

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: P251695

Luminaire Tested: **LD4B20D010 EU4B10209040 4LBLWW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251695
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 EU4B10209040 4LBLWW1LI
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1421.0 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

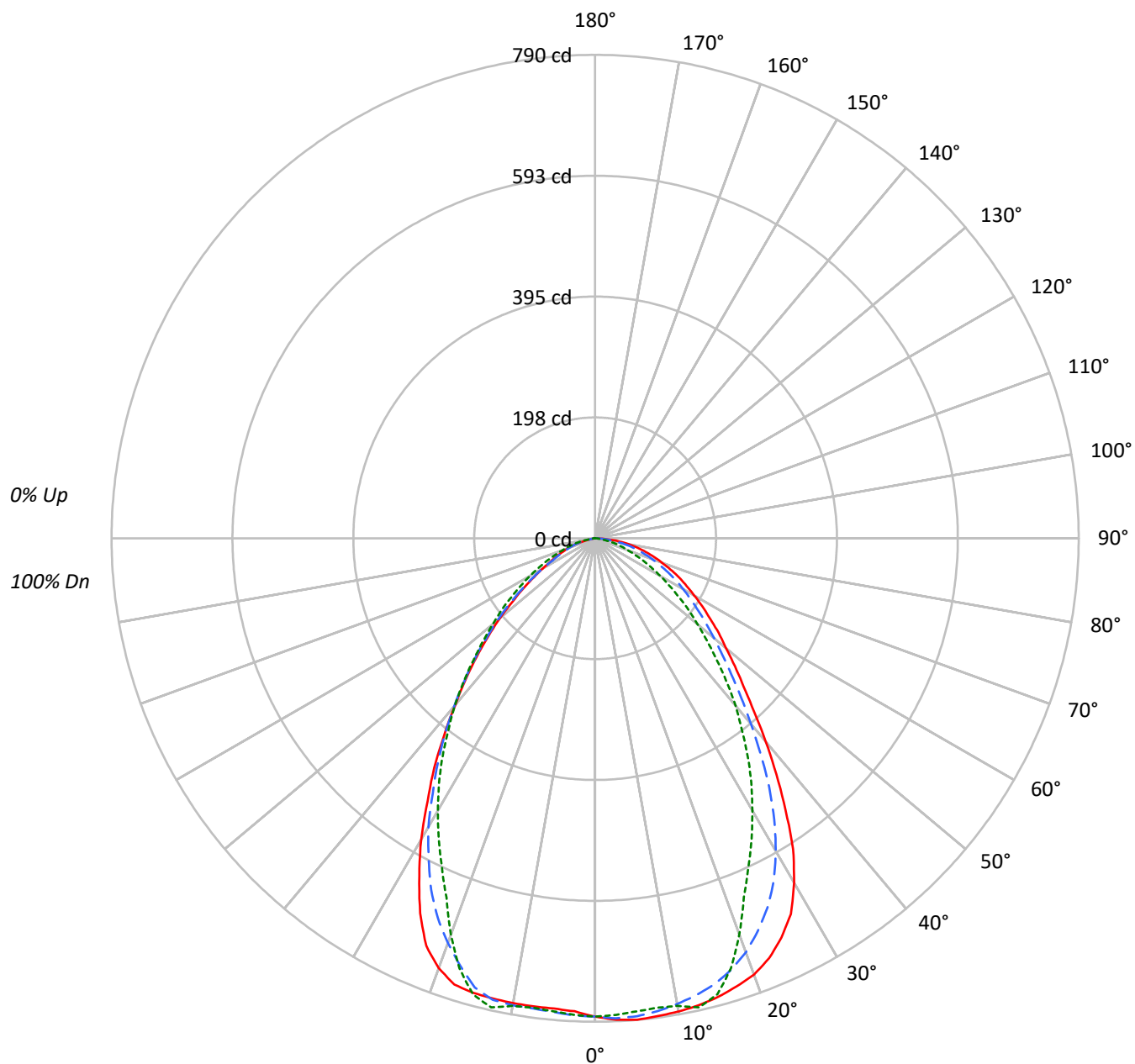
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	76183	76183	76183
5°	77266	75916	75466
10°	77705	76794	76339
15°	78295	77831	77599
20°	78697	71448	77515
25°	77413	63724	72725
30°	73136	57787	63976
35°	64508	51682	54550
40°	55126	45355	45202
45°	47233	38702	37764
50°	42226	33022	30763
55°	38961	28240	24349
60°	36410	23897	19219
65°	34891	19832	15866
70°	32997	16014	13393
75°	31931	12953	9489
80°	30868	7072	2582
85°	26949	3802	1230



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	74.3	5.2
10°-20°	213.7	15.0
20°-30°	296.4	20.9
30°-40°	292.5	20.6
40°-50°	229.5	16.1
50°-60°	158.9	11.2
60°-70°	97.4	6.9
70°-80°	48.7	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°	584.3	41.1
0°-40°	876.8	61.7
0°-60°	1265.2	89.0
0°-90°	1421.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1421.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	782	782	782	782	782	
5°	790	784	776	777	771	75
15°	776	754	771	760	769	219
25°	720	666	593	634	676	329
35°	542	495	434	448	458	338
45°	343	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°	781.7	781.7	781.7	781.7	781.7	781.7	781.7	781.7	781.7	781.7	781.7
2.5°	787.5	785.2	784.0	787.5	786.3	788.6	787.5	786.3	784.0	785.2	785.2
5°	789.8	786.3	785.2	787.5	787.5	789.8	788.6	786.3	784.0	785.2	784.0
7.5°	787.5	785.2	785.2	786.3	785.2	787.5	785.2	782.9	780.6	781.7	779.5
10°	785.2	781.7	781.7	781.7	781.7	784.0	781.7	778.3	774.9	774.9	772.6
12.5°	781.7	778.3	778.3	779.5	777.2	779.5	777.2	771.4	768.0	766.8	764.6
15°	776.0	772.6	772.6	772.6	770.3	771.4	768.0	762.3	757.7	757.7	754.2
17.5°	768.0	764.6	763.4	763.4	760.0	761.1	757.7	751.9	745.1	742.8	739.3
