

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: P251687

Luminaire Tested: **LD4B20D010 EU4B10208030 4LBLWW1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251687  
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 EU4B10208030 4LBLWW1LI  
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1639.0 lumens  
Efficiency: N/A  
Efficacy: 78.8 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

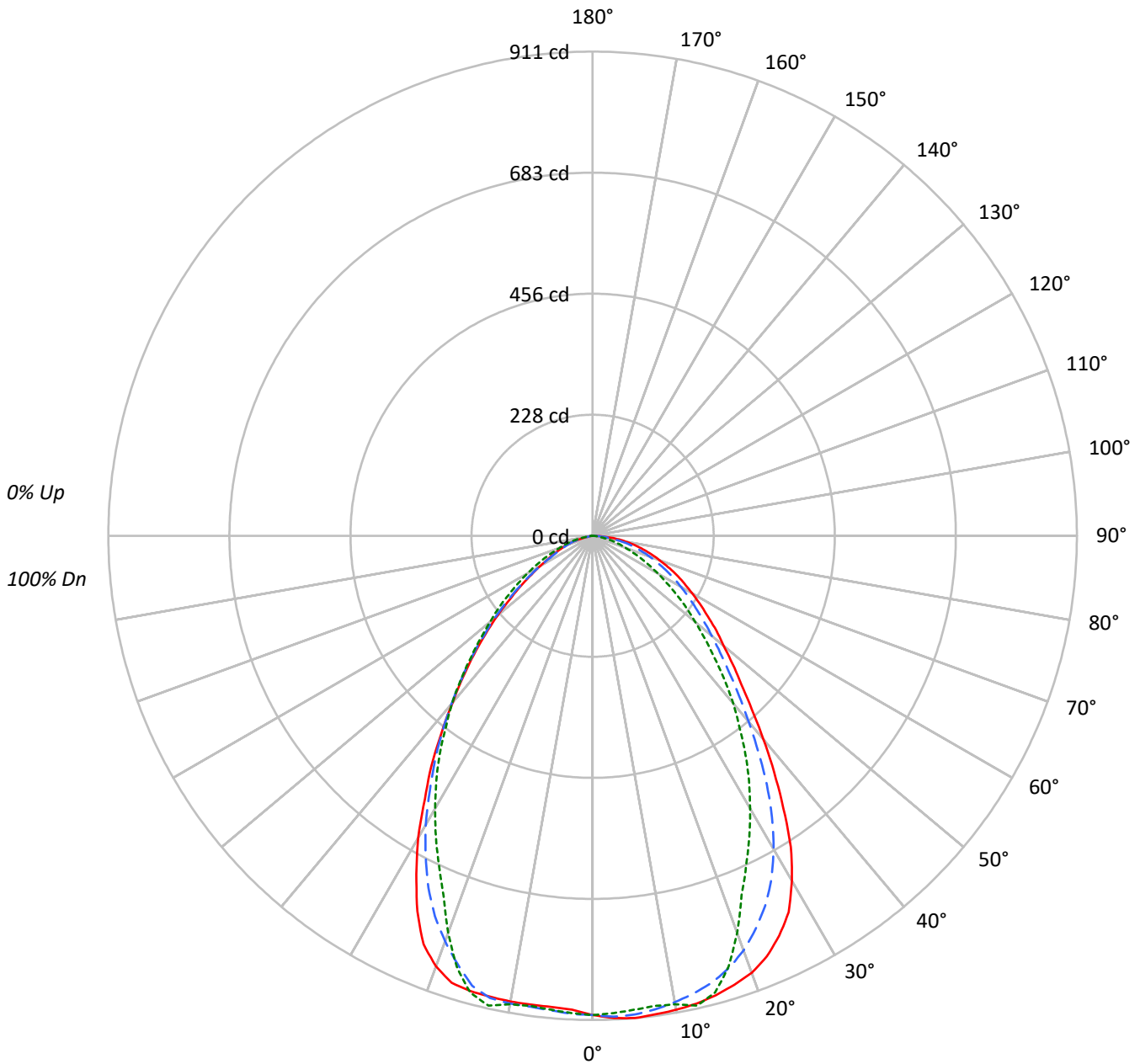
Input Watts (W): 20.8  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	87878	87878	87878
5°	89114	87568	87049
10°	89620	88580	88056
15°	90312	89777	89505
20°	90769	82410	89400
25°	89285	73499	83876
30°	84356	66654	73800
35°	74407	59618	62914
40°	63586	52314	52148
45°	54483	44642	43553
50°	48715	38086	35479
55°	44925	32572	28087
60°	42004	27581	22162
65°	40241	22876	18287
70°	38041	18465	15444
75°	36827	14949	10958
80°	35639	8138	2975
85°	31086	4473	1454



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	85.7	5.2
10°-20°	246.4	15.0
20°-30°	341.8	20.9
30°-40°	337.4	20.6
40°-50°	264.7	16.1
50°-60°	183.3	11.2
60°-70°	112.3	6.9
70°-80°	56.1	3.4
80°-90°	11.2	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°	673.9	41.1
0°-40°	1011.3	61.7
0°-60°	1459.3	89.0
0°-90°	1639.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1639.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	902	902	902	902	902	
5°	911	904	895	896	890	87
15°	895	870	890	877	887	253
25°	830	768	684	731	780	380
35°	625	571	501	517	529	390
45°	395	362	324	320	316	309
55°	264	237	192	171	165	238
65°	174	151	99	74	79	172
75°	98	82	40	30	29	104
85°	28	16	4	1	1	32
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°	901.7	901.7	901.7	901.7	901.7	901.7	901.7	901.7	901.7	901.7	901.7
2.5°	908.3	905.6	904.3	908.3	907.0	909.6	908.3	907.0	904.3	905.6	905.6
5°	910.9	907.0	905.6	908.3	908.3	910.9	909.6	907.0	904.3	905.6	904.3
7.5°	908.3	905.6	905.6	907.0	905.6	908.3	905.6	903.0	900.4	901.7	899.0
10°	905.6	901.7	901.7	901.7	901.7	904.3	901.7	897.7	893.7	893.7	891.1
12.5°	901.7	897.7	897.7	899.0	896.4	899.0	896.4	889.8	885.8	884.5	881.8
