

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: P251770

Luminaire Tested: **LD4B20D010 EU4B10209027 4LBLWW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251770
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-12)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B20D010 EU4B10209027 4LBLWW1H
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1272.0 lumens
Efficiency: N/A
Efficacy: 61.2 lumens/watt
Spacing Criteria (0/90/45): 1.12 / 1.03 / 1.12
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

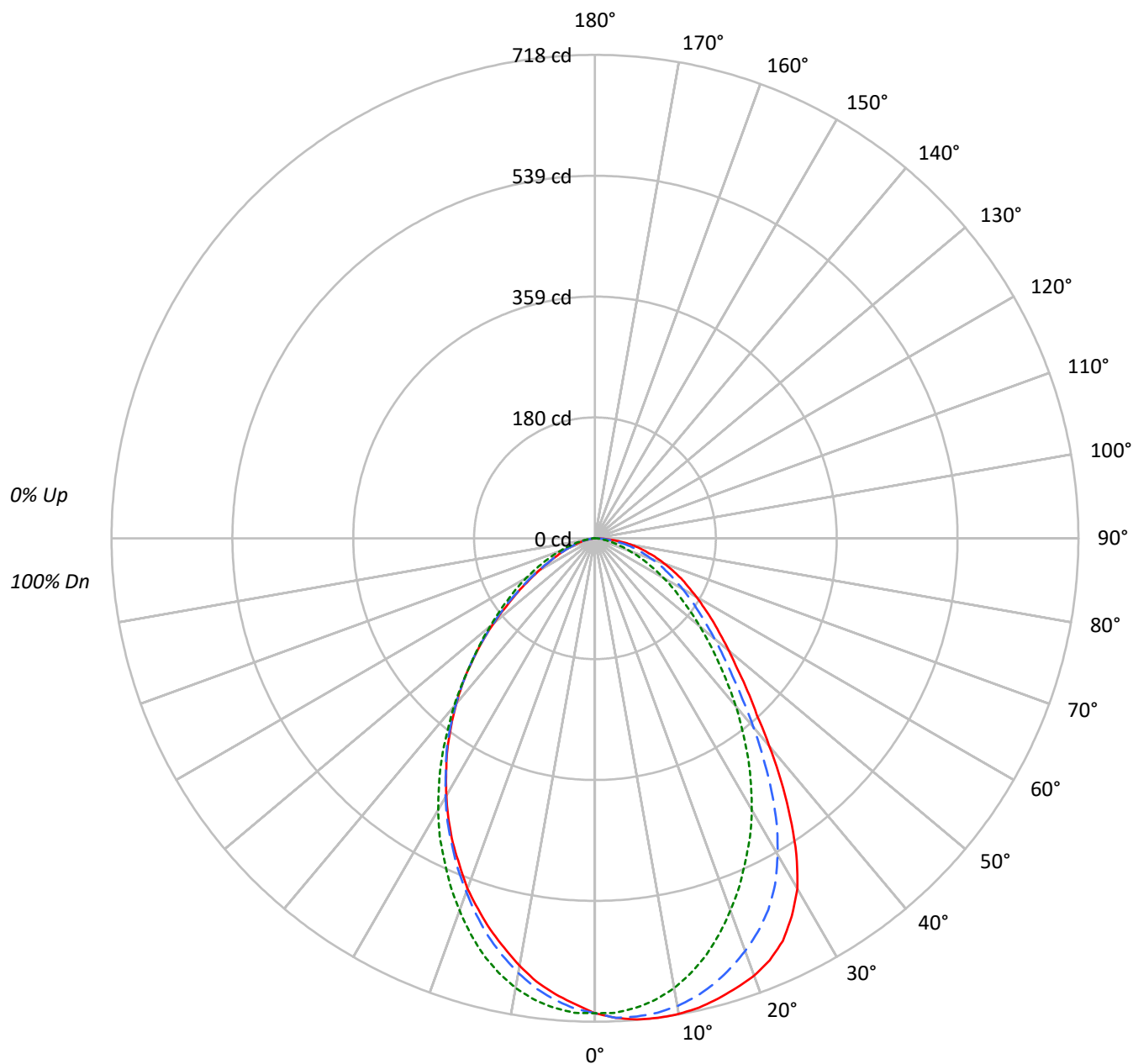
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251770

