

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: P251535

Luminaire Tested: **LD4B20D010 EU4B10209024 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251535
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-10)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B20D010 EU4B10209024 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2400K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1350.0 lumens
Efficiency: N/A
Efficacy: 64.9 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.19
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

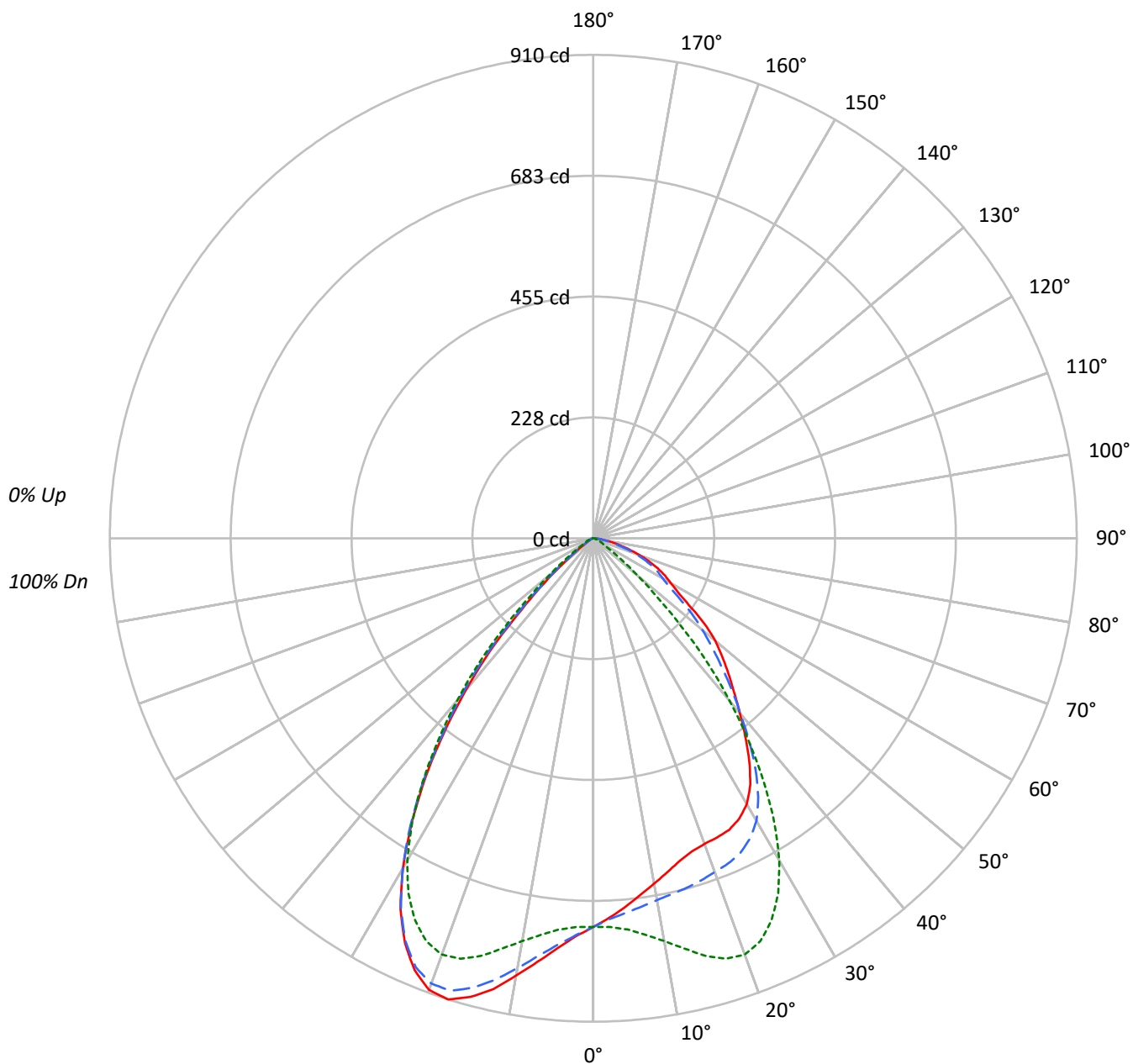
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	112	108	105	102	109	106	103	101	102	100	98		98	96	95		95
2	104	98	93	89	102	96	92	88	93	89	86		90	87	84		87
3	97	89	83	78	95	88	82	77	85	80	76		82	78	75		80
4	91	81	75	69	89	80	74	69	78	72	68		76	71	67		74
5	85	75	67	62	83	74	67	62	72	66	61		70	65	60		68
6	79	69	61	56	78	68	61	56	66	60	55		64	59	55		63
7	75	63	56	51	73	62	55	51	61	55	50		60	54	50		58
8	70	58	51	46	69	58	51	46	57	50	46		55	50	46		54
9	66	54	47	42	65	54	47	42	53	46	42		52	46	42		51
10	62	51	44	39	61	50	43	39	49	43	39		48	43	39		47

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	71300	71300	71300
5°	68109	72316	75770
10°	65305	76181	82702
15°	63403	82099	90191
20°	63493	86476	93798
25°	65111	85338	90274
30°	65023	78774	80609
35°	60903	66590	65674
40°	54553	50787	47390
45°	49494	32251	26463
50°	45470	16360	11296
55°	37330	7306	3738
60°	32765	4093	2047
65°	30832	3090	1545
70°	26386	2451	1368
75°	20145	1807	1092
80°	14480	1066	561
85°	10735	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	71.1	5.3
10°-20°	221.5	16.4
20°-30°	342.6	25.4
30°-40°	337.6	25.0
40°-50°	207.3	15.4
50°-60°	92.2	6.8
60°-70°	51.5	3.8
70°-80°	22.3	1.7
80°-90°	4.0	0.3
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°	635.2	47.0
0°-40°	972.8	72.1
0°-60°	1272.2	94.2
0°-90°	1350.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1350.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	732	732	732	732	732	
5°	696	708	739	768	774	65
15°	628	681	814	876	894	178
25°	606	654	794	837	840	278
35°	512	533	560	558	552	318
45°	359	341	234	204	192	278
55°	220	199	43	25	22	202
65°	134	120	13	8	7	131
75°	54	46	5	3	3	59
