

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: P251615

Luminaire Tested: **LD4B20D010 EU4B10209030 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251615
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 EU4B10209030 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1535.0 lumens
Efficiency: N/A
Efficacy: 73.8 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

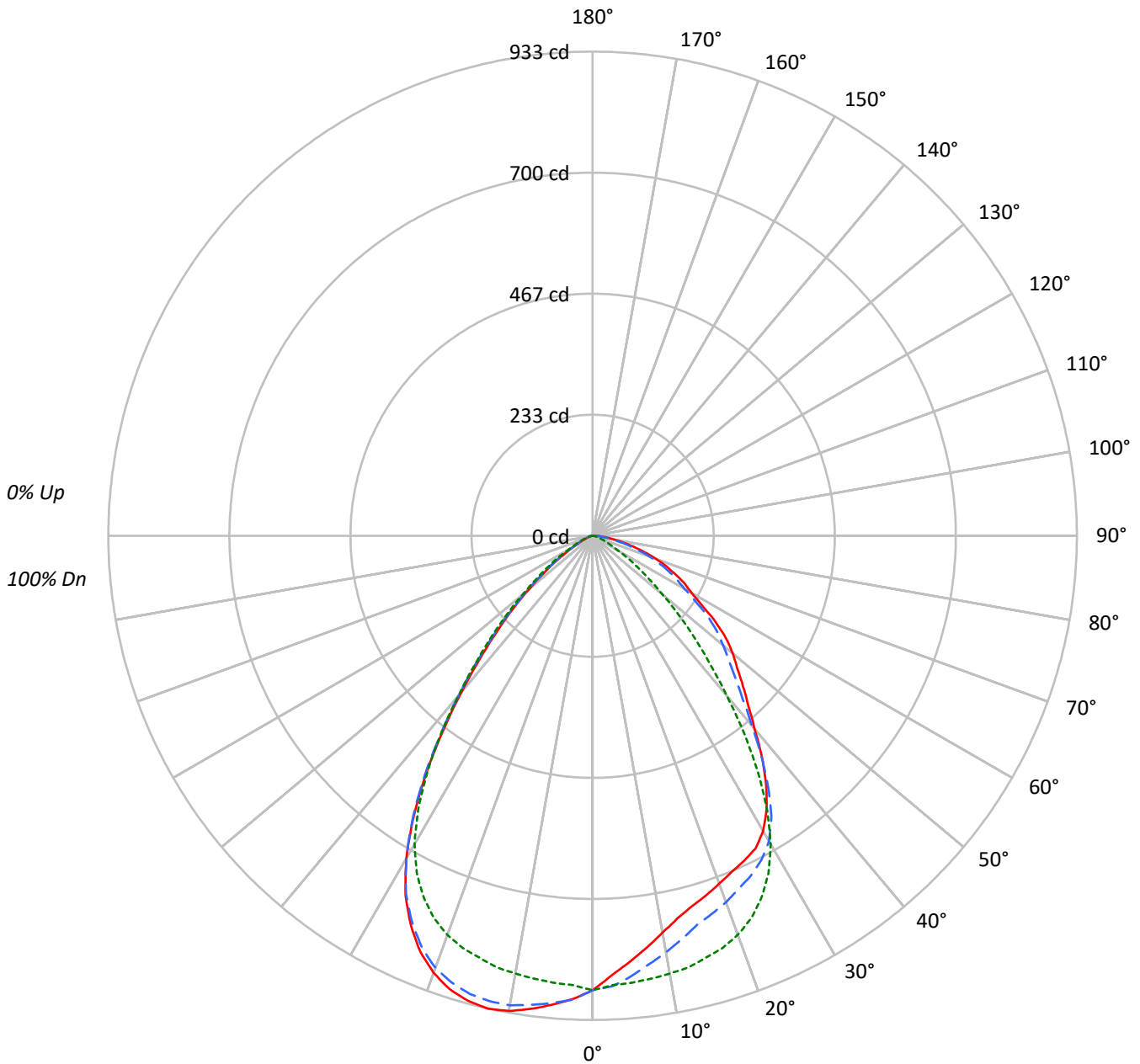
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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			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	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89			89
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79			79
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70			70
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62			62
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56			56
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50			50
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46			46
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42			42
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38			38
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35			35

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	85344	85344	85344
5°	80593	84565	88761
10°	76834	84761	92024
15°	74582	84934	93591
20°	73968	84847	92927
25°	74262	82757	89070
30°	73913	77210	80766
35°	69279	65924	66590
40°	61728	51105	49960
45°	56454	38109	35766
50°	53385	26685	24122
55°	49088	18028	15139
60°	42901	10564	8362
65°	40587	6757	4681
70°	36986	4816	2906
75°	30613	3389	2109
80°	24077	1908	1291
85°	21470	1230	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	82.7	5.4
10°-20°	237.4	15.5
20°-30°	351.9	22.9
30°-40°	352.4	23.0
40°-50°	246.3	16.0
50°-60°	146.5	9.5
60°-70°	76.5	5.0
70°-80°	34.0	2.2
80°-90°	7.4	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°	672.0	43.8
0°-40°	1024.3	66.7
0°-60°	1417.1	92.3
0°-90°	1535.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1535.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	876	876	876	876	876	
5°	824	852	864	904	907	77
15°	739	776	842	914	928	209
25°	691	722	770	823	828	318
35°	582	589	554	564	560	361
45°	410	389	276	267	260	318
55°	289	271	106	92	89	256
65°	176	161	29	21	20	174
75°	81	71	9	6	6	88
