

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: P251931

Luminaire Tested: **LD4B20D010 EU4B10209727 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251931
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 EU4B10209727 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 97CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1249.0 lumens
Efficiency: N/A
Efficacy: 60.0 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

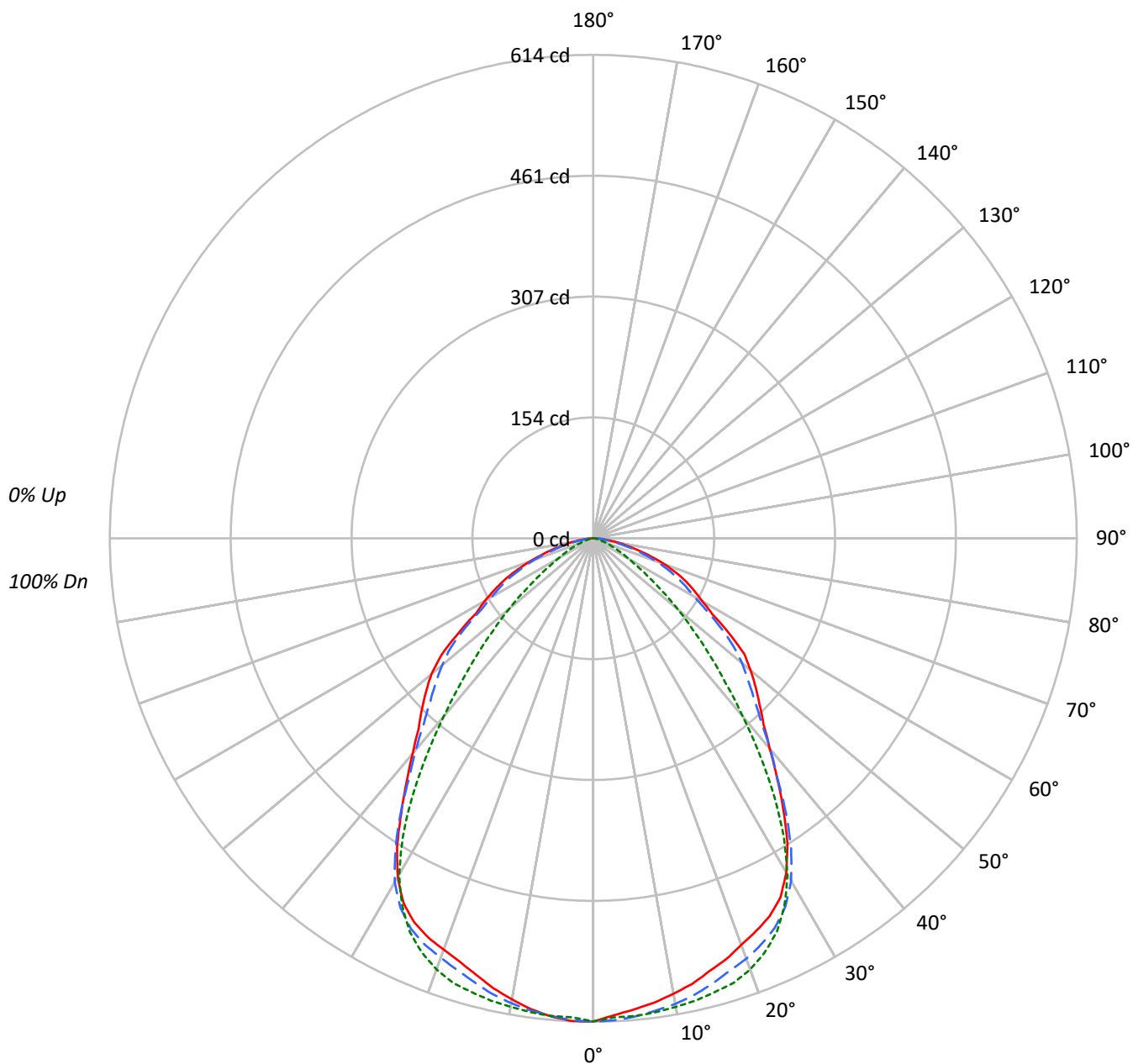
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
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°	59810	59810	59810
5°	58747	59579	59667
10°	58120	59802	58862
15°	57440	60205	57924
20°	56990	60423	57675
25°	56960	59294	57874
30°	55142	55468	55885
35°	50100	47744	50552
40°	44324	37594	45406
45°	41127	28627	42423
50°	39512	21181	40649
55°	35767	14596	35291
60°	31109	9941	30914
65°	30048	7195	28526
70°	27184	4844	24221
75°	22405	3201	19204
80°	18016	2133	14312
85°	14760	1006	9505



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	57.9	4.6
10°-20°	165.6	13.3
20°-30°	250.3	20.0
30°-40°	261.9	21.0
40°-50°	212.1	17.0
50°-60°	154.3	12.4
60°-70°	95.2	7.6
70°-80°	43.0	3.4
80°-90°	8.7	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°	473.8	37.9
0°-40°	735.7	58.9
0°-60°	1102.1	88.2
0°-90°	1249.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1249.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	614	614	614	614	614	
5°	600	610	609	609	610	57
15°	569	585	597	584	574	161
25°	530	546	551	548	538	243
35°	421	427	401	427	425	262
45°	298	289	208	293	308	232
55°	210	197	86	199	208	188
65°	130	117	31	115	124	128
75°	60	51	8	44	51	65
85°	13	10	1	8	8	15
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°	613.7	613.7	613.7	613.7	613.7	613.7	613.7	613.7	613.7	613.7	613.7
2.5°	606.2	606.2	611.8	618.4	612.8	607.1	610.9	609.0	615.6	615.6	612.8
5°	600.5	602.4	607.1	612.8	608.0	602.4	607.1	605.2	611.8	611.8	609.9
7.5°	594.8	595.8	601.4	608.0	603.3	597.7	601.4	600.5	606.2	607.1	605.2
10°	587.3	588.2	593.9	600.5	595.8	591.0	594.8	593.9	601.4	601.4	600.5
12.5°	579.7	580.7	586.3	592.0	587.3	582.6	586.3	586.3	593.9	594.8	593.9
15°	569.3	571.2	575.9	581.6	578.8	573.1	576.9	576.9	583.5	585.4	585.4
