

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: P251897

Luminaire Tested: **LD4B10D010 EU4B10208040 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251897
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 EU4B10208040 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 960.0 lumens
Efficiency: N/A
Efficacy: 95.5 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

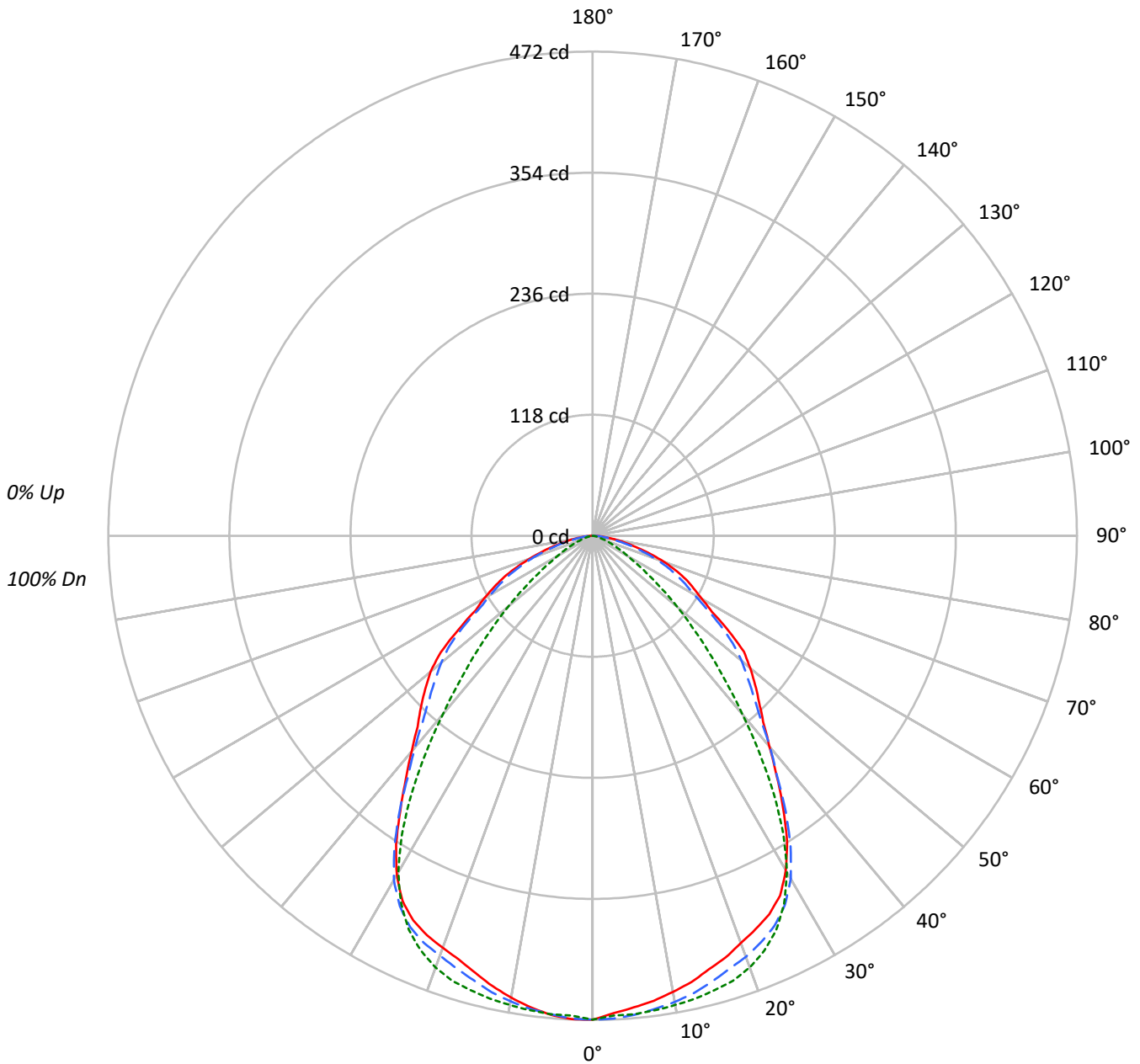
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	45971	45971	45971
5°	45149	45794	45863
10°	44671	45958	45245
15°	44152	46271	44515
20°	43808	46443	44327
25°	43777	45573	44486
30°	42381	42628	42955
35°	38512	36692	38857
40°	34070	28892	34897
45°	31604	22011	32610
50°	30369	16284	31248
55°	27492	11214	27135
60°	23897	7641	23760
65°	23084	5511	21931
70°	20887	3733	18607
75°	17208	2448	14761
80°	13863	1628	11000
85°	11406	783	7268



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	44.5	4.6
10°-20°	127.3	13.3
20°-30°	192.3	20.0
30°-40°	201.3	21.0
40°-50°	163.0	17.0
50°-60°	118.6	12.4
60°-70°	73.1	7.6
70°-80°	33.0	3.4
80°-90°	6.7	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°	364.2	37.9
0°-40°	565.5	58.9
0°-60°	847.1	88.2
0°-90°	960.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	960.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	472	472	472	472	472	
5°	462	469	468	468	469	44
15°	438	450	459	448	441	124
25°	407	420	424	421	414	187
35°	324	328	308	328	327	202
45°	229	222	160	225	237	178
55°	162	152	66	153	160	144
65°	100	90	24	88	95	98
75°	46	39	6	34	39	50
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°	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7
2.5°	465.9	465.9	470.3	475.3	471.0	466.6	469.5	468.1	473.2	473.2	471.0
5°	461.5	463.0	466.6	471.0	467.4	463.0	466.6	465.2	470.3	470.3	468.8
7.5°	457.2	457.9	462.3	467.4	463.7	459.4	462.3	461.5	465.9	466.6	465.2
10°	451.4	452.1	456.5	461.5	457.9	454.3	457.2	456.5	462.3	462.3	461.5
12.5°	445.6	446.3	450.7	455.0	451.4	447.8	450.7	450.7	456.5	457.2	456.5
15°	437.6	439.0	442.7	447.0	444.9	440.5	443.4	443.4	448.5	449.9	449.9
17.5°	431.1	431.8	435.4	439.8	436.9	433.2	436.1	436.1	441.2	442.7	442.7
