

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: P251698

Luminaire Tested: **LD4B20D010 EU4B10209730 4LBLWW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251698
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 EU4B10209730 4LBLWW1LI
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 97CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1223.0 lumens
Efficiency: N/A
Efficacy: 58.8 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

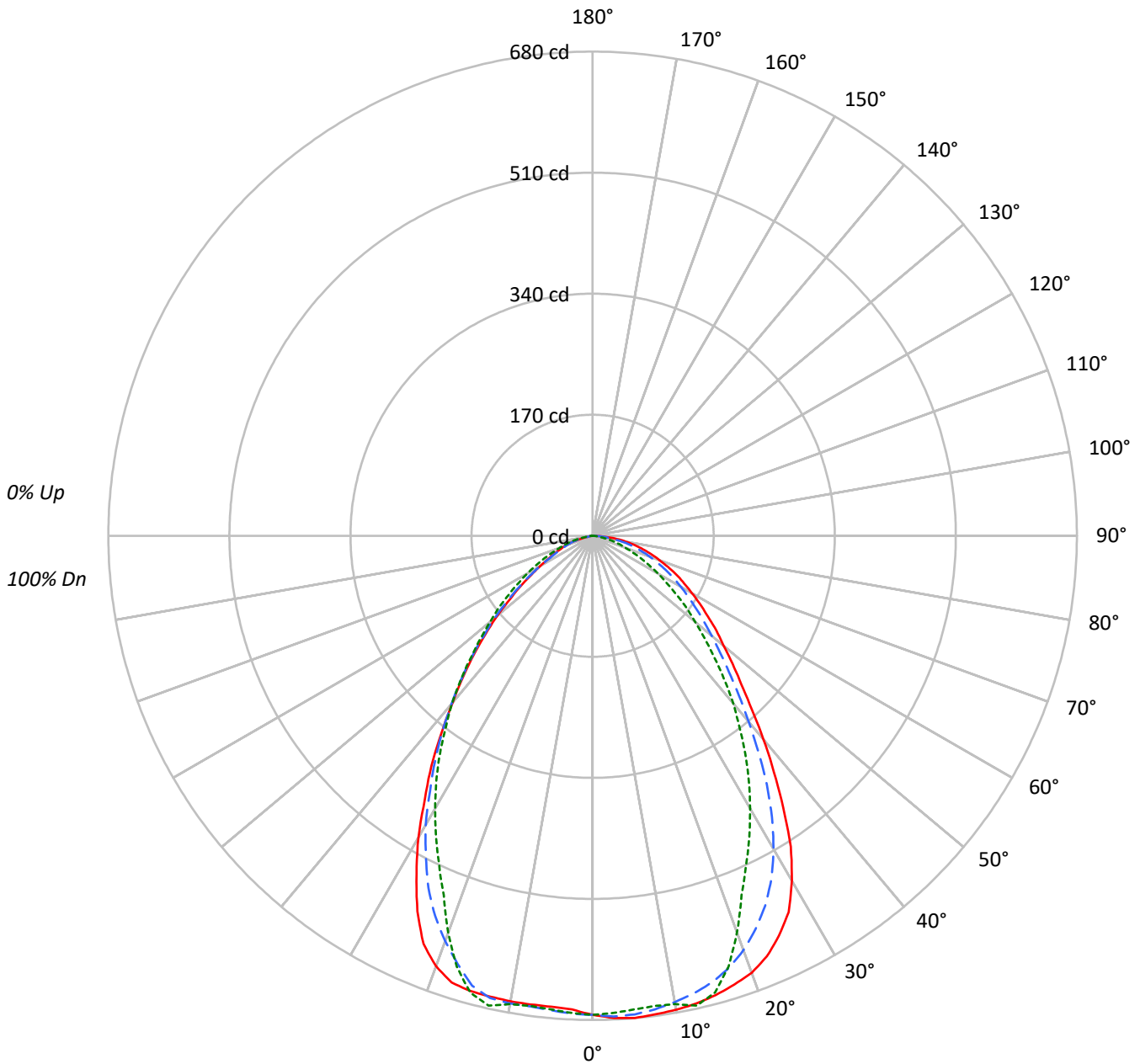
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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	105	101	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°	65570	65570	65570
5°	66495	65341	64950
10°	66878	66096	65701
15°	67388	66985	66793
20°	67735	61491	66708
25°	66617	54842	62595
30°	62952	49740	55063
35°	55513	44485	46947
40°	47441	39032	38905
45°	40659	33313	32499
50°	36343	28413	26472
55°	33524	24298	20950
60°	31343	20583	16529
65°	30025	17065	13652
70°	28381	13763	11512
75°	27488	11146	8171
80°	26603	6118	2189
85°	23147	3355	1118



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	63.9	5.2
10°-20°	183.9	15.0
20°-30°	255.1	20.9
30°-40°	251.8	20.6
40°-50°	197.5	16.1
50°-60°	136.8	11.2
60°-70°	83.8	6.9
70°-80°	41.9	3.4
80°-90°	8.4	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°	502.9	41.1
0°-40°	754.6	61.7
0°-60°	1088.9	89.0
0°-90°	1223.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1223.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	673	673	673	673	673	
5°	680	675	668	669	664	65
15°	668	649	664	654	662	189
25°	620	573	510	546	582	284
35°	467	426	374	386	395	291
45°	295	270	242	239	236	231
55°	197	177	143	127	123	178
65°	130	112	74	55	59	129
75°	73	61	30	23	22	77
85°	21	12	3	1	1	24
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°	672.8	672.8	672.8	672.8	672.8	672.8	672.8	672.8	672.8	672.8	672.8
2.5°	677.8	675.8	674.8	677.8	676.8	678.7	677.8	676.8	674.8	675.8	675.8
5°	679.7	676.8	675.8	677.8	677.8	679.7	678.7	676.8	674.8	675.8	674.8
7.5°	677.8	675.8	675.8	676.8	675.8	677.8	675.8	673.8	671.8	672.8	670.8
10°	675.8	672.8	672.8	672.8	672.8	674.8	672.8	669.9	666.9	666.9	664.9
12.5°	672.8	669.9	669.9	670.8	668.9	670.8	668.9	663.9	661.0	660.0	658.0