15°	895.1	891.1	891.1	891.1	888.5	889.8	885.8	879.2	873.9	873.9	869.9
17.5°	885.8	881.8	880.5	880.5	876.6	877.9	873.9	867.3	859.4	856.7	852.8
20°	875.2	869.9	867.3	867.3	863.3	864.7	859.4	851.4	840.9	836.9	830.3
22.5°	856.7	854.1	850.1	848.8	844.8	843.5	838.2	827.6	818.4	811.8	801.2
25°	830.3	829.0	825.0	823.7	818.4	815.7	810.5	798.6	789.3	778.7	768.1
27.5°	798.6	793.3	790.6	786.7	781.4	780.0	773.4	762.9	748.3	741.7	728.5
30°	749.6	747.0	744.3	740.4	735.1	732.4	728.5	716.6	704.7	692.8	680.9
32.5°	694.1	688.8	684.9	686.2	679.6	676.9	670.3	659.7	649.2	641.2	628.0
35°	625.4	624.0	622.7	620.1	614.8	613.5	608.2	600.2	588.3	579.1	571.2
37.5°	560.6	556.6	554.0	554.0	548.7	548.7	544.7	535.5	528.8	522.2	511.7
40°	499.8	493.1	493.1	493.1	487.9	489.2	486.5	477.3	470.7	462.7	456.1
42.5°	442.9	440.3	438.9	436.3	433.7	433.7	431.0	425.7	419.1	413.8	407.2
45°	395.3	394.0	392.7	391.3	388.7	387.4	386.1	378.1	374.2	368.9	362.3
47.5°	357.0	354.3	353.0	351.7	349.0	347.7	345.1	339.8	335.8	330.5	325.2
50°	321.3	320.0	318.6	318.6	316.0	314.7	312.0	308.1	301.4	298.8	292.2
52.5°	293.5	290.9	288.2	288.2	285.6	285.6	281.6	277.6	271.0	268.4	263.1
55°	264.4	263.1	261.8	261.8	259.1	257.8	256.5	251.2	245.9	241.9	236.7
57.5°	239.3	238.0	236.7	236.7	234.0	232.7	231.4	227.4	222.1	219.5	212.9
60°	215.5	215.5	214.2	212.9	211.5	210.2	208.9	204.9	201.0	197.0	191.7
62.5°	194.4	193.0	191.7	190.4	190.4	189.1	187.7	182.5	179.8	175.8	170.6
65°	174.5	171.9	171.9	170.6	170.6	169.2	167.9	162.6	160.0	156.0	150.7
67.5°	153.4	152.0	150.7	150.7	149.4	149.4	148.1	144.1	140.1	137.5	132.2
70°	133.5	133.5	132.2	132.2	130.9	129.6	129.6	126.9	123.0	119.0	113.7
72.5°	116.3	115.0	113.7	113.7	112.4	112.4	111.1	108.4	105.8	103.1	96.5
75°	97.8	96.5	96.5	96.5	95.2	95.2	93.9	91.2	88.6	85.9	82.0
77.5°	80.6	80.6	79.3	79.3	78.0	78.0	78.0	75.4	72.7	70.1	64.8
80°	63.5	63.5	63.5	62.1	60.8	60.8	60.8	58.2	55.5	52.9	48.9
82.5°	46.3	45.0	45.0	43.6	42.3	42.3	42.3	39.7	38.3	34.4	31.7
85°	27.8	26.4	26.4	25.1	23.8	23.8	23.8	22.5	19.8	18.5	15.9
87.5°	10.6	10.6	10.6	10.6	10.6	9.3	9.3	7.9	7.9	6.6	6.6
