

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: P251614

Luminaire Tested: **LD4B20D010 EU4B10209027 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251614
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 EU4B10209027 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1476.0 lumens
Efficiency: N/A
Efficacy: 71.0 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

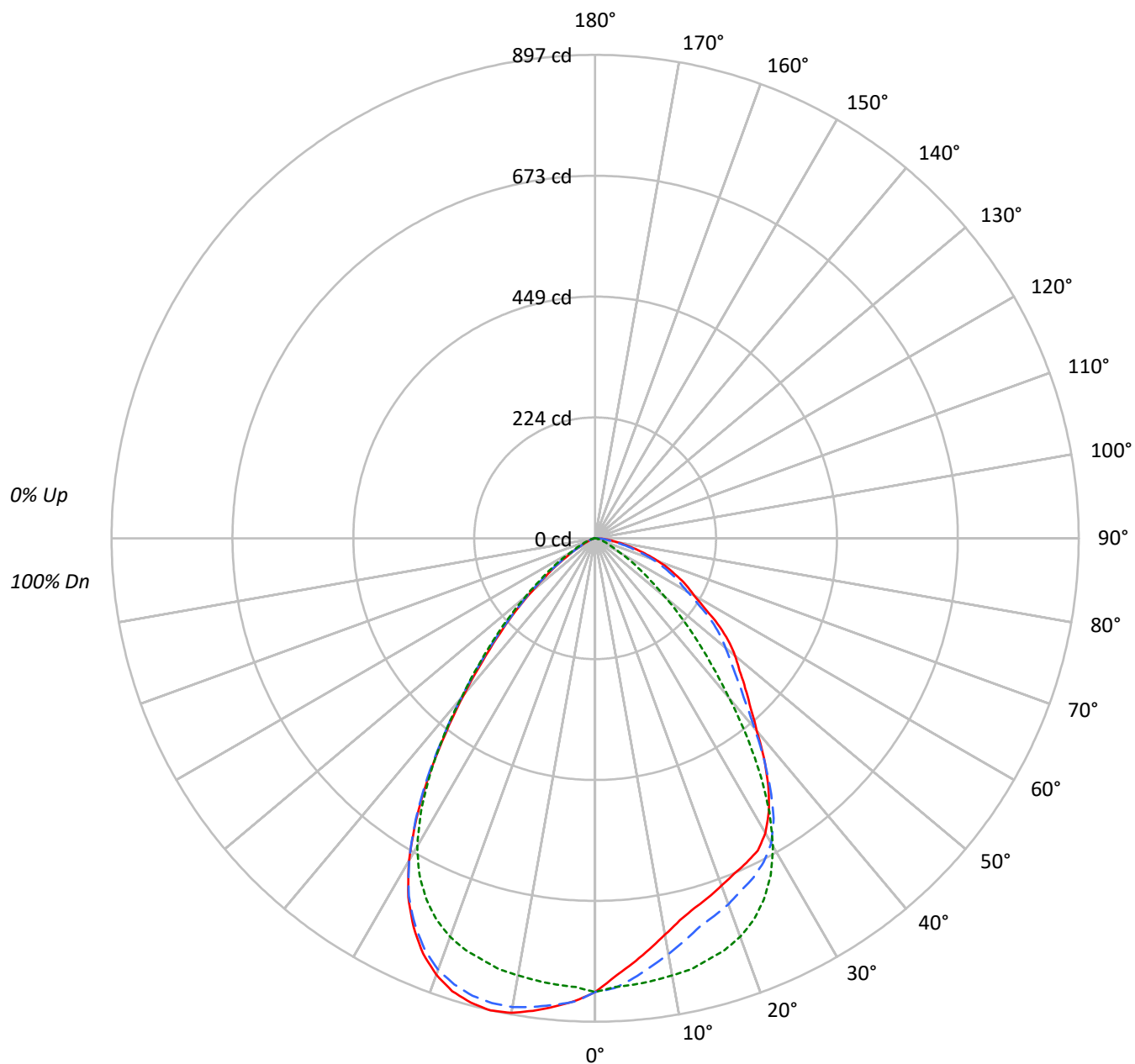
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89		
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79		
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70		
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62		
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56		
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50		
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46		
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42		
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38		
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	82060	82060	82060
5°	77491	81317	85347
10°	73885	81505	88482
15°	71707	81675	89999
20°	71126	81591	89359
25°	71413	79574	85650
30°	71066	74239	77660
35°	66614	63390	64032
40°	59362	49146	48039
45°	54290	36634	34402
50°	51338	25669	23198
55°	47202	17331	14562
60°	41244	10155	8031
65°	39042	6503	4497
70°	35562	4645	2792
75°	29408	3276	2033
80°	23123	1852	1235
85°	20575	1230	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	79.6	5.4
10°-20°	228.2	15.5
20°-30°	338.3	22.9
30°-40°	338.8	23.0
40°-50°	236.8	16.0
50°-60°	140.9	9.5
60°-70°	73.5	5.0
70°-80°	32.7	2.2
80°-90°	7.1	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°	646.1	43.8
0°-40°	985.0	66.7
0°-60°	1362.7	92.3
0°-90°	1476.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1476.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	842	842	842	842	842	
5°	792	819	831	869	872	74
15°	711	747	810	879	892	201
25°	664	694	740	791	796	306
35°	560	566	533	543	538	347
45°	394	374	266	257	250	306
55°	278	260	102	89	86	246
65°	169	155	28	21	20	167
75°	78	68	9	5	5	84
85°	18	14	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°	842.0	842.0	842.0	842.0	842.0	842.0	842.0	842.0	842.0	842.0	842.0
2.5°	814.9	824.7	814.9	818.2	831.2	819.3	825.8	825.8	822.5	830.1	835.5
