

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: P251908

Luminaire Tested: **LD4B15D010 EU4B10208030 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251908
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: LD4B15D010 EU4B10208030 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1291.0 lumens
Efficiency: N/A
Efficacy: 89.7 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

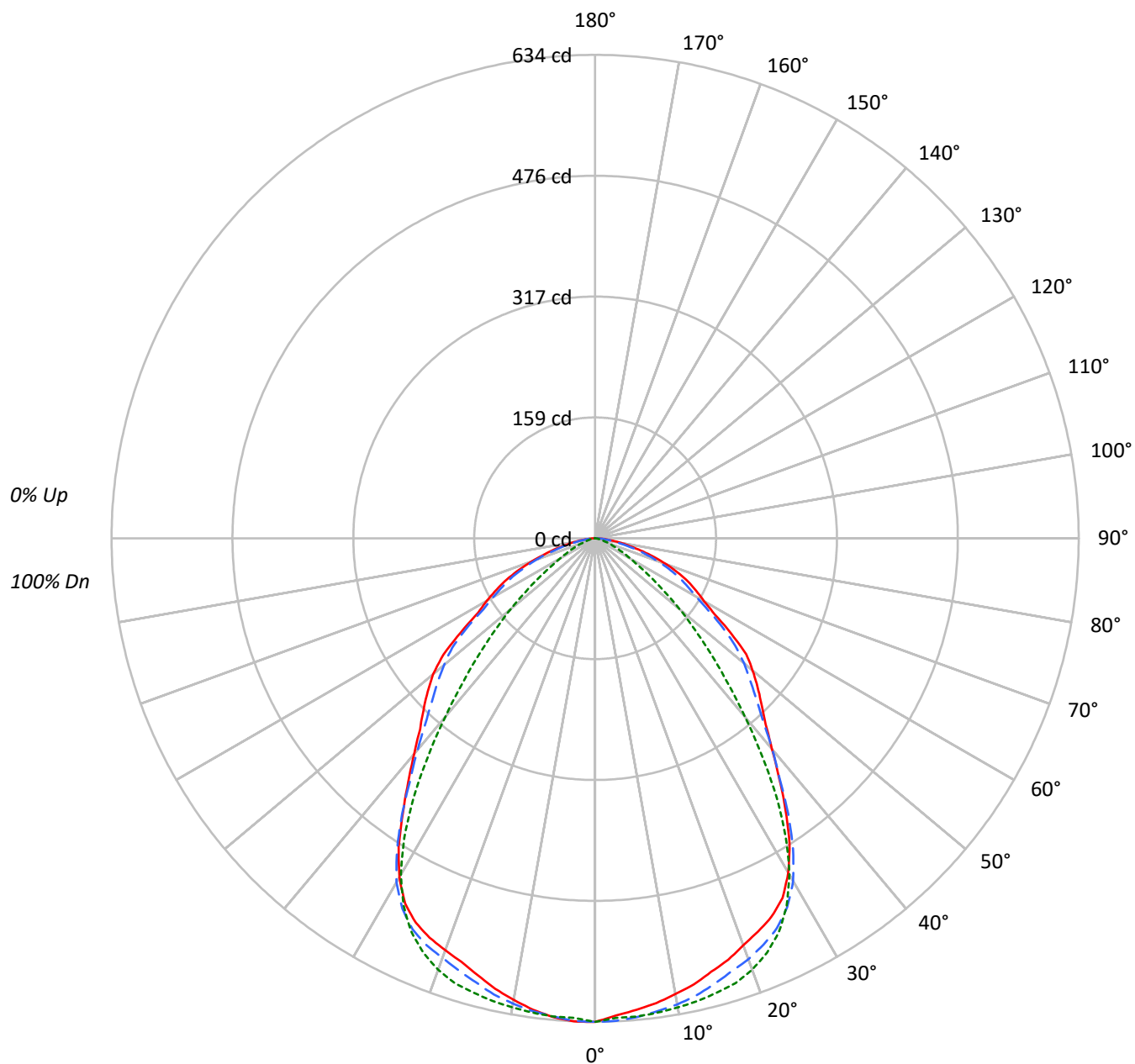
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
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°	61818	61818	61818
5°	60723	61584	61672
10°	60070	61811	60842
15°	59377	62233	59872
20°	58909	62445	59614
25°	58874	61283	59821
30°	56999	57325	57764
35°	51790	49351	52254
40°	45813	38866	46932
45°	42506	29591	43843
50°	40846	21894	42028
55°	36973	15088	36480
60°	32142	10272	31966
65°	31063	7425	29471
70°	28096	5015	25018
75°	23158	3314	19844
80°	18633	2189	14761
85°	15319	1118	9840



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.9	4.6
10°-20°	171.2	13.3
20°-30°	258.7	20.0
30°-40°	270.7	21.0
40°-50°	219.2	17.0
50°-60°	159.5	12.4
60°-70°	98.4	7.6
70°-80°	44.4	3.4
80°-90°	9.0	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°	489.8	37.9
0°-40°	760.5	58.9
0°-60°	1139.2	88.2
0°-90°	1291.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1291.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	634	634	634	634	634	
5°	621	630	630	630	630	59
15°	588	605	617	603	593	166
25°	548	564	570	566	556	251
35°	435	441	415	441	439	271
45°	308	299	215	302	318	240
55°	218	204	89	206	215	194
65°	135	121	32	119	128	132
75°	62	53	9	46	53	67
85°	14	11	1	8	9	16
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°	634.3	634.3	634.3	634.3	634.3	634.3	634.3	634.3	634.3	634.3	634.3
2.5°	626.5	626.5	632.4	639.2	633.4	627.5	631.4	629.5	636.3	636.3	633.4
5°	620.7	622.6	627.5	633.4	628.5	622.6	627.5	625.6	632.4	632.4	630.4
7.5°	614.8	615.8	621.7	628.5	623.6	617.8	621.7	620.7	626.5	627.5	625.6
10°	607.0	608.0	613.9	620.7	615.8	610.9	614.8	613.9	621.7	621.7	620.7
12.5°	599.2	600.2	606.0	611.9	607.0	602.1	606.0	606.0	613.9	614.8	613.9
15°	588.5	590.4	595.3	601.2	598.2	592.4	596.3	596.3	603.1	605.1	605.1
