

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: P251696

Luminaire Tested: **LD4B20D010 EU4B10209050 4LBLWW1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251696  
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 EU4B10209050 4LBLWW1LI  
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1428.0 lumens  
Efficiency: N/A  
Efficacy: 68.7 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

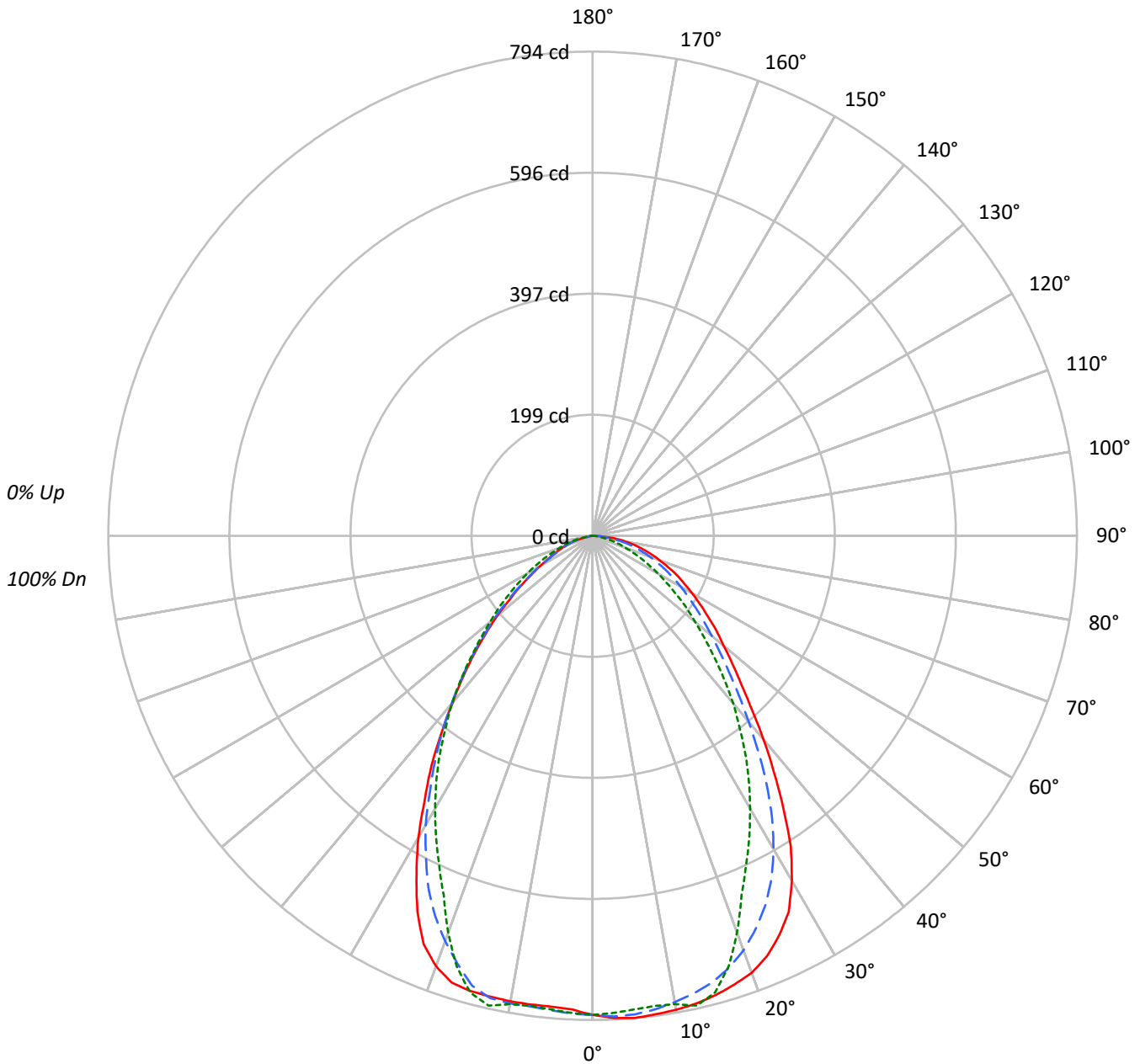
Input Watts (W): 20.8  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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					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				100				
1	111	107	103	100	108	105	101	99	101	98	96	97	95	93	93	91	90	88				88				
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77				77				
3	95	86	79	74	93	84	78	73	82	76	72	79	74	70	77	73	69	67				67				
4	88	78	70	64	86	76	69	64	74	68	63	72	67	62	70	65	62	60				60				
5	82	71	63	57	80	70	62	57	68	61	56	66	60	56	64	59	55	53				53				
6	76	65	57	51	75	64	56	51	62	55	50	60	54	50	59	54	50	48				48				
7	71	59	51	46	70	59	51	46	57	50	46	56	50	45	54	49	45	43				43				
8	67	55	47	42	65	54	47	42	53	46	41	52	46	41	51	45	41	39				39				
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38	36				36				
10	59	47	40	35	58	47	40	35	46	39	35	45	39	35	44	39	35	33				33				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	76563	76563	76563
5°	77648	76288	75838
10°	78091	77170	76715
15°	78679	78215	77983
20°	79091	71800	77888
25°	77789	64036	73079
30°	73497	58079	64291
35°	64829	51944	54823
40°	55393	45571	45431
45°	47467	38895	37944
50°	42438	33189	30915
55°	39148	28375	24467
60°	36605	24033	19316
65°	35075	19924	15935
70°	33139	16071	13450
75°	32082	13029	9527
80°	31037	7128	2582
85°	27061	3914	1342



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	74.6	5.2
10°-20°	214.7	15.0
20°-30°	297.8	20.9
30°-40°	294.0	20.6
40°-50°	230.6	16.1
50°-60°	159.7	11.2
60°-70°	97.9	6.9
70°-80°	48.9	3.4
80°-90°	9.8	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°	587.2	41.1
0°-40°	881.1	61.7
0°-60°	1271.4	89.0
0°-90°	1428.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1428.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	786	786	786	786	786	
5°	794	788	780	781	775	76
15°	780	758	775	764	773	220
25°	723	669	596	637	680	331
35°	545	498	437	450	461	340
45°	344	316	282	279	275	269
