

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: P251904

Luminaire Tested: **LD4B10D010 EU4B10209050 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251904
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 EU4B10209050 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 808.0 lumens
Efficiency: N/A
Efficacy: 80.4 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

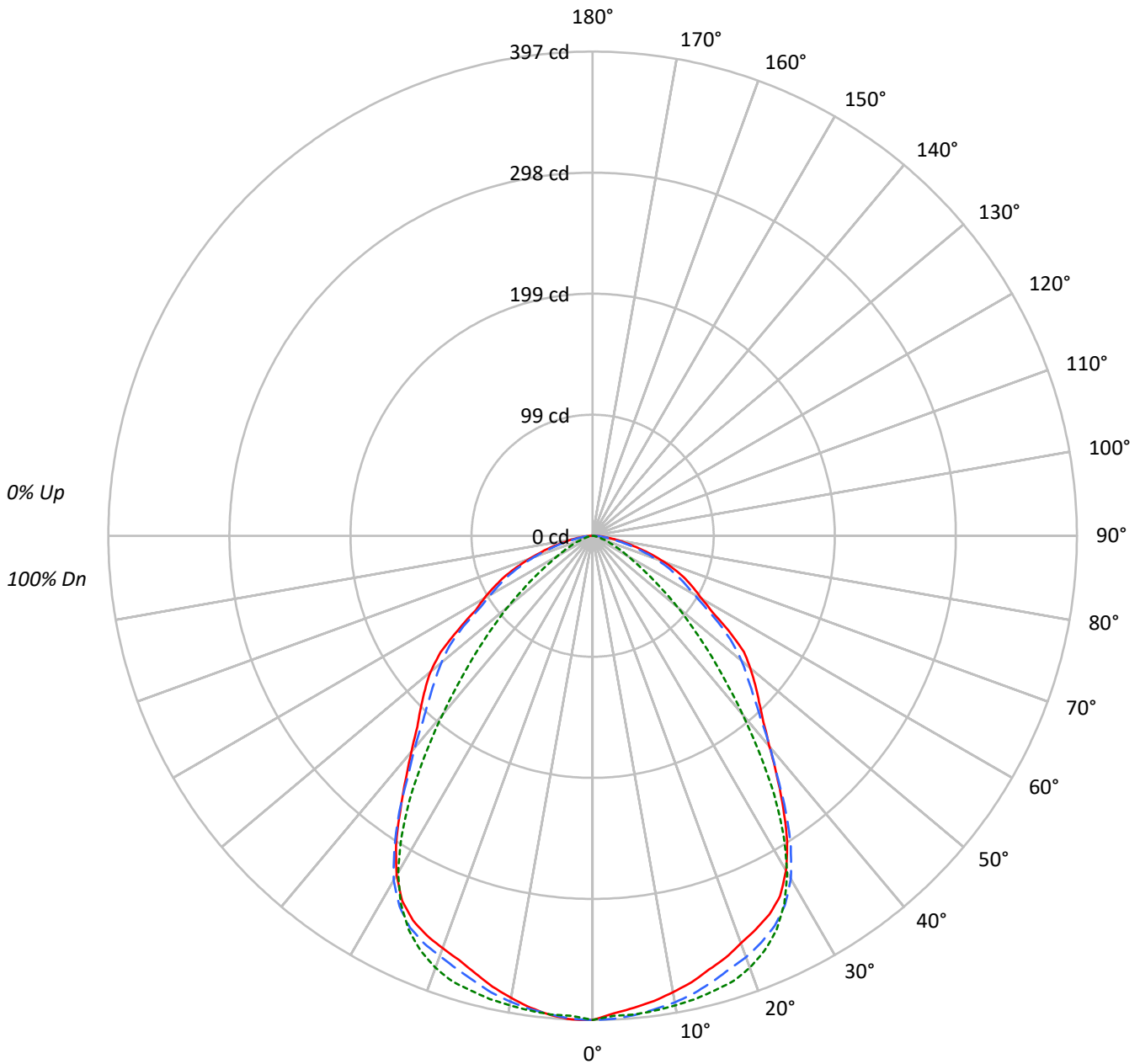
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	38691	38691	38691
5°	38007	38545	38604
10°	37595	38684	38080
15°	37160	38946	37473
20°	36870	39089	37316
25°	36852	38357	37443
30°	35674	35876	36157
35°	32409	30886	32706
40°	28676	24325	29376
45°	26601	18524	27441
50°	25563	13706	26306
55°	23142	9447	22836
60°	20115	6432	19998
65°	19440	4658	18448
70°	17581	3134	15672
75°	14497	2071	12426
80°	11674	1347	9260
85°	9617	671	6150



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.5	4.6
10°-20°	107.2	13.3
20°-30°	161.9	20.0
30°-40°	169.4	21.0
40°-50°	137.2	17.0
50°-60°	99.8	12.4
60°-70°	61.6	7.6
70°-80°	27.8	3.4
80°-90°	5.7	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°	306.5	37.9
0°-40°	476.0	58.9
0°-60°	713.0	88.2
0°-90°	808.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	808.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	397	397	397	397	397	
5°	388	395	394	394	395	37
15°	368	379	386	378	371	104
25°	343	353	357	354	348	157
35°	272	276	260	276	275	170
45°	193	187	134	189	199	150
55°	136	128	56	129	134	122
65°	84	76	20	74	80	83
75°	38	33	6	29	33	42
85°	9	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°	397.0	397.0	397.0	397.0	397.0	397.0	397.0	397.0	397.0	397.0	397.0
2.5°	392.1	392.1	395.8	400.1	396.4	392.7	395.2	394.0	398.2	398.2	396.4
5°	388.5	389.7	392.7	396.4	393.4	389.7	392.7	391.5	395.8	395.8	394.6
7.5°	384.8	385.4	389.1	393.4	390.3	386.6	389.1	388.5	392.1	392.7	391.5
10°	379.9	380.5	384.2	388.5	385.4	382.4	384.8	384.2	389.1	389.1	388.5
12.5°	375.0	375.6	379.3	383.0	379.9	376.9	379.3	379.3	384.2	384.8	384.2
15°	368.3	369.5	372.6	376.3	374.4	370.8	373.2	373.2	377.5	378.7	378.7
