

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: P251895

Luminaire Tested: **LD4B10D010 EU4B10208030 4LBDW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251895  
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 EU4B10208030 4LBDW1H  
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 927.0 lumens  
Efficiency: N/A  
Efficacy: 92.2 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

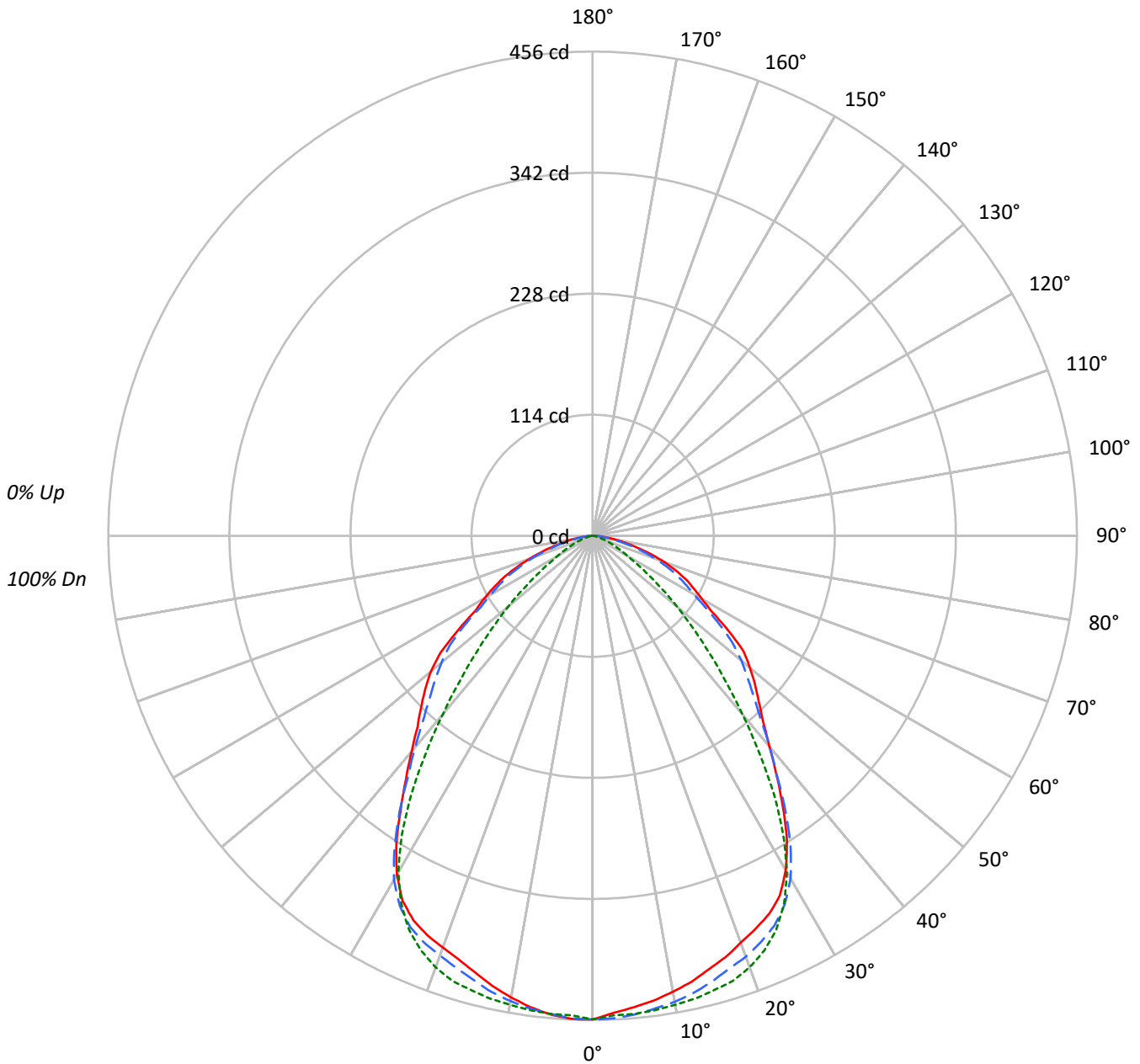
Input Watts (W): 10.05  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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			100																
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88			88																
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76			76																
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66			66																
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58			58																
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51			51																
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46			46																
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41			41																
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37			37																
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34			34																
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31			31																

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

	0°	90°	180°
0°	44392	44392	44392
5°	43603	44219	44288
10°	43137	44384	43692
15°	42639	44687	42992
20°	42294	44845	42802
25°	42271	44003	42949
30°	40929	41165	41480
35°	37179	35431	37513
40°	32900	27900	33701
45°	30515	21253	31480
50°	29323	15723	30172
55°	26557	10840	26201
60°	23078	7368	22942
65°	22300	5327	21170
70°	20174	3590	17980
75°	16606	2372	14234
80°	13357	1571	10607
85°	10958	783	7045



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	43.0	4.6
10°-20°	122.9	13.3
20°-30°	185.7	20.0
30°-40°	194.4	21.0
40°-50°	157.4	17.0
50°-60°	114.5	12.4
60°-70°	70.6	7.6
70°-80°	31.9	3.4
80°-90°	6.5	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°	351.7	37.9
0°-40°	546.0	58.9
0°-60°	818.0	88.2
0°-90°	927.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	927.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	456	456	456	456	456	
5°	446	453	452	452	453	42
15°	423	434	443	433	426	119
