

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: P251505

Luminaire Tested: **LD4B10D010 EU4B10208030 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251505
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-10)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B10D010 EU4B10208030 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 991.0 lumens
Efficiency: N/A
Efficacy: 98.6 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.19
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

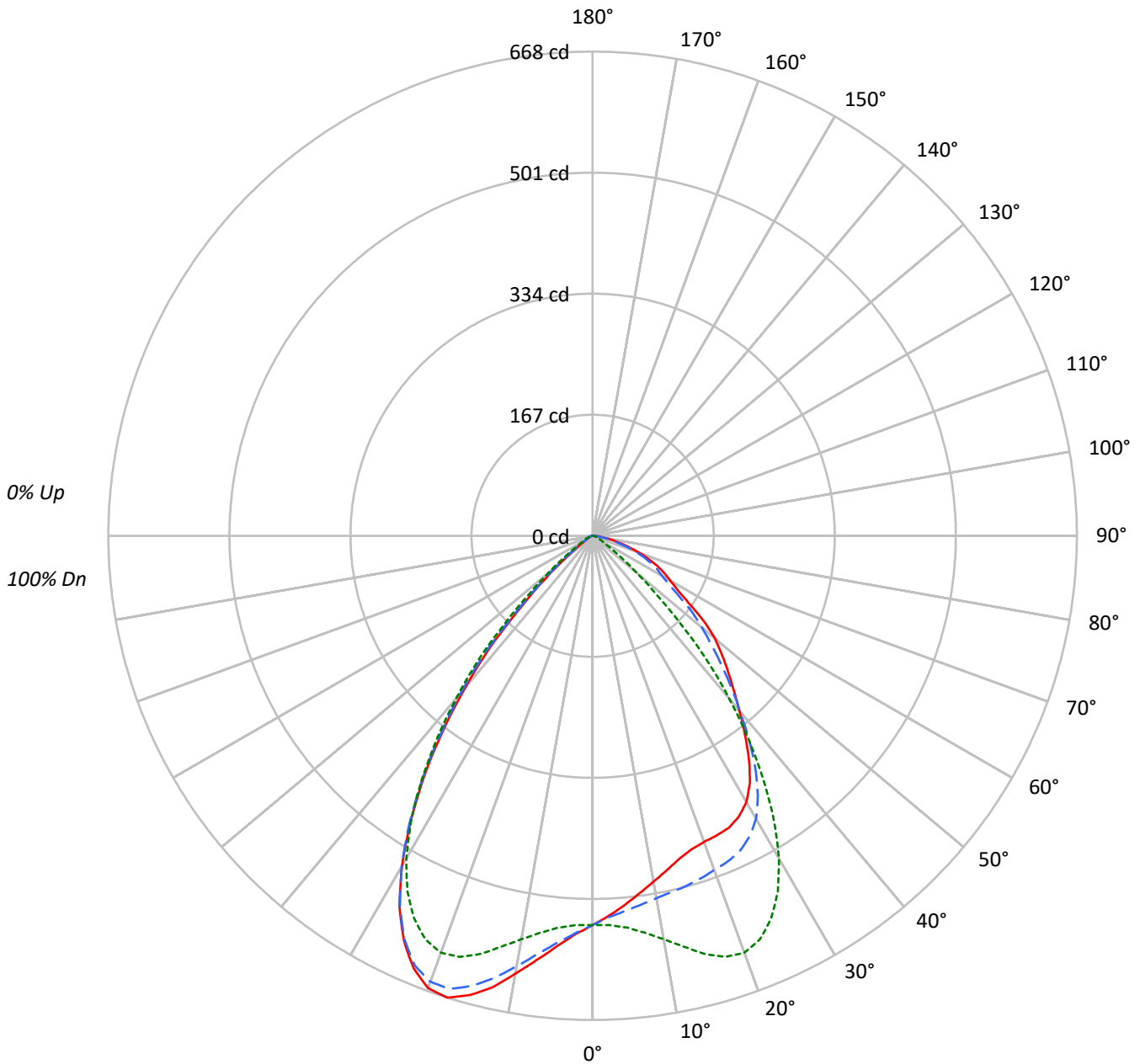
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251505