85°	10	8	0	0	0	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°	731.6	731.6	731.6	731.6	731.6	731.6	731.6	731.6	731.6	731.6	731.6
2.5°	714.4	714.4	714.4	714.4	716.3	713.4	716.3	716.3	719.1	720.1	717.2
5°	696.2	695.3	696.2	696.2	698.1	697.2	700.0	702.0	705.8	707.7	707.7
7.5°	677.1	677.1	677.1	679.0	681.9	680.9	683.8	686.7	692.4	696.2	699.1
10°	659.9	659.0	661.8	662.8	665.7	665.7	670.4	673.3	680.0	687.6	691.5
12.5°	643.7	642.7	644.7	647.5	652.3	652.3	656.1	660.9	670.4	679.0	685.7
15°	628.4	629.4	632.2	634.1	639.9	639.9	644.7	650.4	660.9	671.4	680.9
17.5°	617.9	618.9	620.8	623.6	629.4	629.4	634.1	640.8	652.3	663.8	675.2
20°	612.2	613.1	615.0	617.9	622.7	623.6	627.5	635.1	645.6	658.0	668.5
22.5°	609.3	611.2	613.1	615.0	619.8	619.8	624.6	630.3	640.8	653.2	662.8
25°	605.5	607.4	608.4	611.2	615.0	615.0	617.9	624.6	634.1	644.7	654.2
27.5°	595.0	596.9	597.9	600.7	604.5	603.6	607.4	612.2	620.8	630.3	638.0
30°	577.8	578.8	580.7	581.6	584.5	584.5	587.4	592.1	597.9	606.5	614.1
32.5°	550.1	552.0	553.0	553.9	556.8	555.8	556.8	559.7	565.4	573.0	577.8
35°	511.9	515.7	515.7	517.6	518.6	517.6	517.6	521.5	524.3	530.0	532.9
37.5°	469.9	472.7	471.8	473.7	474.7	471.8	473.7	474.7	478.5	481.3	482.3
40°	428.8	429.8	429.8	429.8	429.8	428.8	429.8	430.7	433.6	433.6	430.7
42.5°	391.6	392.5	392.5	390.6	392.5	391.6	391.6	391.6	391.6	387.7	384.9
45°	359.1	360.1	360.1	359.1	359.1	357.2	356.2	355.3	352.4	347.6	340.9
47.5°	328.5	330.4	331.4	329.5	328.5	326.6	326.6	320.9	317.1	311.3	301.8
50°	299.9	301.8	301.8	299.9	299.9	297.0	294.2	292.2	286.5	279.8	268.4
52.5°	263.6	266.5	266.5	265.5	265.5	261.7	260.7	256.9	252.1	244.5	234.9
55°	219.7	223.5	222.5	221.6	219.7	219.7	219.7	216.8	213.9	208.2	198.6
57.5°	188.1	189.1	189.1	188.1	188.1	186.2	186.2	183.4	182.4	176.7	169.0
60°	168.1	168.1	169.0	168.1	167.1	166.2	165.2	163.3	160.4	156.6	150.9
62.5°	151.9	152.8	152.8	151.9	150.9	149.9	149.0	147.1	145.2	142.3	136.6
65°	133.7	135.6	134.7	133.7	132.8	131.8	131.8	129.9	128.0	126.1	120.3
67.5°	113.6	114.6	115.6	113.6	113.6	112.7	112.7	110.8	109.8	106.0	102.2
70°	92.6	93.6	93.6	92.6	92.6	91.7	91.7	90.7	89.8	86.9	83.1
72.5°	72.6	73.5	72.6	71.6	71.6	71.6	70.7	69.7	68.8	66.9	64.0
75°	53.5	53.5	54.4	53.5	52.5	52.5	51.6	51.6	49.7	48.7	45.8
