

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: P251922

Luminaire Tested: **LD4B20D010 EU4B10208035 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251922
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 EU4B10208035 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1792.0 lumens
Efficiency: N/A
Efficacy: 86.2 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

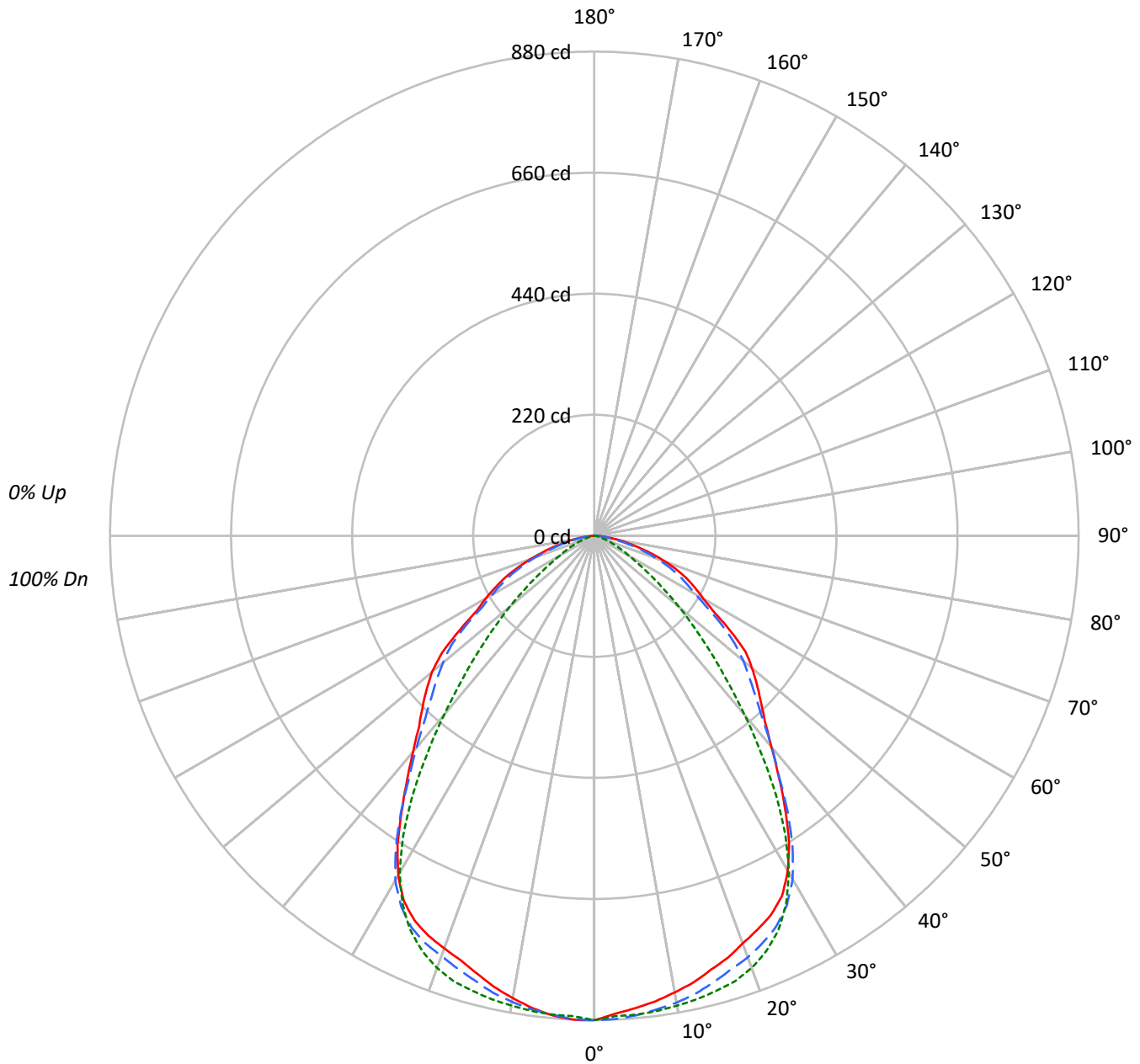
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	85812	85812	85812
5°	84291	85474	85611
10°	83385	85800	84454
15°	82422	86377	83098
20°	81767	86683	82752
25°	81725	85069	83026
30°	79123	79573	80181
35°	71884	68494	72527
40°	63599	53942	65151
45°	59004	41072	60864
50°	56690	30399	58327
55°	51331	20950	50634
60°	44616	14268	44363
65°	43100	10308	40932
70°	38981	6953	34735
75°	32120	4594	27563
80°	25873	3031	20541
85°	21246	1565	13642



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	83.1	4.6
10°-20°	237.7	13.3
20°-30°	359.0	20.0
30°-40°	375.8	21.0
40°-50°	304.3	17.0
50°-60°	221.4	12.4
60°-70°	136.5	7.6
70°-80°	61.7	3.4
80°-90°	12.5	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°	679.8	37.9
0°-40°	1055.6	58.9
0°-60°	1581.3	88.2
0°-90°	1792.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1792.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	880	880	880	880	880	
5°	862	875	874	874	875	82
15°	817	840	856	837	824	231
25°	760	783	791	786	772	348
35°	604	612	576	612	610	377
45°	428	414	298	420	442	333
55°	302	283	123	286	298	270
65°	187	168	45	165	178	183
75°	85	73	12	64	73	93
85°	19	15	1	11	12	22
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°	880.5	880.5	880.5	880.5	880.5	880.5	880.5	880.5	880.5	880.5	880.5
2.5°	869.7	869.7	877.8	887.3	879.2	871.0	876.5	873.7	883.2	883.2	879.2
5°	861.6	864.3	871.0	879.2	872.4	864.3	871.0	868.3	877.8	877.8	875.1
7.5°	853.4	854.8	862.9	872.4	865.6	857.5	862.9	861.6	869.7	871.0	868.3
10°	842.6	843.9	852.1	861.6	854.8	848.0	853.4	852.1	862.9	862.9	861.6
12.5°	831.8	833.1	841.2	849.4	842.6	835.8	841.2	841.2	852.1	853.4	852.1
15°	816.9	819.6	826.3	834.5	830.4	822.3	827.7	827.7	837.2	839.9	839.9
17.5°	804.7	806.0	812.8	820.9	815.5	808.7	814.1	814.1	823.6	826.3	826.3
