

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: P251504

Luminaire Tested: **LD4B10D010 EU4B10208027 4LBSW1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251504  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-10)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B10D010 EU4B10208027 4LBSW1LI  
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 948.0 lumens  
Efficiency: N/A  
Efficacy: 94.3 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.19  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

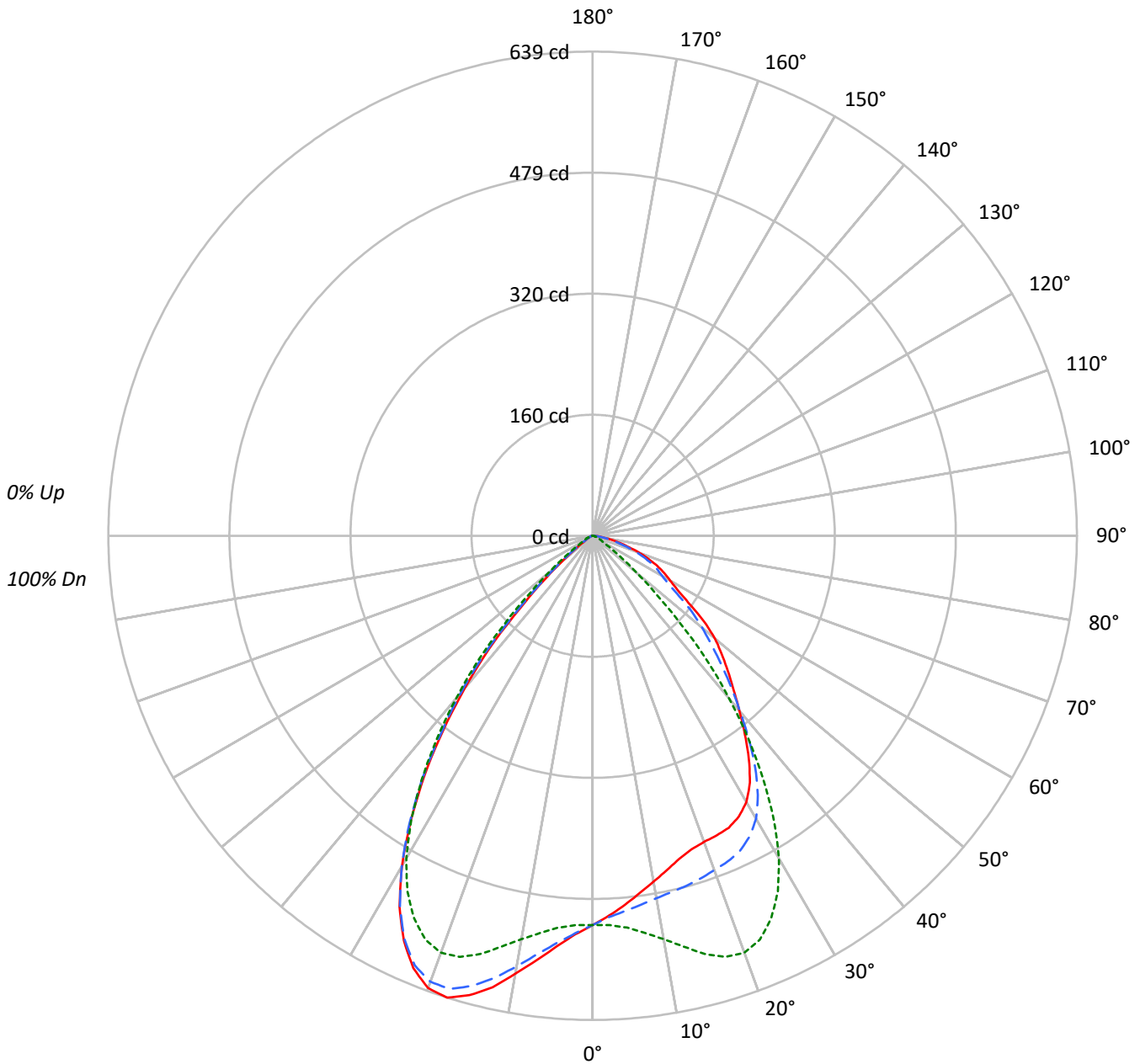
Input Watts (W): 10.05  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90																			
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	85	82	80																			
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72																			
4	91	81	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64																			
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58																			
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53																			
7	75	63	56	51	73	62	55	51	61	55	50	60	54	50	58	53	50	48																			
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44																			
9	66	54	47	42	65	54	47	42	53	46	42	52	46	42	51	46	42	40																			
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37																			

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

	0°	90°	180°
0°	50064	50064	50064
5°	47829	50784	53210
10°	45859	53489	58071
15°	44525	57652	63332
20°	44586	60724	65868
25°	45723	59928	63391
30°	45655	55322	56605
35°	42771	46757	46114
40°	38307	35660	33281
45°	34760	22645	18579
50°	31931	11493	7930
55°	26201	5131	2617
60°	23000	2885	1442
65°	21654	2168	1084
70°	18550	1710	969
75°	14158	1280	753
80°	10158	730	393
85°	7492	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	49.9	5.3
10°-20°	155.5	16.4
20°-30°	240.6	25.4
30°-40°	237.1	25.0
40°-50°	145.6	15.4
50°-60°	64.7	6.8
60°-70°	36.1	3.8
70°-80°	15.6	1.7
80°-90°	2.8	0.3
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°	446.0	47.0
0°-40°	683.1	72.1
0°-60°	893.4	94.2
0°-90°	948.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	948.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	514	514	514	514	514	
5°	489	497	519	539	544	46
15°	441	478	571	615	628	125
