

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: P251597

Luminaire Tested: **LD4B15D010 EU4B10208035 4LBSW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251597  
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 EU4B10208035 4LBSW1H  
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1360.0 lumens  
Efficiency: N/A  
Efficacy: 94.5 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

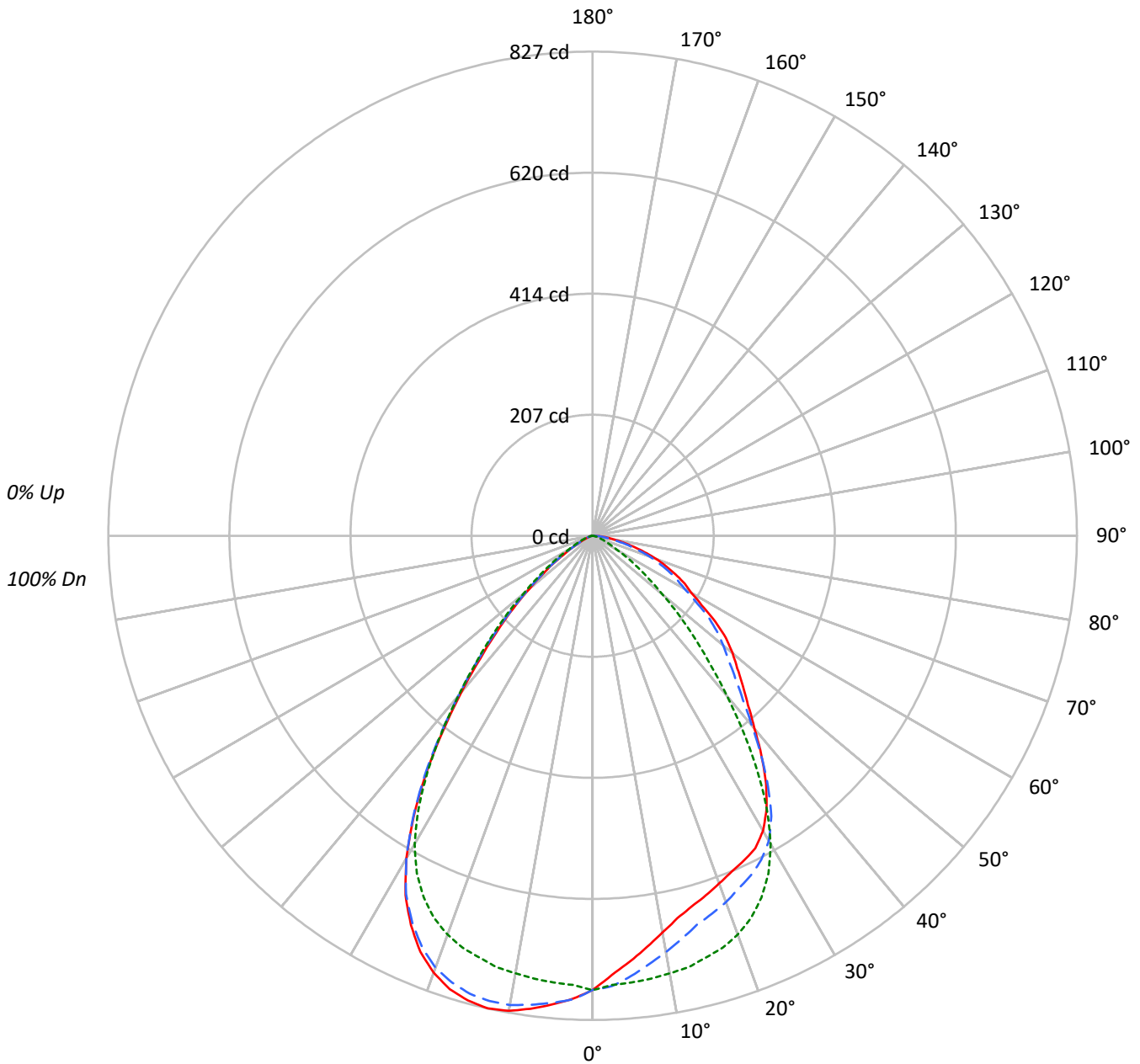
Input Watts (W): 14.39  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	75618	75618	75618
5°	71406	74928	78646
10°	68076	75102	81534
15°	66077	75258	82926
20°	65536	75181	82338
25°	65799	73327	78919
30°	65484	68410	71561
35°	61379	58405	58999
40°	54693	45278	44261
45°	50017	33768	31700
50°	47290	23652	21378
55°	43498	15972	13423
60°	38009	9356	7407
65°	35974	5996	4151
70°	32769	4274	2565
75°	27112	3012	1883
80°	21327	1684	1122
85°	19010	1118	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	73.3	5.4
10°-20°	210.3	15.5
20°-30°	311.8	22.9
30°-40°	312.2	23.0
40°-50°	218.2	16.0
50°-60°	129.8	9.5
60°-70°	67.8	5.0
70°-80°	30.1	2.2
80°-90°	6.6	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°	595.4	43.8
0°-40°	907.6	66.7
0°-60°	1255.6	92.3
0°-90°	1360.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1360.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	776	776	776	776	776	
5°	730	755	766	801	804	68
15°	655	688	746	810	822	185
25°	612	640	682	729	734	282
35°	516	522	491	500	496	320
45°	363	345	245	237	230	282
55°	256	240	94	82	79	227
65°	156	143	26	19	18	154
75°	72	63	8	5	5	78
85°	17	13	1	1	0	19
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°	775.9	775.9	775.9	775.9	775.9	775.9	775.9	775.9	775.9	775.9	775.9
2.5°	750.9	759.9	750.9	753.9	765.9	754.9	760.9	760.9	757.9	764.9	769.9
5°	729.9	738.9	729.9	733.9	746.9	735.9	742.9	740.9	741.9	747.9	754.9
7.5°	708.9	715.9	707.9	712.9	724.9	715.9	721.9	721.9	722.9	731.9	737.9
10°	687.9	693.9	687.9	691.9	704.9	696.9	700.9	701.9	704.9	712.9	721.9
12.5°	668.9	673.9	667.9	673.9	684.9	676.9	681.9	682.9	685.9	694.9	704.9
15°	654.9	659.9	653.9	658.9	668.9	662.9	666.9	668.9	670.9	678.9	687.9
