

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: P251694

Luminaire Tested: **LD4B20D010 EU4B10209035 4LBLWW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251694
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-11)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B20D010 EU4B10209035 4LBLWW1LI
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1420.0 lumens
Efficiency: N/A
Efficacy: 68.3 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.03 / 1.12
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

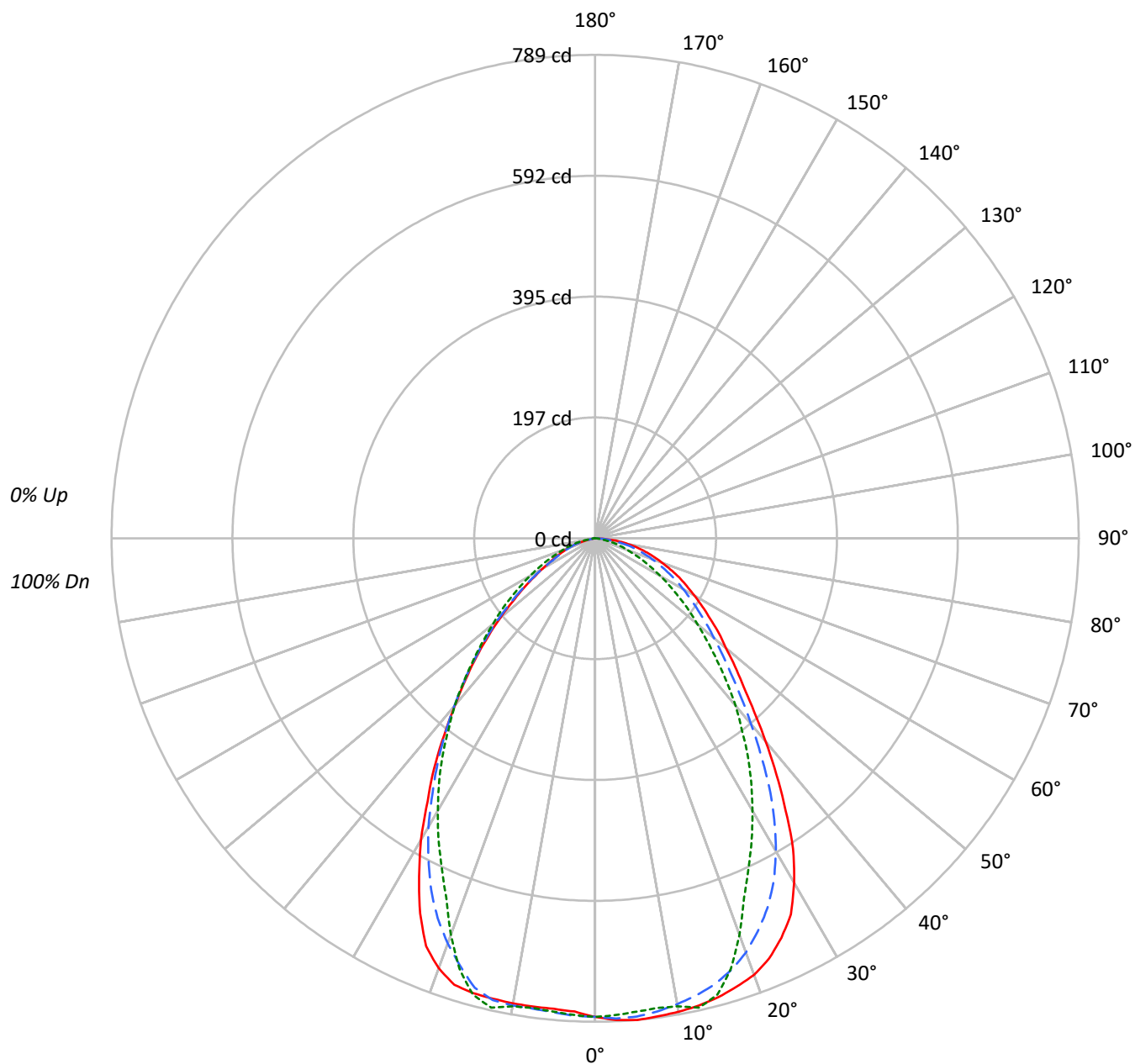
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	107	103	100	108	105	102	99	101	98	96	97	95	93	93	91	90	88		
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77		
3	95	86	79	74	93	84	78	73	82	76	72	79	74	70	77	73	69	67		
4	88	78	70	64	86	76	69	64	74	68	63	72	67	62	70	65	62	60		
5	82	71	63	57	80	70	62	57	68	61	56	66	60	56	64	59	55	53		
6	76	65	57	51	75	64	56	51	62	55	50	60	54	50	59	54	50	48		
7	71	59	51	46	70	59	51	46	57	50	46	56	50	45	54	49	45	43		
8	67	55	47	42	65	54	47	42	53	46	41	52	46	41	51	45	41	39		
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38	36		
10	59	47	40	35	58	47	40	35	46	39	35	45	39	35	44	39	35	33		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	76134	76134	76134
5°	77208	75867	75417
10°	77645	76745	76289
15°	78245	77781	77549
20°	78645	71396	77453
25°	77349	63681	72671
30°	73091	57753	63931
35°	64460	51647	54514
40°	55087	45317	45177
45°	47206	38674	37737
50°	42195	32992	30733
55°	38927	28223	24332
60°	36391	23897	19199
65°	34868	19809	15843
70°	32969	15986	13393
75°	31931	12953	9489
80°	30868	7072	2582
85°	26949	3802	1230



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	74.2	5.2
10°-20°	213.5	15.0
20°-30°	296.2	20.9
30°-40°	292.3	20.6
40°-50°	229.3	16.1
50°-60°	158.8	11.2
60°-70°	97.3	6.9
70°-80°	48.6	3.4
80°-90°	9.7	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°	583.9	41.1
0°-40°	876.2	61.7
0°-60°	1264.3	89.0
0°-90°	1420.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1420.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	781	781	781	781	781	
5°	789	784	776	777	771	75
15°	776	754	771	759	769	219
25°	719	666	592	633	676	329
35°	542	495	434	448	458	338
45°	342	314	281	277	274	268
55°	229	205	166	148	143	206
65°	151	131	86	64	69	149
75°	85	71	34	26	25	90
85°	24	14	3	1	1	27
