

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: P251768

Luminaire Tested: **LD4B20D010 EU4B10208050 4LBLWW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251768
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: LD4B20D010 EU4B10208050 4LBLWW1H
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1603.0 lumens
Efficiency: N/A
Efficacy: 77.1 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

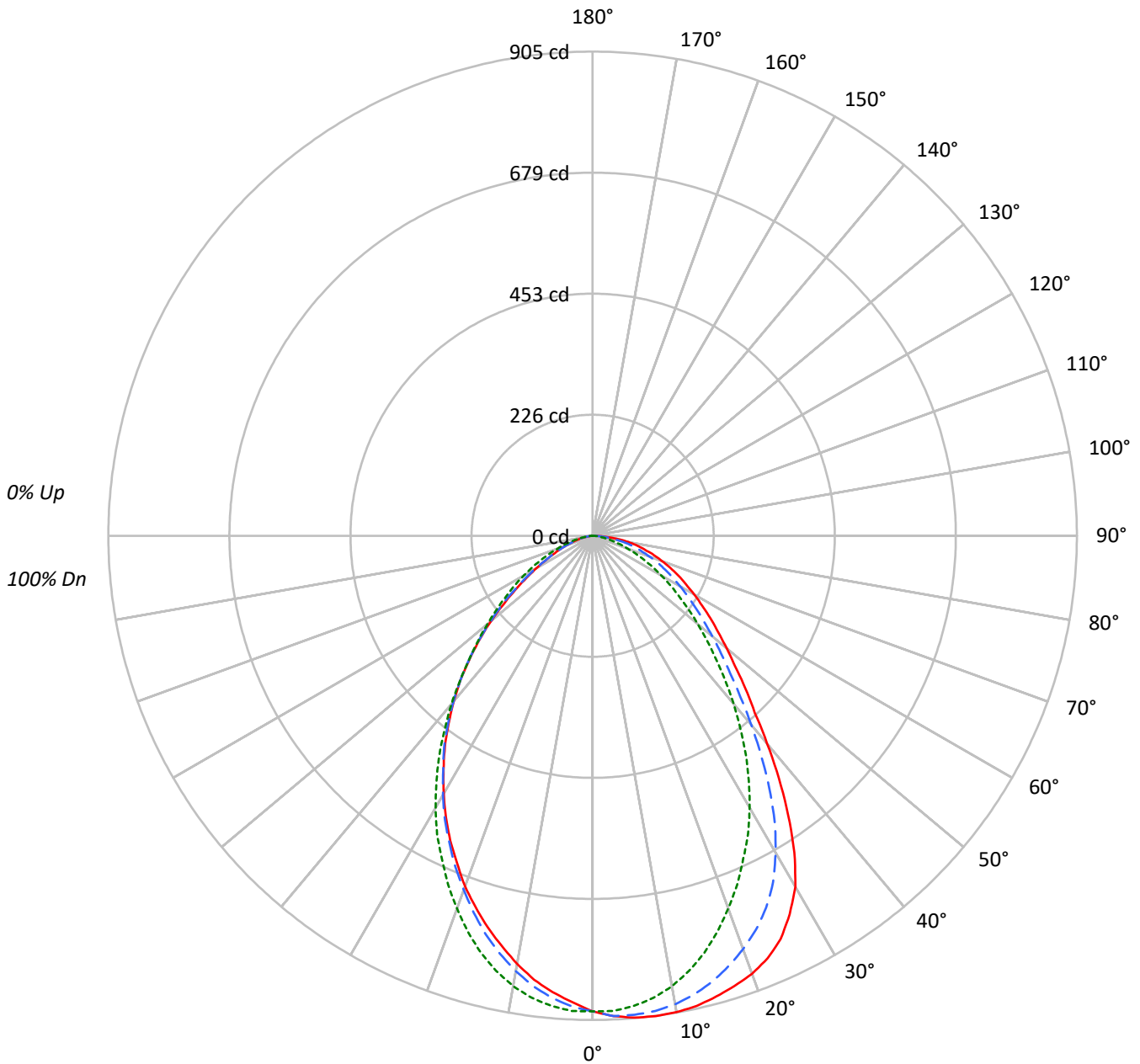
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	86640	86640	86640
5°	88448	86306	83762
10°	89471	84592	80396
15°	89969	81423	76449
20°	90355	76882	72340
25°	89425	71628	67649
30°	85268	66024	62648
35°	75834	59392	57274
40°	64553	52199	51334
45°	55613	44863	44670
50°	49564	38784	37541
55°	45554	33473	29973
60°	42648	28789	23468
65°	41002	24283	18287
70°	39351	19490	14817
75°	38107	15439	11334
80°	38389	10720	6903
85°	32093	7604	3019



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	83.2	5.2
10°-20°	228.8	14.3
20°-30°	320.0	20.0
30°-40°	328.9	20.5
40°-50°	266.9	16.7
50°-60°	188.0	11.7
60°-70°	115.7	7.2
70°-80°	57.8	3.6
80°-90°	13.7	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°	632.0	39.4
0°-40°	960.9	59.9
0°-60°	1415.8	88.3
0°-90°	1603.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1603.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	889	889	889	889	889	
5°	904	899	882	867	856	86
15°	892	863	807	771	758	252
25°	832	767	666	633	629	380
35°	637	576	499	484	481	396
45°	404	364	326	326	324	314
55°	268	235	197	180	176	241
65°	178	149	105	81	79	176
75°	101	79	41	30	30	108
85°	29	19	7	4	3	33
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°	889.0	889.0	889.0	889.0	889.0	889.0	889.0	889.0	889.0	889.0	889.0
2.5°	898.6	900.0	895.9	900.0	894.5	897.2	898.6	895.9	893.1	898.6	898.6
5°	904.1	904.1	900.0	905.4	898.6	900.0	902.7	898.6	894.5	900.0	898.6
7.5°	905.4	905.4	900.0	905.4	898.6	900.0	901.3	897.2	893.1	897.2	895.9
10°	904.1	902.7	898.6	904.1	897.2	897.2	898.6	894.5	887.6	891.7	889.0
12.5°	900.0	900.0	894.5	900.0	890.4	890.4	891.7	886.3	880.8	880.8	878.1
15°	891.7	891.7	886.3	890.4	882.2	882.2	880.8	875.3	868.5	868.5	863.0
17.5°	882.2	882.2	876.7	880.8	871.2	871.2	869.9	861.7	852.1	850.7	843.9
