

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: P251924

Luminaire Tested: **LD4B20D010 EU4B10208050 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251924
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 EU4B10208050 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1810.0 lumens
Efficiency: N/A
Efficacy: 87.0 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

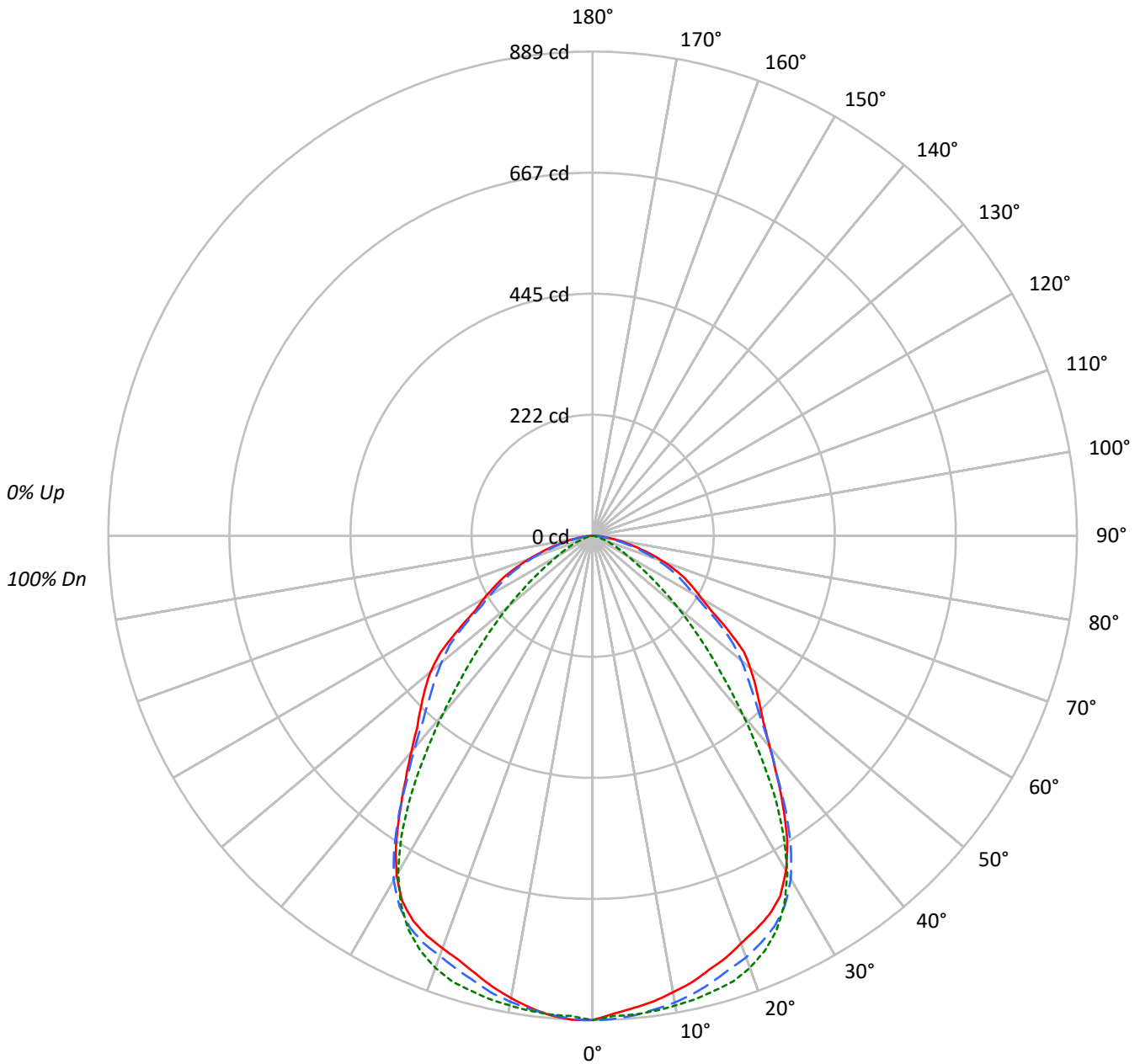
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88				88				
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76				76				
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66				66				
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58				58				
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51				51				
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46				46				
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41				41				
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37				37				
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34				34				
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31				31				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	86679	86679	86679
5°	85132	86335	86472
10°	84226	86661	85305
15°	83249	87245	83935
20°	82586	87554	83582
25°	82542	85930	83865
30°	79911	80372	80991
35°	72598	69184	73253
40°	64235	54489	65799
45°	59596	41486	61471
50°	57251	30703	58919
55°	51840	21154	51144
60°	45065	14404	44811
65°	43538	10423	41324
70°	39380	7010	35077
75°	32459	4632	27827
80°	26098	3087	20710
85°	21470	1565	13754



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	84.0	4.6
10°-20°	240.0	13.3
20°-30°	362.7	20.0
30°-40°	379.5	21.0
40°-50°	307.4	17.0
50°-60°	223.6	12.4
60°-70°	137.9	7.6
70°-80°	62.3	3.4
80°-90°	12.7	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°	686.7	37.9
0°-40°	1066.2	58.9
0°-60°	1597.2	88.2
0°-90°	1810.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1810.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	889	889	889	889	889	
5°	870	884	882	882	884	83
15°	825	848	865	846	832	233
25°	768	791	799	794	780	352
35°	610	618	582	618	616	380
45°	432	419	301	424	446	336
55°	305	286	124	289	301	272
65°	189	170	45	167	179	185
75°	86	74	12	64	74	94
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°	889.4	889.4	889.4	889.4	889.4	889.4	889.4	889.4	889.4	889.4	889.4