25°	393	405	409	406	399	180
35°	312	317	298	317	315	195
45°	221	214	154	217	228	172
55°	156	146	64	148	154	139
65°	97	87	23	86	92	95
75°	44	38	6	33	38	48
85°	10	8	1	6	6	11
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°	455.5	455.5	455.5	455.5	455.5	455.5	455.5	455.5	455.5	455.5	455.5
2.5°	449.9	449.9	454.1	459.0	454.8	450.6	453.4	452.0	456.9	456.9	454.8
5°	445.7	447.1	450.6	454.8	451.3	447.1	450.6	449.2	454.1	454.1	452.7
7.5°	441.5	442.2	446.4	451.3	447.8	443.6	446.4	445.7	449.9	450.6	449.2
10°	435.9	436.6	440.8	445.7	442.2	438.7	441.5	440.8	446.4	446.4	445.7
12.5°	430.3	431.0	435.2	439.4	435.9	432.4	435.2	435.2	440.8	441.5	440.8
15°	422.6	424.0	427.5	431.7	429.6	425.4	428.2	428.2	433.1	434.5	434.5
17.5°	416.2	417.0	420.5	424.7	421.9	418.4	421.2	421.2	426.1	427.5	427.5
20°	407.8	409.2	412.7	417.0	414.8	412.0	414.1	414.1	419.8	421.2	421.9
22.5°	400.8	402.2	405.0	410.6	407.1	405.0	407.8	407.1	413.4	414.1	414.1
25°	393.1	394.5	398.0	401.5	399.4	397.3	399.4	399.4	404.3	405.0	405.0
27.5°	381.9	382.6	386.1	389.6	387.5	384.7	387.5	386.8	391.7	392.4	391.7
30°	363.7	365.1	366.5	371.4	369.3	367.2	370.0	368.6	373.5	373.5	372.8
32.5°	340.6	340.6	343.4	346.9	344.1	342.7	344.8	345.5	349.0	349.0	346.9
35°	312.5	313.9	316.0	318.1	316.0	314.6	316.7	316.0	320.2	318.8	316.7
37.5°	284.5	285.2	287.3	290.1	287.3	285.2	285.9	285.2	288.7	288.7	285.2
40°	258.6	260.0	261.4	264.2	261.4	260.0	260.7	258.6	262.8	261.4	259.3
42.5°	237.6	238.3	240.4	241.8	239.0	238.3	239.0	237.6	239.7	238.3	234.1
45°	221.4	221.4	222.1	224.2	221.4	220.7	220.7	219.3	221.4	218.6	214.4
47.5°	207.4	208.1	208.8	210.2	208.1	206.0	206.7	203.9	205.3	203.2	197.6
50°	193.4	194.8	195.5	196.9	194.8	193.4	194.1	191.3	191.3	187.8	182.9
52.5°	179.4	180.1	179.4	180.8	179.4	177.3	178.0	175.2	175.2	171.0	166.1
55°	156.3	157.0	157.7	159.1	157.7	155.6	157.0	154.9	154.9	152.1	146.5
57.5°	133.1	133.8	134.5	135.2	135.2	133.8	134.5	133.1	132.4	130.3	126.1
60°	118.4	118.4	118.4	119.1	118.4	117.7	117.7	116.3	116.3	113.5	109.3
62.5°	107.2	107.9	107.9	108.6	107.9	107.2	106.5	105.1	104.4	101.6	98.1
65°	96.7	96.7	96.0	97.4	96.7	96.0	96.0	94.6	93.2	90.4	86.9
67.5°	84.1	84.8	84.1	84.8	84.8	84.1	83.4	82.0	81.3	79.2	75.0
70°	70.8	70.8	70.8	71.5	70.8	70.8	71.5	69.4	68.7	65.9	62.4
72.5°	57.5	58.2	58.2	57.5	58.2	56.8	56.8	56.8	56.1	53.3	49.8
75°	44.1	44.8	44.8	45.5	44.8	44.1	44.1	43.4	42.7	40.6	37.8
