

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: P251513

Luminaire Tested: **LD4B10D010 EU4B10209040 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251513
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 EU4B10209040 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 859.0 lumens
Efficiency: N/A
Efficacy: 85.5 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

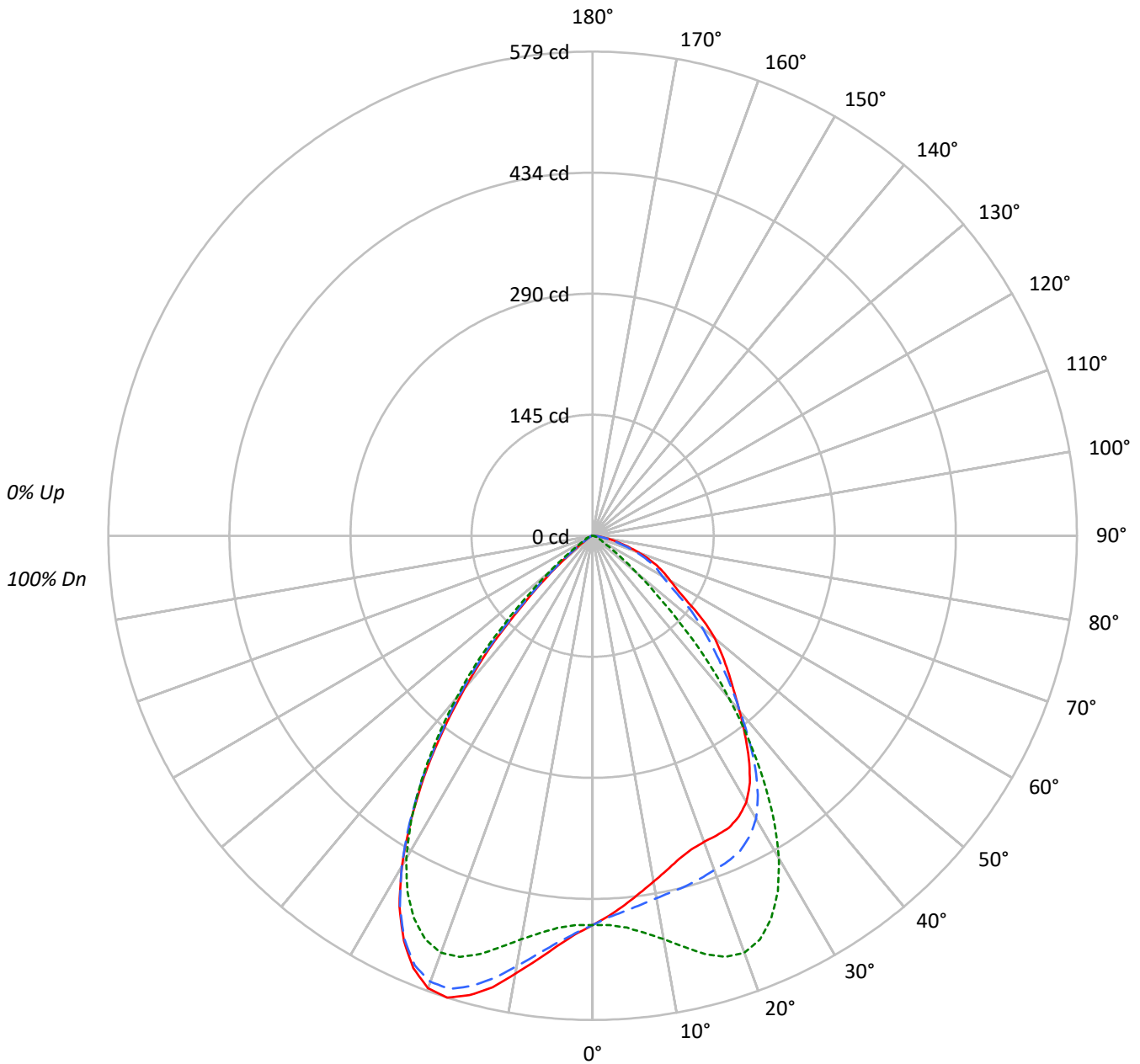
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251513

