

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: P251894

Luminaire Tested: **LD4B10D010 EU4B10208027 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251894
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 EU4B10208027 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 887.0 lumens
Efficiency: N/A
Efficacy: 88.3 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

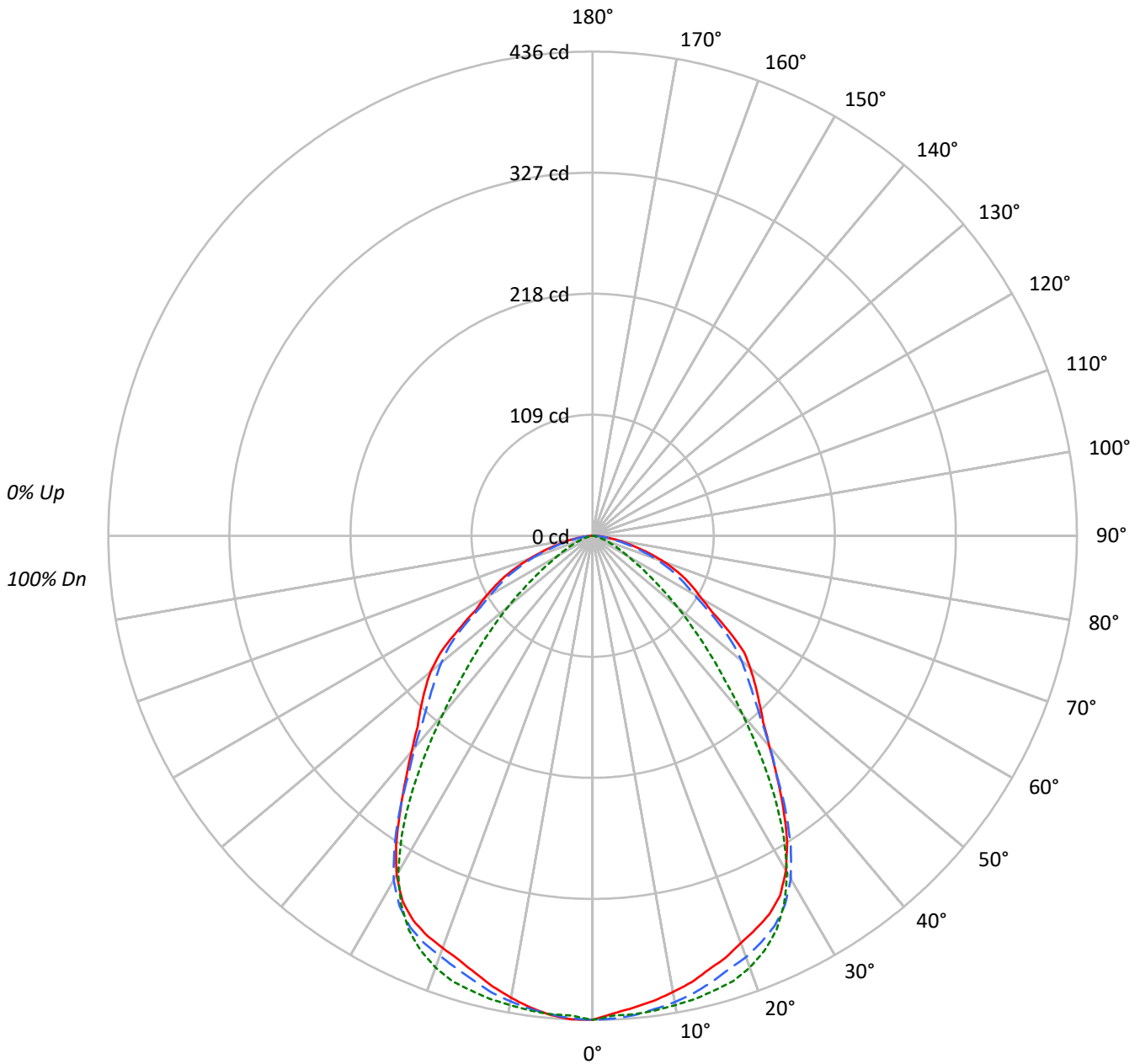
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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°	42472	42472	42472
5°	41715	42312	42380
10°	41277	42464	41801
15°	40792	42760	41135
20°	40469	42906	40956
25°	40454	42110	41099
30°	39162	39387	39691
35°	35585	33908	35895
40°	31475	26704	32251
45°	29205	20329	30129
50°	28064	15040	28868
55°	25402	10365	25062
60°	22084	7056	21948
65°	21331	5096	20247
70°	19291	3448	17182
75°	15890	2259	13631
80°	12796	1515	10158
85°	10511	783	6709



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	41.1	4.6
10°-20°	117.6	13.3
20°-30°	177.7	20.0
30°-40°	186.0	21.0
40°-50°	150.6	17.0
50°-60°	109.6	12.4
60°-70°	67.6	7.6
70°-80°	30.5	3.4
80°-90°	6.2	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°	336.5	37.9
0°-40°	522.5	58.9
0°-60°	782.7	88.2
0°-90°	887.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	887.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	436	436	436	436	436	
5°	426	433	432	432	433	40
15°	404	416	424	414	408	114
25°	376	388	392	389	382	172
35°	299	303	285	303	302	186
45°	212	205	148	208	219	165
55°	150	140	61	142	148	133
65°	92	83	22	82	88	91
75°	42	36	6	32	36	46
85°	9	7	1	5	6	11
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°	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8
2.5°	430.5	430.5	434.5	439.2	435.2	431.1	433.8	432.5	437.2	437.2	435.2
5°	426.4	427.8	431.1	435.2	431.8	427.8	431.1	429.8	434.5	434.5	433.2
7.5°	422.4	423.1	427.1	431.8	428.5	424.4	427.1	426.4	430.5	431.1	429.8
10°	417.1	417.7	421.8	426.4	423.1	419.7	422.4	421.8	427.1	427.1	426.4
12.5°	411.7	412.4	416.4	420.4	417.1	413.7	416.4	416.4	421.8	422.4	421.8
15°	404.3	405.7	409.0	413.0	411.0	407.0	409.7	409.7	414.4	415.7	415.7