2.5°	878.4	878.4	886.6	896.2	888.0	879.8	885.3	882.5	892.1	892.1	888.0
5°	870.2	872.9	879.8	888.0	881.2	872.9	879.8	877.0	886.6	886.6	883.9
7.5°	862.0	863.4	871.6	881.2	874.3	866.1	871.6	870.2	878.4	879.8	877.0
10°	851.1	852.4	860.6	870.2	863.4	856.5	862.0	860.6	871.6	871.6	870.2
12.5°	840.1	841.5	849.7	857.9	851.1	844.2	849.7	849.7	860.6	862.0	860.6
15°	825.1	827.8	834.6	842.8	838.7	830.5	836.0	836.0	845.6	848.3	848.3
17.5°	812.7	814.1	821.0	829.2	823.7	816.8	822.3	822.3	831.9	834.6	834.6
20°	796.3	799.1	805.9	814.1	810.0	804.5	808.6	808.6	819.6	822.3	823.7
22.5°	782.6	785.4	790.8	801.8	795.0	790.8	796.3	795.0	807.3	808.6	808.6
25°	767.6	770.3	777.2	784.0	779.9	775.8	779.9	779.9	789.5	790.8	790.8
27.5°	745.7	747.1	753.9	760.7	756.6	751.2	756.6	755.3	764.9	766.2	764.9
30°	710.1	712.9	715.6	725.2	721.1	717.0	722.4	719.7	729.3	729.3	727.9
32.5°	665.0	665.0	670.4	677.3	671.8	669.1	673.2	674.5	681.4	681.4	677.3
35°	610.2	613.0	617.1	621.2	617.1	614.3	618.4	617.1	625.3	622.6	618.4
37.5°	555.5	556.9	561.0	566.5	561.0	556.9	558.2	556.9	563.7	563.7	556.9
40°	504.9	507.6	510.4	515.8	510.4	507.6	509.0	504.9	513.1	510.4	506.3
42.5°	463.8	465.2	469.3	472.0	466.6	465.2	466.6	463.8	467.9	465.2	457.0
45°	432.4	432.4	433.7	437.8	432.4	431.0	431.0	428.3	432.4	426.9	418.7
47.5°	405.0	406.4	407.7	410.5	406.4	402.3	403.6	398.2	400.9	396.8	385.8
50°	377.6	380.4	381.7	384.5	380.4	377.6	379.0	373.5	373.5	366.7	357.1
52.5°	350.3	351.6	350.3	353.0	350.3	346.2	347.5	342.1	342.1	333.9	324.3
55°	305.1	306.5	307.9	310.6	307.9	303.8	306.5	302.4	302.4	296.9	286.0
57.5°	260.0	261.3	262.7	264.1	264.1	261.3	262.7	260.0	258.6	254.5	246.3
60°	231.2	231.2	231.2	232.6	231.2	229.9	229.9	227.1	227.1	221.7	213.4
62.5°	209.3	210.7	210.7	212.1	210.7	209.3	208.0	205.2	203.9	198.4	191.6
65°	188.8	188.8	187.5	190.2	188.8	187.5	187.5	184.7	182.0	176.5	169.7
67.5°	164.2	165.6	164.2	165.6	165.6	164.2	162.8	160.1	158.7	154.6	146.4
70°	138.2	138.2	138.2	139.6	138.2	138.2	139.6	135.5	134.1	128.6	121.8
72.5°	112.2	113.6	113.6	112.2	113.6	110.8	110.8	110.8	109.5	104.0	97.1
75°	86.2	87.6	87.6	88.9	87.6	86.2	86.2	84.8	83.5	79.4	73.9
77.5°	64.3	64.3	65.7	65.7	65.7	64.3	64.3	61.6	61.6	58.8	53.4
80°	46.5	46.5	45.2	46.5	46.5	45.2	45.2	43.8	43.8	41.0	36.9
82.5°	30.1	31.5	31.5	31.5	31.5	30.1	30.1	30.1	28.7	27.4	24.6
