

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: P251583

Luminaire Tested: **LD4B10D010 EU4B10208030 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251583
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 EU4B10208030 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 953.0 lumens
Efficiency: N/A
Efficacy: 94.8 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

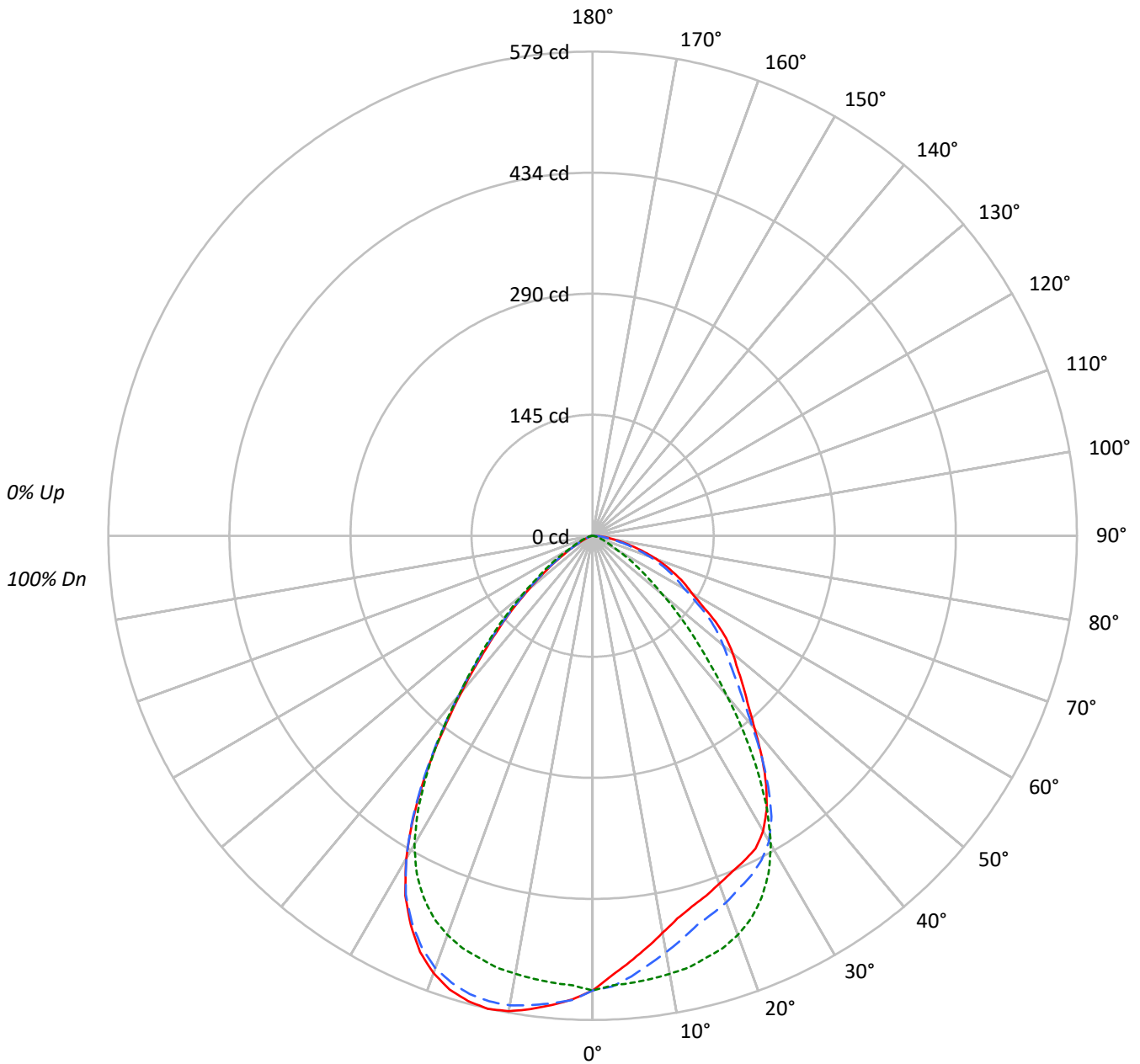
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251583

