

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: P170851

Luminaire Tested: **LDA4A09935D010TE LAR25NF 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170851
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: LDA4A09935D010TE LAR25NF 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 25° Narrow Flood Optic,
at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 685.2 lumens
Efficiency: N/A
Efficacy: 49.5 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

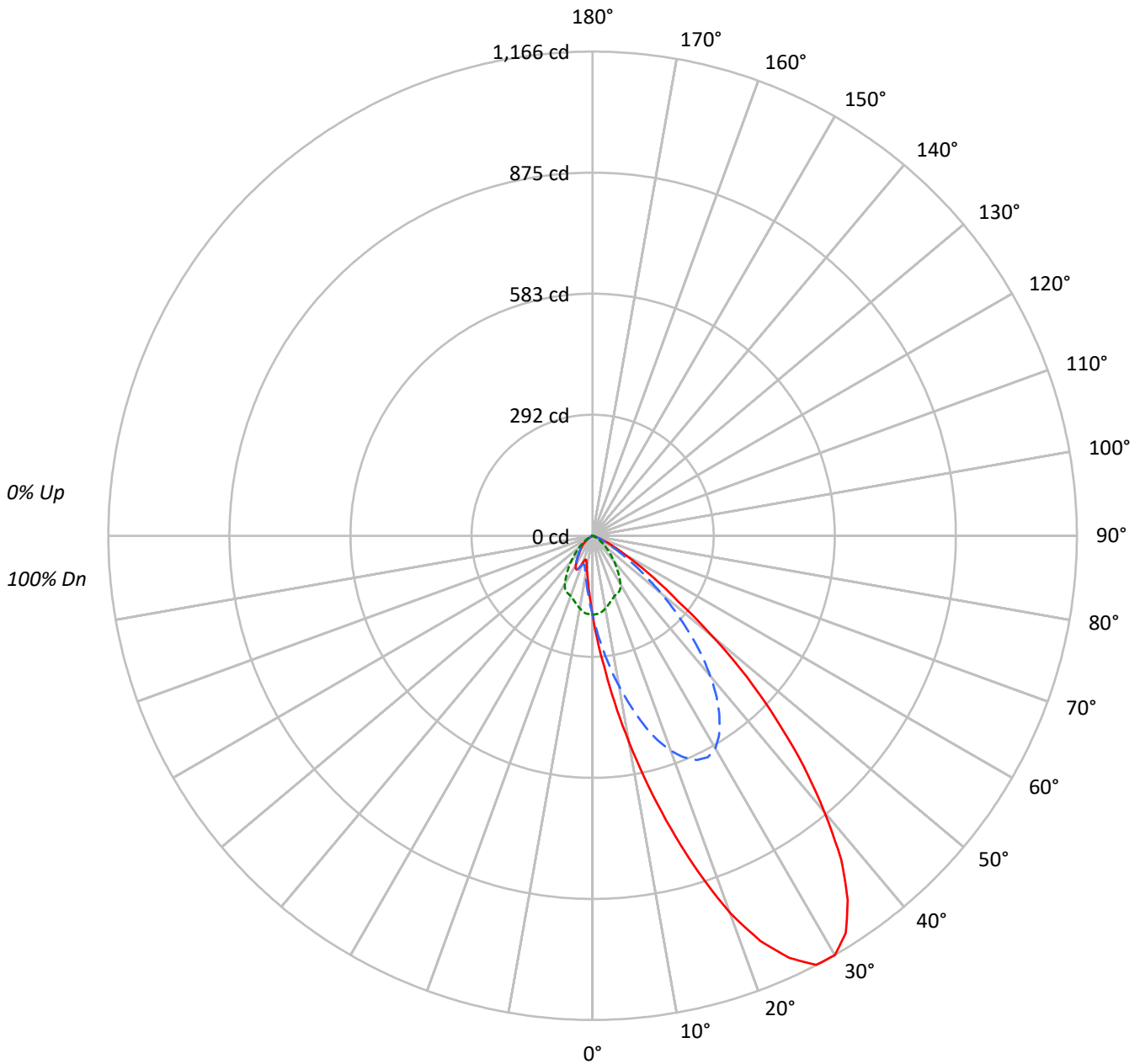
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	23436	23436	23436
5°	38990	23253	14635
10°	63113	22232	9882
15°	93334	21070	7687
20°	126799	20254	9070
25°	152646	20333	12317
30°	166099	19057	11494
35°	161238	16052	9200
40°	139666	12930	7536
45°	108901	9960	6454
50°	72228	7445	4970
55°	40278	5462	2968
60°	21240	3626	1209
65°	11441	1810	117
70°	5482	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°	20.3	3.0
10°-20°	80.0	11.7
20°-30°	164.5	24.0
30°-40°	196.5	28.7
40°-50°	145.1	21.2
50°-60°	61.1	8.9
60°-70°	15.0	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°	264.7	38.6
0°-40°	461.2	67.3
0°-60°	667.4	97.4
0°-90°	685.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	685.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	190	190	190	190	190	
5°	315	271	188	135	118	36
15°	731	469	165	75	60	214
25°	1122	596	149	90	90	513
35°	1071	532	107	64	61	657
45°	624	328	57	38	37	479
55°	187	122	25	16	14	179
65°	39	27	6	1	0	43
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°	190.0	190.0	190.0	190.0	190.0	190.0	190.0	190.0	190.0	190.0	190.0
2.5°	247.1	243.9	243.9	244.8	247.5	245.3	243.5	241.7	243.5	239.5	240.8
5°	314.9	314.4	314.4	310.8	314.0	314.4	310.8	307.7	308.6	302.8	302.8
7.5°	404.0	401.4	400.5	395.6	399.1	398.7	392.9	387.5	387.5	378.2	375.9
10°	503.9	500.4	498.6	492.3	495.5	493.7	485.2	477.2	475.0	461.6	456.7
12.5°	614.1	611.9	609.2	601.2	603.8	600.3	588.2	576.6	571.7	553.9	545.4
15°	730.9	734.5	730.0	720.7	722.5	716.2	700.6	684.6	677.0	652.9	640.4
17.5°	851.3	855.8	850.9	840.2	839.7	831.3	809.9	790.2	779.1	748.3	731.8
20°	966.0	967.3	961.1	949.5	946.8	935.2	909.3	881.7	871.0	833.1	812.1
22.5°	1056.0	1060.9	1053.4	1044.9	1036.4	1021.7	991.4	961.1	945.9	902.6	877.2
25°	1121.6	1132.7	1123.8	1114.0	1104.7	1087.3	1053.4	1020.8	1002.1	953.9	924.9
