

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: P251925

Luminaire Tested: **LD4B20D010 EU4B10209024 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251925
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-15)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B20D010 EU4B10209024 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2400K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1263.0 lumens
Efficiency: N/A
Efficacy: 60.7 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

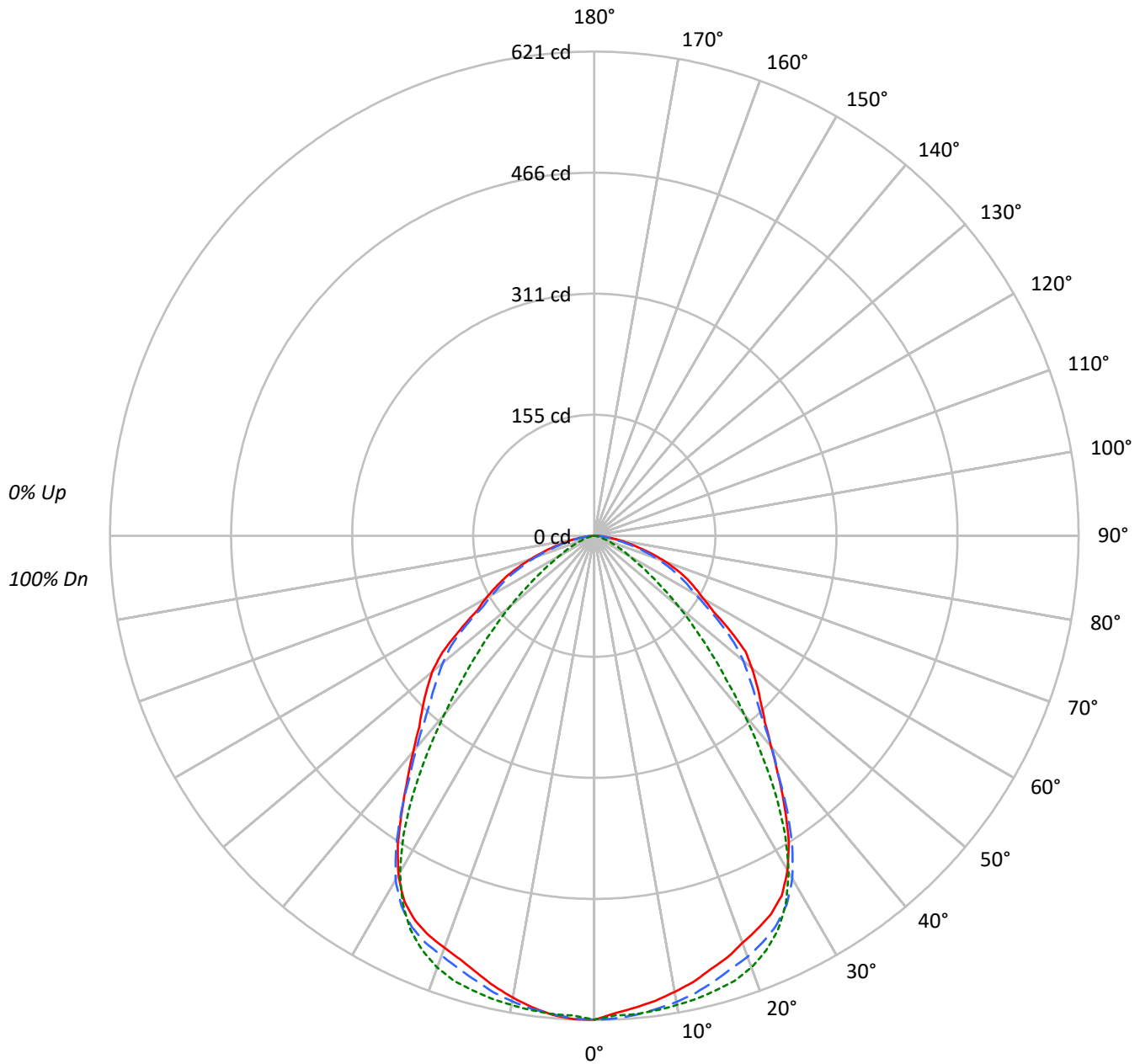
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251925