17.5°	643.9	647.9	642.9	648.9	656.9	649.9	655.9	655.9	658.9	666.9	676.9
20°	631.9	635.9	631.9	636.9	645.9	639.9	644.9	644.9	647.9	656.9	665.9
22.5°	620.9	622.9	620.9	624.9	633.9	628.9	631.9	632.9	635.9	643.9	651.9
25°	611.9	615.9	613.9	617.9	623.9	618.9	621.9	622.9	625.9	632.9	639.9
27.5°	601.9	603.9	601.9	606.9	611.9	607.9	610.9	609.9	611.9	617.9	623.9
30°	581.9	583.9	583.9	586.9	590.9	588.9	591.9	588.9	590.9	595.9	601.9
32.5°	552.9	553.9	554.9	557.9	560.9	557.9	559.9	559.9	559.9	563.9	567.9
35°	515.9	517.9	516.9	518.9	521.9	520.9	520.9	519.9	517.9	519.9	521.9
37.5°	473.9	470.9	470.9	473.9	475.9	471.9	473.9	471.9	471.9	472.9	472.9
40°	429.9	426.9	429.9	430.9	431.9	429.9	428.9	426.9	423.9	424.9	422.9
42.5°	392.9	390.9	391.9	391.9	392.9	390.9	391.9	387.9	384.9	382.9	379.9
45°	362.9	359.9	362.9	360.9	360.9	359.9	358.9	356.9	352.9	349.9	344.9
47.5°	334.9	334.9	335.9	335.9	335.9	333.9	333.9	329.9	325.9	321.9	314.9
50°	311.9	309.9	313.9	313.9	310.9	309.9	310.9	305.9	302.9	297.9	290.9
52.5°	286.9	286.9	287.9	287.9	286.9	284.9	285.9	282.0	279.0	274.0	267.0
55°	256.0	254.0	257.0	257.0	256.0	255.0	256.0	253.0	250.0	246.0	240.0
57.5°	221.0	220.0	222.0	223.0	221.0	221.0	222.0	219.0	218.0	214.0	208.0
60°	195.0	194.0	196.0	197.0	195.0	195.0	195.0	191.0	189.0	185.0	181.0
62.5°	177.0	176.0	178.0	177.0	176.0	175.0	176.0	172.0	170.0	166.0	162.0
65°	156.0	157.0	158.0	158.0	157.0	156.0	156.0	154.0	152.0	148.0	143.0
67.5°	136.0	136.0	137.0	138.0	137.0	137.0	137.0	134.0	132.0	129.0	123.0
70°	115.0	114.0	117.0	117.0	115.0	116.0	115.0	114.0	112.0	108.0	103.0
72.5°	93.0	93.0	94.0	94.0	93.0	93.0	93.0	92.0	89.0	87.0	82.0
75°	72.0	72.0	73.0	74.0	72.0	72.0	73.0	71.0	69.0	66.0	63.0
77.5°	54.0	53.0	54.0	54.0	53.0	53.0	53.0	52.0	51.0	48.0	45.0
80°	38.0	37.0	38.0	38.0	38.0	37.0	37.0	36.0	36.0	34.0	31.0
82.5°	26.0	25.0	26.0	26.0	26.0	25.0	25.0	25.0	24.0	23.0	21.0
85°	17.0	16.0	16.0	17.0	16.0	16.0	16.0	16.0	15.0	14.0	13.0
87.5°	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0	7.0	6.0
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	775.9	775.9	775.9	775.9	775.9	775.9	775.9	775.9	775.9	775.9	775.9
