

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: P251582

Luminaire Tested: **LD4B10D010 EU4B10208027 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251582
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B10D010 EU4B10208027 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 911.0 lumens
Efficiency: N/A
Efficacy: 90.6 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

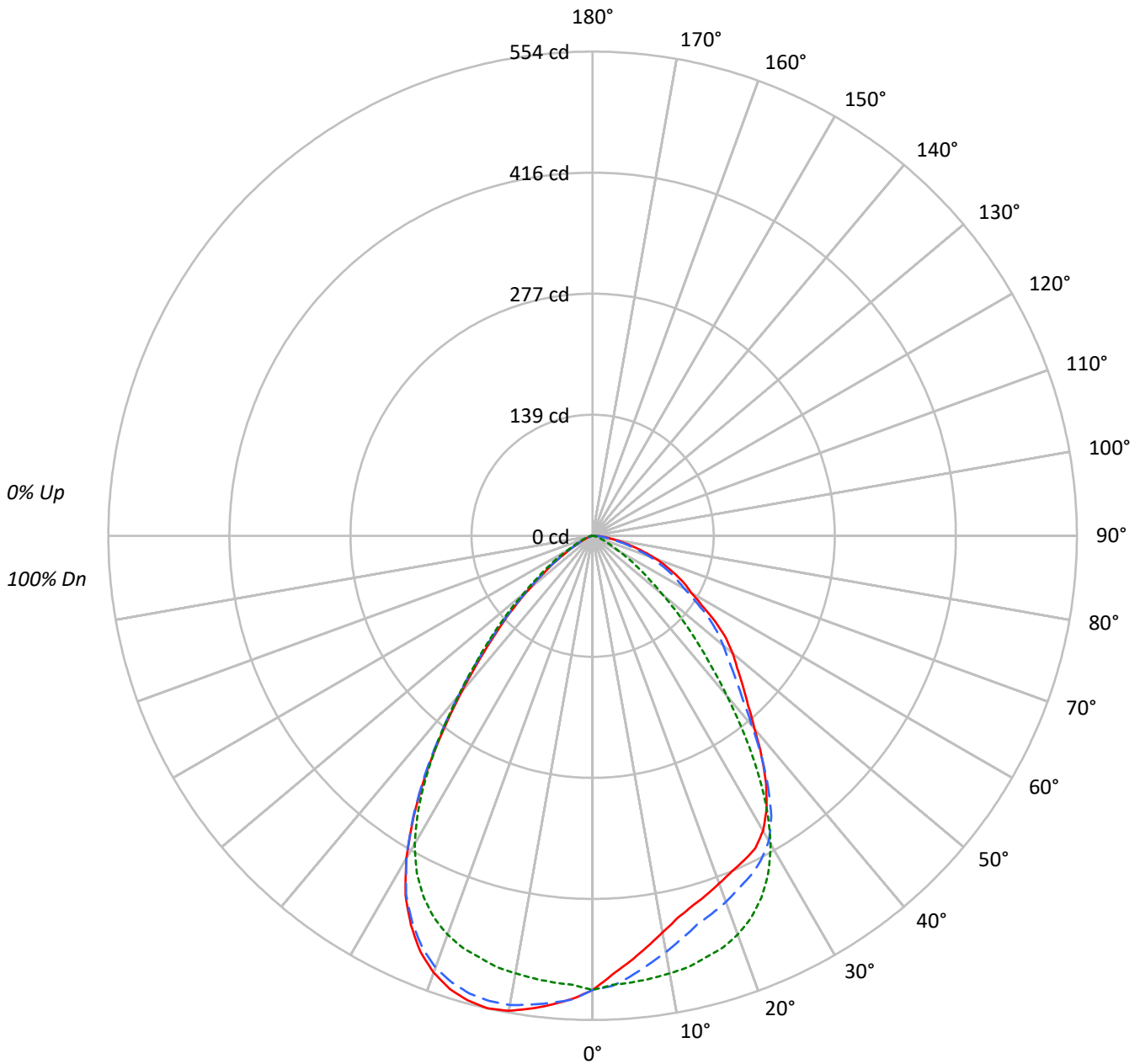
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251582