5°	792.1	801.9	792.1	796.5	810.6	798.6	806.2	804.1	805.1	811.7	819.3
7.5°	769.3	776.9	768.3	773.7	786.7	776.9	783.4	783.4	784.5	794.3	800.8
10°	746.6	753.1	746.6	750.9	765.0	756.3	760.7	761.7	765.0	773.7	783.4
12.5°	725.9	731.4	724.8	731.4	743.3	734.6	740.0	741.1	744.4	754.1	765.0
15°	710.7	716.2	709.7	715.1	725.9	719.4	723.8	725.9	728.1	736.8	746.6
17.5°	698.8	703.1	697.7	704.2	712.9	705.3	711.8	711.8	715.1	723.8	734.6
20°	685.8	690.1	685.8	691.2	701.0	694.5	699.9	699.9	703.1	712.9	722.7
22.5°	673.8	676.0	673.8	678.2	688.0	682.5	685.8	686.9	690.1	698.8	707.5
25°	664.1	668.4	666.3	670.6	677.1	671.7	674.9	676.0	679.3	686.9	694.5
27.5°	653.2	655.4	653.2	658.7	664.1	659.7	663.0	661.9	664.1	670.6	677.1
30°	631.5	633.7	633.7	637.0	641.3	639.1	642.4	639.1	641.3	646.7	653.2
32.5°	600.1	601.1	602.2	605.5	608.7	605.5	607.7	607.7	607.7	612.0	616.3
35°	559.9	562.1	561.0	563.2	566.4	565.3	565.3	564.3	562.1	564.3	566.4
37.5°	514.3	511.1	511.1	514.3	516.5	512.2	514.3	512.2	512.2	513.3	513.3
40°	466.6	463.3	466.6	467.7	468.8	466.6	465.5	463.3	460.1	461.2	459.0
42.5°	426.4	424.3	425.4	425.4	426.4	424.3	425.4	421.0	417.8	415.6	412.3
45°	393.9	390.6	393.9	391.7	391.7	390.6	389.6	387.4	383.0	379.8	374.4
47.5°	363.5	363.5	364.6	364.6	364.6	362.4	362.4	358.1	353.7	349.4	341.8
50°	338.6	336.4	340.7	340.7	337.5	336.4	337.5	332.0	328.8	323.4	315.8
52.5°	311.4	311.4	312.5	312.5	311.4	309.3	310.3	306.0	302.7	297.3	289.7
55°	277.8	275.6	278.9	278.9	277.8	276.7	277.8	274.5	271.3	266.9	260.4
57.5°	239.8	238.7	240.9	242.0	239.8	239.8	240.9	237.6	236.6	232.2	225.7
60°	211.6	210.5	212.7	213.8	211.6	211.6	211.6	207.3	205.1	200.7	196.4
62.5°	192.1	191.0	193.1	192.1	191.0	189.9	191.0	186.6	184.5	180.1	175.8
65°	169.3	170.4	171.4	171.4	170.4	169.3	169.3	167.1	164.9	160.6	155.2
67.5°	147.6	147.6	148.7	149.7	148.7	148.7	148.7	145.4	143.2	140.0	133.5
70°	124.8	123.7	127.0	127.0	124.8	125.9	124.8	123.7	121.5	117.2	111.8
72.5°	100.9	100.9	102.0	102.0	100.9	100.9	100.9	99.8	96.6	94.4	89.0
75°	78.1	78.1	79.2	80.3	78.1	78.1	79.2	77.0	74.9	71.6	68.4
77.5°	58.6	57.5	58.6	58.6	57.5	57.5	57.5	56.4	55.3	52.1	48.8
80°	41.2	40.1	41.2	41.2	41.2	40.1	40.1	39.1	39.1	36.9	33.6
82.5°	28.2	27.1	28.2	28.2	28.2	27.1	27.1	27.1	26.0	25.0	22.8
