

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: P251666

Luminaire Tested: **LD4B10D010 EU4B10209027 4LBLWW1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251666  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-11)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B10D010 EU4B10209027 4LBLWW1LI  
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 713.0 lumens  
Efficiency: N/A  
Efficacy: 70.9 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.03 / 1.12  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

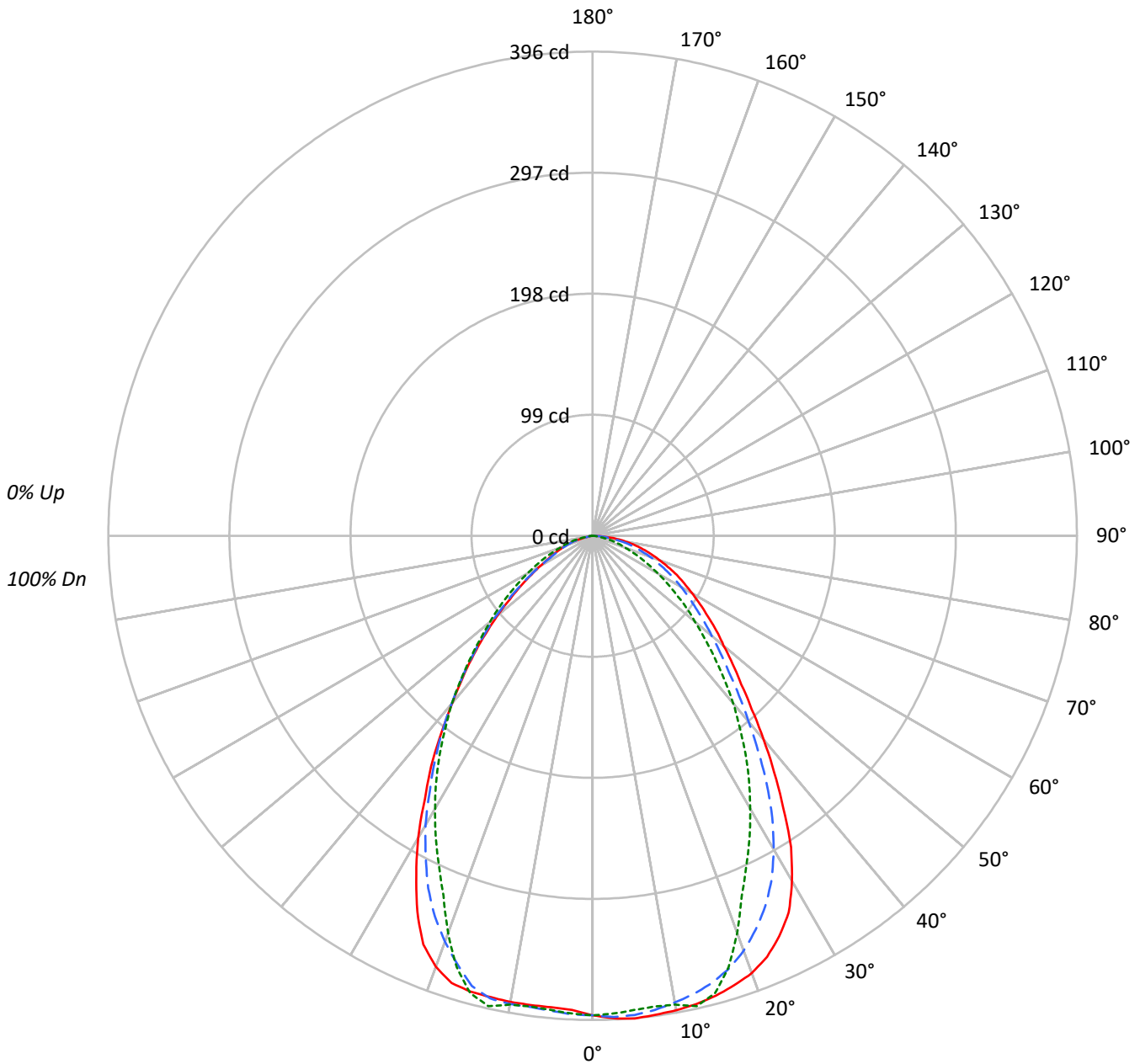
Input Watts (W): 10.05  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					20					
RC	80					70					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				100				
1	111	107	103	100	108	105	101	99	101	98	96	97	95	93	93	91	90	88				88				
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77				77				
3	95	86	79	74	93	84	78	73	82	76	72	79	74	70	77	73	69	67				67				
4	88	78	70	64	86	76	69	64	74	68	63	72	67	62	70	65	62	60				60				
5	82	71	63	57	80	70	62	57	68	61	56	66	60	56	64	59	55	53				53				
6	76	65	57	51	75	64	56	51	62	55	50	60	54	50	59	54	50	48				48				
7	71	59	51	46	70	59	51	46	57	50	46	56	50	45	54	49	45	43				43				
8	67	55	47	42	65	54	47	42	53	46	41	52	46	41	51	45	41	39				39				
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38	36				36				
10	59	47	40	35	58	47	40	35	46	39	35	45	39	35	44	39	35	33				33				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	38223	38223	38223
5°	38770	38095	37870
10°	38991	38536	38308
15°	39289	39057	38936
20°	39483	35853	38892
25°	38841	31980	36486
30°	36698	29000	32106
35°	32361	25936	27376
40°	27658	22760	22684
45°	23706	19420	18951
50°	21196	16572	15435
55°	19540	14171	12217
60°	18264	11987	9648
65°	17503	9939	7956
70°	16555	8036	6725
75°	16041	6514	4782
80°	15490	3536	1291
85°	13530	1901	671



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	37.3	5.2
10°-20°	107.2	15.0
20°-30°	148.7	20.9
30°-40°	146.8	20.6
40°-50°	115.1	16.1
50°-60°	79.7	11.2
60°-70°	48.9	6.9
70°-80°	24.4	3.4
80°-90°	4.9	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°	293.2	41.1
0°-40°	440.0	61.7
0°-60°	634.8	89.0
0°-90°	713.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	713.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	392	392	392	392	392	
5°	396	393	389	390	387	38
