

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: P251896

Luminaire Tested: **LD4B10D010 EU4B10208035 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251896
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: LD4B10D010 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: 950.0 lumens
Efficiency: N/A
Efficacy: 94.5 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

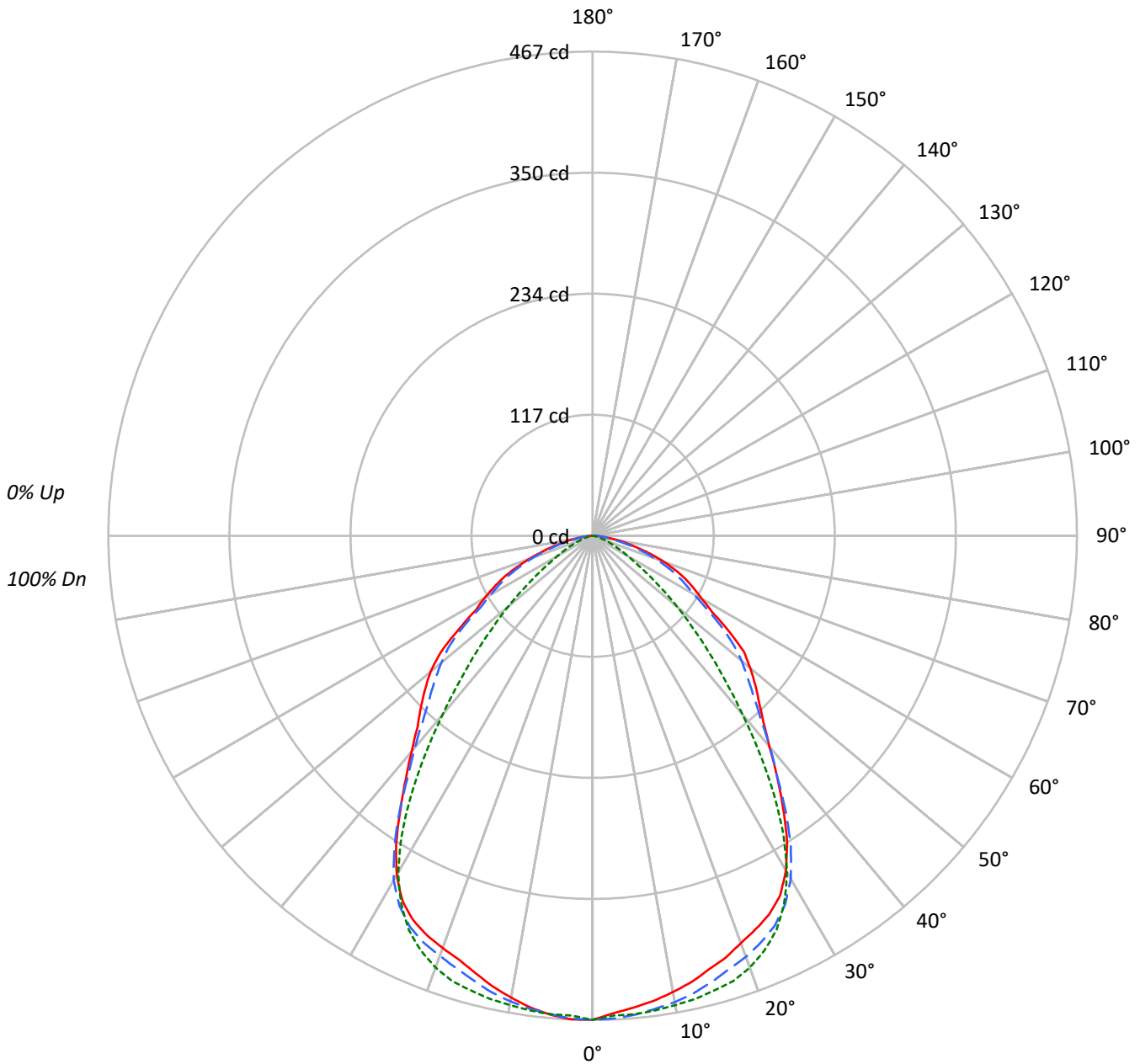
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	45493	45493	45493
5°	44679	45315	45384
10°	44206	45483	44770
15°	43688	45797	44051
20°	43352	45955	43870
25°	43325	45099	44013
30°	41942	42189	42504
35°	38107	36311	38453
40°	33714	28600	34541
45°	31273	21777	32265
50°	30051	16117	30930
55°	27203	11112	26846
60°	23663	7563	23507
65°	22853	5465	21700
70°	20659	3676	18408
75°	17020	2448	14610
80°	13694	1628	10888
85°	11294	783	7268



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	44.1	4.6
10°-20°	126.0	13.3
20°-30°	190.3	20.0
30°-40°	199.2	21.0
40°-50°	161.3	17.0
50°-60°	117.3	12.4
60°-70°	72.4	7.6
70°-80°	32.7	3.4
80°-90°	6.6	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°	360.4	37.9
0°-40°	559.6	58.9
0°-60°	838.3	88.2
0°-90°	950.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	950.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	467	467	467	467	467	
5°	457	464	463	463	464	43
15°	433	445	454	444	437	122
25°	403	415	419	416	409	185
35°	320	325	305	325	323	200
45°	227	220	158	223	234	176
55°	160	150	65	152	158	143
65°	99	89	24	88	94	97
75°	45	39	6	34	39	49
85°	10	8	1	6	6	12
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°	466.8	466.8	466.8	466.8	466.8	466.8	466.8	466.8	466.8	466.8	466.8
2.5°	461.0	461.0	465.4	470.4	466.1	461.8	464.6	463.2	468.2	468.2	466.1
5°	456.7	458.2	461.8	466.1	462.5	458.2	461.8	460.3	465.4	465.4	463.9
7.5°	452.4	453.1	457.5	462.5	458.9	454.6	457.5	456.7	461.0	461.8	460.3
10°	446.7	447.4	451.7	456.7	453.1	449.6	452.4	451.7	457.5	457.5	456.7
12.5°	440.9	441.7	446.0	450.3	446.7	443.1	446.0	446.0	451.7	452.4	451.7
15°	433.0	434.5	438.1	442.4	440.2	435.9	438.8	438.8	443.8	445.2	445.2
17.5°	426.6	427.3	430.9	435.2	432.3	428.7	431.6	431.6	436.6	438.1	438.1