CATALOG NUMBER: LD4B10D010 EU4B10208030 4LBSW1LI

Luminous Intensity Polar Plot





TEST NUMBER: P251505

CATALOG NUMBER: LD4B10D010 EU4B10208030 4LBSW1LI

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	89	102	96	92	88	93	89	86	90	87	84	87	85	82	80																			
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72																			
4	91	81	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64																			
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58																			
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53																			
7	75	63	56	51	73	62	55	51	61	55	50	60	54	50	58	53	50	48																			
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44																			
9	66	54	47	42	65	54	47	42	53	46	42	52	46	42	51	46	42	40																			
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	52335	52335	52335
5°	50001	53083	55626
10°	47937	55923	60703
15°	46543	60265	66208
20°	46608	63472	68855
25°	47798	62649	66262
30°	47726	57832	59171
35°	44711	48875	48208
40°	40050	37276	34783
45°	36331	23679	19420
50°	33371	12008	8293
55°	27390	5352	2736
60°	24053	3002	1501
65°	22622	2260	1130
70°	19376	1795	997
75°	14798	1318	791
80°	10607	786	393
85°	7827	0	0



TEST NUMBER: P251505

CATALOG NUMBER: LD4B10D010 EU4B10208030 4LBSW1LI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.2	5.3
10°-20°	162.6	16.4
20°-30°	251.5	25.4
30°-40°	247.8	25.0
40°-50°	152.2	15.4
50°-60°	67.7	6.8
60°-70°	37.8	3.8
70°-80°	16.4	1.7
80°-90°	2.9	0.3
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°	466.3	47.1
0°-40°	714.1	72.1
0°-60°	933.9	94.2
0°-90°	991.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	991.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	537	537	537	537	537	
5°	511	520	543	564	569	48
15°	461	500	597	643	656	131
25°	444	480	583	614	616	204
35°	376	391	411	409	405	233
45°	264	250	172	150	141	204
55°	161	146	32	18	16	148
65°	98	88	10	6	5	96
75°	39	34	4	2	2	43
85°	7	6	0	0	0	9
90°	0	0	0	0	0	



