

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: P251697

Luminaire Tested: **LD4B20D010 EU4B10209727 4LBLWW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251697
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-11)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B20D010 EU4B10209727 4LBLWW1LI
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 97CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1170.0 lumens
Efficiency: N/A
Efficacy: 56.2 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.03 / 1.12
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

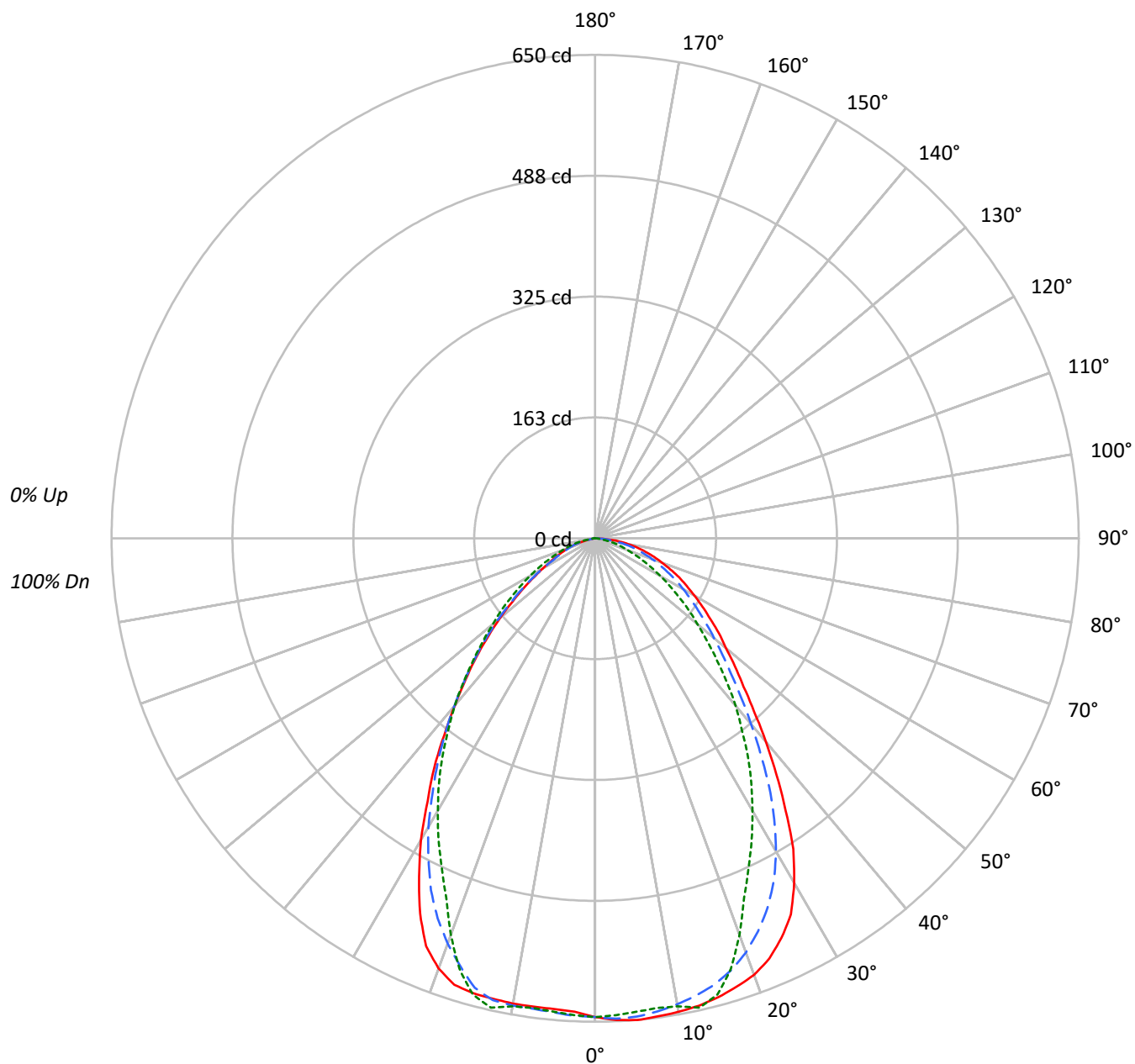
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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	50	30	10
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	105	102	99	101	98	96	97	95	93	93	91	90	88		
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77		
3	95	86	79	74	93	84	78	73	82	76	72	79	74	70	77	73	69	67		
4	88	78	70	64	86	76	69	64	74	68	63	72	67	62	70	65	62	60		
5	82	71	63	57	80	70	62	57	68	61	56	66	60	56	64	59	55	53		
6	76	65	57	51	75	64	56	51	62	55	50	60	54	50	59	54	50	48		
7	71	59	51	46	70	59	51	46	57	50	46	56	50	45	54	49	45	43		
8	67	55	47	42	65	54	47	42	53	46	41	52	46	41	51	45	41	39		
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38	36		
10	59	47	40	35	58	47	40	35	46	39	35	45	39	35	44	39	35	33		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	62734	62734	62734
5°	63619	62504	62142
10°	63979	63227	62860
15°	64462	64089	63897
20°	64800	58826	63814
25°	63735	52465	59874
30°	60217	47580	52678
35°	53110	42557	44913
40°	45393	37340	37225
45°	38895	31865	31094
50°	34766	27185	25335
55°	32080	23244	20050
60°	29978	19687	15827
65°	28733	16327	13052
70°	27156	13165	11028
75°	26283	10656	7832
80°	25424	5837	2133
85°	22140	3131	1006



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	61.1	5.2
10°-20°	175.9	15.0
20°-30°	244.0	20.9
30°-40°	240.9	20.6
40°-50°	188.9	16.1
50°-60°	130.8	11.2
60°-70°	80.2	6.9
70°-80°	40.1	3.4
80°-90°	8.0	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°	481.1	41.1
0°-40°	721.9	61.7
0°-60°	1041.7	89.0
0°-90°	1170.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1170.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	644	644	644	644	644	
5°	650	646	639	640	635	62
15°	639	621	635	626	633	180
25°	593	548	488	522	557	271
35°	446	408	358	369	378	279
45°	282	259	231	228	226	221