77.5°	32.9	32.9	33.6	33.6	33.6	32.9	32.9	31.5	31.5	30.1	27.3
80°	23.8	23.8	23.1	23.8	23.8	23.1	23.1	22.4	22.4	21.0	18.9
82.5°	15.4	16.1	16.1	16.1	16.1	15.4	15.4	15.4	14.7	14.0	12.6
85°	9.8	9.8	9.8	9.8	10.5	9.8	10.5	9.8	9.8	8.4	7.7
87.5°	4.2	4.2	4.2	4.9	4.9	4.2	4.2	4.2	4.2	4.2	3.5
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°	455.5	455.5	455.5	455.5	455.5	455.5	455.5	455.5	455.5	455.5	455.5
2.5°	454.8	455.5	453.4	456.2	454.1	454.8	455.5	454.8	452.0	452.0	459.7
5°	452.0	453.4	451.3	454.8	453.4	453.4	454.8	454.1	451.3	452.0	459.0
7.5°	449.2	451.3	449.9	453.4	451.3	451.3	452.7	452.7	449.9	450.6	456.9
10°	445.0	447.8	447.1	450.6	448.5	448.5	450.6	450.6	447.8	448.5	454.8
12.5°	441.5	444.3	443.6	447.1	445.7	446.4	447.1	448.5	445.0	446.4	452.0
15°	435.9	438.7	438.7	442.2	440.8	442.2	443.6	445.7	442.9	442.9	448.5
17.5°	429.6	433.1	433.1	435.9	435.9	436.6	439.4	441.5	438.7	439.4	444.3
20°	422.6	426.8	426.8	430.3	429.6	431.0	433.1	435.2	432.4	432.4	438.0
22.5°	415.5	419.1	419.8	421.9	421.9	422.6	424.7	426.1	422.6	422.6	428.2
25°	405.7	409.2	409.9	411.3	409.9	409.9	411.3	412.7	409.2	409.2	414.1
27.5°	392.4	395.9	395.9	395.2	393.8	394.5	393.8	394.5	391.0	390.3	395.2
30°	372.8	374.9	374.9	374.2	372.1	372.1	370.0	370.7	365.8	365.8	370.0
32.5°	346.2	348.3	346.9	345.5	342.7	341.3	339.9	339.2	334.3	334.3	339.2
35°	314.6	316.0	313.9	311.1	307.6	305.5	303.4	300.6	297.1	297.8	300.6
37.5°	282.4	282.4	279.6	274.0	271.2	267.7	264.2	264.2	258.6	257.9	260.0
40°	255.1	252.3	247.4	239.7	234.8	231.2	226.3	223.5	219.3	219.3	222.8
42.5°	230.5	224.9	218.6	208.1	203.2	199.0	192.7	189.9	185.0	184.3	186.4
45°	208.8	203.2	194.1	182.9	176.6	171.7	162.6	159.1	154.9	154.2	155.6
47.5°	191.3	185.0	173.8	159.1	152.8	146.5	137.3	132.4	128.9	126.8	128.9
50°	175.9	167.5	155.6	140.2	131.7	126.1	114.9	110.0	105.1	103.7	104.4
52.5°	159.1	150.7	138.0	121.9	114.2	105.8	95.3	88.3	84.1	82.0	84.1
55°	140.9	132.4	119.8	103.7	95.3	87.6	76.4	70.8	65.9	63.8	65.9
57.5°	121.2	113.5	102.3	86.2	78.5	71.5	61.0	55.4	50.5	49.1	50.5
60°	104.4	98.1	86.9	71.5	65.2	57.5	48.4	42.7	38.5	37.8	38.5
62.5°	93.2	86.2	75.7	61.0	54.7	48.4	39.9	34.3	30.8	30.1	30.8
65°	82.0	74.3	64.5	51.9	45.5	40.6	32.2	27.3	23.8	23.1	23.8
67.5°	69.4	62.4	54.0	42.7	37.8	32.9	25.9	21.0	18.2	17.5	18.2
70°	57.5	51.2	42.7	34.3	29.4	25.9	19.6	16.1	13.3	12.6	13.3
