

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: P251619

Luminaire Tested: **LD4B20D010 EU4B10209727 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251619
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B20D010 EU4B10209727 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 97CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1284.0 lumens
Efficiency: N/A
Efficacy: 61.7 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

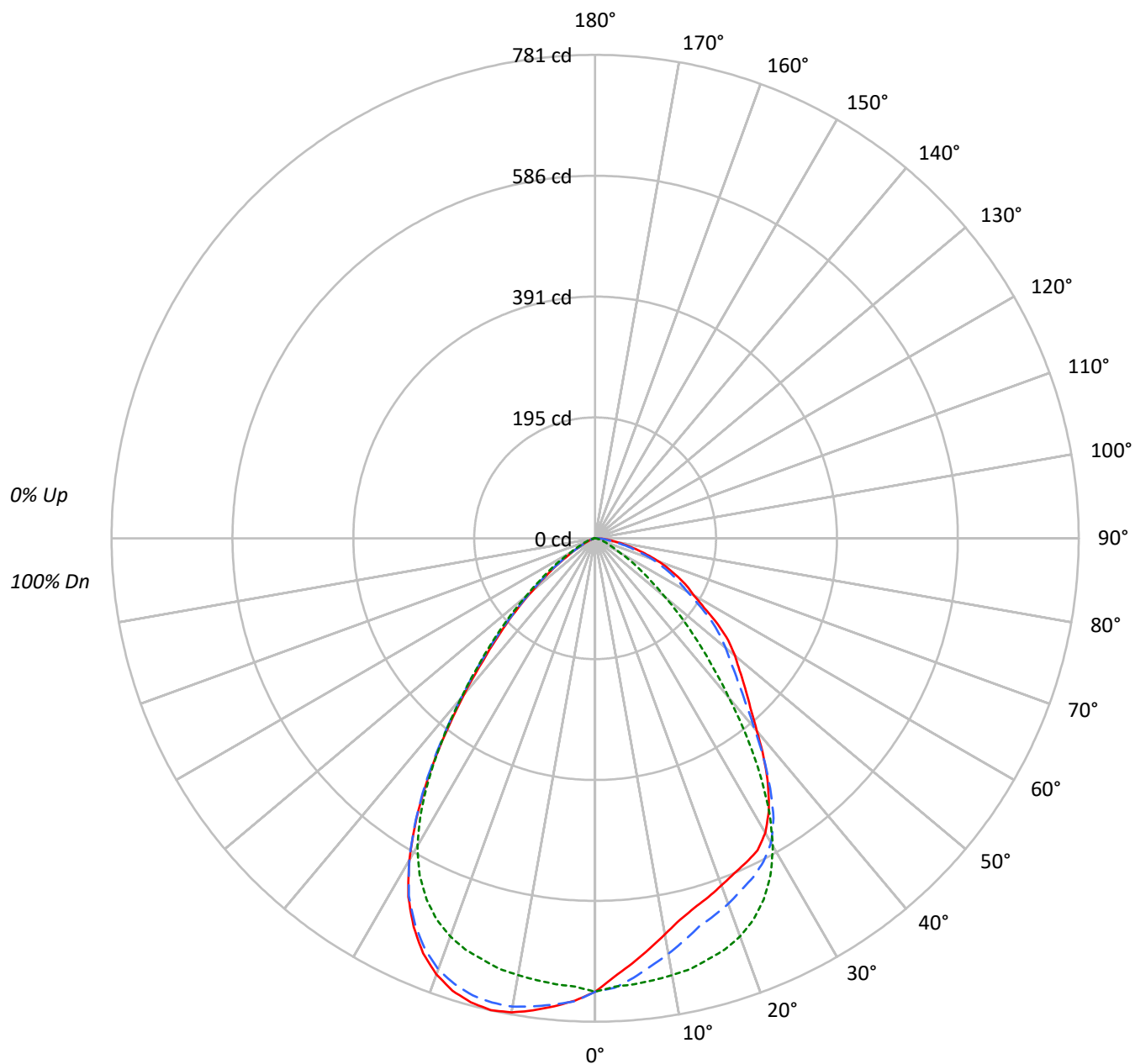
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10		50	30	10		50	30	10		50	30	10
RCR																				
0	119	119	119	119	116	116	116	116		111	111	111		106	106	106		102	102	102
1	111	108	104	101	109	106	103	100		101	99	97		98	96	94		94	93	91
2	104	97	92	87	101	95	90	86		92	88	84		89	85	82		86	83	81
3	96	88	81	76	94	86	80	75		83	78	74		81	76	73		78	75	72
4	90	80	72	67	88	78	72	66		76	70	66		74	69	65		72	68	64
5	83	73	65	60	82	72	65	59		70	63	59		68	62	58		66	61	58
6	78	67	59	53	76	66	59	53		64	58	53		62	57	52		61	56	52
7	73	61	54	48	71	61	53	48		59	53	48		58	52	48		56	51	47
8	68	57	49	44	67	56	49	44		55	48	44		54	48	43		52	47	43
9	64	52	45	40	63	52	45	40		51	44	40		50	44	40		49	44	40
10	61	49	42	37	59	48	42	37		47	41	37		47	41	37		46	40	37

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	71388	71388	71388
5°	67415	70741	74243
10°	64266	70906	76972
15°	62384	71051	78285
20°	61875	70981	77733
25°	62122	69230	74510
30°	61827	64584	67566
35°	57952	55145	55704
40°	51640	42747	41793
45°	47233	31879	29922
50°	44651	22333	20180
55°	41068	15071	12676
60°	35884	8830	6997
65°	33968	5650	3920
70°	30945	4046	2422
75°	25605	2862	1770
80°	20148	1571	1066
85°	17891	1006	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	69.2	5.4
10°-20°	198.6	15.5
20°-30°	294.3	22.9
30°-40°	294.7	23.0
40°-50°	206.0	16.0
50°-60°	122.6	9.5
60°-70°	64.0	5.0
70°-80°	28.4	2.2
80°-90°	6.2	0.5
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°	562.1	43.8
0°-40°	856.8	66.7
0°-60°	1185.4	92.3
0°-90°	1284.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1284.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	732	732	732	732	732	
5°	689	713	723	756	759	65
15°	618	649	704	765	776	175
25°	578	604	644	688	693	266
35°	487	493	464	472	468	302
45°	343	326	231	224	217	266
55°	242	226	89	77	75	214
65°	147	135	24	18	17	146
75°	68	60	8	5	5	74