27.5°	1164.9	1175.6	1165.7	1154.6	1144.8	1124.7	1087.7	1056.5	1033.7	981.1	949.9
30°	1166.2	1179.1	1168.9	1156.8	1147.5	1127.4	1089.5	1057.4	1032.0	979.3	946.8
32.5°	1134.1	1144.3	1134.1	1123.8	1113.1	1093.9	1056.0	1025.3	998.5	948.1	915.6
35°	1070.8	1079.7	1069.4	1057.4	1049.8	1032.9	996.7	967.3	940.5	894.2	865.6
37.5°	983.3	991.4	982.0	975.3	964.2	949.0	916.0	889.7	864.3	822.4	796.9
40°	867.4	884.3	875.4	871.0	860.7	847.8	818.8	795.6	772.4	735.8	714.9
42.5°	751.4	767.5	759.5	756.4	747.4	736.3	712.2	692.6	671.2	640.8	623.0
45°	624.3	641.3	633.7	632.4	624.8	616.3	590.5	580.2	561.5	532.9	524.5
47.5°	504.8	508.0	500.8	501.3	495.9	490.1	469.2	462.9	453.5	431.7	421.9
50°	376.4	378.6	372.8	374.6	371.0	367.5	353.2	350.1	344.3	329.6	323.8
52.5°	259.1	269.4	265.3	267.1	265.3	264.0	258.2	252.9	250.2	240.8	238.1
55°	187.3	188.2	185.1	186.9	185.5	185.1	181.5	178.4	177.0	171.2	170.4
57.5°	129.8	130.7	130.7	129.8	129.3	128.4	126.2	124.4	123.5	122.2	119.5
60°	86.1	89.6	88.3	89.2	88.7	88.7	87.0	85.6	85.2	82.5	82.5
62.5°	58.9	61.1	60.2	60.7	60.2	60.2	58.9	58.0	58.0	57.5	56.2
65°	39.2	40.6	39.7	40.1	40.1	40.1	39.2	38.4	38.4	37.9	37.0
67.5°	25.0	25.9	25.4	25.9	25.4	25.9	25.0	24.5	24.1	24.1	23.6
70°	15.2	15.6	15.2	15.6	15.2	15.2	14.7	14.7	14.3	13.8	13.8
72.5°	8.0	8.5	8.5	8.5	8.5	8.5	8.0	7.6	7.6	7.6	7.1
75°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.6	3.6	3.6
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°	190.0	190.0	190.0	190.0	190.0	190.0	190.0	190.0	190.0	190.0	190.0
2.5°	237.3	235.0	234.1	232.3	230.1	228.8	227.4	227.9	224.8	222.5	219.4
5°	297.0	292.1	289.4	285.4	280.5	276.5	272.9	271.1	265.3	261.3	252.9
7.5°	367.5	359.0	353.6	346.5	338.0	330.9	323.8	318.9	309.9	302.4	289.4
10°	444.6	431.7	422.3	411.6	398.7	387.1	376.4	367.5	354.1	342.5	325.6
12.5°	528.9	510.6	497.2	481.6	463.4	447.3	428.1	417.9	399.6	383.5	361.7
15°	618.6	594.5	575.7	554.3	530.3	508.8	484.3	469.2	445.1	424.6	397.4
17.5°	704.6	674.3	649.8	622.6	592.7	565.0	536.0	514.6	485.2	459.8	427.2
20°	779.5	743.4	713.5	680.5	645.3	611.4	579.8	551.2	516.9	487.0	450.0
22.5°	840.6	798.7	764.4	726.0	685.4	647.1	611.0	578.4	539.2	506.2	465.6
25°	884.8	838.9	800.5	758.1	713.5	669.8	631.5	595.8	553.0	517.8	474.5
27.5°	908.0	859.4	818.8	773.3	726.0	680.5	639.1	601.2	556.1	519.1	474.5
30°	904.0	854.5	812.5	765.7	718.0	672.5	629.3	591.3	545.0	507.5	462.9