CATALOG NUMBER: LD4B10D010 EU4B10208027 4LBSW1H

Luminous Intensity Polar Plot





TEST NUMBER: P251582

CATALOG NUMBER: LD4B10D010 EU4B10208027 4LBSW1H

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	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89																			
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79																			
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70																			
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62																			
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56																			
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50																			
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46																			
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42																			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38																			
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	50649	50649	50649
5°	47829	50187	52682
10°	45601	50302	54617
15°	44263	50408	55543
20°	43902	50363	55154
25°	44078	49121	52863
30°	43866	45824	47940
35°	41118	39119	39523
40°	36640	30330	29656
45°	33506	22617	21225
50°	31688	15844	14313
55°	29140	10705	8988
60°	25456	6257	4951
65°	24098	4013	2790
70°	21941	2849	1710
75°	18150	2033	1243
80°	14255	1122	730
85°	12748	783	0



TEST NUMBER: P251582

CATALOG NUMBER: LD4B10D010 EU4B10208027 4LBSW1H

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	49.1	5.4
10°-20°	140.9	15.5
20°-30°	208.8	22.9
30°-40°	209.1	23.0
40°-50°	146.1	16.0
50°-60°	87.0	9.5
60°-70°	45.4	5.0
70°-80°	20.2	2.2
80°-90°	4.4	0.5
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°	398.8	43.8
0°-40°	607.9	66.7
0°-60°	841.0	92.3
0°-90°	911.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	911.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	520	520	520	520	520	
5°	489	506	513	536	538	46
15°	439	461	500	542	550	124
25°	410	429	457	488	492	189
35°	346	350	329	335	332	214
45°	243	231	164	159	154	189
55°	172	161	63	55	53	152
65°	104	96	17	13	12	103
75°	48	42	5	3	3	52
85°	11	9	1	1	0	13
90°	0	0	0	0	0	



TEST NUMBER: P251582

CATALOG NUMBER: LD4B10D010 EU4B10208027 4LBSW1H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	519.7	519.7	519.7	519.7	519.7	519.7	519.7	519.7	519.7	519.7	519.7
2.5°	503.0	509.0	503.0	505.0	513.0	505.6	509.7	509.7	507.7	512.3	515.7
5°	488.9	494.9	488.9	491.6	500.3	492.9	497.6	496.3	496.9	501.0	505.6
7.5°	474.8	479.5	474.2	477.5	485.6	479.5	483.5	483.5	484.2	490.2	494.3
10°	460.8	464.8	460.8	463.5	472.2	466.8	469.5	470.2	472.2	477.5	483.5
12.5°	448.1	451.4	447.4	451.4	458.8	453.4	456.8	457.4	459.4	465.5	472.2
15°	438.7	442.0	438.0	441.4	448.1	444.0	446.7	448.1	449.4	454.7	460.8
17.5°	431.3	434.0	430.6	434.7	440.0	435.3	439.3	439.3	441.4	446.7	453.4
20°	423.3	426.0	423.3	426.6	432.6	428.6	432.0	432.0	434.0	440.0	446.0
22.5°	415.9	417.2	415.9	418.6	424.6	421.3	423.3	423.9	426.0	431.3	436.7
25°	409.9	412.6	411.2	413.9	417.9	414.6	416.6	417.2	419.3	423.9	428.6
27.5°	403.2	404.5	403.2	406.5	409.9	407.2	409.2	408.5	409.9	413.9	417.9
30°	389.8	391.1	391.1	393.1	395.8	394.5	396.5	394.5	395.8	399.2	403.2
32.5°	370.4	371.0	371.7	373.7	375.7	373.7	375.1	375.1	375.1	377.7	380.4
35°	345.6	346.9	346.3	347.6	349.6	348.9	348.9	348.3	346.9	348.3	349.6
37.5°	317.5	315.4	315.4	317.5	318.8	316.1	317.5	316.1	316.1	316.8	316.8
40°	288.0	286.0	288.0	288.7	289.3	288.0	287.3	286.0	284.0	284.6	283.3
42.5°	263.2	261.9	262.5	262.5	263.2	261.9	262.5	259.9	257.8	256.5	254.5
45°	243.1	241.1	243.1	241.8	241.8	241.1	240.4	239.1	236.4	234.4	231.1
47.5°	224.4	224.4	225.0	225.0	225.0	223.7	223.7	221.0	218.3	215.7	211.0
50°	209.0	207.6	210.3	210.3	208.3	207.6	208.3	204.9	202.9	199.6	194.9
52.5°	192.2	192.2	192.9	192.9	192.2	190.9	191.5	188.9	186.9	183.5	178.8
55°	171.5	170.1	172.1	172.1	171.5	170.8	171.5	169.4	167.4	164.8	160.7
57.5°	148.0	147.3	148.7	149.4	148.0	148.0	148.7	146.7	146.0	143.3	139.3
60°	130.6	129.9	131.3	131.9	130.6	130.6	130.6	127.9	126.6	123.9	121.2
62.5°	118.5	117.9	119.2	118.5	117.9	117.2	117.9	115.2	113.9	111.2	108.5
65°	104.5	105.1	105.8	105.8	105.1	104.5	104.5	103.1	101.8	99.1	95.8
67.5°	91.1	91.1	91.8	92.4	91.8	91.8	91.8	89.7	88.4	86.4	82.4
70°	77.0	76.3	78.4	78.4	77.0	77.7	77.0	76.3	75.0	72.3	69.0
72.5°	62.3	62.3	63.0	63.0	62.3	62.3	62.3	61.6	59.6	58.3	54.9
75°	48.2	48.2	48.9	49.6	48.2	48.2	48.9	47.6	46.2	44.2	42.2
77.5°	36.2	35.5	36.2	36.2	35.5	35.5	35.5	34.8	34.2	32.1	30.1
80°	25.4	24.8	25.4	25.4	25.4	24.8	24.8	24.1	24.1	22.8	20.8
82.5°	17.4	16.7	17.4	17.4	17.4	16.7	16.7	16.7	16.1	15.4	14.1
85°	11.4	10.7	10.7	11.4	10.7	10.7	10.7	10.7	10.0	9.4	8.7
87.5°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	4.7	4.7	4.7	4.0
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: P251582

