

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: P170849

Luminaire Tested: **LDA4A09927D010TE LAR25NF 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170849
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: LDA4A09927D010TE LAR25NF 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 25° Narrow Flood Optic,
at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 589.9 lumens
Efficiency: N/A
Efficacy: 42.6 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

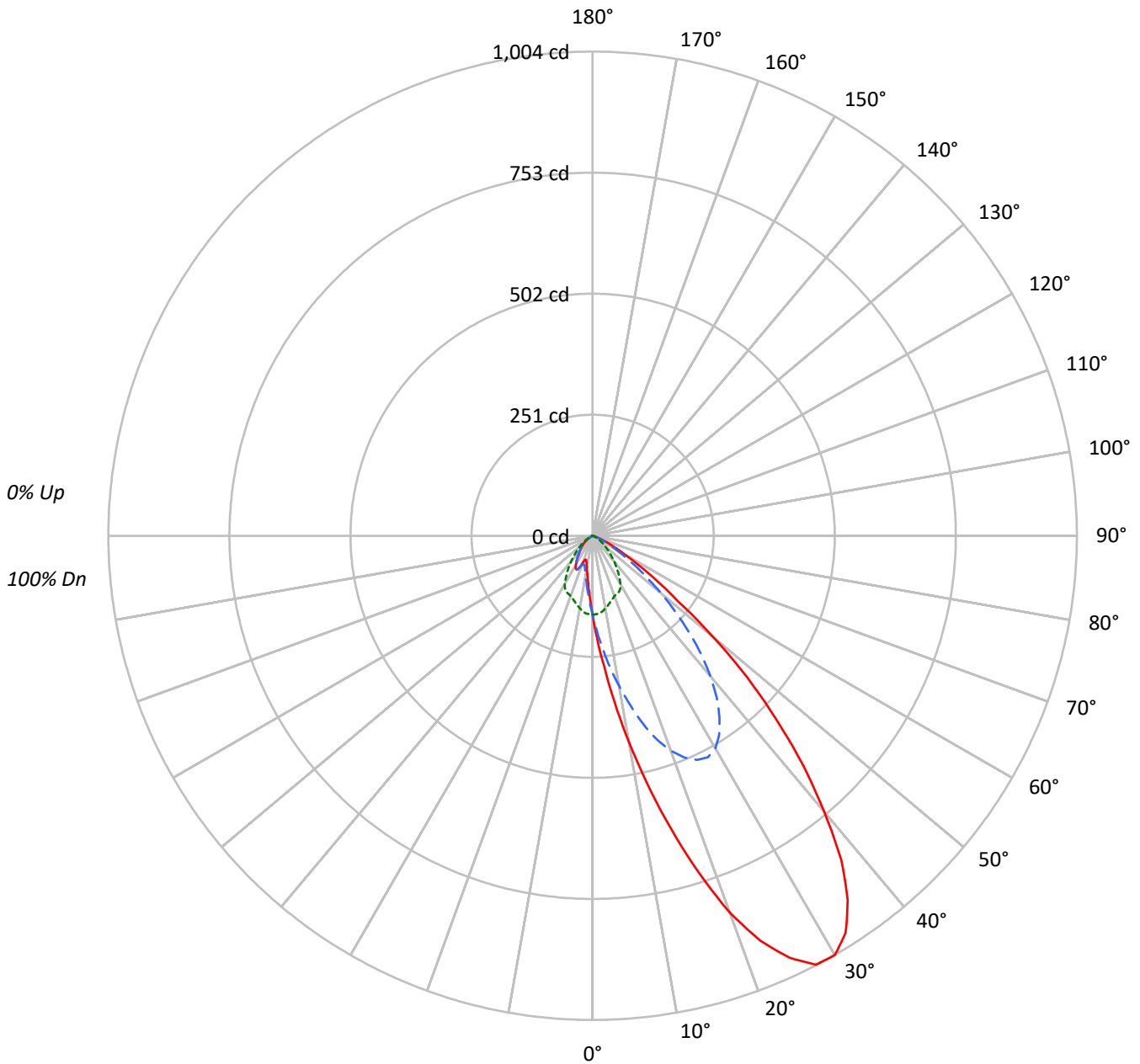
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	44																			
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°	20167	20167	20167
5°	33554	20009	12592
10°	54333	19138	8517
15°	80347	18133	6615
20°	109144	17432	7810
25°	131402	17502	10602
30°	142983	16408	9899
35°	138802	13823	7920
40°	120231	11126	6489
45°	93760	8565	5565
50°	62173	6409	4279
55°	34666	4710	2559
60°	18280	3133	1036
65°	9865	1576	117
70°	4724	541	144
75°	1668	381	191
80°	568	568	0
85°	1698	1132	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	17.4	3.0
10°-20°	68.9	11.7
20°-30°	141.6	24.0
30°-40°	169.1	28.7
40°-50°	124.9	21.2
50°-60°	52.6	8.9
60°-70°	12.9	2.2
70°-80°	1.8	0.3
80°-90°	0.7	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°	227.9	38.6
0°-40°	397.0	67.3
0°-60°	574.5	97.4
0°-90°	589.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	589.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	164	164	164	164	164	
5°	271	233	162	116	102	31
15°	629	404	142	64	52	185
25°	966	513	129	78	78	442
35°	922	458	92	55	53	565
45°	538	283	49	32	32	413
55°	161	105	22	14	12	154
65°	34	23	5	1	0	37
75°	4	2	1	0	0	5
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°	163.5	163.5	163.5	163.5	163.5	163.5	163.5	163.5	163.5	163.5	163.5
2.5°	212.7	210.0	210.0	210.8	213.1	211.1	209.6	208.1	209.6	206.2	207.3
5°	271.0	270.7	270.7	267.6	270.3	270.7	267.6	264.9	265.7	260.7	260.7
7.5°	347.8	345.5	344.7	340.5	343.6	343.2	338.2	333.6	333.6	325.6	323.6
10°	433.8	430.7	429.2	423.8	426.5	425.0	417.7	410.8	408.9	397.3	393.1
12.5°	528.6	526.7	524.4	517.5	519.8	516.7	506.4	496.4	492.2	476.8	469.5