20°	871.2	871.2	864.4	867.1	856.2	856.2	854.8	845.2	834.3	831.6	822.0
22.5°	854.8	854.8	848.0	849.3	838.4	837.0	835.7	824.7	813.8	809.7	797.4
25°	831.6	830.2	824.7	824.7	813.8	811.1	808.3	797.4	786.4	778.2	767.3
27.5°	797.4	798.7	791.9	793.3	779.6	776.9	775.5	761.8	749.5	741.3	730.4
30°	757.7	753.6	746.8	746.8	735.8	734.5	731.7	719.4	705.7	696.2	683.9
32.5°	701.6	700.3	693.4	693.4	681.1	681.1	675.6	663.3	651.0	645.6	633.3
35°	637.4	636.0	630.5	630.5	619.6	620.9	615.5	605.9	593.6	585.4	575.8
37.5°	571.7	570.3	564.9	566.2	556.7	556.7	552.6	543.0	533.4	529.3	517.0
40°	507.4	506.1	499.2	503.3	495.1	492.4	491.0	484.2	473.2	467.8	460.9
42.5°	448.6	450.0	443.1	445.9	439.0	436.3	434.9	429.5	421.3	415.8	408.9
45°	403.5	400.7	398.0	398.0	391.2	389.8	388.4	381.6	376.1	370.6	363.8
47.5°	361.1	358.3	355.6	357.0	351.5	350.1	347.4	341.9	335.1	332.4	325.5
50°	326.9	325.5	321.4	321.4	315.9	314.6	311.8	307.7	300.9	296.8	291.3
52.5°	295.4	295.4	291.3	290.0	285.9	284.5	283.1	277.6	272.2	266.7	261.2
55°	268.1	266.7	264.0	264.0	258.5	257.1	255.8	250.3	244.8	240.7	235.2
57.5°	242.1	242.1	239.3	239.3	235.2	232.5	232.5	227.0	220.2	217.5	210.6
60°	218.8	218.8	216.1	216.1	212.0	212.0	209.3	203.8	199.7	194.2	188.7
62.5°	197.0	198.3	195.6	194.2	190.1	188.7	188.7	184.6	177.8	173.7	168.2
65°	177.8	176.4	175.1	173.7	169.6	168.2	168.2	162.8	158.7	153.2	149.1
67.5°	157.3	157.3	154.6	154.6	151.8	150.4	147.7	143.6	139.5	135.4	131.3
70°	138.1	138.1	136.8	136.8	132.7	131.3	129.9	125.8	121.7	117.6	112.2
72.5°	120.4	119.0	117.6	117.6	114.9	113.5	112.2	108.0	103.9	99.8	95.7
75°	101.2	101.2	99.8	99.8	97.1	95.7	95.7	93.0	87.5	84.8	79.3
77.5°	84.8	84.8	83.4	83.4	80.7	80.7	79.3	75.2	72.5	68.4	65.7
80°	68.4	67.0	67.0	65.7	62.9	62.9	61.5	60.2	56.1	53.3	49.2
82.5°	47.9	47.9	47.9	46.5	45.1	45.1	43.8	41.0	38.3	36.9	32.8
85°	28.7	28.7	27.4	26.0	27.4	26.0	24.6	23.3	21.9	20.5	19.1
87.5°	12.3	12.3	10.9	10.9	10.9	10.9	10.9	9.6	8.2	8.2	6.8
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°	889.0	889.0	889.0	889.0	889.0	889.0	889.0	889.0	889.0	889.0	889.0
2.5°	890.4	894.5	893.1	891.7	889.0	889.0	889.0	887.6	889.0	889.0	886.3
5°	890.4	893.1	891.7	889.0	886.3	886.3	884.9	882.2	882.2	882.2	876.7