55°	230	206	167	149	144	207
65°	152	131	86	64	69	150
75°	85	71	35	26	25	90
85°	24	14	4	1	1	28
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°	785.6	785.6	785.6	785.6	785.6	785.6	785.6	785.6	785.6	785.6	785.6
2.5°	791.4	789.1	787.9	791.4	790.2	792.5	791.4	790.2	787.9	789.1	789.1
5°	793.7	790.2	789.1	791.4	791.4	793.7	792.5	790.2	787.9	789.1	787.9
7.5°	791.4	789.1	789.1	790.2	789.1	791.4	789.1	786.8	784.4	785.6	783.3
10°	789.1	785.6	785.6	785.6	785.6	787.9	785.6	782.1	778.7	778.7	776.4
12.5°	785.6	782.1	782.1	783.3	781.0	783.3	781.0	775.2	771.8	770.6	768.3
15°	779.8	776.4	776.4	776.4	774.1	775.2	771.8	766.0	761.4	761.4	758.0
17.5°	771.8	768.3	767.2	767.2	763.7	764.9	761.4	755.6	748.7	746.4	743.0
20°	762.6	758.0	755.6	755.6	752.2	753.3	748.7	741.8	732.6	729.2	723.4
22.5°	746.4	744.1	740.7	739.5	736.1	734.9	730.3	721.1	713.0	707.3	698.1
25°	723.4	722.2	718.8	717.6	713.0	710.7	706.1	695.8	687.7	678.5	669.3
27.5°	695.8	691.1	688.8	685.4	680.8	679.6	673.9	664.6	652.0	646.2	634.7
30°	653.1	650.8	648.5	645.1	640.5	638.2	634.7	624.3	614.0	603.6	593.2
32.5°	604.7	600.1	596.7	597.8	592.1	589.8	584.0	574.8	565.6	558.7	547.2
35°	544.9	543.7	542.5	540.2	535.6	534.5	529.9	523.0	512.6	504.5	497.6
37.5°	488.4	485.0	482.6	482.6	478.0	478.0	474.6	466.5	460.8	455.0	445.8
40°	435.4	429.7	429.7	429.7	425.1	426.2	423.9	415.8	410.1	403.2	397.4
42.5°	385.9	383.6	382.4	380.1	377.8	377.8	375.5	370.9	365.2	360.5	354.8
45°	344.4	343.3	342.1	341.0	338.7	337.5	336.4	329.4	326.0	321.4	315.6
47.5°	311.0	308.7	307.6	306.4	304.1	303.0	300.6	296.0	292.6	288.0	283.4
50°	279.9	278.8	277.6	277.6	275.3	274.2	271.8	268.4	262.6	260.3	254.6
52.5°	255.7	253.4	251.1	251.1	248.8	248.8	245.4	241.9	236.1	233.8	229.2
55°	230.4	229.2	228.1	228.1	225.8	224.6	223.5	218.9	214.3	210.8	206.2
57.5°	208.5	207.3	206.2	206.2	203.9	202.7	201.6	198.1	193.5	191.2	185.5
60°	187.8	187.8	186.6	185.5	184.3	183.2	182.0	178.5	175.1	171.6	167.0
62.5°	169.3	168.2	167.0	165.9	165.9	164.7	163.6	159.0	156.7	153.2	148.6
65°	152.1	149.7	149.7	148.6	148.6	147.4	146.3	141.7	139.4	135.9	131.3
67.5°	133.6	132.5	131.3	131.3	130.2	130.2	129.0	125.6	122.1	119.8	115.2
70°	116.3	116.3	115.2	115.2	114.0	112.9	112.9	110.6	107.1	103.7	99.1
72.5°	101.4	100.2	99.1	99.1	97.9	97.9	96.8	94.5	92.2	89.8	84.1
75°	85.2	84.1	84.1	84.1	82.9	82.9	81.8	79.5	77.2	74.9	71.4
77.5°	70.3	70.3	69.1	69.1	68.0	68.0	68.0	65.7	63.4	61.1	56.4