55°	189	169	137	122	118	170
65°	125	108	71	53	57	123
75°	70	58	28	22	21	74
85°	20	11	3	1	1	23
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	643.7	643.7	643.7	643.7	643.7	643.7	643.7	643.7	643.7	643.7	643.7
2.5°	648.4	646.5	645.6	648.4	647.4	649.3	648.4	647.4	645.6	646.5	646.5
5°	650.3	647.4	646.5	648.4	648.4	650.3	649.3	647.4	645.6	646.5	645.6
7.5°	648.4	646.5	646.5	647.4	646.5	648.4	646.5	644.6	642.7	643.7	641.8
10°	646.5	643.7	643.7	643.7	643.7	645.6	643.7	640.8	638.0	638.0	636.1
12.5°	643.7	640.8	640.8	641.8	639.9	641.8	639.9	635.2	632.3	631.4	629.5
15°	638.9	636.1	636.1	636.1	634.2	635.2	632.3	627.6	623.8	623.8	621.0
17.5°	632.3	629.5	628.6	628.6	625.7	626.7	623.8	619.1	613.5	611.6	608.7
20°	624.8	621.0	619.1	619.1	616.3	617.2	613.5	607.8	600.2	597.4	592.7
22.5°	611.6	609.7	606.9	605.9	603.1	602.1	598.4	590.8	584.2	579.5	571.9
25°	592.7	591.8	588.9	588.0	584.2	582.3	578.5	570.0	563.4	555.9	548.3
27.5°	570.0	566.3	564.4	561.6	557.8	556.8	552.1	544.6	534.2	529.5	520.0
30°	535.1	533.2	531.4	528.5	524.7	522.9	520.0	511.5	503.0	494.5	486.1
32.5°	495.5	491.7	488.9	489.8	485.1	483.2	478.5	470.9	463.4	457.7	448.3
35°	446.4	445.5	444.5	442.6	438.9	437.9	434.1	428.5	420.0	413.4	407.7
37.5°	400.2	397.3	395.4	395.4	391.7	391.7	388.8	382.2	377.5	372.8	365.2
40°	356.8	352.0	352.0	352.0	348.3	349.2	347.3	340.7	336.0	330.3	325.6
42.5°	316.2	314.3	313.3	311.4	309.6	309.6	307.7	303.9	299.2	295.4	290.7
45°	282.2	281.2	280.3	279.4	277.5	276.5	275.6	269.9	267.1	263.3	258.6
47.5°	254.8	252.9	252.0	251.0	249.2	248.2	246.3	242.6	239.7	235.9	232.2
50°	229.3	228.4	227.5	227.5	225.6	224.6	222.7	219.9	215.2	213.3	208.6
52.5°	209.5	207.6	205.7	205.7	203.9	203.9	201.0	198.2	193.5	191.6	187.8
55°	188.8	187.8	186.9	186.9	185.0	184.0	183.1	179.3	175.5	172.7	168.9
57.5°	170.8	169.9	168.9	168.9	167.1	166.1	165.2	162.3	158.6	156.7	151.9
60°	153.8	153.8	152.9	151.9	151.0	150.1	149.1	146.3	143.5	140.6	136.8
62.5°	138.7	137.8	136.8	135.9	135.9	135.0	134.0	130.2	128.4	125.5	121.7
65°	124.6	122.7	122.7	121.7	121.7	120.8	119.9	116.1	114.2	111.4	107.6
67.5°	109.5	108.5	107.6	107.6	106.6	106.6	105.7	102.9	100.0	98.2	94.4
70°	95.3	95.3	94.4	94.4	93.4	92.5	92.5	90.6	87.8	84.9	81.2
72.5°	83.1	82.1	81.2	81.2	80.2	80.2	79.3	77.4	75.5	73.6	68.9
75°	69.8	68.9	68.9	68.9	68.0	68.0	67.0	65.1	63.2	61.3	58.5
77.5°	57.6	57.6	56.6	56.6	55.7	55.7	55.7	53.8	51.9	50.0	46.2