85°	19	15	1	1	0	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°	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7
2.5°	847.5	857.6	847.5	850.9	864.4	852.0	858.8	858.8	855.4	863.3	868.9
5°	823.8	833.9	823.8	828.3	843.0	830.6	838.5	836.2	837.3	844.1	852.0
7.5°	800.1	808.0	799.0	804.6	818.1	808.0	814.8	814.8	815.9	826.0	832.8
10°	776.4	783.2	776.4	780.9	795.6	786.5	791.1	792.2	795.6	804.6	814.8
12.5°	755.0	760.6	753.8	760.6	773.0	764.0	769.6	770.7	774.1	784.3	795.6
15°	739.2	744.8	738.0	743.7	755.0	748.2	752.7	755.0	757.2	766.2	776.4
17.5°	726.7	731.3	725.6	732.4	741.4	733.5	740.3	740.3	743.7	752.7	764.0
20°	713.2	717.7	713.2	718.8	729.0	722.2	727.9	727.9	731.3	741.4	751.6
22.5°	700.8	703.0	700.8	705.3	715.5	709.8	713.2	714.3	717.7	726.7	735.8
25°	690.6	695.1	692.9	697.4	704.2	698.5	701.9	703.0	706.4	714.3	722.2
27.5°	679.3	681.6	679.3	685.0	690.6	686.1	689.5	688.4	690.6	697.4	704.2
30°	656.8	659.0	659.0	662.4	666.9	664.7	668.1	664.7	666.9	672.6	679.3
32.5°	624.0	625.2	626.3	629.7	633.1	629.7	631.9	631.9	631.9	636.5	641.0
35°	582.3	584.6	583.4	585.7	589.1	587.9	587.9	586.8	584.6	586.8	589.1
37.5°	534.9	531.5	531.5	534.9	537.2	532.6	534.9	532.6	532.6	533.8	533.8
40°	485.2	481.9	485.2	486.4	487.5	485.2	484.1	481.9	478.5	479.6	477.3
42.5°	443.5	441.2	442.4	442.4	443.5	441.2	442.4	437.8	434.5	432.2	428.8
45°	409.6	406.3	409.6	407.4	407.4	406.3	405.1	402.9	398.4	395.0	389.3
47.5°	378.0	378.0	379.2	379.2	379.2	376.9	376.9	372.4	367.9	363.4	355.5
50°	352.1	349.8	354.3	354.3	351.0	349.8	351.0	345.3	341.9	336.3	328.4
52.5°	323.9	323.9	325.0	325.0	323.9	321.6	322.7	318.2	314.8	309.2	301.3
55°	288.9	286.6	290.0	290.0	288.9	287.8	288.9	285.5	282.1	277.6	270.8
57.5°	249.4	248.3	250.5	251.7	249.4	249.4	250.5	247.1	246.0	241.5	234.7
60°	220.1	218.9	221.2	222.3	220.1	220.1	220.1	215.5	213.3	208.8	204.3
62.5°	199.7	198.6	200.9	199.7	198.6	197.5	198.6	194.1	191.8	187.3	182.8
65°	176.0	177.2	178.3	178.3	177.2	176.0	176.0	173.8	171.5	167.0	161.4
67.5°	153.5	153.5	154.6	155.7	154.6	154.6	154.6	151.2	149.0	145.6	138.8
70°	129.8	128.6	132.0	132.0	129.8	130.9	129.8	128.6	126.4	121.9	116.2
72.5°	104.9	104.9	106.1	106.1	104.9	104.9	104.9	103.8	100.4	98.2	92.5
75°	81.3	81.3	82.4	83.5	81.3	81.3	82.4	80.1	77.9	74.5	71.1
77.5°	60.9	59.8	60.9	60.9	59.8	59.8	59.8	58.7	57.6	54.2	50.8
80°	42.9	41.8	42.9	42.9	42.9	41.8	41.8	40.6	40.6	38.4	35.0