17.5°	560.8	561.8	566.5	572.2	568.4	563.7	567.4	567.4	574.1	575.9	575.9
20°	549.5	551.4	556.1	561.8	558.9	555.2	558.0	558.0	565.6	567.4	568.4
22.5°	540.1	542.0	545.7	553.3	548.6	545.7	549.5	548.6	557.1	558.0	558.0
25°	529.7	531.6	536.3	541.0	538.2	535.3	538.2	538.2	544.8	545.7	545.7
27.5°	514.6	515.5	520.2	525.0	522.1	518.3	522.1	521.2	527.8	528.7	527.8
30°	490.0	491.9	493.8	500.4	497.6	494.7	498.5	496.6	503.2	503.2	502.3
32.5°	458.9	458.9	462.6	467.4	463.6	461.7	464.5	465.5	470.2	470.2	467.4
35°	421.1	423.0	425.8	428.7	425.8	423.9	426.8	425.8	431.5	429.6	426.8
37.5°	383.3	384.3	387.1	390.9	387.1	384.3	385.2	384.3	389.0	389.0	384.3
40°	348.4	350.3	352.2	356.0	352.2	350.3	351.2	348.4	354.1	352.2	349.3
42.5°	320.1	321.0	323.8	325.7	322.0	321.0	322.0	320.1	322.9	321.0	315.4
45°	298.4	298.4	299.3	302.1	298.4	297.4	297.4	295.5	298.4	294.6	288.9
47.5°	279.5	280.4	281.4	283.3	280.4	277.6	278.5	274.8	276.6	273.8	266.3
50°	260.6	262.5	263.4	265.3	262.5	260.6	261.5	257.8	257.8	253.0	246.4
52.5°	241.7	242.7	241.7	243.6	241.7	238.9	239.8	236.0	236.0	230.4	223.8
55°	210.5	211.5	212.4	214.3	212.4	209.6	211.5	208.7	208.7	204.9	197.3
57.5°	179.4	180.3	181.3	182.2	182.2	180.3	181.3	179.4	178.4	175.6	170.0
60°	159.6	159.6	159.6	160.5	159.6	158.6	158.6	156.7	156.7	153.0	147.3
62.5°	144.5	145.4	145.4	146.3	145.4	144.5	143.5	141.6	140.7	136.9	132.2
65°	130.3	130.3	129.4	131.2	130.3	129.4	129.4	127.5	125.6	121.8	117.1
67.5°	113.3	114.2	113.3	114.2	114.2	113.3	112.4	110.5	109.5	106.7	101.0
70°	95.4	95.4	95.4	96.3	95.4	95.4	96.3	93.5	92.5	88.8	84.0
72.5°	77.4	78.4	78.4	77.4	78.4	76.5	76.5	76.5	75.5	71.8	67.0
75°	59.5	60.4	60.4	61.4	60.4	59.5	59.5	58.5	57.6	54.8	51.0
77.5°	44.4	44.4	45.3	45.3	45.3	44.4	44.4	42.5	42.5	40.6	36.8
80°	32.1	32.1	31.2	32.1	32.1	31.2	31.2	30.2	30.2	28.3	25.5
82.5°	20.8	21.7	21.7	21.7	21.7	20.8	20.8	20.8	19.8	18.9	17.0
85°	13.2	13.2	13.2	13.2	14.2	13.2	14.2	13.2	13.2	11.3	10.4
87.5°	5.7	5.7	5.7	6.6	6.6	5.7	5.7	5.7	5.7	5.7	4.7
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°	613.7	613.7	613.7	613.7	613.7	613.7	613.7	613.7	613.7	613.7	613.7
2.5°	612.8	613.7	610.9	614.7	611.8	612.8	613.7	612.8	609.0	609.0	619.4
5°	609.0	610.9	608.0	612.8	610.9	610.9	612.8	611.8	608.0	609.0	618.4
