

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: P251690

Luminaire Tested: **LD4B20D010 EU4B10208050 4LBLWW1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251690  
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 EU4B10208050 4LBLWW1LI  
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1697.0 lumens  
Efficiency: N/A  
Efficacy: 81.6 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

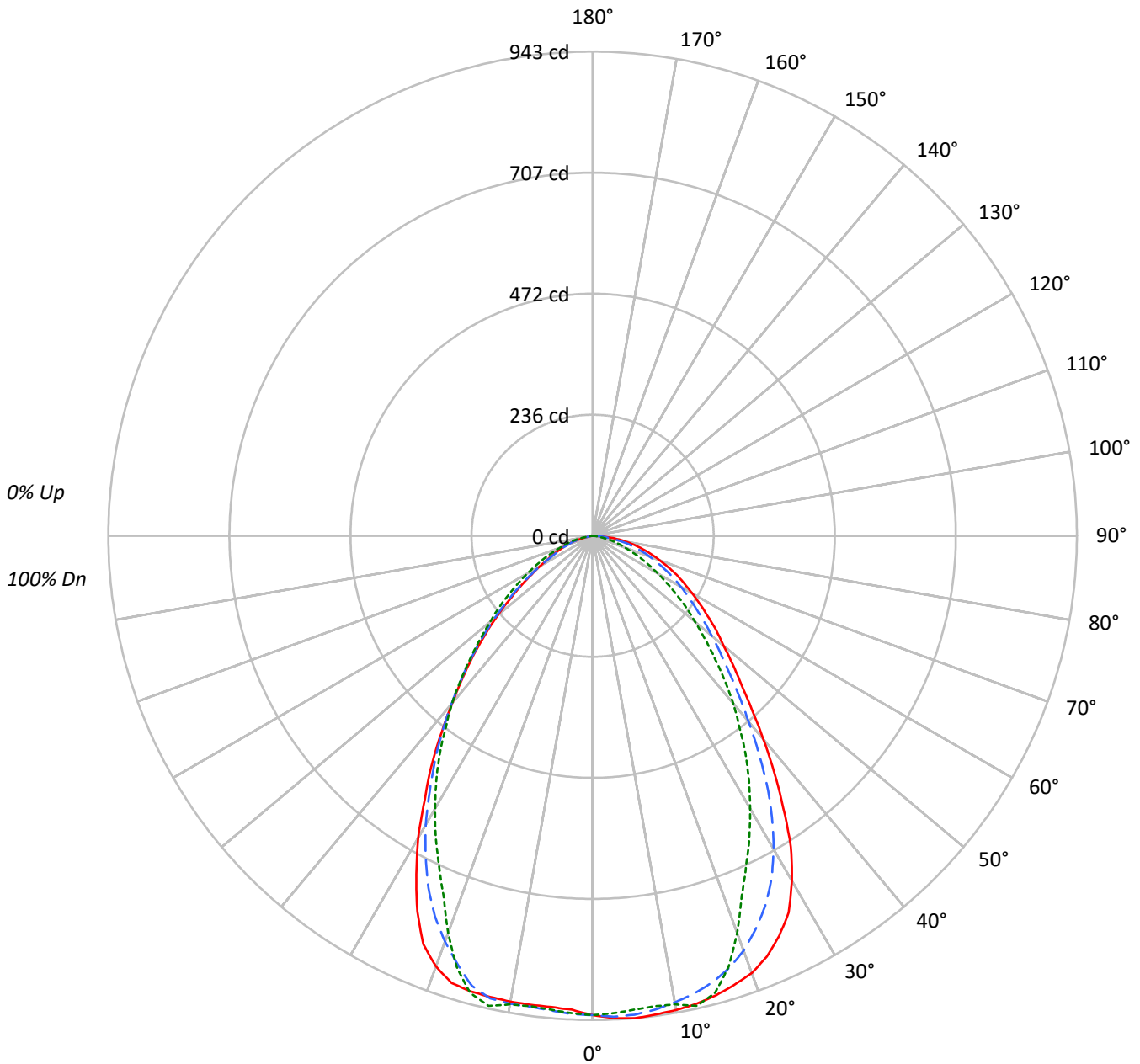
Input Watts (W): 20.8  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	102	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°	90987	90987	90987
5°	92274	90659	90131
10°	92796	91708	91173
15°	93500	92956	92673
20°	93984	85324	92564
25°	92446	76101	86844
30°	87350	69018	76411
35°	77036	61724	65150
40°	65825	54159	53993
45°	56412	46227	45097
50°	50428	39436	36737
55°	46522	33728	29072
60°	43486	28555	22942
65°	41670	23683	18933
70°	39408	19120	15986
75°	38144	15476	11334
80°	36873	8475	3087
85°	32093	4585	1565



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	88.7	5.2
10°-20°	255.2	15.0
20°-30°	353.9	20.9
30°-40°	349.3	20.6
40°-50°	274.0	16.1
50°-60°	189.8	11.2
60°-70°	116.3	6.9
70°-80°	58.1	3.4
80°-90°	11.6	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°	697.8	41.1
0°-40°	1047.1	61.7
0°-60°	1510.9	89.0
0°-90°	1697.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1697.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	934	934	934	934	934	
5°	943	936	927	928	921	90
15°	927	901	921	908	918	262
25°	860	795	708	757	808	393
35°	648	591	519	535	548	404
45°	409	375	335	331	327	320
55°	274	245	198	177	171	247
65°	181	156	103	77	82	178
75°	101	85	41	32	30	107
85°	29	16	4	1	1	33
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°	933.6	933.6	933.6	933.6	933.6	933.6	933.6	933.6	933.6	933.6	933.6
2.5°	940.4	937.7	936.3	940.4	939.1	941.8	940.4	939.1	936.3	937.7	937.7
5°	943.2	939.1	937.7	940.4	940.4	943.2	941.8	939.1	936.3	937.7	936.3
7.5°	940.4	937.7	937.7	939.1	937.7	940.4	937.7	935.0	932.2	933.6	930.8
10°	937.7	933.6	933.6	933.6	933.6	936.3	933.6	929.5	925.4	925.4	922.6
12.5°	933.6	929.5	929.5	930.8	928.1	930.8	928.1	921.3	917.2	915.8	913.1
15°	926.7	922.6	922.6	922.6	919.9	921.3	917.2	910.3	904.8	904.8	900.7