CATALOG NUMBER: LD4B10D010 EU4B10209040 4LBSW1LI

Luminous Intensity Polar Plot





TEST NUMBER: P251513

CATALOG NUMBER: LD4B10D010 EU4B10209040 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°	45367	45367	45367
5°	43339	46019	48211
10°	41554	48471	52618
15°	40348	52244	57390
20°	40396	55020	59687
25°	41433	54304	57444
30°	41379	50123	51293
35°	38750	42367	41784
40°	34719	32315	30152
45°	31493	20522	16829
50°	28929	10416	7187
55°	23754	4639	2379
60°	20856	2612	1306
65°	19625	1960	992
70°	16783	1567	855
75°	12803	1130	678
80°	9204	673	337
85°	6821	0	0



TEST NUMBER: P251513

CATALOG NUMBER: LD4B10D010 EU4B10209040 4LBSW1LI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	45.2	5.3
10°-20°	140.9	16.4
20°-30°	218.0	25.4
30°-40°	214.8	25.0
40°-50°	131.9	15.4
50°-60°	58.6	6.8
60°-70°	32.8	3.8
70°-80°	14.2	1.6
80°-90°	2.5	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°	404.2	47.1
0°-40°	619.0	72.1
0°-60°	809.5	94.2
0°-90°	859.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	859.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	466	466	466	466	466	
5°	443	450	470	489	493	42
15°	400	433	518	557	569	113
25°	385	416	505	532	534	177
35°	326	339	356	355	351	202
45°	228	217	149	130	122	177
55°	140	126	27	16	14	128
65°	85	77	8	5	4	83
75°	34	29	3	2	2	37
85°	6	5	0	0	0	8
90°	0	0	0	0	0	



TEST NUMBER: P251513

CATALOG NUMBER: LD4B10D010 EU4B10209040 4LBSW1LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	465.5	465.5	465.5	465.5	465.5	465.5	465.5	465.5	465.5	465.5	465.5
2.5°	454.6	454.6	454.6	454.6	455.8	453.9	455.8	455.8	457.6	458.2	456.4
5°	443.0	442.4	443.0	443.0	444.2	443.6	445.4	446.7	449.1	450.3	450.3
7.5°	430.9	430.9	430.9	432.1	433.9	433.3	435.1	436.9	440.6	443.0	444.8
10°	419.9	419.3	421.1	421.7	423.6	423.6	426.6	428.4	432.7	437.5	440.0
12.5°	409.6	409.0	410.2	412.0	415.1	415.1	417.5	420.5	426.6	432.1	436.3
15°	399.9	400.5	402.3	403.5	407.2	407.2	410.2	413.8	420.5	427.2	433.3
17.5°	393.2	393.8	395.0	396.8	400.5	400.5	403.5	407.8	415.1	422.3	429.6
20°	389.5	390.1	391.4	393.2	396.2	396.8	399.3	404.1	410.8	418.7	425.4
22.5°	387.7	388.9	390.1	391.4	394.4	394.4	397.4	401.1	407.8	415.7	421.7
25°	385.3	386.5	387.1	388.9	391.4	391.4	393.2	397.4	403.5	410.2	416.3
27.5°	378.6	379.8	380.4	382.2	384.7	384.1	386.5	389.5	395.0	401.1	405.9
30°	367.7	368.3	369.5	370.1	371.9	371.9	373.7	376.8	380.4	385.9	390.7
32.5°	350.0	351.2	351.9	352.5	354.3	353.7	354.3	356.1	359.8	364.6	367.7
35°	325.7	328.2	328.2	329.4	330.0	329.4	329.4	331.8	333.6	337.3	339.1
37.5°	299.0	300.8	300.2	301.4	302.0	300.2	301.4	302.0	304.5	306.3	306.9
40°	272.9	273.5	273.5	273.5	273.5	272.9	273.5	274.1	275.9	275.9	274.1
42.5°	249.2	249.8	249.8	248.5	249.8	249.2	249.2	249.2	249.2	246.7	244.9
45°	228.5	229.1	229.1	228.5	228.5	227.3	226.7	226.1	224.2	221.2	216.9
47.5°	209.0	210.3	210.9	209.7	209.0	207.8	207.8	204.2	201.8	198.1	192.0
50°	190.8	192.0	192.0	190.8	190.8	189.0	187.2	186.0	182.3	178.1	170.8
52.5°	167.7	169.5	169.5	168.9	168.9	166.5	165.9	163.5	160.4	155.6	149.5
55°	139.8	142.2	141.6	141.0	139.8	139.8	139.8	137.9	136.1	132.5	126.4
57.5°	119.7	120.3	120.3	119.7	119.7	118.5	118.5	116.7	116.1	112.4	107.6
60°	107.0	107.0	107.6	107.0	106.3	105.7	105.1	103.9	102.1	99.7	96.0
62.5°	96.6	97.2	97.2	96.6	96.0	95.4	94.8	93.6	92.4	90.5	86.9
65°	85.1	86.3	85.7	85.1	84.5	83.9	83.9	82.6	81.4	80.2	76.6
67.5°	72.3	72.9	73.5	72.3	72.3	71.7	71.7	70.5	69.9	67.5	65.0
70°	58.9	59.6	59.6	58.9	58.9	58.3	58.3	57.7	57.1	55.3	52.9
72.5°	46.2	46.8	46.2	45.6	45.6	45.6	45.0	44.4	43.8	42.5	40.7
75°	34.0	34.0	34.6	34.0	33.4	33.4	32.8	32.8	31.6	31.0	29.2
77.5°	24.3	24.9	24.3	24.3	23.7	23.1	23.1	22.5	22.5	21.9	20.7
80°	16.4	16.4	17.0	16.4	15.8	16.4	15.8	15.2	15.2	14.6	13.4
82.5°	10.3	10.9	10.3	10.3	10.3	10.3	10.3	9.7	9.7	9.1	8.5
85°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	5.5	5.5	5.5	4.9
87.5°	3.0	3.0	2.4	2.4	3.0	3.0	3.0	2.4	2.4	2.4	2.4
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: P251513

