

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: P251759

Luminaire Tested: **LD4B15D010 EU4B10209035 4LBLWW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251759
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-12)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B15D010 EU4B10209035 4LBLWW1H
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 990.0 lumens
Efficiency: N/A
Efficacy: 68.8 lumens/watt
Spacing Criteria (0/90/45): 1.12 / 1.03 / 1.12
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

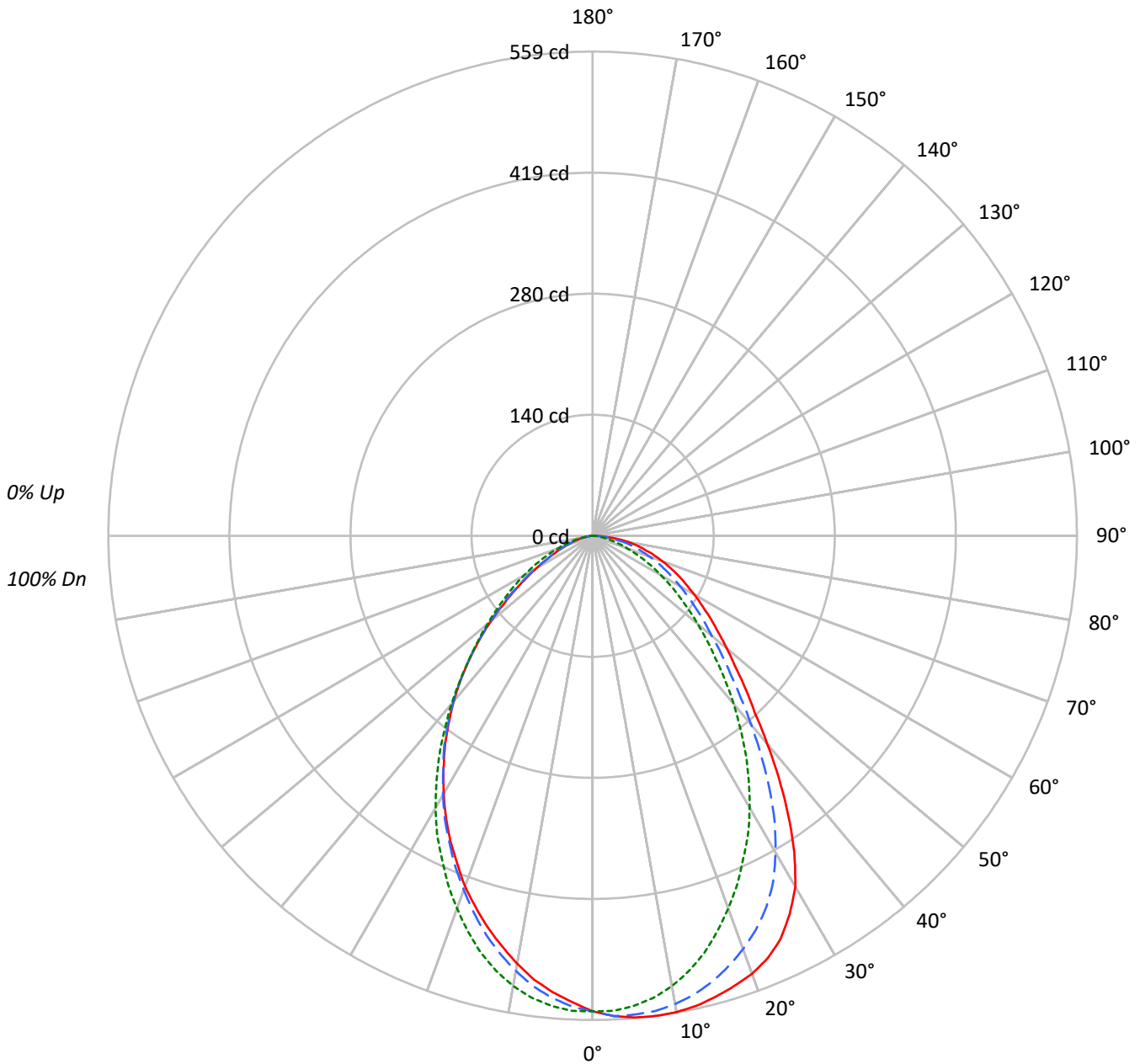
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				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	90	88			88
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	76			76
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67			67
4	88	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59			59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52			52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47			47
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42			42
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38			38
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35			35
10	59	46	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32			32

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	53504	53504	53504
5°	54619	53298	51733
10°	55250	52242	49649
15°	55563	50287	47219
20°	55808	47480	44679
25°	55229	44239	41787
30°	52666	40783	38689
35°	46828	36680	35371
40°	39872	32238	31704
45°	34346	27703	27593
50°	30612	23956	23182
55°	28138	20661	18521
60°	26353	17776	14482
65°	25320	14989	11300
70°	24306	12025	9147
75°	23534	9527	7004
80°	23684	6623	4265
85°	19792	4696	1901



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	51.4	5.2
10°-20°	141.3	14.3
20°-30°	197.6	20.0
30°-40°	203.1	20.5
40°-50°	164.9	16.7
50°-60°	116.1	11.7
60°-70°	71.5	7.2
70°-80°	35.7	3.6
80°-90°	8.5	0.9
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°	390.3	39.4
0°-40°	593.4	59.9
0°-60°	874.4	88.3
0°-90°	990.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	990.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	549	549	549	549	549	
5°	558	555	545	536	529	53
15°	551	533	498	476	468	156
25°	514	474	411	391	389	235
35°	394	356	308	299	297	245
45°	249	225	201	201	200	194
55°	166	145	122	112	109	149
65°	110	92	65	50	49	109