72.5°	45.5	39.9	32.9	25.9	23.1	19.6	15.4	11.9	9.8	9.1	9.8
75°	35.0	30.8	25.2	18.9	16.8	14.7	10.5	8.4	7.0	6.3	7.0
77.5°	24.5	21.7	17.5	14.0	11.9	10.5	7.7	5.6	4.9	4.2	4.9
80°	16.8	14.7	11.9	9.1	7.7	6.3	4.9	3.5	2.8	2.8	2.8
82.5°	11.2	9.1	7.0	5.6	4.9	4.2	2.8	2.1	2.1	1.4	1.4
85°	6.3	5.6	4.2	3.5	2.8	2.1	1.4	1.4	0.7	0.7	0.7
87.5°	2.8	2.1	1.4	1.4	0.7	0.7	0.7	0.7	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°	455.5	455.5	455.5	455.5	455.5	455.5	455.5	455.5	455.5	455.5	455.5
2.5°	457.6	455.5	458.3	455.5	454.1	455.5	454.1	458.3	454.8	452.0	454.8
5°	456.9	454.1	456.9	454.8	452.7	453.4	452.0	456.2	452.0	449.9	451.3
7.5°	455.5	453.4	454.8	452.7	450.6	451.3	449.9	453.4	449.2	447.1	448.5
10°	453.4	451.3	452.0	450.6	448.5	448.5	447.1	449.9	445.0	442.2	443.6
12.5°	450.6	447.8	449.2	447.1	444.3	444.3	442.9	445.0	440.1	437.3	438.0
15°	447.1	444.3	444.3	442.2	439.4	439.4	436.6	438.7	433.1	430.3	430.3
17.5°	442.9	439.4	439.4	437.3	433.8	433.1	431.0	433.1	426.8	424.0	424.0
20°	436.6	433.8	433.1	431.7	428.2	427.5	424.7	425.4	420.5	418.4	417.7
22.5°	428.2	425.4	426.1	424.0	421.2	420.5	417.7	419.8	414.8	412.7	413.4
25°	413.4	412.0	413.4	412.7	410.6	410.6	409.2	410.6	406.4	405.0	405.7
27.5°	396.6	395.9	396.6	396.6	395.2	395.2	395.2	397.3	393.1	392.4	392.4
30°	372.1	372.1	372.8	373.5	373.5	374.9	374.2	377.0	374.2	372.8	374.2
32.5°	339.9	342.7	344.8	344.8	344.8	346.2	347.6	349.7	346.9	347.6	347.6
35°	303.4	305.5	306.9	310.4	308.3	313.2	314.6	317.4	316.7	318.1	317.4
37.5°	262.8	265.6	268.4	273.3	272.6	278.2	281.0	286.6	285.2	288.0	289.4
40°	224.9	229.1	233.4	236.9	239.7	245.3	250.9	257.9	260.0	262.1	262.8
42.5°	188.5	192.7	199.7	204.6	208.8	217.9	225.6	234.1	236.2	240.4	241.8
45°	159.1	162.6	171.0	177.3	180.8	194.1	203.2	213.7	217.2	222.1	224.2
47.5°	131.7	138.0	146.5	154.2	159.1	173.1	185.0	196.2	201.1	206.7	209.5
50°	107.9	114.9	126.1	133.1	140.2	155.6	168.9	180.8	185.7	192.0	194.8
52.5°	88.3	96.0	106.5	114.2	121.9	138.0	152.1	163.3	169.6	173.8	178.0
55°	69.4	77.8	88.3	96.7	103.0	120.5	132.4	143.7	147.9	151.4	153.5
57.5°	54.0	60.3	70.8	77.8	85.5	100.9	112.8	121.2	124.7	128.9	130.3
60°	42.0	48.4	58.2	65.2	72.2	86.9	98.8	107.2	110.7	114.2	116.3
62.5°	33.6	39.9	49.1	55.4	61.7	75.0	85.5	93.9	98.1	101.6	103.7
65°	26.6	32.2	39.9	46.2	51.2	63.1	73.6	81.3	85.5	89.0	91.1
67.5°	21.0	25.9	32.9	37.1	42.0	51.9	61.0	68.0	71.5	75.7	77.8
