

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: P251595

Luminaire Tested: **LD4B15D010 EU4B10208027 4LBSW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251595  
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: LD4B15D010 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**

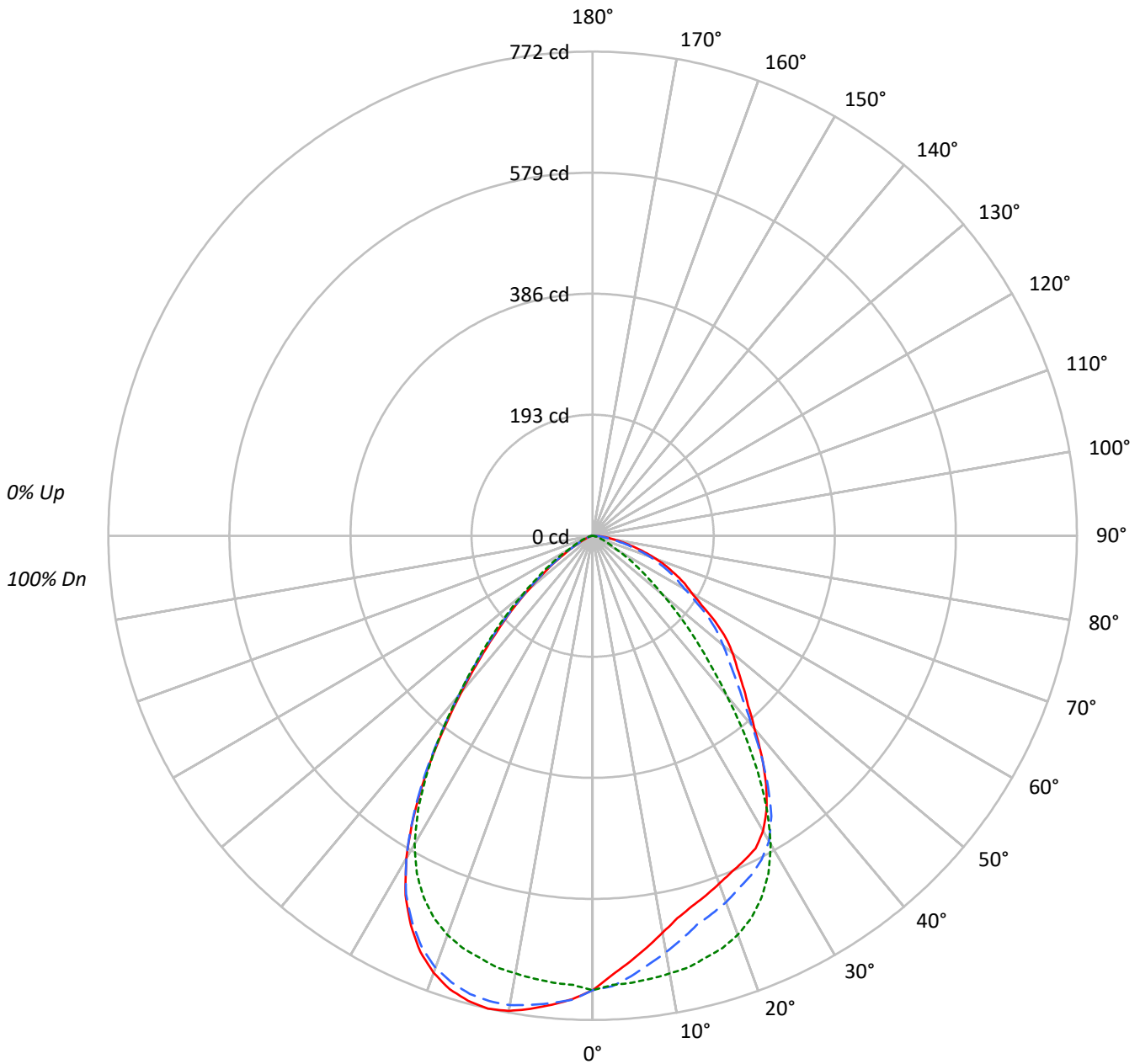
Lumens per Lamp: N/A  
Luminaire Lumens: 1270.0 lumens  
Efficiency: N/A  
Efficacy: 88.3 lumens/watt  
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 14.39  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage 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	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89																			
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79																			
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70																			
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62																			
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56																			
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50																			
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46																			
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42																			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38																			
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35																			

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

	0°	90°	180°
0°	70608	70608	70608
5°	66681	69968	73441
10°	63573	70124	76131
15°	61698	70274	77438
20°	61201	70203	76882
25°	61444	68477	73692
30°	61151	63886	66823
35°	57322	54538	55097
40°	51080	42289	41335
45°	46709	31521	29591
50°	44166	22091	19953
55°	40609	14918	12540
60°	35494	8732	6920
65°	33599	5604	3874
70°	30603	3989	2394
75°	25304	2824	1770
80°	19924	1571	1066
85°	17779	1006	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	68.5	5.4
10°-20°	196.4	15.5
20°-30°	291.1	22.9
30°-40°	291.5	23.0
40°-50°	203.7	16.0
50°-60°	121.2	9.5
60°-70°	63.3	5.0
70°-80°	28.1	2.2
80°-90°	6.1	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°	556.0	43.8
0°-40°	847.5	66.7
0°-60°	1172.5	92.3
0°-90°	1270.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1270.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	724	724	724	724	724	
5°	682	705	715	748	751	64
15°	612	642	696	756	768	173
25°	571	598	637	681	685	263
35°	482	487	458	467	463	299
45°	339	322	229	221	215	263