15°	629.2	632.3	628.5	620.4	621.9	616.6	603.1	589.3	582.8	562.0	551.3
17.5°	732.9	736.7	732.5	723.3	722.9	715.6	697.2	680.3	670.7	644.2	630.0
20°	831.5	832.7	827.3	817.3	815.0	805.1	782.8	759.0	749.8	717.1	699.1
22.5°	909.1	913.3	906.8	899.5	892.2	879.5	853.4	827.3	814.3	777.0	755.1
25°	965.5	975.1	967.4	959.0	950.9	936.0	906.8	878.8	862.6	821.2	796.2
27.5°	1002.8	1012.0	1003.5	993.9	985.5	968.2	936.3	909.5	889.9	844.6	817.7
30°	1003.9	1015.1	1006.2	995.9	987.8	970.5	937.9	910.2	888.4	843.1	815.0
32.5°	976.3	985.1	976.3	967.4	958.2	941.7	909.1	882.6	859.6	816.2	788.2
35°	921.8	929.4	920.6	910.2	903.7	889.1	858.0	832.7	809.7	769.7	745.2
37.5°	846.5	853.4	845.4	839.6	830.0	817.0	788.5	765.9	744.0	707.9	686.0
40°	746.7	761.3	753.6	749.8	740.9	729.8	704.9	684.9	664.9	633.4	615.4
42.5°	646.9	660.7	653.8	651.1	643.4	633.8	613.1	596.2	577.8	551.7	536.3
45°	537.5	552.1	545.5	544.4	537.9	530.6	508.3	499.5	483.3	458.8	451.5
47.5°	434.6	437.3	431.1	431.5	426.9	421.9	403.9	398.5	390.4	371.6	363.2
50°	324.0	325.9	320.9	322.5	319.4	316.3	304.1	301.4	296.4	283.7	278.7
52.5°	223.1	231.9	228.4	230.0	228.4	227.3	222.3	217.7	215.4	207.3	205.0
55°	161.2	162.0	159.3	160.9	159.7	159.3	156.3	153.6	152.4	147.4	146.7
57.5°	111.7	112.5	112.5	111.7	111.3	110.6	108.6	107.1	106.3	105.2	102.9
60°	74.1	77.2	76.0	76.8	76.4	76.4	74.9	73.7	73.3	71.0	71.0
62.5°	50.7	52.6	51.8	52.2	51.8	51.8	50.7	49.9	49.9	49.5	48.4
65°	33.8	34.9	34.2	34.6	34.6	34.6	33.8	33.0	33.0	32.6	31.9
67.5°	21.5	22.3	21.9	22.3	21.9	22.3	21.5	21.1	20.7	20.7	20.3
70°	13.1	13.4	13.1	13.4	13.1	13.1	12.7	12.7	12.3	11.9	11.9
72.5°	6.9	7.3	7.3	7.3	7.3	7.3	6.9	6.5	6.5	6.5	6.1
75°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.1	3.1	3.1
77.5°	1.5	1.5	1.5	1.5	1.9	1.5	1.5	1.5	1.5	1.5	1.5
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
85°	1.2	1.2	1.2	1.2	1.2	1.2	1.5	1.5	1.5	1.5	1.2
87.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.9	1.9	1.5	1.5
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):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	47.5°	50°	52.5°
0°	163.5	163.5	163.5	163.5	163.5	163.5	163.5	163.5	163.5	163.5	163.5
2.5°	204.2	202.3	201.6	200.0	198.1	196.9	195.8	196.2	193.5	191.6	188.9