85°	18.4	17.4	17.4	18.4	17.4	17.4	17.4	17.4	16.3	15.2	14.1
87.5°	8.7	8.7	8.7	8.7	8.7	8.7	8.7	7.6	7.6	7.6	6.5
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°	842.0	842.0	842.0	842.0	842.0	842.0	842.0	842.0	842.0	842.0	842.0
2.5°	831.2	829.0	835.5	833.4	834.4	829.0	837.7	833.4	838.8	833.4	844.2
5°	817.1	814.9	824.7	823.6	824.7	820.3	830.1	829.0	835.5	831.2	843.1
7.5°	801.9	799.7	810.6	811.7	813.8	809.5	822.5	822.5	829.0	827.9	841.0
10°	784.5	785.6	796.5	798.6	803.0	800.8	812.7	816.0	824.7	823.6	839.9
12.5°	768.3	768.3	782.4	786.7	790.0	788.9	803.0	807.3	817.1	819.3	834.4
15°	752.0	753.1	766.1	772.6	776.9	775.8	791.0	796.5	808.4	809.5	827.9
17.5°	739.0	737.9	752.0	757.4	763.9	762.8	779.1	785.6	797.5	800.8	818.2
20°	728.1	727.0	740.0	746.6	750.9	749.8	766.1	773.7	784.5	786.7	804.1
22.5°	715.1	712.9	725.9	731.4	735.7	734.6	748.7	754.1	765.0	767.2	783.4
25°	699.9	697.7	709.7	712.9	716.2	714.0	725.9	729.2	737.9	740.0	756.3
27.5°	682.5	677.1	686.9	686.9	689.0	685.8	694.5	697.7	705.3	705.3	720.5
30°	655.4	647.8	653.2	652.1	653.2	648.9	654.3	655.4	660.8	659.7	670.6
32.5°	617.4	606.6	609.8	606.6	603.3	596.8	603.3	601.1	605.5	601.1	610.9
35°	565.3	554.5	553.4	549.1	545.8	540.4	540.4	535.0	536.0	532.8	539.3
37.5°	508.9	494.8	492.6	484.0	478.5	472.0	472.0	467.7	462.3	460.1	465.5
40°	453.6	438.4	433.0	418.8	413.4	406.9	402.6	397.1	395.0	386.3	390.6
42.5°	405.8	389.6	377.6	362.4	357.0	347.2	340.7	334.2	331.0	321.2	325.5
45°	365.7	346.1	333.1	313.6	306.0	295.1	285.4	277.8	270.2	265.8	263.7
47.5°	332.0	311.4	294.1	272.4	260.4	250.7	237.6	230.0	220.3	214.9	211.6
50°	303.8	281.0	261.5	236.6	224.6	213.8	198.6	186.6	178.0	169.3	167.1
52.5°	278.9	255.0	233.3	205.1	191.0	178.0	161.7	148.7	141.1	131.3	130.2
55°	249.6	229.0	205.1	175.8	161.7	148.7	131.3	118.3	108.5	102.0	99.8
57.5°	218.1	198.6	175.8	146.5	132.4	118.3	102.0	90.1	81.4	76.0	74.9
60°	188.8	170.4	148.7	119.4	105.3	93.3	76.0	64.0	56.4	52.1	49.9
62.5°	167.1	149.7	129.1	102.0	89.0	77.0	60.8	49.9	43.4	39.1	36.9
65°	146.5	129.1	110.7	85.7	74.9	64.0	48.8	39.1	32.6	28.2	26.0
67.5°	124.8	109.6	92.2	71.6	60.8	52.1	39.1	30.4	25.0	21.7	19.5
70°	103.1	89.0	74.9	57.5	49.9	41.2	30.4	23.9	18.4	16.3	14.1
72.5°	81.4	70.5	58.6	44.5	38.0	32.6	23.9	17.4	14.1	11.9	9.8