55°	239	224	88	77	74	212
65°	146	134	24	18	17	144
75°	67	59	8	5	5	73
85°	16	12	1	1	0	18
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°	724.5	724.5	724.5	724.5	724.5	724.5	724.5	724.5	724.5	724.5	724.5
2.5°	701.2	709.6	701.2	704.0	715.2	704.9	710.5	710.5	707.7	714.2	718.9
5°	681.6	690.0	681.6	685.3	697.4	687.2	693.7	691.8	692.8	698.4	704.9
7.5°	662.0	668.5	661.0	665.7	676.9	668.5	674.1	674.1	675.0	683.4	689.0
10°	642.4	648.0	642.4	646.1	658.2	650.8	654.5	655.4	658.2	665.7	674.1
12.5°	624.6	629.3	623.7	629.3	639.6	632.1	636.8	637.7	640.5	648.9	658.2
15°	611.5	616.2	610.6	615.3	624.6	619.0	622.8	624.6	626.5	634.0	642.4
17.5°	601.3	605.0	600.3	605.9	613.4	606.9	612.5	612.5	615.3	622.8	632.1
20°	590.1	593.8	590.1	594.7	603.1	597.5	602.2	602.2	605.0	613.4	621.8
22.5°	579.8	581.7	579.8	583.5	591.9	587.3	590.1	591.0	593.8	601.3	608.7
25°	571.4	575.1	573.3	577.0	582.6	577.9	580.7	581.7	584.5	591.0	597.5
27.5°	562.1	563.9	562.1	566.7	571.4	567.7	570.5	569.5	571.4	577.0	582.6
30°	543.4	545.3	545.3	548.1	551.8	549.9	552.7	549.9	551.8	556.5	562.1
32.5°	516.3	517.2	518.2	521.0	523.8	521.0	522.8	522.8	522.8	526.6	530.3
35°	481.8	483.6	482.7	484.6	487.4	486.4	486.4	485.5	483.6	485.5	487.4
37.5°	442.6	439.8	439.8	442.6	444.4	440.7	442.6	440.7	440.7	441.6	441.6
40°	401.5	398.7	401.5	402.4	403.3	401.5	400.5	398.7	395.9	396.8	394.9
42.5°	366.9	365.1	366.0	366.0	366.9	365.1	366.0	362.3	359.5	357.6	354.8
45°	338.9	336.1	338.9	337.1	337.1	336.1	335.2	333.3	329.6	326.8	322.1
47.5°	312.8	312.8	313.7	313.7	313.7	311.8	311.8	308.1	304.4	300.6	294.1
50°	291.3	289.4	293.2	293.2	290.4	289.4	290.4	285.7	282.9	278.2	271.7
52.5°	268.0	268.0	268.9	268.9	268.0	266.1	267.0	263.3	260.5	255.8	249.3
55°	239.0	237.1	240.0	240.0	239.0	238.1	239.0	236.2	233.4	229.7	224.1
57.5°	206.3	205.4	207.3	208.2	206.3	206.3	207.3	204.5	203.5	199.8	194.2
60°	182.1	181.1	183.0	183.9	182.1	182.1	182.1	178.3	176.5	172.7	169.0
62.5°	165.3	164.3	166.2	165.3	164.3	163.4	164.3	160.6	158.7	155.0	151.3
65°	145.7	146.6	147.5	147.5	146.6	145.7	145.7	143.8	141.9	138.2	133.5
67.5°	127.0	127.0	127.9	128.8	127.9	127.9	127.9	125.1	123.2	120.4	114.8
70°	107.4	106.4	109.2	109.2	107.4	108.3	107.4	106.4	104.6	100.8	96.2
72.5°	86.8	86.8	87.8	87.8	86.8	86.8	86.8	85.9	83.1	81.2	76.6
75°	67.2	67.2	68.2	69.1	67.2	67.2	68.2	66.3	64.4	61.6	58.8
77.5°	50.4	49.5	50.4	50.4	49.5	49.5	49.5	48.6	47.6	44.8	42.0