17.5°	362.8	363.4	366.5	370.1	367.7	364.6	367.1	367.1	371.4	372.6	372.6
20°	355.5	356.7	359.8	363.4	361.6	359.2	361.0	361.0	365.9	367.1	367.7
22.5°	349.4	350.6	353.0	357.9	354.9	353.0	355.5	354.9	360.4	361.0	361.0
25°	342.7	343.9	346.9	350.0	348.2	346.3	348.2	348.2	352.4	353.0	353.0
27.5°	332.9	333.5	336.6	339.6	337.8	335.3	337.8	337.2	341.4	342.0	341.4
30°	317.0	318.2	319.4	323.7	321.9	320.1	322.5	321.3	325.6	325.6	324.9
32.5°	296.8	296.8	299.3	302.3	299.9	298.7	300.5	301.1	304.2	304.2	302.3
35°	272.4	273.6	275.5	277.3	275.5	274.2	276.1	275.5	279.1	277.9	276.1
37.5°	248.0	248.6	250.4	252.9	250.4	248.6	249.2	248.6	251.6	251.6	248.6
40°	225.4	226.6	227.8	230.3	227.8	226.6	227.2	225.4	229.0	227.8	226.0
42.5°	207.1	207.7	209.5	210.7	208.3	207.7	208.3	207.1	208.9	207.7	204.0
45°	193.0	193.0	193.6	195.5	193.0	192.4	192.4	191.2	193.0	190.6	186.9
47.5°	180.8	181.4	182.0	183.2	181.4	179.6	180.2	177.7	179.0	177.1	172.2
50°	168.6	169.8	170.4	171.6	169.8	168.6	169.2	166.7	166.7	163.7	159.4
52.5°	156.4	157.0	156.4	157.6	156.4	154.5	155.1	152.7	152.7	149.0	144.8
55°	136.2	136.8	137.4	138.7	137.4	135.6	136.8	135.0	135.0	132.5	127.7
57.5°	116.1	116.7	117.3	117.9	117.9	116.7	117.3	116.1	115.4	113.6	109.9
60°	103.2	103.2	103.2	103.8	103.2	102.6	102.6	101.4	101.4	98.9	95.3
62.5°	93.5	94.1	94.1	94.7	94.1	93.5	92.8	91.6	91.0	88.6	85.5
65°	84.3	84.3	83.7	84.9	84.3	83.7	83.7	82.5	81.2	78.8	75.7
67.5°	73.3	73.9	73.3	73.9	73.9	73.3	72.7	71.5	70.9	69.0	65.4
70°	61.7	61.7	61.7	62.3	61.7	61.7	62.3	60.5	59.9	57.4	54.4
72.5°	50.1	50.7	50.7	50.1	50.7	49.5	49.5	49.5	48.9	46.4	43.4
75°	38.5	39.1	39.1	39.7	39.1	38.5	38.5	37.9	37.3	35.4	33.0
77.5°	28.7	28.7	29.3	29.3	29.3	28.7	28.7	27.5	27.5	26.3	23.8
80°	20.8	20.8	20.2	20.8	20.8	20.2	20.2	19.5	19.5	18.3	16.5
82.5°	13.4	14.0	14.0	14.0	14.0	13.4	13.4	13.4	12.8	12.2	11.0
85°	8.6	8.6	8.6	8.6	9.2	8.6	9.2	8.6	8.6	7.3	6.7
87.5°	3.7	3.7	3.7	4.3	4.3	3.7	3.7	3.7	3.7	3.7	3.1
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°	397.0	397.0	397.0	397.0	397.0	397.0	397.0	397.0	397.0	397.0	397.0
2.5°	396.4	397.0	395.2	397.6	395.8	396.4	397.0	396.4	394.0	394.0	400.7