7.5°	605.2	608.0	606.2	610.9	608.0	608.0	609.9	609.9	606.2	607.1	615.6
10°	599.5	603.3	602.4	607.1	604.3	604.3	607.1	607.1	603.3	604.3	612.8
12.5°	594.8	598.6	597.7	602.4	600.5	601.4	602.4	604.3	599.5	601.4	609.0
15°	587.3	591.0	591.0	595.8	593.9	595.8	597.7	600.5	596.7	596.7	604.3
17.5°	578.8	583.5	583.5	587.3	587.3	588.2	592.0	594.8	591.0	592.0	598.6
20°	569.3	575.0	575.0	579.7	578.8	580.7	583.5	586.3	582.6	582.6	590.1
22.5°	559.9	564.6	565.6	568.4	568.4	569.3	572.2	574.1	569.3	569.3	576.9
25°	546.7	551.4	552.3	554.2	552.3	552.3	554.2	556.1	551.4	551.4	558.0
27.5°	528.7	533.5	533.5	532.5	530.6	531.6	530.6	531.6	526.8	525.9	532.5
30°	502.3	505.1	505.1	504.2	501.4	501.4	498.5	499.5	492.9	492.9	498.5
32.5°	466.4	469.3	467.4	465.5	461.7	459.8	457.9	457.0	450.4	450.4	457.0
35°	423.9	425.8	423.0	419.2	414.5	411.7	408.8	405.0	400.3	401.3	405.0
37.5°	380.5	380.5	376.7	369.2	365.4	360.7	356.0	356.0	348.4	347.5	350.3
40°	343.7	339.9	333.3	322.9	316.3	311.6	305.0	301.2	295.5	295.5	300.2
42.5°	310.6	303.1	294.6	280.4	273.8	268.1	259.6	255.9	249.3	248.3	251.1
45°	281.4	273.8	261.5	246.4	237.9	231.3	219.0	214.3	208.7	207.7	209.6
47.5°	257.8	249.3	234.2	214.3	205.8	197.3	185.1	178.4	173.7	170.9	173.7
50°	237.0	225.7	209.6	188.8	177.5	170.0	154.8	148.2	141.6	139.7	140.7
52.5°	214.3	203.0	186.0	164.3	153.9	142.6	128.4	119.0	113.3	110.5	113.3
55°	189.8	178.4	161.5	139.7	128.4	118.0	102.9	95.4	88.8	85.9	88.8
57.5°	163.3	153.0	137.8	116.1	105.7	96.3	82.1	74.6	68.0	66.1	68.0
60°	140.7	132.2	117.1	96.3	87.8	77.4	65.1	57.6	51.9	51.0	51.9
62.5°	125.6	116.1	102.0	82.1	73.6	65.1	53.8	46.3	41.5	40.6	41.5
65°	110.5	100.1	86.9	69.9	61.4	54.8	43.4	36.8	32.1	31.2	32.1
67.5°	93.5	84.0	72.7	57.6	51.0	44.4	34.9	28.3	24.5	23.6	24.5
70°	77.4	68.9	57.6	46.3	39.7	34.9	26.4	21.7	17.9	17.0	17.9
72.5°	61.4	53.8	44.4	34.9	31.2	26.4	20.8	16.1	13.2	12.3	13.2
75°	47.2	41.5	34.0	25.5	22.7	19.8	14.2	11.3	9.4	8.5	9.4
77.5°	33.0	29.3	23.6	18.9	16.1	14.2	10.4	7.6	6.6	5.7	6.6
80°	22.7	19.8	16.1	12.3	10.4	8.5	6.6	4.7	3.8	3.8	3.8
82.5°	15.1	12.3	9.4	7.6	6.6	5.7	3.8	2.8	2.8	1.9	1.9
85°	8.5	7.6	5.7	4.7	3.8	2.8	1.9	1.9	0.9	0.9	0.9
87.5°	3.8	2.8	1.9	1.9	0.9	0.9	0.9	0.9	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°	613.7	613.7	613.7	613.7	613.7	613.7	613.7	613.7	613.7	613.7	613.7