CATALOG NUMBER: LD4B20D010 EU4B10209027 4LBLWW1H

Luminous Intensity Polar Plot





TEST NUMBER: P251770

CATALOG NUMBER: LD4B20D010 EU4B10209027 4LBLWW1H

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	85	100	93	88	84		90	85	82			87	83	80			84
3	94	85	78	73	92	84	77	72		81	75	71			78	74	70			76
4	88	77	69	63	85	76	69	63		73	67	62			71	66	61			69
5	81	70	62	56	79	69	61	56		67	60	55			65	59	55			63
6	76	64	56	50	74	63	55	50		61	54	49			60	54	49			58
7	71	59	51	45	69	58	50	45		56	50	45			55	49	44			54
8	66	54	46	41	65	53	46	41		52	45	41			51	45	40			50
9	62	50	42	37	61	49	42	37		48	42	37			47	41	37			46
10	59	46	39	34	57	46	39	34		45	39	34			44	38	34			43

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	68747	68747	68747
5°	70183	68481	66466
10°	70995	67126	63800
15°	71394	64604	60669
20°	71697	61004	57405
25°	70961	56831	53681
30°	67667	52396	49707
35°	60165	47126	45448
40°	51220	41424	40737
45°	44132	35601	35449
50°	39330	30778	29778
55°	36140	26557	23788
60°	33837	22844	18614
65°	32538	19279	14505
70°	31230	15473	11740
75°	30237	12276	9000
80°	30475	8531	5500
85°	25495	6038	2460



TEST NUMBER: P251770

CATALOG NUMBER: LD4B20D010 EU4B10209027 4LBLWW1H

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	66.0	5.2
10°-20°	181.6	14.3
20°-30°	253.9	20.0
30°-40°	261.0	20.5
40°-50°	211.8	16.7
50°-60°	149.1	11.7
60°-70°	91.8	7.2
70°-80°	45.9	3.6
80°-90°	10.9	0.9
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°	501.5	39.4
0°-40°	762.5	59.9
0°-60°	1123.4	88.3
0°-90°	1272.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1272.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	705	705	705	705	705	
5°	717	713	700	688	679	68
15°	708	685	640	612	601	200
25°	660	609	528	502	499	302
35°	506	457	396	384	382	314
45°	320	289	258	258	257	249
55°	213	187	156	143	140	191
65°	141	118	84	64	63	140
75°	80	63	33	24	24	86
85°	23	15	5	3	2	27
90°	0	0	0	0	0	



TEST NUMBER: P251770

CATALOG NUMBER: LD4B20D010 EU4B10209027 4LBLWW1H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	705.4	705.4	705.4	705.4	705.4	705.4	705.4	705.4	705.4	705.4	705.4
2.5°	713.0	714.1	710.9	714.1	709.8	712.0	713.0	710.9	708.7	713.0	713.0
5°	717.4	717.4	714.1	718.5	713.0	714.1	716.3	713.0	709.8	714.1	713.0
7.5°	718.5	718.5	714.1	718.5	713.0	714.1	715.2	712.0	708.7	712.0	710.9
10°	717.4	716.3	713.0	717.4	712.0	712.0	713.0	709.8	704.4	707.6	705.4
12.5°	714.1	714.1	709.8	714.1	706.5	706.5	707.6	703.3	698.9	698.9	696.8
15°	707.6	707.6	703.3	706.5	700.0	700.0	698.9	694.6	689.2	689.2	684.8
17.5°	700.0	700.0	695.7	698.9	691.3	691.3	690.2	683.7	676.1	675.1	669.6
20°	691.3	691.3	685.9	688.1	679.4	679.4	678.3	670.7	662.0	659.9	652.3
22.5°	678.3	678.3	672.9	674.0	665.3	664.2	663.1	654.4	645.8	642.5	632.7
25°	659.9	658.8	654.4	654.4	645.8	643.6	641.4	632.7	624.0	617.5	608.9
27.5°	632.7	633.8	628.4	629.5	618.6	616.4	615.4	604.5	594.7	588.2	579.5
30°	601.3	598.0	592.6	592.6	583.9	582.8	580.6	570.9	560.0	552.4	542.6
32.5°	556.8	555.7	550.2	550.2	540.5	540.5	536.1	526.4	516.6	512.3	502.5
35°	505.7	504.7	500.3	500.3	491.6	492.7	488.4	480.8	471.0	464.5	456.9
37.5°	453.7	452.6	448.2	449.3	441.7	441.7	438.5	430.9	423.3	420.0	410.2
40°	402.6	401.6	396.1	399.4	392.9	390.7	389.6	384.2	375.5	371.2	365.7
42.5°	356.0	357.1	351.6	353.8	348.4	346.2	345.1	340.8	334.3	329.9	324.5
45°	320.2	318.0	315.8	315.8	310.4	309.3	308.2	302.8	298.5	294.1	288.7
47.5°	286.5	284.3	282.2	283.3	278.9	277.8	275.7	271.3	265.9	263.7	258.3
50°	259.4	258.3	255.0	255.0	250.7	249.6	247.4	244.2	238.8	235.5	231.2
52.5°	234.4	234.4	231.2	230.1	226.8	225.7	224.7	220.3	216.0	211.6	207.3
55°	212.7	211.6	209.5	209.5	205.1	204.0	203.0	198.6	194.3	191.0	186.7
57.5°	192.1	192.1	189.9	189.9	186.7	184.5	184.5	180.2	174.7	172.6	167.1
60°	173.6	173.6	171.5	171.5	168.2	168.2	166.1	161.7	158.5	154.1	149.8
62.5°	156.3	157.4	155.2	154.1	150.9	149.8	149.8	146.5	141.1	137.8	133.5
65°	141.1	140.0	138.9	137.8	134.6	133.5	133.5	129.2	125.9	121.6	118.3
67.5°	124.8	124.8	122.6	122.6	120.5	119.4	117.2	114.0	110.7	107.4	104.2
70°	109.6	109.6	108.5	108.5	105.3	104.2	103.1	99.8	96.6	93.3	89.0
72.5°	95.5	94.4	93.3	93.3	91.2	90.1	89.0	85.7	82.5	79.2	76.0
75°	80.3	80.3	79.2	79.2	77.1	76.0	76.0	73.8	69.5	67.3	62.9
77.5°	67.3	67.3	66.2	66.2	64.0	64.0	62.9	59.7	57.5	54.3	52.1
80°	54.3	53.2	53.2	52.1	49.9	49.9	48.8	47.8	44.5	42.3	39.1
82.5°	38.0	38.0	38.0	36.9	35.8	35.8	34.7	32.6	30.4	29.3	26.0
85°	22.8	22.8	21.7	20.6	21.7	20.6	19.5	18.5	17.4	16.3	15.2
87.5°	9.8	9.8	8.7	8.7	8.7	8.7	8.7	7.6	6.5	6.5	5.4
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: P251770

