

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: P251927

Luminaire Tested: **LD4B20D010 EU4B10209030 4LBDW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251927  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-15)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B20D010 EU4B10209030 4LBDW1H  
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1493.0 lumens  
Efficiency: N/A  
Efficacy: 71.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

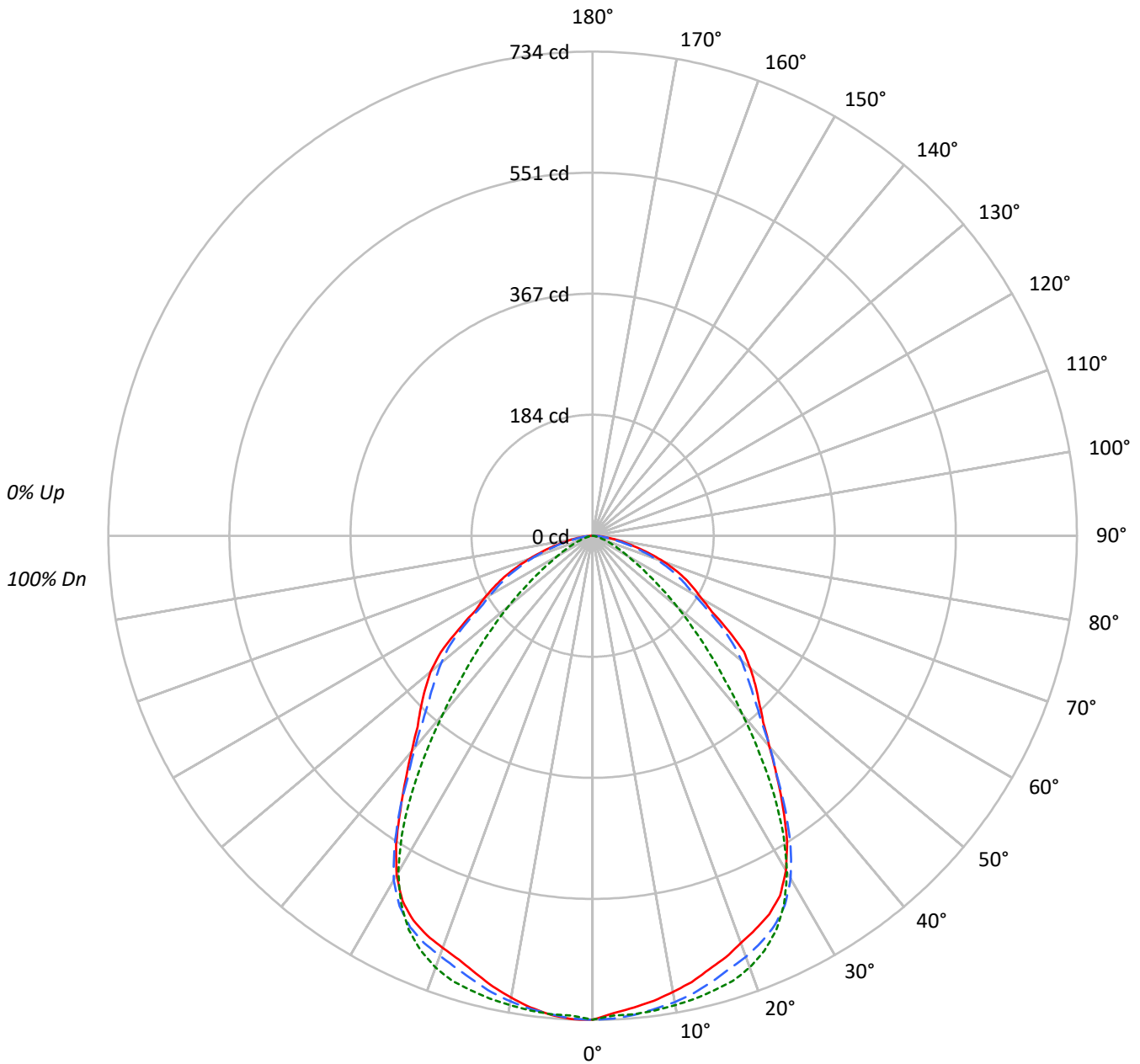
Input Watts (W): 20.8  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88								
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76								
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66								
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58								
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51								
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46								
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41								
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37								
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34								
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31								

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

	0°	90°	180°
0°	71495	71495	71495
5°	70223	71220	71328
10°	69471	71480	70362
15°	68670	71969	69235
20°	68129	72226	68948
25°	68090	70875	69176
30°	65923	66294	66812
35°	59892	57072	60427
40°	52988	44948	54273
45°	49149	34222	50706
50°	47229	25320	48594
55°	42767	17450	42189
60°	37171	11870	36956
65°	35905	8579	34083
70°	32484	5784	28951
75°	26773	3841	22932
80°	21552	2526	17118
85°	17668	1230	11406



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	69.3	4.6
10°-20°	198.0	13.3
20°-30°	299.1	20.0
30°-40°	313.1	21.0
40°-50°	253.5	17.0
50°-60°	184.4	12.4
60°-70°	113.7	7.6
70°-80°	51.4	3.4
80°-90°	10.4	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°	566.4	37.9
0°-40°	879.5	58.9
0°-60°	1317.4	88.2
0°-90°	1493.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1493.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	734	734	734	734	734	
5°	718	729	728	728	729	68
15°	681	700	713	698	686	192
25°	633	652	659	655	643	290
35°	503	510	480	510	508	314
45°	357	345	248	350	368	277
55°	252	236	103	238	248	225
65°	156	140	37	138	148	152
75°	71	61	10	53	61	77