7.5°	886.3	889.0	884.9	882.2	879.4	876.7	876.7	872.6	872.6	871.2	865.8
10°	878.1	879.4	874.0	871.2	867.1	865.8	863.0	857.6	856.2	854.8	849.3
12.5°	865.8	867.1	860.3	854.8	849.3	848.0	845.2	838.4	835.7	832.9	826.1
15°	848.0	848.0	839.8	832.9	827.5	826.1	819.3	812.4	809.7	807.0	797.4
17.5°	827.5	826.1	815.2	808.3	801.5	798.7	791.9	783.7	778.2	775.5	767.3
20°	805.6	801.5	789.2	782.3	774.1	770.0	763.2	752.2	746.8	741.3	733.1
22.5°	779.6	774.1	760.4	750.9	742.7	738.6	729.0	719.4	711.2	705.7	696.2
25°	748.1	741.3	726.3	713.9	707.1	703.0	693.4	682.5	674.3	666.1	657.9
27.5°	711.2	703.0	688.0	675.6	668.8	662.0	655.1	642.8	636.0	629.1	619.6
30°	666.1	656.5	642.8	631.9	623.7	618.2	610.0	599.1	590.9	586.7	577.2
32.5°	616.8	605.9	593.6	582.6	578.5	571.7	564.9	553.9	547.1	543.0	536.1
35°	562.1	553.9	540.2	532.0	525.2	522.5	517.0	506.1	503.3	499.2	491.0
37.5°	504.7	497.8	488.3	481.4	476.0	473.2	467.8	460.9	456.8	452.7	448.6
40°	451.3	445.9	437.7	432.2	425.4	421.3	421.3	413.0	410.3	410.3	406.2
42.5°	399.4	396.6	389.8	381.6	380.2	376.1	374.8	370.6	367.9	366.5	365.2
45°	355.6	351.5	344.7	340.6	336.5	336.5	332.4	328.3	326.9	325.5	324.1
47.5°	317.3	311.8	306.4	302.3	299.5	298.2	294.1	291.3	290.0	290.0	288.6
50°	283.1	279.0	273.5	269.4	266.7	264.0	261.2	258.5	257.1	255.8	255.8
52.5°	254.4	248.9	243.5	239.3	235.2	233.9	231.1	228.4	227.0	225.7	224.3
55°	228.4	224.3	217.5	213.4	209.3	209.3	205.2	201.1	198.3	197.0	195.6
57.5°	203.8	199.7	192.8	188.7	186.0	183.3	180.5	177.8	175.1	172.3	169.6
60°	181.9	177.8	171.0	165.5	164.1	161.4	158.7	153.2	150.4	147.7	145.0
62.5°	161.4	155.9	150.4	145.0	143.6	140.9	136.8	132.7	128.6	125.8	121.7
65°	142.2	138.1	131.3	127.2	123.1	121.7	117.6	112.2	108.0	105.3	101.2
67.5°	124.5	119.0	112.2	108.0	105.3	102.6	98.5	94.4	90.3	86.2	82.1
70°	106.7	102.6	95.7	91.6	88.9	86.2	82.1	76.6	72.5	68.4	65.7
72.5°	90.3	84.8	79.3	75.2	72.5	69.8	65.7	61.5	57.4	54.7	50.6
75°	75.2	69.8	65.7	60.2	58.8	56.1	52.0	47.9	43.8	41.0	38.3
77.5°	60.2	56.1	50.6	47.9	45.1	42.4	39.7	35.6	32.8	28.7	26.0
80°	45.1	41.0	36.9	34.2	31.5	30.1	27.4	24.6	21.9	19.1	17.8
82.5°	30.1	27.4	23.3	21.9	20.5	19.1	16.4	15.0	13.7	12.3	10.9
85°	16.4	15.0	13.7	10.9	10.9	9.6	8.2	8.2	6.8	6.8	5.5
