

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: P251620

Luminaire Tested: **LD4B20D010 EU4B10209730 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251620
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: LD4B20D010 EU4B10209730 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 97CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1341.0 lumens
Efficiency: N/A
Efficacy: 64.5 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

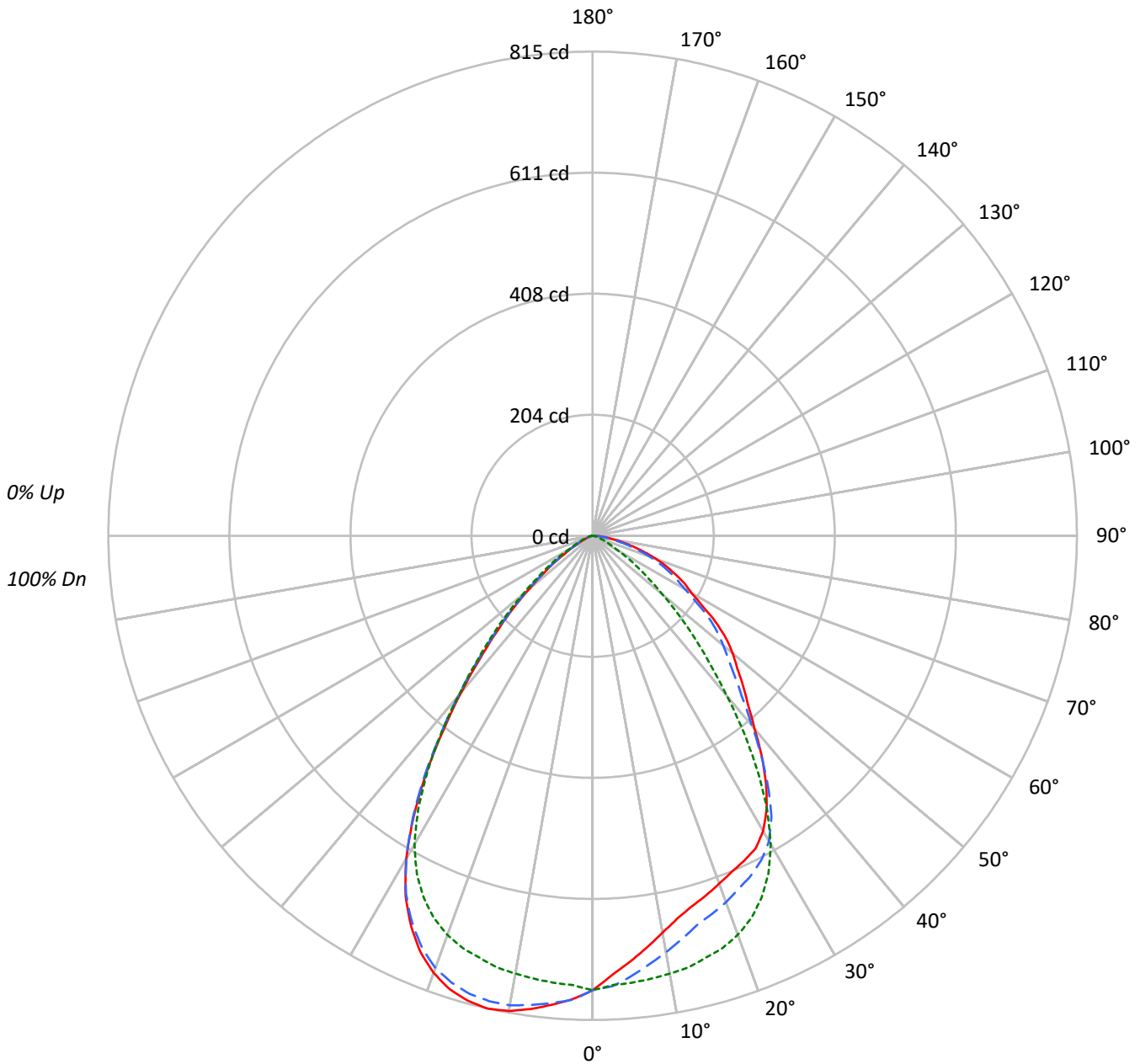
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251620