80°	45.3	45.3	45.3	44.4	43.4	43.4	43.4	41.5	39.6	37.8	34.9
82.5°	33.0	32.1	32.1	31.1	30.2	30.2	30.2	28.3	27.4	24.5	22.7
85°	19.8	18.9	18.9	17.9	17.0	17.0	17.0	16.0	14.2	13.2	11.3
87.5°	7.6	7.6	7.6	7.6	7.6	6.6	6.6	5.7	5.7	4.7	4.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	643.7	643.7	643.7	643.7	643.7	643.7	643.7	643.7	643.7	643.7	643.7
2.5°	646.5	645.6	645.6	644.6	645.6	643.7	643.7	643.7	643.7	641.8	641.8
5°	644.6	644.6	643.7	642.7	643.7	641.8	642.7	641.8	641.8	638.9	638.9
7.5°	640.8	639.9	638.0	637.1	638.0	637.1	637.1	637.1	638.9	637.1	637.1
10°	634.2	633.3	631.4	630.5	630.5	629.5	631.4	633.3	637.1	638.9	642.7
12.5°	627.6	625.7	624.8	624.8	625.7	625.7	629.5	634.2	643.7	646.5	650.3
15°	619.1	618.2	618.2	621.0	624.8	627.6	635.2	638.0	638.9	635.2	633.3
17.5°	607.8	607.8	608.7	611.6	614.4	614.4	615.3	613.5	611.6	606.9	601.2
20°	588.9	588.0	586.1	586.1	586.1	582.3	584.2	577.6	572.9	567.2	558.7
22.5°	565.3	560.6	554.0	549.3	546.5	544.6	539.8	532.3	526.6	522.9	519.1
25°	539.8	532.3	522.9	515.3	510.6	509.6	503.0	496.4	492.7	487.9	486.1
27.5°	510.6	502.1	490.8	483.2	479.4	476.6	470.9	464.3	459.6	455.8	453.0
30°	476.6	468.1	458.7	449.2	445.5	440.7	435.1	430.4	425.6	422.8	420.9
32.5°	438.9	430.4	420.9	414.3	409.6	405.8	401.1	396.4	392.6	390.7	388.8
35°	400.2	391.7	384.1	377.5	373.7	370.9	367.1	361.5	358.6	357.7	355.8
37.5°	358.6	353.0	346.4	340.7	337.9	334.1	332.2	327.5	327.5	323.7	323.7
40°	319.9	316.2	309.6	304.8	303.0	300.1	297.3	295.4	294.5	293.5	292.6
42.5°	286.0	280.3	276.5	272.8	269.9	268.0	268.0	265.2	264.3	261.4	260.5
45°	254.8	252.0	245.4	242.6	241.6	238.8	237.8	235.9	233.1	231.2	230.3
47.5°	227.5	224.6	220.8	217.1	215.2	213.3	211.4	208.6	206.7	203.9	202.9
50°	204.8	200.1	196.3	193.5	190.6	189.7	187.8	184.0	182.2	179.3	179.3
52.5°	184.0	180.3	175.5	172.7	169.9	168.0	165.2	162.3	159.5	158.6	155.7
55°	166.1	161.4	156.7	152.9	150.1	147.2	146.3	142.5	138.7	136.8	135.0
57.5°	149.1	144.4	138.7	134.0	132.1	130.2	127.4	123.6	120.8	118.0	116.1
60°	132.1	128.4	122.7	118.0	116.1	113.3	110.4	106.6	103.8	101.0	99.1
62.5°	118.0	112.3	107.6	102.9	100.0	98.2	94.4	91.5	87.8	84.9	82.1
65°	103.8	98.2	93.4	88.7	86.8	84.0	81.2	77.4	73.6	70.8	67.0
67.5°	89.7	84.9	80.2	75.5	73.6	71.7	68.0	64.2	60.4	57.6	53.8
70°	77.4	72.7	68.0	64.2	62.3	60.4	56.6	52.9	50.0	46.2	43.4
72.5°	66.1	62.3	57.6	53.8	51.9	50.0	46.2	43.4	39.6	37.8	34.9
75°	54.7	51.0	47.2	43.4	41.5	39.6	36.8	34.0	31.1	28.3	26.4
