

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: P251902

Luminaire Tested: **LD4B10D010 EU4B10209035 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251902
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: LD4B10D010 EU4B10209035 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 803.0 lumens
Efficiency: N/A
Efficacy: 79.9 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

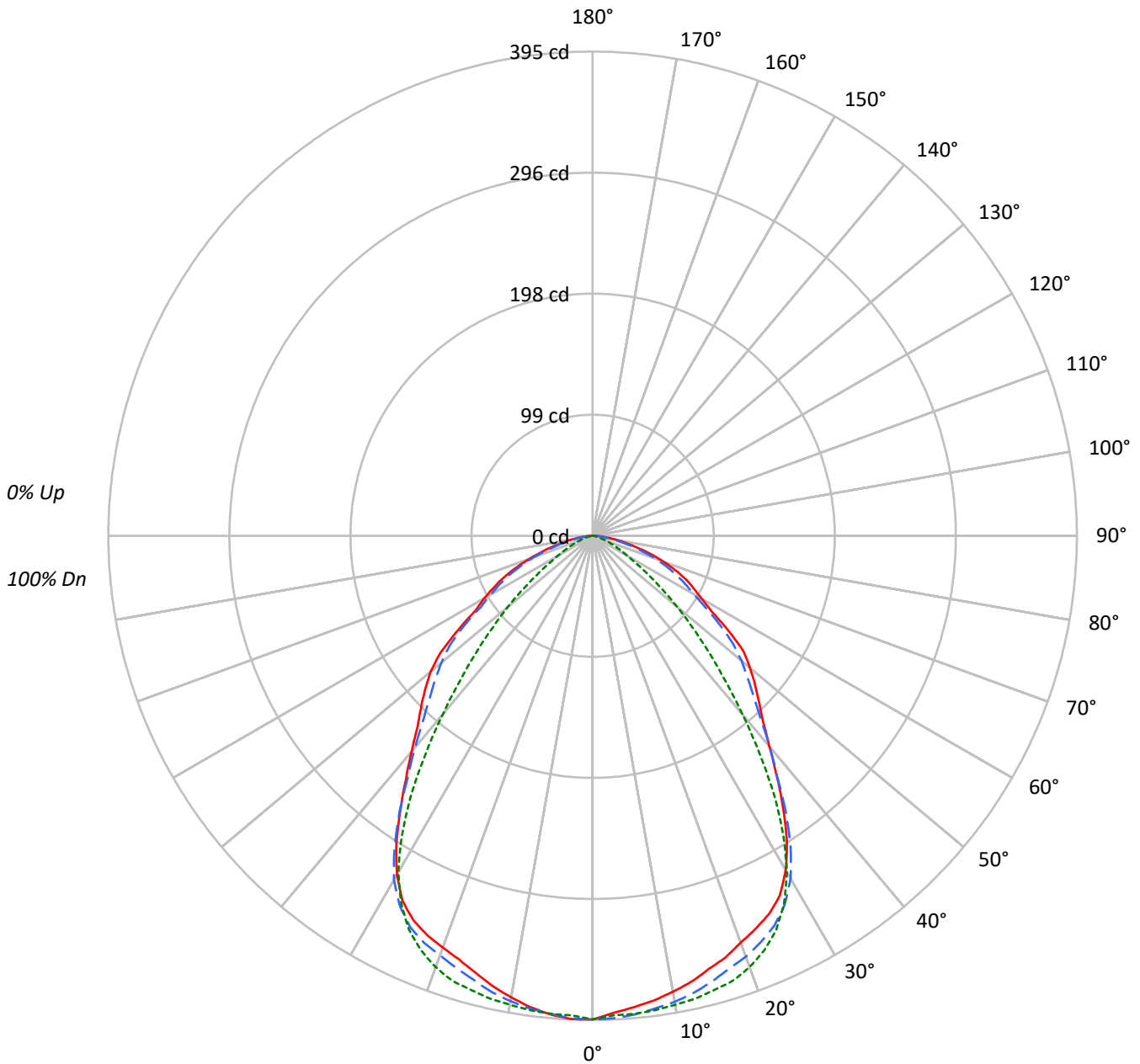
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251902