77.5°	38.2	39.2	38.2	38.2	37.2	36.3	36.3	35.3	35.3	34.4	32.5
80°	25.8	25.8	26.7	25.8	24.8	25.8	24.8	23.9	23.9	22.9	21.0
82.5°	16.2	17.2	16.2	16.2	16.2	16.2	16.2	15.3	15.3	14.3	13.4
85°	9.6	9.6	9.6	9.6	9.6	9.6	9.6	8.6	8.6	8.6	7.6
87.5°	4.8	4.8	3.8	3.8	4.8	4.8	4.8	3.8	3.8	3.8	3.8
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	731.6	731.6	731.6	731.6	731.6	731.6	731.6	731.6	731.6	731.6	731.6
2.5°	721.1	722.0	723.9	726.8	726.8	724.9	729.7	729.7	731.6	732.5	736.3
5°	713.4	715.3	719.1	723.9	724.9	723.9	730.6	733.5	736.3	739.2	744.9
7.5°	706.7	710.6	717.2	723.9	726.8	726.8	737.3	741.1	746.8	752.6	759.3
10°	702.9	708.6	718.2	728.7	731.6	734.4	746.8	754.5	762.1	769.8	779.3
12.5°	698.1	708.6	721.1	734.4	740.2	744.0	761.2	770.7	781.2	790.8	803.2
15°	697.2	709.6	725.8	743.0	750.7	756.4	775.5	788.9	801.3	813.7	826.1
17.5°	693.4	708.6	728.7	747.8	757.3	765.0	787.0	803.2	817.5	829.9	844.3
20°	688.6	705.8	727.7	748.8	759.3	766.9	790.8	806.1	822.3	833.8	847.1
22.5°	681.9	699.1	721.1	742.1	751.6	758.3	782.2	795.5	809.9	821.3	833.8
25°	670.4	686.7	705.8	723.0	732.5	738.2	759.3	771.7	782.2	793.6	805.1
27.5°	654.2	666.6	682.9	695.3	701.0	706.7	723.9	734.4	744.0	753.5	761.2
30°	625.6	635.1	646.6	657.1	662.8	663.8	680.0	685.7	693.4	700.0	705.8
32.5°	587.4	595.0	601.7	607.4	611.2	612.2	624.6	626.5	634.1	634.1	642.7
35°	538.6	542.5	547.2	547.2	550.1	547.2	555.8	557.7	558.7	559.7	566.3
37.5°	483.3	485.2	488.0	482.3	482.3	479.4	482.3	484.2	480.4	480.4	485.2
40°	430.7	426.9	423.1	417.4	414.5	408.8	408.8	404.0	401.1	399.2	400.2
42.5°	380.1	371.5	362.9	350.5	344.8	339.0	333.3	326.6	324.7	319.9	317.1
45°	331.4	319.0	307.5	287.5	276.0	270.3	257.9	244.5	235.9	234.0	226.3
47.5°	290.3	272.2	253.1	229.2	217.7	207.2	189.1	177.6	166.2	160.4	155.7
50°	254.0	237.8	213.0	187.2	172.9	162.4	142.3	128.9	116.5	107.9	102.2
52.5°	222.5	204.4	181.5	151.9	137.5	126.1	104.1	88.8	78.3	69.7	63.0
55°	187.2	172.9	149.9	122.2	107.9	94.5	75.4	59.2	48.7	43.0	38.2
57.5°	161.4	149.0	127.0	100.3	86.9	74.5	55.4	42.0	33.4	27.7	24.8
60°	144.2	132.8	113.6	87.9	75.4	64.0	45.8	33.4	25.8	21.0	19.1
62.5°	129.9	118.4	101.2	77.4	66.9	55.4	39.2	27.7	21.0	17.2	14.3
65°	113.6	103.1	87.9	66.9	57.3	47.8	33.4	22.9	17.2	13.4	11.5
67.5°	96.5	86.9	73.5	55.4	47.8	40.1	26.7	19.1	14.3	11.5	9.6