CATALOG NUMBER: LD4B20D010 EU4B10209027 4LBLWW1H

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	705.4	705.4	705.4	705.4	705.4	705.4	705.4	705.4	705.4	705.4	705.4
2.5°	706.5	709.8	708.7	707.6	705.4	705.4	705.4	704.4	705.4	705.4	703.3
5°	706.5	708.7	707.6	705.4	703.3	703.3	702.2	700.0	700.0	700.0	695.7
7.5°	703.3	705.4	702.2	700.0	697.8	695.7	695.7	692.4	692.4	691.3	687.0
10°	696.8	697.8	693.5	691.3	688.1	687.0	684.8	680.5	679.4	678.3	674.0
12.5°	687.0	688.1	682.7	678.3	674.0	672.9	670.7	665.3	663.1	660.9	655.5
15°	672.9	672.9	666.4	660.9	656.6	655.5	650.1	644.7	642.5	640.3	632.7
17.5°	656.6	655.5	646.8	641.4	636.0	633.8	628.4	621.9	617.5	615.4	608.9
20°	639.2	636.0	626.2	620.8	614.3	611.0	605.6	596.9	592.6	588.2	581.7
22.5°	618.6	614.3	603.4	595.8	589.3	586.1	578.5	570.9	564.4	560.0	552.4
25°	593.7	588.2	576.3	566.5	561.1	557.8	550.2	541.6	535.1	528.5	522.0
27.5°	564.4	557.8	545.9	536.1	530.7	525.3	519.9	510.1	504.7	499.2	491.6
30°	528.5	520.9	510.1	501.4	494.9	490.6	484.0	475.4	468.8	465.6	458.0
32.5°	489.5	480.8	471.0	462.3	459.1	453.7	448.2	439.5	434.1	430.9	425.4
35°	446.1	439.5	428.7	422.2	416.8	414.6	410.2	401.6	399.4	396.1	389.6
37.5°	400.5	395.0	387.5	382.0	377.7	375.5	371.2	365.7	362.5	359.2	356.0
40°	358.1	353.8	347.3	343.0	337.5	334.3	334.3	327.8	325.6	325.6	322.3
42.5°	316.9	314.7	309.3	302.8	301.7	298.5	297.4	294.1	291.9	290.9	289.8
45°	282.2	278.9	273.5	270.2	267.0	267.0	263.7	260.5	259.4	258.3	257.2
47.5°	251.8	247.4	243.1	239.9	237.7	236.6	233.3	231.2	230.1	230.1	229.0
50°	224.7	221.4	217.1	213.8	211.6	209.5	207.3	205.1	204.0	203.0	203.0
52.5°	201.9	197.5	193.2	189.9	186.7	185.6	183.4	181.2	180.2	179.1	178.0
55°	181.2	178.0	172.6	169.3	166.1	166.1	162.8	159.5	157.4	156.3	155.2
57.5°	161.7	158.5	153.0	149.8	147.6	145.4	143.3	141.1	138.9	136.7	134.6
60°	144.3	141.1	135.7	131.3	130.2	128.1	125.9	121.6	119.4	117.2	115.0
62.5°	128.1	123.7	119.4	115.0	114.0	111.8	108.5	105.3	102.0	99.8	96.6
65°	112.9	109.6	104.2	100.9	97.7	96.6	93.3	89.0	85.7	83.6	80.3
67.5°	98.8	94.4	89.0	85.7	83.6	81.4	78.1	74.9	71.6	68.4	65.1
70°	84.7	81.4	76.0	72.7	70.5	68.4	65.1	60.8	57.5	54.3	52.1
72.5°	71.6	67.3	62.9	59.7	57.5	55.4	52.1	48.8	45.6	43.4	40.2
75°	59.7	55.4	52.1	47.8	46.7	44.5	41.2	38.0	34.7	32.6	30.4
77.5°	47.8	44.5	40.2	38.0	35.8	33.6	31.5	28.2	26.0	22.8	20.6
80°	35.8	32.6	29.3	27.1	25.0	23.9	21.7	19.5	17.4	15.2	14.1
82.5°	23.9	21.7	18.5	17.4	16.3	15.2	13.0	11.9	10.9	9.8	8.7
85°	13.0	11.9	10.9	8.7	8.7	7.6	6.5	6.5	5.4	5.4	4.3
87.5°	5.4	4.3	4.3	3.3	3.3	3.3	2.2	2.2	2.2	1.1	1.1
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: P251770

