

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: P251776

Luminaire Tested: **LD4B20D010 EU4B10209730 4LBLWW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251776  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-12)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B20D010 EU4B10209730 4LBLWW1H  
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 97CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1156.0 lumens  
Efficiency: N/A  
Efficacy: 55.6 lumens/watt  
Spacing Criteria (0/90/45): 1.12 / 1.03 / 1.12  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

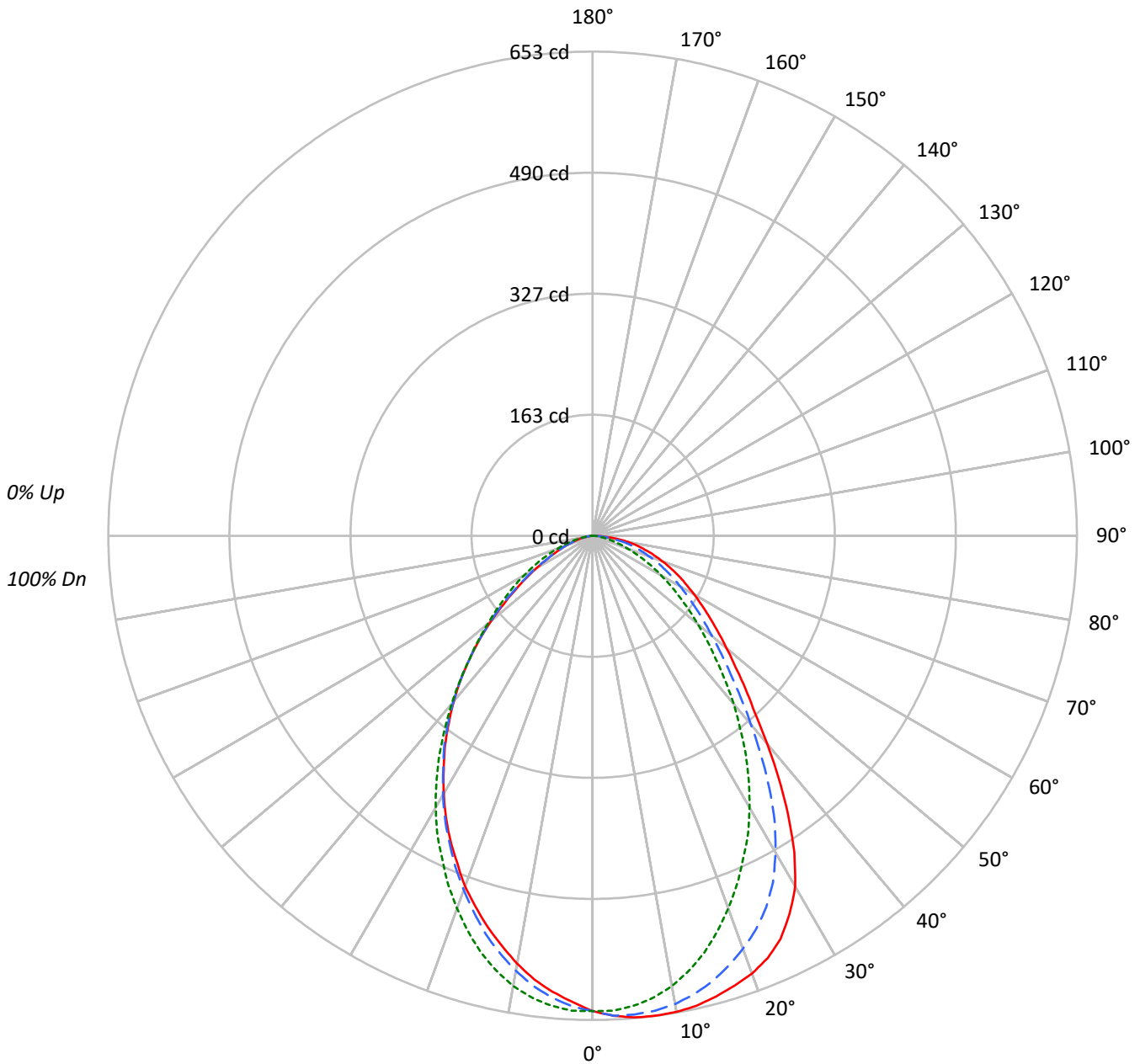
Input Watts (W): 20.8  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	104	101	98	100	98	95	96	94	92	93	91	90	88				88				
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	76				76				
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67				67				
4	88	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59				59				
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52				52				
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47				47				
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42				42				
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38				38				
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35				35				
10	59	46	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32				32				

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

	0°	90°	180°
0°	62480	62480	62480
5°	63785	62240	60400
10°	64523	61010	57982
15°	64886	58711	55130
20°	65163	55445	52167
25°	64488	51648	48788
30°	61489	47614	45172
35°	54681	42831	41308
40°	46551	37645	37022
45°	40108	32348	32224
50°	35736	27958	27064
55°	32844	24128	21613
60°	30758	20759	16919
65°	29564	17503	13191
70°	28381	14048	10686
75°	27488	11146	8171
80°	27669	7745	4995
85°	23147	5479	2236



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	60.0	5.2
10°-20°	165.0	14.3
20°-30°	230.7	20.0
30°-40°	237.2	20.5
40°-50°	192.5	16.7
50°-60°	135.5	11.7
60°-70°	83.4	7.2
70°-80°	41.7	3.6
80°-90°	9.9	0.9
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°	455.8	39.4
0°-40°	692.9	59.9
0°-60°	1021.0	88.3
0°-90°	1156.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1156.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	641	641	641	641	641	
5°	652	648	636	625	617	62
15°	643	622	582	556	546	182
25°	600	553	480	457	454	274
35°	460	415	360	349	347	286