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°	781.2	781.2	781.2	781.2	781.2	781.2	781.2	781.2	781.2	781.2	781.2
2.5°	786.9	784.6	783.5	786.9	785.8	788.1	786.9	785.8	783.5	784.6	784.6
5°	789.2	785.8	784.6	786.9	786.9	789.2	788.1	785.8	783.5	784.6	783.5
7.5°	786.9	784.6	784.6	785.8	784.6	786.9	784.6	782.3	780.1	781.2	778.9
10°	784.6	781.2	781.2	781.2	781.2	783.5	781.2	777.8	774.3	774.3	772.0
12.5°	781.2	777.8	777.8	778.9	776.6	778.9	776.6	770.9	767.5	766.3	764.0
15°	775.5	772.0	772.0	772.0	769.7	770.9	767.5	761.7	757.1	757.1	753.7
17.5°	767.5	764.0	762.9	762.9	759.4	760.6	757.1	751.4	744.5	742.3	738.8
20°	758.3	753.7	751.4	751.4	748.0	749.1	744.5	737.7	728.5	725.1	719.3
22.5°	742.3	740.0	736.5	735.4	731.9	730.8	726.2	717.1	709.0	703.3	694.1
25°	719.3	718.2	714.8	713.6	709.0	706.7	702.2	691.9	683.8	674.7	665.5
27.5°	691.9	687.3	685.0	681.5	677.0	675.8	670.1	660.9	648.3	642.6	631.1
30°	649.5	647.2	644.9	641.5	636.9	634.6	631.1	620.8	610.5	600.2	589.9
32.5°	601.4	596.8	593.3	594.5	588.8	586.5	580.7	571.6	562.4	555.5	544.1
35°	541.8	540.7	539.5	537.2	532.6	531.5	526.9	520.0	509.7	501.7	494.8
37.5°	485.7	482.2	479.9	479.9	475.4	475.4	471.9	463.9	458.2	452.5	443.3
40°	433.0	427.3	427.3	427.3	422.7	423.8	421.5	413.5	407.8	400.9	395.2
42.5°	383.7	381.4	380.3	378.0	375.7	375.7	373.4	368.8	363.1	358.5	352.8
45°	342.5	341.3	340.2	339.1	336.8	335.6	334.5	327.6	324.2	319.6	313.9
47.5°	309.3	307.0	305.8	304.7	302.4	301.3	299.0	294.4	290.9	286.4	281.8
50°	278.3	277.2	276.1	276.1	273.8	272.6	270.3	266.9	261.2	258.9	253.1
52.5°	254.3	252.0	249.7	249.7	247.4	247.4	244.0	240.5	234.8	232.5	227.9
55°	229.1	227.9	226.8	226.8	224.5	223.4	222.2	217.6	213.1	209.6	205.0
57.5°	207.3	206.2	205.0	205.0	202.7	201.6	200.5	197.0	192.4	190.1	184.4
60°	186.7	186.7	185.6	184.4	183.3	182.1	181.0	177.5	174.1	170.7	166.1
62.5°	168.4	167.2	166.1	164.9	164.9	163.8	162.7	158.1	155.8	152.3	147.8
65°	151.2	148.9	148.9	147.8	147.8	146.6	145.5	140.9	138.6	135.2	130.6
67.5°	132.9	131.7	130.6	130.6	129.4	129.4	128.3	124.9	121.4	119.1	114.5
70°	115.7	115.7	114.5	114.5	113.4	112.3	112.3	110.0	106.5	103.1	98.5
72.5°	100.8	99.7	98.5	98.5	97.4	97.4	96.2	93.9	91.6	89.3	83.6
75°	84.8	83.6	83.6	83.6	82.5	82.5	81.3	79.0	76.7	74.5	71.0
77.5°	69.9	69.9	68.7	68.7	67.6	67.6	67.6	65.3	63.0	60.7	56.1
80°	55.0	55.0	55.0	53.8	52.7	52.7	52.7	50.4	48.1	45.8	42.4