85°	16	12	1	9	10	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°	733.6	733.6	733.6	733.6	733.6	733.6	733.6	733.6	733.6	733.6	733.6
2.5°	724.6	724.6	731.3	739.2	732.5	725.7	730.2	728.0	735.9	735.9	732.5
5°	717.8	720.1	725.7	732.5	726.8	720.1	725.7	723.4	731.3	731.3	729.1
7.5°	711.0	712.2	718.9	726.8	721.2	714.4	718.9	717.8	724.6	725.7	723.4
10°	702.0	703.1	709.9	717.8	712.2	706.5	711.0	709.9	718.9	718.9	717.8
12.5°	693.0	694.1	700.9	707.6	702.0	696.4	700.9	700.9	709.9	711.0	709.9
15°	680.6	682.8	688.5	695.2	691.8	685.1	689.6	689.6	697.5	699.7	699.7
17.5°	670.4	671.5	677.2	683.9	679.4	673.8	678.3	678.3	686.2	688.5	688.5
20°	656.9	659.1	664.8	671.5	668.1	663.6	667.0	667.0	676.0	678.3	679.4
22.5°	645.6	647.8	652.3	661.4	655.7	652.3	656.9	655.7	665.9	667.0	667.0
25°	633.2	635.4	641.1	646.7	643.3	639.9	643.3	643.3	651.2	652.3	652.3
27.5°	615.1	616.2	621.9	627.5	624.1	619.6	624.1	623.0	630.9	632.0	630.9
30°	585.8	588.0	590.3	598.2	594.8	591.4	595.9	593.7	601.6	601.6	600.4
32.5°	548.5	548.5	553.0	558.7	554.2	551.9	555.3	556.4	562.1	562.1	558.7
35°	503.4	505.6	509.0	512.4	509.0	506.7	510.1	509.0	515.8	513.5	510.1
37.5°	458.2	459.3	462.7	467.2	462.7	459.3	460.5	459.3	465.0	465.0	459.3
40°	416.5	418.7	421.0	425.5	421.0	418.7	419.8	416.5	423.2	421.0	417.6
42.5°	382.6	383.7	387.1	389.4	384.9	383.7	384.9	382.6	386.0	383.7	377.0
45°	356.6	356.6	357.8	361.2	356.6	355.5	355.5	353.3	356.6	352.1	345.4
47.5°	334.1	335.2	336.3	338.6	335.2	331.8	332.9	328.4	330.7	327.3	318.3
50°	311.5	313.8	314.9	317.1	313.8	311.5	312.6	308.1	308.1	302.5	294.6
52.5°	288.9	290.1	288.9	291.2	288.9	285.5	286.7	282.2	282.2	275.4	267.5
55°	251.7	252.8	253.9	256.2	253.9	250.6	252.8	249.4	249.4	244.9	235.9
57.5°	214.4	215.6	216.7	217.8	217.8	215.6	216.7	214.4	213.3	209.9	203.2
60°	190.7	190.7	190.7	191.9	190.7	189.6	189.6	187.4	187.4	182.8	176.1
62.5°	172.7	173.8	173.8	174.9	173.8	172.7	171.5	169.3	168.2	163.6	158.0
65°	155.7	155.7	154.6	156.9	155.7	154.6	154.6	152.4	150.1	145.6	139.9
67.5°	135.4	136.6	135.4	136.6	136.6	135.4	134.3	132.0	130.9	127.5	120.8
70°	114.0	114.0	114.0	115.1	114.0	114.0	115.1	111.7	110.6	106.1	100.4
72.5°	92.5	93.7	93.7	92.5	93.7	91.4	91.4	91.4	90.3	85.8	80.1
75°	71.1	72.2	72.2	73.4	72.2	71.1	71.1	70.0	68.8	65.5	60.9
77.5°	53.0	53.0	54.2	54.2	54.2	53.0	53.0	50.8	50.8	48.5	44.0
80°	38.4	38.4	37.2	38.4	38.4	37.2	37.2	36.1	36.1	33.9	30.5