CATALOG NUMBER: LD4B20D010 EU4B10209024 4LBDW1H

Luminous Intensity Polar Plot





TEST NUMBER: P251925

CATALOG NUMBER: LD4B20D010 EU4B10209024 4LBDW1H

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	111	107	103	100	108	104	101	98	100	98	95		96	94	92		93
2	102	95	89	84	100	93	88	83	90	85	81		87	83	80		84
3	94	85	78	72	92	84	77	72	81	75	70		78	73	69		76
4	87	77	69	63	85	75	68	62	73	67	62		71	65	61		69
5	81	69	61	55	79	68	61	55	66	60	54		64	58	54		63
6	75	63	55	49	73	62	55	49	60	54	49		59	53	48		57
7	70	58	50	44	68	57	49	44	56	49	44		54	48	43		53
8	66	53	45	40	64	52	45	40	51	44	40		50	44	39		49
9	62	49	41	36	60	49	41	36	47	41	36		46	40	36		45
10	58	46	38	33	57	45	38	33	44	38	33		43	37	33		42

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	60482	60482	60482
5°	59403	60244	60342
10°	58773	60465	59525
15°	58086	60881	58570
20°	57633	61097	58318
25°	57595	59960	58520
30°	55761	56087	56515
35°	50659	48280	51111
40°	44820	38014	45915
45°	41582	28944	42892
50°	39951	21424	41104
55°	36174	14765	35682
60°	31459	10058	31265
65°	30394	7264	28849
70°	27469	4901	24477
75°	22631	3238	19430
80°	18240	2133	14480
85°	14984	1118	9617



TEST NUMBER: P251925

CATALOG NUMBER: LD4B20D010 EU4B10209024 4LBDW1H

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	58.6	4.6
10°-20°	167.5	13.3
20°-30°	253.1	20.0
30°-40°	264.8	21.0
40°-50°	214.5	17.0
50°-60°	156.0	12.4
60°-70°	96.2	7.6
70°-80°	43.5	3.4
80°-90°	8.8	0.7
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°	479.1	37.9
0°-40°	744.0	58.9
0°-60°	1114.5	88.2
0°-90°	1263.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1263.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	621	621	621	621	621	
5°	607	617	616	616	617	58
15°	576	592	603	590	580	163
25°	536	552	558	554	544	245
35°	426	432	406	432	430	265
45°	302	292	210	296	311	235
55°	213	200	87	202	210	190
65°	132	118	32	116	125	129
75°	60	52	9	45	52	65
85°	13	10	1	8	9	15
90°	0	0	0	0	0	



TEST NUMBER: P251925

CATALOG NUMBER: LD4B20D010 EU4B10209024 4LBDW1H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6
2.5°	613.0	613.0	618.7	625.4	619.6	613.9	617.7	615.8	622.5	622.5	619.6
5°	607.2	609.1	613.9	619.6	614.9	609.1	613.9	612.0	618.7	618.7	616.8
7.5°	601.5	602.4	608.2	614.9	610.1	604.4	608.2	607.2	613.0	613.9	612.0
10°	593.9	594.8	600.5	607.2	602.4	597.7	601.5	600.5	608.2	608.2	607.2
12.5°	586.2	587.2	592.9	598.6	593.9	589.1	592.9	592.9	600.5	601.5	600.5
15°	575.7	577.6	582.4	588.1	585.3	579.5	583.4	583.4	590.0	591.9	591.9
17.5°	567.1	568.1	572.9	578.6	574.8	570.0	573.8	573.8	580.5	582.4	582.4
20°	555.7	557.6	562.3	568.1	565.2	561.4	564.3	564.3	571.9	573.8	574.8
22.5°	546.1	548.0	551.8	559.5	554.7	551.8	555.7	554.7	563.3	564.3	564.3
25°	535.6	537.5	542.3	547.1	544.2	541.3	544.2	544.2	550.9	551.8	551.8
27.5°	520.3	521.3	526.1	530.8	528.0	524.2	528.0	527.0	533.7	534.7	533.7
30°	495.5	497.4	499.3	506.0	503.2	500.3	504.1	502.2	508.9	508.9	507.9
32.5°	464.0	464.0	467.8	472.6	468.8	466.9	469.7	470.7	475.5	475.5	472.6
35°	425.8	427.7	430.6	433.5	430.6	428.7	431.5	430.6	436.3	434.4	431.5
37.5°	387.6	388.6	391.4	395.3	391.4	388.6	389.5	388.6	393.4	393.4	388.6
40°	352.3	354.2	356.1	359.9	356.1	354.2	355.2	352.3	358.0	356.1	353.3
42.5°	323.7	324.6	327.5	329.4	325.6	324.6	325.6	323.7	326.5	324.6	318.9
45°	301.7	301.7	302.7	305.5	301.7	300.7	300.7	298.8	301.7	297.9	292.2
47.5°	282.6	283.6	284.5	286.4	283.6	280.7	281.7	277.8	279.7	276.9	269.2
50°	263.5	265.4	266.4	268.3	265.4	263.5	264.5	260.6	260.6	255.9	249.2
52.5°	244.4	245.4	244.4	246.3	244.4	241.6	242.5	238.7	238.7	233.0	226.3
55°	212.9	213.9	214.8	216.7	214.8	212.0	213.9	211.0	211.0	207.2	199.5
57.5°	181.4	182.4	183.3	184.3	184.3	182.4	183.3	181.4	180.4	177.6	171.9
60°	161.4	161.4	161.4	162.3	161.4	160.4	160.4	158.5	158.5	154.7	148.9
62.5°	146.1	147.0	147.0	148.0	147.0	146.1	145.1	143.2	142.3	138.4	133.7
65°	131.8	131.8	130.8	132.7	131.8	130.8	130.8	128.9	127.0	123.2	118.4
67.5°	114.6	115.5	114.6	115.5	115.5	114.6	113.6	111.7	110.8	107.9	102.2
70°	96.4	96.4	96.4	97.4	96.4	96.4	97.4	94.5	93.6	89.7	85.0
72.5°	78.3	79.2	79.2	78.3	79.2	77.3	77.3	77.3	76.4	72.6	67.8
75°	60.1	61.1	61.1	62.1	61.1	60.1	60.1	59.2	58.2	55.4	51.6
77.5°	44.9	44.9	45.8	45.8	45.8	44.9	44.9	43.0	43.0	41.1	37.2
80°	32.5	32.5	31.5	32.5	32.5	31.5	31.5	30.6	30.6	28.6	25.8
82.5°	21.0	22.0	22.0	22.0	22.0	21.0	21.0	21.0	20.0	19.1	17.2
85°	13.4	13.4	13.4	13.4	14.3	13.4	14.3	13.4	13.4	11.5	10.5
87.5°	5.7	5.7	5.7	6.7	6.7	5.7	5.7	5.7	5.7	5.7	4.8
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: P251925