5°	255.7	251.5	249.2	245.7	241.5	238.0	235.0	233.4	228.4	225.0	217.7
7.5°	316.3	309.0	304.4	298.3	291.0	284.9	278.7	274.5	266.8	260.3	249.2
10°	382.8	371.6	363.6	354.3	343.2	333.2	324.0	316.3	304.8	294.8	280.3
12.5°	455.3	439.6	428.1	414.6	398.9	385.1	368.6	359.7	344.0	330.2	311.3
15°	532.5	511.7	495.6	477.2	456.5	438.0	416.9	403.9	383.1	365.5	342.1
17.5°	606.6	580.5	559.4	535.9	510.2	486.4	461.5	443.0	417.7	395.8	367.8
20°	671.1	640.0	614.3	585.8	555.5	526.3	499.1	474.5	444.9	419.2	387.4
22.5°	723.7	687.6	658.0	625.0	590.1	557.0	526.0	497.9	464.1	435.7	400.8
25°	761.7	722.1	689.1	652.6	614.3	576.6	543.6	512.9	476.0	445.7	408.5
27.5°	781.6	739.8	704.9	665.7	625.0	585.8	550.1	517.5	478.7	446.9	408.5
30°	778.2	735.6	699.5	659.2	618.1	578.9	541.7	509.1	469.1	436.9	398.5
32.5°	751.7	709.8	674.5	635.4	595.1	557.0	519.8	488.3	448.4	416.9	379.7
35°	707.9	668.4	635.0	597.7	559.7	524.0	490.2	458.4	420.0	390.0	355.1
37.5°	651.1	615.0	584.7	550.1	515.2	483.0	449.6	422.3	388.1	360.1	325.9
40°	583.2	551.3	524.4	493.7	462.2	434.2	406.2	379.7	346.3	321.3	292.2
42.5°	508.3	481.0	458.0	431.1	403.9	380.1	355.9	332.8	305.2	282.6	255.3
45°	427.7	404.6	385.8	364.3	341.7	319.4	301.8	282.6	256.8	239.9	216.9
47.5°	344.4	326.7	312.5	296.0	277.9	264.1	247.2	231.9	213.1	197.3	178.5
50°	265.3	253.0	243.0	231.5	218.4	205.8	195.8	183.9	169.7	157.0	142.0
52.5°	196.2	188.1	182.0	174.3	165.5	158.9	149.7	140.9	130.1	120.5	109.0
55°	140.5	135.9	132.1	127.5	121.3	115.6	110.9	104.8	97.1	89.8	81.4
57.5°	101.0	96.0	95.6	90.6	88.3	84.1	79.9	75.2	69.9	64.9	58.7
60°	69.9	66.4	64.9	63.0	60.3	57.6	55.7	52.6	48.8	45.3	40.7
62.5°	47.2	44.9	44.1	43.4	41.1	39.9	37.6	35.7	33.0	30.3	27.3
65°	31.1	29.6	28.8	27.6	26.5	25.7	24.6	23.0	20.7	19.2	17.3
67.5°	19.6	18.4	17.7	17.3	16.1	15.7	14.6	13.8	12.3	11.5	10.4
70°	11.1	10.7	10.0	10.0	9.2	8.4	8.1	7.3	6.9	6.1	5.8
72.5°	5.8	5.8	5.4	5.0	4.6	4.6	4.2	3.8	3.5	3.1	3.1
75°	2.7	2.7	2.7	2.3	2.3	2.3	1.9	1.9	1.9	1.5	1.5
77.5°	1.5	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.8	0.8
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.8	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