77.5°	43.4	39.6	35.9	33.0	31.1	30.2	27.4	24.5	21.7	19.8	17.0
80°	32.1	28.3	25.5	22.7	20.8	19.8	17.0	15.1	13.2	10.4	9.4
82.5°	19.8	17.0	15.1	13.2	12.3	11.3	9.4	7.6	6.6	5.7	4.7
85°	10.4	9.4	7.6	6.6	5.7	5.7	4.7	3.8	2.8	2.8	1.9
87.5°	3.8	2.8	2.8	1.9	1.9	1.9	1.9	0.9	0.9	0.9	0.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	643.7	643.7	643.7	643.7	643.7	643.7	643.7	643.7	643.7	643.7	643.7
2.5°	639.9	640.8	641.8	642.7	641.8	641.8	643.7	639.9	642.7	642.7	638.9
5°	638.0	639.9	638.9	640.8	638.9	638.9	639.9	638.0	639.9	639.9	637.1
7.5°	636.1	638.0	638.0	638.9	638.0	638.0	638.9	636.1	638.0	638.0	635.2
10°	644.6	646.5	645.6	644.6	641.8	639.9	640.8	636.1	638.0	638.0	635.2
12.5°	647.4	646.5	642.7	640.8	638.9	637.1	638.0	634.2	636.1	636.1	634.2
15°	628.6	626.7	623.8	624.8	622.9	622.0	623.8	622.0	625.7	627.6	625.7
17.5°	596.5	595.5	593.6	593.6	593.6	594.6	597.4	597.4	603.1	606.9	608.7
20°	554.9	554.0	554.9	556.8	557.8	561.6	568.2	571.9	579.5	586.1	590.8
22.5°	517.2	519.1	521.9	525.7	526.6	531.4	539.8	543.6	553.1	560.6	565.3
25°	485.1	487.9	489.8	492.7	493.6	499.3	506.8	511.5	521.9	527.6	533.2
27.5°	453.0	456.8	457.7	461.5	461.5	467.2	473.8	478.5	485.1	490.8	495.5
30°	421.9	422.8	425.6	426.6	428.5	434.1	437.9	440.7	448.3	451.1	454.0
32.5°	387.9	391.7	393.6	394.5	393.6	398.3	402.1	403.9	406.8	410.5	412.4
35°	355.8	357.7	358.6	360.5	361.5	362.4	364.3	365.2	369.0	370.0	370.9
37.5°	323.7	326.6	325.6	326.6	326.6	327.5	329.4	328.4	331.3	332.2	331.3
40°	291.6	291.6	293.5	292.6	293.5	292.6	294.5	294.5	294.5	295.4	294.5
42.5°	259.5	260.5	259.5	261.4	259.5	260.5	260.5	259.5	260.5	259.5	259.5
45°	230.3	230.3	230.3	230.3	228.4	228.4	230.3	229.3	228.4	227.5	226.5
47.5°	202.0	202.9	201.0	202.0	201.0	200.1	199.1	199.1	198.2	196.3	195.4
50°	178.4	176.5	175.5	176.5	175.5	174.6	173.7	171.8	170.8	168.9	168.0
52.5°	154.8	152.9	151.0	151.0	150.1	148.2	147.2	145.3	144.4	142.5	142.5
55°	134.0	132.1	130.2	129.3	127.4	125.5	124.6	122.7	121.7	119.9	118.0
57.5°	114.2	111.4	109.5	108.5	107.6	104.8	103.8	101.9	100.0	98.2	97.2
60°	96.3	93.4	90.6	89.7	88.7	85.9	84.9	82.1	81.2	79.3	78.3
62.5°	79.3	77.4	73.6	72.7	70.8	68.9	66.1	65.1	64.2	65.1	65.1
65°	64.2	61.3	58.5	57.6	55.7	53.8	52.9	51.9	52.9	52.9	53.8
67.5°	51.0	48.1	45.3	45.3	44.4	42.5	42.5	42.5	43.4	43.4	44.4
70°	40.6	38.7	36.8	35.9	35.9	34.9	35.9	35.9	36.8	36.8	36.8
72.5°	32.1	31.1	30.2	29.3	29.3	29.3	29.3	29.3	29.3	29.3	30.2