20°	418.0	419.4	423.0	427.3	425.1	422.3	424.4	424.4	430.2	431.6	432.3
22.5°	410.8	412.2	415.1	420.8	417.2	415.1	418.0	417.2	423.7	424.4	424.4
25°	402.9	404.3	407.9	411.5	409.3	407.2	409.3	409.3	414.4	415.1	415.1
27.5°	391.4	392.1	395.7	399.3	397.1	394.3	397.1	396.4	401.4	402.2	401.4
30°	372.7	374.2	375.6	380.6	378.5	376.3	379.2	377.7	382.8	382.8	382.1
32.5°	349.0	349.0	351.9	355.5	352.6	351.2	353.3	354.0	357.6	357.6	355.5
35°	320.3	321.7	323.9	326.0	323.9	322.4	324.6	323.9	328.2	326.8	324.6
37.5°	291.6	292.3	294.4	297.3	294.4	292.3	293.0	292.3	295.9	295.9	292.3
40°	265.0	266.4	267.9	270.7	267.9	266.4	267.1	265.0	269.3	267.9	265.7
42.5°	243.5	244.2	246.3	247.8	244.9	244.2	244.9	243.5	245.6	244.2	239.9
45°	226.9	226.9	227.7	229.8	226.9	226.2	226.2	224.8	226.9	224.1	219.8
47.5°	212.6	213.3	214.0	215.4	213.3	211.1	211.9	209.0	210.4	208.3	202.5
50°	198.2	199.6	200.4	201.8	199.6	198.2	198.9	196.1	196.1	192.5	187.4
52.5°	183.8	184.6	183.8	185.3	183.8	181.7	182.4	179.5	179.5	175.2	170.2
55°	160.1	160.9	161.6	163.0	161.6	159.4	160.9	158.7	158.7	155.8	150.1
57.5°	136.4	137.2	137.9	138.6	138.6	137.2	137.9	136.4	135.7	133.6	129.3
60°	121.4	121.4	121.4	122.1	121.4	120.6	120.6	119.2	119.2	116.3	112.0
62.5°	109.9	110.6	110.6	111.3	110.6	109.9	109.2	107.7	107.0	104.1	100.5
65°	99.1	99.1	98.4	99.8	99.1	98.4	98.4	96.9	95.5	92.6	89.0
67.5°	86.2	86.9	86.2	86.9	86.9	86.2	85.5	84.0	83.3	81.2	76.8
70°	72.5	72.5	72.5	73.3	72.5	72.5	73.3	71.1	70.4	67.5	63.9
72.5°	58.9	59.6	59.6	58.9	59.6	58.2	58.2	58.2	57.5	54.6	51.0
75°	45.2	46.0	46.0	46.7	46.0	45.2	45.2	44.5	43.8	41.7	38.8
77.5°	33.8	33.8	34.5	34.5	34.5	33.8	33.8	32.3	32.3	30.9	28.0
80°	24.4	24.4	23.7	24.4	24.4	23.7	23.7	23.0	23.0	21.5	19.4
82.5°	15.8	16.5	16.5	16.5	16.5	15.8	15.8	15.8	15.1	14.4	12.9
85°	10.1	10.1	10.1	10.1	10.8	10.1	10.8	10.1	10.1	8.6	7.9
87.5°	4.3	4.3	4.3	5.0	5.0	4.3	4.3	4.3	4.3	4.3	3.6
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°	466.8	466.8	466.8	466.8	466.8	466.8	466.8	466.8	466.8	466.8	466.8
2.5°	466.1	466.8	464.6	467.5	465.4	466.1	466.8	466.1	463.2	463.2	471.1
5°	463.2	464.6	462.5	466.1	464.6	464.6	466.1	465.4	462.5	463.2	470.4
