

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: P251909

Luminaire Tested: **LD4B15D010 EU4B10208035 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251909
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 EU4B10208035 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE 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: 1323.0 lumens
Efficiency: N/A
Efficacy: 91.9 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

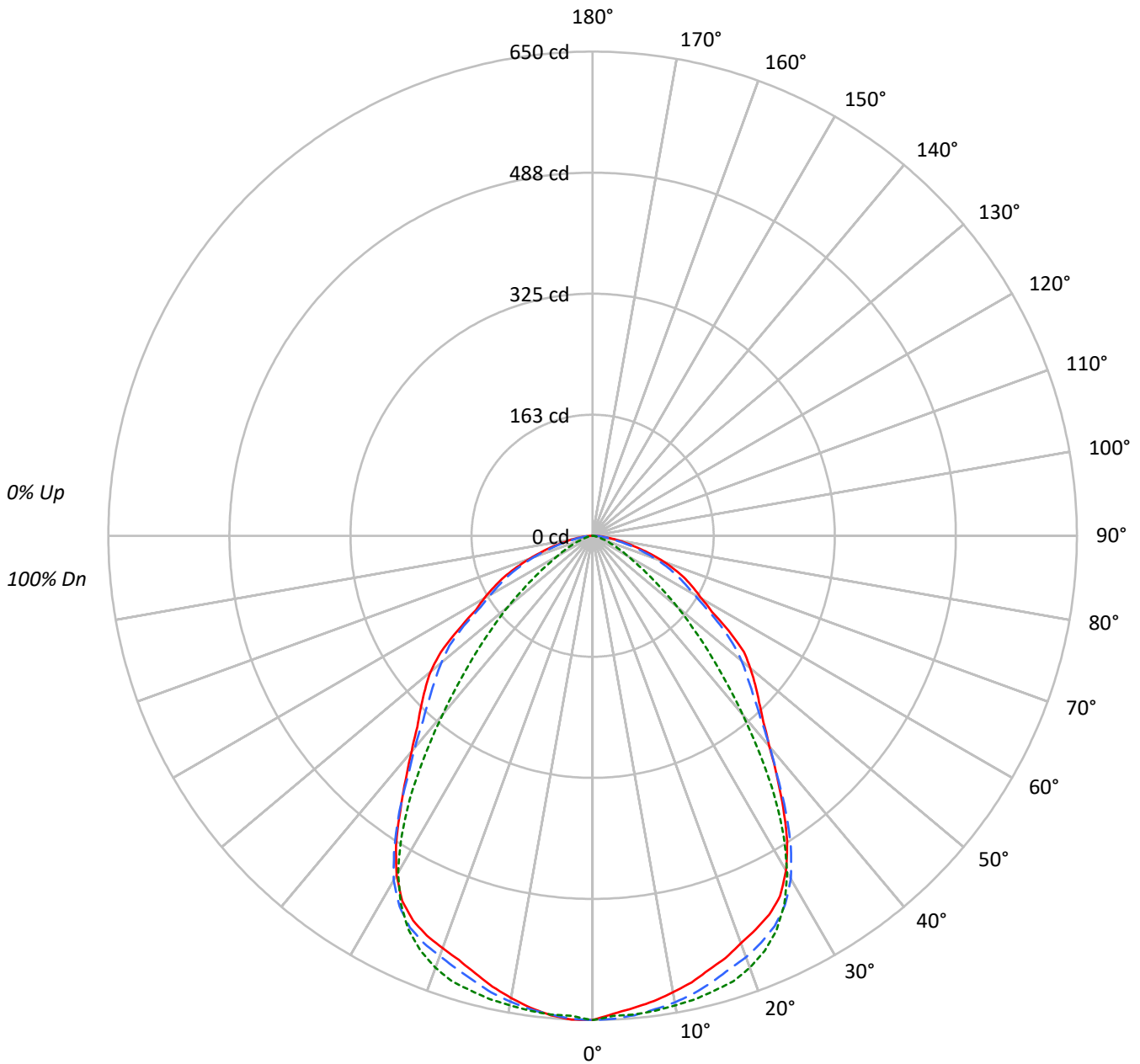
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					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				100				
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88				88				
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76				76				
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66				66				
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58				58				
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51				51				
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46				46				
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41				41				
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37				37				
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34				34				
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31				31				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	63357	63357	63357
5°	62230	63110	63208
10°	61564	63345	62356
15°	60850	63776	61355
20°	60371	64001	61097
25°	60337	62810	61305
30°	58417	58754	59205
35°	53063	50564	53538
40°	46945	39821	48090
45°	43553	30322	44931
50°	41847	22439	43059
55°	37891	15462	37381
60°	32941	10525	32746
65°	31824	7610	30209
70°	28780	5129	25645
75°	23723	3389	20334
80°	19082	2245	15153
85°	15655	1118	10064



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	61.4	4.6
10°-20°	175.5	13.3
20°-30°	265.1	20.0
30°-40°	277.4	21.0
40°-50°	224.7	17.0
50°-60°	163.4	12.4
60°-70°	100.8	7.6
70°-80°	45.5	3.4
80°-90°	9.3	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°	501.9	37.9
0°-40°	779.3	58.9
0°-60°	1167.4	88.2
0°-90°	1323.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1323.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	650	650	650	650	650	
5°	636	646	645	645	646	60
15°	603	620	632	618	608	170
25°	561	578	584	580	570	257
35°	446	452	425	452	450	278
45°	316	306	220	310	326	246
55°	223	209	91	211	220	199