85°	19.2	19.2	19.2	19.2	20.5	19.2	20.5	19.2	19.2	16.4	15.1
87.5°	8.2	8.2	8.2	9.6	9.6	8.2	8.2	8.2	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°	889.4	889.4	889.4	889.4	889.4	889.4	889.4	889.4	889.4	889.4	889.4
2.5°	888.0	889.4	885.3	890.7	886.6	888.0	889.4	888.0	882.5	882.5	897.6
5°	882.5	885.3	881.2	888.0	885.3	885.3	888.0	886.6	881.2	882.5	896.2
7.5°	877.0	881.2	878.4	885.3	881.2	881.2	883.9	883.9	878.4	879.8	892.1
10°	868.8	874.3	872.9	879.8	875.7	875.7	879.8	879.8	874.3	875.7	888.0
12.5°	862.0	867.5	866.1	872.9	870.2	871.6	872.9	875.7	868.8	871.6	882.5
15°	851.1	856.5	856.5	863.4	860.6	863.4	866.1	870.2	864.7	864.7	875.7
17.5°	838.7	845.6	845.6	851.1	851.1	852.4	857.9	862.0	856.5	857.9	867.5
20°	825.1	833.3	833.3	840.1	838.7	841.5	845.6	849.7	844.2	844.2	855.2
22.5°	811.4	818.2	819.6	823.7	823.7	825.1	829.2	831.9	825.1	825.1	836.0
25°	792.2	799.1	800.4	803.2	800.4	800.4	803.2	805.9	799.1	799.1	808.6
27.5°	766.2	773.1	773.1	771.7	769.0	770.3	769.0	770.3	763.5	762.1	771.7
30°	727.9	732.0	732.0	730.6	726.5	726.5	722.4	723.8	714.2	714.2	722.4
32.5°	675.9	680.0	677.3	674.5	669.1	666.3	663.6	662.2	652.7	652.7	662.2
35°	614.3	617.1	613.0	607.5	600.7	596.6	592.5	587.0	580.1	581.5	587.0
37.5°	551.4	551.4	545.9	535.0	529.5	522.7	515.8	515.8	504.9	503.5	507.6
40°	498.0	492.6	483.0	467.9	458.4	451.5	441.9	436.5	428.3	428.3	435.1
42.5°	450.2	439.2	426.9	406.4	396.8	388.6	376.3	370.8	361.2	359.9	364.0
45°	407.7	396.8	379.0	357.1	344.8	335.2	317.4	310.6	302.4	301.0	303.8
47.5°	373.5	361.2	339.3	310.6	298.3	286.0	268.2	258.6	251.8	247.7	251.8
50°	343.4	327.0	303.8	273.7	257.2	246.3	224.4	214.8	205.2	202.5	203.9
52.5°	310.6	294.2	269.5	238.1	223.0	206.6	186.1	172.4	164.2	160.1	164.2
55°	275.0	258.6	234.0	202.5	186.1	171.0	149.1	138.2	128.6	124.5	128.6
57.5°	236.7	221.7	199.8	168.3	153.2	139.6	119.0	108.1	98.5	95.8	98.5
60°	203.9	191.6	169.7	139.6	127.2	112.2	94.4	83.5	75.3	73.9	75.3
62.5°	182.0	168.3	147.8	119.0	106.7	94.4	78.0	67.0	60.2	58.8	60.2
65°	160.1	145.0	125.9	101.3	88.9	79.4	62.9	53.4	46.5	45.2	46.5
67.5°	135.5	121.8	105.4	83.5	73.9	64.3	50.6	41.0	35.6	34.2	35.6
70°	112.2	99.9	83.5	67.0	57.5	50.6	38.3	31.5	26.0	24.6	26.0
72.5°	88.9	78.0	64.3	50.6	45.2	38.3	30.1	23.3	19.2	17.8	19.2
75°	68.4	60.2	49.3	36.9	32.8	28.7	20.5	16.4	13.7	12.3	13.7