82.5°	29.3	28.2	29.3	29.3	29.3	28.2	28.2	28.2	27.1	26.0	23.7
85°	19.2	18.1	18.1	19.2	18.1	18.1	18.1	18.1	16.9	15.8	14.7
87.5°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	7.9	7.9	7.9	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°	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7
2.5°	864.4	862.2	868.9	866.7	867.8	862.2	871.2	866.7	872.3	866.7	878.0
5°	849.7	847.5	857.6	856.5	857.6	853.1	863.3	862.2	868.9	864.4	876.8
7.5°	833.9	831.7	843.0	844.1	846.4	841.8	855.4	855.4	862.2	861.0	874.6
10°	815.9	817.0	828.3	830.6	835.1	832.8	845.2	848.6	857.6	856.5	873.4
12.5°	799.0	799.0	813.6	818.1	821.5	820.4	835.1	839.6	849.7	852.0	867.8
15°	782.0	783.2	796.7	803.5	808.0	806.9	822.7	828.3	840.7	841.8	861.0
17.5°	768.5	767.4	782.0	787.7	794.4	793.3	810.2	817.0	829.4	832.8	850.9
20°	757.2	756.1	769.6	776.4	780.9	779.8	796.7	804.6	815.9	818.1	836.2
22.5°	743.7	741.4	755.0	760.6	765.1	764.0	778.6	784.3	795.6	797.8	814.8
25°	727.9	725.6	738.0	741.4	744.8	742.5	755.0	758.3	767.4	769.6	786.5
27.5°	709.8	704.2	714.3	714.3	716.6	713.2	722.2	725.6	733.5	733.5	749.3
30°	681.6	673.7	679.3	678.2	679.3	674.8	680.5	681.6	687.2	686.1	697.4
32.5°	642.1	630.8	634.2	630.8	627.4	620.7	627.4	625.2	629.7	625.2	635.3
35°	587.9	576.7	575.5	571.0	567.6	562.0	562.0	556.3	557.5	554.1	560.9
37.5°	529.3	514.6	512.3	503.3	497.7	490.9	490.9	486.4	480.7	478.5	484.1
40°	471.7	455.9	450.3	435.6	429.9	423.2	418.7	413.0	410.8	401.7	406.3
42.5°	422.1	405.1	392.7	376.9	371.3	361.1	354.3	347.6	344.2	334.0	338.5
45°	380.3	360.0	346.4	326.1	318.2	306.9	296.8	288.9	281.0	276.5	274.2
47.5°	345.3	323.9	305.8	283.2	270.8	260.7	247.1	239.2	229.1	223.4	220.1
50°	316.0	292.3	272.0	246.0	233.6	222.3	206.5	194.1	185.1	176.0	173.8
52.5°	290.0	265.2	242.6	213.3	198.6	185.1	168.1	154.6	146.7	136.5	135.4
55°	259.5	238.1	213.3	182.8	168.1	154.6	136.5	123.0	112.8	106.1	103.8
57.5°	226.8	206.5	182.8	152.3	137.7	123.0	106.1	93.7	84.6	79.0	77.9
60°	196.4	177.2	154.6	124.1	109.5	97.0	79.0	66.6	58.7	54.2	51.9
62.5°	173.8	155.7	134.3	106.1	92.5	80.1	63.2	51.9	45.1	40.6	38.4
65°	152.3	134.3	115.1	89.1	77.9	66.6	50.8	40.6	33.9	29.3	27.1
67.5°	129.8	114.0	95.9	74.5	63.2	54.2	40.6	31.6	26.0	22.6	20.3
70°	107.2	92.5	77.9	59.8	51.9	42.9	31.6	24.8	19.2	16.9	14.7
72.5°	84.6	73.4	60.9	46.3	39.5	33.9	24.8	18.1	14.7	12.4	10.2
75°	63.2	55.3	45.1	35.0	29.3	24.8	18.1	13.5	11.3	9.0	7.9
