

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: P251618

Luminaire Tested: **LD4B20D010 EU4B10209050 4LBSW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251618  
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 EU4B10209050 4LBSW1H  
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1566.0 lumens  
Efficiency: N/A  
Efficacy: 75.3 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

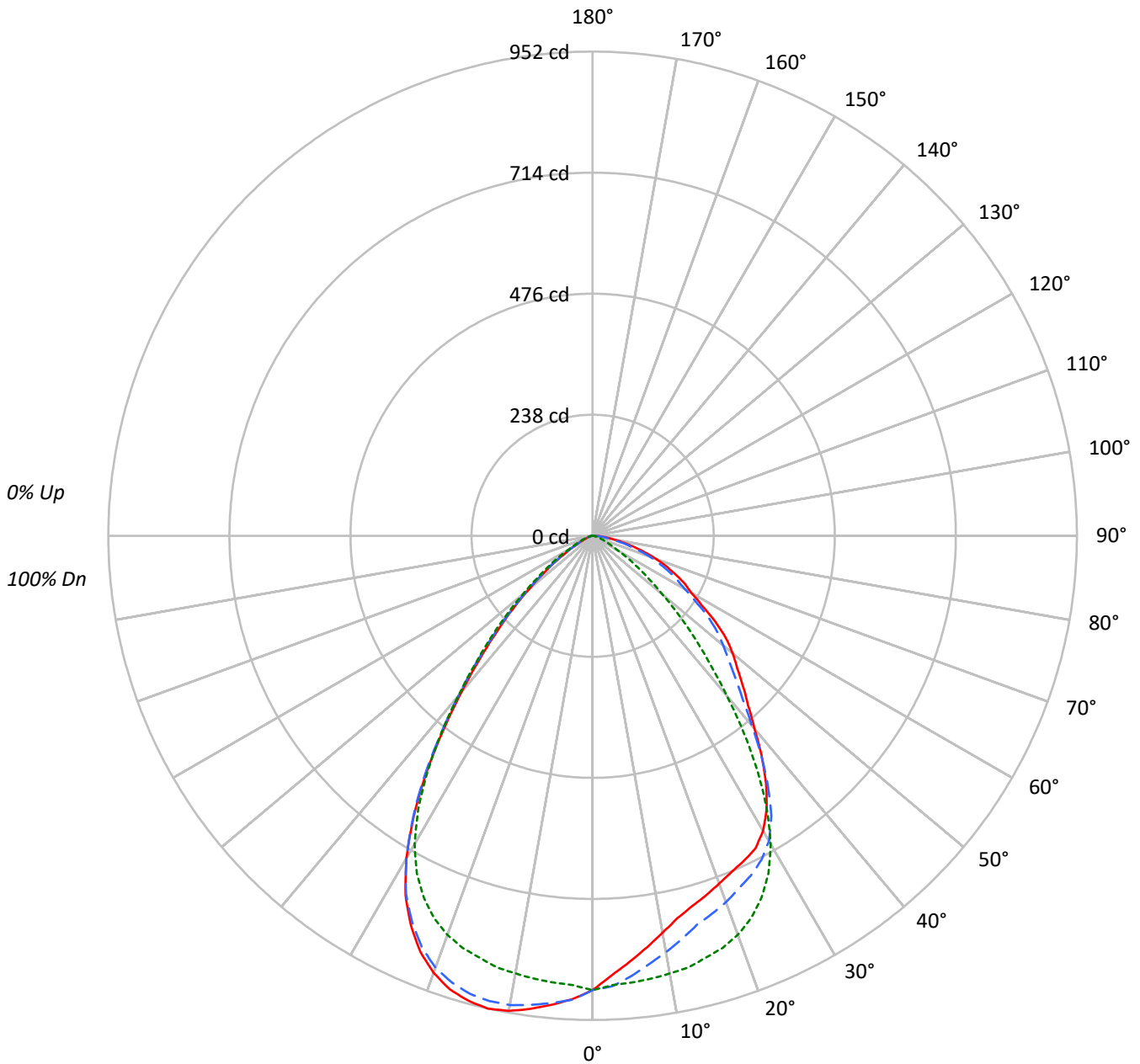
Input Watts (W): 20.8  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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								
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°	87069	87069	87069
5°	82217	86277	90552
10°	78387	86473	93875
15°	76086	86650	95478
20°	75461	86569	94804
25°	75768	84435	90865
30°	75398	78774	82398
35°	70683	67256	67934
40°	62975	52148	50965
45°	57598	38881	36496
50°	54461	27231	24608
55°	50073	18385	15462
60°	43759	10779	8518
65°	41417	6895	4774
70°	37727	4930	2963
75°	31216	3464	2184
80°	24526	1964	1291
85°	21917	1342	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	84.4	5.4
10°-20°	242.2	15.5
20°-30°	359.0	22.9
30°-40°	359.5	23.0
40°-50°	251.2	16.0
50°-60°	149.5	9.5
60°-70°	78.0	5.0
70°-80°	34.7	2.2
80°-90°	7.6	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°	685.5	43.8
0°-40°	1045.0	66.7
0°-60°	1445.7	92.3
0°-90°	1566.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1566.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	893	893	893	893	893	
5°	840	869	882	922	926	79
15°	754	792	859	932	946	214
25°	705	737	785	839	845	325
35°	594	601	565	576	571	368
45°	418	397	282	273	265	324
55°	295	276	108	94	91	262
65°	180	165	30	22	21	178
75°	83	72	9	6	6	90
85°	20	15	1	1	0	22
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°	893.4	893.4	893.4	893.4	893.4	893.4	893.4	893.4	893.4	893.4	893.4
2.5°	864.6	875.0	864.6	868.1	881.9	869.2	876.1	876.1	872.7	880.7	886.5
5°	840.4	850.8	840.4	845.0	860.0	847.3	855.4	853.1	854.2	861.1	869.2
7.5°	816.2	824.3	815.1	820.9	834.7	824.3	831.2	831.2	832.4	842.7	849.6
10°	792.1	799.0	792.1	796.7	811.6	802.4	807.0	808.2	811.6	820.9	831.2
12.5°	770.2	776.0	769.0	776.0	788.6	779.4	785.2	786.3	789.8	800.1	811.6