17.5°	579.7	580.7	585.6	591.4	587.5	582.6	586.5	586.5	593.4	595.3	595.3
20°	568.0	569.9	574.8	580.7	577.7	573.8	576.8	576.8	584.6	586.5	587.5
22.5°	558.2	560.2	564.1	571.9	567.0	564.1	568.0	567.0	575.8	576.8	576.8
25°	547.5	549.4	554.3	559.2	556.3	553.3	556.3	556.3	563.1	564.1	564.1
27.5°	531.9	532.9	537.7	542.6	539.7	535.8	539.7	538.7	545.5	546.5	545.5
30°	506.5	508.5	510.4	517.2	514.3	511.4	515.3	513.3	520.2	520.2	519.2
32.5°	474.3	474.3	478.2	483.1	479.2	477.2	480.2	481.1	486.0	486.0	483.1
35°	435.3	437.2	440.1	443.1	440.1	438.2	441.1	440.1	446.0	444.0	441.1
37.5°	396.2	397.2	400.1	404.0	400.1	397.2	398.2	397.2	402.1	402.1	397.2
40°	360.1	362.1	364.0	367.9	364.0	362.1	363.0	360.1	366.0	364.0	361.1
42.5°	330.8	331.8	334.7	336.7	332.8	331.8	332.8	330.8	333.8	331.8	326.0
45°	308.4	308.4	309.4	312.3	308.4	307.4	307.4	305.5	308.4	304.5	298.6
47.5°	288.9	289.8	290.8	292.8	289.8	286.9	287.9	284.0	285.9	283.0	275.2
50°	269.4	271.3	272.3	274.2	271.3	269.4	270.3	266.4	266.4	261.5	254.7
52.5°	249.8	250.8	249.8	251.8	249.8	246.9	247.9	244.0	244.0	238.1	231.3
55°	217.6	218.6	219.6	221.5	219.6	216.7	218.6	215.7	215.7	211.8	204.0
57.5°	185.4	186.4	187.4	188.4	188.4	186.4	187.4	185.4	184.4	181.5	175.7
60°	164.9	164.9	164.9	165.9	164.9	164.0	164.0	162.0	162.0	158.1	152.2
62.5°	149.3	150.3	150.3	151.3	150.3	149.3	148.3	146.4	145.4	141.5	136.6
65°	134.7	134.7	133.7	135.7	134.7	133.7	133.7	131.7	129.8	125.9	121.0
67.5°	117.1	118.1	117.1	118.1	118.1	117.1	116.1	114.2	113.2	110.3	104.4
70°	98.6	98.6	98.6	99.5	98.6	98.6	99.5	96.6	95.6	91.7	86.9
72.5°	80.0	81.0	81.0	80.0	81.0	79.0	79.0	79.0	78.1	74.2	69.3
75°	61.5	62.5	62.5	63.4	62.5	61.5	61.5	60.5	59.5	56.6	52.7
77.5°	45.9	45.9	46.8	46.8	46.8	45.9	45.9	43.9	43.9	42.0	38.1
80°	33.2	33.2	32.2	33.2	33.2	32.2	32.2	31.2	31.2	29.3	26.3
82.5°	21.5	22.4	22.4	22.4	22.4	21.5	21.5	21.5	20.5	19.5	17.6
85°	13.7	13.7	13.7	13.7	14.6	13.7	14.6	13.7	13.7	11.7	10.7
87.5°	5.9	5.9	5.9	6.8	6.8	5.9	5.9	5.9	5.9	5.9	4.9
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°	634.3	634.3	634.3	634.3	634.3	634.3	634.3	634.3	634.3	634.3	634.3
2.5°	633.4	634.3	631.4	635.3	632.4	633.4	634.3	633.4	629.5	629.5	640.2
5°	629.5	631.4	628.5	633.4	631.4	631.4	633.4	632.4	628.5	629.5	639.2