20°	422.4	423.8	427.4	431.8	429.6	426.7	428.9	428.9	434.7	436.1	436.9
22.5°	415.1	416.6	419.5	425.3	421.6	419.5	422.4	421.6	428.2	428.9	428.9
25°	407.1	408.6	412.2	415.8	413.7	411.5	413.7	413.7	418.7	419.5	419.5
27.5°	395.5	396.2	399.9	403.5	401.3	398.4	401.3	400.6	405.7	406.4	405.7
30°	376.6	378.1	379.5	384.6	382.4	380.3	383.2	381.7	386.8	386.8	386.1
32.5°	352.7	352.7	355.6	359.2	356.3	354.9	357.0	357.8	361.4	361.4	359.2
35°	323.7	325.1	327.3	329.5	327.3	325.8	328.0	327.3	331.6	330.2	328.0
37.5°	294.6	295.4	297.5	300.4	297.5	295.4	296.1	295.4	299.0	299.0	295.4
40°	267.8	269.2	270.7	273.6	270.7	269.2	270.0	267.8	272.1	270.7	268.5
42.5°	246.0	246.7	248.9	250.4	247.5	246.7	247.5	246.0	248.2	246.7	242.4
45°	229.3	229.3	230.0	232.2	229.3	228.6	228.6	227.1	229.3	226.4	222.1
47.5°	214.8	215.5	216.3	217.7	215.5	213.4	214.1	211.2	212.6	210.5	204.6
50°	200.3	201.7	202.5	203.9	201.7	200.3	201.0	198.1	198.1	194.5	189.4
52.5°	185.8	186.5	185.8	187.2	185.8	183.6	184.3	181.4	181.4	177.1	172.0
55°	161.8	162.6	163.3	164.7	163.3	161.1	162.6	160.4	160.4	157.5	151.7
57.5°	137.9	138.6	139.3	140.1	140.1	138.6	139.3	137.9	137.2	135.0	130.6
60°	122.6	122.6	122.6	123.4	122.6	121.9	121.9	120.5	120.5	117.6	113.2
62.5°	111.0	111.8	111.8	112.5	111.8	111.0	110.3	108.9	108.1	105.2	101.6
65°	100.1	100.1	99.4	100.9	100.1	99.4	99.4	98.0	96.5	93.6	90.0
67.5°	87.1	87.8	87.1	87.8	87.8	87.1	86.4	84.9	84.2	82.0	77.7
70°	73.3	73.3	73.3	74.0	73.3	73.3	74.0	71.8	71.1	68.2	64.6
72.5°	59.5	60.2	60.2	59.5	60.2	58.8	58.8	58.8	58.1	55.2	51.5
75°	45.7	46.4	46.4	47.2	46.4	45.7	45.7	45.0	44.3	42.1	39.2
77.5°	34.1	34.1	34.8	34.8	34.8	34.1	34.1	32.7	32.7	31.2	28.3
80°	24.7	24.7	23.9	24.7	24.7	23.9	23.9	23.2	23.2	21.8	19.6
82.5°	16.0	16.7	16.7	16.7	16.7	16.0	16.0	16.0	15.2	14.5	13.1
85°	10.2	10.2	10.2	10.2	10.9	10.2	10.9	10.2	10.2	8.7	8.0
87.5°	4.4	4.4	4.4	5.1	5.1	4.4	4.4	4.4	4.4	4.4	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°	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7
2.5°	471.0	471.7	469.5	472.4	470.3	471.0	471.7	471.0	468.1	468.1	476.1
5°	468.1	469.5	467.4	471.0	469.5	469.5	471.0	470.3	467.4	468.1	475.3