85°	16	12	1	1	0	18
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°	732.5	732.5	732.5	732.5	732.5	732.5	732.5	732.5	732.5	732.5	732.5
2.5°	708.9	717.4	708.9	711.7	723.1	712.7	718.3	718.3	715.5	722.1	726.8
5°	689.1	697.6	689.1	692.9	705.1	694.7	701.4	699.5	700.4	706.1	712.7
7.5°	669.3	675.9	668.3	673.0	684.4	675.9	681.5	681.5	682.5	691.0	696.6
10°	649.4	655.1	649.4	653.2	665.5	657.9	661.7	662.7	665.5	673.0	681.5
12.5°	631.5	636.2	630.6	636.2	646.6	639.1	643.8	644.7	647.6	656.0	665.5
15°	618.3	623.0	617.3	622.1	631.5	625.8	629.6	631.5	633.4	640.9	649.4
17.5°	607.9	611.7	607.0	612.6	620.2	613.6	619.2	619.2	622.1	629.6	639.1
20°	596.6	600.4	596.6	601.3	609.8	604.1	608.8	608.8	611.7	620.2	628.7
22.5°	586.2	588.1	586.2	590.0	598.5	593.7	596.6	597.5	600.4	607.9	615.5
25°	577.7	581.5	579.6	583.4	589.0	584.3	587.1	588.1	590.9	597.5	604.1
27.5°	568.3	570.1	568.3	573.0	577.7	573.9	576.8	575.8	577.7	583.4	589.0
30°	549.4	551.3	551.3	554.1	557.9	556.0	558.8	556.0	557.9	562.6	568.3
32.5°	522.0	522.9	523.9	526.7	529.6	526.7	528.6	528.6	528.6	532.4	536.2
35°	487.1	489.0	488.0	489.9	492.7	491.8	491.8	490.9	489.0	490.9	492.7
37.5°	447.4	444.6	444.6	447.4	449.3	445.5	447.4	445.5	445.5	446.5	446.5
40°	405.9	403.1	405.9	406.8	407.8	405.9	405.0	403.1	400.2	401.2	399.3
42.5°	371.0	369.1	370.0	370.0	371.0	369.1	370.0	366.3	363.4	361.5	358.7
45°	342.7	339.8	342.7	340.8	340.8	339.8	338.9	337.0	333.2	330.4	325.7
47.5°	316.2	316.2	317.2	317.2	317.2	315.3	315.3	311.5	307.7	304.0	297.3
50°	294.5	292.6	296.4	296.4	293.6	292.6	293.6	288.8	286.0	281.3	274.7
52.5°	270.9	270.9	271.9	271.9	270.9	269.0	270.0	266.2	263.4	258.6	252.0
55°	241.7	239.8	242.6	242.6	241.7	240.7	241.7	238.8	236.0	232.2	226.5
57.5°	208.6	207.7	209.6	210.5	208.6	208.6	209.6	206.7	205.8	202.0	196.3
60°	184.1	183.1	185.0	186.0	184.1	184.1	184.1	180.3	178.4	174.6	170.9
62.5°	167.1	166.1	168.0	167.1	166.1	165.2	166.1	162.4	160.5	156.7	152.9
65°	147.3	148.2	149.1	149.1	148.2	147.3	147.3	145.4	143.5	139.7	135.0
67.5°	128.4	128.4	129.3	130.3	129.3	129.3	129.3	126.5	124.6	121.8	116.1
70°	108.6	107.6	110.4	110.4	108.6	109.5	108.6	107.6	105.7	101.9	97.2
72.5°	87.8	87.8	88.7	88.7	87.8	87.8	87.8	86.8	84.0	82.1	77.4
75°	68.0	68.0	68.9	69.9	68.0	68.0	68.9	67.0	65.1	62.3	59.5
77.5°	51.0	50.0	51.0	51.0	50.0	50.0	50.0	49.1	48.1	45.3	42.5
80°	35.9	34.9	35.9	35.9	35.9	34.9	34.9	34.0	34.0	32.1	29.3