82.5°	40.1	38.9	38.9	37.8	36.7	36.7	36.7	34.4	33.2	29.8	27.5
85°	24.1	22.9	22.9	21.8	20.6	20.6	20.6	19.5	17.2	16.0	13.7
87.5°	9.2	9.2	9.2	9.2	9.2	8.0	8.0	6.9	6.9	5.7	5.7
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	781.2	781.2	781.2	781.2	781.2	781.2	781.2	781.2	781.2	781.2	781.2
2.5°	784.6	783.5	783.5	782.3	783.5	781.2	781.2	781.2	781.2	778.9	778.9
5°	782.3	782.3	781.2	780.1	781.2	778.9	780.1	778.9	778.9	775.5	775.5
7.5°	777.8	776.6	774.3	773.2	774.3	773.2	773.2	773.2	775.5	773.2	773.2
10°	769.7	768.6	766.3	765.2	765.2	764.0	766.3	768.6	773.2	775.5	780.1
12.5°	761.7	759.4	758.3	758.3	759.4	759.4	764.0	769.7	781.2	784.6	789.2
15°	751.4	750.3	750.3	753.7	758.3	761.7	770.9	774.3	775.5	770.9	768.6
17.5°	737.7	737.7	738.8	742.3	745.7	745.7	746.8	744.5	742.3	736.5	729.7
20°	714.8	713.6	711.3	711.3	711.3	706.7	709.0	701.0	695.3	688.4	678.1
22.5°	686.1	680.4	672.4	666.7	663.2	660.9	655.2	646.0	639.2	634.6	630.0
25°	655.2	646.0	634.6	625.4	619.7	618.5	610.5	602.5	597.9	592.2	589.9
27.5°	619.7	609.4	595.6	586.5	581.9	578.5	571.6	563.6	557.8	553.3	549.8
30°	578.5	568.1	556.7	545.2	540.7	534.9	528.1	522.3	516.6	513.2	510.9
32.5°	532.6	522.3	510.9	502.9	497.1	492.5	486.8	481.1	476.5	474.2	471.9
35°	485.7	475.4	466.2	458.2	453.6	450.2	445.6	438.7	435.3	434.1	431.8
37.5°	435.3	428.4	420.4	413.5	410.1	405.5	403.2	397.5	397.5	392.9	392.9
40°	388.3	383.7	375.7	370.0	367.7	364.3	360.8	358.5	357.4	356.2	355.1
42.5°	347.1	340.2	335.6	331.0	327.6	325.3	325.3	321.9	320.7	317.3	316.1
45°	309.3	305.8	297.8	294.4	293.2	289.8	288.7	286.4	282.9	280.6	279.5
47.5°	276.1	272.6	268.0	263.5	261.2	258.9	256.6	253.1	250.9	247.4	246.3
50°	248.6	242.8	238.3	234.8	231.4	230.2	227.9	223.4	221.1	217.6	217.6
52.5°	223.4	218.8	213.1	209.6	206.2	203.9	200.5	197.0	193.6	192.4	189.0
55°	201.6	195.9	190.1	185.6	182.1	178.7	177.5	173.0	168.4	166.1	163.8
57.5°	181.0	175.3	168.4	162.7	160.4	158.1	154.6	150.1	146.6	143.2	140.9
60°	160.4	155.8	148.9	143.2	140.9	137.5	134.0	129.4	126.0	122.6	120.3
62.5°	143.2	136.3	130.6	124.9	121.4	119.1	114.5	111.1	106.5	103.1	99.7
65°	126.0	119.1	113.4	107.7	105.4	101.9	98.5	93.9	89.3	85.9	81.3
67.5°	108.8	103.1	97.4	91.6	89.3	87.1	82.5	77.9	73.3	69.9	65.3
70°	93.9	88.2	82.5	77.9	75.6	73.3	68.7	64.1	60.7	56.1	52.7
72.5°	80.2	75.6	69.9	65.3	63.0	60.7	56.1	52.7	48.1	45.8	42.4
75°	66.4	61.9	57.3	52.7	50.4	48.1	44.7	41.2	37.8	34.4	32.1