7.5°	465.2	467.4	465.9	469.5	467.4	467.4	468.8	468.8	465.9	466.6	473.2
10°	460.8	463.7	463.0	466.6	464.4	464.4	466.6	466.6	463.7	464.4	471.0
12.5°	457.2	460.1	459.4	463.0	461.5	462.3	463.0	464.4	460.8	462.3	468.1
15°	451.4	454.3	454.3	457.9	456.5	457.9	459.4	461.5	458.6	458.6	464.4
17.5°	444.9	448.5	448.5	451.4	451.4	452.1	455.0	457.2	454.3	455.0	460.1
20°	437.6	442.0	442.0	445.6	444.9	446.3	448.5	450.7	447.8	447.8	453.6
22.5°	430.3	434.0	434.7	436.9	436.9	437.6	439.8	441.2	437.6	437.6	443.4
25°	420.2	423.8	424.5	426.0	424.5	424.5	426.0	427.4	423.8	423.8	428.9
27.5°	406.4	410.0	410.0	409.3	407.8	408.6	407.8	408.6	404.9	404.2	409.3
30°	386.1	388.3	388.3	387.5	385.3	385.3	383.2	383.9	378.8	378.8	383.2
32.5°	358.5	360.7	359.2	357.8	354.9	353.4	352.0	351.2	346.2	346.2	351.2
35°	325.8	327.3	325.1	322.2	318.6	316.4	314.2	311.3	307.7	308.4	311.3
37.5°	292.5	292.5	289.6	283.7	280.8	277.2	273.6	273.6	267.8	267.1	269.2
40°	264.2	261.3	256.2	248.2	243.1	239.5	234.4	231.5	227.1	227.1	230.8
42.5°	238.8	233.0	226.4	215.5	210.5	206.1	199.6	196.7	191.6	190.9	193.0
45°	216.3	210.5	201.0	189.4	182.9	177.8	168.4	164.7	160.4	159.7	161.1
47.5°	198.1	191.6	180.0	164.7	158.2	151.7	142.2	137.2	133.5	131.4	133.5
50°	182.2	173.4	161.1	145.1	136.4	130.6	119.0	113.9	108.9	107.4	108.1
52.5°	164.7	156.0	143.0	126.3	118.3	109.6	98.7	91.4	87.1	84.9	87.1
55°	145.9	137.2	124.1	107.4	98.7	90.7	79.1	73.3	68.2	66.0	68.2
57.5°	125.5	117.6	106.0	89.3	81.3	74.0	63.1	57.3	52.3	50.8	52.3
60°	108.1	101.6	90.0	74.0	67.5	59.5	50.1	44.3	39.9	39.2	39.9
62.5°	96.5	89.3	78.4	63.1	56.6	50.1	41.4	35.6	31.9	31.2	31.9
65°	84.9	76.9	66.8	53.7	47.2	42.1	33.4	28.3	24.7	23.9	24.7
67.5°	71.8	64.6	55.9	44.3	39.2	34.1	26.9	21.8	18.9	18.1	18.9
70°	59.5	53.0	44.3	35.6	30.5	26.9	20.3	16.7	13.8	13.1	13.8
72.5°	47.2	41.4	34.1	26.9	23.9	20.3	16.0	12.3	10.2	9.4	10.2
75°	36.3	31.9	26.1	19.6	17.4	15.2	10.9	8.7	7.3	6.5	7.3
77.5°	25.4	22.5	18.1	14.5	12.3	10.9	8.0	5.8	5.1	4.4	5.1
80°	17.4	15.2	12.3	9.4	8.0	6.5	5.1	3.6	2.9	2.9	2.9
82.5°	11.6	9.4	7.3	5.8	5.1	4.4	2.9	2.2	2.2	1.5	1.5
85°	6.5	5.8	4.4	3.6	2.9	2.2	1.5	1.5	0.7	0.7	0.7
87.5°	2.9	2.2	1.5	1.5	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°	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7