7.5°	625.6	628.5	626.5	631.4	628.5	628.5	630.4	630.4	626.5	627.5	636.3
10°	619.7	623.6	622.6	627.5	624.6	624.6	627.5	627.5	623.6	624.6	633.4
12.5°	614.8	618.7	617.8	622.6	620.7	621.7	622.6	624.6	619.7	621.7	629.5
15°	607.0	610.9	610.9	615.8	613.9	615.8	617.8	620.7	616.8	616.8	624.6
17.5°	598.2	603.1	603.1	607.0	607.0	608.0	611.9	614.8	610.9	611.9	618.7
20°	588.5	594.3	594.3	599.2	598.2	600.2	603.1	606.0	602.1	602.1	609.9
22.5°	578.7	583.6	584.6	587.5	587.5	588.5	591.4	593.4	588.5	588.5	596.3
25°	565.1	569.9	570.9	572.9	570.9	570.9	572.9	574.8	569.9	569.9	576.8
27.5°	546.5	551.4	551.4	550.4	548.5	549.4	548.5	549.4	544.6	543.6	550.4
30°	519.2	522.1	522.1	521.1	518.2	518.2	515.3	516.3	509.4	509.4	515.3
32.5°	482.1	485.0	483.1	481.1	477.2	475.3	473.3	472.3	465.5	465.5	472.3
35°	438.2	440.1	437.2	433.3	428.4	425.5	422.6	418.7	413.8	414.8	418.7
37.5°	393.3	393.3	389.4	381.6	377.7	372.8	367.9	367.9	360.1	359.1	362.1
40°	355.2	351.3	344.5	333.8	326.9	322.1	315.2	311.3	305.5	305.5	310.3
42.5°	321.1	313.3	304.5	289.8	283.0	277.2	268.4	264.5	257.6	256.7	259.6
45°	290.8	283.0	270.3	254.7	245.9	239.1	226.4	221.5	215.7	214.7	216.7
47.5°	266.4	257.6	242.0	221.5	212.8	204.0	191.3	184.4	179.6	176.6	179.6
50°	245.0	233.2	216.7	195.2	183.5	175.7	160.1	153.2	146.4	144.4	145.4
52.5°	221.5	209.8	192.3	169.8	159.1	147.4	132.7	123.0	117.1	114.2	117.1
55°	196.2	184.4	166.9	144.4	132.7	122.0	106.4	98.6	91.7	88.8	91.7
57.5°	168.8	158.1	142.5	120.0	109.3	99.5	84.9	77.1	70.3	68.3	70.3
60°	145.4	136.6	121.0	99.5	90.8	80.0	67.3	59.5	53.7	52.7	53.7
62.5°	129.8	120.0	105.4	84.9	76.1	67.3	55.6	47.8	42.9	42.0	42.9
65°	114.2	103.4	89.8	72.2	63.4	56.6	44.9	38.1	33.2	32.2	33.2
67.5°	96.6	86.9	75.1	59.5	52.7	45.9	36.1	29.3	25.4	24.4	25.4
70°	80.0	71.2	59.5	47.8	41.0	36.1	27.3	22.4	18.5	17.6	18.5
72.5°	63.4	55.6	45.9	36.1	32.2	27.3	21.5	16.6	13.7	12.7	13.7
75°	48.8	42.9	35.1	26.3	23.4	20.5	14.6	11.7	9.8	8.8	9.8
77.5°	34.2	30.3	24.4	19.5	16.6	14.6	10.7	7.8	6.8	5.9	6.8
80°	23.4	20.5	16.6	12.7	10.7	8.8	6.8	4.9	3.9	3.9	3.9
82.5°	15.6	12.7	9.8	7.8	6.8	5.9	3.9	2.9	2.9	2.0	2.0
85°	8.8	7.8	5.9	4.9	3.9	2.9	2.0	2.0	1.0	1.0	1.0
