

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: P251912

Luminaire Tested: **LD4B15D010 EU4B10209024 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251912
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 EU4B10209024 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2400K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 933.0 lumens
Efficiency: N/A
Efficacy: 64.8 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

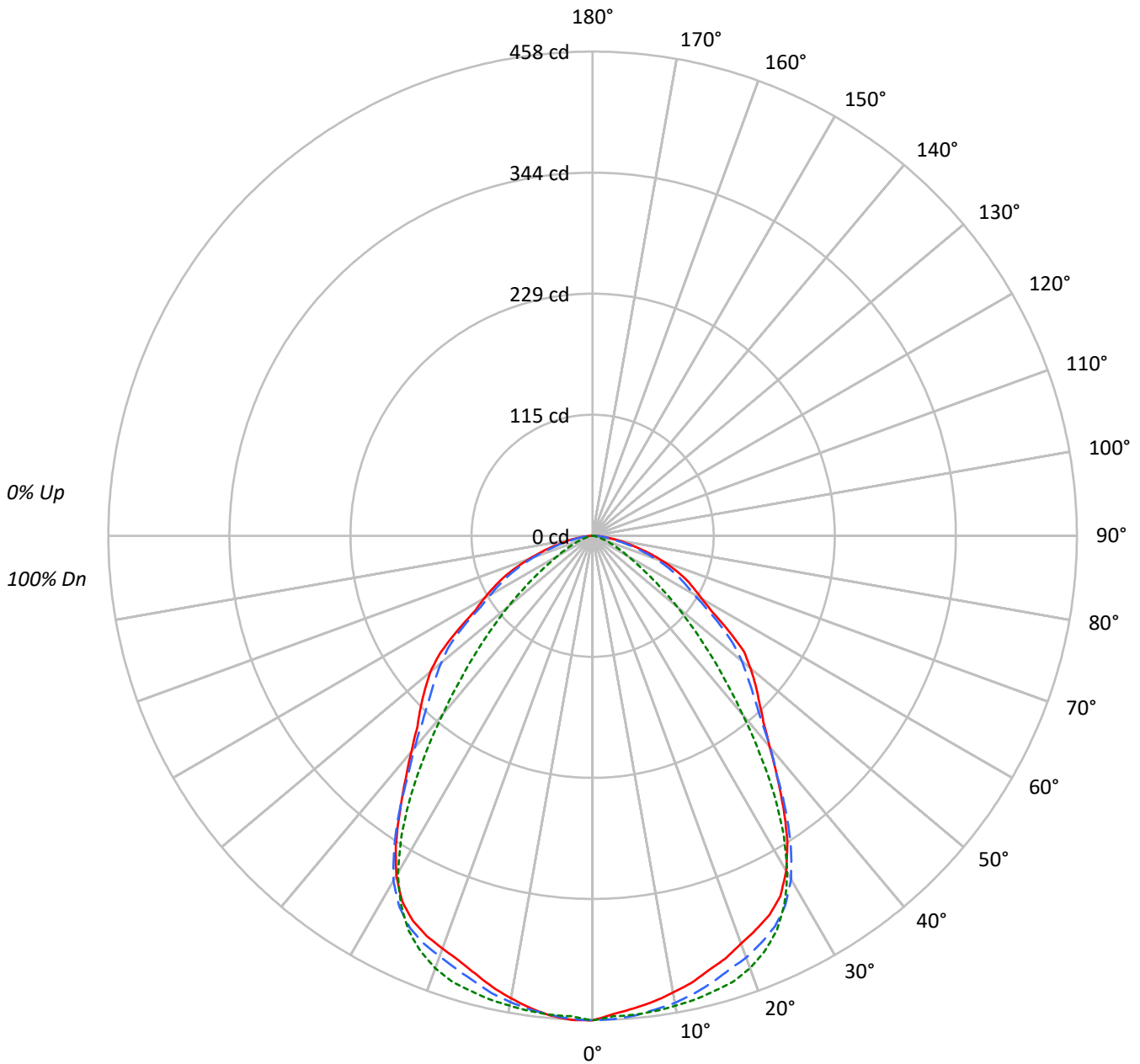
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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°	44675	44675	44675
5°	43887	44503	44572
10°	43414	44671	43969
15°	42911	44969	43264
20°	42574	45136	43082
25°	42551	44293	43228
30°	41188	41435	41750
35°	37429	35657	37762
40°	33116	28091	33918
45°	30722	21391	31686
50°	29520	15829	30369
55°	26727	10908	26370
60°	23234	7426	23098
65°	22438	5373	21308
70°	20288	3619	18094
75°	16719	2372	14347
80°	13470	1571	10664
85°	11070	783	7045



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	43.3	4.6
10°-20°	123.7	13.3
20°-30°	186.9	20.0
30°-40°	195.6	21.0
40°-50°	158.4	17.0
50°-60°	115.3	12.4
60°-70°	71.1	7.6
70°-80°	32.1	3.4
80°-90°	6.5	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°	353.9	37.9
0°-40°	549.6	58.9
0°-60°	823.3	88.2
0°-90°	933.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	933.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	458	458	458	458	458	
5°	449	456	455	455	456	43
15°	425	437	446	436	429	120
25°	396	408	412	409	402	181
35°	315	319	300	319	317	196
45°	223	216	155	219	230	173
55°	157	147	64	149	155	140
65°	97	88	23	86	92	95
75°	44	38	6	33	38	48
85°	10	8	1	6	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°	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4
2.5°	452.8	452.8	457.0	462.0	457.7	453.5	456.3	454.9	459.9	459.9	457.7
5°	448.6	450.0	453.5	457.7	454.2	450.0	453.5	452.1	457.0	457.0	455.6
7.5°	444.3	445.0	449.3	454.2	450.7	446.4	449.3	448.6	452.8	453.5	452.1
10°	438.7	439.4	443.6	448.6	445.0	441.5	444.3	443.6	449.3	449.3	448.6
12.5°	433.0	433.8	438.0	442.2	438.7	435.2	438.0	438.0	443.6	444.3	443.6