2.5°	473.9	471.7	474.6	471.7	470.3	471.7	470.3	474.6	471.0	468.1	471.0
5°	473.2	470.3	473.2	471.0	468.8	469.5	468.1	472.4	468.1	465.9	467.4
7.5°	471.7	469.5	471.0	468.8	466.6	467.4	465.9	469.5	465.2	463.0	464.4
10°	469.5	467.4	468.1	466.6	464.4	464.4	463.0	465.9	460.8	457.9	459.4
12.5°	466.6	463.7	465.2	463.0	460.1	460.1	458.6	460.8	455.7	452.8	453.6
15°	463.0	460.1	460.1	457.9	455.0	455.0	452.1	454.3	448.5	445.6	445.6
17.5°	458.6	455.0	455.0	452.8	449.2	448.5	446.3	448.5	442.0	439.0	439.0
20°	452.1	449.2	448.5	447.0	443.4	442.7	439.8	440.5	435.4	433.2	432.5
22.5°	443.4	440.5	441.2	439.0	436.1	435.4	432.5	434.7	429.6	427.4	428.2
25°	428.2	426.7	428.2	427.4	425.3	425.3	423.8	425.3	420.9	419.5	420.2
27.5°	410.7	410.0	410.7	410.7	409.3	409.3	409.3	411.5	407.1	406.4	406.4
30°	385.3	385.3	386.1	386.8	386.8	388.3	387.5	390.4	387.5	386.1	387.5
32.5°	352.0	354.9	357.0	357.0	357.0	358.5	359.9	362.1	359.2	359.9	359.9
35°	314.2	316.4	317.9	321.5	319.3	324.4	325.8	328.7	328.0	329.5	328.7
37.5°	272.1	275.0	277.9	283.0	282.3	288.1	291.0	296.8	295.4	298.3	299.7
40°	233.0	237.3	241.7	245.3	248.2	254.0	259.8	267.1	269.2	271.4	272.1
42.5°	195.2	199.6	206.8	211.9	216.3	225.7	233.7	242.4	244.6	248.9	250.4
45°	164.7	168.4	177.1	183.6	187.2	201.0	210.5	221.3	225.0	230.0	232.2
47.5°	136.4	143.0	151.7	159.7	164.7	179.2	191.6	203.2	208.3	214.1	217.0
50°	111.8	119.0	130.6	137.9	145.1	161.1	174.9	187.2	192.3	198.8	201.7
52.5°	91.4	99.4	110.3	118.3	126.3	143.0	157.5	169.1	175.6	180.0	184.3
55°	71.8	80.6	91.4	100.1	106.7	124.8	137.2	148.8	153.1	156.8	158.9
57.5°	55.9	62.4	73.3	80.6	88.5	104.5	116.8	125.5	129.2	133.5	135.0
60°	43.5	50.1	60.2	67.5	74.7	90.0	102.3	111.0	114.7	118.3	120.5
62.5°	34.8	41.4	50.8	57.3	63.9	77.7	88.5	97.2	101.6	105.2	107.4
65°	27.6	33.4	41.4	47.9	53.0	65.3	76.2	84.2	88.5	92.2	94.3
67.5°	21.8	26.9	34.1	38.5	43.5	53.7	63.1	70.4	74.0	78.4	80.6
70°	16.7	20.3	26.9	30.5	34.1	42.8	50.1	57.3	61.0	63.9	65.3
72.5°	12.3	15.2	20.3	23.2	25.4	32.7	38.5	43.5	46.4	49.3	50.8
75°	8.7	10.9	14.5	16.7	18.1	23.2	28.3	31.9	34.1	36.3	38.5
77.5°	5.8	7.3	9.4	10.9	12.3	16.0	18.9	21.8	23.9	26.1	26.9