CATALOG NUMBER: LD4B20D010 EU4B10209730 4LBSW1H

Luminous Intensity Polar Plot





TEST NUMBER: P251620

CATALOG NUMBER: LD4B20D010 EU4B10209730 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°	74555	74555	74555
5°	70409	73881	77540
10°	67126	74053	80386
15°	65149	74199	81766
20°	64623	74123	81186
25°	64875	72305	77811
30°	64573	67453	70559
35°	60522	57595	58178
40°	53930	44655	43650
45°	49328	33285	31245
50°	46638	23319	21075
55°	42886	15751	13236
60°	37463	9220	7309
65°	35467	5903	4082
70°	32313	4217	2536
75°	26735	2975	1845
80°	21046	1684	1122
85°	18786	1118	0



TEST NUMBER: P251620

CATALOG NUMBER: LD4B20D010 EU4B10209730 4LBSW1H

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	72.3	5.4
10°-20°	207.4	15.5
20°-30°	307.4	22.9
30°-40°	307.8	23.0
40°-50°	215.1	16.0
50°-60°	128.0	9.5
60°-70°	66.8	5.0
70°-80°	29.7	2.2
80°-90°	6.5	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°	587.0	43.8
0°-40°	894.9	66.7
0°-60°	1238.0	92.3
0°-90°	1341.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1341.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	765	765	765	765	765	
5°	720	744	755	790	793	67
15°	646	678	735	798	810	183
25°	603	631	672	719	724	278
35°	509	515	484	493	489	315
45°	358	340	242	234	227	278
55°	252	237	93	81	78	224
65°	154	141	26	19	18	152
75°	71	62	8	5	5	77
85°	17	13	1	1	0	19
90°	0	0	0	0	0	



TEST NUMBER: P251620

CATALOG NUMBER: LD4B20D010 EU4B10209730 4LBSW1H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	765.0	765.0	765.0	765.0	765.0	765.0	765.0	765.0	765.0	765.0	765.0
2.5°	740.4	749.2	740.4	743.3	755.2	744.3	750.2	750.2	747.3	754.2	759.1
5°	719.7	728.5	719.7	723.6	736.4	725.6	732.5	730.5	731.5	737.4	744.3
7.5°	699.0	705.9	698.0	702.9	714.7	705.9	711.8	711.8	712.8	721.6	727.6
10°	678.3	684.2	678.3	682.2	695.0	687.1	691.1	692.1	695.0	702.9	711.8
12.5°	659.5	664.5	658.6	664.5	675.3	667.4	672.4	673.3	676.3	685.2	695.0
15°	645.7	650.7	644.7	649.7	659.5	653.6	657.6	659.5	661.5	669.4	678.3
17.5°	634.9	638.8	633.9	639.8	647.7	640.8	646.7	646.7	649.7	657.6	667.4
20°	623.1	627.0	623.1	628.0	636.9	630.9	635.9	635.9	638.8	647.7	656.6
22.5°	612.2	614.2	612.2	616.2	625.0	620.1	623.1	624.0	627.0	634.9	642.8
25°	603.3	607.3	605.3	609.3	615.2	610.2	613.2	614.2	617.1	624.0	630.9
27.5°	593.5	595.5	593.5	598.4	603.3	599.4	602.4	601.4	603.3	609.3	615.2
30°	573.8	575.7	575.7	578.7	582.6	580.7	583.6	580.7	582.6	587.6	593.5
32.5°	545.2	546.2	547.1	550.1	553.1	550.1	552.1	552.1	552.1	556.0	560.0
35°	508.7	510.7	509.7	511.7	514.6	513.6	513.6	512.6	510.7	512.6	514.6
37.5°	467.3	464.3	464.3	467.3	469.3	465.3	467.3	465.3	465.3	466.3	466.3
40°	423.9	421.0	423.9	424.9	425.9	423.9	422.9	421.0	418.0	419.0	417.0
42.5°	387.4	385.5	386.5	386.5	387.4	385.5	386.5	382.5	379.6	377.6	374.6
45°	357.9	354.9	357.9	355.9	355.9	354.9	353.9	352.0	348.0	345.0	340.1
47.5°	330.3	330.3	331.2	331.2	331.2	329.3	329.3	325.3	321.4	317.4	310.5
50°	307.6	305.6	309.6	309.6	306.6	305.6	306.6	301.7	298.7	293.8	286.9
52.5°	282.9	282.9	283.9	283.9	282.9	281.0	282.0	278.0	275.1	270.1	263.2
55°	252.4	250.4	253.4	253.4	252.4	251.4	252.4	249.4	246.5	242.5	236.6
57.5°	217.9	216.9	218.9	219.8	217.9	217.9	218.9	215.9	214.9	211.0	205.1
60°	192.2	191.3	193.2	194.2	192.2	192.2	192.2	188.3	186.3	182.4	178.4
62.5°	174.5	173.5	175.5	174.5	173.5	172.5	173.5	169.6	167.6	163.7	159.7
65°	153.8	154.8	155.8	155.8	154.8	153.8	153.8	151.8	149.8	145.9	141.0
67.5°	134.1	134.1	135.1	136.0	135.1	135.1	135.1	132.1	130.1	127.2	121.3
70°	113.4	112.4	115.3	115.3	113.4	114.4	113.4	112.4	110.4	106.5	101.5
72.5°	91.7	91.7	92.7	92.7	91.7	91.7	91.7	90.7	87.7	85.8	80.8
75°	71.0	71.0	72.0	73.0	71.0	71.0	72.0	70.0	68.0	65.1	62.1
77.5°	53.2	52.3	53.2	53.2	52.3	52.3	52.3	51.3	50.3	47.3	44.4
80°	37.5	36.5	37.5	37.5	37.5	36.5	36.5	35.5	35.5	33.5	30.6
82.5°	25.6	24.6	25.6	25.6	25.6	24.6	24.6	24.6	23.7	22.7	20.7
85°	16.8	15.8	15.8	16.8	15.8	15.8	15.8	15.8	14.8	13.8	12.8
87.5°	7.9	7.9	7.9	7.9	7.9	7.9	7.9	6.9	6.9	6.9	5.9
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: P251620