15°	389	378	387	381	386	110
25°	361	334	297	318	339	165
35°	272	248	218	225	230	170
45°	172	158	141	139	138	134
55°	115	103	83	74	72	104
65°	76	66	43	32	34	75
75°	43	36	17	13	13	45
85°	12	7	2	1	1	14
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°	392.2	392.2	392.2	392.2	392.2	392.2	392.2	392.2	392.2	392.2	392.2
2.5°	395.1	394.0	393.4	395.1	394.5	395.7	395.1	394.5	393.4	394.0	394.0
5°	396.3	394.5	394.0	395.1	395.1	396.3	395.7	394.5	393.4	394.0	393.4
7.5°	395.1	394.0	394.0	394.5	394.0	395.1	394.0	392.8	391.7	392.2	391.1
10°	394.0	392.2	392.2	392.2	392.2	393.4	392.2	390.5	388.8	388.8	387.6
12.5°	392.2	390.5	390.5	391.1	389.9	391.1	389.9	387.1	385.3	384.8	383.6
15°	389.4	387.6	387.6	387.6	386.5	387.1	385.3	382.5	380.2	380.2	378.4
17.5°	385.3	383.6	383.0	383.0	381.3	381.9	380.2	377.3	373.8	372.7	371.0
20°	380.7	378.4	377.3	377.3	375.6	376.1	373.8	370.4	365.8	364.1	361.2
22.5°	372.7	371.5	369.8	369.2	367.5	366.9	364.6	360.0	356.0	353.1	348.5
25°	361.2	360.6	358.9	358.3	356.0	354.9	352.6	347.4	343.4	338.8	334.2
27.5°	347.4	345.1	343.9	342.2	339.9	339.3	336.5	331.9	325.5	322.7	316.9
30°	326.1	325.0	323.8	322.1	319.8	318.6	316.9	311.7	306.6	301.4	296.2
32.5°	302.0	299.7	297.9	298.5	295.6	294.5	291.6	287.0	282.4	278.9	273.2
35°	272.0	271.5	270.9	269.7	267.4	266.9	264.6	261.1	255.9	251.9	248.5
37.5°	243.9	242.1	241.0	241.0	238.7	238.7	237.0	232.9	230.1	227.2	222.6
40°	217.4	214.5	214.5	214.5	212.2	212.8	211.7	207.6	204.8	201.3	198.4
42.5°	192.7	191.5	190.9	189.8	188.6	188.6	187.5	185.2	182.3	180.0	177.1
45°	172.0	171.4	170.8	170.2	169.1	168.5	167.9	164.5	162.8	160.5	157.6
47.5°	155.3	154.1	153.6	153.0	151.8	151.3	150.1	147.8	146.1	143.8	141.5
50°	139.8	139.2	138.6	138.6	137.5	136.9	135.7	134.0	131.1	130.0	127.1
52.5°	127.7	126.5	125.4	125.4	124.2	124.2	122.5	120.8	117.9	116.8	114.5
55°	115.0	114.5	113.9	113.9	112.7	112.2	111.6	109.3	107.0	105.3	103.0
57.5°	104.1	103.5	103.0	103.0	101.8	101.2	100.7	98.9	96.6	95.5	92.6
60°	93.7	93.7	93.2	92.6	92.0	91.4	90.9	89.1	87.4	85.7	83.4
62.5°	84.5	84.0	83.4	82.8	82.8	82.2	81.7	79.4	78.2	76.5	74.2
65°	75.9	74.8	74.8	74.2	74.2	73.6	73.0	70.7	69.6	67.9	65.6
67.5°	66.7	66.1	65.6	65.6	65.0	65.0	64.4	62.7	61.0	59.8	57.5
70°	58.1	58.1	57.5	57.5	56.9	56.4	56.4	55.2	53.5	51.8	49.5
72.5°	50.6	50.0	49.5	49.5	48.9	48.9	48.3	47.2	46.0	44.9	42.0