87.5°	3.9	2.9	2.0	2.0	1.0	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°	634.3	634.3	634.3	634.3	634.3	634.3	634.3	634.3	634.3	634.3	634.3
2.5°	637.3	634.3	638.3	634.3	632.4	634.3	632.4	638.3	633.4	629.5	633.4
5°	636.3	632.4	636.3	633.4	630.4	631.4	629.5	635.3	629.5	626.5	628.5
7.5°	634.3	631.4	633.4	630.4	627.5	628.5	626.5	631.4	625.6	622.6	624.6
10°	631.4	628.5	629.5	627.5	624.6	624.6	622.6	626.5	619.7	615.8	617.8
12.5°	627.5	623.6	625.6	622.6	618.7	618.7	616.8	619.7	612.9	609.0	609.9
15°	622.6	618.7	618.7	615.8	611.9	611.9	608.0	610.9	603.1	599.2	599.2
17.5°	616.8	611.9	611.9	609.0	604.1	603.1	600.2	603.1	594.3	590.4	590.4
20°	608.0	604.1	603.1	601.2	596.3	595.3	591.4	592.4	585.6	582.6	581.6
22.5°	596.3	592.4	593.4	590.4	586.5	585.6	581.6	584.6	577.7	574.8	575.8
25°	575.8	573.8	575.8	574.8	571.9	571.9	569.9	571.9	566.0	564.1	565.1
27.5°	552.4	551.4	552.4	552.4	550.4	550.4	550.4	553.3	547.5	546.5	546.5
30°	518.2	518.2	519.2	520.2	520.2	522.1	521.1	525.0	521.1	519.2	521.1
32.5°	473.3	477.2	480.2	480.2	480.2	482.1	484.1	487.0	483.1	484.1	484.1
35°	422.6	425.5	427.5	432.3	429.4	436.2	438.2	442.1	441.1	443.1	442.1
37.5°	366.0	369.9	373.8	380.6	379.6	387.4	391.3	399.2	397.2	401.1	403.1
40°	313.3	319.1	325.0	329.9	333.8	341.6	349.4	359.1	362.1	365.0	366.0
42.5°	262.5	268.4	278.1	285.0	290.8	303.5	314.2	326.0	328.9	334.7	336.7
45°	221.5	226.4	238.1	246.9	251.8	270.3	283.0	297.7	302.5	309.4	312.3
47.5°	183.5	192.3	204.0	214.7	221.5	241.1	257.6	273.3	280.1	287.9	291.8
50°	150.3	160.1	175.7	185.4	195.2	216.7	235.2	251.8	258.6	267.4	271.3
52.5°	123.0	133.7	148.3	159.1	169.8	192.3	211.8	227.4	236.2	242.0	247.9
55°	96.6	108.3	123.0	134.7	143.5	167.9	184.4	200.1	205.9	210.8	213.7
57.5°	75.1	83.9	98.6	108.3	119.1	140.5	157.1	168.8	173.7	179.6	181.5
60°	58.6	67.3	81.0	90.8	100.5	121.0	137.6	149.3	154.2	159.1	162.0
62.5°	46.8	55.6	68.3	77.1	85.9	104.4	119.1	130.8	136.6	141.5	144.4
65°	37.1	44.9	55.6	64.4	71.2	87.8	102.5	113.2	119.1	123.9	126.9
67.5°	29.3	36.1	45.9	51.7	58.6	72.2	84.9	94.7	99.5	105.4	108.3
70°	22.4	27.3	36.1	41.0	45.9	57.6	67.3	77.1	82.0	85.9	87.8
72.5°	16.6	20.5	27.3	31.2	34.2	43.9	51.7	58.6	62.5	66.4	68.3
75°	11.7	14.6	19.5	22.4	24.4	31.2	38.1	42.9	45.9	48.8	51.7