65°	138	124	33	122	131	135
75°	63	54	9	47	54	68
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°	650.1	650.1	650.1	650.1	650.1	650.1	650.1	650.1	650.1	650.1	650.1
2.5°	642.1	642.1	648.1	655.1	649.1	643.1	647.1	645.1	652.1	652.1	649.1
5°	636.1	638.1	643.1	649.1	644.1	638.1	643.1	641.1	648.1	648.1	646.1
7.5°	630.1	631.1	637.1	644.1	639.1	633.1	637.1	636.1	642.1	643.1	641.1
10°	622.1	623.1	629.1	636.1	631.1	626.1	630.1	629.1	637.1	637.1	636.1
12.5°	614.1	615.1	621.1	627.1	622.1	617.1	621.1	621.1	629.1	630.1	629.1
15°	603.1	605.1	610.1	616.1	613.1	607.1	611.1	611.1	618.1	620.1	620.1
17.5°	594.1	595.1	600.1	606.1	602.1	597.1	601.1	601.1	608.1	610.1	610.1
20°	582.1	584.1	589.1	595.1	592.1	588.1	591.1	591.1	599.1	601.1	602.1
22.5°	572.1	574.1	578.1	586.1	581.1	578.1	582.1	581.1	590.1	591.1	591.1
25°	561.1	563.1	568.1	573.1	570.1	567.1	570.1	570.1	577.1	578.1	578.1
27.5°	545.1	546.1	551.1	556.1	553.1	549.1	553.1	552.1	559.1	560.1	559.1
30°	519.1	521.1	523.1	530.1	527.1	524.1	528.1	526.1	533.1	533.1	532.1
32.5°	486.1	486.1	490.1	495.1	491.1	489.1	492.1	493.1	498.1	498.1	495.1
35°	446.0	448.0	451.0	454.0	451.0	449.0	452.0	451.0	457.0	455.0	452.0
37.5°	406.0	407.0	410.0	414.0	410.0	407.0	408.0	407.0	412.0	412.0	407.0
40°	369.0	371.0	373.0	377.0	373.0	371.0	372.0	369.0	375.0	373.0	370.0
42.5°	339.0	340.0	343.0	345.0	341.0	340.0	341.0	339.0	342.0	340.0	334.0
45°	316.0	316.0	317.0	320.0	316.0	315.0	315.0	313.0	316.0	312.0	306.0
47.5°	296.0	297.0	298.0	300.0	297.0	294.0	295.0	291.0	293.0	290.0	282.0
50°	276.0	278.0	279.0	281.0	278.0	276.0	277.0	273.0	273.0	268.0	261.0
52.5°	256.0	257.0	256.0	258.0	256.0	253.0	254.0	250.0	250.0	244.0	237.0
55°	223.0	224.0	225.0	227.0	225.0	222.0	224.0	221.0	221.0	217.0	209.0
57.5°	190.0	191.0	192.0	193.0	193.0	191.0	192.0	190.0	189.0	186.0	180.0
60°	169.0	169.0	169.0	170.0	169.0	168.0	168.0	166.0	166.0	162.0	156.0
62.5°	153.0	154.0	154.0	155.0	154.0	153.0	152.0	150.0	149.0	145.0	140.0
65°	138.0	138.0	137.0	139.0	138.0	137.0	137.0	135.0	133.0	129.0	124.0
67.5°	120.0	121.0	120.0	121.0	121.0	120.0	119.0	117.0	116.0	113.0	107.0
70°	101.0	101.0	101.0	102.0	101.0	101.0	102.0	99.0	98.0	94.0	89.0
72.5°	82.0	83.0	83.0	82.0	83.0	81.0	81.0	81.0	80.0	76.0	71.0
75°	63.0	64.0	64.0	65.0	64.0	63.0	63.0	62.0	61.0	58.0	54.0
77.5°	47.0	47.0	48.0	48.0	48.0	47.0	47.0	45.0	45.0	43.0	39.0