CATALOG NUMBER: LD4B10D010 EU4B10209035 4LBDW1H

Luminous Intensity Polar Plot





TEST NUMBER: P251902

CATALOG NUMBER: LD4B10D010 EU4B10209035 4LBDW1H

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	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88																			
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76																			
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66																			
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58																			
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51																			
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46																			
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41																			
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37																			
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34																			
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	38457	38457	38457
5°	37772	38301	38359
10°	37368	38447	37843
15°	36928	38704	37241
20°	36642	38840	37077
25°	36615	38120	37206
30°	35448	35662	35932
35°	32206	30695	32504
40°	28498	24172	29198
45°	26435	18400	27276
50°	25396	13615	26139
55°	23006	9379	22683
60°	19998	6393	19881
65°	19325	4612	18333
70°	17467	3106	15558
75°	14384	2071	12351
80°	11562	1347	9204
85°	9505	671	6150



TEST NUMBER: P251902

CATALOG NUMBER: LD4B10D010 EU4B10209035 4LBDW1H

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.2	4.6
10°-20°	106.5	13.3
20°-30°	160.9	20.0
30°-40°	168.4	21.0
40°-50°	136.4	17.0
50°-60°	99.2	12.4
60°-70°	61.2	7.6
70°-80°	27.6	3.4
80°-90°	5.6	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°	304.6	37.9
0°-40°	473.0	58.9
0°-60°	708.6	88.2
0°-90°	803.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	803.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	395	395	395	395	395	
5°	386	392	392	392	392	37
15°	366	376	384	375	369	103
25°	340	351	354	352	346	156
35°	271	274	258	274	273	169
45°	192	186	134	188	198	149
55°	135	127	55	128	134	121
65°	84	75	20	74	80	82
75°	38	33	6	28	33	41
85°	8	7	1	5	6	10
90°	0	0	0	0	0	



TEST NUMBER: P251902

CATALOG NUMBER: LD4B10D010 EU4B10209035 4LBDW1H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6
2.5°	389.7	389.7	393.3	397.6	394.0	390.3	392.7	391.5	395.8	395.8	394.0
5°	386.1	387.3	390.3	394.0	390.9	387.3	390.3	389.1	393.3	393.3	392.1
7.5°	382.4	383.0	386.7	390.9	387.9	384.2	386.7	386.1	389.7	390.3	389.1
10°	377.6	378.2	381.8	386.1	383.0	380.0	382.4	381.8	386.7	386.7	386.1
12.5°	372.7	373.3	377.0	380.6	377.6	374.5	377.0	377.0	381.8	382.4	381.8
15°	366.0	367.2	370.3	373.9	372.1	368.5	370.9	370.9	375.1	376.4	376.4
17.5°	360.6	361.2	364.2	367.9	365.4	362.4	364.8	364.8	369.1	370.3	370.3
20°	353.3	354.5	357.5	361.2	359.4	356.9	358.7	358.7	363.6	364.8	365.4
22.5°	347.2	348.4	350.9	355.7	352.7	350.9	353.3	352.7	358.1	358.7	358.7
25°	340.5	341.8	344.8	347.8	346.0	344.2	346.0	346.0	350.3	350.9	350.9
27.5°	330.8	331.4	334.5	337.5	335.7	333.3	335.7	335.1	339.3	339.9	339.3
30°	315.0	316.3	317.5	321.7	319.9	318.1	320.5	319.3	323.5	323.5	322.9
32.5°	295.0	295.0	297.4	300.5	298.0	296.8	298.7	299.3	302.3	302.3	300.5
35°	270.7	271.9	273.8	275.6	273.8	272.6	274.4	273.8	277.4	276.2	274.4
37.5°	246.5	247.1	248.9	251.3	248.9	247.1	247.7	247.1	250.1	250.1	247.1
40°	224.0	225.2	226.4	228.8	226.4	225.2	225.8	224.0	227.6	226.4	224.6
42.5°	205.8	206.4	208.2	209.4	207.0	206.4	207.0	205.8	207.6	206.4	202.7
45°	191.8	191.8	192.4	194.2	191.8	191.2	191.2	190.0	191.8	189.4	185.7
47.5°	179.7	180.3	180.9	182.1	180.3	178.5	179.1	176.6	177.9	176.0	171.2
50°	167.5	168.8	169.4	170.6	168.8	167.5	168.1	165.7	165.7	162.7	158.4
52.5°	155.4	156.0	155.4	156.6	155.4	153.6	154.2	151.8	151.8	148.1	143.9
55°	135.4	136.0	136.6	137.8	136.6	134.8	136.0	134.2	134.2	131.7	126.9
57.5°	115.3	115.9	116.5	117.2	117.2	115.9	116.5	115.3	114.7	112.9	109.3
60°	102.6	102.6	102.6	103.2	102.6	102.0	102.0	100.8	100.8	98.3	94.7
62.5°	92.9	93.5	93.5	94.1	93.5	92.9	92.3	91.1	90.4	88.0	85.0
65°	83.8	83.8	83.2	84.4	83.8	83.2	83.2	81.9	80.7	78.3	75.3
67.5°	72.8	73.4	72.8	73.4	73.4	72.8	72.2	71.0	70.4	68.6	65.0
70°	61.3	61.3	61.3	61.9	61.3	61.3	61.9	60.1	59.5	57.1	54.0
72.5°	49.8	50.4	50.4	49.8	50.4	49.2	49.2	49.2	48.6	46.1	43.1
75°	38.2	38.8	38.8	39.5	38.8	38.2	38.2	37.6	37.0	35.2	32.8
77.5°	28.5	28.5	29.1	29.1	29.1	28.5	28.5	27.3	27.3	26.1	23.7
80°	20.6	20.6	20.0	20.6	20.6	20.0	20.0	19.4	19.4	18.2	16.4
82.5°	13.4	14.0	14.0	14.0	14.0	13.4	13.4	13.4	12.7	12.1	10.9
85°	8.5	8.5	8.5	8.5	9.1	8.5	9.1	8.5	8.5	7.3	6.7
87.5°	3.6	3.6	3.6	4.2	4.2	3.6	3.6	3.6	3.6	3.6	3.0
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: P251902