80°	55.3	55.3	55.3	54.1	53.0	53.0	53.0	50.7	48.4	46.1	42.6
82.5°	40.3	39.2	39.2	38.0	36.9	36.9	36.9	34.6	33.4	29.9	27.6
85°	24.2	23.0	23.0	21.9	20.7	20.7	20.7	19.6	17.3	16.1	13.8
87.5°	9.2	9.2	9.2	9.2	9.2	8.1	8.1	6.9	6.9	5.8	5.8
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°	785.6	785.6	785.6	785.6	785.6	785.6	785.6	785.6	785.6	785.6	785.6
2.5°	789.1	787.9	787.9	786.8	787.9	785.6	785.6	785.6	785.6	783.3	783.3
5°	786.8	786.8	785.6	784.4	785.6	783.3	784.4	783.3	783.3	779.8	779.8
7.5°	782.1	781.0	778.7	777.5	778.7	777.5	777.5	777.5	779.8	777.5	777.5
10°	774.1	772.9	770.6	769.5	769.5	768.3	770.6	772.9	777.5	779.8	784.4
12.5°	766.0	763.7	762.6	762.6	763.7	763.7	768.3	774.1	785.6	789.1	793.7
15°	755.6	754.5	754.5	758.0	762.6	766.0	775.2	778.7	779.8	775.2	772.9
17.5°	741.8	741.8	743.0	746.4	749.9	749.9	751.0	748.7	746.4	740.7	733.8
20°	718.8	717.6	715.3	715.3	715.3	710.7	713.0	705.0	699.2	692.3	681.9
22.5°	690.0	684.2	676.2	670.4	667.0	664.6	658.9	649.7	642.8	638.2	633.5
25°	658.9	649.7	638.2	628.9	623.2	622.0	614.0	605.9	601.3	595.5	593.2
27.5°	623.2	612.8	599.0	589.8	585.2	581.7	574.8	566.7	561.0	556.4	552.9
30°	581.7	571.3	559.8	548.3	543.7	537.9	531.0	525.3	519.5	516.1	513.7
32.5°	535.6	525.3	513.7	505.7	499.9	495.3	489.6	483.8	479.2	476.9	474.6
35°	488.4	478.0	468.8	460.8	456.2	452.7	448.1	441.2	437.7	436.6	434.3
37.5°	437.7	430.8	422.7	415.8	412.4	407.8	405.5	399.7	399.7	395.1	395.1
40°	390.5	385.9	377.8	372.1	369.8	366.3	362.8	360.5	359.4	358.2	357.1
42.5°	349.0	342.1	337.5	332.9	329.4	327.1	327.1	323.7	322.5	319.1	317.9
45°	311.0	307.6	299.5	296.0	294.9	291.4	290.3	288.0	284.5	282.2	281.1
47.5°	277.6	274.2	269.5	264.9	262.6	260.3	258.0	254.6	252.3	248.8	247.7
50°	250.0	244.2	239.6	236.1	232.7	231.5	229.2	224.6	222.3	218.9	218.9
52.5°	224.6	220.0	214.3	210.8	207.3	205.0	201.6	198.1	194.7	193.5	190.1
55°	202.7	197.0	191.2	186.6	183.2	179.7	178.5	173.9	169.3	167.0	164.7
57.5°	182.0	176.2	169.3	163.6	161.3	159.0	155.5	150.9	147.4	144.0	141.7
60°	161.3	156.7	149.7	144.0	141.7	138.2	134.8	130.2	126.7	123.3	120.9
62.5°	144.0	137.1	131.3	125.6	122.1	119.8	115.2	111.7	107.1	103.7	100.2
65°	126.7	119.8	114.0	108.3	106.0	102.5	99.1	94.5	89.8	86.4	81.8
67.5°	109.4	103.7	97.9	92.2	89.8	87.5	82.9	78.3	73.7	70.3	65.7
70°	94.5	88.7	82.9	78.3	76.0	73.7	69.1	64.5	61.1	56.4	53.0
72.5°	80.6	76.0	70.3	65.7	63.4	61.1	56.4	53.0	48.4	46.1	42.6
