

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: P251608

Luminaire Tested: **LD4B20D010 EU4B10208027 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251608
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 EU4B10208027 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1719.0 lumens
Efficiency: N/A
Efficacy: 82.6 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

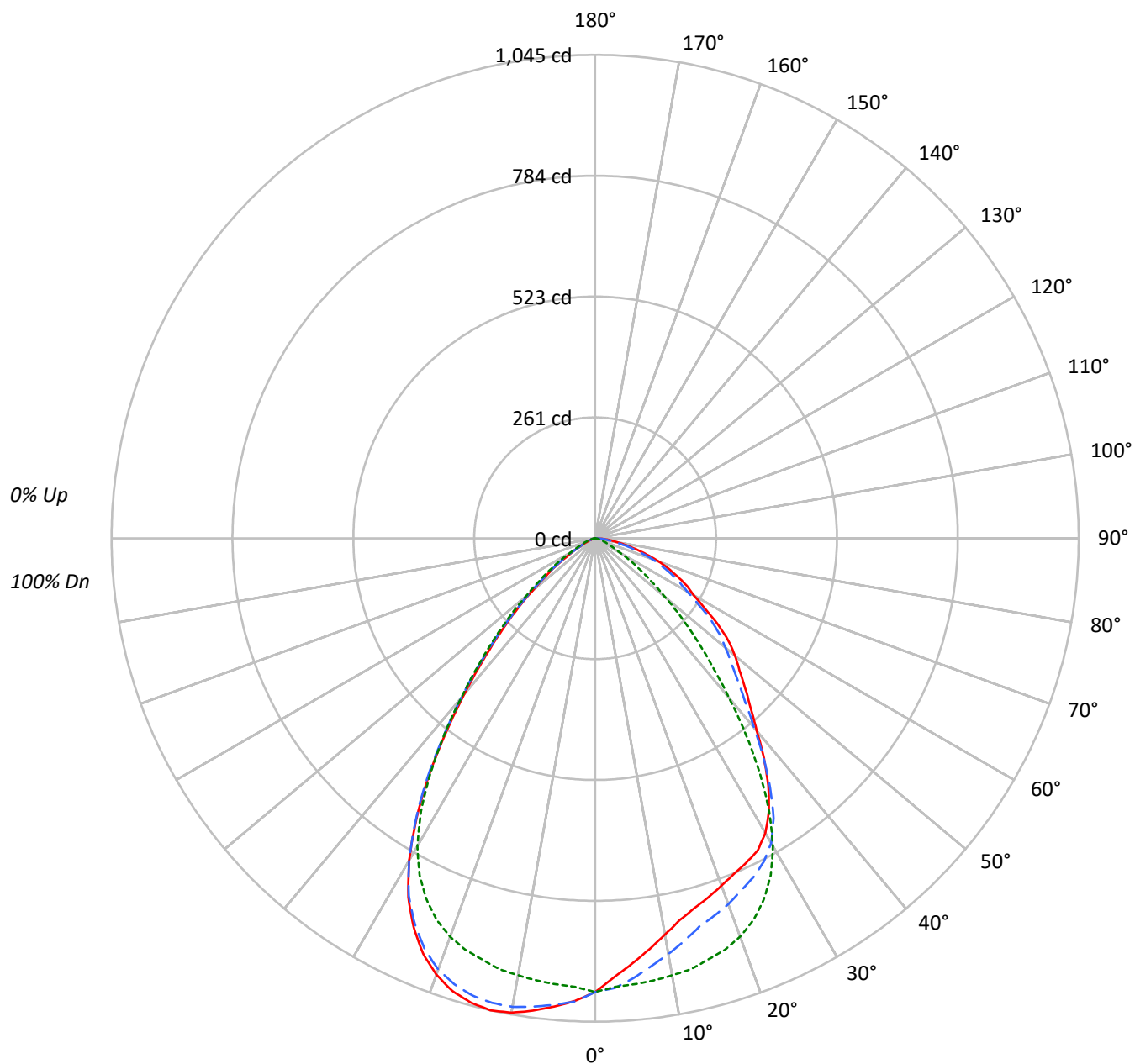
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251608

CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBSW1H

Luminous Intensity Polar Plot





TEST NUMBER: P251608

CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBSW1H

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	30	10
RCR																				
0	119	119	119	119	116	116	116	116		111	111	111		106	106	106		102	102	102
1	111	108	104	101	109	106	103	100		101	99	97		98	96	94		94	93	91
2	104	97	92	87	101	95	90	86		92	88	84		89	85	82		86	83	81
3	96	88	81	76	94	86	80	75		83	78	74		81	76	73		78	75	72
4	90	80	72	67	88	78	72	66		76	70	66		74	69	65		72	68	64
5	83	73	65	60	82	72	65	59		70	63	59		68	62	58		66	61	58
6	78	67	59	53	76	66	59	53		64	58	53		62	57	52		61	56	52
7	73	61	54	48	71	61	53	48		59	53	48		58	52	48		56	51	47
8	68	57	49	44	67	56	49	44		55	48	44		54	48	43		52	47	43
9	64	52	45	40	63	52	45	40		51	44	40		50	44	40		49	44	40
10	61	49	42	37	59	48	42	37		47	41	37		47	41	37		46	40	37

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	95577	95577	95577
5°	90249	94700	99405
10°	86047	94924	103049
15°	83522	95125	104811
20°	82835	95022	104065
25°	83166	92683	99748
30°	82769	86472	90444
35°	77583	73824	74573
40°	69133	57237	55952
45°	63221	42671	40066
50°	59783	29884	27018
55°	54967	20186	16957
60°	48027	11831	9356
65°	45452	7587	5235
70°	41403	5414	3248
75°	34266	3803	2372
80°	26939	2133	1403
85°	24041	1454	0



TEST NUMBER: P251608

CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBSW1H

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	92.7	5.4
10°-20°	265.8	15.5
20°-30°	394.1	22.9
30°-40°	394.6	23.0
40°-50°	275.8	16.0
50°-60°	164.1	9.5
60°-70°	85.6	5.0
70°-80°	38.1	2.2
80°-90°	8.3	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°	752.5	43.8
0°-40°	1147.1	66.7
0°-60°	1587.0	92.3
0°-90°	1719.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1719.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	981	981	981	981	981	
5°	922	954	968	1012	1016	86
15°	828	870	943	1024	1039	234
25°	773	809	862	921	928	356
35°	652	660	620	632	627	404
45°	459	436	310	300	291	356
55°	324	303	119	104	100	287
65°	197	181	33	24	23	195
75°	91	80	10	6	6	98
85°	22	16	1	1	0	24
90°	0	0	0	0	0	