TEST NUMBER: P251505

CATALOG NUMBER: LD4B10D010 EU4B10208030 4LBSW1LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0
2.5°	524.4	524.4	524.4	524.4	525.8	523.7	525.8	525.8	527.9	528.6	526.5
5°	511.1	510.4	511.1	511.1	512.5	511.8	513.9	515.3	518.1	519.5	519.5
7.5°	497.1	497.1	497.1	498.5	500.6	499.9	502.0	504.1	508.3	511.1	513.2
10°	484.4	483.7	485.8	486.5	488.6	488.6	492.2	494.3	499.2	504.8	507.6
12.5°	472.5	471.8	473.2	475.3	478.8	478.8	481.6	485.1	492.2	498.5	503.4
15°	461.3	462.0	464.1	465.5	469.7	469.7	473.2	477.4	485.1	492.9	499.9
17.5°	453.6	454.3	455.7	457.8	462.0	462.0	465.5	470.4	478.8	487.2	495.7
20°	449.4	450.1	451.5	453.6	457.1	457.8	460.6	466.2	473.9	483.0	490.7
22.5°	447.3	448.7	450.1	451.5	455.0	455.0	458.5	462.7	470.4	479.5	486.5
25°	444.5	445.9	446.6	448.7	451.5	451.5	453.6	458.5	465.5	473.2	480.2
27.5°	436.8	438.2	438.9	441.0	443.8	443.1	445.9	449.4	455.7	462.7	468.3
30°	424.1	424.8	426.3	427.0	429.1	429.1	431.2	434.7	438.9	445.2	450.8
32.5°	403.8	405.2	405.9	406.6	408.7	408.0	408.7	410.8	415.0	420.6	424.1
35°	375.8	378.6	378.6	380.0	380.7	380.0	380.0	382.8	384.9	389.1	391.2
37.5°	344.9	347.0	346.3	347.7	348.4	346.3	347.7	348.4	351.2	353.3	354.0
40°	314.8	315.5	315.5	315.5	315.5	314.8	315.5	316.2	318.3	318.3	316.2
42.5°	287.4	288.1	288.1	286.7	288.1	287.4	287.4	287.4	287.4	284.6	282.5
45°	263.6	264.3	264.3	263.6	263.6	262.2	261.5	260.8	258.7	255.2	250.3
47.5°	241.2	242.6	243.3	241.9	241.2	239.8	239.8	235.6	232.8	228.5	221.5
50°	220.1	221.5	221.5	220.1	220.1	218.0	215.9	214.5	210.3	205.4	197.0
52.5°	193.5	195.6	195.6	194.9	194.9	192.1	191.4	188.6	185.1	179.5	172.5
55°	161.2	164.1	163.3	162.6	161.2	161.2	161.2	159.1	157.0	152.8	145.8
57.5°	138.1	138.8	138.8	138.1	138.1	136.7	136.7	134.6	133.9	129.7	124.1
60°	123.4	123.4	124.1	123.4	122.7	122.0	121.3	119.9	117.8	115.0	110.8
62.5°	111.5	112.2	112.2	111.5	110.8	110.1	109.4	108.0	106.6	104.5	100.3
65°	98.1	99.6	98.9	98.1	97.4	96.7	96.7	95.3	93.9	92.5	88.3
67.5°	83.4	84.1	84.8	83.4	83.4	82.7	82.7	81.3	80.6	77.8	75.0
70°	68.0	68.7	68.7	68.0	68.0	67.3	67.3	66.6	65.9	63.8	61.0
72.5°	53.3	54.0	53.3	52.6	52.6	52.6	51.9	51.2	50.5	49.1	47.0
75°	39.3	39.3	40.0	39.3	38.6	38.6	37.9	37.9	36.5	35.8	33.7
77.5°	28.0	28.7	28.0	28.0	27.3	26.6	26.6	25.9	25.9	25.2	23.8
80°	18.9	18.9	19.6	18.9	18.2	18.9	18.2	17.5	17.5	16.8	15.4
82.5°	11.9	12.6	11.9	11.9	11.9	11.9	11.9	11.2	11.2	10.5	9.8
85°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.3	6.3	6.3	5.6
87.5°	3.5	3.5	2.8	2.8	3.5	3.5	3.5	2.8	2.8	2.8	2.8
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: P251505

