

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: P170850

Luminaire Tested: **LDA4A09930D010TE LAR25NF 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170850
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26102)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A09930D010TE LAR25NF 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 25° Narrow Flood Optic,
at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 680.0 lumens
Efficiency: N/A
Efficacy: 49.1 lumens/watt
Spacing Criteria (0/90/45): 2.11 / 1.09 / 1.54
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

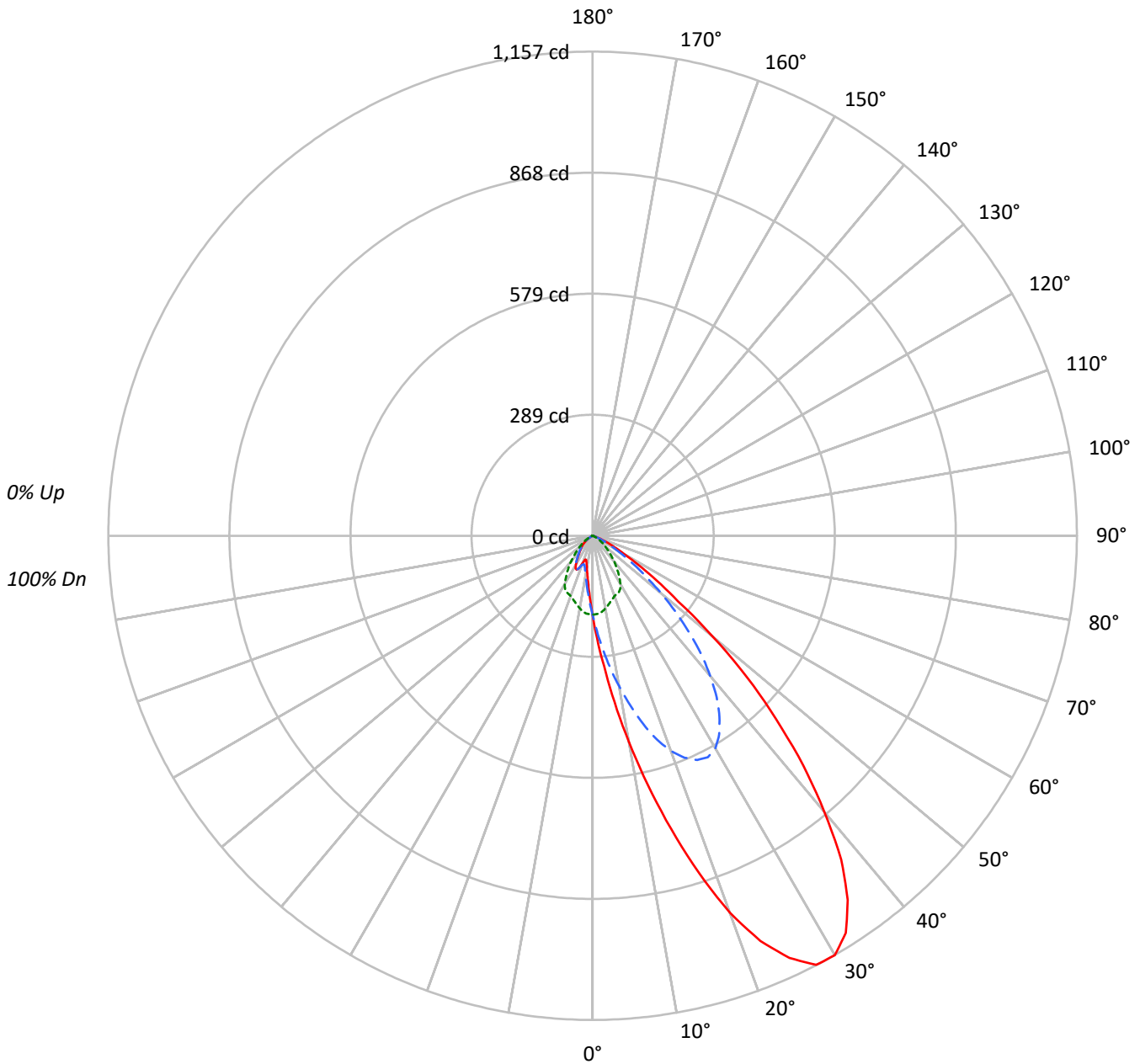
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90																			
2	104	98	93	88	102	96	91	87	93	89	85	90	86	84	87	84	82	80																			
3	97	89	82	77	95	87	81	76	84	79	75	82	77	74	79	76	73	71																			
4	90	80	73	67	88	79	72	67	77	71	66	74	69	65	72	68	65	63																			
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56																			
6	78	66	58	53	76	65	58	53	64	57	52	62	56	52	61	55	52	50																			
7	72	60	53	47	71	60	52	47	58	52	47	57	51	47	56	50	46	45																			
8	67	55	48	43	66	55	47	42	53	47	42	52	46	42	51	46	42	40																			
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38	36																			
10	59	47	40	35	58	46	39	35	45	39	35	45	39	34	44	38	34	33																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	23251	23251	23251
5°	38680	23067	14524
10°	62637	22056	9807
15°	92618	20904	7623
20°	125827	20096	9005
25°	151476	20183	12221
30°	164831	18914	11408
35°	160003	15931	9125
40°	138603	12833	7487
45°	108081	9873	6402
50°	71672	7388	4932
55°	39977	5419	2946
60°	21067	3602	1209
65°	11353	1810	117
70°	5410	649	144
75°	1906	429	191
80°	639	639	0
85°	1840	1274	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	20.1	3.0
10°-20°	79.4	11.7
20°-30°	163.2	24.0
30°-40°	195.0	28.7
40°-50°	144.0	21.2
50°-60°	60.6	8.9
60°-70°	14.9	2.2
70°-80°	2.0	0.3
80°-90°	0.8	0.1
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°	262.7	38.6
0°-40°	457.7	67.3
0°-60°	662.3	97.4
0°-90°	680.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	680.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	188	188	188	188	188	
5°	312	269	186	134	117	36
15°	725	466	164	74	60	213
25°	1113	591	148	89	90	509