15°	425.3	426.7	430.2	434.5	432.3	428.1	430.9	430.9	435.9	437.3	437.3
17.5°	418.9	419.6	423.2	427.4	424.6	421.1	423.9	423.9	428.8	430.2	430.2
20°	410.5	411.9	415.4	419.6	417.5	414.7	416.8	416.8	422.5	423.9	424.6
22.5°	403.4	404.8	407.7	413.3	409.8	407.7	410.5	409.8	416.1	416.8	416.8
25°	395.7	397.1	400.6	404.1	402.0	399.9	402.0	402.0	407.0	407.7	407.7
27.5°	384.4	385.1	388.6	392.1	390.0	387.2	390.0	389.3	394.3	395.0	394.3
30°	366.0	367.5	368.9	373.8	371.7	369.6	372.4	371.0	375.9	375.9	375.2
32.5°	342.8	342.8	345.6	349.1	346.3	344.9	347.0	347.7	351.2	351.2	349.1
35°	314.6	316.0	318.1	320.2	318.1	316.7	318.8	318.1	322.3	320.9	318.8
37.5°	286.3	287.1	289.2	292.0	289.2	287.1	287.8	287.1	290.6	290.6	287.1
40°	260.3	261.7	263.1	265.9	263.1	261.7	262.4	260.3	264.5	263.1	261.0
42.5°	239.1	239.8	241.9	243.3	240.5	239.8	240.5	239.1	241.2	239.8	235.6
45°	222.9	222.9	223.6	225.7	222.9	222.2	222.2	220.8	222.9	220.1	215.8
47.5°	208.8	209.5	210.2	211.6	209.5	207.4	208.1	205.2	206.7	204.5	198.9
50°	194.7	196.1	196.8	198.2	196.1	194.7	195.4	192.5	192.5	189.0	184.1
52.5°	180.6	181.3	180.6	182.0	180.6	178.4	179.1	176.3	176.3	172.1	167.2
55°	157.3	158.0	158.7	160.1	158.7	156.6	158.0	155.9	155.9	153.0	147.4
57.5°	134.0	134.7	135.4	136.1	136.1	134.7	135.4	134.0	133.3	131.2	127.0
60°	119.2	119.2	119.2	119.9	119.2	118.5	118.5	117.1	117.1	114.3	110.0
62.5°	107.9	108.6	108.6	109.3	108.6	107.9	107.2	105.8	105.1	102.3	98.7
65°	97.3	97.3	96.6	98.0	97.3	96.6	96.6	95.2	93.8	91.0	87.5
67.5°	84.6	85.3	84.6	85.3	85.3	84.6	83.9	82.5	81.8	79.7	75.5
70°	71.2	71.2	71.2	71.9	71.2	71.2	71.9	69.8	69.1	66.3	62.8
72.5°	57.8	58.5	58.5	57.8	58.5	57.1	57.1	57.1	56.4	53.6	50.1
75°	44.4	45.1	45.1	45.8	45.1	44.4	44.4	43.7	43.0	40.9	38.1
77.5°	33.1	33.1	33.9	33.9	33.9	33.1	33.1	31.7	31.7	30.3	27.5
80°	24.0	24.0	23.3	24.0	24.0	23.3	23.3	22.6	22.6	21.2	19.0
82.5°	15.5	16.2	16.2	16.2	16.2	15.5	15.5	15.5	14.8	14.1	12.7
85°	9.9	9.9	9.9	9.9	10.6	9.9	10.6	9.9	9.9	8.5	7.8
87.5°	4.2	4.2	4.2	4.9	4.9	4.2	4.2	4.2	4.2	4.2	3.5
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°	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4
2.5°	457.7	458.4	456.3	459.1	457.0	457.7	458.4	457.7	454.9	454.9	462.7