75°	66.8	62.2	57.6	53.0	50.7	48.4	44.9	41.5	38.0	34.6	32.3
77.5°	53.0	48.4	43.8	40.3	38.0	36.9	33.4	29.9	26.5	24.2	20.7
80°	39.2	34.6	31.1	27.6	25.3	24.2	20.7	18.4	16.1	12.7	11.5
82.5°	24.2	20.7	18.4	16.1	15.0	13.8	11.5	9.2	8.1	6.9	5.8
85°	12.7	11.5	9.2	8.1	6.9	6.9	5.8	4.6	3.5	3.5	2.3
87.5°	4.6	3.5	3.5	2.3	2.3	2.3	2.3	1.2	1.2	1.2	1.2
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°	785.6	785.6	785.6	785.6	785.6	785.6	785.6	785.6	785.6	785.6	785.6
2.5°	781.0	782.1	783.3	784.4	783.3	783.3	785.6	781.0	784.4	784.4	779.8
5°	778.7	781.0	779.8	782.1	779.8	779.8	781.0	778.7	781.0	781.0	777.5
7.5°	776.4	778.7	778.7	779.8	778.7	778.7	779.8	776.4	778.7	778.7	775.2
10°	786.8	789.1	787.9	786.8	783.3	781.0	782.1	776.4	778.7	778.7	775.2
12.5°	790.2	789.1	784.4	782.1	779.8	777.5	778.7	774.1	776.4	776.4	774.1
15°	767.2	764.9	761.4	762.6	760.3	759.1	761.4	759.1	763.7	766.0	763.7
17.5°	728.0	726.9	724.5	724.5	724.5	725.7	729.2	729.2	736.1	740.7	743.0
20°	677.3	676.2	677.3	679.6	680.8	685.4	693.4	698.1	707.3	715.3	721.1
22.5°	631.2	633.5	637.0	641.6	642.8	648.5	658.9	663.5	675.0	684.2	690.0
25°	592.1	595.5	597.8	601.3	602.4	609.4	618.6	624.3	637.0	643.9	650.8
27.5°	552.9	557.5	558.7	563.3	563.3	570.2	578.3	584.0	592.1	599.0	604.7
30°	514.9	516.1	519.5	520.7	523.0	529.9	534.5	537.9	547.2	550.6	554.1
32.5°	473.4	478.0	480.3	481.5	480.3	486.1	490.7	493.0	496.5	501.1	503.4
35°	434.3	436.6	437.7	440.0	441.2	442.3	444.6	445.8	450.4	451.5	452.7
37.5°	395.1	398.6	397.4	398.6	398.6	399.7	402.0	400.9	404.3	405.5	404.3
40°	355.9	355.9	358.2	357.1	358.2	357.1	359.4	359.4	359.4	360.5	359.4
42.5°	316.8	317.9	316.8	319.1	316.8	317.9	317.9	316.8	317.9	316.8	316.8
45°	281.1	281.1	281.1	281.1	278.8	278.8	281.1	279.9	278.8	277.6	276.5
47.5°	246.5	247.7	245.4	246.5	245.4	244.2	243.1	243.1	241.9	239.6	238.4
50°	217.7	215.4	214.3	215.4	214.3	213.1	212.0	209.6	208.5	206.2	205.0
52.5°	188.9	186.6	184.3	184.3	183.2	180.8	179.7	177.4	176.2	173.9	173.9
55°	163.6	161.3	159.0	157.8	155.5	153.2	152.1	149.7	148.6	146.3	144.0
57.5°	139.4	135.9	133.6	132.5	131.3	127.9	126.7	124.4	122.1	119.8	118.6
60°	117.5	114.0	110.6	109.4	108.3	104.8	103.7	100.2	99.1	96.8	95.6
62.5°	96.8	94.5	89.8	88.7	86.4	84.1	80.6	79.5	78.3	79.5	79.5
65°	78.3	74.9	71.4	70.3	68.0	65.7	64.5	63.4	64.5	64.5	65.7
67.5°	62.2	58.7	55.3	55.3	54.1	51.8	51.8	51.8	53.0	53.0	54.1
