

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: P251920

Luminaire Tested: **LD4B20D010 EU4B10208027 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251920
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 EU4B10208027 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1673.0 lumens
Efficiency: N/A
Efficacy: 80.4 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

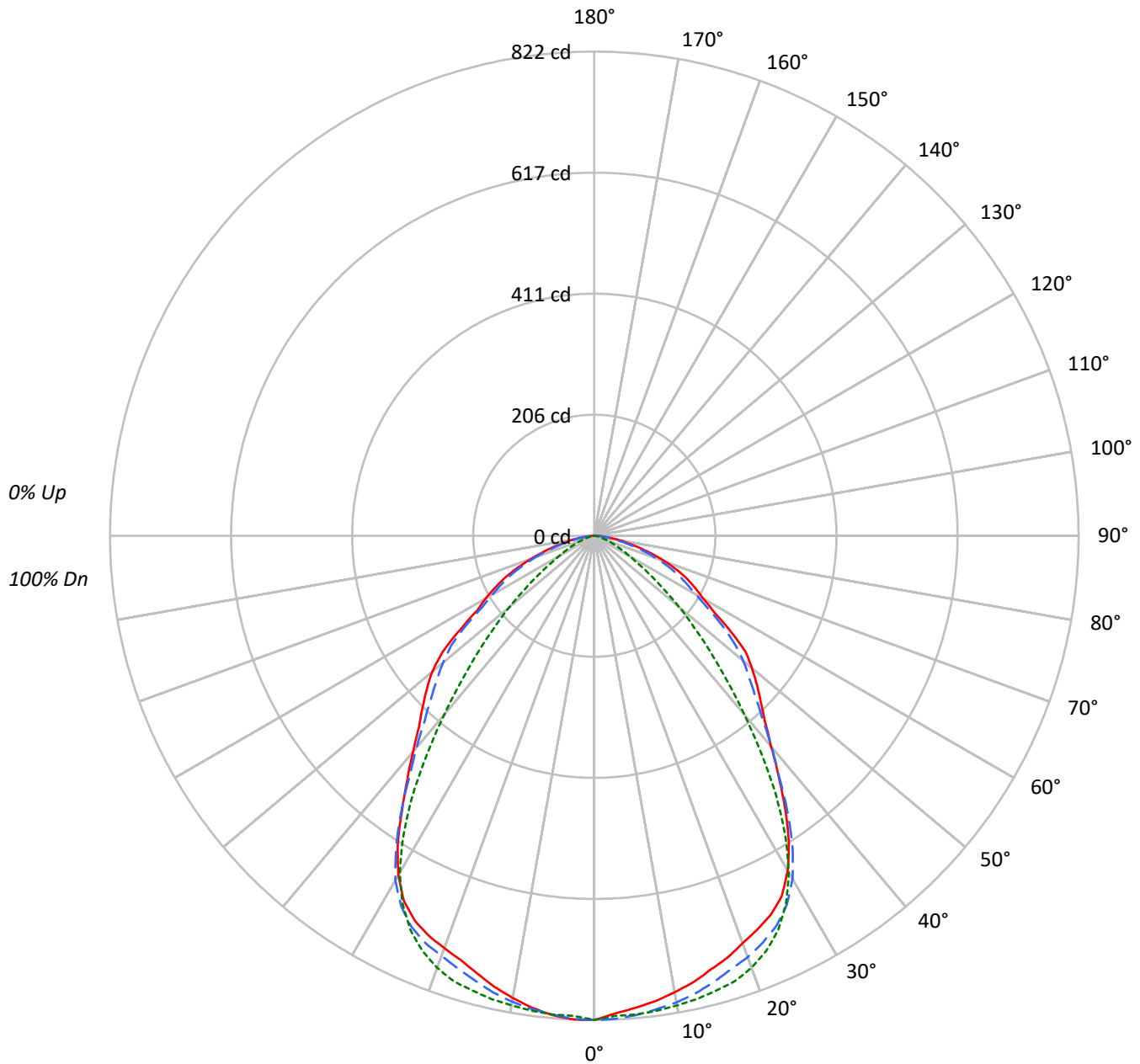
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	80111	80111	80111
5°	78685	79800	79927
10°	77843	80099	78853
15°	76943	80646	77579
20°	76333	80927	77256
25°	76295	79424	77521
30°	73868	74296	74858
35°	67113	63949	67708
40°	59375	50355	60825
45°	55075	38343	56826
50°	52930	28383	54461
55°	47915	19557	47270
60°	41654	13313	41420
65°	40241	9616	38211
70°	36388	6497	32427
75°	30011	4293	25718
80°	24133	2862	19138
85°	19792	1454	12748



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	77.6	4.6
10°-20°	221.9	13.3
20°-30°	335.2	20.0
30°-40°	350.8	21.0
40°-50°	284.1	17.0
50°-60°	206.7	12.4
60°-70°	127.5	7.6
70°-80°	57.6	3.4
80°-90°	11.7	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°	634.7	37.9
0°-40°	985.5	58.9
0°-60°	1476.3	88.2
0°-90°	1673.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1673.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	822	822	822	822	822	
5°	804	817	816	816	817	76
15°	763	784	799	782	769	216
25°	710	731	739	734	721	325
35°	564	572	538	572	569	352
45°	400	387	278	392	412	311
55°	282	264	115	267	278	252
65°	174	157	42	154	166	171
75°	80	68	11	59	68	86
85°	18	14	1	10	11	20
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°	822.0	822.0	822.0	822.0	822.0	822.0	822.0	822.0	822.0	822.0	822.0
2.5°	811.9	811.9	819.5	828.4	820.8	813.2	818.3	815.7	824.6	824.6	820.8
5°	804.3	806.9	813.2	820.8	814.5	806.9	813.2	810.7	819.5	819.5	817.0
7.5°	796.8	798.0	805.6	814.5	808.1	800.5	805.6	804.3	811.9	813.2	810.7
10°	786.6	787.9	795.5	804.3	798.0	791.7	796.8	795.5	805.6	805.6	804.3
12.5°	776.5	777.8	785.4	793.0	786.6	780.3	785.4	785.4	795.5	796.8	795.5
15°	762.6	765.1	771.5	779.0	775.3	767.7	772.7	772.7	781.6	784.1	784.1
17.5°	751.2	752.5	758.8	766.4	761.3	755.0	760.1	760.1	768.9	771.5	771.5