25°	425	459	557	588	590	195
35°	360	374	393	392	388	223
45°	252	239	164	144	135	195
55°	154	140	30	17	15	142
65°	94	84	9	5	5	92
75°	38	32	3	2	2	41
85°	7	5	0	0	0	8
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°	513.7	513.7	513.7	513.7	513.7	513.7	513.7	513.7	513.7	513.7	513.7
2.5°	501.6	501.6	501.6	501.6	503.0	501.0	503.0	503.0	505.0	505.7	503.7
5°	488.9	488.2	488.9	488.9	490.2	489.6	491.6	492.9	495.6	497.0	497.0
7.5°	475.5	475.5	475.5	476.8	478.8	478.2	480.2	482.2	486.2	488.9	490.9
10°	463.4	462.7	464.8	465.4	467.4	467.4	470.8	472.8	477.5	482.9	485.6
12.5°	452.0	451.3	452.7	454.7	458.1	458.1	460.7	464.1	470.8	476.8	481.5
15°	441.3	442.0	444.0	445.3	449.3	449.3	452.7	456.7	464.1	471.5	478.2
17.5°	433.9	434.6	435.9	437.9	442.0	442.0	445.3	450.0	458.1	466.1	474.2
20°	429.9	430.6	431.9	433.9	437.3	437.9	440.6	446.0	453.4	462.1	469.5
22.5°	427.9	429.2	430.6	431.9	435.3	435.3	438.6	442.6	450.0	458.7	465.4
25°	425.2	426.5	427.2	429.2	431.9	431.9	433.9	438.6	445.3	452.7	459.4
27.5°	417.8	419.2	419.8	421.8	424.5	423.9	426.5	429.9	435.9	442.6	448.0
30°	405.7	406.4	407.8	408.4	410.4	410.4	412.5	415.8	419.8	425.9	431.2
32.5°	386.3	387.6	388.3	389.0	391.0	390.3	391.0	393.0	397.0	402.4	405.7
35°	359.5	362.2	362.2	363.5	364.2	363.5	363.5	366.2	368.2	372.2	374.2
37.5°	330.0	332.0	331.3	332.6	333.3	331.3	332.6	333.3	336.0	338.0	338.7
40°	301.1	301.8	301.8	301.8	301.8	301.1	301.8	302.5	304.5	304.5	302.5
42.5°	275.0	275.6	275.6	274.3	275.6	275.0	275.0	275.0	275.0	272.3	270.3
45°	252.2	252.8	252.8	252.2	252.2	250.8	250.2	249.5	247.5	244.1	239.4
47.5°	230.7	232.0	232.7	231.4	230.7	229.4	229.4	225.3	222.7	218.6	211.9
50°	210.6	211.9	211.9	210.6	210.6	208.6	206.6	205.2	201.2	196.5	188.5
52.5°	185.1	187.1	187.1	186.4	186.4	183.8	183.1	180.4	177.1	171.7	165.0
55°	154.2	156.9	156.3	155.6	154.2	154.2	154.2	152.2	150.2	146.2	139.5
57.5°	132.1	132.8	132.8	132.1	132.1	130.8	130.8	128.8	128.1	124.1	118.7
60°	118.0	118.0	118.7	118.0	117.4	116.7	116.0	114.7	112.7	110.0	106.0
62.5°	106.6	107.3	107.3	106.6	106.0	105.3	104.6	103.3	101.9	99.9	95.9
65°	93.9	95.2	94.6	93.9	93.2	92.5	92.5	91.2	89.9	88.5	84.5
67.5°	79.8	80.5	81.1	79.8	79.8	79.1	79.1	77.8	77.1	74.4	71.8
70°	65.1	65.7	65.7	65.1	65.1	64.4	64.4	63.7	63.0	61.0	58.3
72.5°	51.0	51.6	51.0	50.3	50.3	50.3	49.6	49.0	48.3	46.9	44.9