85°	1.2	0.8	0.8	0.8	0.8	1.2	1.2	1.2	1.2	1.2	1.2
87.5°	1.2	1.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
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):

	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77.5°	80°
0°	163.5	163.5	163.5	163.5	163.5	163.5	163.5	163.5	163.5	163.5	163.5
2.5°	187.0	186.2	184.3	183.9	179.7	178.9	176.6	173.1	170.5	169.7	170.5
5°	215.0	211.5	205.8	204.6	197.7	195.4	190.4	185.0	180.4	177.7	176.6
7.5°	243.8	238.0	229.6	225.4	215.4	210.4	203.1	195.4	188.1	183.1	180.1
10°	271.4	262.2	246.9	243.4	231.1	223.1	213.1	202.7	193.5	186.6	181.6
12.5°	297.5	286.4	270.7	261.1	244.9	234.6	221.9	209.2	197.7	188.5	181.6
15°	324.4	309.8	290.2	276.8	258.4	244.5	229.2	214.6	201.2	189.7	181.2
17.5°	346.7	328.6	305.6	289.5	268.0	251.5	233.8	216.9	202.3	189.3	179.7
20°	363.2	342.1	316.0	297.1	273.3	254.9	235.7	217.3	201.2	187.0	176.6
22.5°	374.3	350.1	321.7	301.0	276.0	256.1	235.3	216.1	199.6	185.0	173.9
25°	379.7	353.6	324.0	301.8	275.6	254.9	233.4	213.8	196.9	182.0	171.2
27.5°	378.9	351.3	320.9	297.5	271.0	249.5	227.7	208.1	191.6	176.6	165.5
30°	367.8	340.5	309.8	286.0	259.9	238.4	216.5	197.3	181.2	165.8	155.5
32.5°	350.5	322.5	292.5	266.0	243.8	222.7	201.9	182.4	167.0	152.0	142.0
35°	327.1	300.2	271.4	248.8	224.6	204.2	184.3	165.8	151.3	136.7	127.5
37.5°	299.8	274.1	247.6	224.2	203.1	184.3	165.5	149.0	134.4	121.3	112.5
40°	268.4	244.5	220.4	200.4	179.7	162.4	145.1	129.0	117.1	105.2	97.5
42.5°	234.2	213.1	191.2	173.9	155.1	139.7	123.2	111.7	100.2	89.5	83.3
45°	198.5	180.1	161.6	145.9	130.5	117.1	102.9	92.1	83.3	74.5	69.1
47.5°	163.2	147.4	132.4	119.8	106.3	95.2	85.2	75.6	67.2	59.9	55.7
50°	127.5	117.1	105.2	94.8	84.1	74.9	65.6	58.7	52.2	46.8	44.1
52.5°	99.4	89.8	80.2	71.8	64.1	56.4	50.3	44.5	39.9	36.5	34.6
55°	74.1	66.4	59.1	52.6	46.5	41.5	37.2	33.8	30.7	28.0	27.3
57.5°	53.0	47.2	42.2	37.2	33.4	30.3	27.6	25.3	23.4	21.5	21.1
60°	36.9	32.6	29.6	26.5	24.2	21.9	20.3	18.8	17.3	16.1	15.7
62.5°	24.6	22.3	20.0	18.4	17.3	15.4	14.6	13.4	12.7	11.5	11.1
65°	15.7	14.2	13.1	11.9	11.1	10.4	9.6	8.8	8.1	7.3	7.3
67.5°	9.6	8.4	8.1	7.3	6.5	6.1	5.8	5.0	4.6	4.6	4.2