20°	758.8	754.2	751.9	751.9	748.5	749.7	745.1	738.2	729.0	725.6	719.9
22.5°	742.8	740.5	737.0	735.9	732.5	731.3	726.7	717.6	709.5	703.8	694.6
25°	719.9	718.7	715.3	714.1	709.5	707.2	702.7	692.3	684.3	675.1	666.0
27.5°	692.3	687.8	685.5	682.0	677.4	676.3	670.6	661.4	648.8	643.1	631.6
30°	649.9	647.6	645.3	641.9	637.3	635.0	631.6	621.3	611.0	600.6	590.3
32.5°	601.8	597.2	593.8	594.9	589.2	586.9	581.2	572.0	562.8	555.9	544.5
35°	542.2	541.0	539.9	537.6	533.0	531.9	527.3	520.4	510.1	502.1	495.2
37.5°	486.0	482.6	480.3	480.3	475.7	475.7	472.3	464.2	458.5	452.8	443.6
40°	433.3	427.6	427.6	427.6	423.0	424.1	421.8	413.8	408.1	401.2	395.5
42.5°	384.0	381.7	380.6	378.3	376.0	376.0	373.7	369.1	363.4	358.8	353.0
45°	342.7	341.6	340.4	339.3	337.0	335.9	334.7	327.8	324.4	319.8	314.1
47.5°	309.5	307.2	306.1	304.9	302.6	301.5	299.2	294.6	291.1	286.6	282.0
50°	278.5	277.4	276.2	276.2	274.0	272.8	270.5	267.1	261.3	259.1	253.3
52.5°	254.5	252.2	249.9	249.9	247.6	247.6	244.2	240.7	235.0	232.7	228.1
55°	229.3	228.1	227.0	227.0	224.7	223.5	222.4	217.8	213.2	209.8	205.2
57.5°	207.5	206.3	205.2	205.2	202.9	201.7	200.6	197.2	192.6	190.3	184.5
60°	186.8	186.8	185.7	184.5	183.4	182.3	181.1	177.7	174.2	170.8	166.2
62.5°	168.5	167.4	166.2	165.1	165.1	163.9	162.8	158.2	155.9	152.5	147.9
65°	151.3	149.0	149.0	147.9	147.9	146.7	145.6	141.0	138.7	135.3	130.7
67.5°	133.0	131.8	130.7	130.7	129.5	129.5	128.4	124.9	121.5	119.2	114.6
70°	115.8	115.8	114.6	114.6	113.5	112.3	112.3	110.0	106.6	103.2	98.6
72.5°	100.9	99.7	98.6	98.6	97.4	97.4	96.3	94.0	91.7	89.4	83.7
75°	84.8	83.7	83.7	83.7	82.5	82.5	81.4	79.1	76.8	74.5	71.1
77.5°	69.9	69.9	68.8	68.8	67.6	67.6	67.6	65.3	63.0	60.8	56.2
80°	55.0	55.0	55.0	53.9	52.7	52.7	52.7	50.4	48.1	45.9	42.4
82.5°	40.1	39.0	39.0	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	13.8
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°	781.7	781.7	781.7	781.7	781.7	781.7	781.7	781.7	781.7	781.7	781.7
2.5°	785.2	784.0	784.0	782.9	784.0	781.7	781.7	781.7	781.7	779.5	779.5