70°	78.3	70.7	58.3	44.9	38.2	31.5	22.0	15.3	10.5	8.6	7.6
72.5°	60.2	53.5	44.9	34.4	28.7	23.9	16.2	11.5	8.6	6.7	5.7
75°	43.0	38.2	31.5	24.8	21.0	17.2	12.4	8.6	5.7	4.8	3.8
77.5°	29.6	26.7	22.0	17.2	14.3	12.4	8.6	5.7	4.8	3.8	2.9
80°	19.1	17.2	14.3	10.5	8.6	7.6	4.8	3.8	2.9	1.9	1.9
82.5°	11.5	10.5	8.6	5.7	4.8	3.8	2.9	1.9	1.9	1.0	1.0
85°	6.7	5.7	3.8	2.9	2.9	1.9	1.9	1.0	1.0	0.0	0.0
87.5°	2.9	1.9	1.9	1.0	1.0	1.0	1.0	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	731.6	731.6	731.6	731.6	731.6	731.6	731.6	731.6	731.6	731.6	731.6
2.5°	734.4	739.2	738.2	741.1	740.2	740.2	744.9	743.0	747.8	747.8	748.8
5°	744.9	751.6	751.6	756.4	755.4	757.3	762.1	762.1	767.9	769.8	769.8
7.5°	760.2	768.8	770.7	775.5	776.4	780.3	784.1	785.0	792.7	794.6	795.5
10°	781.2	791.7	794.6	799.4	801.3	805.1	809.9	811.8	821.3	822.3	826.1
12.5°	807.0	818.5	821.3	827.1	828.0	832.8	839.5	841.4	850.9	853.8	856.7
15°	831.8	842.3	847.1	852.9	853.8	859.5	865.3	867.2	875.8	879.6	882.5
17.5°	849.0	861.4	864.3	872.0	872.0	876.7	882.5	884.4	893.0	895.8	897.7
20°	852.9	864.3	868.1	873.9	874.8	877.7	882.5	884.4	892.0	893.0	895.8
22.5°	838.5	850.0	851.9	857.6	858.6	861.4	865.3	864.3	873.9	872.9	873.9
25°	808.0	818.5	818.5	825.2	824.2	827.1	829.0	828.0	836.6	836.6	836.6
27.5°	764.0	773.6	774.5	779.3	776.4	777.4	779.3	778.4	784.1	784.1	784.1
30°	709.6	717.2	714.4	718.2	716.3	718.2	716.3	715.3	717.2	719.1	718.2
32.5°	641.8	647.5	647.5	648.5	648.5	642.7	640.8	640.8	639.9	638.9	638.9
35°	563.5	568.2	566.3	566.3	565.4	559.7	556.8	554.9	557.7	552.0	555.8
37.5°	483.3	484.2	481.3	480.4	475.6	475.6	470.8	467.0	468.9	468.0	464.2
40°	395.4	399.2	393.5	391.6	394.4	390.6	385.8	381.1	384.9	380.1	382.0
42.5°	309.4	308.5	306.6	306.6	306.6	300.8	299.9	298.9	299.9	296.1	293.2
45°	223.5	220.6	217.7	217.7	213.9	212.0	212.0	209.2	204.4	204.4	198.6
47.5°	150.9	144.2	142.3	141.3	139.4	139.4	137.5	135.6	134.7	129.9	129.9
50°	98.4	91.7	89.8	88.8	89.8	87.9	86.0	84.0	82.1	81.2	79.3
52.5°	59.2	56.3	54.4	53.5	51.6	50.6	49.7	47.8	46.8	46.8	45.8
55°	35.3	32.5	28.7	28.7	28.7	27.7	26.7	25.8	24.8	24.8	23.9
57.5°	22.0	20.1	18.1	17.2	17.2	17.2	16.2	16.2	16.2	16.2	15.3
60°	16.2	14.3	13.4	13.4	13.4	12.4	12.4	12.4	12.4	11.5	11.5
62.5°	12.4	11.5	10.5	10.5	9.6	9.6	9.6	9.6	9.6	9.6	8.6
