

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: P251767

Luminaire Tested: **LD4B20D010 EU4B10208040 4LBLWW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251767
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 EU4B10208040 4LBLWW1H
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1604.0 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

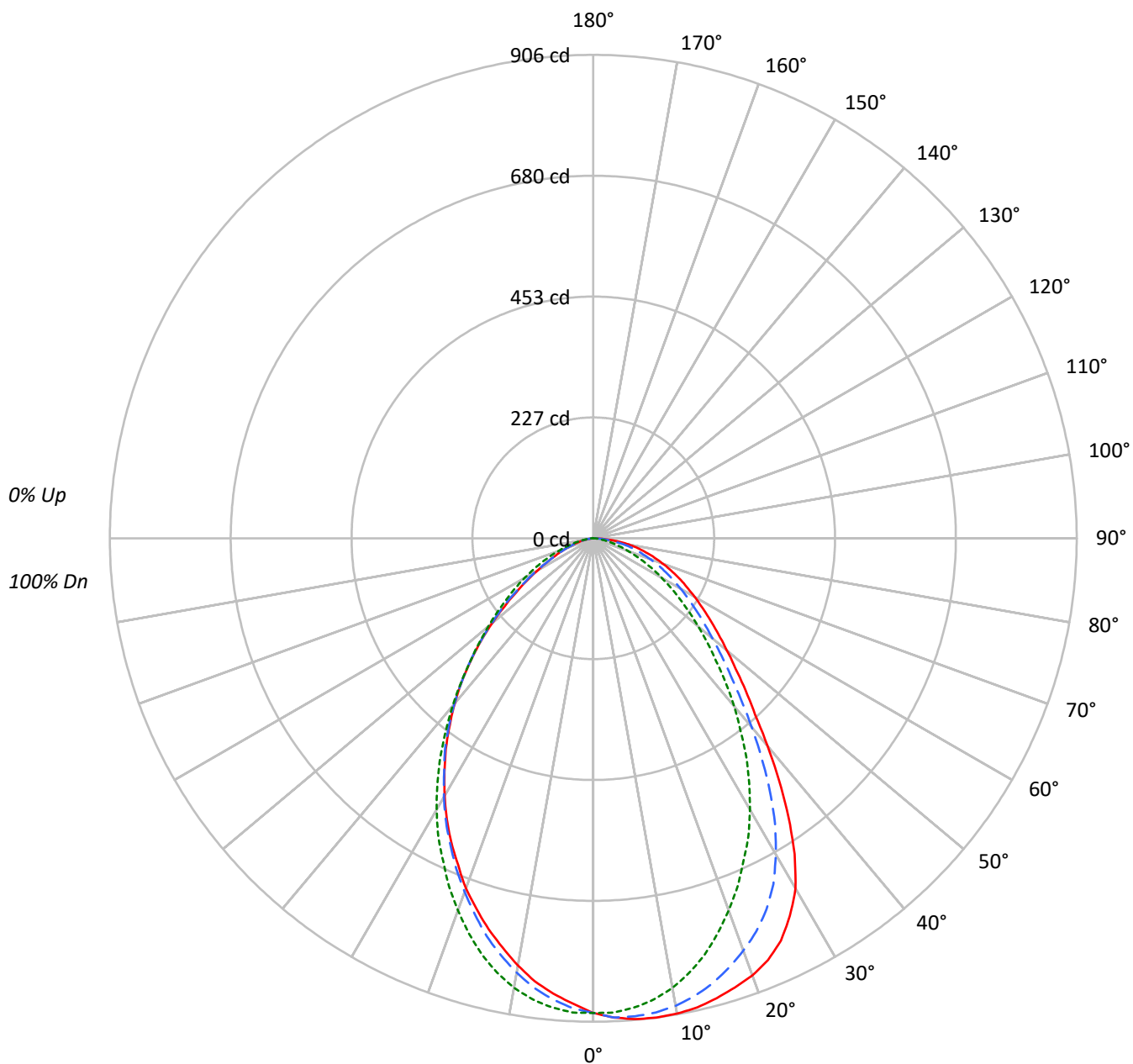
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
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	111	107	103	100	108	104	101	98	100	98	95		96	94	92		93
2	102	95	89	85	100	93	88	84	90	85	82		87	83	80		84
3	94	85	78	73	92	84	77	72	81	75	71		78	74	70		76
4	88	77	69	63	85	76	69	63	73	67	62		71	66	61		69
5	81	70	62	56	79	69	61	56	67	60	55		65	59	55		63
6	76	64	56	50	74	63	55	50	61	54	49		60	54	49		58
7	71	59	51	45	69	58	50	45	56	50	45		55	49	44		54
8	66	54	46	41	65	53	46	41	52	45	41		51	45	40		50
9	62	50	42	37	61	49	42	37	48	42	37		47	41	37		46
10	59	46	39	34	57	46	39	34	45	39	34		44	38	34		43

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	86699	86699	86699
5°	88497	86355	83811
10°	89521	84652	80446
15°	90030	81474	76499
20°	90417	76934	72391
25°	89478	71671	67692
30°	85324	66069	62682
35°	75882	59428	57310
40°	64591	52238	51360
45°	55641	44890	44697
50°	49594	38799	37556
55°	45571	33490	29990
60°	42687	28809	23468
65°	41025	24306	18310
70°	39380	19490	14817
75°	38144	15476	11334
80°	38389	10776	6903
85°	32093	7604	3019



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	83.3	5.2
10°-20°	228.9	14.3
20°-30°	320.2	20.0
30°-40°	329.1	20.5
40°-50°	267.1	16.7
50°-60°	188.1	11.7
60°-70°	115.8	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°	632.4	39.4
0°-40°	961.5	59.9
0°-60°	1416.6	88.3
0°-90°	1604.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1604.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	890	890	890	890	890	
5°	905	899	883	868	857	86
15°	892	864	808	772	758	252
25°	832	768	666	634	630	380
35°	638	576	500	484	482	397
45°	404	364	326	326	324	314
55°	268	235	197	181	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°	889.6	889.6	889.6	889.6	889.6	889.6	889.6	889.6	889.6	889.6	889.6