TEST NUMBER: P251608

CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBSW1H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	980.7	980.7	980.7	980.7	980.7	980.7	980.7	980.7	980.7	980.7	980.7
2.5°	949.1	960.4	949.1	952.9	968.0	954.1	961.7	961.7	957.9	966.8	973.1
5°	922.5	933.9	922.5	927.6	944.0	930.1	939.0	936.4	937.7	945.3	954.1
7.5°	896.0	904.8	894.7	901.1	916.2	904.8	912.4	912.4	913.7	925.1	932.6
10°	869.5	877.0	869.5	874.5	890.9	880.8	885.9	887.2	890.9	901.1	912.4
12.5°	845.4	851.8	844.2	851.8	865.7	855.6	861.9	863.1	866.9	878.3	890.9
15°	827.8	834.1	826.5	832.8	845.4	837.9	842.9	845.4	848.0	858.1	869.5
17.5°	813.9	818.9	812.6	820.2	830.3	821.4	829.0	829.0	832.8	842.9	855.6
20°	798.7	803.7	798.7	805.0	816.4	808.8	815.1	815.1	818.9	830.3	841.7
22.5°	784.8	787.3	784.8	789.8	801.2	794.9	798.7	800.0	803.7	813.9	824.0
25°	773.4	778.5	775.9	781.0	788.6	782.3	786.1	787.3	791.1	800.0	808.8
27.5°	760.8	763.3	760.8	767.1	773.4	768.4	772.1	770.9	773.4	781.0	788.6
30°	735.5	738.0	738.0	741.8	746.9	744.3	748.1	744.3	746.9	753.2	760.8
32.5°	698.9	700.1	701.4	705.2	709.0	705.2	707.7	707.7	707.7	712.8	717.8
35°	652.1	654.6	653.4	655.9	659.7	658.4	658.4	657.1	654.6	657.1	659.7
37.5°	599.0	595.2	595.2	599.0	601.5	596.5	599.0	596.5	596.5	597.8	597.8
40°	543.4	539.6	543.4	544.7	545.9	543.4	542.1	539.6	535.8	537.1	534.6
42.5°	496.7	494.1	495.4	495.4	496.7	494.1	495.4	490.3	486.5	484.0	480.2
45°	458.7	454.9	458.7	456.2	456.2	454.9	453.7	451.2	446.1	442.3	436.0
47.5°	423.4	423.4	424.6	424.6	424.6	422.1	422.1	417.0	412.0	406.9	398.1
50°	394.3	391.8	396.8	396.8	393.0	391.8	393.0	386.7	382.9	376.6	367.8
52.5°	362.7	362.7	364.0	364.0	362.7	360.2	361.4	356.4	352.6	346.3	337.4
55°	323.5	321.0	324.8	324.8	323.5	322.3	323.5	319.7	315.9	310.9	303.3
57.5°	279.3	278.0	280.6	281.8	279.3	279.3	280.6	276.8	275.5	270.4	262.9
60°	246.4	245.2	247.7	249.0	246.4	246.4	246.4	241.4	238.8	233.8	228.7
62.5°	223.7	222.4	224.9	223.7	222.4	221.2	222.4	217.4	214.8	209.8	204.7
65°	197.1	198.4	199.7	199.7	198.4	197.1	197.1	194.6	192.1	187.0	180.7
67.5°	171.9	171.9	173.1	174.4	173.1	173.1	173.1	169.3	166.8	163.0	155.4
70°	145.3	144.1	147.9	147.9	145.3	146.6	145.3	144.1	141.5	136.5	130.2
72.5°	117.5	117.5	118.8	118.8	117.5	117.5	117.5	116.3	112.5	109.9	103.6
75°	91.0	91.0	92.3	93.5	91.0	91.0	92.3	89.7	87.2	83.4	79.6
77.5°	68.2	67.0	68.2	68.2	67.0	67.0	67.0	65.7	64.5	60.7	56.9
80°	48.0	46.8	48.0	48.0	48.0	46.8	46.8	45.5	45.5	43.0	39.2
82.5°	32.9	31.6	32.9	32.9	32.9	31.6	31.6	31.6	30.3	29.1	26.5
85°	21.5	20.2	20.2	21.5	20.2	20.2	20.2	20.2	19.0	17.7	16.4
87.5°	10.1	10.1	10.1	10.1	10.1	10.1	10.1	8.8	8.8	8.8	7.6
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: P251608

CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBSW1H

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	980.7	980.7	980.7	980.7	980.7	980.7	980.7	980.7	980.7	980.7	980.7
2.5°	968.0	965.5	973.1	970.6	971.8	965.5	975.6	970.6	976.9	970.6	983.2
5°	951.6	949.1	960.4	959.2	960.4	955.4	966.8	965.5	973.1	968.0	981.9
7.5°	933.9	931.4	944.0	945.3	947.8	942.8	957.9	957.9	965.5	964.2	979.4
10°	913.7	915.0	927.6	930.1	935.2	932.6	946.5	950.3	960.4	959.2	978.1
12.5°	894.7	894.7	911.2	916.2	920.0	918.7	935.2	940.2	951.6	954.1	971.8
15°	875.8	877.0	892.2	899.8	904.8	903.6	921.3	927.6	941.5	942.8	964.2
17.5°	860.6	859.3	875.8	882.1	889.7	888.4	907.4	915.0	928.9	932.6	952.9
20°	848.0	846.7	861.9	869.5	874.5	873.2	892.2	901.1	913.7	916.2	936.4
22.5°	832.8	830.3	845.4	851.8	856.8	855.6	872.0	878.3	890.9	893.5	912.4
25°	815.1	812.6	826.5	830.3	834.1	831.5	845.4	849.2	859.3	861.9	880.8
27.5°	794.9	788.6	800.0	800.0	802.5	798.7	808.8	812.6	821.4	821.4	839.1
30°	763.3	754.5	760.8	759.5	760.8	755.7	762.0	763.3	769.6	768.4	781.0
32.5°	719.1	706.4	710.2	706.4	702.6	695.1	702.6	700.1	705.2	700.1	711.5
35°	658.4	645.8	644.5	639.5	635.7	629.3	629.3	623.0	624.3	620.5	628.1
37.5°	592.7	576.3	573.7	563.6	557.3	549.7	549.7	544.7	538.4	535.8	542.1
40°	528.2	510.6	504.2	487.8	481.5	473.9	468.9	462.5	460.0	449.9	454.9
42.5°	472.6	453.7	439.8	422.1	415.8	404.4	396.8	389.2	385.4	374.1	379.1
45°	425.9	403.1	388.0	365.2	356.4	343.7	332.4	323.5	314.7	309.6	307.1
47.5°	386.7	362.7	342.5	317.2	303.3	291.9	276.8	267.9	256.5	250.2	246.4
50°	353.8	327.3	304.6	275.5	261.6	249.0	231.3	217.4	207.3	197.1	194.6
52.5°	324.8	297.0	271.7	238.8	222.4	207.3	188.3	173.1	164.3	152.9	151.6
55°	290.7	266.7	238.8	204.7	188.3	173.1	152.9	137.7	126.4	118.8	116.3
57.5°	254.0	231.3	204.7	170.6	154.2	137.7	118.8	104.9	94.8	88.5	87.2
60°	219.9	198.4	173.1	139.0	122.6	108.7	88.5	74.6	65.7	60.7	58.1
62.5°	194.6	174.4	150.4	118.8	103.6	89.7	70.8	58.1	50.5	45.5	43.0
65°	170.6	150.4	128.9	99.8	87.2	74.6	56.9	45.5	37.9	32.9	30.3
67.5°	145.3	127.6	107.4	83.4	70.8	60.7	45.5	35.4	29.1	25.3	22.7
70°	120.1	103.6	87.2	67.0	58.1	48.0	35.4	27.8	21.5	19.0	16.4
72.5°	94.8	82.1	68.2	51.8	44.2	37.9	27.8	20.2	16.4	13.9	11.4
75°	70.8	61.9	50.5	39.2	32.9	27.8	20.2	15.2	12.6	10.1	8.8
77.5°	50.5	43.0	35.4	26.5	24.0	20.2	13.9	11.4	8.8	6.3	5.1
80°	34.1	30.3	24.0	19.0	15.2	13.9	10.1	7.6	5.1	3.8	3.8
82.5°	22.7	19.0	15.2	11.4	10.1	8.8	6.3	5.1	3.8	2.5	2.5
85°	13.9	11.4	8.8	6.3	6.3	5.1	3.8	2.5	1.3	1.3	1.3
87.5°	6.3	5.1	3.8	2.5	2.5	1.3	1.3	1.3	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: P251608

CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBSW1H

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	980.7	980.7	980.7	980.7	980.7	980.7	980.7	980.7	980.7	980.7	980.7
2.5°	993.3	985.7	980.7	987.0	989.5	985.7	989.5	995.8	1002.2	1003.4	985.7
5°	994.6	987.0	984.5	992.0	993.3	992.0	995.8	1004.7	1012.3	1014.8	997.1
7.5°	994.6	989.5	988.3	997.1	998.4	997.1	1003.4	1013.5	1021.1	1026.2	1008.5
10°	992.0	989.5	990.8	998.4	1000.9	1000.9	1009.7	1021.1	1028.7	1033.7	1016.1
12.5°	988.3	988.3	988.3	997.1	999.6	1000.9	1008.5	1023.6	1028.7	1036.3	1018.6
15°	981.9	981.9	981.9	990.8	994.6	994.6	1003.4	1017.3	1023.6	1031.2	1013.5
17.5°	970.6	970.6	971.8	979.4	983.2	983.2	992.0	1007.2	1011.0	1019.8	1002.2
20°	954.1	954.1	955.4	963.0	966.8	964.2	975.6	988.3	992.0	999.6	981.9
22.5°	930.1	930.1	930.1	937.7	940.2	939.0	950.3	961.7	961.7	971.8	952.9
25°	894.7	897.3	894.7	902.3	904.8	903.6	913.7	923.8	921.3	932.6	913.7
27.5°	851.8	850.5	850.5	856.8	856.8	855.6	863.1	874.5	872.0	879.6	861.9
30°	792.4	796.2	789.8	798.7	794.9	792.4	797.4	807.5	803.7	810.1	796.2
32.5°	724.1	719.1	719.1	719.1	721.6	715.3	720.3	725.4	721.6	727.9	712.8
35°	634.4	635.7	631.9	633.1	634.4	626.8	631.9	636.9	631.9	635.7	621.8
37.5°	544.7	545.9	537.1	542.1	537.1	534.6	539.6	542.1	537.1	540.9	525.7
40°	454.9	452.4	451.2	451.2	452.4	446.1	449.9	453.7	449.9	452.4	438.5
42.5°	376.6	375.3	372.8	374.1	370.3	369.0	370.3	374.1	370.3	372.8	362.7
45°	308.4	305.8	302.0	303.3	303.3	297.0	300.8	303.3	299.5	300.8	291.9
47.5°	245.2	241.4	241.4	240.1	240.1	237.6	241.4	240.1	236.3	238.8	230.0
50°	190.8	188.3	188.3	188.3	188.3	184.5	185.8	188.3	184.5	184.5	179.5
52.5°	149.1	145.3	142.8	142.8	142.8	141.5	141.5	142.8	139.0	139.0	137.7
55°	112.5	111.2	107.4	107.4	107.4	103.6	104.9	104.9	103.6	103.6	99.8
57.5°	83.4	79.6	77.1	77.1	74.6	74.6	73.3	74.6	72.0	72.0	69.5
60°	55.6	53.1	51.8	50.5	50.5	49.3	50.5	49.3	49.3	48.0	46.8
62.5°	40.4	37.9	35.4	35.4	35.4	34.1	34.1	34.1	34.1	34.1	32.9
65°	29.1	26.5	26.5	25.3	25.3	24.0	24.0	24.0	24.0	24.0	22.7
67.5°	20.2	19.0	17.7	17.7	17.7	17.7	17.7	17.7	16.4	16.4	16.4
70°	15.2	13.9	12.6	12.6	12.6	12.6	12.6	11.4	12.6	12.6	11.4
72.5°	10.1	10.1	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
75°	7.6	7.6	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
77.5°	5.1	5.1	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
80°	3.8	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
82.5°	2.5	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
85°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	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: P251608

CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	980.7	980.7	980.7	980.7	980.7	980.7	980.7	980.7
2.5°	1004.7	1003.4	1000.9	1004.7	994.6	990.8	989.5	1000.9
5°	1018.6	1016.1	1016.1	1019.8	1008.5	1005.9	1003.4	1016.1
7.5°	1031.2	1028.7	1028.7	1032.5	1022.4	1019.8	1017.3	1030.0
10°	1038.8	1038.8	1038.8	1041.3	1032.5	1030.0	1028.7	1041.3
12.5°	1042.6	1042.6	1041.3	1046.4	1035.0	1035.0	1032.5	1045.1
15°	1037.5	1037.5	1037.5	1041.3	1031.2	1028.7	1028.7	1038.8
17.5°	1024.9	1024.9	1023.6	1027.4	1016.1	1016.1	1014.8	1026.2
20°	1005.9	1005.9	1003.4	1008.5	997.1	993.3	992.0	1003.4
22.5°	975.6	974.3	973.1	975.6	965.5	963.0	961.7	971.8
25°	936.4	935.2	932.6	935.2	923.8	920.0	920.0	927.6
27.5°	880.8	880.8	877.0	880.8	868.2	866.9	865.7	874.5
30°	812.6	807.5	805.0	810.1	797.4	797.4	794.9	803.7
32.5°	727.9	722.9	721.6	724.1	712.8	709.0	714.0	719.1
35°	630.6	631.9	626.8	626.8	616.7	618.0	619.2	626.8
37.5°	537.1	534.6	533.3	534.6	527.0	524.5	521.9	529.5
40°	449.9	443.6	442.3	442.3	436.0	434.7	436.0	439.8
42.5°	367.8	366.5	361.4	364.0	357.6	360.2	358.9	358.9
45°	297.0	298.2	293.2	297.0	291.9	288.1	288.1	290.7
47.5°	235.1	235.1	233.8	233.8	230.0	231.3	228.7	232.5
50°	182.0	182.0	179.5	180.7	178.2	178.2	176.9	178.2
52.5°	139.0	137.7	137.7	136.5	134.0	135.2	136.5	134.0
55°	101.1	102.4	99.8	101.1	98.6	99.8	98.6	99.8
57.5°	69.5	70.8	68.2	70.8	68.2	69.5	68.2	68.2
60°	48.0	48.0	46.8	48.0	46.8	46.8	45.5	48.0
62.5°	32.9	32.9	32.9	32.9	32.9	31.6	32.9	32.9
65°	24.0	22.7	22.7	22.7	22.7	22.7	22.7	22.7
67.5°	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4
70°	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4
72.5°	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
75°	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
77.5°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
80°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
82.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
85°	1.3	1.3	1.3	0.0	1.3	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)