5°	394.0	395.2	393.4	396.4	395.2	395.2	396.4	395.8	393.4	394.0	400.1
7.5°	391.5	393.4	392.1	395.2	393.4	393.4	394.6	394.6	392.1	392.7	398.2
10°	387.9	390.3	389.7	392.7	390.9	390.9	392.7	392.7	390.3	390.9	396.4
12.5°	384.8	387.2	386.6	389.7	388.5	389.1	389.7	390.9	387.9	389.1	394.0
15°	379.9	382.4	382.4	385.4	384.2	385.4	386.6	388.5	386.0	386.0	390.9
17.5°	374.4	377.5	377.5	379.9	379.9	380.5	383.0	384.8	382.4	383.0	387.2
20°	368.3	372.0	372.0	375.0	374.4	375.6	377.5	379.3	376.9	376.9	381.7
22.5°	362.2	365.3	365.9	367.7	367.7	368.3	370.1	371.4	368.3	368.3	373.2
25°	353.7	356.7	357.3	358.5	357.3	357.3	358.5	359.8	356.7	356.7	361.0
27.5°	342.0	345.1	345.1	344.5	343.3	343.9	343.3	343.9	340.8	340.2	344.5
30°	324.9	326.8	326.8	326.2	324.3	324.3	322.5	323.1	318.8	318.8	322.5
32.5°	301.7	303.6	302.3	301.1	298.7	297.5	296.2	295.6	291.4	291.4	295.6
35°	274.2	275.5	273.6	271.2	268.1	266.3	264.5	262.0	259.0	259.6	262.0
37.5°	246.2	246.2	243.7	238.8	236.4	233.3	230.3	230.3	225.4	224.8	226.6
40°	222.3	219.9	215.6	208.9	204.6	201.6	197.3	194.8	191.2	191.2	194.2
42.5°	201.0	196.1	190.6	181.4	177.1	173.5	168.0	165.5	161.3	160.6	162.5
45°	182.0	177.1	169.2	159.4	153.9	149.6	141.7	138.7	135.0	134.4	135.6
47.5°	166.7	161.3	151.5	138.7	133.2	127.7	119.7	115.4	112.4	110.6	112.4
50°	153.3	146.0	135.6	122.2	114.8	109.9	100.2	95.9	91.6	90.4	91.0
52.5°	138.7	131.3	120.3	106.3	99.6	92.2	83.1	77.0	73.3	71.5	73.3
55°	122.8	115.4	104.4	90.4	83.1	76.3	66.6	61.7	57.4	55.6	57.4
57.5°	105.7	98.9	89.2	75.1	68.4	62.3	53.1	48.3	44.0	42.8	44.0
60°	91.0	85.5	75.7	62.3	56.8	50.1	42.1	37.3	33.6	33.0	33.6
62.5°	81.2	75.1	66.0	53.1	47.6	42.1	34.8	29.9	26.9	26.3	26.9
65°	71.5	64.7	56.2	45.2	39.7	35.4	28.1	23.8	20.8	20.2	20.8
67.5°	60.5	54.4	47.0	37.3	33.0	28.7	22.6	18.3	15.9	15.3	15.9
70°	50.1	44.6	37.3	29.9	25.7	22.6	17.1	14.0	11.6	11.0	11.6
72.5°	39.7	34.8	28.7	22.6	20.2	17.1	13.4	10.4	8.6	7.9	8.6
75°	30.5	26.9	22.0	16.5	14.7	12.8	9.2	7.3	6.1	5.5	6.1
77.5°	21.4	18.9	15.3	12.2	10.4	9.2	6.7	4.9	4.3	3.7	4.3
80°	14.7	12.8	10.4	7.9	6.7	5.5	4.3	3.1	2.4	2.4	2.4
82.5°	9.8	7.9	6.1	4.9	4.3	3.7	2.4	1.8	1.8	1.2	1.2