CATALOG NUMBER: LD4B10D010 EU4B10208030 4LBSW1H

Luminous Intensity Polar Plot





TEST NUMBER: P251583

CATALOG NUMBER: LD4B10D010 EU4B10208030 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°	52988	52988	52988
5°	50030	52506	55108
10°	47699	52628	57130
15°	46301	52738	58106
20°	45924	52676	57695
25°	46110	51379	55294
30°	45892	47940	50146
35°	43009	40927	41344
40°	38332	31729	31017
45°	35049	23651	22204
50°	33144	16572	14980
55°	30482	11197	9396
60°	26626	6549	5185
65°	25205	4197	2906
70°	22967	2992	1795
75°	18978	2109	1318
80°	14929	1179	786
85°	13307	783	0



TEST NUMBER: P251583

CATALOG NUMBER: LD4B10D010 EU4B10208030 4LBSW1H

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	51.4	5.4
10°-20°	147.4	15.5
20°-30°	218.5	22.9
30°-40°	218.8	23.0
40°-50°	152.9	16.0
50°-60°	91.0	9.5
60°-70°	47.5	5.0
70°-80°	21.1	2.2
80°-90°	4.6	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°	417.2	43.8
0°-40°	636.0	66.7
0°-60°	879.8	92.3
0°-90°	953.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	953.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	544	544	544	544	544	
5°	511	529	537	561	563	48
15°	459	482	523	568	576	130
25°	429	448	478	511	514	198
35°	362	366	344	350	348	224
45°	254	242	172	166	161	197
55°	179	168	66	58	55	159
65°	109	100	18	13	13	108
75°	50	44	6	4	4	55
85°	12	9	1	1	0	13
90°	0	0	0	0	0	



TEST NUMBER: P251583

CATALOG NUMBER: LD4B10D010 EU4B10208030 4LBSW1H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	543.7	543.7	543.7	543.7	543.7	543.7	543.7	543.7	543.7	543.7	543.7
2.5°	526.2	532.5	526.2	528.3	536.7	529.0	533.2	533.2	531.1	536.0	539.5
5°	511.4	517.8	511.4	514.2	523.4	515.6	520.6	519.2	519.9	524.1	529.0
7.5°	496.7	501.6	496.0	499.5	507.9	501.6	505.8	505.8	506.5	512.8	517.1
10°	482.0	486.2	482.0	484.8	493.9	488.3	491.1	491.8	493.9	499.5	505.8
12.5°	468.7	472.2	468.0	472.2	479.9	474.3	477.8	478.5	480.6	486.9	493.9
15°	458.9	462.4	458.2	461.7	468.7	464.5	467.3	468.7	470.1	475.7	482.0
17.5°	451.2	454.0	450.5	454.7	460.3	455.4	459.6	459.6	461.7	467.3	474.3
20°	442.8	445.6	442.8	446.3	452.6	448.4	451.9	451.9	454.0	460.3	466.6
22.5°	435.1	436.5	435.1	437.9	444.2	440.7	442.8	443.5	445.6	451.2	456.8
25°	428.8	431.6	430.2	433.0	437.2	433.7	435.8	436.5	438.6	443.5	448.4
27.5°	421.8	423.2	421.8	425.3	428.8	426.0	428.1	427.4	428.8	433.0	437.2
30°	407.8	409.2	409.2	411.3	414.1	412.7	414.8	412.7	414.1	417.6	421.8
32.5°	387.4	388.1	388.8	390.9	393.0	390.9	392.3	392.3	392.3	395.1	397.9
35°	361.5	362.9	362.2	363.6	365.7	365.0	365.0	364.3	362.9	364.3	365.7
37.5°	332.1	330.0	330.0	332.1	333.5	330.7	332.1	330.7	330.7	331.4	331.4
40°	301.3	299.2	301.3	302.0	302.7	301.3	300.6	299.2	297.1	297.8	296.4
42.5°	275.3	273.9	274.6	274.6	275.3	273.9	274.6	271.8	269.7	268.3	266.2
45°	254.3	252.2	254.3	252.9	252.9	252.2	251.5	250.1	247.3	245.2	241.7
47.5°	234.7	234.7	235.4	235.4	235.4	234.0	234.0	231.2	228.4	225.6	220.7
50°	218.6	217.2	220.0	220.0	217.9	217.2	217.9	214.4	212.3	208.8	203.9
52.5°	201.1	201.1	201.8	201.8	201.1	199.7	200.4	197.6	195.5	192.0	187.1
55°	179.4	178.0	180.1	180.1	179.4	178.7	179.4	177.3	175.2	172.4	168.1
57.5°	154.8	154.1	155.5	156.2	154.8	154.8	155.5	153.4	152.7	149.9	145.7
60°	136.6	135.9	137.3	138.0	136.6	136.6	136.6	133.8	132.4	129.6	126.8
62.5°	124.0	123.3	124.7	124.0	123.3	122.6	123.3	120.5	119.1	116.3	113.5
65°	109.3	110.0	110.7	110.7	110.0	109.3	109.3	107.9	106.5	103.7	100.2
67.5°	95.3	95.3	96.0	96.7	96.0	96.0	96.0	93.9	92.5	90.4	86.2
70°	80.6	79.9	82.0	82.0	80.6	81.3	80.6	79.9	78.5	75.7	72.2
72.5°	65.2	65.2	65.9	65.9	65.2	65.2	65.2	64.5	62.4	61.0	57.5
75°	50.4	50.4	51.1	51.8	50.4	50.4	51.1	49.7	48.3	46.2	44.1
77.5°	37.8	37.1	37.8	37.8	37.1	37.1	37.1	36.4	35.7	33.6	31.5
80°	26.6	25.9	26.6	26.6	26.6	25.9	25.9	25.2	25.2	23.8	21.7
82.5°	18.2	17.5	18.2	18.2	18.2	17.5	17.5	17.5	16.8	16.1	14.7
85°	11.9	11.2	11.2	11.9	11.2	11.2	11.2	11.2	10.5	9.8	9.1
87.5°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	4.9	4.9	4.9	4.2
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: P251583