20°	736.0	738.6	744.9	752.5	748.7	743.6	747.4	747.4	757.5	760.1	761.3
22.5°	723.4	725.9	731.0	741.1	734.8	731.0	736.0	734.8	746.2	747.4	747.4
25°	709.5	712.0	718.3	724.7	720.9	717.1	720.9	720.9	729.7	731.0	731.0
27.5°	689.3	690.5	696.8	703.2	699.4	694.3	699.4	698.1	707.0	708.2	707.0
30°	656.4	658.9	661.4	670.3	666.5	662.7	667.8	665.2	674.1	674.1	672.8
32.5°	614.6	614.6	619.7	626.0	621.0	618.4	622.2	623.5	629.8	629.8	626.0
35°	564.1	566.6	570.4	574.2	570.4	567.8	571.6	570.4	578.0	575.4	571.6
37.5°	513.5	514.7	518.5	523.6	518.5	514.7	516.0	514.7	521.1	521.1	514.7
40°	466.7	469.2	471.7	476.8	471.7	469.2	470.5	466.7	474.3	471.7	467.9
42.5°	428.7	430.0	433.8	436.3	431.3	430.0	431.3	428.7	432.5	430.0	422.4
45°	399.6	399.6	400.9	404.7	399.6	398.4	398.4	395.8	399.6	394.6	387.0
47.5°	374.3	375.6	376.9	379.4	375.6	371.8	373.1	368.0	370.6	366.8	356.6
50°	349.1	351.6	352.8	355.4	351.6	349.1	350.3	345.3	345.3	338.9	330.1
52.5°	323.8	325.0	323.8	326.3	323.8	320.0	321.2	316.2	316.2	308.6	299.7
55°	282.0	283.3	284.6	287.1	284.6	280.8	283.3	279.5	279.5	274.4	264.3
57.5°	240.3	241.6	242.8	244.1	244.1	241.6	242.8	240.3	239.0	235.2	227.6
60°	213.7	213.7	213.7	215.0	213.7	212.5	212.5	209.9	209.9	204.9	197.3
62.5°	193.5	194.8	194.8	196.0	194.8	193.5	192.2	189.7	188.4	183.4	177.1
65°	174.5	174.5	173.3	175.8	174.5	173.3	173.3	170.7	168.2	163.1	156.8
67.5°	151.8	153.0	151.8	153.0	153.0	151.8	150.5	148.0	146.7	142.9	135.3
70°	127.7	127.7	127.7	129.0	127.7	127.7	129.0	125.2	123.9	118.9	112.6
72.5°	103.7	105.0	105.0	103.7	105.0	102.4	102.4	102.4	101.2	96.1	89.8
75°	79.7	80.9	80.9	82.2	80.9	79.7	79.7	78.4	77.1	73.4	68.3
77.5°	59.4	59.4	60.7	60.7	60.7	59.4	59.4	56.9	56.9	54.4	49.3
80°	43.0	43.0	41.7	43.0	43.0	41.7	41.7	40.5	40.5	37.9	34.1
82.5°	27.8	29.1	29.1	29.1	29.1	27.8	27.8	27.8	26.6	25.3	22.8
85°	17.7	17.7	17.7	17.7	19.0	17.7	19.0	17.7	17.7	15.2	13.9
87.5°	7.6	7.6	7.6	8.9	8.9	7.6	7.6	7.6	7.6	7.6	6.3
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°	822.0	822.0	822.0	822.0	822.0	822.0	822.0	822.0	822.0	822.0	822.0
2.5°	820.8	822.0	818.3	823.3	819.5	820.8	822.0	820.8	815.7	815.7	829.6
5°	815.7	818.3	814.5	820.8	818.3	818.3	820.8	819.5	814.5	815.7	828.4
7.5°	810.7	814.5	811.9	818.3	814.5	814.5	817.0	817.0	811.9	813.2	824.6