17.5°	917.2	913.1	911.7	911.7	907.6	908.9	904.8	898.0	889.8	887.0	882.9
20°	906.2	900.7	898.0	898.0	893.9	895.3	889.8	881.6	870.6	866.5	859.7
22.5°	887.0	884.3	880.2	878.8	874.7	873.4	867.9	856.9	847.3	840.5	829.6
25°	859.7	858.3	854.2	852.8	847.3	844.6	839.1	826.8	817.2	806.3	795.3
27.5°	826.8	821.3	818.6	814.5	809.0	807.6	800.8	789.9	774.8	768.0	754.3
30°	776.2	773.4	770.7	766.6	761.1	758.4	754.3	741.9	729.6	717.3	705.0
32.5°	718.7	713.2	709.1	710.5	703.6	700.9	694.0	683.1	672.1	663.9	650.2
35°	647.5	646.1	644.7	642.0	636.5	635.2	629.7	621.5	609.2	599.6	591.4
37.5°	580.4	576.3	573.6	573.6	568.1	568.1	564.0	554.4	547.6	540.7	529.8
40°	517.4	510.6	510.6	510.6	505.1	506.5	503.8	494.2	487.3	479.1	472.3
42.5°	458.6	455.8	454.5	451.7	449.0	449.0	446.3	440.8	433.9	428.5	421.6
45°	409.3	407.9	406.6	405.2	402.5	401.1	399.7	391.5	387.4	381.9	375.1
47.5°	369.6	366.9	365.5	364.1	361.4	360.0	357.3	351.8	347.7	342.2	336.7
50°	332.6	331.3	329.9	329.9	327.2	325.8	323.1	319.0	312.1	309.4	302.5
52.5°	303.9	301.2	298.4	298.4	295.7	295.7	291.6	287.5	280.6	277.9	272.4
55°	273.8	272.4	271.0	271.0	268.3	266.9	265.6	260.1	254.6	250.5	245.0
57.5°	247.8	246.4	245.0	245.0	242.3	240.9	239.6	235.4	230.0	227.2	220.4
60°	223.1	223.1	221.8	220.4	219.0	217.7	216.3	212.2	208.1	204.0	198.5
62.5°	201.2	199.9	198.5	197.1	197.1	195.8	194.4	188.9	186.2	182.1	176.6
65°	180.7	178.0	178.0	176.6	176.6	175.2	173.8	168.4	165.6	161.5	156.1
67.5°	158.8	157.4	156.1	156.1	154.7	154.7	153.3	149.2	145.1	142.4	136.9
70°	138.3	138.3	136.9	136.9	135.5	134.2	134.2	131.4	127.3	123.2	117.7
72.5°	120.5	119.1	117.7	117.7	116.4	116.4	115.0	112.2	109.5	106.8	99.9
75°	101.3	99.9	99.9	99.9	98.6	98.6	97.2	94.5	91.7	89.0	84.9
77.5°	83.5	83.5	82.1	82.1	80.8	80.8	80.8	78.0	75.3	72.6	67.1
80°	65.7	65.7	65.7	64.3	63.0	63.0	63.0	60.2	57.5	54.8	50.6
82.5°	47.9	46.5	46.5	45.2	43.8	43.8	43.8	41.1	39.7	35.6	32.9
85°	28.7	27.4	27.4	26.0	24.6	24.6	24.6	23.3	20.5	19.2	16.4
87.5°	11.0	11.0	11.0	11.0	11.0	9.6	9.6	8.2	8.2	6.8	6.8
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°	933.6	933.6	933.6	933.6	933.6	933.6	933.6	933.6	933.6	933.6	933.6
2.5°	937.7	936.3	936.3	935.0	936.3	933.6	933.6	933.6	933.6	930.8	930.8