87.5°	6.8	5.5	5.5	4.1	4.1	4.1	2.7	2.7	2.7	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	889.0	889.0	889.0	889.0	889.0	889.0	889.0	889.0	889.0	889.0	889.0
2.5°	887.6	882.2	882.2	882.2	878.1	879.4	880.8	882.2	880.8	876.7	880.8
5°	878.1	872.6	872.6	869.9	867.1	867.1	867.1	868.5	867.1	863.0	864.4
7.5°	865.8	858.9	857.6	854.8	852.1	850.7	850.7	850.7	849.3	843.9	846.6
10°	846.6	839.8	837.0	835.7	831.6	830.2	828.8	827.5	826.1	820.6	823.4
12.5°	823.4	817.9	812.4	811.1	807.0	804.2	802.8	802.8	800.1	794.6	797.4
15°	796.0	787.8	783.7	781.0	776.9	774.1	771.4	772.8	771.4	765.9	767.3
17.5°	763.2	755.0	750.9	749.5	744.0	741.3	739.9	739.9	738.6	733.1	734.5
20°	727.6	719.4	716.7	713.9	711.2	708.5	707.1	705.7	704.4	698.9	703.0
22.5°	692.1	682.5	678.4	678.4	672.9	671.5	670.2	671.5	670.2	664.7	667.4
25°	655.1	645.6	642.8	638.7	636.0	634.6	634.6	634.6	633.3	630.5	633.3
27.5°	614.1	607.3	603.2	601.8	599.1	597.7	596.3	597.7	597.7	593.6	596.3
30°	573.1	567.6	564.9	563.5	559.4	558.0	559.4	559.4	559.4	555.3	559.4
32.5°	532.0	527.9	526.6	522.5	519.7	519.7	519.7	521.1	519.7	517.0	521.1
35°	491.0	485.5	484.2	482.8	482.8	480.1	482.8	481.4	484.2	480.1	482.8
37.5°	447.2	444.5	443.1	443.1	440.4	441.8	441.8	441.8	444.5	440.4	443.1
40°	406.2	403.5	403.5	403.5	402.1	402.1	402.1	403.5	404.8	402.1	404.8
42.5°	365.2	363.8	363.8	362.4	361.1	362.4	363.8	363.8	365.2	362.4	363.8
45°	325.5	324.1	325.5	324.1	324.1	322.8	324.1	325.5	325.5	324.1	324.1
47.5°	288.6	288.6	287.2	287.2	287.2	287.2	287.2	287.2	287.2	284.5	287.2
50°	255.8	253.0	254.4	253.0	253.0	251.7	251.7	250.3	248.9	247.6	247.6
52.5°	224.3	221.6	221.6	220.2	218.8	218.8	217.5	216.1	214.7	212.0	212.0
55°	194.2	191.5	190.1	188.7	187.4	186.0	184.6	183.3	180.5	179.2	179.2
57.5°	166.9	164.1	161.4	161.4	158.7	157.3	154.6	151.8	150.4	147.7	147.7
60°	142.2	139.5	135.4	134.0	132.7	129.9	125.8	124.5	123.1	120.4	121.7
62.5°	119.0	114.9	110.8	109.4	108.0	105.3	102.6	99.8	98.5	99.8	99.8
65°	97.1	93.0	90.3	87.5	86.2	83.4	82.1	80.7	80.7	80.7	82.1
67.5°	78.0	73.9	71.1	69.8	67.0	65.7	65.7	65.7	65.7	65.7	65.7
70°	61.5	58.8	56.1	53.3	53.3	52.0	52.0	52.0	52.0	52.0	52.0
72.5°	46.5	43.8	42.4	42.4	41.0	41.0	41.0	41.0	39.7	39.7	41.0
75°	34.2	32.8	31.5	31.5	31.5	30.1	30.1	30.1	30.1	30.1	30.1