CATALOG NUMBER: LD4B10D010 EU4B10209040 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	465.5	465.5	465.5	465.5	465.5	465.5	465.5	465.5	465.5	465.5	465.5
2.5°	458.8	459.4	460.6	462.5	462.5	461.2	464.3	464.3	465.5	466.1	468.5
5°	453.9	455.2	457.6	460.6	461.2	460.6	464.9	466.7	468.5	470.4	474.0
7.5°	449.7	452.1	456.4	460.6	462.5	462.5	469.1	471.6	475.2	478.9	483.1
10°	447.3	450.9	457.0	463.7	465.5	467.3	475.2	480.1	484.9	489.8	495.9
12.5°	444.2	450.9	458.8	467.3	471.0	473.4	484.3	490.4	497.1	503.2	511.1
15°	443.6	451.5	461.8	472.8	477.6	481.3	493.4	502.0	509.9	517.8	525.7
17.5°	441.2	450.9	463.7	475.8	481.9	486.8	500.7	511.1	520.2	528.1	537.2
20°	438.1	449.1	463.1	476.4	483.1	488.0	503.2	512.9	523.2	530.5	539.0
22.5°	433.9	444.8	458.8	472.2	478.3	482.5	497.7	506.2	515.3	522.6	530.5
25°	426.6	436.9	449.1	460.0	466.1	469.7	483.1	491.0	497.7	505.0	512.3
27.5°	416.3	424.2	434.5	442.4	446.0	449.7	460.6	467.3	473.4	479.5	484.3
30°	398.0	404.1	411.4	418.1	421.7	422.3	432.7	436.3	441.2	445.4	449.1
32.5°	373.7	378.6	382.8	386.5	388.9	389.5	397.4	398.6	403.5	403.5	409.0
35°	342.7	345.2	348.2	348.2	350.0	348.2	353.7	354.9	355.5	356.1	360.4
37.5°	307.5	308.7	310.5	306.9	306.9	305.1	306.9	308.1	305.7	305.7	308.7
40°	274.1	271.6	269.2	265.6	263.7	260.1	260.1	257.1	255.2	254.0	254.6
42.5°	241.9	236.4	230.9	223.0	219.4	215.7	212.1	207.8	206.6	203.6	201.8
45°	210.9	203.0	195.7	182.9	175.6	172.0	164.1	155.6	150.1	148.9	144.0
47.5°	184.7	173.2	161.0	145.8	138.6	131.9	120.3	113.0	105.7	102.1	99.1
50°	161.6	151.3	135.5	119.1	110.0	103.3	90.5	82.0	74.1	68.7	65.0
52.5°	141.6	130.0	115.5	96.6	87.5	80.2	66.2	56.5	49.8	44.4	40.1
55°	119.1	110.0	95.4	77.8	68.7	60.2	48.0	37.7	31.0	27.3	24.3
57.5°	102.7	94.8	80.8	63.8	55.3	47.4	35.2	26.7	21.3	17.6	15.8
60°	91.8	84.5	72.3	55.9	48.0	40.7	29.2	21.3	16.4	13.4	12.2
62.5°	82.6	75.4	64.4	49.2	42.5	35.2	24.9	17.6	13.4	10.9	9.1
65°	72.3	65.6	55.9	42.5	36.5	30.4	21.3	14.6	10.9	8.5	7.3
67.5°	61.4	55.3	46.8	35.2	30.4	25.5	17.0	12.2	9.1	7.3	6.1
70°	49.8	45.0	37.1	28.6	24.3	20.1	14.0	9.7	6.7	5.5	4.9
72.5°	38.3	34.0	28.6	21.9	18.2	15.2	10.3	7.3	5.5	4.3	3.6
75°	27.3	24.3	20.1	15.8	13.4	10.9	7.9	5.5	3.6	3.0	2.4
77.5°	18.8	17.0	14.0	10.9	9.1	7.9	5.5	3.6	3.0	2.4	1.8
80°	12.2	10.9	9.1	6.7	5.5	4.9	3.0	2.4	1.8	1.2	1.2
82.5°	7.3	6.7	5.5	3.6	3.0	2.4	1.8	1.2	1.2	0.6	0.6
85°	4.3	3.6	2.4	1.8	1.8	1.2	1.2	0.6	0.6	0.0	0.0
87.5°	1.8	1.2	1.2	0.6	0.6	0.6	0.6	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: P251513