35°	1063	528	106	63	61	652
45°	620	326	57	37	37	476
55°	186	121	25	16	14	177
65°	39	27	6	1	0	42
75°	4	2	1	0	0	6
85°	1	1	1	0	0	1
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5
2.5°	245.2	242.1	242.1	243.0	245.6	243.4	241.6	239.9	241.6	237.6	239.0
5°	312.4	312.0	312.0	308.5	311.6	312.0	308.5	305.4	306.2	300.5	300.5
7.5°	400.9	398.3	397.4	392.5	396.1	395.6	389.9	384.6	384.6	375.3	373.1
10°	500.1	496.5	494.8	488.6	491.7	489.9	481.5	473.5	471.3	458.0	453.2
12.5°	609.4	607.2	604.5	596.6	599.2	595.7	583.7	572.2	567.3	549.6	541.2
15°	725.3	728.9	724.4	715.2	716.9	710.7	695.2	679.3	671.8	647.9	635.5
17.5°	844.8	849.2	844.4	833.8	833.3	824.9	803.7	784.2	773.1	742.6	726.2
20°	958.6	959.9	953.7	942.2	939.5	928.0	902.3	874.9	864.3	826.7	805.9
22.5°	1047.9	1052.8	1045.3	1036.9	1028.5	1013.9	983.8	953.7	938.6	895.7	870.5
25°	1113.0	1124.1	1115.2	1105.5	1096.2	1078.9	1045.3	1013.0	994.4	946.6	917.8
27.5°	1155.9	1166.5	1156.8	1145.7	1136.0	1116.1	1079.4	1048.4	1025.8	973.6	942.6
30°	1157.3	1170.1	1159.9	1148.0	1138.7	1118.8	1081.1	1049.3	1024.0	971.8	939.5
32.5°	1125.4	1135.6	1125.4	1115.2	1104.6	1085.6	1047.9	1017.4	990.9	940.9	908.5
35°	1062.6	1071.4	1061.2	1049.3	1041.8	1024.9	989.1	959.9	933.3	887.3	859.0
37.5°	975.8	983.8	974.5	967.8	956.8	941.7	909.0	882.9	857.7	816.1	790.8
40°	860.8	877.6	868.7	864.3	854.1	841.3	812.5	789.5	766.5	730.2	709.4
42.5°	745.7	761.6	753.7	750.6	741.7	730.6	706.7	687.3	666.0	635.9	618.2
45°	619.6	636.4	628.9	627.5	620.0	611.6	585.9	575.8	557.2	528.8	520.4
47.5°	501.0	504.1	497.0	497.4	492.1	486.4	465.6	459.4	450.1	428.4	418.6
50°	373.5	375.7	370.0	371.7	368.2	364.7	350.5	347.4	341.6	327.0	321.3
52.5°	257.1	267.3	263.3	265.1	263.3	262.0	256.2	250.9	248.3	239.0	236.3
55°	185.9	186.8	183.7	185.4	184.1	183.7	180.1	177.0	175.7	169.9	169.1
57.5°	128.8	129.7	129.7	128.8	128.3	127.5	125.2	123.5	122.6	121.3	118.6
60°	85.4	89.0	87.6	88.5	88.1	88.1	86.3	85.0	84.5	81.9	81.9
62.5°	58.4	60.6	59.7	60.2	59.7	59.7	58.4	57.5	57.5	57.1	55.8
65°	38.9	40.3	39.4	39.8	39.8	39.8	38.9	38.1	38.1	37.6	36.7
67.5°	24.8	25.7	25.2	25.7	25.2	25.7	24.8	24.3	23.9	23.9	23.5
70°	15.0	15.5	15.0	15.5	15.0	15.0	14.6	14.6	14.2	13.7	13.7
72.5°	8.0	8.4	8.4	8.4	8.4	8.4	8.0	7.5	7.5	7.5	7.1
75°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5
77.5°	1.8	1.8	1.8	1.8	2.2	1.8	1.8	1.8	1.8	1.8	1.8