CATALOG NUMBER: LD4B10D010 EU4B10208030 4LBSW1H

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	543.7	543.7	543.7	543.7	543.7	543.7	543.7	543.7	543.7	543.7	543.7
2.5°	536.7	535.3	539.5	538.1	538.8	535.3	540.9	538.1	541.6	538.1	545.1
5°	527.6	526.2	532.5	531.8	532.5	529.7	536.0	535.3	539.5	536.7	544.4
7.5°	517.8	516.4	523.4	524.1	525.5	522.7	531.1	531.1	535.3	534.6	543.0
10°	506.5	507.2	514.2	515.6	518.5	517.1	524.8	526.9	532.5	531.8	542.3
12.5°	496.0	496.0	505.1	507.9	510.0	509.3	518.5	521.3	527.6	529.0	538.8
15°	485.5	486.2	494.6	498.8	501.6	500.9	510.7	514.2	522.0	522.7	534.6
17.5°	477.1	476.4	485.5	489.0	493.2	492.5	503.0	507.2	514.9	517.1	528.3
20°	470.1	469.4	477.8	482.0	484.8	484.1	494.6	499.5	506.5	507.9	519.2
22.5°	461.7	460.3	468.7	472.2	475.0	474.3	483.4	486.9	493.9	495.3	505.8
25°	451.9	450.5	458.2	460.3	462.4	461.0	468.7	470.8	476.4	477.8	488.3
27.5°	440.7	437.2	443.5	443.5	444.9	442.8	448.4	450.5	455.4	455.4	465.2
30°	423.2	418.3	421.8	421.1	421.8	419.0	422.5	423.2	426.7	426.0	433.0
32.5°	398.6	391.6	393.7	391.6	389.5	385.3	389.5	388.1	390.9	388.1	394.4
35°	365.0	358.0	357.3	354.5	352.4	348.9	348.9	345.4	346.1	344.0	348.2
37.5°	328.6	319.5	318.1	312.5	309.0	304.8	304.8	302.0	298.5	297.1	300.6
40°	292.9	283.0	279.5	270.4	266.9	262.7	259.9	256.4	255.0	249.4	252.2
42.5°	262.0	251.5	243.8	234.0	230.5	224.2	220.0	215.8	213.7	207.4	210.2
45°	236.1	223.5	215.1	202.5	197.6	190.6	184.3	179.4	174.5	171.6	170.2
47.5°	214.4	201.1	189.9	175.9	168.1	161.8	153.4	148.5	142.2	138.7	136.6
50°	196.2	181.5	168.8	152.7	145.0	138.0	128.2	120.5	114.9	109.3	107.9
52.5°	180.1	164.6	150.6	132.4	123.3	114.9	104.4	96.0	91.1	84.8	84.1
55°	161.1	147.8	132.4	113.5	104.4	96.0	84.8	76.4	70.1	65.9	64.5
57.5°	140.8	128.2	113.5	94.6	85.5	76.4	65.9	58.2	52.5	49.0	48.3
60°	121.9	110.0	96.0	77.1	68.0	60.3	49.0	41.3	36.4	33.6	32.2
62.5°	107.9	96.7	83.4	65.9	57.5	49.7	39.2	32.2	28.0	25.2	23.8
65°	94.6	83.4	71.5	55.3	48.3	41.3	31.5	25.2	21.0	18.2	16.8
67.5°	80.6	70.8	59.6	46.2	39.2	33.6	25.2	19.6	16.1	14.0	12.6
70°	66.6	57.5	48.3	37.1	32.2	26.6	19.6	15.4	11.9	10.5	9.1
72.5°	52.5	45.5	37.8	28.7	24.5	21.0	15.4	11.2	9.1	7.7	6.3
75°	39.2	34.3	28.0	21.7	18.2	15.4	11.2	8.4	7.0	5.6	4.9
77.5°	28.0	23.8	19.6	14.7	13.3	11.2	7.7	6.3	4.9	3.5	2.8
80°	18.9	16.8	13.3	10.5	8.4	7.7	5.6	4.2	2.8	2.1	2.1
82.5°	12.6	10.5	8.4	6.3	5.6	4.9	3.5	2.8	2.1	1.4	1.4
85°	7.7	6.3	4.9	3.5	3.5	2.8	2.1	1.4	0.7	0.7	0.7
87.5°	3.5	2.8	2.1	1.4	1.4	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: P251583