85°	5.5	4.9	3.7	3.1	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°	397.0	397.0	397.0	397.0	397.0	397.0	397.0	397.0	397.0	397.0	397.0
2.5°	398.9	397.0	399.5	397.0	395.8	397.0	395.8	399.5	396.4	394.0	396.4
5°	398.2	395.8	398.2	396.4	394.6	395.2	394.0	397.6	394.0	392.1	393.4
7.5°	397.0	395.2	396.4	394.6	392.7	393.4	392.1	395.2	391.5	389.7	390.9
10°	395.2	393.4	394.0	392.7	390.9	390.9	389.7	392.1	387.9	385.4	386.6
12.5°	392.7	390.3	391.5	389.7	387.2	387.2	386.0	387.9	383.6	381.1	381.7
15°	389.7	387.2	387.2	385.4	383.0	383.0	380.5	382.4	377.5	375.0	375.0
17.5°	386.0	383.0	383.0	381.1	378.1	377.5	375.6	377.5	372.0	369.5	369.5
20°	380.5	378.1	377.5	376.3	373.2	372.6	370.1	370.8	366.5	364.6	364.0
22.5°	373.2	370.8	371.4	369.5	367.1	366.5	364.0	365.9	361.6	359.8	360.4
25°	360.4	359.2	360.4	359.8	357.9	357.9	356.7	357.9	354.3	353.0	353.7
27.5°	345.7	345.1	345.7	345.7	344.5	344.5	344.5	346.3	342.7	342.0	342.0
30°	324.3	324.3	324.9	325.6	325.6	326.8	326.2	328.6	326.2	324.9	326.2
32.5°	296.2	298.7	300.5	300.5	300.5	301.7	303.0	304.8	302.3	303.0	303.0
35°	264.5	266.3	267.5	270.6	268.8	273.0	274.2	276.7	276.1	277.3	276.7
37.5°	229.0	231.5	233.9	238.2	237.6	242.5	244.9	249.8	248.6	251.0	252.3
40°	196.1	199.7	203.4	206.5	208.9	213.8	218.7	224.8	226.6	228.4	229.0
42.5°	164.3	168.0	174.1	178.4	182.0	190.0	196.7	204.0	205.8	209.5	210.7
45°	138.7	141.7	149.0	154.5	157.6	169.2	177.1	186.3	189.3	193.6	195.5
47.5°	114.8	120.3	127.7	134.4	138.7	150.9	161.3	171.0	175.3	180.2	182.6
50°	94.1	100.2	109.9	116.1	122.2	135.6	147.2	157.6	161.9	167.4	169.8
52.5°	77.0	83.7	92.8	99.6	106.3	120.3	132.5	142.3	147.8	151.5	155.1
55°	60.5	67.8	77.0	84.3	89.8	105.1	115.4	125.2	128.9	131.9	133.8
57.5°	47.0	52.5	61.7	67.8	74.5	88.0	98.3	105.7	108.7	112.4	113.6
60°	36.6	42.1	50.7	56.8	62.9	75.7	86.1	93.5	96.5	99.6	101.4
62.5°	29.3	34.8	42.8	48.3	53.8	65.4	74.5	81.8	85.5	88.6	90.4
65°	23.2	28.1	34.8	40.3	44.6	55.0	64.1	70.9	74.5	77.6	79.4
67.5°	18.3	22.6	28.7	32.4	36.6	45.2	53.1	59.2	62.3	66.0	67.8
70°	14.0	17.1	22.6	25.7	28.7	36.0	42.1	48.3	51.3	53.8	55.0
72.5°	10.4	12.8	17.1	19.5	21.4	27.5	32.4	36.6	39.1	41.5	42.8