2.5°	616.5	613.7	617.5	613.7	611.8	613.7	611.8	617.5	612.8	609.0	612.8
5°	615.6	611.8	615.6	612.8	609.9	610.9	609.0	614.7	609.0	606.2	608.0
7.5°	613.7	610.9	612.8	609.9	607.1	608.0	606.2	610.9	605.2	602.4	604.3
10°	610.9	608.0	609.0	607.1	604.3	604.3	602.4	606.2	599.5	595.8	597.7
12.5°	607.1	603.3	605.2	602.4	598.6	598.6	596.7	599.5	592.9	589.2	590.1
15°	602.4	598.6	598.6	595.8	592.0	592.0	588.2	591.0	583.5	579.7	579.7
17.5°	596.7	592.0	592.0	589.2	584.4	583.5	580.7	583.5	575.0	571.2	571.2
20°	588.2	584.4	583.5	581.6	576.9	575.9	572.2	573.1	566.5	563.7	562.7
22.5°	576.9	573.1	574.1	571.2	567.4	566.5	562.7	565.6	558.9	556.1	557.1
25°	557.1	555.2	557.1	556.1	553.3	553.3	551.4	553.3	547.6	545.7	546.7
27.5°	534.4	533.5	534.4	534.4	532.5	532.5	532.5	535.3	529.7	528.7	528.7
30°	501.4	501.4	502.3	503.2	503.2	505.1	504.2	508.0	504.2	502.3	504.2
32.5°	457.9	461.7	464.5	464.5	464.5	466.4	468.3	471.1	467.4	468.3	468.3
35°	408.8	411.7	413.5	418.3	415.4	422.0	423.9	427.7	426.8	428.7	427.7
37.5°	354.1	357.8	361.6	368.2	367.3	374.8	378.6	386.2	384.3	388.1	389.9
40°	303.1	308.7	314.4	319.1	322.9	330.5	338.0	347.5	350.3	353.1	354.1
42.5°	254.0	259.6	269.1	275.7	281.4	293.6	304.0	315.4	318.2	323.8	325.7
45°	214.3	219.0	230.4	238.9	243.6	261.5	273.8	288.0	292.7	299.3	302.1
47.5°	177.5	186.0	197.3	207.7	214.3	233.2	249.3	264.4	271.0	278.5	282.3
50°	145.4	154.8	170.0	179.4	188.8	209.6	227.5	243.6	250.2	258.7	262.5
52.5°	119.0	129.4	143.5	153.9	164.3	186.0	204.9	220.0	228.5	234.2	239.8
55°	93.5	104.8	119.0	130.3	138.8	162.4	178.4	193.6	199.2	203.9	206.8
57.5°	72.7	81.2	95.4	104.8	115.2	136.0	152.0	163.3	168.1	173.7	175.6
60°	56.7	65.1	78.4	87.8	97.2	117.1	133.1	144.5	149.2	153.9	156.7
62.5°	45.3	53.8	66.1	74.6	83.1	101.0	115.2	126.5	132.2	136.9	139.7
65°	35.9	43.4	53.8	62.3	68.9	85.0	99.1	109.5	115.2	119.9	122.7
67.5°	28.3	34.9	44.4	50.0	56.7	69.9	82.1	91.6	96.3	102.0	104.8
70°	21.7	26.4	34.9	39.7	44.4	55.7	65.1	74.6	79.3	83.1	85.0
72.5°	16.1	19.8	26.4	30.2	33.0	42.5	50.0	56.7	60.4	64.2	66.1
75°	11.3	14.2	18.9	21.7	23.6	30.2	36.8	41.5	44.4	47.2	50.0
77.5°	7.6	9.4	12.3	14.2	16.1	20.8	24.5	28.3	31.2	34.0	34.9