CATALOG NUMBER: LD4B10D010 EU4B10208030 4LBSW1H

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	543.7	543.7	543.7	543.7	543.7	543.7	543.7	543.7	543.7	543.7	543.7
2.5°	550.7	546.5	543.7	547.2	548.6	546.5	548.6	552.1	555.6	556.3	546.5
5°	551.4	547.2	545.8	550.0	550.7	550.0	552.1	557.0	561.2	562.6	552.8
7.5°	551.4	548.6	547.9	552.8	553.5	552.8	556.3	561.9	566.1	568.9	559.1
10°	550.0	548.6	549.3	553.5	554.9	554.9	559.8	566.1	570.3	573.1	563.3
12.5°	547.9	547.9	547.9	552.8	554.2	554.9	559.1	567.5	570.3	574.5	564.7
15°	544.4	544.4	544.4	549.3	551.4	551.4	556.3	564.0	567.5	571.7	561.9
17.5°	538.1	538.1	538.8	543.0	545.1	545.1	550.0	558.4	560.5	565.4	555.6
20°	529.0	529.0	529.7	533.9	536.0	534.6	540.9	547.9	550.0	554.2	544.4
22.5°	515.6	515.6	515.6	519.9	521.3	520.6	526.9	533.2	533.2	538.8	528.3
25°	496.0	497.4	496.0	500.2	501.6	500.9	506.5	512.1	510.7	517.1	506.5
27.5°	472.2	471.5	471.5	475.0	475.0	474.3	478.5	484.8	483.4	487.6	477.8
30°	439.3	441.4	437.9	442.8	440.7	439.3	442.1	447.7	445.6	449.1	441.4
32.5°	401.5	398.6	398.6	398.6	400.0	396.5	399.3	402.2	400.0	403.6	395.1
35°	351.7	352.4	350.3	351.0	351.7	347.5	350.3	353.1	350.3	352.4	344.7
37.5°	302.0	302.7	297.8	300.6	297.8	296.4	299.2	300.6	297.8	299.9	291.5
40°	252.2	250.8	250.1	250.1	250.8	247.3	249.4	251.5	249.4	250.8	243.1
42.5°	208.8	208.1	206.7	207.4	205.3	204.6	205.3	207.4	205.3	206.7	201.1
45°	170.9	169.5	167.4	168.1	168.1	164.6	166.7	168.1	166.0	166.7	161.8
47.5°	135.9	133.8	133.8	133.1	133.1	131.7	133.8	133.1	131.0	132.4	127.5
50°	105.8	104.4	104.4	104.4	104.4	102.3	103.0	104.4	102.3	102.3	99.5
52.5°	82.7	80.6	79.2	79.2	79.2	78.5	78.5	79.2	77.1	77.1	76.4
55°	62.4	61.7	59.6	59.6	59.6	57.5	58.2	58.2	57.5	57.5	55.3
57.5°	46.2	44.1	42.7	42.7	41.3	41.3	40.6	41.3	39.9	39.9	38.5
60°	30.8	29.4	28.7	28.0	28.0	27.3	28.0	27.3	27.3	26.6	25.9
62.5°	22.4	21.0	19.6	19.6	19.6	18.9	18.9	18.9	18.9	18.9	18.2
65°	16.1	14.7	14.7	14.0	14.0	13.3	13.3	13.3	13.3	13.3	12.6
67.5°	11.2	10.5	9.8	9.8	9.8	9.8	9.8	9.8	9.1	9.1	9.1
70°	8.4	7.7	7.0	7.0	7.0	7.0	7.0	6.3	7.0	7.0	6.3
72.5°	5.6	5.6	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
75°	4.2	4.2	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
77.5°	2.8	2.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
80°	2.1	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	1.4	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: P251583