15°	754.1	759.8	752.9	758.7	770.2	763.3	767.9	770.2	772.5	781.7	792.1
17.5°	741.4	746.0	740.3	747.2	756.4	748.3	755.2	755.2	758.7	767.9	779.4
20°	727.6	732.2	727.6	733.4	743.7	736.8	742.6	742.6	746.0	756.4	766.7
22.5°	714.9	717.2	714.9	719.5	729.9	724.1	727.6	728.8	732.2	741.4	750.6
25°	704.6	709.2	706.9	711.5	718.4	712.6	716.1	717.2	720.7	728.8	736.8
27.5°	693.1	695.4	693.1	698.8	704.6	700.0	703.4	702.3	704.6	711.5	718.4
30°	670.0	672.3	672.3	675.8	680.4	678.1	681.5	678.1	680.4	686.2	693.1
32.5°	636.7	637.8	639.0	642.4	645.9	642.4	644.7	644.7	644.7	649.3	653.9
35°	594.1	596.4	595.2	597.5	601.0	599.8	599.8	598.7	596.4	598.7	601.0
37.5°	545.7	542.2	542.2	545.7	548.0	543.4	545.7	543.4	543.4	544.5	544.5
40°	495.0	491.6	495.0	496.2	497.3	495.0	493.9	491.6	488.1	489.3	487.0
42.5°	452.4	450.1	451.3	451.3	452.4	450.1	451.3	446.7	443.2	440.9	437.5
45°	417.9	414.5	417.9	415.6	415.6	414.5	413.3	411.0	406.4	402.9	397.2
47.5°	385.7	385.7	386.8	386.8	386.8	384.5	384.5	379.9	375.3	370.7	362.6
50°	359.2	356.9	361.5	361.5	358.0	356.9	358.0	352.3	348.8	343.1	335.0
52.5°	330.4	330.4	331.6	331.6	330.4	328.1	329.3	324.7	321.2	315.4	307.4
55°	294.7	292.4	295.9	295.9	294.7	293.6	294.7	291.3	287.8	283.2	276.3
57.5°	254.4	253.3	255.6	256.7	254.4	254.4	255.6	252.1	251.0	246.4	239.5
60°	224.5	223.3	225.6	226.8	224.5	224.5	224.5	219.9	217.6	213.0	208.4
62.5°	203.8	202.6	204.9	203.8	202.6	201.5	202.6	198.0	195.7	191.1	186.5
65°	179.6	180.7	181.9	181.9	180.7	179.6	179.6	177.3	175.0	170.4	164.6
67.5°	156.6	156.6	157.7	158.9	157.7	157.7	157.7	154.3	152.0	148.5	141.6
70°	132.4	131.2	134.7	134.7	132.4	133.5	132.4	131.2	128.9	124.3	118.6
72.5°	107.1	107.1	108.2	108.2	107.1	107.1	107.1	105.9	102.5	100.2	94.4
75°	82.9	82.9	84.0	85.2	82.9	82.9	84.0	81.7	79.4	76.0	72.5
77.5°	62.2	61.0	62.2	62.2	61.0	61.0	61.0	59.9	58.7	55.3	51.8
80°	43.7	42.6	43.7	43.7	43.7	42.6	42.6	41.4	41.4	39.1	35.7
82.5°	29.9	28.8	29.9	29.9	29.9	28.8	28.8	28.8	27.6	26.5	24.2
85°	19.6	18.4	18.4	19.6	18.4	18.4	18.4	18.4	17.3	16.1	15.0
87.5°	9.2	9.2	9.2	9.2	9.2	9.2	9.2	8.1	8.1	8.1	6.9
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°	893.4	893.4	893.4	893.4	893.4	893.4	893.4	893.4	893.4	893.4	893.4
2.5°	881.9	879.6	886.5	884.2	885.3	879.6	888.8	884.2	889.9	884.2	895.7