70°	16.1	19.6	25.9	29.4	32.9	41.3	48.4	55.4	58.9	61.7	63.1
72.5°	11.9	14.7	19.6	22.4	24.5	31.5	37.1	42.0	44.8	47.7	49.1
75°	8.4	10.5	14.0	16.1	17.5	22.4	27.3	30.8	32.9	35.0	37.1
77.5°	5.6	7.0	9.1	10.5	11.9	15.4	18.2	21.0	23.1	25.2	25.9
80°	3.5	4.9	6.3	7.0	7.7	9.8	12.6	14.0	15.4	16.8	17.5
82.5°	2.1	2.8	3.5	4.2	4.9	6.3	7.7	9.1	9.8	11.2	11.9
85°	0.7	1.4	1.4	2.1	2.1	3.5	4.2	4.9	5.6	6.3	7.0
87.5°	0.0	0.0	0.7	0.7	0.7	0.7	1.4	1.4	1.4	1.4	1.4
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°	455.5	455.5	455.5	455.5	455.5	455.5	455.5	455.5
2.5°	457.6	455.5	454.1	453.4	458.3	452.0	454.8	455.5
5°	454.8	452.7	451.3	450.6	454.8	449.2	451.3	452.7
7.5°	450.6	449.2	447.1	446.4	450.6	444.3	447.1	447.8
10°	445.7	443.6	442.2	441.5	445.0	438.7	441.5	441.5
12.5°	439.4	438.0	435.2	435.2	438.0	432.4	434.5	434.5
15°	431.0	429.6	426.8	426.8	429.6	424.0	426.1	426.1
17.5°	424.0	422.6	420.5	419.8	422.6	417.0	419.1	418.4
20°	418.4	417.0	414.1	414.1	416.2	410.6	412.7	412.7
22.5°	413.4	412.7	409.9	409.9	412.7	407.1	408.5	407.1
25°	405.7	405.0	402.2	402.9	404.3	398.7	400.8	399.4
27.5°	393.1	393.1	390.3	389.6	391.7	386.8	388.2	387.5
30°	373.5	374.2	370.7	370.7	371.4	367.2	369.3	368.6
32.5°	346.9	347.6	344.8	344.1	346.2	342.7	344.1	344.1
35°	317.4	318.1	316.0	316.0	318.1	316.0	316.0	315.3
37.5°	288.0	289.4	288.0	288.7	290.1	288.0	289.4	288.7
40°	264.2	265.6	263.5	264.9	266.3	264.2	266.3	264.9
42.5°	242.5	244.6	243.2	244.6	246.0	244.6	246.0	243.9
45°	226.3	227.7	227.0	227.7	229.1	228.4	229.1	228.4
47.5°	210.9	213.7	212.3	213.7	215.8	214.4	215.8	213.7
50°	196.9	199.0	198.3	199.7	200.4	199.7	201.1	199.0
52.5°	178.7	180.8	180.1	180.1	181.5	180.1	181.5	180.1
55°	154.9	155.6	155.6	156.3	155.6	154.9	155.6	154.2
57.5°	131.7	133.1	131.0	133.1	132.4	131.7	131.7	130.3
60°	117.0	119.1	117.7	119.1	118.4	118.4	118.4	117.7
62.5°	105.1	106.5	105.1	105.8	105.8	105.8	105.1	104.4
65°	91.8	93.9	92.5	93.2	92.5	91.8	92.5	91.8
67.5°	78.5	79.2	79.2	78.5	78.5	78.5	78.5	77.1
70°	63.8	64.5	63.8	65.2	64.5	63.8	64.5	63.1
72.5°	49.8	50.5	49.8	50.5	49.8	49.8	49.8	49.8
75°	37.1	37.8	37.8	37.8	37.8	37.8	36.4	37.8
77.5°	26.6	26.6	26.6	27.3	26.6	26.6	26.6	26.6
80°	18.2	18.2	18.2	18.9	18.2	18.9	18.2	18.9
82.5°	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9
85°	6.3	7.0	7.0	6.3	6.3	6.3	6.3	6.3
87.5°	1.4	0.7	0.7	0.7	0.7	0.7	0.7	0.7
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)