CATALOG NUMBER: LD4B10D010 EU4B10209035 4LBDW1H

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6
2.5°	394.0	394.6	392.7	395.2	393.3	394.0	394.6	394.0	391.5	391.5	398.2
5°	391.5	392.7	390.9	394.0	392.7	392.7	394.0	393.3	390.9	391.5	397.6
7.5°	389.1	390.9	389.7	392.7	390.9	390.9	392.1	392.1	389.7	390.3	395.8
10°	385.5	387.9	387.3	390.3	388.5	388.5	390.3	390.3	387.9	388.5	394.0
12.5°	382.4	384.9	384.2	387.3	386.1	386.7	387.3	388.5	385.5	386.7	391.5
15°	377.6	380.0	380.0	383.0	381.8	383.0	384.2	386.1	383.6	383.6	388.5
17.5°	372.1	375.1	375.1	377.6	377.6	378.2	380.6	382.4	380.0	380.6	384.9
20°	366.0	369.7	369.7	372.7	372.1	373.3	375.1	377.0	374.5	374.5	379.4
22.5°	360.0	363.0	363.6	365.4	365.4	366.0	367.9	369.1	366.0	366.0	370.9
25°	351.5	354.5	355.1	356.3	355.1	355.1	356.3	357.5	354.5	354.5	358.7
27.5°	339.9	343.0	343.0	342.4	341.1	341.8	341.1	341.8	338.7	338.1	342.4
30°	322.9	324.8	324.8	324.1	322.3	322.3	320.5	321.1	316.9	316.9	320.5
32.5°	299.9	301.7	300.5	299.3	296.8	295.6	294.4	293.8	289.5	289.5	293.8
35°	272.6	273.8	271.9	269.5	266.5	264.7	262.8	260.4	257.4	258.0	260.4
37.5°	244.6	244.6	242.2	237.3	234.9	231.9	228.8	228.8	224.0	223.4	225.2
40°	221.0	218.5	214.3	207.6	203.4	200.3	196.1	193.6	190.0	190.0	193.0
42.5°	199.7	194.9	189.4	180.3	176.0	172.4	166.9	164.5	160.3	159.6	161.5
45°	180.9	176.0	168.1	158.4	153.0	148.7	140.8	137.8	134.2	133.5	134.8
47.5°	165.7	160.3	150.5	137.8	132.3	126.9	119.0	114.7	111.7	109.9	111.7
50°	152.4	145.1	134.8	121.4	114.1	109.3	99.6	95.3	91.1	89.8	90.4
52.5°	137.8	130.5	119.6	105.6	98.9	91.7	82.6	76.5	72.8	71.0	72.8
55°	122.0	114.7	103.8	89.8	82.6	75.9	66.2	61.3	57.1	55.2	57.1
57.5°	105.0	98.3	88.6	74.7	68.0	61.9	52.8	48.0	43.7	42.5	43.7
60°	90.4	85.0	75.3	61.9	56.5	49.8	41.9	37.0	33.4	32.8	33.4
62.5°	80.7	74.7	65.6	52.8	47.3	41.9	34.6	29.7	26.7	26.1	26.7
65°	71.0	64.3	55.8	44.9	39.5	35.2	27.9	23.7	20.6	20.0	20.6
67.5°	60.1	54.0	46.7	37.0	32.8	28.5	22.5	18.2	15.8	15.2	15.8
70°	49.8	44.3	37.0	29.7	25.5	22.5	17.0	14.0	11.5	10.9	11.5
72.5°	39.5	34.6	28.5	22.5	20.0	17.0	13.4	10.3	8.5	7.9	8.5
75°	30.4	26.7	21.9	16.4	14.6	12.7	9.1	7.3	6.1	5.5	6.1
77.5°	21.2	18.8	15.2	12.1	10.3	9.1	6.7	4.9	4.2	3.6	4.2
80°	14.6	12.7	10.3	7.9	6.7	5.5	4.2	3.0	2.4	2.4	2.4
82.5°	9.7	7.9	6.1	4.9	4.2	3.6	2.4	1.8	1.8	1.2	1.2
85°	5.5	4.9	3.6	3.0	2.4	1.8	1.2	1.2	0.6	0.6	0.6
87.5°	2.4	1.8	1.2	1.2	0.6	0.6	0.6	0.6	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: P251902