80°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
82.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
85°	1.3	1.3	1.3	1.3	1.3	1.3	1.8	1.8	1.8	1.8	1.3
87.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.2	2.2	1.8	1.8
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):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	47.5°	50°	52.5°
0°	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5
2.5°	235.4	233.2	232.3	230.6	228.4	227.0	225.7	226.1	223.0	220.8	217.7
5°	294.7	289.9	287.2	283.2	278.4	274.4	270.8	269.1	263.3	259.3	250.9
7.5°	364.7	356.2	350.9	343.9	335.4	328.4	321.3	316.4	307.6	300.0	287.2
10°	441.2	428.4	419.1	408.5	395.6	384.1	373.5	364.7	351.4	339.9	323.1
12.5°	524.9	506.7	493.4	477.9	459.8	443.9	424.8	414.7	396.5	380.6	358.9
15°	613.8	589.9	571.3	550.1	526.2	504.9	480.6	465.6	441.7	421.3	394.3
17.5°	699.2	669.1	644.8	617.8	588.1	560.7	531.9	510.7	481.5	456.3	424.0
20°	773.6	737.7	708.1	675.3	640.4	606.7	575.3	547.0	512.9	483.3	446.5
22.5°	834.2	792.6	758.5	720.5	680.2	642.1	606.3	574.0	535.0	502.3	462.0
25°	878.0	832.4	794.4	752.3	708.1	664.7	626.6	591.2	548.8	513.8	470.9
27.5°	901.0	852.8	812.5	767.4	720.5	675.3	634.2	596.6	551.9	515.1	470.9
30°	897.0	847.9	806.3	759.8	712.5	667.4	624.4	586.8	540.8	503.6	459.4
32.5°	866.5	818.3	777.6	732.4	685.9	642.1	599.2	562.9	516.9	480.6	437.7
35°	816.1	770.5	732.0	689.0	645.2	604.1	565.1	528.4	484.1	449.6	409.4
37.5°	750.6	709.0	674.0	634.2	593.9	556.7	518.2	486.8	447.4	415.1	375.7
40°	672.2	635.5	604.5	569.1	532.8	500.5	468.2	437.7	399.2	370.4	336.8
42.5°	585.9	554.5	528.0	497.0	465.6	438.1	410.2	383.7	351.8	325.7	294.3
45°	493.0	466.4	444.8	420.0	393.9	368.2	347.8	325.7	296.1	276.6	250.0
47.5°	397.0	376.6	360.2	341.2	320.4	304.5	285.0	267.3	245.6	227.5	205.8
50°	305.8	291.6	280.1	266.9	251.8	237.2	225.7	212.0	195.6	181.0	163.7
52.5°	226.1	216.8	209.8	200.9	190.7	183.2	172.6	162.4	150.0	139.0	125.7
55°	162.0	156.7	152.2	146.9	139.8	133.2	127.9	120.8	112.0	103.6	93.8
57.5°	116.4	110.6	110.2	104.4	101.8	96.9	92.0	86.7	80.5	74.8	67.7
60°	80.5	76.6	74.8	72.6	69.5	66.4	64.2	60.6	56.2	52.2	46.9
62.5°	54.4	51.8	50.9	50.0	47.4	46.0	43.4	41.2	38.1	35.0	31.4
65°	35.8	34.1	33.2	31.9	30.5	29.7	28.3	26.6	23.9	22.1	19.9
67.5°	22.6	21.2	20.4	19.9	18.6	18.1	16.8	15.9	14.2	13.3	11.9
70°	12.8	12.4	11.5	11.5	10.6	9.7	9.3	8.4	8.0	7.1	6.6