77.5°	47.9	42.4	34.2	27.4	23.3	20.5	15.1	10.9	9.6	8.2	9.6
80°	32.8	28.7	23.3	17.8	15.1	12.3	9.6	6.8	5.5	5.5	5.5
82.5°	21.9	17.8	13.7	10.9	9.6	8.2	5.5	4.1	4.1	2.7	2.7
85°	12.3	10.9	8.2	6.8	5.5	4.1	2.7	2.7	1.4	1.4	1.4
87.5°	5.5	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°	889.4	889.4	889.4	889.4	889.4	889.4	889.4	889.4	889.4	889.4	889.4
2.5°	893.5	889.4	894.8	889.4	886.6	889.4	886.6	894.8	888.0	882.5	888.0
5°	892.1	886.6	892.1	888.0	883.9	885.3	882.5	890.7	882.5	878.4	881.2
7.5°	889.4	885.3	888.0	883.9	879.8	881.2	878.4	885.3	877.0	872.9	875.7
10°	885.3	881.2	882.5	879.8	875.7	875.7	872.9	878.4	868.8	863.4	866.1
12.5°	879.8	874.3	877.0	872.9	867.5	867.5	864.7	868.8	859.3	853.8	855.2
15°	872.9	867.5	867.5	863.4	857.9	857.9	852.4	856.5	845.6	840.1	840.1
17.5°	864.7	857.9	857.9	853.8	846.9	845.6	841.5	845.6	833.3	827.8	827.8
20°	852.4	846.9	845.6	842.8	836.0	834.6	829.2	830.5	821.0	816.8	815.5
22.5°	836.0	830.5	831.9	827.8	822.3	821.0	815.5	819.6	810.0	805.9	807.3
25°	807.3	804.5	807.3	805.9	801.8	801.8	799.1	801.8	793.6	790.8	792.2
27.5°	774.4	773.1	774.4	774.4	771.7	771.7	771.7	775.8	767.6	766.2	766.2
30°	726.5	726.5	727.9	729.3	729.3	732.0	730.6	736.1	730.6	727.9	730.6
32.5°	663.6	669.1	673.2	673.2	673.2	675.9	678.7	682.8	677.3	678.7	678.7
35°	592.5	596.6	599.3	606.1	602.0	611.6	614.3	619.8	618.4	621.2	619.8
37.5°	513.1	518.6	524.0	533.6	532.2	543.2	548.7	559.6	556.9	562.4	565.1
40°	439.2	447.4	455.6	462.5	467.9	478.9	489.8	503.5	507.6	511.7	513.1
42.5°	368.1	376.3	390.0	399.5	407.7	425.5	440.6	457.0	461.1	469.3	472.0
45°	310.6	317.4	333.9	346.2	353.0	379.0	396.8	417.3	424.2	433.7	437.8
47.5°	257.2	269.5	286.0	301.0	310.6	338.0	361.2	383.1	392.7	403.6	409.1
50°	210.7	224.4	246.3	260.0	273.7	303.8	329.7	353.0	362.6	374.9	380.4
52.5°	172.4	187.5	208.0	223.0	238.1	269.5	296.9	318.8	331.1	339.3	347.5
55°	135.5	151.9	172.4	188.8	201.1	235.3	258.6	280.5	288.7	295.5	299.6
57.5°	105.4	117.7	138.2	151.9	166.9	197.0	220.3	236.7	243.5	251.8	254.5
60°	82.1	94.4	113.6	127.2	140.9	169.7	192.9	209.3	216.2	223.0	227.1
62.5°	65.7	78.0	95.8	108.1	120.4	146.4	166.9	183.3	191.6	198.4	202.5
65°	52.0	62.9	78.0	90.3	99.9	123.1	143.7	158.7	166.9	173.8	177.9
67.5°	41.0	50.6	64.3	72.5	82.1	101.3	119.0	132.7	139.6	147.8	151.9
70°	31.5	38.3	50.6	57.5	64.3	80.7	94.4	108.1	114.9	120.4	123.1