70°	49.5	47.2	44.9	43.8	43.8	42.6	43.8	43.8	44.9	44.9	44.9
72.5°	39.2	38.0	36.9	35.7	35.7	35.7	35.7	35.7	35.7	35.7	36.9
75°	29.9	28.8	27.6	27.6	26.5	26.5	26.5	26.5	26.5	26.5	25.3
77.5°	19.6	18.4	17.3	17.3	16.1	15.0	15.0	13.8	13.8	13.8	13.8
80°	10.4	9.2	8.1	6.9	6.9	5.8	5.8	5.8	5.8	4.6	4.6
82.5°	4.6	3.5	3.5	3.5	3.5	2.3	2.3	2.3	2.3	2.3	2.3
85°	2.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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°	785.6	785.6	785.6	785.6	785.6	785.6	785.6	785.6
2.5°	782.1	779.8	782.1	783.3	781.0	779.8	782.1	777.5
5°	781.0	777.5	778.7	779.8	777.5	776.4	778.7	775.2
7.5°	778.7	777.5	778.7	779.8	776.4	776.4	778.7	775.2
10°	778.7	776.4	777.5	779.8	777.5	777.5	779.8	775.2
12.5°	777.5	774.1	777.5	778.7	776.4	776.4	778.7	774.1
15°	769.5	769.5	770.6	772.9	771.8	772.9	776.4	772.9
17.5°	752.2	754.5	759.1	762.6	764.9	767.2	770.6	768.3
20°	731.5	734.9	740.7	744.1	748.7	749.9	755.6	751.0
22.5°	699.2	706.1	710.7	714.2	717.6	721.1	725.7	724.5
25°	660.0	664.6	668.1	671.6	676.2	678.5	680.8	679.6
27.5°	612.8	615.1	619.7	622.0	624.3	626.6	631.2	625.5
30°	561.0	562.1	564.4	567.9	567.9	570.2	572.5	571.3
32.5°	508.0	508.0	510.3	512.6	511.4	512.6	517.2	511.4
35°	456.2	455.0	458.5	459.6	459.6	458.5	461.9	460.8
37.5°	405.5	406.6	407.8	408.9	406.6	408.9	408.9	406.6
40°	359.4	358.2	360.5	361.7	360.5	361.7	361.7	357.1
42.5°	317.9	315.6	316.8	317.9	316.8	317.9	316.8	314.5
45°	277.6	276.5	276.5	277.6	275.3	275.3	275.3	275.3
47.5°	239.6	238.4	239.6	239.6	237.3	237.3	238.4	237.3
50°	205.0	203.9	203.9	203.9	202.7	202.7	203.9	203.9
52.5°	173.9	171.6	171.6	171.6	171.6	171.6	172.8	170.5
55°	142.8	142.8	142.8	142.8	144.0	144.0	144.0	144.0
57.5°	117.5	118.6	118.6	119.8	118.6	119.8	119.8	118.6
60°	97.9	96.8	97.9	97.9	99.1	99.1	99.1	99.1
62.5°	80.6	80.6	80.6	81.8	81.8	81.8	82.9	81.8
65°	66.8	66.8	68.0	68.0	68.0	69.1	69.1	69.1
67.5°	55.3	55.3	55.3	55.3	56.4	56.4	57.6	56.4
70°	46.1	46.1	46.1	46.1	46.1	47.2	47.2	47.2
72.5°	36.9	36.9	36.9	36.9	38.0	38.0	38.0	38.0
75°	25.3	25.3	25.3	26.5	25.3	25.3	25.3	25.3
77.5°	12.7	12.7	12.7	12.7	12.7	11.5	11.5	11.5
80°	4.6	4.6	4.6	4.6	4.6	4.6	3.5	4.6
82.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.2
85°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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



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















(END OF REPORT)