CATALOG NUMBER: LD4B20D010 EU4B10209027 4LBLWW1H

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	705.4	705.4	705.4	705.4	705.4	705.4	705.4	705.4	705.4	705.4	705.4
2.5°	704.4	700.0	700.0	700.0	696.8	697.8	698.9	700.0	698.9	695.7	698.9
5°	696.8	692.4	692.4	690.2	688.1	688.1	688.1	689.2	688.1	684.8	685.9
7.5°	687.0	681.6	680.5	678.3	676.1	675.1	675.1	675.1	674.0	669.6	671.8
10°	671.8	666.4	664.2	663.1	659.9	658.8	657.7	656.6	655.5	651.2	653.3
12.5°	653.3	649.0	644.7	643.6	640.3	638.2	637.1	637.1	634.9	630.6	632.7
15°	631.6	625.1	621.9	619.7	616.4	614.3	612.1	613.2	612.1	607.8	608.9
17.5°	605.6	599.1	595.8	594.7	590.4	588.2	587.1	587.1	586.1	581.7	582.8
20°	577.4	570.9	568.7	566.5	564.4	562.2	561.1	560.0	558.9	554.6	557.8
22.5°	549.2	541.6	538.3	538.3	534.0	532.9	531.8	532.9	531.8	527.5	529.6
25°	519.9	512.3	510.1	506.8	504.7	503.6	503.6	503.6	502.5	500.3	502.5
27.5°	487.3	481.9	478.6	477.5	475.4	474.3	473.2	474.3	474.3	471.0	473.2
30°	454.7	450.4	448.2	447.1	443.9	442.8	443.9	443.9	443.9	440.6	443.9
32.5°	422.2	418.9	417.8	414.6	412.4	412.4	412.4	413.5	412.4	410.2	413.5
35°	389.6	385.3	384.2	383.1	383.1	380.9	383.1	382.0	384.2	380.9	383.1
37.5°	354.9	352.7	351.6	351.6	349.5	350.6	350.6	350.6	352.7	349.5	351.6
40°	322.3	320.2	320.2	320.2	319.1	319.1	319.1	320.2	321.2	319.1	321.2
42.5°	289.8	288.7	288.7	287.6	286.5	287.6	288.7	288.7	289.8	287.6	288.7
45°	258.3	257.2	258.3	257.2	257.2	256.1	257.2	258.3	258.3	257.2	257.2
47.5°	229.0	229.0	227.9	227.9	227.9	227.9	227.9	227.9	227.9	225.7	227.9
50°	203.0	200.8	201.9	200.8	200.8	199.7	199.7	198.6	197.5	196.4	196.4
52.5°	178.0	175.8	175.8	174.7	173.6	173.6	172.6	171.5	170.4	168.2	168.2
55°	154.1	151.9	150.9	149.8	148.7	147.6	146.5	145.4	143.3	142.2	142.2
57.5°	132.4	130.2	128.1	128.1	125.9	124.8	122.6	120.5	119.4	117.2	117.2
60°	112.9	110.7	107.4	106.4	105.3	103.1	99.8	98.8	97.7	95.5	96.6
62.5°	94.4	91.2	87.9	86.8	85.7	83.6	81.4	79.2	78.1	79.2	79.2
65°	77.1	73.8	71.6	69.5	68.4	66.2	65.1	64.0	64.0	64.0	65.1
67.5°	61.9	58.6	56.4	55.4	53.2	52.1	52.1	52.1	52.1	52.1	52.1
70°	48.8	46.7	44.5	42.3	42.3	41.2	41.2	41.2	41.2	41.2	41.2
72.5°	36.9	34.7	33.6	33.6	32.6	32.6	32.6	32.6	31.5	31.5	32.6
75°	27.1	26.0	25.0	25.0	25.0	23.9	23.9	23.9	23.9	23.9	23.9
77.5°	19.5	18.5	18.5	17.4	17.4	17.4	17.4	17.4	17.4	16.3	16.3
80°	13.0	11.9	11.9	11.9	11.9	10.9	10.9	10.9	10.9	10.9	10.9
82.5°	7.6	7.6	7.6	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
85°	4.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
87.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	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: P251770