20°	788.4	791.1	797.9	806.0	801.9	796.5	800.6	800.6	811.4	814.1	815.5
22.5°	774.9	777.6	783.0	793.8	787.0	783.0	788.4	787.0	799.2	800.6	800.6
25°	760.0	762.7	769.4	776.2	772.1	768.1	772.1	772.1	781.6	783.0	783.0
27.5°	738.3	739.6	746.4	753.2	749.1	743.7	749.1	747.8	757.2	758.6	757.2
30°	703.1	705.8	708.5	718.0	713.9	709.8	715.3	712.5	722.0	722.0	720.7
32.5°	658.4	658.4	663.8	670.5	665.1	662.4	666.5	667.8	674.6	674.6	670.5
35°	604.2	606.9	610.9	615.0	610.9	608.2	612.3	610.9	619.1	616.4	612.3
37.5°	550.0	551.3	555.4	560.8	555.4	551.3	552.7	551.3	558.1	558.1	551.3
40°	499.9	502.6	505.3	510.7	505.3	502.6	503.9	499.9	508.0	505.3	501.2
42.5°	459.2	460.6	464.6	467.4	461.9	460.6	461.9	459.2	463.3	460.6	452.5
45°	428.1	428.1	429.4	433.5	428.1	426.7	426.7	424.0	428.1	422.6	414.5
47.5°	401.0	402.3	403.7	406.4	402.3	398.3	399.6	394.2	396.9	392.8	382.0
50°	373.9	376.6	377.9	380.7	376.6	373.9	375.2	369.8	369.8	363.0	353.6
52.5°	346.8	348.1	346.8	349.5	346.8	342.7	344.1	338.7	338.7	330.5	321.1
55°	302.1	303.4	304.8	307.5	304.8	300.7	303.4	299.4	299.4	294.0	283.1
57.5°	257.4	258.7	260.1	261.4	261.4	258.7	260.1	257.4	256.0	252.0	243.8
60°	228.9	228.9	228.9	230.3	228.9	227.6	227.6	224.9	224.9	219.5	211.3
62.5°	207.3	208.6	208.6	210.0	208.6	207.3	205.9	203.2	201.8	196.4	189.7
65°	186.9	186.9	185.6	188.3	186.9	185.6	185.6	182.9	180.2	174.7	168.0
67.5°	162.6	163.9	162.6	163.9	163.9	162.6	161.2	158.5	157.1	153.1	144.9
70°	136.8	136.8	136.8	138.2	136.8	136.8	138.2	134.1	132.8	127.3	120.6
72.5°	111.1	112.4	112.4	111.1	112.4	109.7	109.7	109.7	108.4	103.0	96.2
75°	85.3	86.7	86.7	88.1	86.7	85.3	85.3	84.0	82.6	78.6	73.2
77.5°	63.7	63.7	65.0	65.0	65.0	63.7	63.7	61.0	61.0	58.2	52.8
80°	46.1	46.1	44.7	46.1	46.1	44.7	44.7	43.3	43.3	40.6	36.6
82.5°	29.8	31.2	31.2	31.2	31.2	29.8	29.8	29.8	28.4	27.1	24.4
85°	19.0	19.0	19.0	19.0	20.3	19.0	20.3	19.0	19.0	16.3	14.9
87.5°	8.1	8.1	8.1	9.5	9.5	8.1	8.1	8.1	8.1	8.1	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°	880.5	880.5	880.5	880.5	880.5	880.5	880.5	880.5	880.5	880.5	880.5
2.5°	879.2	880.5	876.5	881.9	877.8	879.2	880.5	879.2	873.7	873.7	888.6
5°	873.7	876.5	872.4	879.2	876.5	876.5	879.2	877.8	872.4	873.7	887.3
7.5°	868.3	872.4	869.7	876.5	872.4	872.4	875.1	875.1	869.7	871.0	883.2