CATALOG NUMBER: LD4B10D010 EU4B10208027 4LBSW1H

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	519.7	519.7	519.7	519.7	519.7	519.7	519.7	519.7	519.7	519.7	519.7
2.5°	513.0	511.7	515.7	514.4	515.0	511.7	517.0	514.4	517.7	514.4	521.1
5°	504.3	503.0	509.0	508.3	509.0	506.3	512.3	511.7	515.7	513.0	520.4
7.5°	494.9	493.6	500.3	501.0	502.3	499.6	507.7	507.7	511.7	511.0	519.0
10°	484.2	484.9	491.6	492.9	495.6	494.3	501.6	503.6	509.0	508.3	518.4
12.5°	474.2	474.2	482.9	485.6	487.6	486.9	495.6	498.3	504.3	505.6	515.0
15°	464.1	464.8	472.8	476.9	479.5	478.9	488.2	491.6	499.0	499.6	511.0
17.5°	456.1	455.4	464.1	467.5	471.5	470.8	480.9	484.9	492.3	494.3	505.0
20°	449.4	448.7	456.8	460.8	463.5	462.8	472.8	477.5	484.2	485.6	496.3
22.5°	441.4	440.0	448.1	451.4	454.1	453.4	462.1	465.5	472.2	473.5	483.5
25°	432.0	430.6	438.0	440.0	442.0	440.7	448.1	450.1	455.4	456.8	466.8
27.5°	421.3	417.9	423.9	423.9	425.3	423.3	428.6	430.6	435.3	435.3	444.7
30°	404.5	399.8	403.2	402.5	403.2	400.5	403.8	404.5	407.9	407.2	413.9
32.5°	381.1	374.4	376.4	374.4	372.4	368.4	372.4	371.0	373.7	371.0	377.1
35°	348.9	342.2	341.6	338.9	336.9	333.5	333.5	330.2	330.8	328.8	332.9
37.5°	314.1	305.4	304.1	298.7	295.4	291.3	291.3	288.7	285.3	284.0	287.3
40°	279.9	270.6	267.2	258.5	255.2	251.2	248.5	245.1	243.8	238.4	241.1
42.5°	250.5	240.4	233.1	223.7	220.3	214.3	210.3	206.3	204.3	198.2	200.9
45°	225.7	213.6	205.6	193.6	188.9	182.2	176.1	171.5	166.8	164.1	162.7
47.5°	204.9	192.2	181.5	168.1	160.7	154.7	146.7	142.0	136.0	132.6	130.6
50°	187.5	173.5	161.4	146.0	138.6	131.9	122.6	115.2	109.8	104.5	103.1
52.5°	172.1	157.4	144.0	126.6	117.9	109.8	99.8	91.8	87.1	81.0	80.4
55°	154.0	141.3	126.6	108.5	99.8	91.8	81.0	73.0	67.0	63.0	61.6
57.5°	134.6	122.6	108.5	90.4	81.7	73.0	63.0	55.6	50.2	46.9	46.2
60°	116.5	105.1	91.8	73.7	65.0	57.6	46.9	39.5	34.8	32.1	30.8
62.5°	103.1	92.4	79.7	63.0	54.9	47.6	37.5	30.8	26.8	24.1	22.8
65°	90.4	79.7	68.3	52.9	46.2	39.5	30.1	24.1	20.1	17.4	16.1
67.5°	77.0	67.6	56.9	44.2	37.5	32.1	24.1	18.8	15.4	13.4	12.1
70°	63.6	54.9	46.2	35.5	30.8	25.4	18.8	14.7	11.4	10.0	8.7
72.5°	50.2	43.5	36.2	27.5	23.4	20.1	14.7	10.7	8.7	7.4	6.0
75°	37.5	32.8	26.8	20.8	17.4	14.7	10.7	8.0	6.7	5.4	4.7
77.5°	26.8	22.8	18.8	14.1	12.7	10.7	7.4	6.0	4.7	3.3	2.7
80°	18.1	16.1	12.7	10.0	8.0	7.4	5.4	4.0	2.7	2.0	2.0
82.5°	12.1	10.0	8.0	6.0	5.4	4.7	3.3	2.7	2.0	1.3	1.3
85°	7.4	6.0	4.7	3.3	3.3	2.7	2.0	1.3	0.7	0.7	0.7
87.5°	3.3	2.7	2.0	1.3	1.3	0.7	0.7	0.7	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: P251582