2.5°	765.9	763.9	769.9	767.9	768.9	763.9	771.9	767.9	772.9	767.9	777.9
5°	752.9	750.9	759.9	758.9	759.9	755.9	764.9	763.9	769.9	765.9	776.9
7.5°	738.9	736.9	746.9	747.9	749.9	745.9	757.9	757.9	763.9	762.9	774.9
10°	722.9	723.9	733.9	735.9	739.9	737.9	748.9	751.9	759.9	758.9	773.9
12.5°	707.9	707.9	720.9	724.9	727.9	726.9	739.9	743.9	752.9	754.9	768.9
15°	692.9	693.9	705.9	711.9	715.9	714.9	728.9	733.9	744.9	745.9	762.9
17.5°	680.9	679.9	692.9	697.9	703.9	702.9	717.9	723.9	734.9	737.9	753.9
20°	670.9	669.9	681.9	687.9	691.9	690.9	705.9	712.9	722.9	724.9	740.9
22.5°	658.9	656.9	668.9	673.9	677.9	676.9	689.9	694.9	704.9	706.9	721.9
25°	644.9	642.9	653.9	656.9	659.9	657.9	668.9	671.9	679.9	681.9	696.9
27.5°	628.9	623.9	632.9	632.9	634.9	631.9	639.9	642.9	649.9	649.9	663.9
30°	603.9	596.9	601.9	600.9	601.9	597.9	602.9	603.9	608.9	607.9	617.9
32.5°	568.9	558.9	561.9	558.9	555.9	549.9	555.9	553.9	557.9	553.9	562.9
35°	520.9	510.9	509.9	505.9	502.9	497.9	497.9	492.9	493.9	490.9	496.9
37.5°	468.9	455.9	453.9	445.9	440.9	434.9	434.9	430.9	425.9	423.9	428.9
40°	417.9	403.9	398.9	385.9	380.9	374.9	370.9	365.9	363.9	355.9	359.9
42.5°	373.9	358.9	347.9	333.9	328.9	319.9	313.9	307.9	304.9	295.9	299.9
45°	336.9	318.9	306.9	288.9	282.0	272.0	263.0	256.0	249.0	245.0	243.0
47.5°	305.9	286.9	271.0	251.0	240.0	231.0	219.0	212.0	203.0	198.0	195.0
50°	280.0	259.0	241.0	218.0	207.0	197.0	183.0	172.0	164.0	156.0	154.0
52.5°	257.0	235.0	215.0	189.0	176.0	164.0	149.0	137.0	130.0	121.0	120.0
55°	230.0	211.0	189.0	162.0	149.0	137.0	121.0	109.0	100.0	94.0	92.0
57.5°	201.0	183.0	162.0	135.0	122.0	109.0	94.0	83.0	75.0	70.0	69.0
60°	174.0	157.0	137.0	110.0	97.0	86.0	70.0	59.0	52.0	48.0	46.0
62.5°	154.0	138.0	119.0	94.0	82.0	71.0	56.0	46.0	40.0	36.0	34.0
65°	135.0	119.0	102.0	79.0	69.0	59.0	45.0	36.0	30.0	26.0	24.0
67.5°	115.0	101.0	85.0	66.0	56.0	48.0	36.0	28.0	23.0	20.0	18.0
70°	95.0	82.0	69.0	53.0	46.0	38.0	28.0	22.0	17.0	15.0	13.0
72.5°	75.0	65.0	54.0	41.0	35.0	30.0	22.0	16.0	13.0	11.0	9.0
75°	56.0	49.0	40.0	31.0	26.0	22.0	16.0	12.0	10.0	8.0	7.0
77.5°	40.0	34.0	28.0	21.0	19.0	16.0	11.0	9.0	7.0	5.0	4.0
80°	27.0	24.0	19.0	15.0	12.0	11.0	8.0	6.0	4.0	3.0	3.0