75°	7.3	9.2	12.2	14.0	15.3	19.5	23.8	26.9	28.7	30.5	32.4
77.5°	4.9	6.1	7.9	9.2	10.4	13.4	15.9	18.3	20.2	22.0	22.6
80°	3.1	4.3	5.5	6.1	6.7	8.6	11.0	12.2	13.4	14.7	15.3
82.5°	1.8	2.4	3.1	3.7	4.3	5.5	6.7	7.9	8.6	9.8	10.4
85°	0.6	1.2	1.2	1.8	1.8	3.1	3.7	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°	397.0	397.0	397.0	397.0	397.0	397.0	397.0	397.0
2.5°	398.9	397.0	395.8	395.2	399.5	394.0	396.4	397.0
5°	396.4	394.6	393.4	392.7	396.4	391.5	393.4	394.6
7.5°	392.7	391.5	389.7	389.1	392.7	387.2	389.7	390.3
10°	388.5	386.6	385.4	384.8	387.9	382.4	384.8	384.8
12.5°	383.0	381.7	379.3	379.3	381.7	376.9	378.7	378.7
15°	375.6	374.4	372.0	372.0	374.4	369.5	371.4	371.4
17.5°	369.5	368.3	366.5	365.9	368.3	363.4	365.3	364.6
20°	364.6	363.4	361.0	361.0	362.8	357.9	359.8	359.8
22.5°	360.4	359.8	357.3	357.3	359.8	354.9	356.1	354.9
25°	353.7	353.0	350.6	351.2	352.4	347.5	349.4	348.2
27.5°	342.7	342.7	340.2	339.6	341.4	337.2	338.4	337.8
30°	325.6	326.2	323.1	323.1	323.7	320.1	321.9	321.3
32.5°	302.3	303.0	300.5	299.9	301.7	298.7	299.9	299.9
35°	276.7	277.3	275.5	275.5	277.3	275.5	275.5	274.9
37.5°	251.0	252.3	251.0	251.6	252.9	251.0	252.3	251.6
40°	230.3	231.5	229.7	230.9	232.1	230.3	232.1	230.9
42.5°	211.3	213.2	211.9	213.2	214.4	213.2	214.4	212.6
45°	197.3	198.5	197.9	198.5	199.7	199.1	199.7	199.1
47.5°	183.9	186.3	185.1	186.3	188.1	186.9	188.1	186.3
50°	171.6	173.5	172.9	174.1	174.7	174.1	175.3	173.5
52.5°	155.8	157.6	157.0	157.0	158.2	157.0	158.2	157.0
55°	135.0	135.6	135.6	136.2	135.6	135.0	135.6	134.4
57.5°	114.8	116.1	114.2	116.1	115.4	114.8	114.8	113.6
60°	102.0	103.8	102.6	103.8	103.2	103.2	103.2	102.6
62.5°	91.6	92.8	91.6	92.2	92.2	92.2	91.6	91.0
65°	80.0	81.8	80.6	81.2	80.6	80.0	80.6	80.0
67.5°	68.4	69.0	69.0	68.4	68.4	68.4	68.4	67.2
70°	55.6	56.2	55.6	56.8	56.2	55.6	56.2	55.0
72.5°	43.4	44.0	43.4	44.0	43.4	43.4	43.4	43.4
75°	32.4	33.0	33.0	33.0	33.0	33.0	31.8	33.0
77.5°	23.2	23.2	23.2	23.8	23.2	23.2	23.2	23.2
80°	15.9	15.9	15.9	16.5	15.9	16.5	15.9	16.5
82.5°	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
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)