17.5°	398.3	399.0	402.3	406.3	403.7	400.3	403.0	403.0	407.7	409.0	409.0
20°	390.2	391.6	394.9	399.0	396.9	394.3	396.3	396.3	401.6	403.0	403.7
22.5°	383.5	384.9	387.6	392.9	389.6	387.6	390.2	389.6	395.6	396.3	396.3
25°	376.2	377.5	380.9	384.2	382.2	380.2	382.2	382.2	386.9	387.6	387.6
27.5°	365.4	366.1	369.5	372.8	370.8	368.1	370.8	370.1	374.8	375.5	374.8
30°	348.0	349.3	350.7	355.4	353.4	351.4	354.0	352.7	357.4	357.4	356.7
32.5°	325.9	325.9	328.6	331.9	329.2	327.9	329.9	330.6	333.9	333.9	331.9
35°	299.1	300.4	302.4	304.4	302.4	301.1	303.1	302.4	306.4	305.1	303.1
37.5°	272.2	272.9	274.9	277.6	274.9	272.9	273.6	272.9	276.3	276.3	272.9
40°	247.4	248.8	250.1	252.8	250.1	248.8	249.4	247.4	251.4	250.1	248.1
42.5°	227.3	228.0	230.0	231.3	228.6	228.0	228.6	227.3	229.3	228.0	224.0
45°	211.9	211.9	212.6	214.6	211.9	211.2	211.2	209.9	211.9	209.2	205.2
47.5°	198.5	199.1	199.8	201.2	199.1	197.1	197.8	195.1	196.5	194.5	189.1
50°	185.1	186.4	187.1	188.4	186.4	185.1	185.7	183.1	183.1	179.7	175.0
52.5°	171.7	172.3	171.7	173.0	171.7	169.6	170.3	167.6	167.6	163.6	158.9
55°	149.5	150.2	150.9	152.2	150.9	148.9	150.2	148.2	148.2	145.5	140.1
57.5°	127.4	128.1	128.7	129.4	129.4	128.1	128.7	127.4	126.7	124.7	120.7
60°	113.3	113.3	113.3	114.0	113.3	112.6	112.6	111.3	111.3	108.6	104.6
62.5°	102.6	103.3	103.3	103.9	103.3	102.6	101.9	100.6	99.9	97.2	93.9
65°	92.5	92.5	91.9	93.2	92.5	91.9	91.9	90.5	89.2	86.5	83.1
67.5°	80.5	81.1	80.5	81.1	81.1	80.5	79.8	78.5	77.8	75.8	71.7
70°	67.7	67.7	67.7	68.4	67.7	67.7	68.4	66.4	65.7	63.0	59.7
72.5°	55.0	55.7	55.7	55.0	55.7	54.3	54.3	54.3	53.6	51.0	47.6
75°	42.2	42.9	42.9	43.6	42.9	42.2	42.2	41.6	40.9	38.9	36.2
77.5°	31.5	31.5	32.2	32.2	32.2	31.5	31.5	30.2	30.2	28.8	26.2
80°	22.8	22.8	22.1	22.8	22.8	22.1	22.1	21.5	21.5	20.1	18.1
82.5°	14.8	15.4	15.4	15.4	15.4	14.8	14.8	14.8	14.1	13.4	12.1
85°	9.4	9.4	9.4	9.4	10.1	9.4	10.1	9.4	9.4	8.0	7.4
87.5°	4.0	4.0	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	3.4
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8
2.5°	435.2	435.8	433.8	436.5	434.5	435.2	435.8	435.2	432.5	432.5	439.9
5°	432.5	433.8	431.8	435.2	433.8	433.8	435.2	434.5	431.8	432.5	439.2