75°	62	49	25	19	19	67
85°	18	12	4	2	2	21
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°	549.0	549.0	549.0	549.0	549.0	549.0	549.0	549.0	549.0	549.0	549.0
2.5°	555.0	555.8	553.3	555.8	552.4	554.1	555.0	553.3	551.6	555.0	555.0
5°	558.3	558.3	555.8	559.2	555.0	555.8	557.5	555.0	552.4	555.8	555.0
7.5°	559.2	559.2	555.8	559.2	555.0	555.8	556.6	554.1	551.6	554.1	553.3
10°	558.3	557.5	555.0	558.3	554.1	554.1	555.0	552.4	548.2	550.7	549.0
12.5°	555.8	555.8	552.4	555.8	549.9	549.9	550.7	547.4	544.0	544.0	542.3
15°	550.7	550.7	547.4	549.9	544.8	544.8	544.0	540.6	536.4	536.4	533.0
17.5°	544.8	544.8	541.4	544.0	538.1	538.1	537.2	532.2	526.2	525.4	521.2
20°	538.1	538.1	533.8	535.5	528.8	528.8	527.9	522.0	515.3	513.6	507.7
22.5°	527.9	527.9	523.7	524.6	517.8	516.9	516.1	509.3	502.6	500.1	492.5
25°	513.6	512.7	509.3	509.3	502.6	500.9	499.2	492.5	485.7	480.6	473.9
27.5°	492.5	493.3	489.1	489.9	481.5	479.8	478.9	470.5	462.9	457.8	451.1
30°	468.0	465.4	461.2	461.2	454.4	453.6	451.9	444.3	435.9	429.9	422.3
32.5°	433.3	432.5	428.3	428.3	420.7	420.7	417.3	409.7	402.1	398.7	391.1
35°	393.6	392.8	389.4	389.4	382.6	383.5	380.1	374.2	366.6	361.5	355.6
37.5°	353.1	352.2	348.9	349.7	343.8	343.8	341.3	335.3	329.4	326.9	319.3
40°	313.4	312.5	308.3	310.8	305.8	304.1	303.2	299.0	292.3	288.9	284.7
42.5°	277.1	277.9	273.7	275.4	271.1	269.5	268.6	265.2	260.2	256.8	252.6
45°	249.2	247.5	245.8	245.8	241.6	240.7	239.9	235.7	232.3	228.9	224.7
47.5°	223.0	221.3	219.6	220.5	217.1	216.2	214.6	211.2	206.9	205.3	201.0
50°	201.9	201.0	198.5	198.5	195.1	194.3	192.6	190.1	185.8	183.3	179.9
52.5°	182.5	182.5	179.9	179.1	176.5	175.7	174.9	171.5	168.1	164.7	161.3
55°	165.6	164.7	163.0	163.0	159.6	158.8	158.0	154.6	151.2	148.7	145.3
57.5°	149.5	149.5	147.8	147.8	145.3	143.6	143.6	140.2	136.0	134.3	130.1
60°	135.2	135.2	133.5	133.5	130.9	130.9	129.2	125.9	123.3	119.9	116.6
62.5°	121.6	122.5	120.8	119.9	117.4	116.6	116.6	114.0	109.8	107.3	103.9
65°	109.8	109.0	108.1	107.3	104.7	103.9	103.9	100.5	98.0	94.6	92.1
67.5°	97.1	97.1	95.4	95.4	93.8	92.9	91.2	88.7	86.2	83.6	81.1
70°	85.3	85.3	84.5	84.5	81.9	81.1	80.2	77.7	75.2	72.6	69.3
72.5°	74.3	73.5	72.6	72.6	71.0	70.1	69.3	66.7	64.2	61.7	59.1
75°	62.5	62.5	61.7	61.7	60.0	59.1	59.1	57.4	54.1	52.4	49.0
77.5°	52.4	52.4	51.5	51.5	49.8	49.8	49.0	46.5	44.8	42.2	40.5
80°	42.2	41.4	41.4	40.5	38.9	38.9	38.0	37.2	34.6	32.9	30.4