5°	782.9	782.9	781.7	780.6	781.7	779.5	780.6	779.5	779.5	776.0	776.0
7.5°	778.3	777.2	774.9	773.7	774.9	773.7	773.7	773.7	776.0	773.7	773.7
10°	770.3	769.1	766.8	765.7	765.7	764.6	766.8	769.1	773.7	776.0	780.6
12.5°	762.3	760.0	758.8	758.8	760.0	760.0	764.6	770.3	781.7	785.2	789.8
15°	751.9	750.8	750.8	754.2	758.8	762.3	771.4	774.9	776.0	771.4	769.1
17.5°	738.2	738.2	739.3	742.8	746.2	746.2	747.4	745.1	742.8	737.0	730.2
20°	715.3	714.1	711.8	711.8	711.8	707.2	709.5	701.5	695.8	688.9	678.6
22.5°	686.6	680.9	672.9	667.1	663.7	661.4	655.7	646.5	639.6	635.0	630.4
25°	655.7	646.5	635.0	625.9	620.1	619.0	611.0	602.9	598.3	592.6	590.3
27.5°	620.1	609.8	596.1	586.9	582.3	578.9	572.0	564.0	558.2	553.6	550.2
30°	578.9	568.5	557.1	545.6	541.0	535.3	528.4	522.7	517.0	513.5	511.2
32.5°	533.0	522.7	511.2	503.2	497.5	492.9	487.2	481.4	476.8	474.6	472.3
35°	486.0	475.7	466.5	458.5	453.9	450.5	445.9	439.0	435.6	434.4	432.1
37.5°	435.6	428.7	420.7	413.8	410.4	405.8	403.5	397.8	397.8	393.2	393.2
40°	388.6	384.0	376.0	370.2	367.9	364.5	361.1	358.8	357.6	356.5	355.3
42.5°	347.3	340.4	335.9	331.3	327.8	325.5	325.5	322.1	321.0	317.5	316.4
45°	309.5	306.1	298.0	294.6	293.4	290.0	288.9	286.6	283.1	280.8	279.7
47.5°	276.2	272.8	268.2	263.6	261.3	259.1	256.8	253.3	251.0	247.6	246.4
50°	248.7	243.0	238.4	235.0	231.5	230.4	228.1	223.5	221.2	217.8	217.8
52.5°	223.5	218.9	213.2	209.8	206.3	204.0	200.6	197.2	193.7	192.6	189.1
55°	201.7	196.0	190.3	185.7	182.3	178.8	177.7	173.1	168.5	166.2	163.9
57.5°	181.1	175.4	168.5	162.8	160.5	158.2	154.7	150.2	146.7	143.3	141.0
60°	160.5	155.9	149.0	143.3	141.0	137.6	134.1	129.5	126.1	122.6	120.4
62.5°	143.3	136.4	130.7	124.9	121.5	119.2	114.6	111.2	106.6	103.2	99.7
65°	126.1	119.2	113.5	107.7	105.5	102.0	98.6	94.0	89.4	86.0	81.4
67.5°	108.9	103.2	97.4	91.7	89.4	87.1	82.5	77.9	73.4	69.9	65.3
70°	94.0	88.3	82.5	77.9	75.7	73.4	68.8	64.2	60.8	56.2	52.7
72.5°	80.2	75.7	69.9	65.3	63.0	60.8	56.2	52.7	48.1	45.9	42.4
75°	66.5	61.9	57.3	52.7	50.4	48.1	44.7	41.3	37.8	34.4	32.1
