

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: P251921

Luminaire Tested: **LD4B20D010 EU4B10208030 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251921
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-15)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B20D010 EU4B10208030 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1748.0 lumens
Efficiency: N/A
Efficacy: 84.0 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

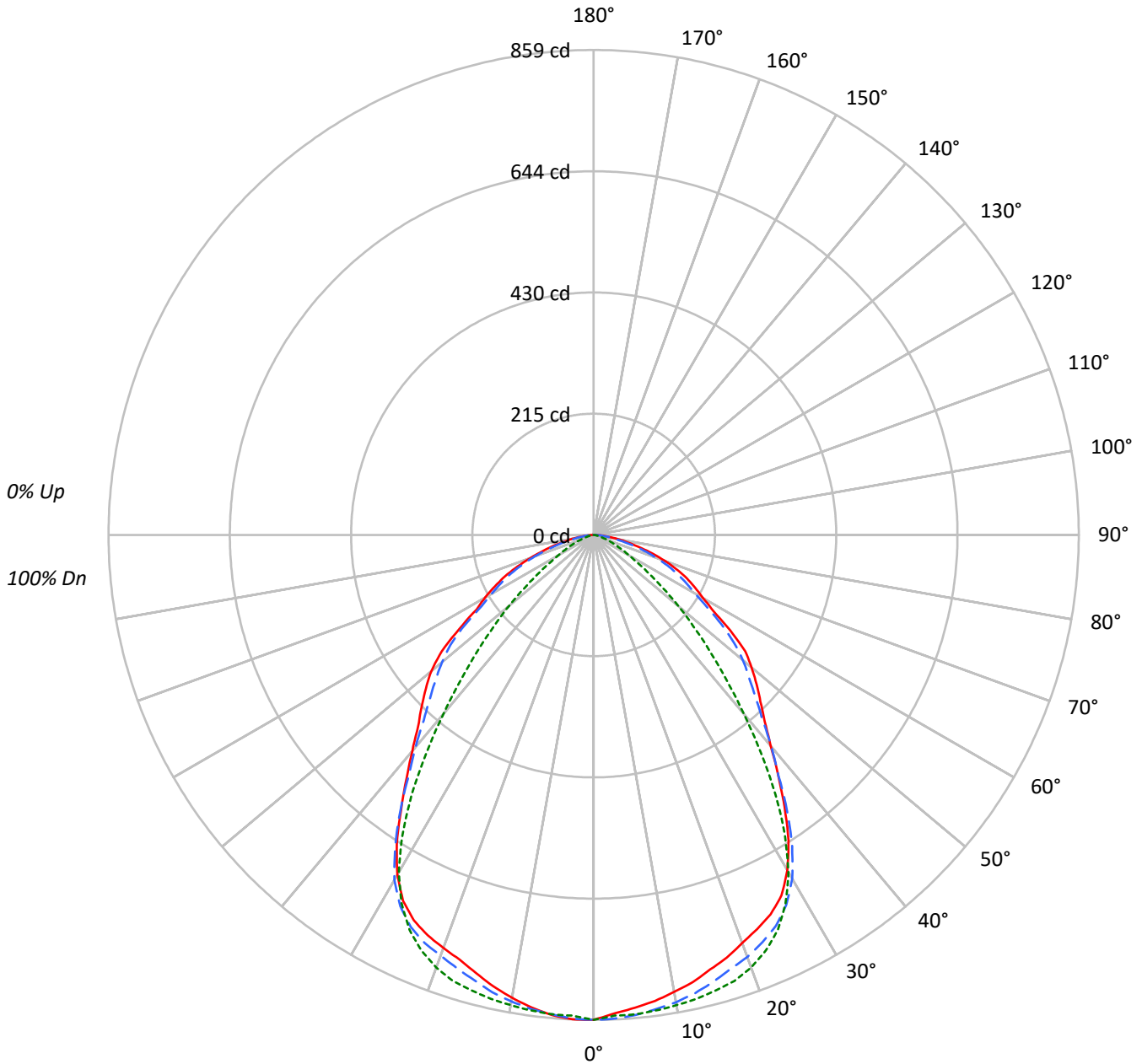
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									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	89	88																			
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76																			
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66																			
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58																			
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51																			
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46																			
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41																			
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37																			
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34																			
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	83707	83707	83707
5°	82217	83381	83508
10°	81336	83692	82385
15°	80394	84258	81060
20°	79755	84557	80720
25°	79714	82983	80994
30°	77176	77627	78212
35°	70112	66816	70742
40°	62034	52619	63548
45°	57556	40066	59376
50°	55295	29656	56902
55°	50073	20424	49394
60°	43525	13917	43271
65°	42062	10054	39918
70°	38041	6782	33880
75°	31329	4481	26886
80°	25200	2975	20036
85°	20687	1454	13307



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	81.1	4.6
10°-20°	231.8	13.3
20°-30°	350.2	20.0
30°-40°	366.5	21.0
40°-50°	296.9	17.0
50°-60°	215.9	12.4
60°-70°	133.2	7.6
70°-80°	60.2	3.4
80°-90°	12.2	0.7
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°	663.1	37.9
0°-40°	1029.7	58.9
0°-60°	1542.4	88.2
0°-90°	1748.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1748.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	859	859	859	859	859	
5°	840	854	852	852	854	80
15°	797	819	835	817	803	225
25°	741	764	772	766	753	340
35°	589	597	562	597	595	367
45°	418	404	291	410	431	325
55°	295	276	120	279	291	263
65°	182	164	44	161	173	179
75°	83	71	12	62	71	90