CATALOG NUMBER: LD4B10D010 EU4B10208027 4LBSW1H

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	519.7	519.7	519.7	519.7	519.7	519.7	519.7	519.7	519.7	519.7	519.7
2.5°	526.4	522.4	519.7	523.1	524.4	522.4	524.4	527.8	531.1	531.8	522.4
5°	527.1	523.1	521.7	525.7	526.4	525.7	527.8	532.4	536.5	537.8	528.4
7.5°	527.1	524.4	523.7	528.4	529.1	528.4	531.8	537.1	541.1	543.8	534.4
10°	525.7	524.4	525.1	529.1	530.4	530.4	535.1	541.1	545.2	547.8	538.5
12.5°	523.7	523.7	523.7	528.4	529.8	530.4	534.4	542.5	545.2	549.2	539.8
15°	520.4	520.4	520.4	525.1	527.1	527.1	531.8	539.1	542.5	546.5	537.1
17.5°	514.4	514.4	515.0	519.0	521.1	521.1	525.7	533.8	535.8	540.5	531.1
20°	505.6	505.6	506.3	510.3	512.3	511.0	517.0	523.7	525.7	529.8	520.4
22.5°	492.9	492.9	492.9	496.9	498.3	497.6	503.6	509.7	509.7	515.0	505.0
25°	474.2	475.5	474.2	478.2	479.5	478.9	484.2	489.6	488.2	494.3	484.2
27.5°	451.4	450.7	450.7	454.1	454.1	453.4	457.4	463.5	462.1	466.1	456.8
30°	419.9	421.9	418.6	423.3	421.3	419.9	422.6	428.0	426.0	429.3	421.9
32.5°	383.8	381.1	381.1	381.1	382.4	379.1	381.7	384.4	382.4	385.8	377.7
35°	336.2	336.9	334.9	335.5	336.2	332.2	334.9	337.5	334.9	336.9	329.5
37.5°	288.7	289.3	284.6	287.3	284.6	283.3	286.0	287.3	284.6	286.6	278.6
40°	241.1	239.8	239.1	239.1	239.8	236.4	238.4	240.4	238.4	239.8	232.4
42.5°	199.6	198.9	197.6	198.2	196.2	195.6	196.2	198.2	196.2	197.6	192.2
45°	163.4	162.1	160.1	160.7	160.7	157.4	159.4	160.7	158.7	159.4	154.7
47.5°	129.9	127.9	127.9	127.2	127.2	125.9	127.9	127.2	125.2	126.6	121.9
50°	101.1	99.8	99.8	99.8	99.8	97.8	98.5	99.8	97.8	97.8	95.1
52.5°	79.0	77.0	75.7	75.7	75.7	75.0	75.0	75.7	73.7	73.7	73.0
55°	59.6	58.9	56.9	56.9	56.9	54.9	55.6	55.6	54.9	54.9	52.9
57.5°	44.2	42.2	40.9	40.9	39.5	39.5	38.8	39.5	38.2	38.2	36.8
60°	29.5	28.1	27.5	26.8	26.8	26.1	26.8	26.1	26.1	25.4	24.8
62.5°	21.4	20.1	18.8	18.8	18.8	18.1	18.1	18.1	18.1	18.1	17.4
65°	15.4	14.1	14.1	13.4	13.4	12.7	12.7	12.7	12.7	12.7	12.1
67.5°	10.7	10.0	9.4	9.4	9.4	9.4	9.4	9.4	8.7	8.7	8.7
70°	8.0	7.4	6.7	6.7	6.7	6.7	6.7	6.0	6.7	6.7	6.0
72.5°	5.4	5.4	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
75°	4.0	4.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
77.5°	2.7	2.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
80°	2.0	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
82.5°	1.3	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
85°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	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: P251582