82.5°	24.8	26.0	26.0	26.0	26.0	24.8	24.8	24.8	23.7	22.6	20.3
85°	15.8	15.8	15.8	15.8	16.9	15.8	16.9	15.8	15.8	13.5	12.4
87.5°	6.8	6.8	6.8	7.9	7.9	6.8	6.8	6.8	6.8	6.8	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°	733.6	733.6	733.6	733.6	733.6	733.6	733.6	733.6	733.6	733.6	733.6
2.5°	732.5	733.6	730.2	734.7	731.3	732.5	733.6	732.5	728.0	728.0	740.4
5°	728.0	730.2	726.8	732.5	730.2	730.2	732.5	731.3	726.8	728.0	739.2
7.5°	723.4	726.8	724.6	730.2	726.8	726.8	729.1	729.1	724.6	725.7	735.9
10°	716.7	721.2	720.1	725.7	722.3	722.3	725.7	725.7	721.2	722.3	732.5
12.5°	711.0	715.5	714.4	720.1	717.8	718.9	720.1	722.3	716.7	718.9	728.0
15°	702.0	706.5	706.5	712.2	709.9	712.2	714.4	717.8	713.3	713.3	722.3
17.5°	691.8	697.5	697.5	702.0	702.0	703.1	707.6	711.0	706.5	707.6	715.5
20°	680.6	687.3	687.3	693.0	691.8	694.1	697.5	700.9	696.4	696.4	705.4
22.5°	669.3	674.9	676.0	679.4	679.4	680.6	683.9	686.2	680.6	680.6	689.6
25°	653.5	659.1	660.2	662.5	660.2	660.2	662.5	664.8	659.1	659.1	667.0
27.5°	632.0	637.7	637.7	636.5	634.3	635.4	634.3	635.4	629.8	628.6	636.5
30°	600.4	603.8	603.8	602.7	599.3	599.3	595.9	597.0	589.1	589.1	595.9
32.5°	557.5	560.9	558.7	556.4	551.9	549.6	547.4	546.3	538.4	538.4	546.3
35°	506.7	509.0	505.6	501.1	495.5	492.1	488.7	484.2	478.5	479.7	484.2
37.5°	454.8	454.8	450.3	441.3	436.8	431.1	425.5	425.5	416.5	415.3	418.7
40°	410.8	406.3	398.4	386.0	378.1	372.4	364.5	360.0	353.3	353.3	358.9
42.5°	371.3	362.3	352.1	335.2	327.3	320.5	310.4	305.9	298.0	296.8	300.2
45°	336.3	327.3	312.6	294.6	284.4	276.5	261.8	256.2	249.4	248.3	250.6
47.5°	308.1	298.0	279.9	256.2	246.0	235.9	221.2	213.3	207.7	204.3	207.7
50°	283.3	269.7	250.6	225.7	212.2	203.2	185.1	177.2	169.3	167.0	168.2
52.5°	256.2	242.7	222.3	196.4	184.0	170.4	153.5	142.2	135.4	132.0	135.4
55°	226.9	213.3	193.0	167.0	153.5	141.1	123.0	114.0	106.1	102.7	106.1
57.5°	195.3	182.8	164.8	138.8	126.4	115.1	98.2	89.2	81.3	79.0	81.3
60°	168.2	158.0	139.9	115.1	105.0	92.5	77.9	68.8	62.1	60.9	62.1
62.5°	150.1	138.8	121.9	98.2	88.0	77.9	64.3	55.3	49.7	48.5	49.7
65°	132.0	119.6	103.8	83.5	73.4	65.5	51.9	44.0	38.4	37.2	38.4
67.5°	111.7	100.4	86.9	68.8	60.9	53.0	41.8	33.9	29.3	28.2	29.3
70°	92.5	82.4	68.8	55.3	47.4	41.8	31.6	26.0	21.4	20.3	21.4
72.5°	73.4	64.3	53.0	41.8	37.2	31.6	24.8	19.2	15.8	14.7	15.8
75°	56.4	49.7	40.6	30.5	27.1	23.7	16.9	13.5	11.3	10.2	11.3