CATALOG NUMBER: LD4B10D010 EU4B10208030 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0
2.5°	529.3	530.0	531.4	533.5	533.5	532.1	535.6	535.6	537.0	537.7	540.5
5°	523.7	525.1	527.9	531.4	532.1	531.4	536.3	538.4	540.5	542.6	546.8
7.5°	518.8	521.6	526.5	531.4	533.5	533.5	541.2	544.0	548.2	552.4	557.4
10°	516.0	520.2	527.2	534.9	537.0	539.1	548.2	553.8	559.5	565.1	572.1
12.5°	512.5	520.2	529.3	539.1	543.3	546.1	558.8	565.8	573.5	580.5	589.6
15°	511.8	520.9	532.8	545.4	551.0	555.2	569.3	579.1	588.2	597.3	606.4
17.5°	509.0	520.2	534.9	548.9	555.9	561.6	577.7	589.6	600.1	609.2	619.7
20°	505.5	518.1	534.2	549.6	557.4	563.0	580.5	591.7	603.6	612.0	621.9
22.5°	500.6	513.2	529.3	544.7	551.7	556.7	574.2	584.0	594.5	602.9	612.0
25°	492.2	504.1	518.1	530.7	537.7	541.9	557.4	566.5	574.2	582.6	591.0
27.5°	480.2	489.3	501.3	510.4	514.6	518.8	531.4	539.1	546.1	553.1	558.8
30°	459.2	466.2	474.6	482.3	486.5	487.2	499.2	503.4	509.0	513.9	518.1
32.5°	431.2	436.8	441.7	445.9	448.7	449.4	458.5	459.9	465.5	465.5	471.8
35°	395.4	398.2	401.7	401.7	403.8	401.7	408.0	409.4	410.1	410.8	415.7
37.5°	354.7	356.1	358.2	354.0	354.0	351.9	354.0	355.4	352.6	352.6	356.1
40°	316.2	313.4	310.6	306.4	304.3	300.1	300.1	296.6	294.4	293.0	293.7
42.5°	279.0	272.7	266.4	257.3	253.1	248.9	244.7	239.8	238.4	234.9	232.8
45°	243.3	234.2	225.7	211.0	202.6	198.4	189.3	179.5	173.2	171.8	166.2
47.5°	213.1	199.8	185.8	168.3	159.8	152.1	138.8	130.4	122.0	117.8	114.3
50°	186.5	174.6	156.3	137.4	126.9	119.2	104.5	94.6	85.5	79.2	75.0
52.5°	163.3	150.0	133.2	111.5	101.0	92.5	76.4	65.2	57.5	51.2	46.3
55°	137.4	126.9	110.1	89.7	79.2	69.4	55.4	43.5	35.8	31.5	28.0
57.5°	118.5	109.4	93.2	73.6	63.8	54.7	40.7	30.8	24.5	20.3	18.2
60°	105.9	97.4	83.4	64.5	55.4	47.0	33.7	24.5	18.9	15.4	14.0
62.5°	95.3	86.9	74.3	56.8	49.1	40.7	28.7	20.3	15.4	12.6	10.5
65°	83.4	75.7	64.5	49.1	42.1	35.1	24.5	16.8	12.6	9.8	8.4
67.5°	70.8	63.8	54.0	40.7	35.1	29.4	19.6	14.0	10.5	8.4	7.0
70°	57.5	51.9	42.8	33.0	28.0	23.1	16.1	11.2	7.7	6.3	5.6
72.5°	44.2	39.3	33.0	25.2	21.0	17.5	11.9	8.4	6.3	4.9	4.2
75°	31.5	28.0	23.1	18.2	15.4	12.6	9.1	6.3	4.2	3.5	2.8
77.5°	21.7	19.6	16.1	12.6	10.5	9.1	6.3	4.2	3.5	2.8	2.1
80°	14.0	12.6	10.5	7.7	6.3	5.6	3.5	2.8	2.1	1.4	1.4
82.5°	8.4	7.7	6.3	4.2	3.5	2.8	2.1	1.4	1.4	0.7	0.7
85°	4.9	4.2	2.8	2.1	2.1	1.4	1.4	0.7	0.7	0.0	0.0
87.5°	2.1	1.4	1.4	0.7	0.7	0.7	0.7	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	0.0	0.0	0.0