10°	803.1	808.1	806.9	813.2	809.4	809.4	813.2	813.2	808.1	809.4	820.8
12.5°	796.8	801.8	800.5	806.9	804.3	805.6	806.9	809.4	803.1	805.6	815.7
15°	786.6	791.7	791.7	798.0	795.5	798.0	800.5	804.3	799.3	799.3	809.4
17.5°	775.3	781.6	781.6	786.6	786.6	787.9	793.0	796.8	791.7	793.0	801.8
20°	762.6	770.2	770.2	776.5	775.3	777.8	781.6	785.4	780.3	780.3	790.4
22.5°	750.0	756.3	757.5	761.3	761.3	762.6	766.4	768.9	762.6	762.6	772.7
25°	732.3	738.6	739.8	742.4	739.8	739.8	742.4	744.9	738.6	738.6	747.4
27.5°	708.2	714.5	714.5	713.3	710.8	712.0	710.8	712.0	705.7	704.4	713.3
30°	672.8	676.6	676.6	675.3	671.5	671.5	667.8	669.0	660.2	660.2	667.8
32.5°	624.8	628.5	626.0	623.5	618.4	615.9	613.4	612.1	603.3	603.3	612.1
35°	567.8	570.4	566.6	561.5	555.2	551.4	547.6	542.6	536.2	537.5	542.6
37.5°	509.7	509.7	504.6	494.5	489.4	483.1	476.8	476.8	466.7	465.4	469.2
40°	460.3	455.3	446.4	432.5	423.7	417.3	408.5	403.4	395.8	395.8	402.2
42.5°	416.1	406.0	394.6	375.6	366.8	359.2	347.8	342.7	333.9	332.6	336.4
45°	376.9	366.8	350.3	330.1	318.7	309.8	293.4	287.1	279.5	278.2	280.8
47.5°	345.3	333.9	313.6	287.1	275.7	264.3	247.9	239.0	232.7	228.9	232.7
50°	317.4	302.3	280.8	252.9	237.8	227.6	207.4	198.6	189.7	187.2	188.4
52.5°	287.1	271.9	249.1	220.1	206.1	191.0	172.0	159.4	151.8	148.0	151.8
55°	254.2	239.0	216.3	187.2	172.0	158.1	137.9	127.7	118.9	115.1	118.9
57.5°	218.8	204.9	184.6	155.6	141.6	129.0	110.0	99.9	91.1	88.5	91.1
60°	188.4	177.1	156.8	129.0	117.6	103.7	87.3	77.1	69.6	68.3	69.6
62.5°	168.2	155.6	136.6	110.0	98.6	87.3	72.1	62.0	55.6	54.4	55.6
65°	148.0	134.1	116.4	93.6	82.2	73.4	58.2	49.3	43.0	41.7	43.0
67.5°	125.2	112.6	97.4	77.1	68.3	59.4	46.8	37.9	32.9	31.6	32.9
70°	103.7	92.3	77.1	62.0	53.1	46.8	35.4	29.1	24.0	22.8	24.0
72.5°	82.2	72.1	59.4	46.8	41.7	35.4	27.8	21.5	17.7	16.4	17.7
75°	63.2	55.6	45.5	34.1	30.4	26.6	19.0	15.2	12.6	11.4	12.6
77.5°	44.3	39.2	31.6	25.3	21.5	19.0	13.9	10.1	8.9	7.6	8.9
80°	30.4	26.6	21.5	16.4	13.9	11.4	8.9	6.3	5.1	5.1	5.1
82.5°	20.2	16.4	12.6	10.1	8.9	7.6	5.1	3.8	3.8	2.5	2.5
85°	11.4	10.1	7.6	6.3	5.1	3.8	2.5	2.5	1.3	1.3	1.3
87.5°	5.1	3.8	2.5	2.5	1.3	1.3	1.3	1.3	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°	822.0	822.0	822.0	822.0	822.0	822.0	822.0	822.0	822.0	822.0	822.0