32.5°	873.2	824.6	783.6	738.1	691.2	647.1	603.8	567.3	520.9	484.3	441.1
35°	822.4	776.4	737.6	694.4	650.2	608.7	569.5	532.5	487.9	453.1	412.5
37.5°	756.4	714.4	679.2	639.1	598.5	561.0	522.2	490.6	450.9	418.3	378.6
40°	677.4	640.4	609.2	573.5	536.9	504.4	471.8	441.1	402.3	373.3	339.4
42.5°	590.5	558.8	532.0	500.8	469.2	441.5	413.4	386.7	354.5	328.2	296.6
45°	496.8	470.0	448.2	423.2	396.9	371.0	350.5	328.2	298.3	278.7	252.0
47.5°	400.0	379.5	363.0	343.8	322.9	306.8	287.2	269.4	247.5	229.2	207.4
50°	308.2	293.9	282.3	268.9	253.8	239.0	227.4	213.6	197.1	182.4	165.0
52.5°	227.9	218.5	211.4	202.5	192.2	184.6	173.9	163.7	151.2	140.0	126.7
55°	163.2	157.9	153.4	148.1	140.9	134.2	128.9	121.7	112.8	104.4	94.5
57.5°	117.3	111.5	111.0	105.2	102.6	97.7	92.8	87.4	81.2	75.4	68.2
60°	81.2	77.2	75.4	73.1	70.0	66.9	64.7	61.1	56.6	52.6	47.3
62.5°	54.9	52.2	51.3	50.4	47.7	46.4	43.7	41.5	38.4	35.2	31.7
65°	36.1	34.3	33.4	32.1	30.8	29.9	28.5	26.8	24.1	22.3	20.1
67.5°	22.7	21.4	20.5	20.1	18.7	18.3	16.9	16.1	14.3	13.4	12.0
70°	12.9	12.5	11.6	11.6	10.7	9.8	9.4	8.5	8.0	7.1	6.7
72.5°	6.7	6.7	6.2	5.8	5.4	5.4	4.9	4.5	4.0	3.6	3.6
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°	190.0	190.0	190.0	190.0	190.0	190.0	190.0	190.0	190.0	190.0	190.0
2.5°	217.2	216.3	214.1	213.6	208.7	207.8	205.1	201.1	198.0	197.1	198.0
5°	249.7	245.7	239.0	237.7	229.7	227.0	221.2	215.0	209.6	206.5	205.1
7.5°	283.2	276.5	266.7	261.8	250.2	244.4	235.9	227.0	218.5	212.7	209.2
10°	315.3	304.6	286.8	282.7	268.5	259.1	247.5	235.5	224.8	216.7	210.9
12.5°	345.6	332.7	314.4	303.3	284.5	272.5	257.8	243.1	229.7	219.0	210.9
15°	376.8	359.9	337.1	321.5	300.1	284.1	266.2	249.3	233.7	220.3	210.5
17.5°	402.7	381.7	355.0	336.3	311.3	292.1	271.6	252.0	235.0	219.9	208.7
20°	421.9	397.4	367.0	345.2	317.5	296.1	273.8	252.4	233.7	217.2	205.1
22.5°	434.8	406.7	373.7	349.6	320.6	297.5	273.4	251.1	231.9	215.0	202.0
25°	441.1	410.7	376.4	350.5	320.2	296.1	271.1	248.4	228.8	211.4	198.9
27.5°	440.2	408.1	372.8	345.6	314.9	289.9	264.5	241.7	222.5	205.1	192.2
30°	427.2	395.6	359.9	332.2	301.9	276.9	251.5	229.2	210.5	192.7	180.6
32.5°	407.2	374.6	339.8	309.1	283.2	258.7	234.6	211.8	194.0	176.6	165.0
35°	380.0	348.7	315.3	289.0	260.9	237.3	214.1	192.7	175.7	158.8	148.1
37.5°	348.3	318.4	287.6	260.4	235.9	214.1	192.2	173.0	156.1	140.9	130.7