82.5°	24.5	23.6	24.5	24.5	24.5	23.6	23.6	23.6	22.7	21.7	19.8
85°	16.0	15.1	15.1	16.0	15.1	15.1	15.1	15.1	14.2	13.2	12.3
87.5°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	6.6	6.6	6.6	5.7
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°	732.5	732.5	732.5	732.5	732.5	732.5	732.5	732.5	732.5	732.5	732.5
2.5°	723.1	721.2	726.8	725.0	725.9	721.2	728.7	725.0	729.7	725.0	734.4
5°	710.8	708.9	717.4	716.5	717.4	713.6	722.1	721.2	726.8	723.1	733.4
7.5°	697.6	695.7	705.1	706.1	708.0	704.2	715.5	715.5	721.2	720.2	731.6
10°	682.5	683.4	692.9	694.7	698.5	696.6	707.0	709.9	717.4	716.5	730.6
12.5°	668.3	668.3	680.6	684.4	687.2	686.3	698.5	702.3	710.8	712.7	725.9
15°	654.2	655.1	666.4	672.1	675.9	674.9	688.1	692.9	703.2	704.2	720.2
17.5°	642.8	641.9	654.2	658.9	664.5	663.6	677.8	683.4	693.8	696.6	711.7
20°	633.4	632.4	643.8	649.4	653.2	652.3	666.4	673.0	682.5	684.4	699.5
22.5°	622.1	620.2	631.5	636.2	640.0	639.1	651.3	656.0	665.5	667.4	681.5
25°	608.8	607.0	617.3	620.2	623.0	621.1	631.5	634.3	641.9	643.8	657.9
27.5°	593.7	589.0	597.5	597.5	599.4	596.6	604.1	607.0	613.6	613.6	626.8
30°	570.1	563.5	568.3	567.3	568.3	564.5	569.2	570.1	574.9	573.9	583.4
32.5°	537.1	527.7	530.5	527.7	524.8	519.2	524.8	522.9	526.7	522.9	531.4
35°	491.8	482.4	481.4	477.6	474.8	470.1	470.1	465.4	466.3	463.5	469.1
37.5°	442.7	430.4	428.6	421.0	416.3	410.6	410.6	406.8	402.1	400.2	405.0
40°	394.6	381.4	376.6	364.4	359.6	354.0	350.2	345.5	343.6	336.0	339.8
42.5°	353.0	338.9	328.5	315.3	310.6	302.1	296.4	290.7	287.9	279.4	283.2
45°	318.1	301.1	289.8	272.8	266.2	256.8	248.3	241.7	235.0	231.3	229.4
47.5°	288.8	270.9	255.8	236.9	226.5	218.1	206.7	200.1	191.6	186.9	184.1
50°	264.3	244.5	227.5	205.8	195.4	186.0	172.7	162.4	154.8	147.3	145.4
52.5°	242.6	221.8	202.9	178.4	166.1	154.8	140.6	129.3	122.7	114.2	113.3
55°	217.1	199.2	178.4	152.9	140.6	129.3	114.2	102.9	94.4	88.7	86.8
57.5°	189.7	172.7	152.9	127.4	115.2	102.9	88.7	78.3	70.8	66.1	65.1
60°	164.2	148.2	129.3	103.8	91.6	81.2	66.1	55.7	49.1	45.3	43.4
62.5°	145.4	130.3	112.3	88.7	77.4	67.0	52.9	43.4	37.8	34.0	32.1
65°	127.4	112.3	96.3	74.6	65.1	55.7	42.5	34.0	28.3	24.5	22.7
67.5°	108.6	95.3	80.2	62.3	52.9	45.3	34.0	26.4	21.7	18.9	17.0
70°	89.7	77.4	65.1	50.0	43.4	35.9	26.4	20.8	16.0	14.2	12.3
72.5°	70.8	61.4	51.0	38.7	33.0	28.3	20.8	15.1	12.3	10.4	8.5