2.5°	825.8	822.0	827.1	822.0	819.5	822.0	819.5	827.1	820.8	815.7	820.8
5°	824.6	819.5	824.6	820.8	817.0	818.3	815.7	823.3	815.7	811.9	814.5
7.5°	822.0	818.3	820.8	817.0	813.2	814.5	811.9	818.3	810.7	806.9	809.4
10°	818.3	814.5	815.7	813.2	809.4	809.4	806.9	811.9	803.1	798.0	800.5
12.5°	813.2	808.1	810.7	806.9	801.8	801.8	799.3	803.1	794.2	789.2	790.4
15°	806.9	801.8	801.8	798.0	793.0	793.0	787.9	791.7	781.6	776.5	776.5
17.5°	799.3	793.0	793.0	789.2	782.8	781.6	777.8	781.6	770.2	765.1	765.1
20°	787.9	782.8	781.6	779.0	772.7	771.5	766.4	767.7	758.8	755.0	753.8
22.5°	772.7	767.7	768.9	765.1	760.1	758.8	753.8	757.5	748.7	744.9	746.2
25°	746.2	743.6	746.2	744.9	741.1	741.1	738.6	741.1	733.5	731.0	732.3
27.5°	715.8	714.5	715.8	715.8	713.3	713.3	713.3	717.1	709.5	708.2	708.2
30°	671.5	671.5	672.8	674.1	674.1	676.6	675.3	680.4	675.3	672.8	675.3
32.5°	613.4	618.4	622.2	622.2	622.2	624.8	627.3	631.1	626.0	627.3	627.3
35°	547.6	551.4	553.9	560.3	556.5	565.3	567.8	572.9	571.6	574.2	572.9
37.5°	474.3	479.3	484.4	493.2	492.0	502.1	507.1	517.3	514.7	519.8	522.3
40°	406.0	413.6	421.1	427.5	432.5	442.6	452.8	465.4	469.2	473.0	474.3
42.5°	340.2	347.8	360.4	369.3	376.9	393.3	407.2	422.4	426.2	433.8	436.3
45°	287.1	293.4	308.6	320.0	326.3	350.3	366.8	385.7	392.1	400.9	404.7
47.5°	237.8	249.1	264.3	278.2	287.1	312.4	333.9	354.1	363.0	373.1	378.1
50°	194.8	207.4	227.6	240.3	252.9	280.8	304.8	326.3	335.1	346.5	351.6
52.5°	159.4	173.3	192.2	206.1	220.1	249.1	274.4	294.7	306.1	313.6	321.2
55°	125.2	140.4	159.4	174.5	185.9	217.5	239.0	259.3	266.8	273.2	277.0
57.5°	97.4	108.8	127.7	140.4	154.3	182.1	203.6	218.8	225.1	232.7	235.2
60°	75.9	87.3	105.0	117.6	130.3	156.8	178.3	193.5	199.8	206.1	209.9
62.5°	60.7	72.1	88.5	99.9	111.3	135.3	154.3	169.5	177.1	183.4	187.2
65°	48.1	58.2	72.1	83.5	92.3	113.8	132.8	146.7	154.3	160.6	164.4
67.5°	37.9	46.8	59.4	67.0	75.9	93.6	110.0	122.7	129.0	136.6	140.4
70°	29.1	35.4	46.8	53.1	59.4	74.6	87.3	99.9	106.2	111.3	113.8
72.5°	21.5	26.6	35.4	40.5	44.3	56.9	67.0	75.9	80.9	86.0	88.5
75°	15.2	19.0	25.3	29.1	31.6	40.5	49.3	55.6	59.4	63.2	67.0
77.5°	10.1	12.6	16.4	19.0	21.5	27.8	32.9	37.9	41.7	45.5	46.8