7.5°	460.3	462.5	461.0	464.6	462.5	462.5	463.9	463.9	461.0	461.8	468.2
10°	456.0	458.9	458.2	461.8	459.6	459.6	461.8	461.8	458.9	459.6	466.1
12.5°	452.4	455.3	454.6	458.2	456.7	457.5	458.2	459.6	456.0	457.5	463.2
15°	446.7	449.6	449.6	453.1	451.7	453.1	454.6	456.7	453.9	453.9	459.6
17.5°	440.2	443.8	443.8	446.7	446.7	447.4	450.3	452.4	449.6	450.3	455.3
20°	433.0	437.3	437.3	440.9	440.2	441.7	443.8	446.0	443.1	443.1	448.8
22.5°	425.9	429.4	430.2	432.3	432.3	433.0	435.2	436.6	433.0	433.0	438.8
25°	415.8	419.4	420.1	421.5	420.1	420.1	421.5	423.0	419.4	419.4	424.4
27.5°	402.2	405.8	405.8	405.0	403.6	404.3	403.6	404.3	400.7	400.0	405.0
30°	382.1	384.2	384.2	383.5	381.3	381.3	379.2	379.9	374.9	374.9	379.2
32.5°	354.8	356.9	355.5	354.0	351.2	349.7	348.3	347.6	342.6	342.6	347.6
35°	322.4	323.9	321.7	318.9	315.3	313.1	311.0	308.1	304.5	305.2	308.1
37.5°	289.4	289.4	286.5	280.8	277.9	274.3	270.7	270.7	265.0	264.3	266.4
40°	261.4	258.5	253.5	245.6	240.6	237.0	232.0	229.1	224.8	224.8	228.4
42.5°	236.3	230.5	224.1	213.3	208.3	204.0	197.5	194.6	189.6	188.9	191.0
45°	214.0	208.3	198.9	187.4	181.0	175.9	166.6	163.0	158.7	158.0	159.4
47.5°	196.1	189.6	178.1	163.0	156.6	150.1	140.8	135.7	132.1	130.0	132.1
50°	180.3	171.6	159.4	143.6	135.0	129.3	117.8	112.7	107.7	106.3	107.0
52.5°	163.0	154.4	141.5	125.0	117.1	108.4	97.7	90.5	86.2	84.0	86.2
55°	144.3	135.7	122.8	106.3	97.7	89.8	78.3	72.5	67.5	65.4	67.5
57.5°	124.2	116.3	104.8	88.3	80.4	73.3	62.5	56.7	51.7	50.3	51.7
60°	107.0	100.5	89.0	73.3	66.8	58.9	49.6	43.8	39.5	38.8	39.5
62.5°	95.5	88.3	77.6	62.5	56.0	49.6	40.9	35.2	31.6	30.9	31.6
65°	84.0	76.1	66.1	53.1	46.7	41.7	33.0	28.0	24.4	23.7	24.4
67.5°	71.1	63.9	55.3	43.8	38.8	33.8	26.6	21.5	18.7	18.0	18.7
70°	58.9	52.4	43.8	35.2	30.2	26.6	20.1	16.5	13.6	12.9	13.6
72.5°	46.7	40.9	33.8	26.6	23.7	20.1	15.8	12.2	10.1	9.3	10.1
75°	35.9	31.6	25.9	19.4	17.2	15.1	10.8	8.6	7.2	6.5	7.2
77.5°	25.1	22.3	18.0	14.4	12.2	10.8	7.9	5.7	5.0	4.3	5.0
80°	17.2	15.1	12.2	9.3	7.9	6.5	5.0	3.6	2.9	2.9	2.9
82.5°	11.5	9.3	7.2	5.7	5.0	4.3	2.9	2.2	2.2	1.4	1.4
85°	6.5	5.7	4.3	3.6	2.9	2.2	1.4	1.4	0.7	0.7	0.7
87.5°	2.9	2.2	1.4	1.4	0.7	0.7	0.7	0.7	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°	466.8	466.8	466.8	466.8	466.8	466.8	466.8	466.8	466.8	466.8	466.8