72.5°	6.6	6.6	6.2	5.8	5.3	5.3	4.9	4.4	4.0	3.5	3.5
75°	3.1	3.1	3.1	2.7	2.7	2.7	2.2	2.2	2.2	1.8	1.8
77.5°	1.8	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	0.9	0.9
80°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
82.5°	0.9	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
85°	1.3	0.9	0.9	0.9	0.9	1.3	1.3	1.3	1.3	1.3	1.3
87.5°	1.3	1.3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
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):

	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77.5°	80°
0°	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5
2.5°	215.5	214.6	212.4	212.0	207.1	206.2	203.6	199.6	196.5	195.6	196.5
5°	247.8	243.8	237.2	235.9	227.9	225.3	219.5	213.3	208.0	204.9	203.6
7.5°	281.0	274.4	264.6	259.8	248.3	242.5	234.1	225.3	216.8	211.1	207.6
10°	312.9	302.3	284.6	280.6	266.4	257.1	245.6	233.7	223.0	215.1	209.3
12.5°	343.0	330.1	312.0	300.9	282.3	270.4	255.8	241.2	227.9	217.3	209.3
15°	374.0	357.1	334.6	319.1	297.8	281.9	264.2	247.4	231.9	218.6	208.9
17.5°	399.6	378.8	352.3	333.7	308.9	289.9	269.5	250.0	233.2	218.2	207.1
20°	418.6	394.3	364.2	342.5	315.1	293.8	271.7	250.5	231.9	215.5	203.6
22.5°	431.5	403.6	370.9	347.0	318.2	295.2	271.3	249.2	230.1	213.3	200.5
25°	437.7	407.6	373.5	347.8	317.7	293.8	269.1	246.5	227.0	209.8	197.4
27.5°	436.8	404.9	370.0	343.0	312.4	287.7	262.4	239.9	220.8	203.6	190.7
30°	424.0	392.5	357.1	329.7	299.6	274.8	249.6	227.5	208.9	191.2	179.2
32.5°	404.0	371.7	337.2	306.7	281.0	256.7	232.8	210.2	192.5	175.2	163.7
35°	377.0	346.1	312.9	286.8	258.9	235.4	212.4	191.2	174.4	157.5	146.9
37.5°	345.6	316.0	285.4	258.4	234.1	212.4	190.7	171.7	154.9	139.8	129.7
40°	309.3	281.9	254.0	231.0	207.1	187.2	167.3	148.7	135.0	121.3	112.4
42.5°	270.0	245.6	220.4	200.5	178.8	161.1	142.1	128.8	115.5	103.1	96.0
45°	228.8	207.6	186.3	168.2	150.5	135.0	118.6	106.2	96.0	85.9	79.7
47.5°	188.1	169.9	152.7	138.1	122.6	109.8	98.2	87.2	77.4	69.0	64.2
50°	146.9	135.0	121.3	109.3	96.9	86.3	75.7	67.7	60.2	54.0	50.9
52.5°	114.6	103.6	92.5	82.8	73.9	65.1	58.0	51.3	46.0	42.0	39.8
55°	85.4	76.6	68.2	60.6	53.5	47.8	42.9	38.9	35.4	32.3	31.4
57.5°	61.1	54.4	48.7	42.9	38.5	35.0	31.9	29.2	27.0	24.8	24.3
60°	42.5	37.6	34.1	30.5	27.9	25.2	23.5	21.7	19.9	18.6	18.1
62.5°	28.3	25.7	23.0	21.2	19.9	17.7	16.8	15.5	14.6	13.3	12.8
65°	18.1	16.4	15.0	13.7	12.8	11.9	11.1	10.2	9.3	8.4	8.4