75°	42.6	42.0	42.0	42.0	41.4	41.4	40.8	39.7	38.5	37.4	35.7
77.5°	35.1	35.1	34.5	34.5	33.9	33.9	33.9	32.8	31.6	30.5	28.2
80°	27.6	27.6	27.6	27.0	26.5	26.5	26.5	25.3	24.2	23.0	21.3
82.5°	20.1	19.6	19.6	19.0	18.4	18.4	18.4	17.3	16.7	15.0	13.8
85°	12.1	11.5	11.5	10.9	10.4	10.4	10.4	9.8	8.6	8.1	6.9
87.5°	4.6	4.6	4.6	4.6	4.6	4.0	4.0	3.5	3.5	2.9	2.9
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°	392.2	392.2	392.2	392.2	392.2	392.2	392.2	392.2	392.2	392.2	392.2
2.5°	394.0	393.4	393.4	392.8	393.4	392.2	392.2	392.2	392.2	391.1	391.1
5°	392.8	392.8	392.2	391.7	392.2	391.1	391.7	391.1	391.1	389.4	389.4
7.5°	390.5	389.9	388.8	388.2	388.8	388.2	388.2	388.2	389.4	388.2	388.2
10°	386.5	385.9	384.8	384.2	384.2	383.6	384.8	385.9	388.2	389.4	391.7
12.5°	382.5	381.3	380.7	380.7	381.3	381.3	383.6	386.5	392.2	394.0	396.3
15°	377.3	376.7	376.7	378.4	380.7	382.5	387.1	388.8	389.4	387.1	385.9
17.5°	370.4	370.4	371.0	372.7	374.4	374.4	375.0	373.8	372.7	369.8	366.4
20°	358.9	358.3	357.2	357.2	357.2	354.9	356.0	352.0	349.1	345.7	340.5
22.5°	344.5	341.6	337.6	334.7	333.0	331.9	329.0	324.4	320.9	318.6	316.3
25°	329.0	324.4	318.6	314.0	311.2	310.6	306.6	302.5	300.2	297.4	296.2
27.5°	311.2	306.0	299.1	294.5	292.2	290.4	287.0	283.0	280.1	277.8	276.1
30°	290.4	285.3	279.5	273.8	271.5	268.6	265.1	262.3	259.4	257.7	256.5
32.5°	267.4	262.3	256.5	252.5	249.6	247.3	244.4	241.6	239.3	238.1	237.0
35°	243.9	238.7	234.1	230.1	227.8	226.0	223.7	220.3	218.6	218.0	216.8
37.5°	218.6	215.1	211.1	207.6	205.9	203.6	202.5	199.6	199.6	197.3	197.3
40°	195.0	192.7	188.6	185.8	184.6	182.9	181.2	180.0	179.4	178.9	178.3
42.5°	174.3	170.8	168.5	166.2	164.5	163.3	163.3	161.6	161.0	159.3	158.7
45°	155.3	153.6	149.5	147.8	147.2	145.5	144.9	143.8	142.1	140.9	140.3
47.5°	138.6	136.9	134.6	132.3	131.1	130.0	128.8	127.1	126.0	124.2	123.7
50°	124.8	121.9	119.6	117.9	116.2	115.6	114.5	112.2	111.0	109.3	109.3
52.5°	112.2	109.9	107.0	105.3	103.5	102.4	100.7	98.9	97.2	96.6	94.9
55°	101.2	98.3	95.5	93.2	91.4	89.7	89.1	86.8	84.5	83.4	82.2
57.5°	90.9	88.0	84.5	81.7	80.5	79.4	77.6	75.3	73.6	71.9	70.7
60°	80.5	78.2	74.8	71.9	70.7	69.0	67.3	65.0	63.3	61.5	60.4
62.5°	71.9	68.4	65.6	62.7	61.0	59.8	57.5	55.8	53.5	51.8	50.0
65°	63.3	59.8	56.9	54.1	52.9	51.2	49.5	47.2	44.9	43.1	40.8
67.5°	54.6	51.8	48.9	46.0	44.9	43.7	41.4	39.1	36.8	35.1	32.8