77.5°	45.1	38.4	31.6	23.7	21.4	18.1	12.4	10.2	7.9	5.6	4.5
80°	30.5	27.1	21.4	16.9	13.5	12.4	9.0	6.8	4.5	3.4	3.4
82.5°	20.3	16.9	13.5	10.2	9.0	7.9	5.6	4.5	3.4	2.3	2.3
85°	12.4	10.2	7.9	5.6	5.6	4.5	3.4	2.3	1.1	1.1	1.1
87.5°	5.6	4.5	3.4	2.3	2.3	1.1	1.1	1.1	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°	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7
2.5°	887.0	880.2	875.7	881.3	883.6	880.2	883.6	889.2	894.9	896.0	880.2
5°	888.1	881.3	879.1	885.9	887.0	885.9	889.2	897.1	903.9	906.2	890.4
7.5°	888.1	883.6	882.5	890.4	891.5	890.4	896.0	905.0	911.8	916.3	900.5
10°	885.9	883.6	884.7	891.5	893.8	893.8	901.7	911.8	918.6	923.1	907.3
12.5°	882.5	882.5	882.5	890.4	892.6	893.8	900.5	914.1	918.6	925.4	909.6
15°	876.8	876.8	876.8	884.7	888.1	888.1	896.0	908.4	914.1	920.8	905.0
17.5°	866.7	866.7	867.8	874.6	878.0	878.0	885.9	899.4	902.8	910.7	894.9
20°	852.0	852.0	853.1	859.9	863.3	861.0	871.2	882.5	885.9	892.6	876.8
22.5°	830.6	830.6	830.6	837.3	839.6	838.5	848.6	858.8	858.8	867.8	850.9
25°	799.0	801.2	799.0	805.7	808.0	806.9	815.9	824.9	822.7	832.8	815.9
27.5°	760.6	759.5	759.5	765.1	765.1	764.0	770.7	780.9	778.6	785.4	769.6
30°	707.6	710.9	705.3	713.2	709.8	707.6	712.1	721.1	717.7	723.4	710.9
32.5°	646.6	642.1	642.1	642.1	644.4	638.7	643.2	647.7	644.4	650.0	636.5
35°	566.5	567.6	564.2	565.4	566.5	559.7	564.2	568.8	564.2	567.6	555.2
37.5°	486.4	487.5	479.6	484.1	479.6	477.3	481.9	484.1	479.6	483.0	469.4
40°	406.3	404.0	402.9	402.9	404.0	398.4	401.7	405.1	401.7	404.0	391.6
42.5°	336.3	335.2	332.9	334.0	330.6	329.5	330.6	334.0	330.6	332.9	323.9
45°	275.3	273.1	269.7	270.8	270.8	265.2	268.6	270.8	267.4	268.6	260.7
47.5°	218.9	215.5	215.5	214.4	214.4	212.2	215.5	214.4	211.0	213.3	205.4
50°	170.4	168.1	168.1	168.1	168.1	164.8	165.9	168.1	164.8	164.8	160.2
52.5°	133.2	129.8	127.5	127.5	127.5	126.4	126.4	127.5	124.1	124.1	123.0
55°	100.4	99.3	95.9	95.9	95.9	92.5	93.7	93.7	92.5	92.5	89.1
57.5°	74.5	71.1	68.8	68.8	66.6	66.6	65.5	66.6	64.3	64.3	62.1
60°	49.7	47.4	46.3	45.1	45.1	44.0	45.1	44.0	44.0	42.9	41.8
62.5°	36.1	33.9	31.6	31.6	31.6	30.5	30.5	30.5	30.5	30.5	29.3
65°	26.0	23.7	23.7	22.6	22.6	21.4	21.4	21.4	21.4	21.4	20.3
67.5°	18.1	16.9	15.8	15.8	15.8	15.8	15.8	15.8	14.7	14.7	14.7
70°	13.5	12.4	11.3	11.3	11.3	11.3	11.3	10.2	11.3	11.3	10.2
72.5°	9.0	9.0	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