77.5°	39.5	35.0	28.2	22.6	19.2	16.9	12.4	9.0	7.9	6.8	7.9
80°	27.1	23.7	19.2	14.7	12.4	10.2	7.9	5.6	4.5	4.5	4.5
82.5°	18.1	14.7	11.3	9.0	7.9	6.8	4.5	3.4	3.4	2.3	2.3
85°	10.2	9.0	6.8	5.6	4.5	3.4	2.3	2.3	1.1	1.1	1.1
87.5°	4.5	3.4	2.3	2.3	1.1	1.1	1.1	1.1	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°	733.6	733.6	733.6	733.6	733.6	733.6	733.6	733.6	733.6	733.6	733.6
2.5°	737.0	733.6	738.1	733.6	731.3	733.6	731.3	738.1	732.5	728.0	732.5
5°	735.9	731.3	735.9	732.5	729.1	730.2	728.0	734.7	728.0	724.6	726.8
7.5°	733.6	730.2	732.5	729.1	725.7	726.8	724.6	730.2	723.4	720.1	722.3
10°	730.2	726.8	728.0	725.7	722.3	722.3	720.1	724.6	716.7	712.2	714.4
12.5°	725.7	721.2	723.4	720.1	715.5	715.5	713.3	716.7	708.8	704.3	705.4
15°	720.1	715.5	715.5	712.2	707.6	707.6	703.1	706.5	697.5	693.0	693.0
17.5°	713.3	707.6	707.6	704.3	698.6	697.5	694.1	697.5	687.3	682.8	682.8
20°	703.1	698.6	697.5	695.2	689.6	688.5	683.9	685.1	677.2	673.8	672.7
22.5°	689.6	685.1	686.2	682.8	678.3	677.2	672.7	676.0	668.1	664.8	665.9
25°	665.9	663.6	665.9	664.8	661.4	661.4	659.1	661.4	654.6	652.3	653.5
27.5°	638.8	637.7	638.8	638.8	636.5	636.5	636.5	639.9	633.2	632.0	632.0
30°	599.3	599.3	600.4	601.6	601.6	603.8	602.7	607.2	602.7	600.4	602.7
32.5°	547.4	551.9	555.3	555.3	555.3	557.5	559.8	563.2	558.7	559.8	559.8
35°	488.7	492.1	494.3	500.0	496.6	504.5	506.7	511.3	510.1	512.4	511.3
37.5°	423.2	427.7	432.3	440.2	439.0	448.1	452.6	461.6	459.3	463.9	466.1
40°	362.3	369.1	375.8	381.5	386.0	395.0	404.0	415.3	418.7	422.1	423.2
42.5°	303.6	310.4	321.7	329.6	336.3	351.0	363.4	377.0	380.3	387.1	389.4
45°	256.2	261.8	275.4	285.5	291.2	312.6	327.3	344.2	349.9	357.8	361.2
47.5°	212.2	222.3	235.9	248.3	256.2	278.8	298.0	316.0	323.9	332.9	337.5
50°	173.8	185.1	203.2	214.4	225.7	250.6	272.0	291.2	299.1	309.2	313.8
52.5°	142.2	154.6	171.5	184.0	196.4	222.3	244.9	263.0	273.1	279.9	286.7
55°	111.7	125.3	142.2	155.7	165.9	194.1	213.3	231.4	238.1	243.8	247.2
57.5°	86.9	97.1	114.0	125.3	137.7	162.5	181.7	195.3	200.9	207.7	209.9
60°	67.7	77.9	93.7	105.0	116.2	139.9	159.1	172.7	178.3	184.0	187.4
62.5°	54.2	64.3	79.0	89.2	99.3	120.8	137.7	151.2	158.0	163.6	167.0
65°	42.9	51.9	64.3	74.5	82.4	101.6	118.5	130.9	137.7	143.3	146.7
67.5°	33.9	41.8	53.0	59.8	67.7	83.5	98.2	109.5	115.1	121.9	125.3
70°	26.0	31.6	41.8	47.4	53.0	66.6	77.9	89.2	94.8	99.3	101.6
72.5°	19.2	23.7	31.6	36.1	39.5	50.8	59.8	67.7	72.2	76.7	79.0