70°	47.2	44.3	41.4	39.1	38.0	36.8	34.5	32.2	30.5	28.2	26.5
72.5°	40.3	38.0	35.1	32.8	31.6	30.5	28.2	26.5	24.2	23.0	21.3
75°	33.4	31.1	28.8	26.5	25.3	24.2	22.4	20.7	19.0	17.3	16.1
77.5°	26.5	24.2	21.9	20.1	19.0	18.4	16.7	15.0	13.2	12.1	10.4
80°	19.6	17.3	15.5	13.8	12.7	12.1	10.4	9.2	8.1	6.3	5.8
82.5°	12.1	10.4	9.2	8.1	7.5	6.9	5.8	4.6	4.0	3.5	2.9
85°	6.3	5.8	4.6	4.0	3.5	3.5	2.9	2.3	1.7	1.7	1.2
87.5°	2.3	1.7	1.7	1.2	1.2	1.2	1.2	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	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°	392.2	392.2	392.2	392.2	392.2	392.2	392.2	392.2	392.2	392.2	392.2
2.5°	389.9	390.5	391.1	391.7	391.1	391.1	392.2	389.9	391.7	391.7	389.4
5°	388.8	389.9	389.4	390.5	389.4	389.4	389.9	388.8	389.9	389.9	388.2
7.5°	387.6	388.8	388.8	389.4	388.8	388.8	389.4	387.6	388.8	388.8	387.1
10°	392.8	394.0	393.4	392.8	391.1	389.9	390.5	387.6	388.8	388.8	387.1
12.5°	394.5	394.0	391.7	390.5	389.4	388.2	388.8	386.5	387.6	387.6	386.5
15°	383.0	381.9	380.2	380.7	379.6	379.0	380.2	379.0	381.3	382.5	381.3
17.5°	363.5	362.9	361.8	361.8	361.8	362.3	364.1	364.1	367.5	369.8	371.0
20°	338.2	337.6	338.2	339.3	339.9	342.2	346.2	348.5	353.1	357.2	360.0
22.5°	315.2	316.3	318.1	320.4	320.9	323.8	329.0	331.3	337.0	341.6	344.5
25°	295.6	297.4	298.5	300.2	300.8	304.3	308.9	311.7	318.1	321.5	325.0
27.5°	276.1	278.4	278.9	281.2	281.2	284.7	288.7	291.6	295.6	299.1	302.0
30°	257.1	257.7	259.4	260.0	261.1	264.6	266.9	268.6	273.2	274.9	276.6
32.5°	236.4	238.7	239.8	240.4	239.8	242.7	245.0	246.2	247.9	250.2	251.3
35°	216.8	218.0	218.6	219.7	220.3	220.9	222.0	222.6	224.9	225.5	226.0
37.5°	197.3	199.0	198.4	199.0	199.0	199.6	200.7	200.2	201.9	202.5	201.9
40°	177.7	177.7	178.9	178.3	178.9	178.3	179.4	179.4	179.4	180.0	179.4
42.5°	158.2	158.7	158.2	159.3	158.2	158.7	158.7	158.2	158.7	158.2	158.2
45°	140.3	140.3	140.3	140.3	139.2	139.2	140.3	139.8	139.2	138.6	138.0
47.5°	123.1	123.7	122.5	123.1	122.5	121.9	121.4	121.4	120.8	119.6	119.1
50°	108.7	107.6	107.0	107.6	107.0	106.4	105.8	104.7	104.1	103.0	102.4
52.5°	94.3	93.2	92.0	92.0	91.4	90.3	89.7	88.6	88.0	86.8	86.8
55°	81.7	80.5	79.4	78.8	77.6	76.5	75.9	74.8	74.2	73.0	71.9
57.5°	69.6	67.9	66.7	66.1	65.6	63.8	63.3	62.1	61.0	59.8	59.2
60°	58.7	56.9	55.2	54.6	54.1	52.3	51.8	50.0	49.5	48.3	47.7
62.5°	48.3	47.2	44.9	44.3	43.1	42.0	40.3	39.7	39.1	39.7	39.7
65°	39.1	37.4	35.7	35.1	33.9	32.8	32.2	31.6	32.2	32.2	32.8