77.5°	52.7	48.1	43.5	40.1	37.8	36.7	33.2	29.8	26.3	24.1	20.6
80°	38.9	34.4	30.9	27.5	25.2	24.1	20.6	18.3	16.0	12.6	11.5
82.5°	24.1	20.6	18.3	16.0	14.9	13.7	11.5	9.2	8.0	6.9	5.7
85°	12.6	11.5	9.2	8.0	6.9	6.9	5.7	4.6	3.4	3.4	2.3
87.5°	4.6	3.4	3.4	2.3	2.3	2.3	2.3	1.1	1.1	1.1	1.1
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°	781.2	781.2	781.2	781.2	781.2	781.2	781.2	781.2	781.2	781.2	781.2
2.5°	776.6	777.8	778.9	780.1	778.9	778.9	781.2	776.6	780.1	780.1	775.5
5°	774.3	776.6	775.5	777.8	775.5	775.5	776.6	774.3	776.6	776.6	773.2
7.5°	772.0	774.3	774.3	775.5	774.3	774.3	775.5	772.0	774.3	774.3	770.9
10°	782.3	784.6	783.5	782.3	778.9	776.6	777.8	772.0	774.3	774.3	770.9
12.5°	785.8	784.6	780.1	777.8	775.5	773.2	774.3	769.7	772.0	772.0	769.7
15°	762.9	760.6	757.1	758.3	756.0	754.9	757.1	754.9	759.4	761.7	759.4
17.5°	723.9	722.8	720.5	720.5	720.5	721.6	725.1	725.1	731.9	736.5	738.8
20°	673.5	672.4	673.5	675.8	677.0	681.5	689.6	694.1	703.3	711.3	717.1
22.5°	627.7	630.0	633.4	638.0	639.2	644.9	655.2	659.8	671.2	680.4	686.1
25°	588.8	592.2	594.5	597.9	599.1	605.9	615.1	620.8	633.4	640.3	647.2
27.5°	549.8	554.4	555.5	560.1	560.1	567.0	575.0	580.7	588.8	595.6	601.4
30°	512.0	513.2	516.6	517.7	520.0	526.9	531.5	534.9	544.1	547.5	551.0
32.5°	470.8	475.4	477.7	478.8	477.7	483.4	488.0	490.3	493.7	498.3	500.6
35°	431.8	434.1	435.3	437.6	438.7	439.9	442.1	443.3	447.9	449.0	450.2
37.5°	392.9	396.3	395.2	396.3	396.3	397.5	399.8	398.6	402.1	403.2	402.1
40°	353.9	353.9	356.2	355.1	356.2	355.1	357.4	357.4	357.4	358.5	357.4
42.5°	315.0	316.1	315.0	317.3	315.0	316.1	316.1	315.0	316.1	315.0	315.0
45°	279.5	279.5	279.5	279.5	277.2	277.2	279.5	278.3	277.2	276.1	274.9
47.5°	245.1	246.3	244.0	245.1	244.0	242.8	241.7	241.7	240.5	238.3	237.1
50°	216.5	214.2	213.1	214.2	213.1	211.9	210.8	208.5	207.3	205.0	203.9
52.5°	187.9	185.6	183.3	183.3	182.1	179.8	178.7	176.4	175.3	173.0	173.0
55°	162.7	160.4	158.1	156.9	154.6	152.3	151.2	148.9	147.8	145.5	143.2
57.5°	138.6	135.2	132.9	131.7	130.6	127.1	126.0	123.7	121.4	119.1	118.0
60°	116.8	113.4	110.0	108.8	107.7	104.2	103.1	99.7	98.5	96.2	95.1
62.5°	96.2	93.9	89.3	88.2	85.9	83.6	80.2	79.0	77.9	79.0	79.0
65°	77.9	74.5	71.0	69.9	67.6	65.3	64.1	63.0	64.1	64.1	65.3
67.5°	61.9	58.4	55.0	55.0	53.8	51.5	51.5	51.5	52.7	52.7	53.8
70°	49.3	47.0	44.7	43.5	43.5	42.4	43.5	43.5	44.7	44.7	44.7