40°	311.7	284.1	256.0	232.8	208.7	188.6	168.6	149.8	136.0	122.2	113.3
42.5°	272.0	247.5	222.1	202.0	180.2	162.3	143.2	129.8	116.4	103.9	96.8
45°	230.6	209.2	187.8	169.5	151.6	136.0	119.5	107.0	96.8	86.5	80.3
47.5°	189.5	171.2	153.9	139.1	123.5	110.6	99.0	87.9	78.0	69.6	64.7
50°	148.1	136.0	122.2	110.2	97.7	87.0	76.3	68.2	60.7	54.4	51.3
52.5°	115.5	104.4	93.2	83.4	74.5	65.6	58.4	51.7	46.4	42.4	40.1
55°	86.1	77.2	68.7	61.1	54.0	48.2	43.3	39.2	35.7	32.6	31.7
57.5°	61.5	54.9	49.1	43.3	38.8	35.2	32.1	29.4	27.2	25.0	24.5
60°	42.8	37.9	34.3	30.8	28.1	25.4	23.6	21.9	20.1	18.7	18.3
62.5°	28.5	25.9	23.2	21.4	20.1	17.8	16.9	15.6	14.7	13.4	12.9
65°	18.3	16.5	15.2	13.8	12.9	12.0	11.1	10.3	9.4	8.5	8.5
67.5°	11.1	9.8	9.4	8.5	7.6	7.1	6.7	5.8	5.4	5.4	4.9
70°	6.2	5.4	4.9	4.5	4.0	4.0	3.6	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



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CANDELA DISTRIBUTION (continued):

	82.5°	85°	87.5°	90°	112.5°	135°	157.5°	180°
0°	190.0	190.0	190.0	190.0	190.0	190.0	190.0	190.0
2.5°	194.4	190.0	189.1	189.1	170.4	159.2	150.7	148.5
5°	198.9	192.7	189.5	187.8	154.3	134.7	121.7	118.2
7.5°	201.1	192.2	187.3	183.3	138.7	113.3	99.4	95.4
10°	200.2	189.5	182.8	177.5	124.4	96.8	82.5	78.9
12.5°	198.5	186.4	177.9	171.2	112.4	83.8	70.9	67.3
15°	196.7	182.8	173.0	165.0	102.6	74.9	63.3	60.2
17.5°	193.1	178.8	167.7	159.2	96.3	71.4	61.5	59.8
20°	189.1	174.4	162.8	154.3	94.5	74.9	69.1	69.1
22.5°	186.4	171.2	160.1	151.6	97.7	83.4	81.2	82.5
25°	182.8	168.6	157.4	149.4	100.8	90.1	88.7	90.5
27.5°	177.0	162.8	152.1	144.0	99.0	89.2	87.9	88.7
30°	165.5	151.6	142.3	133.8	91.9	82.5	80.3	80.7
32.5°	150.7	137.4	128.4	120.4	81.6	72.7	70.5	70.5
35°	134.7	122.2	113.7	106.6	71.8	63.8	61.5	61.1
37.5°	118.6	107.0	99.9	93.2	62.9	55.7	53.5	53.1
40°	102.6	92.3	85.6	80.3	55.3	49.5	47.3	46.8
42.5°	87.4	78.5	72.7	68.2	48.2	43.7	41.9	41.5
45°	72.2	65.1	60.7	57.1	41.9	37.5	37.0	37.0
47.5°	58.4	52.6	49.5	47.3	35.7	32.1	31.7	32.1
50°	46.8	42.8	40.6	38.8	30.3	27.2	25.9	25.9
52.5°	37.0	34.3	33.0	31.7	25.0	21.9	20.1	19.6
55°	29.4	27.2	26.3	25.4	19.6	16.1	14.3	13.8
57.5°	23.2	21.4	20.5	19.6	14.7	11.1	9.4	8.9
60°	17.4	16.1	15.2	14.7	10.3	6.7	5.4	4.9
62.5°	12.5	11.6	10.7	10.3	6.2	3.6	2.2	1.8
65°	7.6	7.6	6.7	6.2	3.1	1.3	0.9	0.4
67.5°	4.5	4.0	3.6	3.6	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)