75°	24.5	23.6	22.7	22.7	21.7	21.7	21.7	21.7	21.7	21.7	20.8
77.5°	16.0	15.1	14.2	14.2	13.2	12.3	12.3	11.3	11.3	11.3	11.3
80°	8.5	7.6	6.6	5.7	5.7	4.7	4.7	4.7	4.7	3.8	3.8
82.5°	3.8	2.8	2.8	2.8	2.8	1.9	1.9	1.9	1.9	1.9	1.9
85°	1.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
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



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CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	643.7	643.7	643.7	643.7	643.7	643.7	643.7	643.7
2.5°	640.8	638.9	640.8	641.8	639.9	638.9	640.8	637.1
5°	639.9	637.1	638.0	638.9	637.1	636.1	638.0	635.2
7.5°	638.0	637.1	638.0	638.9	636.1	636.1	638.0	635.2
10°	638.0	636.1	637.1	638.9	637.1	637.1	638.9	635.2
12.5°	637.1	634.2	637.1	638.0	636.1	636.1	638.0	634.2
15°	630.5	630.5	631.4	633.3	632.3	633.3	636.1	633.3
17.5°	616.3	618.2	622.0	624.8	626.7	628.6	631.4	629.5
20°	599.3	602.1	606.9	609.7	613.5	614.4	619.1	615.3
22.5°	572.9	578.5	582.3	585.1	588.0	590.8	594.6	593.6
25°	540.8	544.6	547.4	550.2	554.0	555.9	557.8	556.8
27.5°	502.1	504.0	507.8	509.6	511.5	513.4	517.2	512.5
30°	459.6	460.6	462.5	465.3	465.3	467.2	469.1	468.1
32.5°	416.2	416.2	418.1	420.0	419.0	420.0	423.8	419.0
35°	373.7	372.8	375.6	376.6	376.6	375.6	378.5	377.5
37.5°	332.2	333.2	334.1	335.0	333.2	335.0	335.0	333.2
40°	294.5	293.5	295.4	296.3	295.4	296.3	296.3	292.6
42.5°	260.5	258.6	259.5	260.5	259.5	260.5	259.5	257.7
45°	227.5	226.5	226.5	227.5	225.6	225.6	225.6	225.6
47.5°	196.3	195.4	196.3	196.3	194.4	194.4	195.4	194.4
50°	168.0	167.1	167.1	167.1	166.1	166.1	167.1	167.1
52.5°	142.5	140.6	140.6	140.6	140.6	140.6	141.6	139.7
55°	117.0	117.0	117.0	117.0	118.0	118.0	118.0	118.0
57.5°	96.3	97.2	97.2	98.2	97.2	98.2	98.2	97.2
60°	80.2	79.3	80.2	80.2	81.2	81.2	81.2	81.2
62.5°	66.1	66.1	66.1	67.0	67.0	67.0	68.0	67.0
65°	54.7	54.7	55.7	55.7	55.7	56.6	56.6	56.6
67.5°	45.3	45.3	45.3	45.3	46.2	46.2	47.2	46.2
70°	37.8	37.8	37.8	37.8	37.8	38.7	38.7	38.7
72.5°	30.2	30.2	30.2	30.2	31.1	31.1	31.1	31.1
75°	20.8	20.8	20.8	21.7	20.8	20.8	20.8	20.8
77.5°	10.4	10.4	10.4	10.4	10.4	9.4	9.4	9.4
80°	3.8	3.8	3.8	3.8	3.8	3.8	2.8	3.8
82.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	0.9
85°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
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



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— 0°-180° - - 45°-225° - - - 90°-270°













(END OF REPORT)