7.5°	429.8	431.8	430.5	433.8	431.8	431.8	433.2	433.2	430.5	431.1	437.2
10°	425.8	428.5	427.8	431.1	429.1	429.1	431.1	431.1	428.5	429.1	435.2
12.5°	422.4	425.1	424.4	427.8	426.4	427.1	427.8	429.1	425.8	427.1	432.5
15°	417.1	419.7	419.7	423.1	421.8	423.1	424.4	426.4	423.8	423.8	429.1
17.5°	411.0	414.4	414.4	417.1	417.1	417.7	420.4	422.4	419.7	420.4	425.1
20°	404.3	408.3	408.3	411.7	411.0	412.4	414.4	416.4	413.7	413.7	419.1
22.5°	397.6	401.0	401.6	403.7	403.7	404.3	406.3	407.7	404.3	404.3	409.7
25°	388.2	391.6	392.3	393.6	392.3	392.3	393.6	394.9	391.6	391.6	396.3
27.5°	375.5	378.8	378.8	378.2	376.8	377.5	376.8	377.5	374.1	373.5	378.2
30°	356.7	358.7	358.7	358.1	356.0	356.0	354.0	354.7	350.0	350.0	354.0
32.5°	331.2	333.2	331.9	330.6	327.9	326.5	325.2	324.5	319.8	319.8	324.5
35°	301.1	302.4	300.4	297.7	294.4	292.3	290.3	287.7	284.3	285.0	287.7
37.5°	270.2	270.2	267.5	262.2	259.5	256.1	252.8	252.8	247.4	246.8	248.8
40°	244.1	241.4	236.7	229.3	224.6	221.3	216.6	213.9	209.9	209.9	213.2
42.5°	220.6	215.2	209.2	199.1	194.5	190.4	184.4	181.7	177.0	176.3	178.4
45°	199.8	194.5	185.7	175.0	169.0	164.3	155.6	152.2	148.2	147.5	148.9
47.5°	183.1	177.0	166.3	152.2	146.2	140.1	131.4	126.7	123.4	121.4	123.4
50°	168.3	160.3	148.9	134.1	126.1	120.7	110.0	105.3	100.6	99.2	99.9
52.5°	152.2	144.2	132.1	116.7	109.3	101.2	91.2	84.5	80.5	78.5	80.5
55°	134.8	126.7	114.7	99.2	91.2	83.8	73.1	67.7	63.0	61.0	63.0
57.5°	116.0	108.6	97.9	82.5	75.1	68.4	58.3	53.0	48.3	46.9	48.3
60°	99.9	93.9	83.1	68.4	62.4	55.0	46.3	40.9	36.9	36.2	36.9
62.5°	89.2	82.5	72.4	58.3	52.3	46.3	38.2	32.9	29.5	28.8	29.5
65°	78.5	71.1	61.7	49.6	43.6	38.9	30.8	26.2	22.8	22.1	22.8
67.5°	66.4	59.7	51.6	40.9	36.2	31.5	24.8	20.1	17.4	16.8	17.4
70°	55.0	48.9	40.9	32.9	28.2	24.8	18.8	15.4	12.7	12.1	12.7
72.5°	43.6	38.2	31.5	24.8	22.1	18.8	14.8	11.4	9.4	8.7	9.4
75°	33.5	29.5	24.1	18.1	16.1	14.1	10.1	8.0	6.7	6.0	6.7
77.5°	23.5	20.8	16.8	13.4	11.4	10.1	7.4	5.4	4.7	4.0	4.7
80°	16.1	14.1	11.4	8.7	7.4	6.0	4.7	3.4	2.7	2.7	2.7
82.5°	10.7	8.7	6.7	5.4	4.7	4.0	2.7	2.0	2.0	1.3	1.3
85°	6.0	5.4	4.0	3.4	2.7	2.0	1.3	1.3	0.7	0.7	0.7