5°	866.9	864.6	875.0	873.8	875.0	870.4	880.7	879.6	886.5	881.9	894.5
7.5°	850.8	848.5	860.0	861.1	863.5	858.8	872.7	872.7	879.6	878.4	892.2
10°	832.4	833.5	845.0	847.3	851.9	849.6	862.3	865.8	875.0	873.8	891.1
12.5°	815.1	815.1	830.1	834.7	838.1	837.0	851.9	856.5	866.9	869.2	885.3
15°	797.8	799.0	812.8	819.7	824.3	823.2	839.3	845.0	857.7	858.8	878.4
17.5°	784.0	782.9	797.8	803.6	810.5	809.3	826.6	833.5	846.2	849.6	868.1
20°	772.5	771.3	785.2	792.1	796.7	795.5	812.8	820.9	832.4	834.7	853.1
22.5°	758.7	756.4	770.2	776.0	780.6	779.4	794.4	800.1	811.6	813.9	831.2
25°	742.6	740.3	752.9	756.4	759.8	757.5	770.2	773.7	782.9	785.2	802.4
27.5°	724.1	718.4	728.8	728.8	731.1	727.6	736.8	740.3	748.3	748.3	764.4
30°	695.4	687.3	693.1	691.9	693.1	688.5	694.2	695.4	701.1	700.0	711.5
32.5°	655.1	643.6	647.0	643.6	640.1	633.2	640.1	637.8	642.4	637.8	648.2
35°	599.8	588.3	587.1	582.5	579.1	573.3	573.3	567.6	568.7	565.3	572.2
37.5°	539.9	525.0	522.7	513.5	507.7	500.8	500.8	496.2	490.4	488.1	493.9
40°	481.2	465.1	459.4	444.4	438.6	431.7	427.1	421.4	419.1	409.9	414.5
42.5°	430.6	413.3	400.6	384.5	378.8	368.4	361.5	354.6	351.1	340.8	345.4
45°	388.0	367.3	353.4	332.7	324.7	313.1	302.8	294.7	286.7	282.1	279.8
47.5°	352.3	330.4	312.0	289.0	276.3	265.9	252.1	244.1	233.7	228.0	224.5
50°	322.4	298.2	277.5	251.0	238.3	226.8	210.7	198.0	188.8	179.6	177.3
52.5°	295.9	270.5	247.5	217.6	202.6	188.8	171.5	157.7	149.7	139.3	138.2
55°	264.8	242.9	217.6	186.5	171.5	157.7	139.3	125.5	115.1	108.2	105.9
57.5°	231.4	210.7	186.5	155.4	140.5	125.5	108.2	95.6	86.3	80.6	79.4
60°	200.3	180.7	157.7	126.6	111.7	99.0	80.6	67.9	59.9	55.3	53.0
62.5°	177.3	158.9	137.0	108.2	94.4	81.7	64.5	53.0	46.1	41.4	39.1
65°	155.4	137.0	117.4	91.0	79.4	67.9	51.8	41.4	34.5	29.9	27.6
67.5°	132.4	116.3	97.9	76.0	64.5	55.3	41.4	32.2	26.5	23.0	20.7
70°	109.4	94.4	79.4	61.0	53.0	43.7	32.2	25.3	19.6	17.3	15.0
72.5°	86.3	74.8	62.2	47.2	40.3	34.5	25.3	18.4	15.0	12.7	10.4
75°	64.5	56.4	46.1	35.7	29.9	25.3	18.4	13.8	11.5	9.2	8.1
77.5°	46.1	39.1	32.2	24.2	21.9	18.4	12.7	10.4	8.1	5.8	4.6
80°	31.1	27.6	21.9	17.3	13.8	12.7	9.2	6.9	4.6	3.5	3.5
82.5°	20.7	17.3	13.8	10.4	9.2	8.1	5.8	4.6	3.5	2.3	2.3
85°	12.7	10.4	8.1	5.8	5.8	4.6	3.5	2.3	1.2	1.2	1.2