85°	18	14	1	11	12	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°	858.9	858.9	858.9	858.9	858.9	858.9	858.9	858.9	858.9	858.9	858.9
2.5°	848.3	848.3	856.3	865.5	857.6	849.6	854.9	852.3	861.5	861.5	857.6
5°	840.4	843.0	849.6	857.6	851.0	843.0	849.6	847.0	856.3	856.3	853.6
7.5°	832.5	833.8	841.7	851.0	844.4	836.4	841.7	840.4	848.3	849.6	847.0
10°	821.9	823.2	831.1	840.4	833.8	827.2	832.5	831.1	841.7	841.7	840.4
12.5°	811.3	812.7	820.6	828.5	821.9	815.3	820.6	820.6	831.1	832.5	831.1
15°	796.8	799.4	806.0	814.0	810.0	802.1	807.4	807.4	816.6	819.3	819.3
17.5°	784.9	786.2	792.8	800.8	795.5	788.9	794.2	794.2	803.4	806.0	806.0
20°	769.0	771.7	778.3	786.2	782.3	777.0	780.9	780.9	791.5	794.2	795.5
22.5°	755.8	758.5	763.8	774.3	767.7	763.8	769.0	767.7	779.6	780.9	780.9
25°	741.3	743.9	750.5	757.2	753.2	749.2	753.2	753.2	762.4	763.8	763.8
27.5°	720.2	721.5	728.1	734.7	730.7	725.4	730.7	729.4	738.7	740.0	738.7
30°	685.8	688.4	691.1	700.3	696.4	692.4	697.7	695.0	704.3	704.3	703.0
32.5°	642.2	642.2	647.5	654.1	648.8	646.2	650.1	651.4	658.0	658.0	654.1
35°	589.3	592.0	595.9	599.9	595.9	593.3	597.3	595.9	603.9	601.2	597.3
37.5°	536.5	537.8	541.8	547.1	541.8	537.8	539.1	537.8	544.4	544.4	537.8
40°	487.6	490.2	492.9	498.2	492.9	490.2	491.6	487.6	495.5	492.9	488.9
42.5°	447.9	449.3	453.2	455.9	450.6	449.3	450.6	447.9	451.9	449.3	441.3
45°	417.6	417.6	418.9	422.8	417.6	416.2	416.2	413.6	417.6	412.3	404.3
47.5°	391.1	392.5	393.8	396.4	392.5	388.5	389.8	384.5	387.2	383.2	372.6
50°	364.7	367.3	368.7	371.3	367.3	364.7	366.0	360.7	360.7	354.1	344.9
52.5°	338.3	339.6	338.3	340.9	338.3	334.3	335.6	330.3	330.3	322.4	313.2
55°	294.7	296.0	297.3	300.0	297.3	293.3	296.0	292.0	292.0	286.7	276.2
57.5°	251.1	252.4	253.7	255.0	255.0	252.4	253.7	251.1	249.7	245.8	237.8
60°	223.3	223.3	223.3	224.6	223.3	222.0	222.0	219.3	219.3	214.1	206.1
62.5°	202.2	203.5	203.5	204.8	203.5	202.2	200.9	198.2	196.9	191.6	185.0
65°	182.4	182.4	181.0	183.7	182.4	181.0	181.0	178.4	175.7	170.5	163.9
67.5°	158.6	159.9	158.6	159.9	159.9	158.6	157.2	154.6	153.3	149.3	141.4
70°	133.5	133.5	133.5	134.8	133.5	133.5	134.8	130.8	129.5	124.2	117.6
72.5°	108.4	109.7	109.7	108.4	109.7	107.0	107.0	107.0	105.7	100.4	93.8
75°	83.2	84.6	84.6	85.9	84.6	83.2	83.2	81.9	80.6	76.6	71.4
77.5°	62.1	62.1	63.4	63.4	63.4	62.1	62.1	59.5	59.5	56.8	51.5
80°	44.9	44.9	43.6	44.9	44.9	43.6	43.6	42.3	42.3	39.6	35.7