80°	34.0	34.0	33.0	34.0	34.0	33.0	33.0	32.0	32.0	30.0	27.0
82.5°	22.0	23.0	23.0	23.0	23.0	22.0	22.0	22.0	21.0	20.0	18.0
85°	14.0	14.0	14.0	14.0	15.0	14.0	15.0	14.0	14.0	12.0	11.0
87.5°	6.0	6.0	6.0	7.0	7.0	6.0	6.0	6.0	6.0	6.0	5.0
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°	650.1	650.1	650.1	650.1	650.1	650.1	650.1	650.1	650.1	650.1	650.1
2.5°	649.1	650.1	647.1	651.1	648.1	649.1	650.1	649.1	645.1	645.1	656.1
5°	645.1	647.1	644.1	649.1	647.1	647.1	649.1	648.1	644.1	645.1	655.1
7.5°	641.1	644.1	642.1	647.1	644.1	644.1	646.1	646.1	642.1	643.1	652.1
10°	635.1	639.1	638.1	643.1	640.1	640.1	643.1	643.1	639.1	640.1	649.1
12.5°	630.1	634.1	633.1	638.1	636.1	637.1	638.1	640.1	635.1	637.1	645.1
15°	622.1	626.1	626.1	631.1	629.1	631.1	633.1	636.1	632.1	632.1	640.1
17.5°	613.1	618.1	618.1	622.1	622.1	623.1	627.1	630.1	626.1	627.1	634.1
20°	603.1	609.1	609.1	614.1	613.1	615.1	618.1	621.1	617.1	617.1	625.1
22.5°	593.1	598.1	599.1	602.1	602.1	603.1	606.1	608.1	603.1	603.1	611.1
25°	579.1	584.1	585.1	587.1	585.1	585.1	587.1	589.1	584.1	584.1	591.1
27.5°	560.1	565.1	565.1	564.1	562.1	563.1	562.1	563.1	558.1	557.1	564.1
30°	532.1	535.1	535.1	534.1	531.1	531.1	528.1	529.1	522.1	522.1	528.1
32.5°	494.1	497.1	495.1	493.1	489.1	487.1	485.1	484.1	477.1	477.1	484.1
35°	449.0	451.0	448.0	444.0	439.0	436.0	433.0	429.0	424.0	425.0	429.0
37.5°	403.0	403.0	399.0	391.0	387.0	382.0	377.0	377.0	369.0	368.0	371.0
40°	364.0	360.0	353.0	342.0	335.0	330.0	323.0	319.0	313.0	313.0	318.0
42.5°	329.0	321.0	312.0	297.0	290.0	284.0	275.0	271.0	264.0	263.0	266.0
45°	298.0	290.0	277.0	261.0	252.0	245.0	232.0	227.0	221.0	220.0	222.0
47.5°	273.0	264.0	248.0	227.0	218.0	209.0	196.0	189.0	184.0	181.0	184.0
50°	251.0	239.0	222.0	200.0	188.0	180.0	164.0	157.0	150.0	148.0	149.0
52.5°	227.0	215.0	197.0	174.0	163.0	151.0	136.0	126.0	120.0	117.0	120.0
55°	201.0	189.0	171.0	148.0	136.0	125.0	109.0	101.0	94.0	91.0	94.0
57.5°	173.0	162.0	146.0	123.0	112.0	102.0	87.0	79.0	72.0	70.0	72.0
60°	149.0	140.0	124.0	102.0	93.0	82.0	69.0	61.0	55.0	54.0	55.0
62.5°	133.0	123.0	108.0	87.0	78.0	69.0	57.0	49.0	44.0	43.0	44.0
65°	117.0	106.0	92.0	74.0	65.0	58.0	46.0	39.0	34.0	33.0	34.0
67.5°	99.0	89.0	77.0	61.0	54.0	47.0	37.0	30.0	26.0	25.0	26.0
70°	82.0	73.0	61.0	49.0	42.0	37.0	28.0	23.0	19.0	18.0	19.0