87.5°	5.8	4.6	3.5	2.3	2.3	1.2	1.2	1.2	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°	893.4	893.4	893.4	893.4	893.4	893.4	893.4	893.4	893.4	893.4	893.4
2.5°	904.9	898.0	893.4	899.1	901.4	898.0	901.4	907.2	913.0	914.1	898.0
5°	906.0	899.1	896.8	903.7	904.9	903.7	907.2	915.3	922.2	924.5	908.3
7.5°	906.0	901.4	900.3	908.3	909.5	908.3	914.1	923.3	930.2	934.8	918.7
10°	903.7	901.4	902.6	909.5	911.8	911.8	919.9	930.2	937.1	941.7	925.6
12.5°	900.3	900.3	900.3	908.3	910.7	911.8	918.7	932.5	937.1	944.0	927.9
15°	894.5	894.5	894.5	902.6	906.0	906.0	914.1	926.8	932.5	939.4	923.3
17.5°	884.2	884.2	885.3	892.2	895.7	895.7	903.7	917.6	921.0	929.1	913.0
20°	869.2	869.2	870.4	877.3	880.7	878.4	888.8	900.3	903.7	910.7	894.5
22.5°	847.3	847.3	847.3	854.2	856.5	855.4	865.8	876.1	876.1	885.3	868.1
25°	815.1	817.4	815.1	822.0	824.3	823.2	832.4	841.6	839.3	849.6	832.4
27.5°	776.0	774.8	774.8	780.6	780.6	779.4	786.3	796.7	794.4	801.3	785.2
30°	721.8	725.3	719.5	727.6	724.1	721.8	726.4	735.7	732.2	738.0	725.3
32.5°	659.7	655.1	655.1	655.1	657.4	651.6	656.2	660.8	657.4	663.1	649.3
35°	577.9	579.1	575.6	576.8	577.9	571.0	575.6	580.2	575.6	579.1	566.4
37.5°	496.2	497.3	489.3	493.9	489.3	487.0	491.6	493.9	489.3	492.7	478.9
40°	414.5	412.2	411.0	411.0	412.2	406.4	409.9	413.3	409.9	412.2	399.5
42.5°	343.1	341.9	339.6	340.8	337.3	336.2	337.3	340.8	337.3	339.6	330.4
45°	280.9	278.6	275.2	276.3	276.3	270.5	274.0	276.3	272.9	274.0	265.9
47.5°	223.3	219.9	219.9	218.7	218.7	216.4	219.9	218.7	215.3	217.6	209.5
50°	173.8	171.5	171.5	171.5	171.5	168.1	169.2	171.5	168.1	168.1	163.5
52.5°	135.8	132.4	130.1	130.1	130.1	128.9	128.9	130.1	126.6	126.6	125.5
55°	102.5	101.3	97.9	97.9	97.9	94.4	95.6	95.6	94.4	94.4	91.0
57.5°	76.0	72.5	70.2	70.2	67.9	67.9	66.8	67.9	65.6	65.6	63.3
60°	50.7	48.4	47.2	46.1	46.1	44.9	46.1	44.9	44.9	43.7	42.6
62.5°	36.8	34.5	32.2	32.2	32.2	31.1	31.1	31.1	31.1	31.1	29.9
65°	26.5	24.2	24.2	23.0	23.0	21.9	21.9	21.9	21.9	21.9	20.7
67.5°	18.4	17.3	16.1	16.1	16.1	16.1	16.1	16.1	15.0	15.0	15.0
70°	13.8	12.7	11.5	11.5	11.5	11.5	11.5	10.4	11.5	11.5	10.4
72.5°	9.2	9.2	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
75°	6.9	6.9	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