CATALOG NUMBER: LD4B20D010 EU4B10209027 4LBLWW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	705.4	705.4	705.4	705.4	705.4	705.4	705.4	705.4
2.5°	692.4	696.8	697.8	694.6	695.7	693.5	694.6	692.4
5°	680.5	683.7	684.8	682.7	682.7	680.5	681.6	679.4
7.5°	665.3	668.5	669.6	667.5	667.5	665.3	665.3	664.2
10°	647.9	649.0	651.2	647.9	649.0	646.8	646.8	644.7
12.5°	626.2	628.4	630.6	627.3	627.3	626.2	626.2	623.0
15°	603.4	605.6	606.7	604.5	604.5	603.4	602.3	601.3
17.5°	579.5	580.6	582.8	579.5	581.7	579.5	579.5	577.4
20°	552.4	555.7	556.8	553.5	554.6	553.5	553.5	553.5
22.5°	526.4	528.5	529.6	527.5	528.5	526.4	527.5	525.3
25°	499.2	500.3	501.4	499.2	501.4	500.3	499.2	499.2
27.5°	471.0	472.1	473.2	471.0	473.2	472.1	473.2	471.0
30°	440.6	442.8	445.0	442.8	443.9	442.8	442.8	441.7
32.5°	410.2	412.4	414.6	412.4	414.6	412.4	413.5	411.3
35°	382.0	383.1	384.2	382.0	383.1	383.1	383.1	382.0
37.5°	350.6	352.7	352.7	351.6	353.8	352.7	352.7	350.6
40°	320.2	321.2	322.3	320.2	321.2	320.2	321.2	320.2
42.5°	288.7	290.9	291.9	289.8	289.8	289.8	288.7	289.8
45°	256.1	258.3	260.5	257.2	258.3	258.3	258.3	257.2
47.5°	226.8	226.8	227.9	226.8	227.9	225.7	227.9	226.8
50°	196.4	196.4	198.6	196.4	196.4	196.4	196.4	196.4
52.5°	167.1	168.2	168.2	166.1	167.1	166.1	167.1	166.1
55°	140.0	140.0	141.1	140.0	140.0	140.0	140.0	140.0
57.5°	116.1	117.2	117.2	116.1	117.2	116.1	116.1	116.1
60°	96.6	96.6	96.6	95.5	96.6	95.5	96.6	95.5
62.5°	78.1	79.2	79.2	78.1	79.2	78.1	78.1	78.1
65°	64.0	64.0	64.0	64.0	64.0	64.0	64.0	62.9
67.5°	51.0	51.0	52.1	51.0	52.1	52.1	52.1	52.1
70°	41.2	41.2	41.2	41.2	41.2	41.2	41.2	41.2
72.5°	31.5	31.5	32.6	31.5	31.5	31.5	31.5	31.5
75°	23.9	23.9	23.9	23.9	23.9	22.8	22.8	23.9
77.5°	16.3	16.3	16.3	16.3	16.3	16.3	16.3	17.4
80°	10.9	10.9	10.9	10.9	9.8	9.8	10.9	9.8
82.5°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
85°	3.3	3.3	2.2	2.2	2.2	2.2	2.2	2.2
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)