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°	901.7	901.7	901.7	901.7	901.7	901.7	901.7	901.7	901.7	901.7	901.7
2.5°	905.6	904.3	904.3	903.0	904.3	901.7	901.7	901.7	901.7	899.0	899.0
5°	903.0	903.0	901.7	900.4	901.7	899.0	900.4	899.0	899.0	895.1	895.1
7.5°	897.7	896.4	893.7	892.4	893.7	892.4	892.4	892.4	895.1	892.4	892.4
10°	888.5	887.1	884.5	883.2	883.2	881.8	884.5	887.1	892.4	895.1	900.4
12.5°	879.2	876.6	875.2	875.2	876.6	876.6	881.8	888.5	901.7	905.6	910.9
15°	867.3	866.0	866.0	869.9	875.2	879.2	889.8	893.7	895.1	889.8	887.1
17.5°	851.4	851.4	852.8	856.7	860.7	860.7	862.0	859.4	856.7	850.1	842.2
20°	825.0	823.7	821.0	821.0	821.0	815.7	818.4	809.1	802.5	794.6	782.7
22.5°	791.9	785.3	776.1	769.5	765.5	762.9	756.2	745.7	737.7	732.4	727.2
25°	756.2	745.7	732.4	721.9	715.3	713.9	704.7	695.4	690.1	683.5	680.9
27.5°	715.3	703.4	687.5	676.9	671.6	667.7	659.7	650.5	643.9	638.6	634.6
30°	667.7	655.8	642.5	629.3	624.0	617.4	609.5	602.9	596.3	592.3	589.7
32.5°	614.8	602.9	589.7	580.4	573.8	568.5	561.9	555.3	550.0	547.4	544.7
35°	560.6	548.7	538.1	528.8	523.6	519.6	514.3	506.4	502.4	501.1	498.4
37.5°	502.4	494.5	485.2	477.3	473.3	468.0	465.4	458.8	458.8	453.5	453.5
40°	448.2	442.9	433.7	427.0	424.4	420.4	416.5	413.8	412.5	411.2	409.9
42.5°	400.6	392.7	387.4	382.1	378.1	375.5	375.5	371.5	370.2	366.2	364.9
45°	357.0	353.0	343.7	339.8	338.5	334.5	333.2	330.5	326.6	323.9	322.6
47.5°	318.6	314.7	309.4	304.1	301.4	298.8	296.2	292.2	289.5	285.6	284.3
50°	286.9	280.3	275.0	271.0	267.1	265.7	263.1	257.8	255.2	251.2	251.2
52.5°	257.8	252.5	245.9	241.9	238.0	235.3	231.4	227.4	223.4	222.1	218.1
55°	232.7	226.1	219.5	214.2	210.2	206.2	204.9	199.6	194.4	191.7	189.1
57.5°	208.9	202.3	194.4	187.7	185.1	182.5	178.5	173.2	169.2	165.3	162.6
60°	185.1	179.8	171.9	165.3	162.6	158.7	154.7	149.4	145.4	141.5	138.8
62.5°	165.3	157.3	150.7	144.1	140.1	137.5	132.2	128.2	123.0	119.0	115.0
65°	145.4	137.5	130.9	124.3	121.6	117.7	113.7	108.4	103.1	99.2	93.9
67.5°	125.6	119.0	112.4	105.8	103.1	100.5	95.2	89.9	84.6	80.6	75.4
70°	108.4	101.8	95.2	89.9	87.3	84.6	79.3	74.0	70.1	64.8	60.8