CATALOG NUMBER: LD4B20D010 EU4B10209024 4LBDW1H

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6
2.5°	619.6	620.6	617.7	621.5	618.7	619.6	620.6	619.6	615.8	615.8	626.3
5°	615.8	617.7	614.9	619.6	617.7	617.7	619.6	618.7	614.9	615.8	625.4
7.5°	612.0	614.9	613.0	617.7	614.9	614.9	616.8	616.8	613.0	613.9	622.5
10°	606.3	610.1	609.1	613.9	611.0	611.0	613.9	613.9	610.1	611.0	619.6
12.5°	601.5	605.3	604.4	609.1	607.2	608.2	609.1	611.0	606.3	608.2	615.8
15°	593.9	597.7	597.7	602.4	600.5	602.4	604.4	607.2	603.4	603.4	611.0
17.5°	585.3	590.0	590.0	593.9	593.9	594.8	598.6	601.5	597.7	598.6	605.3
20°	575.7	581.4	581.4	586.2	585.3	587.2	590.0	592.9	589.1	589.1	596.7
22.5°	566.2	570.9	571.9	574.8	574.8	575.7	578.6	580.5	575.7	575.7	583.4
25°	552.8	557.6	558.5	560.4	558.5	558.5	560.4	562.3	557.6	557.6	564.3
27.5°	534.7	539.4	539.4	538.5	536.6	537.5	536.6	537.5	532.8	531.8	538.5
30°	507.9	510.8	510.8	509.8	507.0	507.0	504.1	505.1	498.4	498.4	504.1
32.5°	471.6	474.5	472.6	470.7	466.9	465.0	463.1	462.1	455.4	455.4	462.1
35°	428.7	430.6	427.7	423.9	419.1	416.3	413.4	409.6	404.8	405.8	409.6
37.5°	384.8	384.8	380.9	373.3	369.5	364.7	359.9	359.9	352.3	351.3	354.2
40°	347.5	343.7	337.0	326.5	319.8	315.1	308.4	304.6	298.8	298.8	303.6
42.5°	314.1	306.5	297.9	283.6	276.9	271.1	262.6	258.7	252.1	251.1	254.0
45°	284.5	276.9	264.5	249.2	240.6	233.9	221.5	216.7	211.0	210.0	212.0
47.5°	260.6	252.1	236.8	216.7	208.1	199.5	187.1	180.4	175.7	172.8	175.7
50°	239.6	228.2	212.0	191.0	179.5	171.9	156.6	149.9	143.2	141.3	142.3
52.5°	216.7	205.3	188.1	166.1	155.6	144.2	129.8	120.3	114.6	111.7	114.6
55°	191.9	180.4	163.3	141.3	129.8	119.3	104.1	96.4	89.7	86.9	89.7
57.5°	165.2	154.7	139.4	117.4	106.9	97.4	83.1	75.4	68.7	66.8	68.7
60°	142.3	133.7	118.4	97.4	88.8	78.3	65.9	58.2	52.5	51.6	52.5
62.5°	127.0	117.4	103.1	83.1	74.5	65.9	54.4	46.8	42.0	41.1	42.0
65°	111.7	101.2	87.8	70.7	62.1	55.4	43.9	37.2	32.5	31.5	32.5
67.5°	94.5	85.0	73.5	58.2	51.6	44.9	35.3	28.6	24.8	23.9	24.8
70°	78.3	69.7	58.2	46.8	40.1	35.3	26.7	22.0	18.1	17.2	18.1
72.5°	62.1	54.4	44.9	35.3	31.5	26.7	21.0	16.2	13.4	12.4	13.4
75°	47.7	42.0	34.4	25.8	22.9	20.0	14.3	11.5	9.5	8.6	9.5
77.5°	33.4	29.6	23.9	19.1	16.2	14.3	10.5	7.6	6.7	5.7	6.7
80°	22.9	20.0	16.2	12.4	10.5	8.6	6.7	4.8	3.8	3.8	3.8
82.5°	15.3	12.4	9.5	7.6	6.7	5.7	3.8	2.9	2.9	1.9	1.9
85°	8.6	7.6	5.7	4.8	3.8	2.9	1.9	1.9	1.0	1.0	1.0
87.5°	3.8	2.9	1.9	1.9	1.0	1.0	1.0	1.0	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: P251925