80°	35.5	34.5	35.5	35.5	35.5	34.5	34.5	33.6	33.6	31.7	28.9
82.5°	24.3	23.3	24.3	24.3	24.3	23.3	23.3	23.3	22.4	21.5	19.6
85°	15.9	14.9	14.9	15.9	14.9	14.9	14.9	14.9	14.0	13.1	12.1
87.5°	7.5	7.5	7.5	7.5	7.5	7.5	7.5	6.5	6.5	6.5	5.6
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°	724.5	724.5	724.5	724.5	724.5	724.5	724.5	724.5	724.5	724.5	724.5
2.5°	715.2	713.3	718.9	717.0	718.0	713.3	720.8	717.0	721.7	717.0	726.4
5°	703.0	701.2	709.6	708.6	709.6	705.8	714.2	713.3	718.9	715.2	725.5
7.5°	690.0	688.1	697.4	698.4	700.2	696.5	707.7	707.7	713.3	712.4	723.6
10°	675.0	676.0	685.3	687.2	690.9	689.0	699.3	702.1	709.6	708.6	722.7
12.5°	661.0	661.0	673.2	676.9	679.7	678.8	690.9	694.6	703.0	704.9	718.0
15°	647.0	648.0	659.2	664.8	668.5	667.6	680.6	685.3	695.6	696.5	712.4
17.5°	635.8	634.9	647.0	651.7	657.3	656.4	670.4	676.0	686.2	689.0	704.0
20°	626.5	625.6	636.8	642.4	646.1	645.2	659.2	665.7	675.0	676.9	691.8
22.5°	615.3	613.4	624.6	629.3	633.0	632.1	644.2	648.9	658.2	660.1	674.1
25°	602.2	600.3	610.6	613.4	616.2	614.3	624.6	627.4	634.9	636.8	650.8
27.5°	587.3	582.6	591.0	591.0	592.9	590.1	597.5	600.3	606.9	606.9	619.9
30°	563.9	557.4	562.1	561.1	562.1	558.3	563.0	563.9	568.6	567.7	577.0
32.5°	531.3	521.9	524.7	521.9	519.1	513.5	519.1	517.2	521.0	517.2	525.6
35°	486.4	477.1	476.2	472.4	469.6	465.0	465.0	460.3	461.2	458.4	464.0
37.5°	437.9	425.7	423.9	416.4	411.7	406.1	406.1	402.4	397.7	395.9	400.5
40°	390.3	377.2	372.5	360.4	355.7	350.1	346.4	341.7	339.9	332.4	336.1
42.5°	349.2	335.2	324.9	311.8	307.2	298.8	293.2	287.6	284.8	276.4	280.1
45°	314.6	297.8	286.6	269.8	263.3	254.0	245.6	239.0	232.5	228.7	226.9
47.5°	285.7	268.0	253.0	234.3	224.1	215.7	204.5	197.9	189.5	184.9	182.1
50°	261.4	241.8	225.0	203.5	193.3	183.9	170.9	160.6	153.1	145.7	143.8
52.5°	240.0	219.4	200.7	176.5	164.3	153.1	139.1	127.9	121.4	113.0	112.0
55°	214.7	197.0	176.5	151.3	139.1	127.9	113.0	101.8	93.4	87.8	85.9
57.5°	187.7	170.9	151.3	126.0	113.9	101.8	87.8	77.5	70.0	65.4	64.4
60°	162.5	146.6	127.9	102.7	90.6	80.3	65.4	55.1	48.6	44.8	42.9
62.5°	143.8	128.8	111.1	87.8	76.6	66.3	52.3	42.9	37.3	33.6	31.7
65°	126.0	111.1	95.2	73.8	64.4	55.1	42.0	33.6	28.0	24.3	22.4
67.5°	107.4	94.3	79.4	61.6	52.3	44.8	33.6	26.1	21.5	18.7	16.8
70°	88.7	76.6	64.4	49.5	42.9	35.5	26.1	20.5	15.9	14.0	12.1
72.5°	70.0	60.7	50.4	38.3	32.7	28.0	20.5	14.9	12.1	10.3	8.4
75°	52.3	45.7	37.3	28.9	24.3	20.5	14.9	11.2	9.3	7.5	6.5