75°	6.8	6.8	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
77.5°	4.5	4.5	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
80°	3.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
82.5°	2.3	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
85°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	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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CATALOG NUMBER: LD4B20D010 EU4B10209030 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7
2.5°	897.1	896.0	893.8	897.1	888.1	884.7	883.6	893.8
5°	909.6	907.3	907.3	910.7	900.5	898.3	896.0	907.3
7.5°	920.8	918.6	918.6	922.0	912.9	910.7	908.4	919.7
10°	927.6	927.6	927.6	929.9	922.0	919.7	918.6	929.9
12.5°	931.0	931.0	929.9	934.4	924.2	924.2	922.0	933.3
15°	926.5	926.5	926.5	929.9	920.8	918.6	918.6	927.6
17.5°	915.2	915.2	914.1	917.5	907.3	907.3	906.2	916.3
20°	898.3	898.3	896.0	900.5	890.4	887.0	885.9	896.0
22.5°	871.2	870.1	868.9	871.2	862.2	859.9	858.8	867.8
25°	836.2	835.1	832.8	835.1	824.9	821.5	821.5	828.3
27.5°	786.5	786.5	783.2	786.5	775.3	774.1	773.0	780.9
30°	725.6	721.1	718.8	723.4	712.1	712.1	709.8	717.7
32.5°	650.0	645.5	644.4	646.6	636.5	633.1	637.6	642.1
35°	563.1	564.2	559.7	559.7	550.7	551.8	553.0	559.7
37.5°	479.6	477.3	476.2	477.3	470.6	468.3	466.1	472.8
40°	401.7	396.1	395.0	395.0	389.3	388.2	389.3	392.7
42.5°	328.4	327.3	322.7	325.0	319.4	321.6	320.5	320.5
45°	265.2	266.3	261.8	265.2	260.7	257.3	257.3	259.5
47.5°	209.9	209.9	208.8	208.8	205.4	206.5	204.3	207.6
50°	162.5	162.5	160.2	161.4	159.1	159.1	158.0	159.1
52.5°	124.1	123.0	123.0	121.9	119.6	120.7	121.9	119.6
55°	90.3	91.4	89.1	90.3	88.0	89.1	88.0	89.1
57.5°	62.1	63.2	60.9	63.2	60.9	62.1	60.9	60.9
60°	42.9	42.9	41.8	42.9	41.8	41.8	40.6	42.9
62.5°	29.3	29.3	29.3	29.3	29.3	28.2	29.3	29.3
65°	21.4	20.3	20.3	20.3	20.3	20.3	20.3	20.3
67.5°	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
70°	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
72.5°	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
75°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
77.5°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
80°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
82.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
85°	1.1	1.1	1.1	0.0	1.1	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)