CATALOG NUMBER: LD4B10D010 EU4B10209035 4LBDW1H

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6
2.5°	396.4	394.6	397.0	394.6	393.3	394.6	393.3	397.0	394.0	391.5	394.0
5°	395.8	393.3	395.8	394.0	392.1	392.7	391.5	395.2	391.5	389.7	390.9
7.5°	394.6	392.7	394.0	392.1	390.3	390.9	389.7	392.7	389.1	387.3	388.5
10°	392.7	390.9	391.5	390.3	388.5	388.5	387.3	389.7	385.5	383.0	384.2
12.5°	390.3	387.9	389.1	387.3	384.9	384.9	383.6	385.5	381.2	378.8	379.4
15°	387.3	384.9	384.9	383.0	380.6	380.6	378.2	380.0	375.1	372.7	372.7
17.5°	383.6	380.6	380.6	378.8	375.7	375.1	373.3	375.1	369.7	367.2	367.2
20°	378.2	375.7	375.1	373.9	370.9	370.3	367.9	368.5	364.2	362.4	361.8
22.5°	370.9	368.5	369.1	367.2	364.8	364.2	361.8	363.6	359.4	357.5	358.1
25°	358.1	356.9	358.1	357.5	355.7	355.7	354.5	355.7	352.1	350.9	351.5
27.5°	343.6	343.0	343.6	343.6	342.4	342.4	342.4	344.2	340.5	339.9	339.9
30°	322.3	322.3	322.9	323.5	323.5	324.8	324.1	326.6	324.1	322.9	324.1
32.5°	294.4	296.8	298.7	298.7	298.7	299.9	301.1	302.9	300.5	301.1	301.1
35°	262.8	264.7	265.9	268.9	267.1	271.3	272.6	275.0	274.4	275.6	275.0
37.5°	227.6	230.1	232.5	236.7	236.1	241.0	243.4	248.3	247.1	249.5	250.7
40°	194.9	198.5	202.1	205.2	207.6	212.5	217.3	223.4	225.2	227.0	227.6
42.5°	163.3	166.9	173.0	177.2	180.9	188.8	195.5	202.7	204.6	208.2	209.4
45°	137.8	140.8	148.1	153.6	156.6	168.1	176.0	185.1	188.2	192.4	194.2
47.5°	114.1	119.6	126.9	133.5	137.8	149.9	160.3	170.0	174.2	179.1	181.5
50°	93.5	99.6	109.3	115.3	121.4	134.8	146.3	156.6	160.9	166.3	168.8
52.5°	76.5	83.2	92.3	98.9	105.6	119.6	131.7	141.4	146.9	150.5	154.2
55°	60.1	67.4	76.5	83.8	89.2	104.4	114.7	124.4	128.1	131.1	132.9
57.5°	46.7	52.2	61.3	67.4	74.1	87.4	97.7	105.0	108.0	111.7	112.9
60°	36.4	41.9	50.4	56.5	62.5	75.3	85.6	92.9	95.9	98.9	100.8
62.5°	29.1	34.6	42.5	48.0	53.4	65.0	74.1	81.3	85.0	88.0	89.8
65°	23.1	27.9	34.6	40.1	44.3	54.6	63.7	70.4	74.1	77.1	78.9
67.5°	18.2	22.5	28.5	32.2	36.4	44.9	52.8	58.9	61.9	65.6	67.4
70°	14.0	17.0	22.5	25.5	28.5	35.8	41.9	48.0	51.0	53.4	54.6
72.5°	10.3	12.7	17.0	19.4	21.2	27.3	32.2	36.4	38.8	41.3	42.5
75°	7.3	9.1	12.1	14.0	15.2	19.4	23.7	26.7	28.5	30.4	32.2
77.5°	4.9	6.1	7.9	9.1	10.3	13.4	15.8	18.2	20.0	21.9	22.5
80°	3.0	4.2	5.5	6.1	6.7	8.5	10.9	12.1	13.4	14.6	15.2
82.5°	1.8	2.4	3.0	3.6	4.2	5.5	6.7	7.9	8.5	9.7	10.3
85°	0.6	1.2	1.2	1.8	1.8	3.0	3.6	4.2	4.9	5.5	6.1
87.5°	0.0	0.0	0.6	0.6	0.6	0.6	1.2	1.2	1.2	1.2	1.2
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: P251902