77.5°	37.3	31.7	26.1	19.6	17.7	14.9	10.3	8.4	6.5	4.7	3.7
80°	25.2	22.4	17.7	14.0	11.2	10.3	7.5	5.6	3.7	2.8	2.8
82.5°	16.8	14.0	11.2	8.4	7.5	6.5	4.7	3.7	2.8	1.9	1.9
85°	10.3	8.4	6.5	4.7	4.7	3.7	2.8	1.9	0.9	0.9	0.9
87.5°	4.7	3.7	2.8	1.9	1.9	0.9	0.9	0.9	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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	724.5	724.5	724.5	724.5	724.5	724.5	724.5	724.5	724.5	724.5	724.5
2.5°	733.9	728.3	724.5	729.2	731.1	728.3	731.1	735.7	740.4	741.3	728.3
5°	734.8	729.2	727.3	732.9	733.9	732.9	735.7	742.3	747.9	749.7	736.7
7.5°	734.8	731.1	730.1	736.7	737.6	736.7	741.3	748.8	754.4	758.1	745.1
10°	732.9	731.1	732.0	737.6	739.5	739.5	746.0	754.4	760.0	763.7	750.7
12.5°	730.1	730.1	730.1	736.7	738.5	739.5	745.1	756.3	760.0	765.6	752.5
15°	725.5	725.5	725.5	732.0	734.8	734.8	741.3	751.6	756.3	761.9	748.8
17.5°	717.0	717.0	718.0	723.6	726.4	726.4	732.9	744.1	746.9	753.5	740.4
20°	704.9	704.9	705.8	711.4	714.2	712.4	720.8	730.1	732.9	738.5	725.5
22.5°	687.2	687.2	687.2	692.8	694.6	693.7	702.1	710.5	710.5	718.0	704.0
25°	661.0	662.9	661.0	666.6	668.5	667.6	675.0	682.5	680.6	689.0	675.0
27.5°	629.3	628.4	628.4	633.0	633.0	632.1	637.7	646.1	644.2	649.8	636.8
30°	585.4	588.2	583.5	590.1	587.3	585.4	589.1	596.6	593.8	598.5	588.2
32.5°	535.0	531.3	531.3	531.3	533.1	528.5	532.2	535.9	533.1	537.8	526.6
35°	468.7	469.6	466.8	467.8	468.7	463.1	466.8	470.6	466.8	469.6	459.4
37.5°	402.4	403.3	396.8	400.5	396.8	394.9	398.7	400.5	396.8	399.6	388.4
40°	336.1	334.2	333.3	333.3	334.2	329.6	332.4	335.2	332.4	334.2	324.0
42.5°	278.2	277.3	275.4	276.4	273.6	272.6	273.6	276.4	273.6	275.4	268.0
45°	227.8	225.9	223.1	224.1	224.1	219.4	222.2	224.1	221.3	222.2	215.7
47.5°	181.1	178.3	178.3	177.4	177.4	175.5	178.3	177.4	174.6	176.5	169.9
50°	141.0	139.1	139.1	139.1	139.1	136.3	137.2	139.1	136.3	136.3	132.6
52.5°	110.2	107.4	105.5	105.5	105.5	104.6	104.6	105.5	102.7	102.7	101.8
55°	83.1	82.2	79.4	79.4	79.4	76.6	77.5	77.5	76.6	76.6	73.8
57.5°	61.6	58.8	57.0	57.0	55.1	55.1	54.2	55.1	53.2	53.2	51.4
60°	41.1	39.2	38.3	37.3	37.3	36.4	37.3	36.4	36.4	35.5	34.5
62.5°	29.9	28.0	26.1	26.1	26.1	25.2	25.2	25.2	25.2	25.2	24.3
65°	21.5	19.6	19.6	18.7	18.7	17.7	17.7	17.7	17.7	17.7	16.8
67.5°	14.9	14.0	13.1	13.1	13.1	13.1	13.1	13.1	12.1	12.1	12.1
70°	11.2	10.3	9.3	9.3	9.3	9.3	9.3	8.4	9.3	9.3	8.4
72.5°	7.5	7.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