80°	3.6	5.1	6.5	7.3	8.0	10.2	13.1	14.5	16.0	17.4	18.1
82.5°	2.2	2.9	3.6	4.4	5.1	6.5	8.0	9.4	10.2	11.6	12.3
85°	0.7	1.5	1.5	2.2	2.2	3.6	4.4	5.1	5.8	6.5	7.3
87.5°	0.0	0.0	0.7	0.7	0.7	0.7	1.5	1.5	1.5	1.5	1.5
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):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7
2.5°	473.9	471.7	470.3	469.5	474.6	468.1	471.0	471.7
5°	471.0	468.8	467.4	466.6	471.0	465.2	467.4	468.8
7.5°	466.6	465.2	463.0	462.3	466.6	460.1	463.0	463.7
10°	461.5	459.4	457.9	457.2	460.8	454.3	457.2	457.2
12.5°	455.0	453.6	450.7	450.7	453.6	447.8	449.9	449.9
15°	446.3	444.9	442.0	442.0	444.9	439.0	441.2	441.2
17.5°	439.0	437.6	435.4	434.7	437.6	431.8	434.0	433.2
20°	433.2	431.8	428.9	428.9	431.1	425.3	427.4	427.4
22.5°	428.2	427.4	424.5	424.5	427.4	421.6	423.1	421.6
25°	420.2	419.5	416.6	417.3	418.7	412.9	415.1	413.7
27.5°	407.1	407.1	404.2	403.5	405.7	400.6	402.0	401.3
30°	386.8	387.5	383.9	383.9	384.6	380.3	382.4	381.7
32.5°	359.2	359.9	357.0	356.3	358.5	354.9	356.3	356.3
35°	328.7	329.5	327.3	327.3	329.5	327.3	327.3	326.6
37.5°	298.3	299.7	298.3	299.0	300.4	298.3	299.7	299.0
40°	273.6	275.0	272.9	274.3	275.8	273.6	275.8	274.3
42.5°	251.1	253.3	251.8	253.3	254.7	253.3	254.7	252.5
45°	234.4	235.9	235.1	235.9	237.3	236.6	237.3	236.6
47.5°	218.4	221.3	219.9	221.3	223.5	222.1	223.5	221.3
50°	203.9	206.1	205.4	206.8	207.6	206.8	208.3	206.1
52.5°	185.1	187.2	186.5	186.5	188.0	186.5	188.0	186.5
55°	160.4	161.1	161.1	161.8	161.1	160.4	161.1	159.7
57.5°	136.4	137.9	135.7	137.9	137.2	136.4	136.4	135.0
60°	121.2	123.4	121.9	123.4	122.6	122.6	122.6	121.9
62.5°	108.9	110.3	108.9	109.6	109.6	109.6	108.9	108.1
65°	95.1	97.2	95.8	96.5	95.8	95.1	95.8	95.1
67.5°	81.3	82.0	82.0	81.3	81.3	81.3	81.3	79.8
70°	66.0	66.8	66.0	67.5	66.8	66.0	66.8	65.3
72.5°	51.5	52.3	51.5	52.3	51.5	51.5	51.5	51.5
75°	38.5	39.2	39.2	39.2	39.2	39.2	37.7	39.2
77.5°	27.6	27.6	27.6	28.3	27.6	27.6	27.6	27.6
80°	18.9	18.9	18.9	19.6	18.9	19.6	18.9	19.6
82.5°	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
85°	6.5	7.3	7.3	6.5	6.5	6.5	6.5	6.5
87.5°	1.5	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)