2.5°	468.9	466.8	469.7	466.8	465.4	466.8	465.4	469.7	466.1	463.2	466.1
5°	468.2	465.4	468.2	466.1	463.9	464.6	463.2	467.5	463.2	461.0	462.5
7.5°	466.8	464.6	466.1	463.9	461.8	462.5	461.0	464.6	460.3	458.2	459.6
10°	464.6	462.5	463.2	461.8	459.6	459.6	458.2	461.0	456.0	453.1	454.6
12.5°	461.8	458.9	460.3	458.2	455.3	455.3	453.9	456.0	451.0	448.1	448.8
15°	458.2	455.3	455.3	453.1	450.3	450.3	447.4	449.6	443.8	440.9	440.9
17.5°	453.9	450.3	450.3	448.1	444.5	443.8	441.7	443.8	437.3	434.5	434.5
20°	447.4	444.5	443.8	442.4	438.8	438.1	435.2	435.9	430.9	428.7	428.0
22.5°	438.8	435.9	436.6	434.5	431.6	430.9	428.0	430.2	425.1	423.0	423.7
25°	423.7	422.3	423.7	423.0	420.8	420.8	419.4	420.8	416.5	415.1	415.8
27.5°	406.5	405.8	406.5	406.5	405.0	405.0	405.0	407.2	402.9	402.2	402.2
30°	381.3	381.3	382.1	382.8	382.8	384.2	383.5	386.4	383.5	382.1	383.5
32.5°	348.3	351.2	353.3	353.3	353.3	354.8	356.2	358.4	355.5	356.2	356.2
35°	311.0	313.1	314.5	318.1	316.0	321.0	322.4	325.3	324.6	326.0	325.3
37.5°	269.3	272.2	275.0	280.1	279.4	285.1	288.0	293.7	292.3	295.2	296.6
40°	230.5	234.8	239.1	242.7	245.6	251.4	257.1	264.3	266.4	268.6	269.3
42.5°	193.2	197.5	204.7	209.7	214.0	223.3	231.2	239.9	242.0	246.3	247.8
45°	163.0	166.6	175.2	181.7	185.3	198.9	208.3	219.0	222.6	227.7	229.8
47.5°	135.0	141.5	150.1	158.0	163.0	177.4	189.6	201.1	206.1	211.9	214.7
50°	110.6	117.8	129.3	136.4	143.6	159.4	173.1	185.3	190.3	196.8	199.6
52.5°	90.5	98.4	109.2	117.1	125.0	141.5	155.8	167.3	173.8	178.1	182.4
55°	71.1	79.7	90.5	99.1	105.6	123.5	135.7	147.2	151.5	155.1	157.3
57.5°	55.3	61.8	72.5	79.7	87.6	103.4	115.6	124.2	127.8	132.1	133.6
60°	43.1	49.6	59.6	66.8	74.0	89.0	101.3	109.9	113.5	117.1	119.2
62.5°	34.5	40.9	50.3	56.7	63.2	76.8	87.6	96.2	100.5	104.1	106.3
65°	27.3	33.0	40.9	47.4	52.4	64.6	75.4	83.3	87.6	91.2	93.4
67.5°	21.5	26.6	33.8	38.1	43.1	53.1	62.5	69.7	73.3	77.6	79.7
70°	16.5	20.1	26.6	30.2	33.8	42.4	49.6	56.7	60.3	63.2	64.6
72.5°	12.2	15.1	20.1	23.0	25.1	32.3	38.1	43.1	46.0	48.8	50.3
75°	8.6	10.8	14.4	16.5	18.0	23.0	28.0	31.6	33.8	35.9	38.1
77.5°	5.7	7.2	9.3	10.8	12.2	15.8	18.7	21.5	23.7	25.9	26.6