77.5°	52.7	48.1	43.6	40.1	37.8	36.7	33.2	29.8	26.4	24.1	20.6
80°	39.0	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	13.8	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°	781.7	781.7	781.7	781.7	781.7	781.7	781.7	781.7	781.7	781.7	781.7
2.5°	777.2	778.3	779.5	780.6	779.5	779.5	781.7	777.2	780.6	780.6	776.0
5°	774.9	777.2	776.0	778.3	776.0	776.0	777.2	774.9	777.2	777.2	773.7
7.5°	772.6	774.9	774.9	776.0	774.9	774.9	776.0	772.6	774.9	774.9	771.4
10°	782.9	785.2	784.0	782.9	779.5	777.2	778.3	772.6	774.9	774.9	771.4
12.5°	786.3	785.2	780.6	778.3	776.0	773.7	774.9	770.3	772.6	772.6	770.3
15°	763.4	761.1	757.7	758.8	756.5	755.4	757.7	755.4	760.0	762.3	760.0
17.5°	724.4	723.3	721.0	721.0	721.0	722.1	725.6	725.6	732.5	737.0	739.3
20°	674.0	672.9	674.0	676.3	677.4	682.0	690.0	694.6	703.8	711.8	717.6
22.5°	628.1	630.4	633.9	638.5	639.6	645.3	655.7	660.2	671.7	680.9	686.6
25°	589.2	592.6	594.9	598.3	599.5	606.4	615.5	621.3	633.9	640.8	647.6
27.5°	550.2	554.8	555.9	560.5	560.5	567.4	575.4	581.2	589.2	596.1	601.8
30°	512.4	513.5	517.0	518.1	520.4	527.3	531.9	535.3	544.5	547.9	551.4
32.5°	471.1	475.7	478.0	479.1	478.0	483.7	488.3	490.6	494.0	498.6	500.9
35°	432.1	434.4	435.6	437.9	439.0	440.2	442.5	443.6	448.2	449.3	450.5
37.5°	393.2	396.6	395.5	396.6	396.6	397.8	400.0	398.9	402.3	403.5	402.3
40°	354.2	354.2	356.5	355.3	356.5	355.3	357.6	357.6	357.6	358.8	357.6
42.5°	315.2	316.4	315.2	317.5	315.2	316.4	316.4	315.2	316.4	315.2	315.2
45°	279.7	279.7	279.7	279.7	277.4	277.4	279.7	278.5	277.4	276.2	275.1
47.5°	245.3	246.4	244.2	245.3	244.2	243.0	241.9	241.9	240.7	238.4	237.3
50°	216.6	214.4	213.2	214.4	213.2	212.1	210.9	208.6	207.5	205.2	204.0
52.5°	188.0	185.7	183.4	183.4	182.3	180.0	178.8	176.5	175.4	173.1	173.1
55°	162.8	160.5	158.2	157.0	154.7	152.5	151.3	149.0	147.9	145.6	143.3
57.5°	138.7	135.3	133.0	131.8	130.7	127.2	126.1	123.8	121.5	119.2	118.1
60°	116.9	113.5	110.0	108.9	107.7	104.3	103.2	99.7	98.6	96.3	95.1
62.5°	96.3	94.0	89.4	88.3	86.0	83.7	80.2	79.1	77.9	79.1	79.1