2.5°	899.1	900.5	896.4	900.5	895.0	897.8	899.1	896.4	893.7	899.1	899.1
5°	904.6	904.6	900.5	906.0	899.1	900.5	903.3	899.1	895.0	900.5	899.1
7.5°	906.0	906.0	900.5	906.0	899.1	900.5	901.9	897.8	893.7	897.8	896.4
10°	904.6	903.3	899.1	904.6	897.8	897.8	899.1	895.0	888.2	892.3	889.6
12.5°	900.5	900.5	895.0	900.5	890.9	890.9	892.3	886.8	881.4	881.4	878.6
15°	892.3	892.3	886.8	890.9	882.7	882.7	881.4	875.9	869.0	869.0	863.6
17.5°	882.7	882.7	877.3	881.4	871.8	871.8	870.4	862.2	852.6	851.2	844.4
20°	871.8	871.8	864.9	867.7	856.7	856.7	855.4	845.8	834.8	832.1	822.5
22.5°	855.4	855.4	848.5	849.9	838.9	837.6	836.2	825.2	814.3	810.2	797.9
25°	832.1	830.7	825.2	825.2	814.3	811.6	808.8	797.9	786.9	778.7	767.8
27.5°	797.9	799.2	792.4	793.8	780.1	777.3	776.0	762.3	750.0	741.8	730.8
30°	758.2	754.1	747.2	747.2	736.3	734.9	732.2	719.9	706.2	696.6	684.3
32.5°	702.1	700.7	693.9	693.9	681.5	681.5	676.1	663.8	651.4	646.0	633.6
35°	637.8	636.4	630.9	630.9	620.0	621.3	615.9	606.3	594.0	585.7	576.2
37.5°	572.1	570.7	565.2	566.6	557.0	557.0	552.9	543.3	533.7	529.6	517.3
40°	507.7	506.4	499.5	503.6	495.4	492.7	491.3	484.5	473.5	468.0	461.2
42.5°	448.9	450.3	443.4	446.2	439.3	436.6	435.2	429.7	421.5	416.0	409.2
45°	403.7	401.0	398.3	398.3	391.4	390.0	388.7	381.8	376.4	370.9	364.0
47.5°	361.3	358.6	355.8	357.2	351.7	350.4	347.6	342.1	335.3	332.6	325.7
50°	327.1	325.7	321.6	321.6	316.1	314.8	312.0	307.9	301.1	297.0	291.5
52.5°	295.6	295.6	291.5	290.1	286.0	284.7	283.3	277.8	272.3	266.9	261.4
55°	268.2	266.9	264.1	264.1	258.7	257.3	255.9	250.4	245.0	240.9	235.4
57.5°	242.2	242.2	239.5	239.5	235.4	232.7	232.7	227.2	220.3	217.6	210.8
60°	219.0	219.0	216.2	216.2	212.1	212.1	209.4	203.9	199.8	194.3	188.9
62.5°	197.1	198.4	195.7	194.3	190.2	188.9	188.9	184.8	177.9	173.8	168.3
65°	177.9	176.5	175.2	173.8	169.7	168.3	168.3	162.9	158.8	153.3	149.2
67.5°	157.4	157.4	154.6	154.6	151.9	150.5	147.8	143.7	139.6	135.5	131.4
70°	138.2	138.2	136.9	136.9	132.8	131.4	130.0	125.9	121.8	117.7	112.2
72.5°	120.4	119.1	117.7	117.7	115.0	113.6	112.2	108.1	104.0	99.9	95.8
75°	101.3	101.3	99.9	99.9	97.2	95.8	95.8	93.1	87.6	84.9	79.4