72.5°	23.3	28.7	38.3	43.8	47.9	61.6	72.5	82.1	87.6	93.0	95.8
75°	16.4	20.5	27.4	31.5	34.2	43.8	53.4	60.2	64.3	68.4	72.5
77.5°	10.9	13.7	17.8	20.5	23.3	30.1	35.6	41.0	45.2	49.3	50.6
80°	6.8	9.6	12.3	13.7	15.1	19.2	24.6	27.4	30.1	32.8	34.2
82.5°	4.1	5.5	6.8	8.2	9.6	12.3	15.1	17.8	19.2	21.9	23.3
85°	1.4	2.7	2.7	4.1	4.1	6.8	8.2	9.6	10.9	12.3	13.7
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°	889.4	889.4	889.4	889.4	889.4	889.4	889.4	889.4
2.5°	893.5	889.4	886.6	885.3	894.8	882.5	888.0	889.4
5°	888.0	883.9	881.2	879.8	888.0	877.0	881.2	883.9
7.5°	879.8	877.0	872.9	871.6	879.8	867.5	872.9	874.3
10°	870.2	866.1	863.4	862.0	868.8	856.5	862.0	862.0
12.5°	857.9	855.2	849.7	849.7	855.2	844.2	848.3	848.3
15°	841.5	838.7	833.3	833.3	838.7	827.8	831.9	831.9
17.5°	827.8	825.1	821.0	819.6	825.1	814.1	818.2	816.8
20°	816.8	814.1	808.6	808.6	812.7	801.8	805.9	805.9
22.5°	807.3	805.9	800.4	800.4	805.9	795.0	797.7	795.0
25°	792.2	790.8	785.4	786.7	789.5	778.5	782.6	779.9
27.5°	767.6	767.6	762.1	760.7	764.9	755.3	758.0	756.6
30°	729.3	730.6	723.8	723.8	725.2	717.0	721.1	719.7
32.5°	677.3	678.7	673.2	671.8	675.9	669.1	671.8	671.8
35°	619.8	621.2	617.1	617.1	621.2	617.1	617.1	615.7
37.5°	562.4	565.1	562.4	563.7	566.5	562.4	565.1	563.7
40°	515.8	518.6	514.5	517.2	519.9	515.8	519.9	517.2
42.5°	473.4	477.5	474.8	477.5	480.3	477.5	480.3	476.2
45°	441.9	444.7	443.3	444.7	447.4	446.0	447.4	446.0
47.5°	411.8	417.3	414.6	417.3	421.4	418.7	421.4	417.3
50°	384.5	388.6	387.2	390.0	391.3	390.0	392.7	388.6
52.5°	348.9	353.0	351.6	351.6	354.4	351.6	354.4	351.6
55°	302.4	303.8	303.8	305.1	303.8	302.4	303.8	301.0
57.5°	257.2	260.0	255.9	260.0	258.6	257.2	257.2	254.5
60°	228.5	232.6	229.9	232.6	231.2	231.2	231.2	229.9
62.5°	205.2	208.0	205.2	206.6	206.6	206.6	205.2	203.9
65°	179.2	183.3	180.6	182.0	180.6	179.2	180.6	179.2
67.5°	153.2	154.6	154.6	153.2	153.2	153.2	153.2	150.5
70°	124.5	125.9	124.5	127.2	125.9	124.5	125.9	123.1
72.5°	97.1	98.5	97.1	98.5	97.1	97.1	97.1	97.1
75°	72.5	73.9	73.9	73.9	73.9	73.9	71.1	73.9
77.5°	52.0	52.0	52.0	53.4	52.0	52.0	52.0	52.0
80°	35.6	35.6	35.6	36.9	35.6	36.9	35.6	36.9
82.5°	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3
85°	12.3	13.7	13.7	12.3	12.3	12.3	12.3	12.3
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)