75°	13.5	16.9	22.6	26.0	28.2	36.1	44.0	49.7	53.0	56.4	59.8
77.5°	9.0	11.3	14.7	16.9	19.2	24.8	29.3	33.9	37.2	40.6	41.8
80°	5.6	7.9	10.2	11.3	12.4	15.8	20.3	22.6	24.8	27.1	28.2
82.5°	3.4	4.5	5.6	6.8	7.9	10.2	12.4	14.7	15.8	18.1	19.2
85°	1.1	2.3	2.3	3.4	3.4	5.6	6.8	7.9	9.0	10.2	11.3
87.5°	0.0	0.0	1.1	1.1	1.1	1.1	2.3	2.3	2.3	2.3	2.3
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°	733.6	733.6	733.6	733.6	733.6	733.6	733.6	733.6
2.5°	737.0	733.6	731.3	730.2	738.1	728.0	732.5	733.6
5°	732.5	729.1	726.8	725.7	732.5	723.4	726.8	729.1
7.5°	725.7	723.4	720.1	718.9	725.7	715.5	720.1	721.2
10°	717.8	714.4	712.2	711.0	716.7	706.5	711.0	711.0
12.5°	707.6	705.4	700.9	700.9	705.4	696.4	699.7	699.7
15°	694.1	691.8	687.3	687.3	691.8	682.8	686.2	686.2
17.5°	682.8	680.6	677.2	676.0	680.6	671.5	674.9	673.8
20°	673.8	671.5	667.0	667.0	670.4	661.4	664.8	664.8
22.5°	665.9	664.8	660.2	660.2	664.8	655.7	658.0	655.7
25°	653.5	652.3	647.8	649.0	651.2	642.2	645.6	643.3
27.5°	633.2	633.2	628.6	627.5	630.9	623.0	625.3	624.1
30°	601.6	602.7	597.0	597.0	598.2	591.4	594.8	593.7
32.5°	558.7	559.8	555.3	554.2	557.5	551.9	554.2	554.2
35°	511.3	512.4	509.0	509.0	512.4	509.0	509.0	507.9
37.5°	463.9	466.1	463.9	465.0	467.2	463.9	466.1	465.0
40°	425.5	427.7	424.4	426.6	428.9	425.5	428.9	426.6
42.5°	390.5	393.9	391.6	393.9	396.1	393.9	396.1	392.8
45°	364.5	366.8	365.7	366.8	369.1	367.9	369.1	367.9
47.5°	339.7	344.2	342.0	344.2	347.6	345.4	347.6	344.2
50°	317.1	320.5	319.4	321.7	322.8	321.7	323.9	320.5
52.5°	287.8	291.2	290.1	290.1	292.3	290.1	292.3	290.1
55°	249.4	250.6	250.6	251.7	250.6	249.4	250.6	248.3
57.5°	212.2	214.4	211.1	214.4	213.3	212.2	212.2	209.9
60°	188.5	191.9	189.6	191.9	190.7	190.7	190.7	189.6
62.5°	169.3	171.5	169.3	170.4	170.4	170.4	169.3	168.2
65°	147.8	151.2	149.0	150.1	149.0	147.8	149.0	147.8
67.5°	126.4	127.5	127.5	126.4	126.4	126.4	126.4	124.1
70°	102.7	103.8	102.7	105.0	103.8	102.7	103.8	101.6
72.5°	80.1	81.3	80.1	81.3	80.1	80.1	80.1	80.1
75°	59.8	60.9	60.9	60.9	60.9	60.9	58.7	60.9
77.5°	42.9	42.9	42.9	44.0	42.9	42.9	42.9	42.9
80°	29.3	29.3	29.3	30.5	29.3	30.5	29.3	30.5
82.5°	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2
85°	10.2	11.3	11.3	10.2	10.2	10.2	10.2	10.2
87.5°	2.3	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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)