5°	935.0	935.0	933.6	932.2	933.6	930.8	932.2	930.8	930.8	926.7	926.7
7.5°	929.5	928.1	925.4	924.0	925.4	924.0	924.0	924.0	926.7	924.0	924.0
10°	919.9	918.5	915.8	914.4	914.4	913.1	915.8	918.5	924.0	926.7	932.2
12.5°	910.3	907.6	906.2	906.2	907.6	907.6	913.1	919.9	933.6	937.7	943.2
15°	898.0	896.6	896.6	900.7	906.2	910.3	921.3	925.4	926.7	921.3	918.5
17.5°	881.6	881.6	882.9	887.0	891.2	891.2	892.5	889.8	887.0	880.2	872.0
20°	854.2	852.8	850.1	850.1	850.1	844.6	847.3	837.8	830.9	822.7	810.4
22.5°	820.0	813.1	803.5	796.7	792.6	789.9	783.0	772.1	763.8	758.4	752.9
25°	783.0	772.1	758.4	747.4	740.6	739.2	729.6	720.0	714.6	707.7	705.0
27.5°	740.6	728.3	711.8	700.9	695.4	691.3	683.1	673.5	666.7	661.2	657.1
30°	691.3	679.0	665.3	651.6	646.1	639.3	631.1	624.2	617.4	613.3	610.5
32.5°	636.5	624.2	610.5	600.9	594.1	588.6	581.8	574.9	569.5	566.7	564.0
35°	580.4	568.1	557.1	547.6	542.1	538.0	532.5	524.3	520.2	518.8	516.1
37.5°	520.2	512.0	502.4	494.2	490.1	484.6	481.9	475.0	475.0	469.5	469.5
40°	464.1	458.6	449.0	442.2	439.4	435.3	431.2	428.5	427.1	425.7	424.4
42.5°	414.8	406.6	401.1	395.6	391.5	388.8	388.8	384.7	383.3	379.2	377.8
45°	369.6	365.5	355.9	351.8	350.4	346.3	345.0	342.2	338.1	335.4	334.0
47.5°	329.9	325.8	320.3	314.8	312.1	309.4	306.6	302.5	299.8	295.7	294.3
50°	297.1	290.2	284.7	280.6	276.5	275.1	272.4	266.9	264.2	260.1	260.1
52.5°	266.9	261.5	254.6	250.5	246.4	243.7	239.6	235.4	231.3	230.0	225.9
55°	240.9	234.1	227.2	221.8	217.7	213.5	212.2	206.7	201.2	198.5	195.8
57.5°	216.3	209.4	201.2	194.4	191.6	188.9	184.8	179.3	175.2	171.1	168.4
60°	191.6	186.2	178.0	171.1	168.4	164.3	160.2	154.7	150.6	146.5	143.7
62.5°	171.1	162.9	156.1	149.2	145.1	142.4	136.9	132.8	127.3	123.2	119.1
65°	150.6	142.4	135.5	128.7	125.9	121.8	117.7	112.2	106.8	102.7	97.2
67.5°	130.0	123.2	116.4	109.5	106.8	104.0	98.6	93.1	87.6	83.5	78.0
70°	112.2	105.4	98.6	93.1	90.3	87.6	82.1	76.7	72.6	67.1	63.0
72.5°	95.8	90.3	83.5	78.0	75.3	72.6	67.1	63.0	57.5	54.8	50.6
75°	79.4	73.9	68.4	63.0	60.2	57.5	53.4	49.3	45.2	41.1	38.3
77.5°	63.0	57.5	52.0	47.9	45.2	43.8	39.7	35.6	31.5	28.7	24.6
80°	46.5	41.1	37.0	32.9	30.1	28.7	24.6	21.9	19.2	15.1	13.7
82.5°	28.7	24.6	21.9	19.2	17.8	16.4	13.7	11.0	9.6	8.2	6.8