15°	667.9	664.9	664.9	664.9	663.0	663.9	661.0	656.0	652.1	652.1	649.1
17.5°	661.0	658.0	657.0	657.0	654.1	655.1	652.1	647.2	641.3	639.3	636.3
20°	653.1	649.1	647.2	647.2	644.2	645.2	641.3	635.3	627.4	624.5	619.5
22.5°	639.3	637.3	634.3	633.4	630.4	629.4	625.5	617.6	610.7	605.7	597.8
25°	619.5	618.6	615.6	614.6	610.7	608.7	604.7	595.9	589.0	581.1	573.2
27.5°	595.9	591.9	590.0	587.0	583.0	582.1	577.1	569.2	558.4	553.4	543.6
30°	559.4	557.4	555.4	552.5	548.5	546.5	543.6	534.7	525.8	516.9	508.1
32.5°	517.9	514.0	511.0	512.0	507.1	505.1	500.2	492.3	484.4	478.5	468.6
35°	466.6	465.6	464.7	462.7	458.7	457.8	453.8	447.9	439.0	432.1	426.2
37.5°	418.3	415.3	413.4	413.4	409.4	409.4	406.5	399.5	394.6	389.7	381.8
40°	372.9	368.0	368.0	368.0	364.0	365.0	363.0	356.1	351.2	345.3	340.4
42.5°	330.5	328.5	327.5	325.6	323.6	323.6	321.6	317.7	312.7	308.8	303.9
45°	295.0	294.0	293.0	292.0	290.0	289.1	288.1	282.2	279.2	275.2	270.3
47.5°	266.4	264.4	263.4	262.4	260.4	259.5	257.5	253.5	250.6	246.6	242.7
50°	239.7	238.7	237.8	237.8	235.8	234.8	232.8	229.9	224.9	223.0	218.0
52.5°	219.0	217.0	215.1	215.1	213.1	213.1	210.1	207.2	202.2	200.3	196.3
55°	197.3	196.3	195.3	195.3	193.4	192.4	191.4	187.4	183.5	180.5	176.6
57.5°	178.6	177.6	176.6	176.6	174.6	173.6	172.6	169.7	165.7	163.8	158.8
60°	160.8	160.8	159.8	158.8	157.8	156.9	155.9	152.9	150.0	147.0	143.0
62.5°	145.0	144.0	143.0	142.1	142.1	141.1	140.1	136.1	134.2	131.2	127.3
65°	130.2	128.3	128.3	127.3	127.3	126.3	125.3	121.3	119.4	116.4	112.5
67.5°	114.4	113.5	112.5	112.5	111.5	111.5	110.5	107.5	104.6	102.6	98.7
70°	99.6	99.6	98.7	98.7	97.7	96.7	96.7	94.7	91.7	88.8	84.8
72.5°	86.8	85.8	84.8	84.8	83.9	83.9	82.9	80.9	78.9	77.0	72.0
75°	73.0	72.0	72.0	72.0	71.0	71.0	70.0	68.1	66.1	64.1	61.2
77.5°	60.2	60.2	59.2	59.2	58.2	58.2	58.2	56.2	54.3	52.3	48.3
80°	47.4	47.4	47.4	46.4	45.4	45.4	45.4	43.4	41.4	39.5	36.5
82.5°	34.5	33.5	33.5	32.6	31.6	31.6	31.6	29.6	28.6	25.7	23.7
85°	20.7	19.7	19.7	18.7	17.8	17.8	17.8	16.8	14.8	13.8	11.8
87.5°	7.9	7.9	7.9	7.9	7.9	6.9	6.9	5.9	5.9	4.9	4.9
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	672.8	672.8	672.8	672.8	672.8	672.8	672.8	672.8	672.8	672.8	672.8
2.5°	675.8	674.8	674.8	673.8	674.8	672.8	672.8	672.8	672.8	670.8	670.8
5°	673.8	673.8	672.8	671.8	672.8	670.8	671.8	670.8	670.8	667.9	667.9