10°	860.2	865.6	864.3	871.0	867.0	867.0	871.0	871.0	865.6	867.0	879.2
12.5°	853.4	858.8	857.5	864.3	861.6	862.9	864.3	867.0	860.2	862.9	873.7
15°	842.6	848.0	848.0	854.8	852.1	854.8	857.5	861.6	856.1	856.1	867.0
17.5°	830.4	837.2	837.2	842.6	842.6	843.9	849.4	853.4	848.0	849.4	858.8
20°	816.9	825.0	825.0	831.8	830.4	833.1	837.2	841.2	835.8	835.8	846.7
22.5°	803.3	810.1	811.4	815.5	815.5	816.9	820.9	823.6	816.9	816.9	827.7
25°	784.3	791.1	792.5	795.2	792.5	792.5	795.2	797.9	791.1	791.1	800.6
27.5°	758.6	765.4	765.4	764.0	761.3	762.7	761.3	762.7	755.9	754.5	764.0
30°	720.7	724.7	724.7	723.4	719.3	719.3	715.3	716.6	707.1	707.1	715.3
32.5°	669.2	673.3	670.5	667.8	662.4	659.7	657.0	655.6	646.2	646.2	655.6
35°	608.2	610.9	606.9	601.5	594.7	590.6	586.6	581.1	574.4	575.7	581.1
37.5°	545.9	545.9	540.5	529.7	524.2	517.5	510.7	510.7	499.9	498.5	502.6
40°	493.1	487.7	478.2	463.3	453.8	447.0	437.6	432.1	424.0	424.0	430.8
42.5°	445.7	434.8	422.6	402.3	392.8	384.7	372.5	367.1	357.6	356.3	360.3
45°	403.7	392.8	375.2	353.6	341.4	331.9	314.3	307.5	299.4	298.0	300.7
47.5°	369.8	357.6	336.0	307.5	295.3	283.1	265.5	256.0	249.3	245.2	249.3
50°	340.0	323.8	300.7	270.9	254.7	243.8	222.2	212.7	203.2	200.5	201.8
52.5°	307.5	291.2	266.9	235.7	220.8	204.6	184.2	170.7	162.6	158.5	162.6
55°	272.3	256.0	231.6	200.5	184.2	169.3	147.7	136.8	127.3	123.3	127.3
57.5°	234.4	219.5	197.8	166.6	151.7	138.2	117.9	107.0	97.5	94.8	97.5
60°	201.8	189.7	168.0	138.2	126.0	111.1	93.5	82.6	74.5	73.2	74.5
62.5°	180.2	166.6	146.3	117.9	105.7	93.5	77.2	66.4	59.6	58.2	59.6
65°	158.5	143.6	124.6	100.2	88.1	78.6	62.3	52.8	46.1	44.7	46.1
67.5°	134.1	120.6	104.3	82.6	73.2	63.7	50.1	40.6	35.2	33.9	35.2
70°	111.1	98.9	82.6	66.4	56.9	50.1	37.9	31.2	25.7	24.4	25.7
72.5°	88.1	77.2	63.7	50.1	44.7	37.9	29.8	23.0	19.0	17.6	19.0
75°	67.7	59.6	48.8	36.6	32.5	28.4	20.3	16.3	13.5	12.2	13.5
77.5°	47.4	42.0	33.9	27.1	23.0	20.3	14.9	10.8	9.5	8.1	9.5
80°	32.5	28.4	23.0	17.6	14.9	12.2	9.5	6.8	5.4	5.4	5.4
82.5°	21.7	17.6	13.5	10.8	9.5	8.1	5.4	4.1	4.1	2.7	2.7
85°	12.2	10.8	8.1	6.8	5.4	4.1	2.7	2.7	1.4	1.4	1.4
87.5°	5.4	4.1	2.7	2.7	1.4	1.4	1.4	1.4	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°	880.5	880.5	880.5	880.5	880.5	880.5	880.5	880.5	880.5	880.5	880.5