CATALOG NUMBER: LD4B20D010 EU4B10209730 4LBSW1H

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	765.0	765.0	765.0	765.0	765.0	765.0	765.0	765.0	765.0	765.0	765.0
2.5°	755.2	753.2	759.1	757.1	758.1	753.2	761.1	757.1	762.1	757.1	767.0
5°	742.3	740.4	749.2	748.3	749.2	745.3	754.2	753.2	759.1	755.2	766.0
7.5°	728.5	726.6	736.4	737.4	739.4	735.4	747.3	747.3	753.2	752.2	764.0
10°	712.8	713.8	723.6	725.6	729.5	727.6	738.4	741.4	749.2	748.3	763.1
12.5°	698.0	698.0	710.8	714.7	717.7	716.7	729.5	733.5	742.3	744.3	758.1
15°	683.2	684.2	696.0	701.9	705.9	704.9	718.7	723.6	734.5	735.4	752.2
17.5°	671.4	670.4	683.2	688.1	694.0	693.1	707.8	713.8	724.6	727.6	743.3
20°	661.5	660.5	672.4	678.3	682.2	681.2	696.0	702.9	712.8	714.7	730.5
22.5°	649.7	647.7	659.5	664.5	668.4	667.4	680.2	685.2	695.0	697.0	711.8
25°	635.9	633.9	644.7	647.7	650.7	648.7	659.5	662.5	670.4	672.4	687.1
27.5°	620.1	615.2	624.0	624.0	626.0	623.1	630.9	633.9	640.8	640.8	654.6
30°	595.5	588.6	593.5	592.5	593.5	589.5	594.5	595.5	600.4	599.4	609.3
32.5°	561.0	551.1	554.1	551.1	548.1	542.2	548.1	546.2	550.1	546.2	555.0
35°	513.6	503.8	502.8	498.8	495.9	491.0	491.0	486.0	487.0	484.1	490.0
37.5°	462.4	449.5	447.6	439.7	434.8	428.8	428.8	424.9	420.0	418.0	422.9
40°	412.1	398.3	393.4	380.5	375.6	369.7	365.8	360.8	358.9	351.0	354.9
42.5°	368.7	353.9	343.1	329.3	324.3	315.5	309.6	303.6	300.7	291.8	295.8
45°	332.2	314.5	302.7	284.9	278.0	268.2	259.3	252.4	245.5	241.5	239.6
47.5°	301.7	282.9	267.2	247.4	236.6	227.7	215.9	209.0	200.1	195.2	192.2
50°	276.0	255.3	237.6	214.9	204.1	194.2	180.4	169.6	161.7	153.8	151.8
52.5°	253.4	231.7	212.0	186.3	173.5	161.7	146.9	135.1	128.2	119.3	118.3
55°	226.7	208.0	186.3	159.7	146.9	135.1	119.3	107.5	98.6	92.7	90.7
57.5°	198.2	180.4	159.7	133.1	120.3	107.5	92.7	81.8	73.9	69.0	68.0
60°	171.5	154.8	135.1	108.4	95.6	84.8	69.0	58.2	51.3	47.3	45.3
62.5°	151.8	136.0	117.3	92.7	80.8	70.0	55.2	45.3	39.4	35.5	33.5
65°	133.1	117.3	100.6	77.9	68.0	58.2	44.4	35.5	29.6	25.6	23.7
67.5°	113.4	99.6	83.8	65.1	55.2	47.3	35.5	27.6	22.7	19.7	17.7
70°	93.7	80.8	68.0	52.3	45.3	37.5	27.6	21.7	16.8	14.8	12.8
72.5°	73.9	64.1	53.2	40.4	34.5	29.6	21.7	15.8	12.8	10.8	8.9
75°	55.2	48.3	39.4	30.6	25.6	21.7	15.8	11.8	9.9	7.9	6.9
77.5°	39.4	33.5	27.6	20.7	18.7	15.8	10.8	8.9	6.9	4.9	3.9
80°	26.6	23.7	18.7	14.8	11.8	10.8	7.9	5.9	3.9	3.0	3.0
82.5°	17.7	14.8	11.8	8.9	7.9	6.9	4.9	3.9	3.0	2.0	2.0
85°	10.8	8.9	6.9	4.9	4.9	3.9	3.0	2.0	1.0	1.0	1.0
87.5°	4.9	3.9	3.0	2.0	2.0	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: P251620