45°	291	262	235	235	234	226
55°	193	170	142	130	127	174
65°	128	108	76	58	57	127
75°	73	57	30	22	22	78
85°	21	14	5	3	2	24
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°	641.1	641.1	641.1	641.1	641.1	641.1	641.1	641.1	641.1	641.1	641.1
2.5°	648.0	649.0	646.0	649.0	645.1	647.0	648.0	646.0	644.1	648.0	648.0
5°	652.0	652.0	649.0	652.9	648.0	649.0	651.0	648.0	645.1	649.0	648.0
7.5°	652.9	652.9	649.0	652.9	648.0	649.0	650.0	647.0	644.1	647.0	646.0
10°	652.0	651.0	648.0	652.0	647.0	647.0	648.0	645.1	640.1	643.1	641.1
12.5°	649.0	649.0	645.1	649.0	642.1	642.1	643.1	639.1	635.2	635.2	633.2
15°	643.1	643.1	639.1	642.1	636.2	636.2	635.2	631.2	626.3	626.3	622.4
17.5°	636.2	636.2	632.2	635.2	628.3	628.3	627.3	621.4	614.5	613.5	608.6
20°	628.3	628.3	623.4	625.3	617.4	617.4	616.5	609.5	601.7	599.7	592.8
22.5°	616.5	616.5	611.5	612.5	604.6	603.6	602.6	594.8	586.9	583.9	575.0
25°	599.7	598.7	594.8	594.8	586.9	584.9	582.9	575.0	567.1	561.2	553.3
27.5°	575.0	576.0	571.1	572.1	562.2	560.2	559.2	549.4	540.5	534.6	526.7
30°	546.4	543.5	538.5	538.5	530.6	529.7	527.7	518.8	508.9	502.0	493.2
32.5°	506.0	505.0	500.1	500.1	491.2	491.2	487.2	478.4	469.5	465.5	456.7
35°	459.6	458.6	454.7	454.7	446.8	447.8	443.8	436.9	428.1	422.1	415.2
37.5°	412.3	411.3	407.4	408.3	401.4	401.4	398.5	391.6	384.7	381.7	372.8
40°	365.9	364.9	360.0	363.0	357.0	355.1	354.1	349.2	341.3	337.3	332.4
42.5°	323.5	324.5	319.6	321.5	316.6	314.6	313.7	309.7	303.8	299.8	294.9
45°	291.0	289.0	287.0	287.0	282.1	281.1	280.1	275.2	271.2	267.3	262.4
47.5°	260.4	258.4	256.4	257.4	253.5	252.5	250.5	246.6	241.6	239.7	234.7
50°	235.7	234.7	231.8	231.8	227.8	226.9	224.9	221.9	217.0	214.0	210.1
52.5°	213.0	213.0	210.1	209.1	206.1	205.2	204.2	200.2	196.3	192.3	188.4
55°	193.3	192.3	190.4	190.4	186.4	185.4	184.4	180.5	176.6	173.6	169.6
57.5°	174.6	174.6	172.6	172.6	169.6	167.7	167.7	163.7	158.8	156.8	151.9
60°	157.8	157.8	155.8	155.8	152.9	152.9	150.9	147.0	144.0	140.1	136.1
62.5°	142.0	143.0	141.0	140.1	137.1	136.1	136.1	133.2	128.2	125.3	121.3
65°	128.2	127.2	126.2	125.3	122.3	121.3	121.3	117.4	114.4	110.5	107.5
67.5°	113.4	113.4	111.5	111.5	109.5	108.5	106.5	103.6	100.6	97.6	94.7
70°	99.6	99.6	98.6	98.6	95.7	94.7	93.7	90.7	87.8	84.8	80.9
72.5°	86.8	85.8	84.8	84.8	82.9	81.9	80.9	77.9	75.0	72.0	69.0
75°	73.0	73.0	72.0	72.0	70.0	69.0	69.0	67.1	63.1	61.2	57.2
77.5°	61.2	61.2	60.2	60.2	58.2	58.2	57.2	54.2	52.3	49.3	47.3