75°	37.6	37.6	38.2	37.6	36.9	36.9	36.2	36.2	34.9	34.2	32.2
77.5°	26.8	27.5	26.8	26.8	26.2	25.5	25.5	24.8	24.8	24.1	22.8
80°	18.1	18.1	18.8	18.1	17.4	18.1	17.4	16.8	16.8	16.1	14.8
82.5°	11.4	12.1	11.4	11.4	11.4	11.4	11.4	10.7	10.7	10.1	9.4
85°	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.0	6.0	6.0	5.4
87.5°	3.4	3.4	2.7	2.7	3.4	3.4	3.4	2.7	2.7	2.7	2.7
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°	513.7	513.7	513.7	513.7	513.7	513.7	513.7	513.7	513.7	513.7	513.7
2.5°	506.3	507.0	508.4	510.4	510.4	509.0	512.4	512.4	513.7	514.4	517.1
5°	501.0	502.3	505.0	508.4	509.0	508.4	513.0	515.1	517.1	519.1	523.1
7.5°	496.3	499.0	503.7	508.4	510.4	510.4	517.7	520.4	524.4	528.5	533.2
10°	493.6	497.6	504.3	511.7	513.7	515.7	524.4	529.8	535.2	540.5	547.3
12.5°	490.2	497.6	506.3	515.7	519.8	522.4	534.5	541.2	548.6	555.3	564.0
15°	489.6	498.3	509.7	521.8	527.1	531.2	544.6	554.0	562.7	571.4	580.1
17.5°	486.9	497.6	511.7	525.1	531.8	537.2	552.6	564.0	574.1	582.8	592.9
20°	483.5	495.6	511.0	525.8	533.2	538.5	555.3	566.0	577.4	585.5	594.9
22.5°	478.8	490.9	506.3	521.1	527.8	532.5	549.3	558.7	568.7	576.8	585.5
25°	470.8	482.2	495.6	507.7	514.4	518.4	533.2	541.9	549.3	557.3	565.4
27.5°	459.4	468.1	479.5	488.2	492.3	496.3	508.4	515.7	522.4	529.1	534.5
30°	439.3	446.0	454.0	461.4	465.4	466.1	477.5	481.5	486.9	491.6	495.6
32.5°	412.5	417.8	422.5	426.5	429.2	429.9	438.6	439.9	445.3	445.3	451.3
35°	378.2	380.9	384.3	384.3	386.3	384.3	390.3	391.7	392.3	393.0	397.7
37.5°	339.3	340.7	342.7	338.7	338.7	336.7	338.7	340.0	337.3	337.3	340.7
40°	302.5	299.8	297.1	293.1	291.1	287.0	287.0	283.7	281.7	280.3	281.0
42.5°	266.9	260.9	254.8	246.1	242.1	238.1	234.1	229.4	228.0	224.7	222.7
45°	232.7	224.0	215.9	201.9	193.8	189.8	181.1	171.7	165.7	164.3	158.9
47.5°	203.9	191.1	177.7	161.0	152.9	145.5	132.8	124.7	116.7	112.7	109.3
50°	178.4	167.0	149.6	131.4	121.4	114.0	99.9	90.5	81.8	75.8	71.8
52.5°	156.3	143.5	127.4	106.6	96.6	88.5	73.1	62.4	55.0	49.0	44.3
55°	131.4	121.4	105.3	85.8	75.8	66.4	53.0	41.6	34.2	30.2	26.8
57.5°	113.3	104.6	89.2	70.4	61.0	52.3	38.9	29.5	23.5	19.4	17.4
60°	101.3	93.2	79.8	61.7	53.0	44.9	32.2	23.5	18.1	14.8	13.4
62.5°	91.2	83.2	71.1	54.3	46.9	38.9	27.5	19.4	14.8	12.1	10.1
65°	79.8	72.4	61.7	46.9	40.2	33.5	23.5	16.1	12.1	9.4	8.0
67.5°	67.7	61.0	51.6	38.9	33.5	28.2	18.8	13.4	10.1	8.0	6.7