82.5°	29.1	30.4	30.4	30.4	30.4	29.1	29.1	29.1	27.7	26.4	23.8
85°	18.5	18.5	18.5	18.5	19.8	18.5	19.8	18.5	18.5	15.9	14.5
87.5°	7.9	7.9	7.9	9.2	9.2	7.9	7.9	7.9	7.9	7.9	6.6
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°	858.9	858.9	858.9	858.9	858.9	858.9	858.9	858.9	858.9	858.9	858.9
2.5°	857.6	858.9	854.9	860.2	856.3	857.6	858.9	857.6	852.3	852.3	866.8
5°	852.3	854.9	851.0	857.6	854.9	854.9	857.6	856.3	851.0	852.3	865.5
7.5°	847.0	851.0	848.3	854.9	851.0	851.0	853.6	853.6	848.3	849.6	861.5
10°	839.1	844.4	843.0	849.6	845.7	845.7	849.6	849.6	844.4	845.7	857.6
12.5°	832.5	837.8	836.4	843.0	840.4	841.7	843.0	845.7	839.1	841.7	852.3
15°	821.9	827.2	827.2	833.8	831.1	833.8	836.4	840.4	835.1	835.1	845.7
17.5°	810.0	816.6	816.6	821.9	821.9	823.2	828.5	832.5	827.2	828.5	837.8
20°	796.8	804.7	804.7	811.3	810.0	812.7	816.6	820.6	815.3	815.3	825.9
22.5°	783.6	790.2	791.5	795.5	795.5	796.8	800.8	803.4	796.8	796.8	807.4
25°	765.1	771.7	773.0	775.7	773.0	773.0	775.7	778.3	771.7	771.7	780.9
27.5°	740.0	746.6	746.6	745.3	742.6	743.9	742.6	743.9	737.3	736.0	745.3
30°	703.0	706.9	706.9	705.6	701.7	701.7	697.7	699.0	689.8	689.8	697.7
32.5°	652.8	656.7	654.1	651.4	646.2	643.5	640.9	639.5	630.3	630.3	639.5
35°	593.3	595.9	592.0	586.7	580.1	576.1	572.2	566.9	560.3	561.6	566.9
37.5°	532.5	532.5	527.2	516.7	511.4	504.8	498.2	498.2	487.6	486.3	490.2
40°	481.0	475.7	466.4	451.9	442.7	436.1	426.8	421.5	413.6	413.6	420.2
42.5°	434.7	424.2	412.3	392.5	383.2	375.3	363.4	358.1	348.8	347.5	351.5
45°	393.8	383.2	366.0	344.9	333.0	323.7	306.6	300.0	292.0	290.7	293.3
47.5°	360.7	348.8	327.7	300.0	288.1	276.2	259.0	249.7	243.1	239.2	243.1
50°	331.7	315.8	293.3	264.3	248.4	237.8	216.7	207.5	198.2	195.6	196.9
52.5°	300.0	284.1	260.3	229.9	215.4	199.5	179.7	166.5	158.6	154.6	158.6
55°	265.6	249.7	226.0	195.6	179.7	165.2	144.0	133.5	124.2	120.2	124.2
57.5°	228.6	214.1	192.9	162.5	148.0	134.8	115.0	104.4	95.1	92.5	95.1
60°	196.9	185.0	163.9	134.8	122.9	108.4	91.2	80.6	72.7	71.4	72.7
62.5°	175.7	162.5	142.7	115.0	103.1	91.2	75.3	64.7	58.1	56.8	58.1
65°	154.6	140.1	121.6	97.8	85.9	76.6	60.8	51.5	44.9	43.6	44.9
67.5°	130.8	117.6	101.7	80.6	71.4	62.1	48.9	39.6	34.4	33.0	34.4
70°	108.4	96.5	80.6	64.7	55.5	48.9	37.0	30.4	25.1	23.8	25.1
72.5°	85.9	75.3	62.1	48.9	43.6	37.0	29.1	22.5	18.5	17.2	18.5
75°	66.1	58.1	47.6	35.7	31.7	27.7	19.8	15.9	13.2	11.9	13.2