72.5°	65.0	57.0	47.0	37.0	33.0	28.0	22.0	17.0	14.0	13.0	14.0
75°	50.0	44.0	36.0	27.0	24.0	21.0	15.0	12.0	10.0	9.0	10.0
77.5°	35.0	31.0	25.0	20.0	17.0	15.0	11.0	8.0	7.0	6.0	7.0
80°	24.0	21.0	17.0	13.0	11.0	9.0	7.0	5.0	4.0	4.0	4.0
82.5°	16.0	13.0	10.0	8.0	7.0	6.0	4.0	3.0	3.0	2.0	2.0
85°	9.0	8.0	6.0	5.0	4.0	3.0	2.0	2.0	1.0	1.0	1.0
87.5°	4.0	3.0	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°	650.1	650.1	650.1	650.1	650.1	650.1	650.1	650.1	650.1	650.1	650.1
2.5°	653.1	650.1	654.1	650.1	648.1	650.1	648.1	654.1	649.1	645.1	649.1
5°	652.1	648.1	652.1	649.1	646.1	647.1	645.1	651.1	645.1	642.1	644.1
7.5°	650.1	647.1	649.1	646.1	643.1	644.1	642.1	647.1	641.1	638.1	640.1
10°	647.1	644.1	645.1	643.1	640.1	640.1	638.1	642.1	635.1	631.1	633.1
12.5°	643.1	639.1	641.1	638.1	634.1	634.1	632.1	635.1	628.1	624.1	625.1
15°	638.1	634.1	634.1	631.1	627.1	627.1	623.1	626.1	618.1	614.1	614.1
17.5°	632.1	627.1	627.1	624.1	619.1	618.1	615.1	618.1	609.1	605.1	605.1
20°	623.1	619.1	618.1	616.1	611.1	610.1	606.1	607.1	600.1	597.1	596.1
22.5°	611.1	607.1	608.1	605.1	601.1	600.1	596.1	599.1	592.1	589.1	590.1
25°	590.1	588.1	590.1	589.1	586.1	586.1	584.1	586.1	580.1	578.1	579.1
27.5°	566.1	565.1	566.1	566.1	564.1	564.1	564.1	567.1	561.1	560.1	560.1
30°	531.1	531.1	532.1	533.1	533.1	535.1	534.1	538.1	534.1	532.1	534.1
32.5°	485.1	489.1	492.1	492.1	492.1	494.1	496.1	499.1	495.1	496.1	496.1
35°	433.0	436.0	438.0	443.0	440.0	447.0	449.0	453.0	452.0	454.0	453.0
37.5°	375.0	379.0	383.0	390.0	389.0	397.0	401.0	409.0	407.0	411.0	413.0
40°	321.0	327.0	333.0	338.0	342.0	350.0	358.0	368.0	371.0	374.0	375.0
42.5°	269.0	275.0	285.0	292.0	298.0	311.0	322.0	334.0	337.0	343.0	345.0
45°	227.0	232.0	244.0	253.0	258.0	277.0	290.0	305.0	310.0	317.0	320.0
47.5°	188.0	197.0	209.0	220.0	227.0	247.0	264.0	280.0	287.0	295.0	299.0
50°	154.0	164.0	180.0	190.0	200.0	222.0	241.0	258.0	265.0	274.0	278.0
52.5°	126.0	137.0	152.0	163.0	174.0	197.0	217.0	233.0	242.0	248.0	254.0
55°	99.0	111.0	126.0	138.0	147.0	172.0	189.0	205.0	211.0	216.0	219.0
57.5°	77.0	86.0	101.0	111.0	122.0	144.0	161.0	173.0	178.0	184.0	186.0
60°	60.0	69.0	83.0	93.0	103.0	124.0	141.0	153.0	158.0	163.0	166.0
62.5°	48.0	57.0	70.0	79.0	88.0	107.0	122.0	134.0	140.0	145.0	148.0
65°	38.0	46.0	57.0	66.0	73.0	90.0	105.0	116.0	122.0	127.0	130.0
67.5°	30.0	37.0	47.0	53.0	60.0	74.0	87.0	97.0	102.0	108.0	111.0