CATALOG NUMBER: LD4B20D010 EU4B10209024 4LBDW1H

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6
2.5°	623.5	620.6	624.4	620.6	618.7	620.6	618.7	624.4	619.6	615.8	619.6
5°	622.5	618.7	622.5	619.6	616.8	617.7	615.8	621.5	615.8	613.0	614.9
7.5°	620.6	617.7	619.6	616.8	613.9	614.9	613.0	617.7	612.0	609.1	611.0
10°	617.7	614.9	615.8	613.9	611.0	611.0	609.1	613.0	606.3	602.4	604.4
12.5°	613.9	610.1	612.0	609.1	605.3	605.3	603.4	606.3	599.6	595.8	596.7
15°	609.1	605.3	605.3	602.4	598.6	598.6	594.8	597.7	590.0	586.2	586.2
17.5°	603.4	598.6	598.6	595.8	591.0	590.0	587.2	590.0	581.4	577.6	577.6
20°	594.8	591.0	590.0	588.1	583.4	582.4	578.6	579.5	572.9	570.0	569.0
22.5°	583.4	579.5	580.5	577.6	573.8	572.9	569.0	571.9	565.2	562.3	563.3
25°	563.3	561.4	563.3	562.3	559.5	559.5	557.6	559.5	553.8	551.8	552.8
27.5°	540.4	539.4	540.4	540.4	538.5	538.5	538.5	541.3	535.6	534.7	534.7
30°	507.0	507.0	507.9	508.9	508.9	510.8	509.8	513.7	509.8	507.9	509.8
32.5°	463.1	466.9	469.7	469.7	469.7	471.6	473.6	476.4	472.6	473.6	473.6
35°	413.4	416.3	418.2	423.0	420.1	426.8	428.7	432.5	431.5	433.5	432.5
37.5°	358.0	361.9	365.7	372.4	371.4	379.0	382.9	390.5	388.6	392.4	394.3
40°	306.5	312.2	317.9	322.7	326.5	334.2	341.8	351.3	354.2	357.1	358.0
42.5°	256.8	262.6	272.1	278.8	284.5	296.9	307.4	318.9	321.8	327.5	329.4
45°	216.7	221.5	233.0	241.6	246.3	264.5	276.9	291.2	296.0	302.7	305.5
47.5°	179.5	188.1	199.5	210.0	216.7	235.8	252.1	267.3	274.0	281.7	285.5
50°	147.0	156.6	171.9	181.4	191.0	212.0	230.1	246.3	253.0	261.6	265.4
52.5°	120.3	130.8	145.1	155.6	166.1	188.1	207.2	222.5	231.1	236.8	242.5
55°	94.5	106.0	120.3	131.8	140.3	164.2	180.4	195.7	201.5	206.2	209.1
57.5°	73.5	82.1	96.4	106.0	116.5	137.5	153.7	165.2	169.9	175.7	177.6
60°	57.3	65.9	79.2	88.8	98.3	118.4	134.6	146.1	150.9	155.6	158.5
62.5°	45.8	54.4	66.8	75.4	84.0	102.2	116.5	127.9	133.7	138.4	141.3
65°	36.3	43.9	54.4	63.0	69.7	85.9	100.2	110.8	116.5	121.3	124.1
67.5°	28.6	35.3	44.9	50.6	57.3	70.7	83.1	92.6	97.4	103.1	106.0
70°	22.0	26.7	35.3	40.1	44.9	56.3	65.9	75.4	80.2	84.0	85.9
72.5°	16.2	20.0	26.7	30.6	33.4	43.0	50.6	57.3	61.1	64.9	66.8
75°	11.5	14.3	19.1	22.0	23.9	30.6	37.2	42.0	44.9	47.7	50.6
77.5°	7.6	9.5	12.4	14.3	16.2	21.0	24.8	28.6	31.5	34.4	35.3
80°	4.8	6.7	8.6	9.5	10.5	13.4	17.2	19.1	21.0	22.9	23.9
82.5°	2.9	3.8	4.8	5.7	6.7	8.6	10.5	12.4	13.4	15.3	16.2
85°	1.0	1.9	1.9	2.9	2.9	4.8	5.7	6.7	7.6	8.6	9.5
87.5°	0.0	0.0	1.0	1.0	1.0	1.0	1.9	1.9	1.9	1.9	1.9
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: P251925