77.5°	46.2	41.0	33.0	26.4	22.5	19.8	14.5	10.6	9.2	7.9	9.2
80°	31.7	27.7	22.5	17.2	14.5	11.9	9.2	6.6	5.3	5.3	5.3
82.5°	21.1	17.2	13.2	10.6	9.2	7.9	5.3	4.0	4.0	2.6	2.6
85°	11.9	10.6	7.9	6.6	5.3	4.0	2.6	2.6	1.3	1.3	1.3
87.5°	5.3	4.0	2.6	2.6	1.3	1.3	1.3	1.3	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°	858.9	858.9	858.9	858.9	858.9	858.9	858.9	858.9	858.9	858.9	858.9
2.5°	862.9	858.9	864.2	858.9	856.3	858.9	856.3	864.2	857.6	852.3	857.6
5°	861.5	856.3	861.5	857.6	853.6	854.9	852.3	860.2	852.3	848.3	851.0
7.5°	858.9	854.9	857.6	853.6	849.6	851.0	848.3	854.9	847.0	843.0	845.7
10°	854.9	851.0	852.3	849.6	845.7	845.7	843.0	848.3	839.1	833.8	836.4
12.5°	849.6	844.4	847.0	843.0	837.8	837.8	835.1	839.1	829.8	824.5	825.9
15°	843.0	837.8	837.8	833.8	828.5	828.5	823.2	827.2	816.6	811.3	811.3
17.5°	835.1	828.5	828.5	824.5	817.9	816.6	812.7	816.6	804.7	799.4	799.4
20°	823.2	817.9	816.6	814.0	807.4	806.0	800.8	802.1	792.8	788.9	787.5
22.5°	807.4	802.1	803.4	799.4	794.2	792.8	787.5	791.5	782.3	778.3	779.6
25°	779.6	777.0	779.6	778.3	774.3	774.3	771.7	774.3	766.4	763.8	765.1
27.5°	747.9	746.6	747.9	747.9	745.3	745.3	745.3	749.2	741.3	740.0	740.0
30°	701.7	701.7	703.0	704.3	704.3	706.9	705.6	710.9	705.6	703.0	705.6
32.5°	640.9	646.2	650.1	650.1	650.1	652.8	655.4	659.4	654.1	655.4	655.4
35°	572.2	576.1	578.8	585.4	581.4	590.7	593.3	598.6	597.3	599.9	598.6
37.5°	495.5	500.8	506.1	515.3	514.0	524.6	529.9	540.4	537.8	543.1	545.7
40°	424.2	432.1	440.0	446.6	451.9	462.5	473.1	486.3	490.2	494.2	495.5
42.5°	355.5	363.4	376.6	385.8	393.8	411.0	425.5	441.3	445.3	453.2	455.9
45°	300.0	306.6	322.4	334.3	340.9	366.0	383.2	403.0	409.6	418.9	422.8
47.5°	248.4	260.3	276.2	290.7	300.0	326.4	348.8	370.0	379.2	389.8	395.1
50°	203.5	216.7	237.8	251.1	264.3	293.3	318.5	340.9	350.2	362.1	367.3
52.5°	166.5	181.0	200.9	215.4	229.9	260.3	286.7	307.9	319.8	327.7	335.6
55°	130.8	146.7	166.5	182.4	194.2	227.3	249.7	270.9	278.8	285.4	289.4
57.5°	101.7	113.6	133.5	146.7	161.2	190.3	212.7	228.6	235.2	243.1	245.8
60°	79.3	91.2	109.7	122.9	136.1	163.9	186.3	202.2	208.8	215.4	219.3
62.5°	63.4	75.3	92.5	104.4	116.3	141.4	161.2	177.1	185.0	191.6	195.6
65°	50.2	60.8	75.3	87.2	96.5	118.9	138.7	153.3	161.2	167.8	171.8
67.5°	39.6	48.9	62.1	70.0	79.3	97.8	115.0	128.2	134.8	142.7	146.7
70°	30.4	37.0	48.9	55.5	62.1	78.0	91.2	104.4	111.0	116.3	118.9