CATALOG NUMBER: LD4B10D010 EU4B10208027 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	519.7	519.7	519.7	519.7	519.7	519.7	519.7	519.7
2.5°	532.4	531.8	530.4	532.4	527.1	525.1	524.4	530.4
5°	539.8	538.5	538.5	540.5	534.4	533.1	531.8	538.5
7.5°	546.5	545.2	545.2	547.2	541.8	540.5	539.1	545.8
10°	550.5	550.5	550.5	551.9	547.2	545.8	545.2	551.9
12.5°	552.5	552.5	551.9	554.5	548.5	548.5	547.2	553.9
15°	549.9	549.9	549.9	551.9	546.5	545.2	545.2	550.5
17.5°	543.2	543.2	542.5	544.5	538.5	538.5	537.8	543.8
20°	533.1	533.1	531.8	534.4	528.4	526.4	525.7	531.8
22.5°	517.0	516.4	515.7	517.0	511.7	510.3	509.7	515.0
25°	496.3	495.6	494.3	495.6	489.6	487.6	487.6	491.6
27.5°	466.8	466.8	464.8	466.8	460.1	459.4	458.8	463.5
30°	430.6	428.0	426.6	429.3	422.6	422.6	421.3	426.0
32.5°	385.8	383.1	382.4	383.8	377.7	375.7	378.4	381.1
35°	334.2	334.9	332.2	332.2	326.8	327.5	328.2	332.2
37.5°	284.6	283.3	282.6	283.3	279.3	277.9	276.6	280.6
40°	238.4	235.1	234.4	234.4	231.1	230.4	231.1	233.1
42.5°	194.9	194.2	191.5	192.9	189.5	190.9	190.2	190.2
45°	157.4	158.1	155.4	157.4	154.7	152.7	152.7	154.0
47.5°	124.6	124.6	123.9	123.9	121.9	122.6	121.2	123.2
50°	96.4	96.4	95.1	95.8	94.4	94.4	93.8	94.4
52.5°	73.7	73.0	73.0	72.3	71.0	71.7	72.3	71.0
55°	53.6	54.2	52.9	53.6	52.2	52.9	52.2	52.9
57.5°	36.8	37.5	36.2	37.5	36.2	36.8	36.2	36.2
60°	25.4	25.4	24.8	25.4	24.8	24.8	24.1	25.4
62.5°	17.4	17.4	17.4	17.4	17.4	16.7	17.4	17.4
65°	12.7	12.1	12.1	12.1	12.1	12.1	12.1	12.1
67.5°	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
70°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
72.5°	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
75°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
77.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
80°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
82.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
85°	0.7	0.7	0.7	0.0	0.7	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



Report Generated By E9808895 / USPTCWHP6082093





— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)