77.5°	84.9	84.9	83.5	83.5	80.7	80.7	79.4	75.3	72.5	68.4	65.7
80°	68.4	67.1	67.1	65.7	63.0	63.0	61.6	60.2	56.1	53.4	49.3
82.5°	47.9	47.9	47.9	46.5	45.2	45.2	43.8	41.1	38.3	37.0	32.8
85°	28.7	28.7	27.4	26.0	27.4	26.0	24.6	23.3	21.9	20.5	19.2
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°	889.6	889.6	889.6	889.6	889.6	889.6	889.6	889.6	889.6	889.6	889.6
2.5°	890.9	895.0	893.7	892.3	889.6	889.6	889.6	888.2	889.6	889.6	886.8
5°	890.9	893.7	892.3	889.6	886.8	886.8	885.5	882.7	882.7	882.7	877.3
7.5°	886.8	889.6	885.5	882.7	880.0	877.3	877.3	873.1	873.1	871.8	866.3
10°	878.6	880.0	874.5	871.8	867.7	866.3	863.6	858.1	856.7	855.4	849.9
12.5°	866.3	867.7	860.8	855.4	849.9	848.5	845.8	838.9	836.2	833.5	826.6
15°	848.5	848.5	840.3	833.5	828.0	826.6	819.8	812.9	810.2	807.5	797.9
17.5°	828.0	826.6	815.7	808.8	802.0	799.2	792.4	784.2	778.7	776.0	767.8
20°	806.1	802.0	789.7	782.8	774.6	770.5	763.7	752.7	747.2	741.8	733.6
22.5°	780.1	774.6	760.9	751.3	743.1	739.0	729.4	719.9	711.7	706.2	696.6
25°	748.6	741.8	726.7	714.4	707.5	703.4	693.9	682.9	674.7	666.5	658.3
27.5°	711.7	703.4	688.4	676.1	669.2	662.4	655.5	643.2	636.4	629.5	620.0
30°	666.5	656.9	643.2	632.3	624.1	618.6	610.4	599.4	591.2	587.1	577.5
32.5°	617.2	606.3	594.0	583.0	578.9	572.1	565.2	554.3	547.4	543.3	536.5
35°	562.5	554.3	540.6	532.4	525.5	522.8	517.3	506.4	503.6	499.5	491.3
37.5°	505.0	498.2	488.6	481.7	476.3	473.5	468.0	461.2	457.1	453.0	448.9
40°	451.6	446.2	437.9	432.5	425.6	421.5	421.5	413.3	410.6	410.6	406.5
42.5°	399.6	396.9	390.0	381.8	380.5	376.4	375.0	370.9	368.1	366.8	365.4
45°	355.8	351.7	344.9	340.8	336.7	336.7	332.6	328.5	327.1	325.7	324.3
47.5°	317.5	312.0	306.6	302.5	299.7	298.3	294.2	291.5	290.1	290.1	288.8
50°	283.3	279.2	273.7	269.6	266.9	264.1	261.4	258.7	257.3	255.9	255.9
52.5°	254.6	249.1	243.6	239.5	235.4	234.0	231.3	228.6	227.2	225.8	224.4
55°	228.6	224.4	217.6	213.5	209.4	209.4	205.3	201.2	198.4	197.1	195.7
57.5°	203.9	199.8	193.0	188.9	186.1	183.4	180.7	177.9	175.2	172.4	169.7
60°	182.0	177.9	171.1	165.6	164.2	161.5	158.8	153.3	150.5	147.8	145.1
62.5°	161.5	156.0	150.5	145.1	143.7	141.0	136.9	132.8	128.6	125.9	121.8