80°	6.3	8.9	11.4	12.6	13.9	17.7	22.8	25.3	27.8	30.4	31.6
82.5°	3.8	5.1	6.3	7.6	8.9	11.4	13.9	16.4	17.7	20.2	21.5
85°	1.3	2.5	2.5	3.8	3.8	6.3	7.6	8.9	10.1	11.4	12.6
87.5°	0.0	0.0	1.3	1.3	1.3	1.3	2.5	2.5	2.5	2.5	2.5
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°	822.0	822.0	822.0	822.0	822.0	822.0	822.0	822.0
2.5°	825.8	822.0	819.5	818.3	827.1	815.7	820.8	822.0
5°	820.8	817.0	814.5	813.2	820.8	810.7	814.5	817.0
7.5°	813.2	810.7	806.9	805.6	813.2	801.8	806.9	808.1
10°	804.3	800.5	798.0	796.8	803.1	791.7	796.8	796.8
12.5°	793.0	790.4	785.4	785.4	790.4	780.3	784.1	784.1
15°	777.8	775.3	770.2	770.2	775.3	765.1	768.9	768.9
17.5°	765.1	762.6	758.8	757.5	762.6	752.5	756.3	755.0
20°	755.0	752.5	747.4	747.4	751.2	741.1	744.9	744.9
22.5°	746.2	744.9	739.8	739.8	744.9	734.8	737.3	734.8
25°	732.3	731.0	725.9	727.2	729.7	719.6	723.4	720.9
27.5°	709.5	709.5	704.4	703.2	707.0	698.1	700.6	699.4
30°	674.1	675.3	669.0	669.0	670.3	662.7	666.5	665.2
32.5°	626.0	627.3	622.2	621.0	624.8	618.4	621.0	621.0
35°	572.9	574.2	570.4	570.4	574.2	570.4	570.4	569.1
37.5°	519.8	522.3	519.8	521.1	523.6	519.8	522.3	521.1
40°	476.8	479.3	475.5	478.1	480.6	476.8	480.6	478.1
42.5°	437.6	441.4	438.8	441.4	443.9	441.4	443.9	440.1
45°	408.5	411.0	409.8	411.0	413.6	412.3	413.6	412.3
47.5°	380.7	385.7	383.2	385.7	389.5	387.0	389.5	385.7
50°	355.4	359.2	357.9	360.4	361.7	360.4	363.0	359.2
52.5°	322.5	326.3	325.0	325.0	327.6	325.0	327.6	325.0
55°	279.5	280.8	280.8	282.0	280.8	279.5	280.8	278.2
57.5°	237.8	240.3	236.5	240.3	239.0	237.8	237.8	235.2
60°	211.2	215.0	212.5	215.0	213.7	213.7	213.7	212.5
62.5°	189.7	192.2	189.7	191.0	191.0	191.0	189.7	188.4
65°	165.7	169.5	166.9	168.2	166.9	165.7	166.9	165.7
67.5°	141.6	142.9	142.9	141.6	141.6	141.6	141.6	139.1
70°	115.1	116.4	115.1	117.6	116.4	115.1	116.4	113.8
72.5°	89.8	91.1	89.8	91.1	89.8	89.8	89.8	89.8
75°	67.0	68.3	68.3	68.3	68.3	68.3	65.8	68.3
77.5°	48.1	48.1	48.1	49.3	48.1	48.1	48.1	48.1
80°	32.9	32.9	32.9	34.1	32.9	34.1	32.9	34.1
82.5°	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5
85°	11.4	12.6	12.6	11.4	11.4	11.4	11.4	11.4
87.5°	2.5	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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)