80°	49.3	48.3	48.3	47.3	45.4	45.4	44.4	43.4	40.4	38.5	35.5
82.5°	34.5	34.5	34.5	33.5	32.5	32.5	31.6	29.6	27.6	26.6	23.7
85°	20.7	20.7	19.7	18.7	19.7	18.7	17.8	16.8	15.8	14.8	13.8
87.5°	8.9	8.9	7.9	7.9	7.9	7.9	7.9	6.9	5.9	5.9	4.9
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°	641.1	641.1	641.1	641.1	641.1	641.1	641.1	641.1	641.1	641.1	641.1
2.5°	642.1	645.1	644.1	643.1	641.1	641.1	641.1	640.1	641.1	641.1	639.1
5°	642.1	644.1	643.1	641.1	639.1	639.1	638.2	636.2	636.2	636.2	632.2
7.5°	639.1	641.1	638.2	636.2	634.2	632.2	632.2	629.3	629.3	628.3	624.3
10°	633.2	634.2	630.3	628.3	625.3	624.3	622.4	618.4	617.4	616.5	612.5
12.5°	624.3	625.3	620.4	616.5	612.5	611.5	609.5	604.6	602.6	600.7	595.7
15°	611.5	611.5	605.6	600.7	596.7	595.7	590.8	585.9	583.9	581.9	575.0
17.5°	596.7	595.7	587.8	582.9	578.0	576.0	571.1	565.2	561.2	559.2	553.3
20°	580.9	578.0	569.1	564.2	558.3	555.3	550.4	542.5	538.5	534.6	528.7
22.5°	562.2	558.3	548.4	541.5	535.6	532.6	525.7	518.8	512.9	508.9	502.0
25°	539.5	534.6	523.7	514.9	509.9	507.0	500.1	492.2	486.3	480.3	474.4
27.5°	512.9	507.0	496.1	487.2	482.3	477.4	472.4	463.6	458.6	453.7	446.8
30°	480.3	473.4	463.6	455.7	449.8	445.8	439.9	432.0	426.1	423.1	416.2
32.5°	444.8	436.9	428.1	420.2	417.2	412.3	407.4	399.5	394.5	391.6	386.6
35°	405.4	399.5	389.6	383.7	378.7	376.8	372.8	364.9	363.0	360.0	354.1
37.5°	364.0	359.0	352.1	347.2	343.2	341.3	337.3	332.4	329.4	326.5	323.5
40°	325.5	321.5	315.6	311.7	306.7	303.8	303.8	297.9	295.9	295.9	292.9
42.5°	288.0	286.0	281.1	275.2	274.2	271.2	270.3	267.3	265.3	264.3	263.3
45°	256.4	253.5	248.6	245.6	242.6	242.6	239.7	236.7	235.7	234.7	233.8
47.5°	228.8	224.9	220.9	218.0	216.0	215.0	212.1	210.1	209.1	209.1	208.1
50°	204.2	201.2	197.3	194.3	192.3	190.4	188.4	186.4	185.4	184.4	184.4
52.5°	183.5	179.5	175.6	172.6	169.6	168.7	166.7	164.7	163.7	162.7	161.8
55°	164.7	161.8	156.8	153.9	150.9	150.9	147.9	145.0	143.0	142.0	141.0
57.5°	147.0	144.0	139.1	136.1	134.1	132.2	130.2	128.2	126.2	124.3	122.3
60°	131.2	128.2	123.3	119.3	118.4	116.4	114.4	110.5	108.5	106.5	104.6
62.5°	116.4	112.4	108.5	104.6	103.6	101.6	98.6	95.7	92.7	90.7	87.8
65°	102.6	99.6	94.7	91.7	88.8	87.8	84.8	80.9	77.9	75.9	73.0
67.5°	89.8	85.8	80.9	77.9	75.9	74.0	71.0	68.1	65.1	62.1	59.2
70°	76.9	74.0	69.0	66.1	64.1	62.1	59.2	55.2	52.3	49.3	47.3
72.5°	65.1	61.2	57.2	54.2	52.3	50.3	47.3	44.4	41.4	39.5	36.5
75°	54.2	50.3	47.3	43.4	42.4	40.4	37.5	34.5	31.6	29.6	27.6
