.5
35°	263.2	265.0	266.2	269.2	267.4	271.7	272.9	275.3	274.7	275.9	275.3
37.5°	227.9	230.3	232.8	237.0	236.4	241.3	243.7	248.6	247.4	249.8	251.0
40°	195.1	198.7	202.4	205.4	207.9	212.7	217.6	223.7	225.5	227.3	227.9
42.5°	163.5	167.1	173.2	177.5	181.1	189.0	195.7	203.0	204.8	208.5	209.7
45°	138.0	141.0	148.3	153.8	156.8	168.4	176.3	185.4	188.4	192.7	194.5
47.5°	114.3	119.7	127.0	133.7	138.0	150.1	160.5	170.2	174.4	179.3	181.7
50°	93.6	99.7	109.4	115.5	121.6	134.9	146.5	156.8	161.1	166.5	169.0
52.5°	76.6	83.3	92.4	99.1	105.8	119.7	131.9	141.6	147.1	150.7	154.4
55°	60.2	67.5	76.6	83.9	89.3	104.5	114.9	124.6	128.2	131.3	133.1
57.5°	46.8	52.3	61.4	67.5	74.1	87.5	97.9	105.1	108.2	111.8	113.0
60°	36.5	41.9	50.4	56.5	62.6	75.4	85.7	93.0	96.0	99.1	100.9
62.5°	29.2	34.6	42.5	48.0	53.5	65.0	74.1	81.4	85.1	88.1	90.0
65°	23.1	28.0	34.6	40.1	44.4	54.7	63.8	70.5	74.1	77.2	79.0
67.5°	18.2	22.5	28.6	32.2	36.5	45.0	52.9	59.0	62.0	65.6	67.5
70°	14.0	17.0	22.5	25.5	28.6	35.9	41.9	48.0	51.1	53.5	54.7
72.5°	10.3	12.8	17.0	19.4	21.3	27.3	32.2	36.5	38.9	41.3	42.5
75°	7.3	9.1	12.2	14.0	15.2	19.4	23.7	26.7	28.6	30.4	32.2
77.5°	4.9	6.1	7.9	9.1	10.3	13.4	15.8	18.2	20.1	21.9	22.5
80°	3.0	4.3	5.5	6.1	6.7	8.5	10.9	12.2	13.4	14.6	15.2
82.5°	1.8	2.4	3.0	3.6	4.3	5.5	6.7	7.9	8.5	9.7	10.3
85°	0.6	1.2	1.2	1.8	1.8	3.0	3.6	4.3	4.9	5.5	6.1
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°	395.1	395.1	395.1	395.1	395.1	395.1	395.1	395.1
2.5°	396.9	395.1	393.8	393.2	397.5	392.0	394.4	395.1
5°	394.4	392.6	391.4	390.8	394.4	389.6	391.4	392.6
7.5°	390.8	389.6	387.8	387.2	390.8	385.3	387.8	388.4
10°	386.5	384.7	383.5	382.9	385.9	380.5	382.9	382.9
12.5°	381.1	379.9	377.4	377.4	379.9	375.0	376.8	376.8
15°	373.8	372.6	370.1	370.1	372.6	367.7	369.5	369.5
17.5°	367.7	366.5	364.7	364.1	366.5	361.6	363.4	362.8
20°	362.8	361.6	359.2	359.2	361.0	356.2	358.0	358.0
22.5°	358.6	358.0	355.5	355.5	358.0	353.1	354.3	353.1
25°	351.9	351.3	348.9	349.5	350.7	345.8	347.6	346.4
27.5°	341.0	341.0	338.5	337.9	339.7	335.5	336.7	336.1
30°	323.9	324.6	321.5	321.5	322.1	318.5	320.3	319.7
32.5°	300.8	301.5	299.0	298.4	300.2	297.2	298.4	298.4
35°	275.3	275.9	274.1	274.1	275.9	274.1	274.1	273.5
37.5°	249.8	251.0	249.8	250.4	251.6	249.8	251.0	250.4
40°	229.1	230.3	228.5	229.7	231.0	229.1	231.0	229.7
42.5°	210.3	212.1	210.9	212.1	213.3	212.1	213.3	211.5
45°	196.3	197.5	196.9	197.5	198.7	198.1	198.7	198.1
47.5°	182.9	185.4	184.2	185.4	187.2	186.0	187.2	185.4
50°	170.8	172.6	172.0	173.2	173.8	173.2	174.4	172.6
52.5°	155.0	156.8	156.2	156.2	157.4	156.2	157.4	156.2
55°	134.3	134.9	134.9	135.5	134.9	134.3	134.9	133.7
57.5°	114.3	115.5	113.7	115.5	114.9	114.3	114.3	113.0
60°	101.5	103.3	102.1	103.3	102.7	102.7	102.7	102.1
62.5°	91.2	92.4	91.2	91.8	91.8	91.8	91.2	90.6
65°	79.6	81.4	80.2	80.8	80.2	79.6	80.2	79.6
67.5°	68.1	68.7	68.7	68.1	68.1	68.1	68.1	66.9
70°	55.3	55.9	55.3	56.5	55.9	55.3	55.9	54.7
72.5°	43.2	43.8	43.2	43.8	43.2	43.2	43.2	43.2
75°	32.2	32.8	32.8	32.8	32.8	32.8	31.6	32.8
77.5°	23.1	23.1	23.1	23.7	23.1	23.1	23.1	23.1
80°	15.8	15.8	15.8	16.4	15.8	16.4	15.8	16.4
82.5°	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
85°	5.5	6.1	6.1	5.5	5.5	5.5	5.5	5.5
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)