75°	60.8	53.2	43.4	33.6	28.2	23.9	17.4	13.0	10.9	8.7	7.6
77.5°	43.4	36.9	30.4	22.8	20.6	17.4	11.9	9.8	7.6	5.4	4.3
80°	29.3	26.0	20.6	16.3	13.0	11.9	8.7	6.5	4.3	3.3	3.3
82.5°	19.5	16.3	13.0	9.8	8.7	7.6	5.4	4.3	3.3	2.2	2.2
85°	11.9	9.8	7.6	5.4	5.4	4.3	3.3	2.2	1.1	1.1	1.1
87.5°	5.4	4.3	3.3	2.2	2.2	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°	842.0	842.0	842.0	842.0	842.0	842.0	842.0	842.0	842.0	842.0	842.0
2.5°	852.9	846.4	842.0	847.5	849.6	846.4	849.6	855.1	860.5	861.6	846.4
5°	854.0	847.5	845.3	851.8	852.9	851.8	855.1	862.7	869.2	871.3	856.1
7.5°	854.0	849.6	848.5	856.1	857.2	856.1	861.6	870.3	876.8	881.1	865.9
10°	851.8	849.6	850.7	857.2	859.4	859.4	867.0	876.8	883.3	887.6	872.4
12.5°	848.5	848.5	848.5	856.1	858.3	859.4	865.9	878.9	883.3	889.8	874.6
15°	843.1	843.1	843.1	850.7	854.0	854.0	861.6	873.5	878.9	885.4	870.3
17.5°	833.4	833.4	834.4	841.0	844.2	844.2	851.8	864.8	868.1	875.7	860.5
20°	819.3	819.3	820.3	826.8	830.1	827.9	837.7	848.5	851.8	858.3	843.1
22.5°	798.6	798.6	798.6	805.1	807.3	806.2	816.0	825.8	825.8	834.4	818.2
25°	768.3	770.4	768.3	774.8	776.9	775.8	784.5	793.2	791.0	800.8	784.5
27.5°	731.4	730.3	730.3	735.7	735.7	734.6	741.1	750.9	748.7	755.2	740.0
30°	680.4	683.6	678.2	685.8	682.5	680.4	684.7	693.4	690.1	695.6	683.6
32.5°	621.8	617.4	617.4	617.4	619.6	614.2	618.5	622.8	619.6	625.0	612.0
35°	544.7	545.8	542.6	543.6	544.7	538.2	542.6	546.9	542.6	545.8	533.9
37.5°	467.7	468.8	461.2	465.5	461.2	459.0	463.3	465.5	461.2	464.4	451.4
40°	390.6	388.5	387.4	387.4	388.5	383.0	386.3	389.6	386.3	388.5	376.5
42.5°	323.4	322.3	320.1	321.2	317.9	316.8	317.9	321.2	317.9	320.1	311.4
45°	264.8	262.6	259.3	260.4	260.4	255.0	258.3	260.4	257.2	258.3	250.7
47.5°	210.5	207.3	207.3	206.2	206.2	204.0	207.3	206.2	202.9	205.1	197.5
50°	163.9	161.7	161.7	161.7	161.7	158.4	159.5	161.7	158.4	158.4	154.1
52.5°	128.0	124.8	122.6	122.6	122.6	121.5	121.5	122.6	119.4	119.4	118.3
55°	96.6	95.5	92.2	92.2	92.2	89.0	90.1	90.1	89.0	89.0	85.7
57.5°	71.6	68.4	66.2	66.2	64.0	64.0	62.9	64.0	61.9	61.9	59.7
60°	47.7	45.6	44.5	43.4	43.4	42.3	43.4	42.3	42.3	41.2	40.1
62.5°	34.7	32.6	30.4	30.4	30.4	29.3	29.3	29.3	29.3	29.3	28.2
65°	25.0	22.8	22.8	21.7	21.7	20.6	20.6	20.6	20.6	20.6	19.5
67.5°	17.4	16.3	15.2	15.2	15.2	15.2	15.2	15.2	14.1	14.1	14.1