67.5°	31.1	29.3	27.6	27.6	27.0	25.9	25.9	25.9	26.5	26.5	27.0
70°	24.7	23.6	22.4	21.9	21.9	21.3	21.9	21.9	22.4	22.4	22.4
72.5°	19.6	19.0	18.4	17.8	17.8	17.8	17.8	17.8	17.8	17.8	18.4
75°	15.0	14.4	13.8	13.8	13.2	13.2	13.2	13.2	13.2	13.2	12.7
77.5°	9.8	9.2	8.6	8.6	8.1	7.5	7.5	6.9	6.9	6.9	6.9
80°	5.2	4.6	4.0	3.5	3.5	2.9	2.9	2.9	2.9	2.3	2.3
82.5°	2.3	1.7	1.7	1.7	1.7	1.2	1.2	1.2	1.2	1.2	1.2
85°	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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°	392.2	392.2	392.2	392.2	392.2	392.2	392.2	392.2
2.5°	390.5	389.4	390.5	391.1	389.9	389.4	390.5	388.2
5°	389.9	388.2	388.8	389.4	388.2	387.6	388.8	387.1
7.5°	388.8	388.2	388.8	389.4	387.6	387.6	388.8	387.1
10°	388.8	387.6	388.2	389.4	388.2	388.2	389.4	387.1
12.5°	388.2	386.5	388.2	388.8	387.6	387.6	388.8	386.5
15°	384.2	384.2	384.8	385.9	385.3	385.9	387.6	385.9
17.5°	375.6	376.7	379.0	380.7	381.9	383.0	384.8	383.6
20°	365.2	366.9	369.8	371.5	373.8	374.4	377.3	375.0
22.5°	349.1	352.6	354.9	356.6	358.3	360.0	362.3	361.8
25°	329.6	331.9	333.6	335.3	337.6	338.8	339.9	339.3
27.5°	306.0	307.1	309.4	310.6	311.7	312.9	315.2	312.3
30°	280.1	280.7	281.8	283.5	283.5	284.7	285.8	285.3
32.5°	253.6	253.6	254.8	255.9	255.4	255.9	258.2	255.4
35°	227.8	227.2	228.9	229.5	229.5	228.9	230.6	230.1
37.5°	202.5	203.0	203.6	204.2	203.0	204.2	204.2	203.0
40°	179.4	178.9	180.0	180.6	180.0	180.6	180.6	178.3
42.5°	158.7	157.6	158.2	158.7	158.2	158.7	158.2	157.0
45°	138.6	138.0	138.0	138.6	137.5	137.5	137.5	137.5
47.5°	119.6	119.1	119.6	119.6	118.5	118.5	119.1	118.5
50°	102.4	101.8	101.8	101.8	101.2	101.2	101.8	101.8
52.5°	86.8	85.7	85.7	85.7	85.7	85.7	86.3	85.1
55°	71.3	71.3	71.3	71.3	71.9	71.9	71.9	71.9
57.5°	58.7	59.2	59.2	59.8	59.2	59.8	59.8	59.2
60°	48.9	48.3	48.9	48.9	49.5	49.5	49.5	49.5
62.5°	40.3	40.3	40.3	40.8	40.8	40.8	41.4	40.8
65°	33.4	33.4	33.9	33.9	33.9	34.5	34.5	34.5
67.5°	27.6	27.6	27.6	27.6	28.2	28.2	28.8	28.2
70°	23.0	23.0	23.0	23.0	23.0	23.6	23.6	23.6
72.5°	18.4	18.4	18.4	18.4	19.0	19.0	19.0	19.0
75°	12.7	12.7	12.7	13.2	12.7	12.7	12.7	12.7
77.5°	6.3	6.3	6.3	6.3	6.3	5.8	5.8	5.8
80°	2.3	2.3	2.3	2.3	2.3	2.3	1.7	2.3
82.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.6
85°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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)