65°	10.5	8.6	8.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
67.5°	7.6	6.7	6.7	6.7	6.7	5.7	5.7	5.7	5.7	5.7	5.7
70°	5.7	5.7	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
72.5°	4.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
75°	3.8	3.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
77.5°	2.9	2.9	2.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
80°	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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°	731.6	731.6	731.6	731.6	731.6	731.6	731.6	731.6
2.5°	748.8	753.5	748.8	748.8	751.6	750.7	752.6	749.7
5°	770.7	777.4	772.6	771.7	776.4	775.5	776.4	774.5
7.5°	797.5	804.1	799.4	799.4	804.1	803.2	806.1	804.1
10°	828.0	835.7	829.0	829.9	836.6	835.7	835.7	835.7
12.5°	859.5	867.2	863.4	863.4	868.1	869.1	870.0	869.1
15°	885.3	893.0	888.2	888.2	894.9	893.9	894.9	893.9
17.5°	900.6	908.2	902.5	902.5	908.2	908.2	909.2	910.2
20°	896.8	905.4	900.6	898.7	905.4	905.4	904.4	904.4
22.5°	874.8	882.5	878.6	876.7	881.5	879.6	878.6	879.6
25°	836.6	844.3	836.6	836.6	840.4	839.5	840.4	839.5
27.5°	785.0	790.8	783.1	782.2	786.0	784.1	783.1	786.0
30°	716.3	722.0	718.2	715.3	720.1	717.2	715.3	716.3
32.5°	638.0	641.8	639.9	635.1	638.0	636.1	635.1	636.1
35°	552.0	556.8	549.1	548.2	553.0	549.1	547.2	552.0
37.5°	463.2	468.9	462.2	463.2	460.3	461.3	459.4	462.2
40°	379.2	378.2	376.3	375.3	376.3	373.4	375.3	372.5
42.5°	288.4	290.3	289.4	288.4	289.4	285.6	283.6	287.5
45°	200.6	199.6	197.7	195.8	195.8	194.8	194.8	192.0
47.5°	128.9	128.0	124.2	125.1	127.0	125.1	122.2	126.1
50°	78.3	77.4	77.4	76.4	78.3	76.4	74.5	74.5
52.5°	43.9	43.9	43.0	43.0	43.0	43.0	42.0	41.1
55°	23.9	22.9	22.9	22.9	22.0	22.0	22.0	22.0
57.5°	15.3	15.3	15.3	15.3	15.3	15.3	14.3	14.3
60°	11.5	11.5	11.5	11.5	10.5	11.5	10.5	10.5
62.5°	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
65°	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
67.5°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
70°	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
72.5°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
75°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
77.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	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)