75°	5.6	5.6	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
77.5°	3.7	3.7	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
80°	2.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
82.5°	1.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
85°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	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





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**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	724.5	724.5	724.5	724.5	724.5	724.5	724.5	724.5
2.5°	742.3	741.3	739.5	742.3	734.8	732.0	731.1	739.5
5°	752.5	750.7	750.7	753.5	745.1	743.2	741.3	750.7
7.5°	761.9	760.0	760.0	762.8	755.3	753.5	751.6	760.9
10°	767.5	767.5	767.5	769.3	762.8	760.9	760.0	769.3
12.5°	770.3	770.3	769.3	773.1	764.7	764.7	762.8	772.1
15°	766.5	766.5	766.5	769.3	761.9	760.0	760.0	767.5
17.5°	757.2	757.2	756.3	759.1	750.7	750.7	749.7	758.1
20°	743.2	743.2	741.3	745.1	736.7	733.9	732.9	741.3
22.5°	720.8	719.9	718.9	720.8	713.3	711.4	710.5	718.0
25°	691.8	690.9	689.0	690.9	682.5	679.7	679.7	685.3
27.5°	650.8	650.8	648.0	650.8	641.4	640.5	639.6	646.1
30°	600.3	596.6	594.7	598.5	589.1	589.1	587.3	593.8
32.5°	537.8	534.1	533.1	535.0	526.6	523.8	527.5	531.3
35°	465.9	466.8	463.1	463.1	455.6	456.6	457.5	463.1
37.5°	396.8	394.9	394.0	394.9	389.3	387.5	385.6	391.2
40°	332.4	327.7	326.8	326.8	322.1	321.2	322.1	324.9
42.5°	271.7	270.8	267.0	268.9	264.2	266.1	265.2	265.2
45°	219.4	220.3	216.6	219.4	215.7	212.9	212.9	214.7
47.5°	173.7	173.7	172.7	172.7	169.9	170.9	169.0	171.8
50°	134.4	134.4	132.6	133.5	131.6	131.6	130.7	131.6
52.5°	102.7	101.8	101.8	100.8	99.0	99.9	100.8	99.0
55°	74.7	75.6	73.8	74.7	72.8	73.8	72.8	73.8
57.5°	51.4	52.3	50.4	52.3	50.4	51.4	50.4	50.4
60°	35.5	35.5	34.5	35.5	34.5	34.5	33.6	35.5
62.5°	24.3	24.3	24.3	24.3	24.3	23.3	24.3	24.3
65°	17.7	16.8	16.8	16.8	16.8	16.8	16.8	16.8
67.5°	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
70°	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
72.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
75°	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
77.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
80°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
82.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
85°	0.9	0.9	0.9	0.0	0.9	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



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















(END OF REPORT)