72.5°	22.5	27.7	37.0	42.3	46.2	59.5	70.0	79.3	84.6	89.9	92.5
75°	15.9	19.8	26.4	30.4	33.0	42.3	51.5	58.1	62.1	66.1	70.0
77.5°	10.6	13.2	17.2	19.8	22.5	29.1	34.4	39.6	43.6	47.6	48.9
80°	6.6	9.2	11.9	13.2	14.5	18.5	23.8	26.4	29.1	31.7	33.0
82.5°	4.0	5.3	6.6	7.9	9.2	11.9	14.5	17.2	18.5	21.1	22.5
85°	1.3	2.6	2.6	4.0	4.0	6.6	7.9	9.2	10.6	11.9	13.2
87.5°	0.0	0.0	1.3	1.3	1.3	1.3	2.6	2.6	2.6	2.6	2.6
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°	858.9	858.9	858.9	858.9	858.9	858.9	858.9	858.9
2.5°	862.9	858.9	856.3	854.9	864.2	852.3	857.6	858.9
5°	857.6	853.6	851.0	849.6	857.6	847.0	851.0	853.6
7.5°	849.6	847.0	843.0	841.7	849.6	837.8	843.0	844.4
10°	840.4	836.4	833.8	832.5	839.1	827.2	832.5	832.5
12.5°	828.5	825.9	820.6	820.6	825.9	815.3	819.3	819.3
15°	812.7	810.0	804.7	804.7	810.0	799.4	803.4	803.4
17.5°	799.4	796.8	792.8	791.5	796.8	786.2	790.2	788.9
20°	788.9	786.2	780.9	780.9	784.9	774.3	778.3	778.3
22.5°	779.6	778.3	773.0	773.0	778.3	767.7	770.4	767.7
25°	765.1	763.8	758.5	759.8	762.4	751.9	755.8	753.2
27.5°	741.3	741.3	736.0	734.7	738.7	729.4	732.0	730.7
30°	704.3	705.6	699.0	699.0	700.3	692.4	696.4	695.0
32.5°	654.1	655.4	650.1	648.8	652.8	646.2	648.8	648.8
35°	598.6	599.9	595.9	595.9	599.9	595.9	595.9	594.6
37.5°	543.1	545.7	543.1	544.4	547.1	543.1	545.7	544.4
40°	498.2	500.8	496.8	499.5	502.1	498.2	502.1	499.5
42.5°	457.2	461.2	458.5	461.2	463.8	461.2	463.8	459.8
45°	426.8	429.4	428.1	429.4	432.1	430.8	432.1	430.8
47.5°	397.7	403.0	400.4	403.0	407.0	404.3	407.0	403.0
50°	371.3	375.3	374.0	376.6	377.9	376.6	379.2	375.3
52.5°	337.0	340.9	339.6	339.6	342.2	339.6	342.2	339.6
55°	292.0	293.3	293.3	294.7	293.3	292.0	293.3	290.7
57.5°	248.4	251.1	247.1	251.1	249.7	248.4	248.4	245.8
60°	220.7	224.6	222.0	224.6	223.3	223.3	223.3	222.0
62.5°	198.2	200.9	198.2	199.5	199.5	199.5	198.2	196.9
65°	173.1	177.1	174.4	175.7	174.4	173.1	174.4	173.1
67.5°	148.0	149.3	149.3	148.0	148.0	148.0	148.0	145.4
70°	120.2	121.6	120.2	122.9	121.6	120.2	121.6	118.9
72.5°	93.8	95.1	93.8	95.1	93.8	93.8	93.8	93.8
75°	70.0	71.4	71.4	71.4	71.4	71.4	68.7	71.4
77.5°	50.2	50.2	50.2	51.5	50.2	50.2	50.2	50.2
80°	34.4	34.4	34.4	35.7	34.4	35.7	34.4	35.7
82.5°	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
85°	11.9	13.2	13.2	11.9	11.9	11.9	11.9	11.9
87.5°	2.6	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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)