65°	142.3	138.2	131.4	127.3	123.2	121.8	117.7	112.2	108.1	105.4	101.3
67.5°	124.5	119.1	112.2	108.1	105.4	102.6	98.5	94.4	90.3	86.2	82.1
70°	106.7	102.6	95.8	91.7	89.0	86.2	82.1	76.6	72.5	68.4	65.7
72.5°	90.3	84.9	79.4	75.3	72.5	69.8	65.7	61.6	57.5	54.7	50.6
75°	75.3	69.8	65.7	60.2	58.8	56.1	52.0	47.9	43.8	41.1	38.3
77.5°	60.2	56.1	50.6	47.9	45.2	42.4	39.7	35.6	32.8	28.7	26.0
80°	45.2	41.1	37.0	34.2	31.5	30.1	27.4	24.6	21.9	19.2	17.8
82.5°	30.1	27.4	23.3	21.9	20.5	19.2	16.4	15.1	13.7	12.3	10.9
85°	16.4	15.1	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°	889.6	889.6	889.6	889.6	889.6	889.6	889.6	889.6	889.6	889.6	889.6
2.5°	888.2	882.7	882.7	882.7	878.6	880.0	881.4	882.7	881.4	877.3	881.4
5°	878.6	873.1	873.1	870.4	867.7	867.7	867.7	869.0	867.7	863.6	864.9
7.5°	866.3	859.5	858.1	855.4	852.6	851.2	851.2	851.2	849.9	844.4	847.1
10°	847.1	840.3	837.6	836.2	832.1	830.7	829.4	828.0	826.6	821.1	823.9
12.5°	823.9	818.4	812.9	811.6	807.5	804.7	803.3	803.3	800.6	795.1	797.9
15°	796.5	788.3	784.2	781.5	777.3	774.6	771.9	773.2	771.9	766.4	767.8
17.5°	763.7	755.4	751.3	750.0	744.5	741.8	740.4	740.4	739.0	733.6	734.9
20°	728.1	719.9	717.1	714.4	711.7	708.9	707.5	706.2	704.8	699.3	703.4
22.5°	692.5	682.9	678.8	678.8	673.3	672.0	670.6	672.0	670.6	665.1	667.9
25°	655.5	646.0	643.2	639.1	636.4	635.0	635.0	635.0	633.6	630.9	633.6
27.5°	614.5	607.6	603.5	602.2	599.4	598.1	596.7	598.1	598.1	594.0	596.7
30°	573.4	568.0	565.2	563.8	559.7	558.4	559.7	559.7	559.7	555.6	559.7
32.5°	532.4	528.3	526.9	522.8	520.1	520.1	520.1	521.4	520.1	517.3	521.4
35°	491.3	485.8	484.5	483.1	483.1	480.4	483.1	481.7	484.5	480.4	483.1
37.5°	447.5	444.8	443.4	443.4	440.7	442.0	442.0	442.0	444.8	440.7	443.4
40°	406.5	403.7	403.7	403.7	402.4	402.4	402.4	403.7	405.1	402.4	405.1
42.5°	365.4	364.0	364.0	362.7	361.3	362.7	364.0	364.0	365.4	362.7	364.0
45°	325.7	324.3	325.7	324.3	324.3	323.0	324.3	325.7	325.7	324.3	324.3
47.5°	288.8	288.8	287.4	287.4	287.4	287.4	287.4	287.4	287.4	284.7	287.4
50°	255.9	253.2	254.6	253.2	253.2	251.8	251.8	250.4	249.1	247.7	247.7
52.5°	224.4	221.7	221.7	220.3	219.0	219.0	217.6	216.2	214.9	212.1	212.1