7.5°	669.9	668.9	666.9	665.9	666.9	665.9	665.9	665.9	667.9	665.9	665.9
10°	663.0	662.0	660.0	659.0	659.0	658.0	660.0	662.0	665.9	667.9	671.8
12.5°	656.0	654.1	653.1	653.1	654.1	654.1	658.0	663.0	672.8	675.8	679.7
15°	647.2	646.2	646.2	649.1	653.1	656.0	663.9	666.9	667.9	663.9	662.0
17.5°	635.3	635.3	636.3	639.3	642.2	642.2	643.2	641.3	639.3	634.3	628.4
20°	615.6	614.6	612.6	612.6	612.6	608.7	610.7	603.8	598.8	592.9	584.0
22.5°	590.9	586.0	579.1	574.2	571.2	569.2	564.3	556.4	550.5	546.5	542.6
25°	564.3	556.4	546.5	538.7	533.7	532.7	525.8	518.9	515.0	510.0	508.1
27.5°	533.7	524.8	513.0	505.1	501.2	498.2	492.3	485.4	480.4	476.5	473.5
30°	498.2	489.3	479.5	469.6	465.6	460.7	454.8	449.9	444.9	442.0	440.0
32.5°	458.7	449.9	440.0	433.1	428.2	424.2	419.3	414.3	410.4	408.4	406.5
35°	418.3	409.4	401.5	394.6	390.7	387.7	383.8	377.8	374.9	373.9	371.9
37.5°	374.9	369.0	362.1	356.1	353.2	349.2	347.3	342.3	342.3	338.4	338.4
40°	334.4	330.5	323.6	318.7	316.7	313.7	310.8	308.8	307.8	306.8	305.8
42.5°	298.9	293.0	289.1	285.1	282.2	280.2	280.2	277.2	276.2	273.3	272.3
45°	266.4	263.4	256.5	253.5	252.6	249.6	248.6	246.6	243.7	241.7	240.7
47.5°	237.8	234.8	230.9	226.9	224.9	223.0	221.0	218.0	216.1	213.1	212.1
50°	214.1	209.1	205.2	202.2	199.3	198.3	196.3	192.4	190.4	187.4	187.4
52.5°	192.4	188.4	183.5	180.5	177.6	175.6	172.6	169.7	166.7	165.7	162.8
55°	173.6	168.7	163.8	159.8	156.9	153.9	152.9	149.0	145.0	143.0	141.1
57.5°	155.9	150.9	145.0	140.1	138.1	136.1	133.2	129.2	126.3	123.3	121.3
60°	138.1	134.2	128.3	123.3	121.3	118.4	115.4	111.5	108.5	105.6	103.6
62.5°	123.3	117.4	112.5	107.5	104.6	102.6	98.7	95.7	91.7	88.8	85.8
65°	108.5	102.6	97.7	92.7	90.8	87.8	84.8	80.9	77.0	74.0	70.0
67.5°	93.7	88.8	83.9	78.9	77.0	75.0	71.0	67.1	63.1	60.2	56.2
70°	80.9	76.0	71.0	67.1	65.1	63.1	59.2	55.2	52.3	48.3	45.4
72.5°	69.1	65.1	60.2	56.2	54.3	52.3	48.3	45.4	41.4	39.5	36.5
75°	57.2	53.3	49.3	45.4	43.4	41.4	38.5	35.5	32.6	29.6	27.6
77.5°	45.4	41.4	37.5	34.5	32.6	31.6	28.6	25.7	22.7	20.7	17.8
80°	33.5	29.6	26.6	23.7	21.7	20.7	17.8	15.8	13.8	10.9	9.9
82.5°	20.7	17.8	15.8	13.8	12.8	11.8	9.9	7.9	6.9	5.9	4.9
85°	10.9	9.9	7.9	6.9	5.9	5.9	4.9	3.9	3.0	3.0	2.0