75°	52.9	46.3	37.8	29.3	24.5	20.8	15.1	11.3	9.4	7.6	6.6
77.5°	37.8	32.1	26.4	19.8	17.9	15.1	10.4	8.5	6.6	4.7	3.8
80°	25.5	22.7	17.9	14.2	11.3	10.4	7.6	5.7	3.8	2.8	2.8
82.5°	17.0	14.2	11.3	8.5	7.6	6.6	4.7	3.8	2.8	1.9	1.9
85°	10.4	8.5	6.6	4.7	4.7	3.8	2.8	1.9	0.9	0.9	0.9
87.5°	4.7	3.8	2.8	1.9	1.9	0.9	0.9	0.9	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°	732.5	732.5	732.5	732.5	732.5	732.5	732.5	732.5	732.5	732.5	732.5
2.5°	741.9	736.3	732.5	737.2	739.1	736.3	739.1	743.8	748.6	749.5	736.3
5°	742.9	737.2	735.3	741.0	741.9	741.0	743.8	750.4	756.1	758.0	744.8
7.5°	742.9	739.1	738.2	744.8	745.7	744.8	749.5	757.0	762.7	766.5	753.3
10°	741.0	739.1	740.1	745.7	747.6	747.6	754.2	762.7	768.4	772.2	758.9
12.5°	738.2	738.2	738.2	744.8	746.7	747.6	753.3	764.6	768.4	774.0	760.8
15°	733.4	733.4	733.4	740.1	742.9	742.9	749.5	759.9	764.6	770.3	757.0
17.5°	725.0	725.0	725.9	731.6	734.4	734.4	741.0	752.3	755.2	761.8	748.6
20°	712.7	712.7	713.6	719.3	722.1	720.2	728.7	738.2	741.0	746.7	733.4
22.5°	694.7	694.7	694.7	700.4	702.3	701.4	709.9	718.3	718.3	725.9	711.7
25°	668.3	670.2	668.3	674.0	675.9	674.9	682.5	690.0	688.1	696.6	682.5
27.5°	636.2	635.3	635.3	640.0	640.0	639.1	644.7	653.2	651.3	657.0	643.8
30°	591.9	594.7	590.0	596.6	593.7	591.9	595.6	603.2	600.4	605.1	594.7
32.5°	540.9	537.1	537.1	537.1	539.0	534.3	538.1	541.8	539.0	543.7	532.4
35°	473.9	474.8	472.0	472.9	473.9	468.2	472.0	475.8	472.0	474.8	464.4
37.5°	406.8	407.8	401.2	405.0	401.2	399.3	403.1	405.0	401.2	404.0	392.7
40°	339.8	337.9	337.0	337.0	337.9	333.2	336.0	338.9	336.0	337.9	327.6
42.5°	281.3	280.4	278.5	279.4	276.6	275.6	276.6	279.4	276.6	278.5	270.9
45°	230.3	228.4	225.6	226.5	226.5	221.8	224.7	226.5	223.7	224.7	218.1
47.5°	183.1	180.3	180.3	179.4	179.4	177.5	180.3	179.4	176.5	178.4	171.8
50°	142.5	140.6	140.6	140.6	140.6	137.8	138.8	140.6	137.8	137.8	134.0
52.5°	111.4	108.6	106.7	106.7	106.7	105.7	105.7	106.7	103.8	103.8	102.9
55°	84.0	83.1	80.2	80.2	80.2	77.4	78.3	78.3	77.4	77.4	74.6
57.5°	62.3	59.5	57.6	57.6	55.7	55.7	54.7	55.7	53.8	53.8	51.9
60°	41.5	39.6	38.7	37.8	37.8	36.8	37.8	36.8	36.8	35.9	34.9
62.5°	30.2	28.3	26.4	26.4	26.4	25.5	25.5	25.5	25.5	25.5	24.5
65°	21.7	19.8	19.8	18.9	18.9	17.9	17.9	17.9	17.9	17.9	17.0
67.5°	15.1	14.2	13.2	13.2	13.2	13.2	13.2	13.2	12.3	12.3	12.3
70°	11.3	10.4	9.4	9.4	9.4	9.4	9.4	8.5	9.4	9.4	8.5
72.5°	7.6	7.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