CATALOG NUMBER: LD4B10D010 EU4B10209035 4LBDW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6
2.5°	396.4	394.6	393.3	392.7	397.0	391.5	394.0	394.6
5°	394.0	392.1	390.9	390.3	394.0	389.1	390.9	392.1
7.5°	390.3	389.1	387.3	386.7	390.3	384.9	387.3	387.9
10°	386.1	384.2	383.0	382.4	385.5	380.0	382.4	382.4
12.5°	380.6	379.4	377.0	377.0	379.4	374.5	376.4	376.4
15°	373.3	372.1	369.7	369.7	372.1	367.2	369.1	369.1
17.5°	367.2	366.0	364.2	363.6	366.0	361.2	363.0	362.4
20°	362.4	361.2	358.7	358.7	360.6	355.7	357.5	357.5
22.5°	358.1	357.5	355.1	355.1	357.5	352.7	353.9	352.7
25°	351.5	350.9	348.4	349.0	350.3	345.4	347.2	346.0
27.5°	340.5	340.5	338.1	337.5	339.3	335.1	336.3	335.7
30°	323.5	324.1	321.1	321.1	321.7	318.1	319.9	319.3
32.5°	300.5	301.1	298.7	298.0	299.9	296.8	298.0	298.0
35°	275.0	275.6	273.8	273.8	275.6	273.8	273.8	273.2
37.5°	249.5	250.7	249.5	250.1	251.3	249.5	250.7	250.1
40°	228.8	230.1	228.2	229.5	230.7	228.8	230.7	229.5
42.5°	210.0	211.8	210.6	211.8	213.1	211.8	213.1	211.2
45°	196.1	197.3	196.7	197.3	198.5	197.9	198.5	197.9
47.5°	182.7	185.1	183.9	185.1	187.0	185.7	187.0	185.1
50°	170.6	172.4	171.8	173.0	173.6	173.0	174.2	172.4
52.5°	154.8	156.6	156.0	156.0	157.2	156.0	157.2	156.0
55°	134.2	134.8	134.8	135.4	134.8	134.2	134.8	133.5
57.5°	114.1	115.3	113.5	115.3	114.7	114.1	114.1	112.9
60°	101.4	103.2	102.0	103.2	102.6	102.6	102.6	102.0
62.5°	91.1	92.3	91.1	91.7	91.7	91.7	91.1	90.4
65°	79.5	81.3	80.1	80.7	80.1	79.5	80.1	79.5
67.5°	68.0	68.6	68.6	68.0	68.0	68.0	68.0	66.8
70°	55.2	55.8	55.2	56.5	55.8	55.2	55.8	54.6
72.5°	43.1	43.7	43.1	43.7	43.1	43.1	43.1	43.1
75°	32.2	32.8	32.8	32.8	32.8	32.8	31.6	32.8
77.5°	23.1	23.1	23.1	23.7	23.1	23.1	23.1	23.1
80°	15.8	15.8	15.8	16.4	15.8	16.4	15.8	16.4
82.5°	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
85°	5.5	6.1	6.1	5.5	5.5	5.5	5.5	5.5
87.5°	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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)