70°	55.0	49.6	40.9	31.5	26.8	22.1	15.4	10.7	7.4	6.0	5.4
72.5°	42.3	37.6	31.5	24.1	20.1	16.8	11.4	8.0	6.0	4.7	4.0
75°	30.2	26.8	22.1	17.4	14.8	12.1	8.7	6.0	4.0	3.4	2.7
77.5°	20.8	18.8	15.4	12.1	10.1	8.7	6.0	4.0	3.4	2.7	2.0
80°	13.4	12.1	10.1	7.4	6.0	5.4	3.4	2.7	2.0	1.3	1.3
82.5°	8.0	7.4	6.0	4.0	3.4	2.7	2.0	1.3	1.3	0.7	0.7
85°	4.7	4.0	2.7	2.0	2.0	1.3	1.3	0.7	0.7	0.0	0.0
87.5°	2.0	1.3	1.3	0.7	0.7	0.7	0.7	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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	513.7	513.7	513.7	513.7	513.7	513.7	513.7	513.7	513.7	513.7	513.7
2.5°	515.7	519.1	518.4	520.4	519.8	519.8	523.1	521.8	525.1	525.1	525.8
5°	523.1	527.8	527.8	531.2	530.5	531.8	535.2	535.2	539.2	540.5	540.5
7.5°	533.8	539.9	541.2	544.6	545.2	547.9	550.6	551.3	556.6	558.0	558.7
10°	548.6	556.0	558.0	561.3	562.7	565.4	568.7	570.1	576.8	577.4	580.1
12.5°	566.7	574.7	576.8	580.8	581.5	584.8	589.5	590.8	597.6	599.6	601.6
15°	584.1	591.5	594.9	598.9	599.6	603.6	607.6	609.0	615.0	617.7	619.7
17.5°	596.2	604.9	606.9	612.3	612.3	615.7	619.7	621.0	627.1	629.1	630.4
20°	598.9	606.9	609.6	613.6	614.3	616.3	619.7	621.0	626.4	627.1	629.1
22.5°	588.8	596.9	598.2	602.2	602.9	604.9	607.6	606.9	613.6	613.0	613.6
25°	567.4	574.7	574.7	579.4	578.8	580.8	582.1	581.5	587.5	587.5	587.5
27.5°	536.5	543.2	543.9	547.3	545.2	545.9	547.3	546.6	550.6	550.6	550.6
30°	498.3	503.7	501.6	504.3	503.0	504.3	503.0	502.3	503.7	505.0	504.3
32.5°	450.7	454.7	454.7	455.4	455.4	451.3	450.0	450.0	449.3	448.7	448.7
35°	395.7	399.0	397.7	397.7	397.0	393.0	391.0	389.6	391.7	387.6	390.3
37.5°	339.3	340.0	338.0	337.3	334.0	334.0	330.6	327.9	329.3	328.6	325.9
40°	277.6	280.3	276.3	275.0	277.0	274.3	270.9	267.6	270.3	266.9	268.3
42.5°	217.3	216.6	215.3	215.3	215.3	211.3	210.6	209.9	210.6	207.9	205.9
45°	156.9	154.9	152.9	152.9	150.2	148.9	148.9	146.9	143.5	143.5	139.5
47.5°	106.0	101.3	99.9	99.3	97.9	97.9	96.6	95.2	94.6	91.2	91.2
50°	69.1	64.4	63.0	62.4	63.0	61.7	60.4	59.0	57.7	57.0	55.7
52.5°	41.6	39.6	38.2	37.6	36.2	35.5	34.9	33.5	32.9	32.9	32.2
55°	24.8	22.8	20.1	20.1	20.1	19.4	18.8	18.1	17.4	17.4	16.8
57.5°	15.4	14.1	12.7	12.1	12.1	12.1	11.4	11.4	11.4	11.4	10.7
60°	11.4	10.1	9.4	9.4	9.4	8.7	8.7	8.7	8.7	8.0	8.0
62.5°	8.7	8.0	7.4	7.4	6.7	6.7	6.7	6.7	6.7	6.7	6.0
65°	7.4	6.0	6.0	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