77.5°	43.4	40.4	36.5	34.5	32.5	30.6	28.6	25.6	23.7	20.7	18.7
80°	32.5	29.6	26.6	24.7	22.7	21.7	19.7	17.8	15.8	13.8	12.8
82.5°	21.7	19.7	16.8	15.8	14.8	13.8	11.8	10.8	9.9	8.9	7.9
85°	11.8	10.8	9.9	7.9	7.9	6.9	5.9	5.9	4.9	4.9	3.9
87.5°	4.9	3.9	3.9	3.0	3.0	3.0	2.0	2.0	2.0	1.0	1.0
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°	641.1	641.1	641.1	641.1	641.1	641.1	641.1	641.1	641.1	641.1	641.1
2.5°	640.1	636.2	636.2	636.2	633.2	634.2	635.2	636.2	635.2	632.2	635.2
5°	633.2	629.3	629.3	627.3	625.3	625.3	625.3	626.3	625.3	622.4	623.4
7.5°	624.3	619.4	618.4	616.5	614.5	613.5	613.5	613.5	612.5	608.6	610.5
10°	610.5	605.6	603.6	602.6	599.7	598.7	597.7	596.7	595.7	591.8	593.8
12.5°	593.8	589.8	585.9	584.9	581.9	580.0	579.0	579.0	577.0	573.1	575.0
15°	574.0	568.1	565.2	563.2	560.2	558.3	556.3	557.3	556.3	552.3	553.3
17.5°	550.4	544.5	541.5	540.5	536.6	534.6	533.6	533.6	532.6	528.7	529.7
20°	524.7	518.8	516.8	514.9	512.9	510.9	509.9	508.9	508.0	504.0	507.0
22.5°	499.1	492.2	489.2	489.2	485.3	484.3	483.3	484.3	483.3	479.4	481.3
25°	472.4	465.5	463.6	460.6	458.6	457.7	457.7	457.7	456.7	454.7	456.7
27.5°	442.9	437.9	435.0	434.0	432.0	431.0	430.0	431.0	431.0	428.1	430.0
30°	413.3	409.3	407.4	406.4	403.4	402.4	403.4	403.4	403.4	400.4	403.4
32.5°	383.7	380.7	379.7	376.8	374.8	374.8	374.8	375.8	374.8	372.8	375.8
35°	354.1	350.1	349.2	348.2	348.2	346.2	348.2	347.2	349.2	346.2	348.2
37.5°	322.5	320.6	319.6	319.6	317.6	318.6	318.6	318.6	320.6	317.6	319.6
40°	292.9	291.0	291.0	291.0	290.0	290.0	290.0	291.0	292.0	290.0	292.0
42.5°	263.3	262.4	262.4	261.4	260.4	261.4	262.4	262.4	263.3	261.4	262.4
45°	234.7	233.8	234.7	233.8	233.8	232.8	233.8	234.7	234.7	233.8	233.8
47.5°	208.1	208.1	207.1	207.1	207.1	207.1	207.1	207.1	207.1	205.2	207.1
50°	184.4	182.5	183.5	182.5	182.5	181.5	181.5	180.5	179.5	178.5	178.5
52.5°	161.8	159.8	159.8	158.8	157.8	157.8	156.8	155.8	154.9	152.9	152.9
55°	140.1	138.1	137.1	136.1	135.1	134.1	133.2	132.2	130.2	129.2	129.2
57.5°	120.3	118.4	116.4	116.4	114.4	113.4	111.5	109.5	108.5	106.5	106.5
60°	102.6	100.6	97.6	96.7	95.7	93.7	90.7	89.8	88.8	86.8	87.8
62.5°	85.8	82.9	79.9	78.9	77.9	75.9	74.0	72.0	71.0	72.0	72.0
65°	70.0	67.1	65.1	63.1	62.1	60.2	59.2	58.2	58.2	58.2	59.2
67.5°	56.2	53.3	51.3	50.3	48.3	47.3	47.3	47.3	47.3	47.3	47.3
70°	44.4	42.4	40.4	38.5	38.5	37.5	37.5	37.5	37.5	37.5	37.5
72.5°	33.5	31.6	30.6	30.6	29.6	29.6	29.6	29.6	28.6	28.6	29.6