70°	23.0	28.0	37.0	42.0	47.0	59.0	69.0	79.0	84.0	88.0	90.0
72.5°	17.0	21.0	28.0	32.0	35.0	45.0	53.0	60.0	64.0	68.0	70.0
75°	12.0	15.0	20.0	23.0	25.0	32.0	39.0	44.0	47.0	50.0	53.0
77.5°	8.0	10.0	13.0	15.0	17.0	22.0	26.0	30.0	33.0	36.0	37.0
80°	5.0	7.0	9.0	10.0	11.0	14.0	18.0	20.0	22.0	24.0	25.0
82.5°	3.0	4.0	5.0	6.0	7.0	9.0	11.0	13.0	14.0	16.0	17.0
85°	1.0	2.0	2.0	3.0	3.0	5.0	6.0	7.0	8.0	9.0	10.0
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°	650.1	650.1	650.1	650.1	650.1	650.1	650.1	650.1
2.5°	653.1	650.1	648.1	647.1	654.1	645.1	649.1	650.1
5°	649.1	646.1	644.1	643.1	649.1	641.1	644.1	646.1
7.5°	643.1	641.1	638.1	637.1	643.1	634.1	638.1	639.1
10°	636.1	633.1	631.1	630.1	635.1	626.1	630.1	630.1
12.5°	627.1	625.1	621.1	621.1	625.1	617.1	620.1	620.1
15°	615.1	613.1	609.1	609.1	613.1	605.1	608.1	608.1
17.5°	605.1	603.1	600.1	599.1	603.1	595.1	598.1	597.1
20°	597.1	595.1	591.1	591.1	594.1	586.1	589.1	589.1
22.5°	590.1	589.1	585.1	585.1	589.1	581.1	583.1	581.1
25°	579.1	578.1	574.1	575.1	577.1	569.1	572.1	570.1
27.5°	561.1	561.1	557.1	556.1	559.1	552.1	554.1	553.1
30°	533.1	534.1	529.1	529.1	530.1	524.1	527.1	526.1
32.5°	495.1	496.1	492.1	491.1	494.1	489.1	491.1	491.1
35°	453.0	454.0	451.0	451.0	454.0	451.0	451.0	450.0
37.5°	411.0	413.0	411.0	412.0	414.0	411.0	413.0	412.0
40°	377.0	379.0	376.0	378.0	380.0	377.0	380.0	378.0
42.5°	346.0	349.0	347.0	349.0	351.0	349.0	351.0	348.0
45°	323.0	325.0	324.0	325.0	327.0	326.0	327.0	326.0
47.5°	301.0	305.0	303.0	305.0	308.0	306.0	308.0	305.0
50°	281.0	284.0	283.0	285.0	286.0	285.0	287.0	284.0
52.5°	255.0	258.0	257.0	257.0	259.0	257.0	259.0	257.0
55°	221.0	222.0	222.0	223.0	222.0	221.0	222.0	220.0
57.5°	188.0	190.0	187.0	190.0	189.0	188.0	188.0	186.0
60°	167.0	170.0	168.0	170.0	169.0	169.0	169.0	168.0
62.5°	150.0	152.0	150.0	151.0	151.0	151.0	150.0	149.0
65°	131.0	134.0	132.0	133.0	132.0	131.0	132.0	131.0
67.5°	112.0	113.0	113.0	112.0	112.0	112.0	112.0	110.0
70°	91.0	92.0	91.0	93.0	92.0	91.0	92.0	90.0
72.5°	71.0	72.0	71.0	72.0	71.0	71.0	71.0	71.0
75°	53.0	54.0	54.0	54.0	54.0	54.0	52.0	54.0
77.5°	38.0	38.0	38.0	39.0	38.0	38.0	38.0	38.0
80°	26.0	26.0	26.0	27.0	26.0	27.0	26.0	27.0
82.5°	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
85°	9.0	10.0	10.0	9.0	9.0	9.0	9.0	9.0
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)