77.5°	7.8	9.8	12.7	14.6	16.6	21.5	25.4	29.3	32.2	35.1	36.1
80°	4.9	6.8	8.8	9.8	10.7	13.7	17.6	19.5	21.5	23.4	24.4
82.5°	2.9	3.9	4.9	5.9	6.8	8.8	10.7	12.7	13.7	15.6	16.6
85°	1.0	2.0	2.0	2.9	2.9	4.9	5.9	6.8	7.8	8.8	9.8
87.5°	0.0	0.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0
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°	634.3	634.3	634.3	634.3	634.3	634.3	634.3	634.3
2.5°	637.3	634.3	632.4	631.4	638.3	629.5	633.4	634.3
5°	633.4	630.4	628.5	627.5	633.4	625.6	628.5	630.4
7.5°	627.5	625.6	622.6	621.7	627.5	618.7	622.6	623.6
10°	620.7	617.8	615.8	614.8	619.7	610.9	614.8	614.8
12.5°	611.9	609.9	606.0	606.0	609.9	602.1	605.1	605.1
15°	600.2	598.2	594.3	594.3	598.2	590.4	593.4	593.4
17.5°	590.4	588.5	585.6	584.6	588.5	580.7	583.6	582.6
20°	582.6	580.7	576.8	576.8	579.7	571.9	574.8	574.8
22.5°	575.8	574.8	570.9	570.9	574.8	567.0	569.0	567.0
25°	565.1	564.1	560.2	561.2	563.1	555.3	558.2	556.3
27.5°	547.5	547.5	543.6	542.6	545.5	538.7	540.7	539.7
30°	520.2	521.1	516.3	516.3	517.2	511.4	514.3	513.3
32.5°	483.1	484.1	480.2	479.2	482.1	477.2	479.2	479.2
35°	442.1	443.1	440.1	440.1	443.1	440.1	440.1	439.2
37.5°	401.1	403.1	401.1	402.1	404.0	401.1	403.1	402.1
40°	367.9	369.9	366.9	368.9	370.8	367.9	370.8	368.9
42.5°	337.7	340.6	338.6	340.6	342.5	340.6	342.5	339.6
45°	315.2	317.2	316.2	317.2	319.1	318.1	319.1	318.1
47.5°	293.8	297.7	295.7	297.7	300.6	298.6	300.6	297.7
50°	274.2	277.2	276.2	278.1	279.1	278.1	280.1	277.2
52.5°	248.9	251.8	250.8	250.8	252.8	250.8	252.8	250.8
55°	215.7	216.7	216.7	217.6	216.7	215.7	216.7	214.7
57.5°	183.5	185.4	182.5	185.4	184.4	183.5	183.5	181.5
60°	163.0	165.9	164.0	165.9	164.9	164.9	164.9	164.0
62.5°	146.4	148.3	146.4	147.4	147.4	147.4	146.4	145.4
65°	127.8	130.8	128.8	129.8	128.8	127.8	128.8	127.8
67.5°	109.3	110.3	110.3	109.3	109.3	109.3	109.3	107.4
70°	88.8	89.8	88.8	90.8	89.8	88.8	89.8	87.8
72.5°	69.3	70.3	69.3	70.3	69.3	69.3	69.3	69.3
75°	51.7	52.7	52.7	52.7	52.7	52.7	50.7	52.7
77.5°	37.1	37.1	37.1	38.1	37.1	37.1	37.1	37.1
80°	25.4	25.4	25.4	26.3	25.4	26.3	25.4	26.3
82.5°	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6
85°	8.8	9.8	9.8	8.8	8.8	8.8	8.8	8.8
87.5°	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)