82.5°	18.0	15.0	12.0	9.0	8.0	7.0	5.0	4.0	3.0	2.0	2.0
85°	11.0	9.0	7.0	5.0	5.0	4.0	3.0	2.0	1.0	1.0	1.0
87.5°	5.0	4.0	3.0	2.0	2.0	1.0	1.0	1.0	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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	775.9	775.9	775.9	775.9	775.9	775.9	775.9	775.9	775.9	775.9	775.9
2.5°	785.9	779.9	775.9	780.9	782.9	779.9	782.9	787.9	792.9	793.9	779.9
5°	786.9	780.9	778.9	784.9	785.9	784.9	787.9	794.9	800.9	802.9	788.9
7.5°	786.9	782.9	781.9	788.9	789.9	788.9	793.9	801.9	807.9	811.9	797.9
10°	784.9	782.9	783.9	789.9	791.9	791.9	798.9	807.9	813.9	817.9	803.9
12.5°	781.9	781.9	781.9	788.9	790.9	791.9	797.9	809.9	813.9	819.9	805.9
15°	776.9	776.9	776.9	783.9	786.9	786.9	793.9	804.9	809.9	815.9	801.9
17.5°	767.9	767.9	768.9	774.9	777.9	777.9	784.9	796.9	799.9	806.9	792.9
20°	754.9	754.9	755.9	761.9	764.9	762.9	771.9	781.9	784.9	790.9	776.9
22.5°	735.9	735.9	735.9	741.9	743.9	742.9	751.9	760.9	760.9	768.9	753.9
25°	707.9	709.9	707.9	713.9	715.9	714.9	722.9	730.9	728.9	737.9	722.9
27.5°	673.9	672.9	672.9	677.9	677.9	676.9	682.9	691.9	689.9	695.9	681.9
30°	626.9	629.9	624.9	631.9	628.9	626.9	630.9	638.9	635.9	640.9	629.9
32.5°	572.9	568.9	568.9	568.9	570.9	565.9	569.9	573.9	570.9	575.9	563.9
35°	501.9	502.9	499.9	500.9	501.9	495.9	499.9	503.9	499.9	502.9	491.9
37.5°	430.9	431.9	424.9	428.9	424.9	422.9	426.9	428.9	424.9	427.9	415.9
40°	359.9	357.9	356.9	356.9	357.9	352.9	355.9	358.9	355.9	357.9	346.9
42.5°	297.9	296.9	294.9	295.9	292.9	291.9	292.9	295.9	292.9	294.9	286.9
45°	244.0	242.0	239.0	240.0	240.0	235.0	238.0	240.0	237.0	238.0	231.0
47.5°	194.0	191.0	191.0	190.0	190.0	188.0	191.0	190.0	187.0	189.0	182.0
50°	151.0	149.0	149.0	149.0	149.0	146.0	147.0	149.0	146.0	146.0	142.0
52.5°	118.0	115.0	113.0	113.0	113.0	112.0	112.0	113.0	110.0	110.0	109.0
55°	89.0	88.0	85.0	85.0	85.0	82.0	83.0	83.0	82.0	82.0	79.0
57.5°	66.0	63.0	61.0	61.0	59.0	59.0	58.0	59.0	57.0	57.0	55.0
60°	44.0	42.0	41.0	40.0	40.0	39.0	40.0	39.0	39.0	38.0	37.0
62.5°	32.0	30.0	28.0	28.0	28.0	27.0	27.0	27.0	27.0	27.0	26.0
65°	23.0	21.0	21.0	20.0	20.0	19.0	19.0	19.0	19.0	19.0	18.0
67.5°	16.0	15.0	14.0	14.0	14.0	14.0	14.0	14.0	13.0	13.0	13.0