67.5°	5.4	4.7	4.7	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
70°	4.0	4.0	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
72.5°	3.4	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
75°	2.7	2.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
77.5°	2.0	2.0	2.0	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
80°	1.3	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
82.5°	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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°	513.7	513.7	513.7	513.7	513.7	513.7	513.7	513.7
2.5°	525.8	529.1	525.8	525.8	527.8	527.1	528.5	526.5
5°	541.2	545.9	542.6	541.9	545.2	544.6	545.2	543.9
7.5°	560.0	564.7	561.3	561.3	564.7	564.0	566.0	564.7
10°	581.5	586.8	582.1	582.8	587.5	586.8	586.8	586.8
12.5°	603.6	609.0	606.3	606.3	609.6	610.3	611.0	610.3
15°	621.7	627.1	623.7	623.7	628.4	627.7	628.4	627.7
17.5°	632.4	637.8	633.8	633.8	637.8	637.8	638.5	639.1
20°	629.7	635.8	632.4	631.1	635.8	635.8	635.1	635.1
22.5°	614.3	619.7	617.0	615.7	619.0	617.7	617.0	617.7
25°	587.5	592.9	587.5	587.5	590.2	589.5	590.2	589.5
27.5°	551.3	555.3	549.9	549.3	551.9	550.6	549.9	551.9
30°	503.0	507.0	504.3	502.3	505.7	503.7	502.3	503.0
32.5°	448.0	450.7	449.3	446.0	448.0	446.7	446.0	446.7
35°	387.6	391.0	385.6	385.0	388.3	385.6	384.3	387.6
37.5°	325.3	329.3	324.6	325.3	323.3	323.9	322.6	324.6
40°	266.2	265.6	264.2	263.6	264.2	262.2	263.6	261.6
42.5°	202.5	203.9	203.2	202.5	203.2	200.5	199.2	201.9
45°	140.8	140.2	138.8	137.5	137.5	136.8	136.8	134.8
47.5°	90.5	89.9	87.2	87.9	89.2	87.9	85.8	88.5
50°	55.0	54.3	54.3	53.7	55.0	53.7	52.3	52.3
52.5°	30.8	30.8	30.2	30.2	30.2	30.2	29.5	28.8
55°	16.8	16.1	16.1	16.1	15.4	15.4	15.4	15.4
57.5°	10.7	10.7	10.7	10.7	10.7	10.7	10.1	10.1
60°	8.0	8.0	8.0	8.0	7.4	8.0	7.4	7.4
62.5°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
65°	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
67.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
70°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
72.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
75°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
77.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
80°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	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)