82.5°	29.6	29.6	29.6	28.7	27.9	27.9	27.0	25.3	23.7	22.8	20.3
85°	17.7	17.7	16.9	16.0	16.9	16.0	15.2	14.4	13.5	12.7	11.8
87.5°	7.6	7.6	6.8	6.8	6.8	6.8	6.8	5.9	5.1	5.1	4.2
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°	549.0	549.0	549.0	549.0	549.0	549.0	549.0	549.0	549.0	549.0	549.0
2.5°	549.9	552.4	551.6	550.7	549.0	549.0	549.0	548.2	549.0	549.0	547.4
5°	549.9	551.6	550.7	549.0	547.4	547.4	546.5	544.8	544.8	544.8	541.4
7.5°	547.4	549.0	546.5	544.8	543.1	541.4	541.4	538.9	538.9	538.1	534.7
10°	542.3	543.1	539.8	538.1	535.5	534.7	533.0	529.6	528.8	527.9	524.6
12.5°	534.7	535.5	531.3	527.9	524.6	523.7	522.0	517.8	516.1	514.4	510.2
15°	523.7	523.7	518.6	514.4	511.0	510.2	506.0	501.7	500.1	498.4	492.5
17.5°	511.0	510.2	503.4	499.2	495.0	493.3	489.1	484.0	480.6	478.9	473.9
20°	497.5	495.0	487.4	483.2	478.1	475.6	471.3	464.6	461.2	457.8	452.8
22.5°	481.5	478.1	469.6	463.7	458.7	456.1	450.2	444.3	439.2	435.9	429.9
25°	462.0	457.8	448.5	440.9	436.7	434.2	428.3	421.5	416.4	411.4	406.3
27.5°	439.2	434.2	424.9	417.3	413.1	408.8	404.6	397.0	392.8	388.6	382.6
30°	411.4	405.5	397.0	390.2	385.2	381.8	376.7	370.0	364.9	362.4	356.5
32.5°	381.0	374.2	366.6	359.8	357.3	353.1	348.9	342.1	337.9	335.3	331.1
35°	347.2	342.1	333.7	328.6	324.4	322.7	319.3	312.5	310.8	308.3	303.2
37.5°	311.7	307.5	301.6	297.3	294.0	292.3	288.9	284.7	282.1	279.6	277.1
40°	278.7	275.4	270.3	266.9	262.7	260.2	260.2	255.1	253.4	253.4	250.9
42.5°	246.6	245.0	240.7	235.7	234.8	232.3	231.4	228.9	227.2	226.4	225.5
45°	219.6	217.1	212.9	210.3	207.8	207.8	205.3	202.7	201.9	201.0	200.2
47.5°	196.0	192.6	189.2	186.7	185.0	184.1	181.6	179.9	179.1	179.1	178.2
50°	174.9	172.3	168.9	166.4	164.7	163.0	161.3	159.6	158.8	158.0	158.0
52.5°	157.1	153.7	150.4	147.8	145.3	144.4	142.8	141.1	140.2	139.4	138.5
55°	141.1	138.5	134.3	131.8	129.2	129.2	126.7	124.2	122.5	121.6	120.8
57.5°	125.9	123.3	119.1	116.6	114.9	113.2	111.5	109.8	108.1	106.4	104.7
60°	112.3	109.8	105.6	102.2	101.4	99.7	98.0	94.6	92.9	91.2	89.5
62.5°	99.7	96.3	92.9	89.5	88.7	87.0	84.5	81.9	79.4	77.7	75.2
65°	87.8	85.3	81.1	78.6	76.0	75.2	72.6	69.3	66.7	65.0	62.5
67.5°	76.9	73.5	69.3	66.7	65.0	63.4	60.8	58.3	55.7	53.2	50.7
70°	65.9	63.4	59.1	56.6	54.9	53.2	50.7	47.3	44.8	42.2	40.5
72.5°	55.7	52.4	49.0	46.5	44.8	43.1	40.5	38.0	35.5	33.8	31.3
75°	46.5	43.1	40.5	37.2	36.3	34.6	32.1	29.6	27.0	25.3	23.7