CATALOG NUMBER: LD4B10D010 EU4B10208030 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	543.7	543.7	543.7	543.7	543.7	543.7	543.7	543.7
2.5°	557.0	556.3	554.9	557.0	551.4	549.3	548.6	554.9
5°	564.7	563.3	563.3	565.4	559.1	557.7	556.3	563.3
7.5°	571.7	570.3	570.3	572.4	566.8	565.4	564.0	571.0
10°	575.9	575.9	575.9	577.3	572.4	571.0	570.3	577.3
12.5°	578.0	578.0	577.3	580.1	573.8	573.8	572.4	579.4
15°	575.2	575.2	575.2	577.3	571.7	570.3	570.3	575.9
17.5°	568.2	568.2	567.5	569.6	563.3	563.3	562.6	568.9
20°	557.7	557.7	556.3	559.1	552.8	550.7	550.0	556.3
22.5°	540.9	540.2	539.5	540.9	535.3	533.9	533.2	538.8
25°	519.2	518.5	517.1	518.5	512.1	510.0	510.0	514.2
27.5°	488.3	488.3	486.2	488.3	481.3	480.6	479.9	484.8
30°	450.5	447.7	446.3	449.1	442.1	442.1	440.7	445.6
32.5°	403.6	400.7	400.0	401.5	395.1	393.0	395.8	398.6
35°	349.6	350.3	347.5	347.5	341.9	342.6	343.3	347.5
37.5°	297.8	296.4	295.7	296.4	292.2	290.8	289.4	293.6
40°	249.4	245.9	245.2	245.2	241.7	241.0	241.7	243.8
42.5°	203.9	203.2	200.4	201.8	198.3	199.7	199.0	199.0
45°	164.6	165.3	162.5	164.6	161.8	159.7	159.7	161.1
47.5°	130.3	130.3	129.6	129.6	127.5	128.2	126.8	128.9
50°	100.9	100.9	99.5	100.2	98.8	98.8	98.1	98.8
52.5°	77.1	76.4	76.4	75.7	74.3	75.0	75.7	74.3
55°	56.0	56.7	55.3	56.0	54.6	55.3	54.6	55.3
57.5°	38.5	39.2	37.8	39.2	37.8	38.5	37.8	37.8
60°	26.6	26.6	25.9	26.6	25.9	25.9	25.2	26.6
62.5°	18.2	18.2	18.2	18.2	18.2	17.5	18.2	18.2
65°	13.3	12.6	12.6	12.6	12.6	12.6	12.6	12.6
67.5°	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
70°	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
72.5°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
75°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
77.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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)