CATALOG NUMBER: LD4B10D010 EU4B10209040 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	465.5	465.5	465.5	465.5	465.5	465.5	465.5	465.5	465.5	465.5	465.5
2.5°	467.3	470.4	469.7	471.6	471.0	471.0	474.0	472.8	475.8	475.8	476.4
5°	474.0	478.3	478.3	481.3	480.7	481.9	484.9	484.9	488.6	489.8	489.8
7.5°	483.7	489.2	490.4	493.4	494.1	496.5	498.9	499.5	504.4	505.6	506.2
10°	497.1	503.8	505.6	508.6	509.9	512.3	515.3	516.5	522.6	523.2	525.7
12.5°	513.5	520.8	522.6	526.3	526.9	529.9	534.2	535.4	541.5	543.3	545.1
15°	529.3	536.0	539.0	542.7	543.3	546.9	550.6	551.8	557.3	559.7	561.5
17.5°	540.2	548.1	550.0	554.8	554.8	557.9	561.5	562.7	568.2	570.0	571.2
20°	542.7	550.0	552.4	556.0	556.6	558.5	561.5	562.7	567.6	568.2	570.0
22.5°	533.6	540.8	542.1	545.7	546.3	548.1	550.6	550.0	556.0	555.4	556.0
25°	514.1	520.8	520.8	525.0	524.4	526.3	527.5	526.9	532.3	532.3	532.3
27.5°	486.2	492.2	492.8	495.9	494.1	494.7	495.9	495.3	498.9	498.9	498.9
30°	451.5	456.4	454.6	457.0	455.8	457.0	455.8	455.2	456.4	457.6	457.0
32.5°	408.4	412.0	412.0	412.6	412.6	409.0	407.8	407.8	407.2	406.5	406.5
35°	358.5	361.6	360.4	360.4	359.8	356.1	354.3	353.1	354.9	351.2	353.7
37.5°	307.5	308.1	306.3	305.7	302.6	302.6	299.6	297.2	298.4	297.8	295.3
40°	251.6	254.0	250.4	249.2	251.0	248.5	245.5	242.5	244.9	241.9	243.1
42.5°	196.9	196.3	195.1	195.1	195.1	191.4	190.8	190.2	190.8	188.4	186.6
45°	142.2	140.4	138.6	138.6	136.1	134.9	134.9	133.1	130.0	130.0	126.4
47.5°	96.0	91.8	90.5	89.9	88.7	88.7	87.5	86.3	85.7	82.6	82.6
50°	62.6	58.3	57.1	56.5	57.1	55.9	54.7	53.5	52.3	51.7	50.4
52.5°	37.7	35.9	34.6	34.0	32.8	32.2	31.6	30.4	29.8	29.8	29.2
55°	22.5	20.7	18.2	18.2	18.2	17.6	17.0	16.4	15.8	15.8	15.2
57.5°	14.0	12.8	11.5	10.9	10.9	10.9	10.3	10.3	10.3	10.3	9.7
60°	10.3	9.1	8.5	8.5	8.5	7.9	7.9	7.9	7.9	7.3	7.3
62.5°	7.9	7.3	6.7	6.7	6.1	6.1	6.1	6.1	6.1	6.1	5.5
65°	6.7	5.5	5.5	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
67.5°	4.9	4.3	4.3	4.3	4.3	3.6	3.6	3.6	3.6	3.6	3.6
70°	3.6	3.6	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
72.5°	3.0	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
75°	2.4	2.4	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
77.5°	1.8	1.8	1.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
80°	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
82.5°	0.6	0.6	0.6	0.6	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: P251513