77.5°	37.2	34.6	31.3	29.6	27.9	26.2	24.5	22.0	20.3	17.7	16.0
80°	27.9	25.3	22.8	21.1	19.4	18.6	16.9	15.2	13.5	11.8	11.0
82.5°	18.6	16.9	14.4	13.5	12.7	11.8	10.1	9.3	8.4	7.6	6.8
85°	10.1	9.3	8.4	6.8	6.8	5.9	5.1	5.1	4.2	4.2	3.4
87.5°	4.2	3.4	3.4	2.5	2.5	2.5	1.7	1.7	1.7	0.8	0.8
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°	549.0	549.0	549.0	549.0	549.0	549.0	549.0	549.0	549.0	549.0	549.0
2.5°	548.2	544.8	544.8	544.8	542.3	543.1	544.0	544.8	544.0	541.4	544.0
5°	542.3	538.9	538.9	537.2	535.5	535.5	535.5	536.4	535.5	533.0	533.8
7.5°	534.7	530.5	529.6	527.9	526.2	525.4	525.4	525.4	524.6	521.2	522.9
10°	522.9	518.6	516.9	516.1	513.6	512.7	511.9	511.0	510.2	506.8	508.5
12.5°	508.5	505.1	501.7	500.9	498.4	496.7	495.8	495.8	494.1	490.8	492.5
15°	491.6	486.5	484.0	482.3	479.8	478.1	476.4	477.2	476.4	473.0	473.9
17.5°	471.3	466.3	463.7	462.9	459.5	457.8	457.0	457.0	456.1	452.8	453.6
20°	449.4	444.3	442.6	440.9	439.2	437.5	436.7	435.9	435.0	431.6	434.2
22.5°	427.4	421.5	419.0	419.0	415.6	414.7	413.9	414.7	413.9	410.5	412.2
25°	404.6	398.7	397.0	394.5	392.8	391.9	391.9	391.9	391.1	389.4	391.1
27.5°	379.3	375.0	372.5	371.7	370.0	369.1	368.3	369.1	369.1	366.6	368.3
30°	353.9	350.5	348.9	348.0	345.5	344.6	345.5	345.5	345.5	342.9	345.5
32.5°	328.6	326.0	325.2	322.7	321.0	321.0	321.0	321.8	321.0	319.3	321.8
35°	303.2	299.9	299.0	298.2	298.2	296.5	298.2	297.3	299.0	296.5	298.2
37.5°	276.2	274.5	273.7	273.7	272.0	272.8	272.8	272.8	274.5	272.0	273.7
40°	250.9	249.2	249.2	249.2	248.3	248.3	248.3	249.2	250.0	248.3	250.0
42.5°	225.5	224.7	224.7	223.8	223.0	223.8	224.7	224.7	225.5	223.8	224.7
45°	201.0	200.2	201.0	200.2	200.2	199.3	200.2	201.0	201.0	200.2	200.2
47.5°	178.2	178.2	177.4	177.4	177.4	177.4	177.4	177.4	177.4	175.7	177.4
50°	158.0	156.3	157.1	156.3	156.3	155.4	155.4	154.6	153.7	152.9	152.9
52.5°	138.5	136.8	136.8	136.0	135.2	135.2	134.3	133.5	132.6	130.9	130.9
55°	119.9	118.3	117.4	116.6	115.7	114.9	114.0	113.2	111.5	110.7	110.7
57.5°	103.1	101.4	99.7	99.7	98.0	97.1	95.4	93.8	92.9	91.2	91.2
60°	87.8	86.2	83.6	82.8	81.9	80.2	77.7	76.9	76.0	74.3	75.2
62.5°	73.5	71.0	68.4	67.6	66.7	65.0	63.4	61.7	60.8	61.7	61.7
65°	60.0	57.4	55.7	54.1	53.2	51.5	50.7	49.8	49.8	49.8	50.7
67.5°	48.1	45.6	43.9	43.1	41.4	40.5	40.5	40.5	40.5	40.5	40.5
70°	38.0	36.3	34.6	32.9	32.9	32.1	32.1	32.1	32.1	32.1	32.1