55°	194.3	191.6	190.2	188.9	187.5	186.1	184.8	183.4	180.7	179.3	179.3
57.5°	167.0	164.2	161.5	161.5	158.8	157.4	154.6	151.9	150.5	147.8	147.8
60°	142.3	139.6	135.5	134.1	132.8	130.0	125.9	124.5	123.2	120.4	121.8
62.5°	119.1	115.0	110.9	109.5	108.1	105.4	102.6	99.9	98.5	99.9	99.9
65°	97.2	93.1	90.3	87.6	86.2	83.5	82.1	80.7	80.7	80.7	82.1
67.5°	78.0	73.9	71.2	69.8	67.1	65.7	65.7	65.7	65.7	65.7	65.7
70°	61.6	58.8	56.1	53.4	53.4	52.0	52.0	52.0	52.0	52.0	52.0
72.5°	46.5	43.8	42.4	42.4	41.1	41.1	41.1	41.1	39.7	39.7	41.1
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	15.1	15.1	15.1	15.1	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°	889.6	889.6	889.6	889.6	889.6	889.6	889.6	889.6
2.5°	873.1	878.6	880.0	875.9	877.3	874.5	875.9	873.1
5°	858.1	862.2	863.6	860.8	860.8	858.1	859.5	856.7
7.5°	838.9	843.0	844.4	841.7	841.7	838.9	838.9	837.6
10°	817.0	818.4	821.1	817.0	818.4	815.7	815.7	812.9
12.5°	789.7	792.4	795.1	791.0	791.0	789.7	789.7	785.6
15°	760.9	763.7	765.0	762.3	762.3	760.9	759.6	758.2
17.5°	730.8	732.2	734.9	730.8	733.6	730.8	730.8	728.1
20°	696.6	700.7	702.1	698.0	699.3	698.0	698.0	698.0
22.5°	663.8	666.5	667.9	665.1	666.5	663.8	665.1	662.4
25°	629.5	630.9	632.3	629.5	632.3	630.9	629.5	629.5
27.5°	594.0	595.3	596.7	594.0	596.7	595.3	596.7	594.0
30°	555.6	558.4	561.1	558.4	559.7	558.4	558.4	557.0
32.5°	517.3	520.1	522.8	520.1	522.8	520.1	521.4	518.7
35°	481.7	483.1	484.5	481.7	483.1	483.1	483.1	481.7
37.5°	442.0	444.8	444.8	443.4	446.2	444.8	444.8	442.0
40°	403.7	405.1	406.5	403.7	405.1	403.7	405.1	403.7
42.5°	364.0	366.8	368.1	365.4	365.4	365.4	364.0	365.4
45°	323.0	325.7	328.5	324.3	325.7	325.7	325.7	324.3
47.5°	286.0	286.0	287.4	286.0	287.4	284.7	287.4	286.0
50°	247.7	247.7	250.4	247.7	247.7	247.7	247.7	247.7
52.5°	210.8	212.1	212.1	209.4	210.8	209.4	210.8	209.4
55°	176.5	176.5	177.9	176.5	176.5	176.5	176.5	176.5
57.5°	146.4	147.8	147.8	146.4	147.8	146.4	146.4	146.4
60°	121.8	121.8	121.8	120.4	121.8	120.4	121.8	120.4
62.5°	98.5	99.9	99.9	98.5	99.9	98.5	98.5	98.5
65°	80.7	80.7	80.7	80.7	80.7	80.7	80.7	79.4
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	41.1	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)