CATALOG NUMBER: LD4B10D010 EU4B10209040 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	465.5	465.5	465.5	465.5	465.5	465.5	465.5	465.5
2.5°	476.4	479.5	476.4	476.4	478.3	477.6	478.9	477.0
5°	490.4	494.7	491.6	491.0	494.1	493.4	494.1	492.8
7.5°	507.4	511.7	508.6	508.6	511.7	511.1	512.9	511.7
10°	526.9	531.7	527.5	528.1	532.3	531.7	531.7	531.7
12.5°	546.9	551.8	549.4	549.4	552.4	553.0	553.6	553.0
15°	563.3	568.2	565.2	565.2	569.4	568.8	569.4	568.8
17.5°	573.1	577.9	574.3	574.3	577.9	577.9	578.5	579.1
20°	570.6	576.1	573.1	571.8	576.1	576.1	575.5	575.5
22.5°	556.6	561.5	559.1	557.9	560.9	559.7	559.1	559.7
25°	532.3	537.2	532.3	532.3	534.8	534.2	534.8	534.2
27.5°	499.5	503.2	498.3	497.7	500.1	498.9	498.3	500.1
30°	455.8	459.4	457.0	455.2	458.2	456.4	455.2	455.8
32.5°	405.9	408.4	407.2	404.1	405.9	404.7	404.1	404.7
35°	351.2	354.3	349.4	348.8	351.9	349.4	348.2	351.2
37.5°	294.7	298.4	294.1	294.7	292.9	293.5	292.3	294.1
40°	241.3	240.6	239.4	238.8	239.4	237.6	238.8	237.0
42.5°	183.5	184.7	184.1	183.5	184.1	181.7	180.5	182.9
45°	127.6	127.0	125.8	124.6	124.6	124.0	124.0	122.1
47.5°	82.0	81.4	79.0	79.6	80.8	79.6	77.8	80.2
50°	49.8	49.2	49.2	48.6	49.8	48.6	47.4	47.4
52.5°	28.0	28.0	27.3	27.3	27.3	27.3	26.7	26.1
55°	15.2	14.6	14.6	14.6	14.0	14.0	14.0	14.0
57.5°	9.7	9.7	9.7	9.7	9.7	9.7	9.1	9.1
60°	7.3	7.3	7.3	7.3	6.7	7.3	6.7	6.7
62.5°	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
65°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
67.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
70°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
72.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
75°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
80°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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



Report Generated By E9808895 / USPTCWHP6082093





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













(END OF REPORT)