67.5°	11.1	9.7	9.3	8.4	7.5	7.1	6.6	5.8	5.3	5.3	4.9
70°	6.2	5.3	4.9	4.4	4.0	4.0	3.5	3.1	3.1	2.7	2.7
72.5°	3.1	3.1	2.7	2.7	2.2	2.2	1.8	1.8	1.8	1.3	1.3
75°	1.8	1.8	1.3	1.3	1.3	1.3	1.3	1.3	0.9	0.9	0.9
77.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
80°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
82.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
85°	1.3	1.3	1.3	1.3	0.9	0.9	0.9	0.9	0.9	0.9	0.9
87.5°	1.3	1.3	1.3	1.3	1.3	0.9	0.9	0.9	0.9	0.9	0.9
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: P170850

CATALOG NUMBER: LDA4A09930D010TE LAR25NF 4LLWW1

CANDELA DISTRIBUTION (continued):

	82.5°	85°	87.5°	90°	112.5°	135°	157.5°	180°
0°	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5
2.5°	192.9	188.5	187.6	187.6	169.1	158.0	149.6	147.4
5°	197.4	191.2	188.1	186.3	153.1	133.6	120.8	117.3
7.5°	199.6	190.7	185.9	181.9	137.6	112.4	98.7	94.7
10°	198.7	188.1	181.4	176.1	123.5	96.0	81.9	78.3
12.5°	196.9	185.0	176.6	169.9	111.5	83.2	70.4	66.8
15°	195.2	181.4	171.7	163.7	101.8	74.3	62.8	59.7
17.5°	191.6	177.5	166.4	158.0	95.6	70.8	61.1	59.3
20°	187.6	173.0	161.5	153.1	93.8	74.3	68.6	68.6
22.5°	185.0	169.9	158.9	150.5	96.9	82.8	80.5	81.9
25°	181.4	167.3	156.2	148.3	100.0	89.4	88.1	89.8
27.5°	175.7	161.5	150.9	142.9	98.2	88.5	87.2	88.1
30°	164.2	150.5	141.2	132.8	91.2	81.9	79.7	80.1
32.5°	149.6	136.3	127.5	119.5	81.0	72.1	69.9	69.9
35°	133.6	121.3	112.8	105.8	71.2	63.3	61.1	60.6
37.5°	117.7	106.2	99.1	92.5	62.4	55.3	53.1	52.7
40°	101.8	91.6	85.0	79.7	54.9	49.1	46.9	46.5
42.5°	86.7	77.9	72.1	67.7	47.8	43.4	41.6	41.2
45°	71.7	64.6	60.2	56.6	41.6	37.2	36.7	36.7
47.5°	58.0	52.2	49.1	46.9	35.4	31.9	31.4	31.9
50°	46.5	42.5	40.3	38.5	30.1	27.0	25.7	25.7
52.5°	36.7	34.1	32.7	31.4	24.8	21.7	19.9	19.5
55°	29.2	27.0	26.1	25.2	19.5	15.9	14.2	13.7
57.5°	23.0	21.2	20.4	19.5	14.6	11.1	9.3	8.9
60°	17.3	15.9	15.0	14.6	10.2	6.6	5.3	4.9
62.5°	12.4	11.5	10.6	10.2	6.2	3.5	2.2	1.8
65°	7.5	7.5	6.6	6.2	3.1	1.3	0.9	0.4
67.5°	4.4	4.0	3.5	3.5	1.3	0.9	0.4	0.4
70°	2.2	2.2	1.8	1.8	0.9	0.4	0.4	0.4
72.5°	1.3	1.3	1.3	0.9	0.9	0.4	0.4	0.4
75°	0.9	0.9	0.9	0.9	0.9	0.4	0.4	0.4
77.5°	0.9	0.9	0.9	0.9	0.9	0.4	0.4	0.0
80°	0.9	0.9	0.9	0.9	0.9	0.4	0.4	0.0
82.5°	0.9	0.9	0.9	0.9	0.9	0.4	0.4	0.4
85°	0.9	0.9	0.9	0.9	0.9	0.4	0.4	0.0
87.5°	0.9	0.9	0.9	0.9	0.9	0.4	0.4	0.4
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)