77.5°	4.6	4.6	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
80°	3.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
82.5°	2.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
85°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	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°	893.4	893.4	893.4	893.4	893.4	893.4	893.4	893.4
2.5°	915.3	914.1	911.8	915.3	906.0	902.6	901.4	911.8
5°	927.9	925.6	925.6	929.1	918.7	916.4	914.1	925.6
7.5°	939.4	937.1	937.1	940.6	931.4	929.1	926.8	938.3
10°	946.3	946.3	946.3	948.6	940.6	938.3	937.1	948.6
12.5°	949.8	949.8	948.6	953.2	942.9	942.9	940.6	952.1
15°	945.2	945.2	945.2	948.6	939.4	937.1	937.1	946.3
17.5°	933.7	933.7	932.5	936.0	925.6	925.6	924.5	934.8
20°	916.4	916.4	914.1	918.7	908.3	904.9	903.7	914.1
22.5°	888.8	887.6	886.5	888.8	879.6	877.3	876.1	885.3
25°	853.1	851.9	849.6	851.9	841.6	838.1	838.1	845.0
27.5°	802.4	802.4	799.0	802.4	790.9	789.8	788.6	796.7
30°	740.3	735.7	733.4	738.0	726.4	726.4	724.1	732.2
32.5°	663.1	658.5	657.4	659.7	649.3	645.9	650.5	655.1
35°	574.5	575.6	571.0	571.0	561.8	563.0	564.1	571.0
37.5°	489.3	487.0	485.8	487.0	480.1	477.8	475.5	482.4
40°	409.9	404.1	402.9	402.9	397.2	396.0	397.2	400.6
42.5°	335.0	333.9	329.3	331.6	325.8	328.1	327.0	327.0
45°	270.5	271.7	267.1	270.5	265.9	262.5	262.5	264.8
47.5°	214.1	214.1	213.0	213.0	209.5	210.7	208.4	211.8
50°	165.8	165.8	163.5	164.6	162.3	162.3	161.2	162.3
52.5°	126.6	125.5	125.5	124.3	122.0	123.2	124.3	122.0
55°	92.1	93.3	91.0	92.1	89.8	91.0	89.8	91.0
57.5°	63.3	64.5	62.2	64.5	62.2	63.3	62.2	62.2
60°	43.7	43.7	42.6	43.7	42.6	42.6	41.4	43.7
62.5°	29.9	29.9	29.9	29.9	29.9	28.8	29.9	29.9
65°	21.9	20.7	20.7	20.7	20.7	20.7	20.7	20.7
67.5°	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
70°	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
72.5°	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
75°	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
77.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
80°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
82.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
85°	1.2	1.2	1.2	0.0	1.2	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)