70°	12.0	11.0	10.0	10.0	10.0	10.0	10.0	9.0	10.0	10.0	9.0
72.5°	8.0	8.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
75°	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
77.5°	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
80°	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	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°	775.9	775.9	775.9	775.9	775.9	775.9	775.9	775.9
2.5°	794.9	793.9	791.9	794.9	786.9	783.9	782.9	791.9
5°	805.9	803.9	803.9	806.9	797.9	795.9	793.9	803.9
7.5°	815.9	813.9	813.9	816.9	808.9	806.9	804.9	814.9
10°	821.9	821.9	821.9	823.9	816.9	814.9	813.9	823.9
12.5°	824.9	824.9	823.9	827.9	818.9	818.9	816.9	826.9
15°	820.9	820.9	820.9	823.9	815.9	813.9	813.9	821.9
17.5°	810.9	810.9	809.9	812.9	803.9	803.9	802.9	811.9
20°	795.9	795.9	793.9	797.9	788.9	785.9	784.9	793.9
22.5°	771.9	770.9	769.9	771.9	763.9	761.9	760.9	768.9
25°	740.9	739.9	737.9	739.9	730.9	727.9	727.9	733.9
27.5°	696.9	696.9	693.9	696.9	686.9	685.9	684.9	691.9
30°	642.9	638.9	636.9	640.9	630.9	630.9	628.9	635.9
32.5°	575.9	571.9	570.9	572.9	563.9	560.9	564.9	568.9
35°	498.9	499.9	495.9	495.9	487.9	488.9	489.9	495.9
37.5°	424.9	422.9	421.9	422.9	416.9	414.9	412.9	418.9
40°	355.9	350.9	349.9	349.9	344.9	343.9	344.9	347.9
42.5°	290.9	289.9	285.9	287.9	282.9	284.9	283.9	283.9
45°	235.0	236.0	232.0	235.0	231.0	228.0	228.0	230.0
47.5°	186.0	186.0	185.0	185.0	182.0	183.0	181.0	184.0
50°	144.0	144.0	142.0	143.0	141.0	141.0	140.0	141.0
52.5°	110.0	109.0	109.0	108.0	106.0	107.0	108.0	106.0
55°	80.0	81.0	79.0	80.0	78.0	79.0	78.0	79.0
57.5°	55.0	56.0	54.0	56.0	54.0	55.0	54.0	54.0
60°	38.0	38.0	37.0	38.0	37.0	37.0	36.0	38.0
62.5°	26.0	26.0	26.0	26.0	26.0	25.0	26.0	26.0
65°	19.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
67.5°	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
70°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
72.5°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
75°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
77.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.0	1.0	1.0	0.0	1.0	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)