2.5°	884.6	880.5	885.9	880.5	877.8	880.5	877.8	885.9	879.2	873.7	879.2
5°	883.2	877.8	883.2	879.2	875.1	876.5	873.7	881.9	873.7	869.7	872.4
7.5°	880.5	876.5	879.2	875.1	871.0	872.4	869.7	876.5	868.3	864.3	867.0
10°	876.5	872.4	873.7	871.0	867.0	867.0	864.3	869.7	860.2	854.8	857.5
12.5°	871.0	865.6	868.3	864.3	858.8	858.8	856.1	860.2	850.7	845.3	846.7
15°	864.3	858.8	858.8	854.8	849.4	849.4	843.9	848.0	837.2	831.8	831.8
17.5°	856.1	849.4	849.4	845.3	838.5	837.2	833.1	837.2	825.0	819.6	819.6
20°	843.9	838.5	837.2	834.5	827.7	826.3	820.9	822.3	812.8	808.7	807.4
22.5°	827.7	822.3	823.6	819.6	814.1	812.8	807.4	811.4	801.9	797.9	799.2
25°	799.2	796.5	799.2	797.9	793.8	793.8	791.1	793.8	785.7	783.0	784.3
27.5°	766.7	765.4	766.7	766.7	764.0	764.0	764.0	768.1	760.0	758.6	758.6
30°	719.3	719.3	720.7	722.0	722.0	724.7	723.4	728.8	723.4	720.7	723.4
32.5°	657.0	662.4	666.5	666.5	666.5	669.2	671.9	676.0	670.5	671.9	671.9
35°	586.6	590.6	593.3	600.1	596.0	605.5	608.2	613.7	612.3	615.0	613.7
37.5°	508.0	513.4	518.8	528.3	527.0	537.8	543.2	554.0	551.3	556.8	559.5
40°	434.8	443.0	451.1	457.9	463.3	474.1	485.0	498.5	502.6	506.6	508.0
42.5°	364.4	372.5	386.1	395.6	403.7	421.3	436.2	452.5	456.5	464.6	467.4
45°	307.5	314.3	330.5	342.7	349.5	375.2	392.8	413.2	419.9	429.4	433.5
47.5°	254.7	266.9	283.1	298.0	307.5	334.6	357.6	379.3	388.8	399.6	405.0
50°	208.6	222.2	243.8	257.4	270.9	300.7	326.5	349.5	359.0	371.2	376.6
52.5°	170.7	185.6	205.9	220.8	235.7	266.9	294.0	315.6	327.8	336.0	344.1
55°	134.1	150.4	170.7	186.9	199.1	233.0	256.0	277.7	285.8	292.6	296.7
57.5°	104.3	116.5	136.8	150.4	165.3	195.1	218.1	234.4	241.1	249.3	252.0
60°	81.3	93.5	112.4	126.0	139.5	168.0	191.0	207.3	214.0	220.8	224.9
62.5°	65.0	77.2	94.8	107.0	119.2	144.9	165.3	181.5	189.7	196.4	200.5
65°	51.5	62.3	77.2	89.4	98.9	121.9	142.2	157.1	165.3	172.0	176.1
67.5°	40.6	50.1	63.7	71.8	81.3	100.2	117.9	131.4	138.2	146.3	150.4
70°	31.2	37.9	50.1	56.9	63.7	79.9	93.5	107.0	113.8	119.2	121.9
72.5°	23.0	28.4	37.9	43.3	47.4	61.0	71.8	81.3	86.7	92.1	94.8
75°	16.3	20.3	27.1	31.2	33.9	43.3	52.8	59.6	63.7	67.7	71.8
77.5°	10.8	13.5	17.6	20.3	23.0	29.8	35.2	40.6	44.7	48.8	50.1