80°	4.7	6.6	8.5	9.4	10.4	13.2	17.0	18.9	20.8	22.7	23.6
82.5°	2.8	3.8	4.7	5.7	6.6	8.5	10.4	12.3	13.2	15.1	16.1
85°	0.9	1.9	1.9	2.8	2.8	4.7	5.7	6.6	7.6	8.5	9.4
87.5°	0.0	0.0	0.9	0.9	0.9	0.9	1.9	1.9	1.9	1.9	1.9
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):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	613.7	613.7	613.7	613.7	613.7	613.7	613.7	613.7
2.5°	616.5	613.7	611.8	610.9	617.5	609.0	612.8	613.7
5°	612.8	609.9	608.0	607.1	612.8	605.2	608.0	609.9
7.5°	607.1	605.2	602.4	601.4	607.1	598.6	602.4	603.3
10°	600.5	597.7	595.8	594.8	599.5	591.0	594.8	594.8
12.5°	592.0	590.1	586.3	586.3	590.1	582.6	585.4	585.4
15°	580.7	578.8	575.0	575.0	578.8	571.2	574.1	574.1
17.5°	571.2	569.3	566.5	565.6	569.3	561.8	564.6	563.7
20°	563.7	561.8	558.0	558.0	560.8	553.3	556.1	556.1
22.5°	557.1	556.1	552.3	552.3	556.1	548.6	550.5	548.6
25°	546.7	545.7	542.0	542.9	544.8	537.2	540.1	538.2
27.5°	529.7	529.7	525.9	525.0	527.8	521.2	523.1	522.1
30°	503.2	504.2	499.5	499.5	500.4	494.7	497.6	496.6
32.5°	467.4	468.3	464.5	463.6	466.4	461.7	463.6	463.6
35°	427.7	428.7	425.8	425.8	428.7	425.8	425.8	424.9
37.5°	388.1	389.9	388.1	389.0	390.9	388.1	389.9	389.0
40°	356.0	357.8	355.0	356.9	358.8	356.0	358.8	356.9
42.5°	326.7	329.5	327.6	329.5	331.4	329.5	331.4	328.6
45°	305.0	306.9	305.9	306.9	308.7	307.8	308.7	307.8
47.5°	284.2	288.0	286.1	288.0	290.8	288.9	290.8	288.0
50°	265.3	268.1	267.2	269.1	270.0	269.1	271.0	268.1
52.5°	240.8	243.6	242.7	242.7	244.5	242.7	244.5	242.7
55°	208.7	209.6	209.6	210.5	209.6	208.7	209.6	207.7
57.5°	177.5	179.4	176.6	179.4	178.4	177.5	177.5	175.6
60°	157.7	160.5	158.6	160.5	159.6	159.6	159.6	158.6
62.5°	141.6	143.5	141.6	142.6	142.6	142.6	141.6	140.7
65°	123.7	126.5	124.6	125.6	124.6	123.7	124.6	123.7
67.5°	105.7	106.7	106.7	105.7	105.7	105.7	105.7	103.9
70°	85.9	86.9	85.9	87.8	86.9	85.9	86.9	85.0
72.5°	67.0	68.0	67.0	68.0	67.0	67.0	67.0	67.0
75°	50.0	51.0	51.0	51.0	51.0	51.0	49.1	51.0
77.5°	35.9	35.9	35.9	36.8	35.9	35.9	35.9	35.9
80°	24.5	24.5	24.5	25.5	24.5	25.5	24.5	25.5
82.5°	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
85°	8.5	9.4	9.4	8.5	8.5	8.5	8.5	8.5
87.5°	1.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
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)