72.5°	28.7	27.0	26.2	26.2	25.3	25.3	25.3	25.3	24.5	24.5	25.3
75°	21.1	20.3	19.4	19.4	19.4	18.6	18.6	18.6	18.6	18.6	18.6
77.5°	15.2	14.4	14.4	13.5	13.5	13.5	13.5	13.5	13.5	12.7	12.7
80°	10.1	9.3	9.3	9.3	9.3	8.4	8.4	8.4	8.4	8.4	8.4
82.5°	5.9	5.9	5.9	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
85°	3.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
87.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	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):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	549.0	549.0	549.0	549.0	549.0	549.0	549.0	549.0
2.5°	538.9	542.3	543.1	540.6	541.4	539.8	540.6	538.9
5°	529.6	532.2	533.0	531.3	531.3	529.6	530.5	528.8
7.5°	517.8	520.3	521.2	519.5	519.5	517.8	517.8	516.9
10°	504.3	505.1	506.8	504.3	505.1	503.4	503.4	501.7
12.5°	487.4	489.1	490.8	488.2	488.2	487.4	487.4	484.9
15°	469.6	471.3	472.2	470.5	470.5	469.6	468.8	468.0
17.5°	451.1	451.9	453.6	451.1	452.8	451.1	451.1	449.4
20°	429.9	432.5	433.3	430.8	431.6	430.8	430.8	430.8
22.5°	409.7	411.4	412.2	410.5	411.4	409.7	410.5	408.8
25°	388.6	389.4	390.2	388.6	390.2	389.4	388.6	388.6
27.5°	366.6	367.4	368.3	366.6	368.3	367.4	368.3	366.6
30°	342.9	344.6	346.3	344.6	345.5	344.6	344.6	343.8
32.5°	319.3	321.0	322.7	321.0	322.7	321.0	321.8	320.1
35°	297.3	298.2	299.0	297.3	298.2	298.2	298.2	297.3
37.5°	272.8	274.5	274.5	273.7	275.4	274.5	274.5	272.8
40°	249.2	250.0	250.9	249.2	250.0	249.2	250.0	249.2
42.5°	224.7	226.4	227.2	225.5	225.5	225.5	224.7	225.5
45°	199.3	201.0	202.7	200.2	201.0	201.0	201.0	200.2
47.5°	176.5	176.5	177.4	176.5	177.4	175.7	177.4	176.5
50°	152.9	152.9	154.6	152.9	152.9	152.9	152.9	152.9
52.5°	130.1	130.9	130.9	129.2	130.1	129.2	130.1	129.2
55°	109.0	109.0	109.8	109.0	109.0	109.0	109.0	109.0
57.5°	90.4	91.2	91.2	90.4	91.2	90.4	90.4	90.4
60°	75.2	75.2	75.2	74.3	75.2	74.3	75.2	74.3
62.5°	60.8	61.7	61.7	60.8	61.7	60.8	60.8	60.8
65°	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.0
67.5°	39.7	39.7	40.5	39.7	40.5	40.5	40.5	40.5
70°	32.1	32.1	32.1	32.1	32.1	32.1	32.1	32.1
72.5°	24.5	24.5	25.3	24.5	24.5	24.5	24.5	24.5
75°	18.6	18.6	18.6	18.6	18.6	17.7	17.7	18.6
77.5°	12.7	12.7	12.7	12.7	12.7	12.7	12.7	13.5
80°	8.4	8.4	8.4	8.4	7.6	7.6	8.4	7.6
82.5°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
85°	2.5	2.5	1.7	1.7	1.7	1.7	1.7	1.7
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)