72.5°	38.9	37.8	36.7	35.5	35.5	35.5	35.5	35.5	35.5	35.5	36.7
75°	29.8	28.6	27.5	27.5	26.3	26.3	26.3	26.3	26.3	26.3	25.2
77.5°	19.5	18.3	17.2	17.2	16.0	14.9	14.9	13.7	13.7	13.7	13.7
80°	10.3	9.2	8.0	6.9	6.9	5.7	5.7	5.7	5.7	4.6	4.6
82.5°	4.6	3.4	3.4	3.4	3.4	2.3	2.3	2.3	2.3	2.3	2.3
85°	2.3	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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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CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	781.2	781.2	781.2	781.2	781.2	781.2	781.2	781.2
2.5°	777.8	775.5	777.8	778.9	776.6	775.5	777.8	773.2
5°	776.6	773.2	774.3	775.5	773.2	772.0	774.3	770.9
7.5°	774.3	773.2	774.3	775.5	772.0	772.0	774.3	770.9
10°	774.3	772.0	773.2	775.5	773.2	773.2	775.5	770.9
12.5°	773.2	769.7	773.2	774.3	772.0	772.0	774.3	769.7
15°	765.2	765.2	766.3	768.6	767.5	768.6	772.0	768.6
17.5°	748.0	750.3	754.9	758.3	760.6	762.9	766.3	764.0
20°	727.4	730.8	736.5	740.0	744.5	745.7	751.4	746.8
22.5°	695.3	702.2	706.7	710.2	713.6	717.1	721.6	720.5
25°	656.3	660.9	664.4	667.8	672.4	674.7	677.0	675.8
27.5°	609.4	611.7	616.3	618.5	620.8	623.1	627.7	622.0
30°	557.8	559.0	561.3	564.7	564.7	567.0	569.3	568.1
32.5°	505.1	505.1	507.4	509.7	508.6	509.7	514.3	508.6
35°	453.6	452.5	455.9	457.0	457.0	455.9	459.3	458.2
37.5°	403.2	404.3	405.5	406.6	404.3	406.6	406.6	404.3
40°	357.4	356.2	358.5	359.7	358.5	359.7	359.7	355.1
42.5°	316.1	313.9	315.0	316.1	315.0	316.1	315.0	312.7
45°	276.1	274.9	274.9	276.1	273.8	273.8	273.8	273.8
47.5°	238.3	237.1	238.3	238.3	236.0	236.0	237.1	236.0
50°	203.9	202.7	202.7	202.7	201.6	201.6	202.7	202.7
52.5°	173.0	170.7	170.7	170.7	170.7	170.7	171.8	169.5
55°	142.0	142.0	142.0	142.0	143.2	143.2	143.2	143.2
57.5°	116.8	118.0	118.0	119.1	118.0	119.1	119.1	118.0
60°	97.4	96.2	97.4	97.4	98.5	98.5	98.5	98.5
62.5°	80.2	80.2	80.2	81.3	81.3	81.3	82.5	81.3
65°	66.4	66.4	67.6	67.6	67.6	68.7	68.7	68.7
67.5°	55.0	55.0	55.0	55.0	56.1	56.1	57.3	56.1
70°	45.8	45.8	45.8	45.8	45.8	47.0	47.0	47.0
72.5°	36.7	36.7	36.7	36.7	37.8	37.8	37.8	37.8
75°	25.2	25.2	25.2	26.3	25.2	25.2	25.2	25.2
77.5°	12.6	12.6	12.6	12.6	12.6	11.5	11.5	11.5
80°	4.6	4.6	4.6	4.6	4.6	4.6	3.4	4.6
82.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.1
85°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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)