85°	15.1	13.7	11.0	9.6	8.2	8.2	6.8	5.5	4.1	4.1	2.7
87.5°	5.5	4.1	4.1	2.7	2.7	2.7	2.7	1.4	1.4	1.4	1.4
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°	933.6	933.6	933.6	933.6	933.6	933.6	933.6	933.6	933.6	933.6	933.6
2.5°	928.1	929.5	930.8	932.2	930.8	930.8	933.6	928.1	932.2	932.2	926.7
5°	925.4	928.1	926.7	929.5	926.7	926.7	928.1	925.4	928.1	928.1	924.0
7.5°	922.6	925.4	925.4	926.7	925.4	925.4	926.7	922.6	925.4	925.4	921.3
10°	935.0	937.7	936.3	935.0	930.8	928.1	929.5	922.6	925.4	925.4	921.3
12.5°	939.1	937.7	932.2	929.5	926.7	924.0	925.4	919.9	922.6	922.6	919.9
15°	911.7	908.9	904.8	906.2	903.5	902.1	904.8	902.1	907.6	910.3	907.6
17.5°	865.1	863.8	861.0	861.0	861.0	862.4	866.5	866.5	874.7	880.2	882.9
20°	804.9	803.5	804.9	807.6	809.0	814.5	824.1	829.6	840.5	850.1	856.9
22.5°	750.2	752.9	757.0	762.5	763.8	770.7	783.0	788.5	802.2	813.1	820.0
25°	703.6	707.7	710.5	714.6	715.9	724.1	735.1	741.9	757.0	765.2	773.4
27.5°	657.1	662.5	663.9	669.4	669.4	677.6	687.2	694.0	703.6	711.8	718.7
30°	611.9	613.3	617.4	618.7	621.5	629.7	635.2	639.3	650.2	654.3	658.4
32.5°	562.6	568.1	570.8	572.2	570.8	577.7	583.1	585.9	590.0	595.5	598.2
35°	516.1	518.8	520.2	522.9	524.3	525.7	528.4	529.8	535.2	536.6	538.0
37.5°	469.5	473.6	472.3	473.6	473.6	475.0	477.7	476.4	480.5	481.9	480.5
40°	423.0	423.0	425.7	424.4	425.7	424.4	427.1	427.1	427.1	428.5	427.1
42.5°	376.4	377.8	376.4	379.2	376.4	377.8	377.8	376.4	377.8	376.4	376.4
45°	334.0	334.0	334.0	334.0	331.3	331.3	334.0	332.6	331.3	329.9	328.5
47.5°	292.9	294.3	291.6	292.9	291.6	290.2	288.8	288.8	287.5	284.7	283.4
50°	258.7	256.0	254.6	256.0	254.6	253.2	251.9	249.1	247.8	245.0	243.7
52.5°	224.5	221.8	219.0	219.0	217.7	214.9	213.5	210.8	209.4	206.7	206.7
55°	194.4	191.6	188.9	187.5	184.8	182.1	180.7	178.0	176.6	173.8	171.1
57.5°	165.6	161.5	158.8	157.4	156.1	151.9	150.6	147.8	145.1	142.4	141.0
60°	139.6	135.5	131.4	130.0	128.7	124.6	123.2	119.1	117.7	115.0	113.6
62.5°	115.0	112.2	106.8	105.4	102.7	99.9	95.8	94.5	93.1	94.5	94.5
65°	93.1	89.0	84.9	83.5	80.8	78.0	76.7	75.3	76.7	76.7	78.0
67.5°	73.9	69.8	65.7	65.7	64.3	61.6	61.6	61.6	63.0	63.0	64.3
70°	58.9	56.1	53.4	52.0	52.0	50.6	52.0	52.0	53.4	53.4	53.4
72.5°	46.5	45.2	43.8	42.4	42.4	42.4	42.4	42.4	42.4	42.4	43.8