80°	6.8	9.5	12.2	13.5	14.9	19.0	24.4	27.1	29.8	32.5	33.9
82.5°	4.1	5.4	6.8	8.1	9.5	12.2	14.9	17.6	19.0	21.7	23.0
85°	1.4	2.7	2.7	4.1	4.1	6.8	8.1	9.5	10.8	12.2	13.5
87.5°	0.0	0.0	1.4	1.4	1.4	1.4	2.7	2.7	2.7	2.7	2.7
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°	880.5	880.5	880.5	880.5	880.5	880.5	880.5	880.5
2.5°	884.6	880.5	877.8	876.5	885.9	873.7	879.2	880.5
5°	879.2	875.1	872.4	871.0	879.2	868.3	872.4	875.1
7.5°	871.0	868.3	864.3	862.9	871.0	858.8	864.3	865.6
10°	861.6	857.5	854.8	853.4	860.2	848.0	853.4	853.4
12.5°	849.4	846.7	841.2	841.2	846.7	835.8	839.9	839.9
15°	833.1	830.4	825.0	825.0	830.4	819.6	823.6	823.6
17.5°	819.6	816.9	812.8	811.4	816.9	806.0	810.1	808.7
20°	808.7	806.0	800.6	800.6	804.7	793.8	797.9	797.9
22.5°	799.2	797.9	792.5	792.5	797.9	787.0	789.8	787.0
25°	784.3	783.0	777.6	778.9	781.6	770.8	774.9	772.1
27.5°	760.0	760.0	754.5	753.2	757.2	747.8	750.5	749.1
30°	722.0	723.4	716.6	716.6	718.0	709.8	713.9	712.5
32.5°	670.5	671.9	666.5	665.1	669.2	662.4	665.1	665.1
35°	613.7	615.0	610.9	610.9	615.0	610.9	610.9	609.6
37.5°	556.8	559.5	556.8	558.1	560.8	556.8	559.5	558.1
40°	510.7	513.4	509.3	512.1	514.8	510.7	514.8	512.1
42.5°	468.7	472.8	470.1	472.8	475.5	472.8	475.5	471.4
45°	437.6	440.3	438.9	440.3	443.0	441.6	443.0	441.6
47.5°	407.7	413.2	410.5	413.2	417.2	414.5	417.2	413.2
50°	380.7	384.7	383.4	386.1	387.4	386.1	388.8	384.7
52.5°	345.4	349.5	348.1	348.1	350.9	348.1	350.9	348.1
55°	299.4	300.7	300.7	302.1	300.7	299.4	300.7	298.0
57.5°	254.7	257.4	253.3	257.4	256.0	254.7	254.7	252.0
60°	226.2	230.3	227.6	230.3	228.9	228.9	228.9	227.6
62.5°	203.2	205.9	203.2	204.6	204.6	204.6	203.2	201.8
65°	177.5	181.5	178.8	180.2	178.8	177.5	178.8	177.5
67.5°	151.7	153.1	153.1	151.7	151.7	151.7	151.7	149.0
70°	123.3	124.6	123.3	126.0	124.6	123.3	124.6	121.9
72.5°	96.2	97.5	96.2	97.5	96.2	96.2	96.2	96.2
75°	71.8	73.2	73.2	73.2	73.2	73.2	70.4	73.2
77.5°	51.5	51.5	51.5	52.8	51.5	51.5	51.5	51.5
80°	35.2	35.2	35.2	36.6	35.2	36.6	35.2	36.6
82.5°	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
85°	12.2	13.5	13.5	12.2	12.2	12.2	12.2	12.2
87.5°	2.7	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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)