87.5°	2.7	2.0	1.3	1.3	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°	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8
2.5°	437.8	435.8	438.5	435.8	434.5	435.8	434.5	438.5	435.2	432.5	435.2
5°	437.2	434.5	437.2	435.2	433.2	433.8	432.5	436.5	432.5	430.5	431.8
7.5°	435.8	433.8	435.2	433.2	431.1	431.8	430.5	433.8	429.8	427.8	429.1
10°	433.8	431.8	432.5	431.1	429.1	429.1	427.8	430.5	425.8	423.1	424.4
12.5°	431.1	428.5	429.8	427.8	425.1	425.1	423.8	425.8	421.1	418.4	419.1
15°	427.8	425.1	425.1	423.1	420.4	420.4	417.7	419.7	414.4	411.7	411.7
17.5°	423.8	420.4	420.4	418.4	415.1	414.4	412.4	414.4	408.3	405.7	405.7
20°	417.7	415.1	414.4	413.0	409.7	409.0	406.3	407.0	402.3	400.3	399.6
22.5°	409.7	407.0	407.7	405.7	403.0	402.3	399.6	401.6	396.9	394.9	395.6
25°	395.6	394.3	395.6	394.9	392.9	392.9	391.6	392.9	388.9	387.6	388.2
27.5°	379.5	378.8	379.5	379.5	378.2	378.2	378.2	380.2	376.2	375.5	375.5
30°	356.0	356.0	356.7	357.4	357.4	358.7	358.1	360.7	358.1	356.7	358.1
32.5°	325.2	327.9	329.9	329.9	329.9	331.2	332.6	334.6	331.9	332.6	332.6
35°	290.3	292.3	293.7	297.0	295.0	299.7	301.1	303.7	303.1	304.4	303.7
37.5°	251.4	254.1	256.8	261.5	260.8	266.2	268.9	274.2	272.9	275.6	276.9
40°	215.2	219.3	223.3	226.6	229.3	234.7	240.0	246.8	248.8	250.8	251.4
42.5°	180.4	184.4	191.1	195.8	199.8	208.5	215.9	224.0	226.0	230.0	231.3
45°	152.2	155.6	163.6	169.6	173.0	185.7	194.5	204.5	207.9	212.6	214.6
47.5°	126.1	132.1	140.1	147.5	152.2	165.6	177.0	187.7	192.4	197.8	200.5
50°	103.3	110.0	120.7	127.4	134.1	148.9	161.6	173.0	177.7	183.7	186.4
52.5°	84.5	91.9	101.9	109.3	116.7	132.1	145.5	156.2	162.3	166.3	170.3
55°	66.4	74.4	84.5	92.5	98.6	115.3	126.7	137.5	141.5	144.8	146.8
57.5°	51.6	57.7	67.7	74.4	81.8	96.6	108.0	116.0	119.4	123.4	124.7
60°	40.2	46.3	55.7	62.4	69.1	83.1	94.5	102.6	105.9	109.3	111.3
62.5°	32.2	38.2	46.9	53.0	59.0	71.7	81.8	89.8	93.9	97.2	99.2
65°	25.5	30.8	38.2	44.3	48.9	60.3	70.4	77.8	81.8	85.2	87.2
67.5°	20.1	24.8	31.5	35.5	40.2	49.6	58.3	65.0	68.4	72.4	74.4
70°	15.4	18.8	24.8	28.2	31.5	39.6	46.3	53.0	56.3	59.0	60.3
72.5°	11.4	14.1	18.8	21.5	23.5	30.2	35.5	40.2	42.9	45.6	46.9
75°	8.0	10.1	13.4	15.4	16.8	21.5	26.2	29.5	31.5	33.5	35.5