87.5°	3.9	3.0	3.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	672.8	672.8	672.8	672.8	672.8	672.8	672.8	672.8	672.8	672.8	672.8
2.5°	668.9	669.9	670.8	671.8	670.8	670.8	672.8	668.9	671.8	671.8	667.9
5°	666.9	668.9	667.9	669.9	667.9	667.9	668.9	666.9	668.9	668.9	665.9
7.5°	664.9	666.9	666.9	667.9	666.9	666.9	667.9	664.9	666.9	666.9	663.9
10°	673.8	675.8	674.8	673.8	670.8	668.9	669.9	664.9	666.9	666.9	663.9
12.5°	676.8	675.8	671.8	669.9	667.9	665.9	666.9	663.0	664.9	664.9	663.0
15°	657.0	655.1	652.1	653.1	651.1	650.1	652.1	650.1	654.1	656.0	654.1
17.5°	623.5	622.5	620.5	620.5	620.5	621.5	624.5	624.5	630.4	634.3	636.3
20°	580.1	579.1	580.1	582.1	583.0	587.0	593.9	597.8	605.7	612.6	617.6
22.5°	540.6	542.6	545.6	549.5	550.5	555.4	564.3	568.2	578.1	586.0	590.9
25°	507.1	510.0	512.0	515.0	516.0	521.9	529.8	534.7	545.6	551.5	557.4
27.5°	473.5	477.5	478.5	482.4	482.4	488.3	495.2	500.2	507.1	513.0	517.9
30°	441.0	442.0	444.9	445.9	447.9	453.8	457.8	460.7	468.6	471.6	474.5
32.5°	405.5	409.4	411.4	412.4	411.4	416.3	420.3	422.2	425.2	429.1	431.1
35°	371.9	373.9	374.9	376.9	377.8	378.8	380.8	381.8	385.7	386.7	387.7
37.5°	338.4	341.3	340.4	341.3	341.3	342.3	344.3	343.3	346.3	347.3	346.3
40°	304.8	304.8	306.8	305.8	306.8	305.8	307.8	307.8	307.8	308.8	307.8
42.5°	271.3	272.3	271.3	273.3	271.3	272.3	272.3	271.3	272.3	271.3	271.3
45°	240.7	240.7	240.7	240.7	238.7	238.7	240.7	239.7	238.7	237.8	236.8
47.5°	211.1	212.1	210.1	211.1	210.1	209.1	208.2	208.2	207.2	205.2	204.2
50°	186.5	184.5	183.5	184.5	183.5	182.5	181.5	179.6	178.6	176.6	175.6
52.5°	161.8	159.8	157.8	157.8	156.9	154.9	153.9	151.9	150.9	149.0	149.0
55°	140.1	138.1	136.1	135.2	133.2	131.2	130.2	128.3	127.3	125.3	123.3
57.5°	119.4	116.4	114.4	113.5	112.5	109.5	108.5	106.5	104.6	102.6	101.6
60°	100.6	97.7	94.7	93.7	92.7	89.8	88.8	85.8	84.8	82.9	81.9
62.5°	82.9	80.9	77.0	76.0	74.0	72.0	69.1	68.1	67.1	68.1	68.1
65°	67.1	64.1	61.2	60.2	58.2	56.2	55.2	54.3	55.2	55.2	56.2
67.5°	53.3	50.3	47.4	47.4	46.4	44.4	44.4	44.4	45.4	45.4	46.4
70°	42.4	40.4	38.5	37.5	37.5	36.5	37.5	37.5	38.5	38.5	38.5
72.5°	33.5	32.6	31.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	31.6
75°	25.7	24.7	23.7	23.7	22.7	22.7	22.7	22.7	22.7	22.7	21.7
77.5°	16.8	15.8	14.8	14.8	13.8	12.8	12.8	11.8	11.8	11.8	11.8
80°	8.9	7.9	6.9	5.9	5.9	4.9	4.9	4.9	4.9	3.9	3.9