TEST NUMBER: P251505

CATALOG NUMBER: LD4B10D010 EU4B10208030 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0
2.5°	539.1	542.6	541.9	544.0	543.3	543.3	546.8	545.4	548.9	548.9	549.6
5°	546.8	551.7	551.7	555.2	554.5	555.9	559.5	559.5	563.7	565.1	565.1
7.5°	558.1	564.4	565.8	569.3	570.0	572.8	575.6	576.3	581.9	583.3	584.0
10°	573.5	581.2	583.3	586.8	588.2	591.0	594.5	595.9	602.9	603.6	606.4
12.5°	592.4	600.8	602.9	607.1	607.8	611.3	616.2	617.6	624.7	626.8	628.9
15°	610.6	618.3	621.9	626.1	626.8	631.0	635.2	636.6	642.9	645.7	647.8
17.5°	623.3	632.4	634.5	640.1	640.1	643.6	647.8	649.2	655.5	657.6	659.0
20°	626.1	634.5	637.3	641.5	642.2	644.3	647.8	649.2	654.8	655.5	657.6
22.5°	615.5	624.0	625.4	629.6	630.3	632.4	635.2	634.5	641.5	640.8	641.5
25°	593.1	600.8	600.8	605.7	605.0	607.1	608.5	607.8	614.1	614.1	614.1
27.5°	560.9	567.9	568.6	572.1	570.0	570.7	572.1	571.4	575.6	575.6	575.6
30°	520.9	526.5	524.4	527.2	525.8	527.2	525.8	525.1	526.5	527.9	527.2
32.5°	471.1	475.3	475.3	476.0	476.0	471.8	470.4	470.4	469.7	469.0	469.0
35°	413.6	417.1	415.7	415.7	415.0	410.8	408.7	407.3	409.4	405.2	408.0
37.5°	354.7	355.4	353.3	352.6	349.1	349.1	345.6	342.8	344.2	343.5	340.7
40°	290.2	293.0	288.8	287.4	289.5	286.7	283.2	279.7	282.5	279.0	280.4
42.5°	227.1	226.4	225.0	225.0	225.0	220.8	220.1	219.4	220.1	217.3	215.2
45°	164.1	161.9	159.8	159.8	157.0	155.6	155.6	153.5	150.0	150.0	145.8
47.5°	110.8	105.9	104.5	103.8	102.4	102.4	101.0	99.6	98.9	95.3	95.3
50°	72.2	67.3	65.9	65.2	65.9	64.5	63.1	61.7	60.3	59.6	58.2
52.5°	43.5	41.4	40.0	39.3	37.9	37.2	36.5	35.1	34.4	34.4	33.7
55°	25.9	23.8	21.0	21.0	21.0	20.3	19.6	18.9	18.2	18.2	17.5
57.5°	16.1	14.7	13.3	12.6	12.6	12.6	11.9	11.9	11.9	11.9	11.2
60°	11.9	10.5	9.8	9.8	9.8	9.1	9.1	9.1	9.1	8.4	8.4
62.5°	9.1	8.4	7.7	7.7	7.0	7.0	7.0	7.0	7.0	7.0	6.3
65°	7.7	6.3	6.3	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
67.5°	5.6	4.9	4.9	4.9	4.9	4.2	4.2	4.2	4.2	4.2	4.2
70°	4.2	4.2	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
72.5°	3.5	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
75°	2.8	2.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
77.5°	2.1	2.1	2.1	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
80°	1.4	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
82.5°	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	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	0.0	0.0	0.0



TEST NUMBER: P251505

CATALOG NUMBER: LD4B10D010 EU4B10208030 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0
2.5°	549.6	553.1	549.6	549.6	551.7	551.0	552.4	550.3
5°	565.8	570.7	567.2	566.5	570.0	569.3	570.0	568.6
7.5°	585.4	590.3	586.8	586.8	590.3	589.6	591.7	590.3
10°	607.8	613.4	608.5	609.2	614.1	613.4	613.4	613.4
12.5°	631.0	636.6	633.8	633.8	637.3	638.0	638.7	638.0
15°	649.9	655.5	652.0	652.0	656.9	656.2	656.9	656.2
17.5°	661.1	666.7	662.5	662.5	666.7	666.7	667.4	668.1
20°	658.3	664.6	661.1	659.7	664.6	664.6	663.9	663.9
22.5°	642.2	647.8	645.0	643.6	647.1	645.7	645.0	645.7
25°	614.1	619.7	614.1	614.1	616.9	616.2	616.9	616.2
27.5°	576.3	580.5	574.9	574.2	577.0	575.6	574.9	577.0
30°	525.8	530.0	527.2	525.1	528.6	526.5	525.1	525.8
32.5°	468.3	471.1	469.7	466.2	468.3	466.9	466.2	466.9
35°	405.2	408.7	403.1	402.4	405.9	403.1	401.7	405.2
37.5°	340.0	344.2	339.3	340.0	337.9	338.6	337.2	339.3
40°	278.3	277.6	276.2	275.5	276.2	274.1	275.5	273.4
42.5°	211.7	213.1	212.4	211.7	212.4	209.6	208.2	211.0
45°	147.2	146.5	145.1	143.7	143.7	143.0	143.0	140.9
47.5°	94.6	93.9	91.1	91.8	93.2	91.8	89.7	92.5
50°	57.5	56.8	56.8	56.1	57.5	56.1	54.7	54.7
52.5°	32.2	32.2	31.5	31.5	31.5	31.5	30.8	30.1
55°	17.5	16.8	16.8	16.8	16.1	16.1	16.1	16.1
57.5°	11.2	11.2	11.2	11.2	11.2	11.2	10.5	10.5
60°	8.4	8.4	8.4	8.4	7.7	8.4	7.7	7.7
62.5°	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
65°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
67.5°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
70°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
72.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
75°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
77.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
80°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)