70°	13.0	11.9	10.9	10.9	10.9	10.9	10.9	9.8	10.9	10.9	9.8
72.5°	8.7	8.7	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
75°	6.5	6.5	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
77.5°	4.3	4.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
80°	3.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
82.5°	2.2	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 EU4B10209027 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	842.0	842.0	842.0	842.0	842.0	842.0	842.0	842.0
2.5°	862.7	861.6	859.4	862.7	854.0	850.7	849.6	859.4
5°	874.6	872.4	872.4	875.7	865.9	863.7	861.6	872.4
7.5°	885.4	883.3	883.3	886.5	877.8	875.7	873.5	884.4
10°	892.0	892.0	892.0	894.1	886.5	884.4	883.3	894.1
12.5°	895.2	895.2	894.1	898.5	888.7	888.7	886.5	897.4
15°	890.9	890.9	890.9	894.1	885.4	883.3	883.3	892.0
17.5°	880.0	880.0	878.9	882.2	872.4	872.4	871.3	881.1
20°	863.7	863.7	861.6	865.9	856.1	852.9	851.8	861.6
22.5°	837.7	836.6	835.5	837.7	829.0	826.8	825.8	834.4
25°	804.1	803.0	800.8	803.0	793.2	790.0	790.0	796.5
27.5°	756.3	756.3	753.1	756.3	745.5	744.4	743.3	750.9
30°	697.7	693.4	691.2	695.6	684.7	684.7	682.5	690.1
32.5°	625.0	620.7	619.6	621.8	612.0	608.7	613.1	617.4
35°	541.5	542.6	538.2	538.2	529.5	530.6	531.7	538.2
37.5°	461.2	459.0	457.9	459.0	452.5	450.3	448.1	454.7
40°	386.3	380.9	379.8	379.8	374.4	373.3	374.4	377.6
42.5°	315.8	314.7	310.3	312.5	307.1	309.3	308.2	308.2
45°	255.0	256.1	251.7	255.0	250.7	247.4	247.4	249.6
47.5°	201.8	201.8	200.7	200.7	197.5	198.6	196.4	199.7
50°	156.3	156.3	154.1	155.2	153.0	153.0	151.9	153.0
52.5°	119.4	118.3	118.3	117.2	115.0	116.1	117.2	115.0
55°	86.8	87.9	85.7	86.8	84.6	85.7	84.6	85.7
57.5°	59.7	60.8	58.6	60.8	58.6	59.7	58.6	58.6
60°	41.2	41.2	40.1	41.2	40.1	40.1	39.1	41.2
62.5°	28.2	28.2	28.2	28.2	28.2	27.1	28.2	28.2
65°	20.6	19.5	19.5	19.5	19.5	19.5	19.5	19.5
67.5°	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1
70°	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
72.5°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
75°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
77.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
80°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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)