CATALOG NUMBER: LD4B20D010 EU4B10209024 4LBDW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6
2.5°	623.5	620.6	618.7	617.7	624.4	615.8	619.6	620.6
5°	619.6	616.8	614.9	613.9	619.6	612.0	614.9	616.8
7.5°	613.9	612.0	609.1	608.2	613.9	605.3	609.1	610.1
10°	607.2	604.4	602.4	601.5	606.3	597.7	601.5	601.5
12.5°	598.6	596.7	592.9	592.9	596.7	589.1	591.9	591.9
15°	587.2	585.3	581.4	581.4	585.3	577.6	580.5	580.5
17.5°	577.6	575.7	572.9	571.9	575.7	568.1	570.9	570.0
20°	570.0	568.1	564.3	564.3	567.1	559.5	562.3	562.3
22.5°	563.3	562.3	558.5	558.5	562.3	554.7	556.6	554.7
25°	552.8	551.8	548.0	549.0	550.9	543.3	546.1	544.2
27.5°	535.6	535.6	531.8	530.8	533.7	527.0	528.9	528.0
30°	508.9	509.8	505.1	505.1	506.0	500.3	503.2	502.2
32.5°	472.6	473.6	469.7	468.8	471.6	466.9	468.8	468.8
35°	432.5	433.5	430.6	430.6	433.5	430.6	430.6	429.6
37.5°	392.4	394.3	392.4	393.4	395.3	392.4	394.3	393.4
40°	359.9	361.9	359.0	360.9	362.8	359.9	362.8	360.9
42.5°	330.3	333.2	331.3	333.2	335.1	333.2	335.1	332.3
45°	308.4	310.3	309.3	310.3	312.2	311.2	312.2	311.2
47.5°	287.4	291.2	289.3	291.2	294.1	292.2	294.1	291.2
50°	268.3	271.1	270.2	272.1	273.1	272.1	274.0	271.1
52.5°	243.5	246.3	245.4	245.4	247.3	245.4	247.3	245.4
55°	211.0	212.0	212.0	212.9	212.0	211.0	212.0	210.0
57.5°	179.5	181.4	178.5	181.4	180.4	179.5	179.5	177.6
60°	159.4	162.3	160.4	162.3	161.4	161.4	161.4	160.4
62.5°	143.2	145.1	143.2	144.2	144.2	144.2	143.2	142.3
65°	125.1	127.9	126.0	127.0	126.0	125.1	126.0	125.1
67.5°	106.9	107.9	107.9	106.9	106.9	106.9	106.9	105.0
70°	86.9	87.8	86.9	88.8	87.8	86.9	87.8	85.9
72.5°	67.8	68.7	67.8	68.7	67.8	67.8	67.8	67.8
75°	50.6	51.6	51.6	51.6	51.6	51.6	49.6	51.6
77.5°	36.3	36.3	36.3	37.2	36.3	36.3	36.3	36.3
80°	24.8	24.8	24.8	25.8	24.8	25.8	24.8	25.8
82.5°	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
85°	8.6	9.5	9.5	8.6	8.6	8.6	8.6	8.6
87.5°	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)