77.5°	24.6	23.3	23.3	21.9	21.9	21.9	21.9	21.9	21.9	20.5	20.5
80°	16.4	15.0	15.0	15.0	15.0	13.7	13.7	13.7	13.7	13.7	13.7
82.5°	9.6	9.6	9.6	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
85°	5.5	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
87.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	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°	889.0	889.0	889.0	889.0	889.0	889.0	889.0	889.0
2.5°	872.6	878.1	879.4	875.3	876.7	874.0	875.3	872.6
5°	857.6	861.7	863.0	860.3	860.3	857.6	858.9	856.2
7.5°	838.4	842.5	843.9	841.1	841.1	838.4	838.4	837.0
10°	816.5	817.9	820.6	816.5	817.9	815.2	815.2	812.4
12.5°	789.2	791.9	794.6	790.5	790.5	789.2	789.2	785.1
15°	760.4	763.2	764.6	761.8	761.8	760.4	759.1	757.7
17.5°	730.4	731.7	734.5	730.4	733.1	730.4	730.4	727.6
20°	696.2	700.3	701.6	697.5	698.9	697.5	697.5	697.5
22.5°	663.3	666.1	667.4	664.7	666.1	663.3	664.7	662.0
25°	629.1	630.5	631.9	629.1	631.9	630.5	629.1	629.1
27.5°	593.6	595.0	596.3	593.6	596.3	595.0	596.3	593.6
30°	555.3	558.0	560.8	558.0	559.4	558.0	558.0	556.7
32.5°	517.0	519.7	522.5	519.7	522.5	519.7	521.1	518.4
35°	481.4	482.8	484.2	481.4	482.8	482.8	482.8	481.4
37.5°	441.8	444.5	444.5	443.1	445.9	444.5	444.5	441.8
40°	403.5	404.8	406.2	403.5	404.8	403.5	404.8	403.5
42.5°	363.8	366.5	367.9	365.2	365.2	365.2	363.8	365.2
45°	322.8	325.5	328.3	324.1	325.5	325.5	325.5	324.1
47.5°	285.9	285.9	287.2	285.9	287.2	284.5	287.2	285.9
50°	247.6	247.6	250.3	247.6	247.6	247.6	247.6	247.6
52.5°	210.6	212.0	212.0	209.3	210.6	209.3	210.6	209.3
55°	176.4	176.4	177.8	176.4	176.4	176.4	176.4	176.4
57.5°	146.3	147.7	147.7	146.3	147.7	146.3	146.3	146.3
60°	121.7	121.7	121.7	120.4	121.7	120.4	121.7	120.4
62.5°	98.5	99.8	99.8	98.5	99.8	98.5	98.5	98.5
65°	80.7	80.7	80.7	80.7	80.7	80.7	80.7	79.3
67.5°	64.3	64.3	65.7	64.3	65.7	65.7	65.7	65.7
70°	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0
72.5°	39.7	39.7	41.0	39.7	39.7	39.7	39.7	39.7
75°	30.1	30.1	30.1	30.1	30.1	28.7	28.7	30.1
77.5°	20.5	20.5	20.5	20.5	20.5	20.5	20.5	21.9
80°	13.7	13.7	13.7	13.7	12.3	12.3	13.7	12.3
82.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
85°	4.1	4.1	2.7	2.7	2.7	2.7	2.7	2.7
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)