65°	77.9	74.5	71.1	69.9	67.6	65.3	64.2	63.0	64.2	64.2	65.3
67.5°	61.9	58.5	55.0	55.0	53.9	51.6	51.6	51.6	52.7	52.7	53.9
70°	49.3	47.0	44.7	43.6	43.6	42.4	43.6	43.6	44.7	44.7	44.7
72.5°	39.0	37.8	36.7	35.5	35.5	35.5	35.5	35.5	35.5	35.5	36.7
75°	29.8	28.7	27.5	27.5	26.4	26.4	26.4	26.4	26.4	26.4	25.2
77.5°	19.5	18.3	17.2	17.2	16.0	14.9	14.9	13.8	13.8	13.8	13.8
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°	781.7	781.7	781.7	781.7	781.7	781.7	781.7	781.7
2.5°	778.3	776.0	778.3	779.5	777.2	776.0	778.3	773.7
5°	777.2	773.7	774.9	776.0	773.7	772.6	774.9	771.4
7.5°	774.9	773.7	774.9	776.0	772.6	772.6	774.9	771.4
10°	774.9	772.6	773.7	776.0	773.7	773.7	776.0	771.4
12.5°	773.7	770.3	773.7	774.9	772.6	772.6	774.9	770.3
15°	765.7	765.7	766.8	769.1	768.0	769.1	772.6	769.1
17.5°	748.5	750.8	755.4	758.8	761.1	763.4	766.8	764.6
20°	727.9	731.3	737.0	740.5	745.1	746.2	751.9	747.4
22.5°	695.8	702.7	707.2	710.7	714.1	717.6	722.1	721.0
25°	656.8	661.4	664.8	668.3	672.9	675.1	677.4	676.3
27.5°	609.8	612.1	616.7	619.0	621.3	623.6	628.1	622.4
30°	558.2	559.4	561.7	565.1	565.1	567.4	569.7	568.5
32.5°	505.5	505.5	507.8	510.1	508.9	510.1	514.7	508.9
35°	453.9	452.8	456.2	457.4	457.4	456.2	459.6	458.5
37.5°	403.5	404.6	405.8	406.9	404.6	406.9	406.9	404.6
40°	357.6	356.5	358.8	359.9	358.8	359.9	359.9	355.3
42.5°	316.4	314.1	315.2	316.4	315.2	316.4	315.2	312.9
45°	276.2	275.1	275.1	276.2	274.0	274.0	274.0	274.0
47.5°	238.4	237.3	238.4	238.4	236.1	236.1	237.3	236.1
50°	204.0	202.9	202.9	202.9	201.7	201.7	202.9	202.9
52.5°	173.1	170.8	170.8	170.8	170.8	170.8	171.9	169.6
55°	142.1	142.1	142.1	142.1	143.3	143.3	143.3	143.3
57.5°	116.9	118.1	118.1	119.2	118.1	119.2	119.2	118.1
60°	97.4	96.3	97.4	97.4	98.6	98.6	98.6	98.6
62.5°	80.2	80.2	80.2	81.4	81.4	81.4	82.5	81.4
65°	66.5	66.5	67.6	67.6	67.6	68.8	68.8	68.8
67.5°	55.0	55.0	55.0	55.0	56.2	56.2	57.3	56.2
70°	45.9	45.9	45.9	45.9	45.9	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	26.4	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)