82.5°	3.9	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
85°	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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



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CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	672.8	672.8	672.8	672.8	672.8	672.8	672.8	672.8
2.5°	669.9	667.9	669.9	670.8	668.9	667.9	669.9	665.9
5°	668.9	665.9	666.9	667.9	665.9	664.9	666.9	663.9
7.5°	666.9	665.9	666.9	667.9	664.9	664.9	666.9	663.9
10°	666.9	664.9	665.9	667.9	665.9	665.9	667.9	663.9
12.5°	665.9	663.0	665.9	666.9	664.9	664.9	666.9	663.0
15°	659.0	659.0	660.0	662.0	661.0	662.0	664.9	662.0
17.5°	644.2	646.2	650.1	653.1	655.1	657.0	660.0	658.0
20°	626.5	629.4	634.3	637.3	641.3	642.2	647.2	643.2
22.5°	598.8	604.7	608.7	611.7	614.6	617.6	621.5	620.5
25°	565.3	569.2	572.2	575.2	579.1	581.1	583.0	582.1
27.5°	524.8	526.8	530.8	532.7	534.7	536.7	540.6	535.7
30°	480.4	481.4	483.4	486.4	486.4	488.3	490.3	489.3
32.5°	435.1	435.1	437.0	439.0	438.0	439.0	443.0	438.0
35°	390.7	389.7	392.6	393.6	393.6	392.6	395.6	394.6
37.5°	347.3	348.2	349.2	350.2	348.2	350.2	350.2	348.2
40°	307.8	306.8	308.8	309.8	308.8	309.8	309.8	305.8
42.5°	272.3	270.3	271.3	272.3	271.3	272.3	271.3	269.3
45°	237.8	236.8	236.8	237.8	235.8	235.8	235.8	235.8
47.5°	205.2	204.2	205.2	205.2	203.2	203.2	204.2	203.2
50°	175.6	174.6	174.6	174.6	173.6	173.6	174.6	174.6
52.5°	149.0	147.0	147.0	147.0	147.0	147.0	148.0	146.0
55°	122.3	122.3	122.3	122.3	123.3	123.3	123.3	123.3
57.5°	100.6	101.6	101.6	102.6	101.6	102.6	102.6	101.6
60°	83.9	82.9	83.9	83.9	84.8	84.8	84.8	84.8
62.5°	69.1	69.1	69.1	70.0	70.0	70.0	71.0	70.0
65°	57.2	57.2	58.2	58.2	58.2	59.2	59.2	59.2
67.5°	47.4	47.4	47.4	47.4	48.3	48.3	49.3	48.3
70°	39.5	39.5	39.5	39.5	39.5	40.4	40.4	40.4
72.5°	31.6	31.6	31.6	31.6	32.6	32.6	32.6	32.6
75°	21.7	21.7	21.7	22.7	21.7	21.7	21.7	21.7
77.5°	10.9	10.9	10.9	10.9	10.9	9.9	9.9	9.9
80°	3.9	3.9	3.9	3.9	3.9	3.9	3.0	3.9
82.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0
85°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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



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— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)