75°	35.6	34.2	32.9	32.9	31.5	31.5	31.5	31.5	31.5	31.5	30.1
77.5°	23.3	21.9	20.5	20.5	19.2	17.8	17.8	16.4	16.4	16.4	16.4
80°	12.3	11.0	9.6	8.2	8.2	6.8	6.8	6.8	6.8	5.5	5.5
82.5°	5.5	4.1	4.1	4.1	4.1	2.7	2.7	2.7	2.7	2.7	2.7
85°	2.7	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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°	933.6	933.6	933.6	933.6	933.6	933.6	933.6	933.6
2.5°	929.5	926.7	929.5	930.8	928.1	926.7	929.5	924.0
5°	928.1	924.0	925.4	926.7	924.0	922.6	925.4	921.3
7.5°	925.4	924.0	925.4	926.7	922.6	922.6	925.4	921.3
10°	925.4	922.6	924.0	926.7	924.0	924.0	926.7	921.3
12.5°	924.0	919.9	924.0	925.4	922.6	922.6	925.4	919.9
15°	914.4	914.4	915.8	918.5	917.2	918.5	922.6	918.5
17.5°	893.9	896.6	902.1	906.2	908.9	911.7	915.8	913.1
20°	869.2	873.4	880.2	884.3	889.8	891.2	898.0	892.5
22.5°	830.9	839.1	844.6	848.7	852.8	856.9	862.4	861.0
25°	784.4	789.9	794.0	798.1	803.5	806.3	809.0	807.6
27.5°	728.3	731.0	736.5	739.2	741.9	744.7	750.2	743.3
30°	666.7	668.0	670.8	674.9	674.9	677.6	680.3	679.0
32.5°	603.7	603.7	606.4	609.2	607.8	609.2	614.6	607.8
35°	542.1	540.7	544.8	546.2	546.2	544.8	548.9	547.6
37.5°	481.9	483.2	484.6	486.0	483.2	486.0	486.0	483.2
40°	427.1	425.7	428.5	429.8	428.5	429.8	429.8	424.4
42.5°	377.8	375.1	376.4	377.8	376.4	377.8	376.4	373.7
45°	329.9	328.5	328.5	329.9	327.2	327.2	327.2	327.2
47.5°	284.7	283.4	284.7	284.7	282.0	282.0	283.4	282.0
50°	243.7	242.3	242.3	242.3	240.9	240.9	242.3	242.3
52.5°	206.7	204.0	204.0	204.0	204.0	204.0	205.3	202.6
55°	169.7	169.7	169.7	169.7	171.1	171.1	171.1	171.1
57.5°	139.6	141.0	141.0	142.4	141.0	142.4	142.4	141.0
60°	116.4	115.0	116.4	116.4	117.7	117.7	117.7	117.7
62.5°	95.8	95.8	95.8	97.2	97.2	97.2	98.6	97.2
65°	79.4	79.4	80.8	80.8	80.8	82.1	82.1	82.1
67.5°	65.7	65.7	65.7	65.7	67.1	67.1	68.4	67.1
70°	54.8	54.8	54.8	54.8	54.8	56.1	56.1	56.1
72.5°	43.8	43.8	43.8	43.8	45.2	45.2	45.2	45.2
75°	30.1	30.1	30.1	31.5	30.1	30.1	30.1	30.1
77.5°	15.1	15.1	15.1	15.1	15.1	13.7	13.7	13.7
80°	5.5	5.5	5.5	5.5	5.5	5.5	4.1	5.5
82.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.4
85°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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)