70°	5.4	4.6	4.2	3.8	3.5	3.5	3.1	2.7	2.7	2.3	2.3
72.5°	2.7	2.7	2.3	2.3	1.9	1.9	1.5	1.5	1.5	1.2	1.2
75°	1.5	1.5	1.2	1.2	1.2	1.2	1.2	1.2	0.8	0.8	0.8
77.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
85°	1.2	1.2	1.2	1.2	0.8	0.8	0.8	0.8	0.8	0.8	0.8
87.5°	1.2	1.2	1.2	1.2	1.2	0.8	0.8	0.8	0.8	0.8	0.8
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):

	82.5°	85°	87.5°	90°	112.5°	135°	157.5°	180°
0°	163.5	163.5	163.5	163.5	163.5	163.5	163.5	163.5
2.5°	167.4	163.5	162.8	162.8	146.7	137.1	129.8	127.8
5°	171.2	165.8	163.2	161.6	132.8	115.9	104.8	101.7
7.5°	173.1	165.5	161.2	157.8	119.4	97.5	85.6	82.2
10°	172.4	163.2	157.4	152.8	107.1	83.3	71.0	68.0
12.5°	170.8	160.5	153.2	147.4	96.7	72.2	61.0	58.0
15°	169.3	157.4	149.0	142.0	88.3	64.5	54.5	51.8
17.5°	166.2	153.9	144.3	137.1	82.9	61.4	53.0	51.4
20°	162.8	150.1	140.1	132.8	81.4	64.5	59.5	59.5
22.5°	160.5	147.4	137.8	130.5	84.1	71.8	69.9	71.0
25°	157.4	145.1	135.5	128.6	86.8	77.5	76.4	77.9
27.5°	152.4	140.1	130.9	124.0	85.2	76.8	75.6	76.4
30°	142.4	130.5	122.5	115.2	79.1	71.0	69.1	69.5
32.5°	129.8	118.2	110.6	103.7	70.3	62.6	60.7	60.7
35°	115.9	105.2	97.9	91.8	61.8	54.9	53.0	52.6
37.5°	102.1	92.1	86.0	80.2	54.1	48.0	46.1	45.7
40°	88.3	79.5	73.7	69.1	47.6	42.6	40.7	40.3
42.5°	75.2	67.6	62.6	58.7	41.5	37.6	36.1	35.7
45°	62.2	56.1	52.2	49.1	36.1	32.2	31.9	31.9
47.5°	50.3	45.3	42.6	40.7	30.7	27.6	27.3	27.6
50°	40.3	36.9	34.9	33.4	26.1	23.4	22.3	22.3
52.5°	31.9	29.6	28.4	27.3	21.5	18.8	17.3	16.9
55°	25.3	23.4	22.7	21.9	16.9	13.8	12.3	11.9
57.5°	20.0	18.4	17.7	16.9	12.7	9.6	8.1	7.7
60°	15.0	13.8	13.1	12.7	8.8	5.8	4.6	4.2
62.5°	10.7	10.0	9.2	8.8	5.4	3.1	1.9	1.5
65°	6.5	6.5	5.8	5.4	2.7	1.2	0.8	0.4
67.5°	3.8	3.5	3.1	3.1	1.2	0.8	0.4	0.4
70°	1.9	1.9	1.5	1.5	0.8	0.4	0.4	0.4
72.5°	1.2	1.2	1.2	0.8	0.8	0.4	0.4	0.4
75°	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4
77.5°	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.0
80°	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.0
82.5°	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4
85°	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.0
87.5°	0.8	0.8	0.8	0.8	0.8	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)