77.5°	5.4	6.7	8.7	10.1	11.4	14.8	17.4	20.1	22.1	24.1	24.8
80°	3.4	4.7	6.0	6.7	7.4	9.4	12.1	13.4	14.8	16.1	16.8
82.5°	2.0	2.7	3.4	4.0	4.7	6.0	7.4	8.7	9.4	10.7	11.4
85°	0.7	1.3	1.3	2.0	2.0	3.4	4.0	4.7	5.4	6.0	6.7
87.5°	0.0	0.0	0.7	0.7	0.7	0.7	1.3	1.3	1.3	1.3	1.3
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°	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8
2.5°	437.8	435.8	434.5	433.8	438.5	432.5	435.2	435.8
5°	435.2	433.2	431.8	431.1	435.2	429.8	431.8	433.2
7.5°	431.1	429.8	427.8	427.1	431.1	425.1	427.8	428.5
10°	426.4	424.4	423.1	422.4	425.8	419.7	422.4	422.4
12.5°	420.4	419.1	416.4	416.4	419.1	413.7	415.7	415.7
15°	412.4	411.0	408.3	408.3	411.0	405.7	407.7	407.7
17.5°	405.7	404.3	402.3	401.6	404.3	399.0	401.0	400.3
20°	400.3	399.0	396.3	396.3	398.3	392.9	394.9	394.9
22.5°	395.6	394.9	392.3	392.3	394.9	389.6	390.9	389.6
25°	388.2	387.6	384.9	385.5	386.9	381.5	383.5	382.2
27.5°	376.2	376.2	373.5	372.8	374.8	370.1	371.5	370.8
30°	357.4	358.1	354.7	354.7	355.4	351.4	353.4	352.7
32.5°	331.9	332.6	329.9	329.2	331.2	327.9	329.2	329.2
35°	303.7	304.4	302.4	302.4	304.4	302.4	302.4	301.7
37.5°	275.6	276.9	275.6	276.3	277.6	275.6	276.9	276.3
40°	252.8	254.1	252.1	253.5	254.8	252.8	254.8	253.5
42.5°	232.0	234.0	232.7	234.0	235.4	234.0	235.4	233.3
45°	216.6	217.9	217.2	217.9	219.3	218.6	219.3	218.6
47.5°	201.8	204.5	203.2	204.5	206.5	205.2	206.5	204.5
50°	188.4	190.4	189.8	191.1	191.8	191.1	192.4	190.4
52.5°	171.0	173.0	172.3	172.3	173.7	172.3	173.7	172.3
55°	148.2	148.9	148.9	149.5	148.9	148.2	148.9	147.5
57.5°	126.1	127.4	125.4	127.4	126.7	126.1	126.1	124.7
60°	112.0	114.0	112.6	114.0	113.3	113.3	113.3	112.6
62.5°	100.6	101.9	100.6	101.2	101.2	101.2	100.6	99.9
65°	87.8	89.8	88.5	89.2	88.5	87.8	88.5	87.8
67.5°	75.1	75.8	75.8	75.1	75.1	75.1	75.1	73.8
70°	61.0	61.7	61.0	62.4	61.7	61.0	61.7	60.3
72.5°	47.6	48.3	47.6	48.3	47.6	47.6	47.6	47.6
75°	35.5	36.2	36.2	36.2	36.2	36.2	34.9	36.2
77.5°	25.5	25.5	25.5	26.2	25.5	25.5	25.5	25.5
80°	17.4	17.4	17.4	18.1	17.4	18.1	17.4	18.1
82.5°	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4
85°	6.0	6.7	6.7	6.0	6.0	6.0	6.0	6.0
87.5°	1.3	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)