CATALOG NUMBER: LD4B20D010 EU4B10209730 4LBSW1H

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	765.0	765.0	765.0	765.0	765.0	765.0	765.0	765.0	765.0	765.0	765.0
2.5°	774.9	769.0	765.0	770.0	771.9	769.0	771.9	776.9	781.8	782.8	769.0
5°	775.9	770.0	768.0	773.9	774.9	773.9	776.9	783.8	789.7	791.6	777.8
7.5°	775.9	771.9	770.9	777.8	778.8	777.8	782.8	790.7	796.6	800.5	786.7
10°	773.9	771.9	772.9	778.8	780.8	780.8	787.7	796.6	802.5	806.4	792.6
12.5°	770.9	770.9	770.9	777.8	779.8	780.8	786.7	798.5	802.5	808.4	794.6
15°	766.0	766.0	766.0	772.9	775.9	775.9	782.8	793.6	798.5	804.5	790.7
17.5°	757.1	757.1	758.1	764.0	767.0	767.0	773.9	785.7	788.7	795.6	781.8
20°	744.3	744.3	745.3	751.2	754.2	752.2	761.1	770.9	773.9	779.8	766.0
22.5°	725.6	725.6	725.6	731.5	733.5	732.5	741.4	750.2	750.2	758.1	743.3
25°	698.0	700.0	698.0	703.9	705.9	704.9	712.8	720.7	718.7	727.6	712.8
27.5°	664.5	663.5	663.5	668.4	668.4	667.4	673.3	682.2	680.2	686.2	672.4
30°	618.1	621.1	616.2	623.1	620.1	618.1	622.1	630.0	627.0	631.9	621.1
32.5°	564.9	561.0	561.0	561.0	562.9	558.0	561.9	565.9	562.9	567.9	556.0
35°	494.9	495.9	492.9	493.9	494.9	489.0	492.9	496.9	492.9	495.9	485.0
37.5°	424.9	425.9	419.0	422.9	419.0	417.0	421.0	422.9	419.0	421.9	410.1
40°	354.9	352.9	352.0	352.0	352.9	348.0	351.0	353.9	351.0	352.9	342.1
42.5°	293.8	292.8	290.8	291.8	288.9	287.9	288.9	291.8	288.9	290.8	282.9
45°	240.5	238.6	235.6	236.6	236.6	231.7	234.6	236.6	233.6	234.6	227.7
47.5°	191.3	188.3	188.3	187.3	187.3	185.3	188.3	187.3	184.4	186.3	179.4
50°	148.9	146.9	146.9	146.9	146.9	143.9	144.9	146.9	143.9	143.9	140.0
52.5°	116.3	113.4	111.4	111.4	111.4	110.4	110.4	111.4	108.4	108.4	107.5
55°	87.7	86.8	83.8	83.8	83.8	80.8	81.8	81.8	80.8	80.8	77.9
57.5°	65.1	62.1	60.1	60.1	58.2	58.2	57.2	58.2	56.2	56.2	54.2
60°	43.4	41.4	40.4	39.4	39.4	38.4	39.4	38.4	38.4	37.5	36.5
62.5°	31.5	29.6	27.6	27.6	27.6	26.6	26.6	26.6	26.6	26.6	25.6
65°	22.7	20.7	20.7	19.7	19.7	18.7	18.7	18.7	18.7	18.7	17.7
67.5°	15.8	14.8	13.8	13.8	13.8	13.8	13.8	13.8	12.8	12.8	12.8
70°	11.8	10.8	9.9	9.9	9.9	9.9	9.9	8.9	9.9	9.9	8.9
72.5°	7.9	7.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
75°	5.9	5.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
77.5°	3.9	3.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
80°	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	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: P251620