75°	24.7	23.7	22.7	22.7	22.7	21.7	21.7	21.7	21.7	21.7	21.7
77.5°	17.8	16.8	16.8	15.8	15.8	15.8	15.8	15.8	15.8	14.8	14.8
80°	11.8	10.8	10.8	10.8	10.8	9.9	9.9	9.9	9.9	9.9	9.9
82.5°	6.9	6.9	6.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
85°	3.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
87.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	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





TEST NUMBER: P251776

CATALOG NUMBER: LD4B20D010 EU4B10209730 4LBLWW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	641.1	641.1	641.1	641.1	641.1	641.1	641.1	641.1
2.5°	629.3	633.2	634.2	631.2	632.2	630.3	631.2	629.3
5°	618.4	621.4	622.4	620.4	620.4	618.4	619.4	617.4
7.5°	604.6	607.6	608.6	606.6	606.6	604.6	604.6	603.6
10°	588.8	589.8	591.8	588.8	589.8	587.8	587.8	585.9
12.5°	569.1	571.1	573.1	570.1	570.1	569.1	569.1	566.1
15°	548.4	550.4	551.4	549.4	549.4	548.4	547.4	546.4
17.5°	526.7	527.7	529.7	526.7	528.7	526.7	526.7	524.7
20°	502.0	505.0	506.0	503.0	504.0	503.0	503.0	503.0
22.5°	478.4	480.3	481.3	479.4	480.3	478.4	479.4	477.4
25°	453.7	454.7	455.7	453.7	455.7	454.7	453.7	453.7
27.5°	428.1	429.1	430.0	428.1	430.0	429.1	430.0	428.1
30°	400.4	402.4	404.4	402.4	403.4	402.4	402.4	401.4
32.5°	372.8	374.8	376.8	374.8	376.8	374.8	375.8	373.8
35°	347.2	348.2	349.2	347.2	348.2	348.2	348.2	347.2
37.5°	318.6	320.6	320.6	319.6	321.5	320.6	320.6	318.6
40°	291.0	292.0	292.9	291.0	292.0	291.0	292.0	291.0
42.5°	262.4	264.3	265.3	263.3	263.3	263.3	262.4	263.3
45°	232.8	234.7	236.7	233.8	234.7	234.7	234.7	233.8
47.5°	206.1	206.1	207.1	206.1	207.1	205.2	207.1	206.1
50°	178.5	178.5	180.5	178.5	178.5	178.5	178.5	178.5
52.5°	151.9	152.9	152.9	150.9	151.9	150.9	151.9	150.9
55°	127.2	127.2	128.2	127.2	127.2	127.2	127.2	127.2
57.5°	105.5	106.5	106.5	105.5	106.5	105.5	105.5	105.5
60°	87.8	87.8	87.8	86.8	87.8	86.8	87.8	86.8
62.5°	71.0	72.0	72.0	71.0	72.0	71.0	71.0	71.0
65°	58.2	58.2	58.2	58.2	58.2	58.2	58.2	57.2
67.5°	46.4	46.4	47.3	46.4	47.3	47.3	47.3	47.3
70°	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5
72.5°	28.6	28.6	29.6	28.6	28.6	28.6	28.6	28.6
75°	21.7	21.7	21.7	21.7	21.7	20.7	20.7	21.7
77.5°	14.8	14.8	14.8	14.8	14.8	14.8	14.8	15.8
80°	9.9	9.9	9.9	9.9	8.9	8.9	9.9	8.9
82.5°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
85°	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
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)