5°	454.9	456.3	454.2	457.7	456.3	456.3	457.7	457.0	454.2	454.9	462.0
7.5°	452.1	454.2	452.8	456.3	454.2	454.2	455.6	455.6	452.8	453.5	459.9
10°	447.9	450.7	450.0	453.5	451.4	451.4	453.5	453.5	450.7	451.4	457.7
12.5°	444.3	447.2	446.4	450.0	448.6	449.3	450.0	451.4	447.9	449.3	454.9
15°	438.7	441.5	441.5	445.0	443.6	445.0	446.4	448.6	445.7	445.7	451.4
17.5°	432.3	435.9	435.9	438.7	438.7	439.4	442.2	444.3	441.5	442.2	447.2
20°	425.3	429.5	429.5	433.0	432.3	433.8	435.9	438.0	435.2	435.2	440.8
22.5°	418.2	421.8	422.5	424.6	424.6	425.3	427.4	428.8	425.3	425.3	430.9
25°	408.4	411.9	412.6	414.0	412.6	412.6	414.0	415.4	411.9	411.9	416.8
27.5°	395.0	398.5	398.5	397.8	396.4	397.1	396.4	397.1	393.6	392.8	397.8
30°	375.2	377.3	377.3	376.6	374.5	374.5	372.4	373.1	368.2	368.2	372.4
32.5°	348.4	350.5	349.1	347.7	344.9	343.5	342.1	341.4	336.4	336.4	341.4
35°	316.7	318.1	316.0	313.1	309.6	307.5	305.4	302.6	299.0	299.7	302.6
37.5°	284.2	284.2	281.4	275.8	272.9	269.4	265.9	265.9	260.3	259.5	261.7
40°	256.7	253.9	249.0	241.2	236.3	232.7	227.8	225.0	220.8	220.8	224.3
42.5°	232.0	226.4	220.1	209.5	204.5	200.3	194.0	191.1	186.2	185.5	187.6
45°	210.2	204.5	195.4	184.1	177.7	172.8	163.6	160.1	155.9	155.2	156.6
47.5°	192.5	186.2	174.9	160.1	153.8	147.4	138.2	133.3	129.8	127.7	129.8
50°	177.0	168.6	156.6	141.1	132.6	127.0	115.7	110.7	105.8	104.4	105.1
52.5°	160.1	151.6	138.9	122.7	115.0	106.5	95.9	88.9	84.6	82.5	84.6
55°	141.8	133.3	120.6	104.4	95.9	88.2	76.9	71.2	66.3	64.2	66.3
57.5°	122.0	114.3	103.0	86.8	79.0	71.9	61.4	55.7	50.8	49.4	50.8
60°	105.1	98.7	87.5	71.9	65.6	57.8	48.7	43.0	38.8	38.1	38.8
62.5°	93.8	86.8	76.2	61.4	55.0	48.7	40.2	34.6	31.0	30.3	31.0
65°	82.5	74.8	64.9	52.2	45.8	40.9	32.4	27.5	24.0	23.3	24.0
67.5°	69.8	62.8	54.3	43.0	38.1	33.1	26.1	21.2	18.3	17.6	18.3
70°	57.8	51.5	43.0	34.6	29.6	26.1	19.7	16.2	13.4	12.7	13.4
72.5°	45.8	40.2	33.1	26.1	23.3	19.7	15.5	12.0	9.9	9.2	9.9
75°	35.3	31.0	25.4	19.0	16.9	14.8	10.6	8.5	7.1	6.3	7.1
77.5°	24.7	21.9	17.6	14.1	12.0	10.6	7.8	5.6	4.9	4.2	4.9
80°	16.9	14.8	12.0	9.2	7.8	6.3	4.9	3.5	2.8	2.8	2.8
82.5°	11.3	9.2	7.1	5.6	4.9	4.2	2.8	2.1	2.1	1.4	1.4
85°	6.3	5.6	4.2	3.5	2.8	2.1	1.4	1.4	0.7	0.7	0.7