75°	5.7	5.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
77.5°	3.8	3.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
80°	2.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
82.5°	1.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
85°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.0
87.5°	0.0	0.0	0.0	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	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	732.5	732.5	732.5	732.5	732.5	732.5	732.5	732.5
2.5°	750.4	749.5	747.6	750.4	742.9	740.1	739.1	747.6
5°	760.8	758.9	758.9	761.8	753.3	751.4	749.5	758.9
7.5°	770.3	768.4	768.4	771.2	763.7	761.8	759.9	769.3
10°	775.9	775.9	775.9	777.8	771.2	769.3	768.4	777.8
12.5°	778.8	778.8	777.8	781.6	773.1	773.1	771.2	780.6
15°	775.0	775.0	775.0	777.8	770.3	768.4	768.4	775.9
17.5°	765.5	765.5	764.6	767.4	758.9	758.9	758.0	766.5
20°	751.4	751.4	749.5	753.3	744.8	741.9	741.0	749.5
22.5°	728.7	727.8	726.8	728.7	721.2	719.3	718.3	725.9
25°	699.5	698.5	696.6	698.5	690.0	687.2	687.2	692.9
27.5°	657.9	657.9	655.1	657.9	648.5	647.6	646.6	653.2
30°	607.0	603.2	601.3	605.1	595.6	595.6	593.7	600.4
32.5°	543.7	539.9	539.0	540.9	532.4	529.6	533.3	537.1
35°	471.0	472.0	468.2	468.2	460.6	461.6	462.5	468.2
37.5°	401.2	399.3	398.3	399.3	393.6	391.7	389.9	395.5
40°	336.0	331.3	330.4	330.4	325.7	324.7	325.7	328.5
42.5°	274.7	273.7	270.0	271.9	267.1	269.0	268.1	268.1
45°	221.8	222.8	219.0	221.8	218.1	215.2	215.2	217.1
47.5°	175.6	175.6	174.6	174.6	171.8	172.7	170.9	173.7
50°	135.9	135.9	134.0	135.0	133.1	133.1	132.2	133.1
52.5°	103.8	102.9	102.9	101.9	100.1	101.0	101.9	100.1
55°	75.5	76.5	74.6	75.5	73.6	74.6	73.6	74.6
57.5°	51.9	52.9	51.0	52.9	51.0	51.9	51.0	51.0
60°	35.9	35.9	34.9	35.9	34.9	34.9	34.0	35.9
62.5°	24.5	24.5	24.5	24.5	24.5	23.6	24.5	24.5
65°	17.9	17.0	17.0	17.0	17.0	17.0	17.0	17.0
67.5°	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
70°	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
72.5°	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
75°	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
77.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
80°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
82.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
85°	0.9	0.9	0.9	0.0	0.9	0.0	0.0	0.0
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)