80°	3.6	5.0	6.5	7.2	7.9	10.1	12.9	14.4	15.8	17.2	18.0
82.5°	2.2	2.9	3.6	4.3	5.0	6.5	7.9	9.3	10.1	11.5	12.2
85°	0.7	1.4	1.4	2.2	2.2	3.6	4.3	5.0	5.7	6.5	7.2
87.5°	0.0	0.0	0.7	0.7	0.7	0.7	1.4	1.4	1.4	1.4	1.4
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°	466.8	466.8	466.8	466.8	466.8	466.8	466.8	466.8
2.5°	468.9	466.8	465.4	464.6	469.7	463.2	466.1	466.8
5°	466.1	463.9	462.5	461.8	466.1	460.3	462.5	463.9
7.5°	461.8	460.3	458.2	457.5	461.8	455.3	458.2	458.9
10°	456.7	454.6	453.1	452.4	456.0	449.6	452.4	452.4
12.5°	450.3	448.8	446.0	446.0	448.8	443.1	445.2	445.2
15°	441.7	440.2	437.3	437.3	440.2	434.5	436.6	436.6
17.5°	434.5	433.0	430.9	430.2	433.0	427.3	429.4	428.7
20°	428.7	427.3	424.4	424.4	426.6	420.8	423.0	423.0
22.5°	423.7	423.0	420.1	420.1	423.0	417.2	418.7	417.2
25°	415.8	415.1	412.2	412.9	414.4	408.6	410.8	409.3
27.5°	402.9	402.9	400.0	399.3	401.4	396.4	397.9	397.1
30°	382.8	383.5	379.9	379.9	380.6	376.3	378.5	377.7
32.5°	355.5	356.2	353.3	352.6	354.8	351.2	352.6	352.6
35°	325.3	326.0	323.9	323.9	326.0	323.9	323.9	323.2
37.5°	295.2	296.6	295.2	295.9	297.3	295.2	296.6	295.9
40°	270.7	272.2	270.0	271.5	272.9	270.7	272.9	271.5
42.5°	248.5	250.6	249.2	250.6	252.1	250.6	252.1	249.9
45°	232.0	233.4	232.7	233.4	234.8	234.1	234.8	234.1
47.5°	216.2	219.0	217.6	219.0	221.2	219.8	221.2	219.0
50°	201.8	204.0	203.2	204.7	205.4	204.7	206.1	204.0
52.5°	183.1	185.3	184.6	184.6	186.0	184.6	186.0	184.6
55°	158.7	159.4	159.4	160.1	159.4	158.7	159.4	158.0
57.5°	135.0	136.4	134.3	136.4	135.7	135.0	135.0	133.6
60°	119.9	122.1	120.6	122.1	121.4	121.4	121.4	120.6
62.5°	107.7	109.2	107.7	108.4	108.4	108.4	107.7	107.0
65°	94.1	96.2	94.8	95.5	94.8	94.1	94.8	94.1
67.5°	80.4	81.2	81.2	80.4	80.4	80.4	80.4	79.0
70°	65.4	66.1	65.4	66.8	66.1	65.4	66.1	64.6
72.5°	51.0	51.7	51.0	51.7	51.0	51.0	51.0	51.0
75°	38.1	38.8	38.8	38.8	38.8	38.8	37.3	38.8
77.5°	27.3	27.3	27.3	28.0	27.3	27.3	27.3	27.3
80°	18.7	18.7	18.7	19.4	18.7	19.4	18.7	19.4
82.5°	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2
85°	6.5	7.2	7.2	6.5	6.5	6.5	6.5	6.5
87.5°	1.4	0.7	0.7	0.7	0.7	0.7	0.7	0.7
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)