87.5°	2.8	2.1	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°	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4
2.5°	460.6	458.4	461.3	458.4	457.0	458.4	457.0	461.3	457.7	454.9	457.7
5°	459.9	457.0	459.9	457.7	455.6	456.3	454.9	459.1	454.9	452.8	454.2
7.5°	458.4	456.3	457.7	455.6	453.5	454.2	452.8	456.3	452.1	450.0	451.4
10°	456.3	454.2	454.9	453.5	451.4	451.4	450.0	452.8	447.9	445.0	446.4
12.5°	453.5	450.7	452.1	450.0	447.2	447.2	445.7	447.9	442.9	440.1	440.8
15°	450.0	447.2	447.2	445.0	442.2	442.2	439.4	441.5	435.9	433.0	433.0
17.5°	445.7	442.2	442.2	440.1	436.6	435.9	433.8	435.9	429.5	426.7	426.7
20°	439.4	436.6	435.9	434.5	430.9	430.2	427.4	428.1	423.2	421.1	420.4
22.5°	430.9	428.1	428.8	426.7	423.9	423.2	420.4	422.5	417.5	415.4	416.1
25°	416.1	414.7	416.1	415.4	413.3	413.3	411.9	413.3	409.1	407.7	408.4
27.5°	399.2	398.5	399.2	399.2	397.8	397.8	397.8	399.9	395.7	395.0	395.0
30°	374.5	374.5	375.2	375.9	375.9	377.3	376.6	379.4	376.6	375.2	376.6
32.5°	342.1	344.9	347.0	347.0	347.0	348.4	349.8	351.9	349.1	349.8	349.8
35°	305.4	307.5	308.9	312.4	310.3	315.3	316.7	319.5	318.8	320.2	319.5
37.5°	264.5	267.3	270.1	275.1	274.4	280.0	282.8	288.5	287.1	289.9	291.3
40°	226.4	230.6	234.9	238.4	241.2	246.9	252.5	259.5	261.7	263.8	264.5
42.5°	189.7	194.0	201.0	205.9	210.2	219.3	227.1	235.6	237.7	241.9	243.3
45°	160.1	163.6	172.1	178.4	182.0	195.4	204.5	215.1	218.6	223.6	225.7
47.5°	132.6	138.9	147.4	155.2	160.1	174.2	186.2	197.5	202.4	208.1	210.9
50°	108.6	115.7	127.0	134.0	141.1	156.6	170.0	182.0	186.9	193.2	196.1
52.5°	88.9	96.6	107.2	115.0	122.7	138.9	153.0	164.3	170.7	174.9	179.1
55°	69.8	78.3	88.9	97.3	103.7	121.3	133.3	144.6	148.8	152.3	154.5
57.5°	54.3	60.7	71.2	78.3	86.0	101.6	113.6	122.0	125.5	129.8	131.2
60°	42.3	48.7	58.5	65.6	72.6	87.5	99.4	107.9	111.4	115.0	117.1
62.5°	33.9	40.2	49.4	55.7	62.1	75.5	86.0	94.5	98.7	102.3	104.4
65°	26.8	32.4	40.2	46.5	51.5	63.5	74.1	81.8	86.0	89.6	91.7
67.5°	21.2	26.1	33.1	37.4	42.3	52.2	61.4	68.4	71.9	76.2	78.3
70°	16.2	19.7	26.1	29.6	33.1	41.6	48.7	55.7	59.2	62.1	63.5
72.5°	12.0	14.8	19.7	22.6	24.7	31.7	37.4	42.3	45.1	48.0	49.4