CATALOG NUMBER: LD4B20D010 EU4B10209730 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	765.0	765.0	765.0	765.0	765.0	765.0	765.0	765.0
2.5°	783.8	782.8	780.8	783.8	775.9	772.9	771.9	780.8
5°	794.6	792.6	792.6	795.6	786.7	784.7	782.8	792.6
7.5°	804.5	802.5	802.5	805.4	797.6	795.6	793.6	803.5
10°	810.4	810.4	810.4	812.3	805.4	803.5	802.5	812.3
12.5°	813.3	813.3	812.3	816.3	807.4	807.4	805.4	815.3
15°	809.4	809.4	809.4	812.3	804.5	802.5	802.5	810.4
17.5°	799.5	799.5	798.5	801.5	792.6	792.6	791.6	800.5
20°	784.7	784.7	782.8	786.7	777.8	774.9	773.9	782.8
22.5°	761.1	760.1	759.1	761.1	753.2	751.2	750.2	758.1
25°	730.5	729.5	727.6	729.5	720.7	717.7	717.7	723.6
27.5°	687.1	687.1	684.2	687.1	677.3	676.3	675.3	682.2
30°	633.9	630.0	628.0	631.9	622.1	622.1	620.1	627.0
32.5°	567.9	563.9	562.9	564.9	556.0	553.1	557.0	561.0
35°	491.9	492.9	489.0	489.0	481.1	482.1	483.1	489.0
37.5°	419.0	417.0	416.0	417.0	411.1	409.1	407.2	413.1
40°	351.0	346.0	345.0	345.0	340.1	339.1	340.1	343.1
42.5°	286.9	285.9	282.0	283.9	279.0	281.0	280.0	280.0
45°	231.7	232.7	228.7	231.7	227.7	224.8	224.8	226.7
47.5°	183.4	183.4	182.4	182.4	179.4	180.4	178.4	181.4
50°	142.0	142.0	140.0	141.0	139.0	139.0	138.0	139.0
52.5°	108.4	107.5	107.5	106.5	104.5	105.5	106.5	104.5
55°	78.9	79.9	77.9	78.9	76.9	77.9	76.9	77.9
57.5°	54.2	55.2	53.2	55.2	53.2	54.2	53.2	53.2
60°	37.5	37.5	36.5	37.5	36.5	36.5	35.5	37.5
62.5°	25.6	25.6	25.6	25.6	25.6	24.6	25.6	25.6
65°	18.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7
67.5°	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
70°	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
72.5°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
75°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
77.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.0	1.0	1.0	0.0	1.0	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)