75°	8.5	10.6	14.1	16.2	17.6	22.6	27.5	31.0	33.1	35.3	37.4
77.5°	5.6	7.1	9.2	10.6	12.0	15.5	18.3	21.2	23.3	25.4	26.1
80°	3.5	4.9	6.3	7.1	7.8	9.9	12.7	14.1	15.5	16.9	17.6
82.5°	2.1	2.8	3.5	4.2	4.9	6.3	7.8	9.2	9.9	11.3	12.0
85°	0.7	1.4	1.4	2.1	2.1	3.5	4.2	4.9	5.6	6.3	7.1
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°	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4
2.5°	460.6	458.4	457.0	456.3	461.3	454.9	457.7	458.4
5°	457.7	455.6	454.2	453.5	457.7	452.1	454.2	455.6
7.5°	453.5	452.1	450.0	449.3	453.5	447.2	450.0	450.7
10°	448.6	446.4	445.0	444.3	447.9	441.5	444.3	444.3
12.5°	442.2	440.8	438.0	438.0	440.8	435.2	437.3	437.3
15°	433.8	432.3	429.5	429.5	432.3	426.7	428.8	428.8
17.5°	426.7	425.3	423.2	422.5	425.3	419.6	421.8	421.1
20°	421.1	419.6	416.8	416.8	418.9	413.3	415.4	415.4
22.5°	416.1	415.4	412.6	412.6	415.4	409.8	411.2	409.8
25°	408.4	407.7	404.8	405.5	407.0	401.3	403.4	402.0
27.5°	395.7	395.7	392.8	392.1	394.3	389.3	390.7	390.0
30°	375.9	376.6	373.1	373.1	373.8	369.6	371.7	371.0
32.5°	349.1	349.8	347.0	346.3	348.4	344.9	346.3	346.3
35°	319.5	320.2	318.1	318.1	320.2	318.1	318.1	317.4
37.5°	289.9	291.3	289.9	290.6	292.0	289.9	291.3	290.6
40°	265.9	267.3	265.2	266.6	268.0	265.9	268.0	266.6
42.5°	244.0	246.1	244.7	246.1	247.6	246.1	247.6	245.4
45°	227.8	229.2	228.5	229.2	230.6	229.9	230.6	229.9
47.5°	212.3	215.1	213.7	215.1	217.2	215.8	217.2	215.1
50°	198.2	200.3	199.6	201.0	201.7	201.0	202.4	200.3
52.5°	179.8	182.0	181.3	181.3	182.7	181.3	182.7	181.3
55°	155.9	156.6	156.6	157.3	156.6	155.9	156.6	155.2
57.5°	132.6	134.0	131.9	134.0	133.3	132.6	132.6	131.2
60°	117.8	119.9	118.5	119.9	119.2	119.2	119.2	118.5
62.5°	105.8	107.2	105.8	106.5	106.5	106.5	105.8	105.1
65°	92.4	94.5	93.1	93.8	93.1	92.4	93.1	92.4
67.5°	79.0	79.7	79.7	79.0	79.0	79.0	79.0	77.6
70°	64.2	64.9	64.2	65.6	64.9	64.2	64.9	63.5
72.5°	50.1	50.8	50.1	50.8	50.1	50.1	50.1	50.1
75°	37.4	38.1	38.1	38.1	38.1	38.1	36.7	38.1
77.5°	26.8	26.8	26.8	27.5	26.8	26.8	26.8	26.8
80°	18.3	18.3	18.3	19.0	18.3	19.0	18.3	19.0
82.5°	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
85°	6.3	7.1	7.1	6.3	6.3	6.3	6.3	6.3
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)