72.5°	92.5	87.3	80.6	75.4	72.7	70.1	64.8	60.8	55.5	52.9	48.9
75°	76.7	71.4	66.1	60.8	58.2	55.5	51.6	47.6	43.6	39.7	37.0
77.5°	60.8	55.5	50.2	46.3	43.6	42.3	38.3	34.4	30.4	27.8	23.8
80°	45.0	39.7	35.7	31.7	29.1	27.8	23.8	21.2	18.5	14.5	13.2
82.5°	27.8	23.8	21.2	18.5	17.2	15.9	13.2	10.6	9.3	7.9	6.6
85°	14.5	13.2	10.6	9.3	7.9	7.9	6.6	5.3	4.0	4.0	2.6
87.5°	5.3	4.0	4.0	2.6	2.6	2.6	2.6	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	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°	901.7	901.7	901.7	901.7	901.7	901.7	901.7	901.7	901.7	901.7	901.7
2.5°	896.4	897.7	899.0	900.4	899.0	899.0	901.7	896.4	900.4	900.4	895.1
5°	893.7	896.4	895.1	897.7	895.1	895.1	896.4	893.7	896.4	896.4	892.4
7.5°	891.1	893.7	893.7	895.1	893.7	893.7	895.1	891.1	893.7	893.7	889.8
10°	903.0	905.6	904.3	903.0	899.0	896.4	897.7	891.1	893.7	893.7	889.8
12.5°	907.0	905.6	900.4	897.7	895.1	892.4	893.7	888.5	891.1	891.1	888.5
15°	880.5	877.9	873.9	875.2	872.6	871.3	873.9	871.3	876.6	879.2	876.6
17.5°	835.6	834.3	831.6	831.6	831.6	832.9	836.9	836.9	844.8	850.1	852.8
20°	777.4	776.1	777.4	780.0	781.4	786.7	795.9	801.2	811.8	821.0	827.6
22.5°	724.5	727.2	731.1	736.4	737.7	744.3	756.2	761.5	774.8	785.3	791.9
25°	679.6	683.5	686.2	690.1	691.5	699.4	710.0	716.6	731.1	739.1	747.0
27.5°	634.6	639.9	641.2	646.5	646.5	654.4	663.7	670.3	679.6	687.5	694.1
30°	591.0	592.3	596.3	597.6	600.2	608.2	613.5	617.4	628.0	632.0	635.9
32.5°	543.4	548.7	551.3	552.6	551.3	557.9	563.2	565.9	569.8	575.1	577.8
35°	498.4	501.1	502.4	505.0	506.4	507.7	510.3	511.7	516.9	518.3	519.6
37.5°	453.5	457.4	456.1	457.4	457.4	458.8	461.4	460.1	464.1	465.4	464.1
40°	408.5	408.5	411.2	409.9	411.2	409.9	412.5	412.5	412.5	413.8	412.5
42.5°	363.6	364.9	363.6	366.2	363.6	364.9	364.9	363.6	364.9	363.6	363.6
45°	322.6	322.6	322.6	322.6	320.0	320.0	322.6	321.3	320.0	318.6	317.3
47.5°	282.9	284.3	281.6	282.9	281.6	280.3	279.0	279.0	277.6	275.0	273.7
50°	249.9	247.2	245.9	247.2	245.9	244.6	243.3	240.6	239.3	236.7	235.3
52.5°	216.8	214.2	211.5	211.5	210.2	207.6	206.2	203.6	202.3	199.6	199.6
55°	187.7	185.1	182.5	181.1	178.5	175.8	174.5	171.9	170.6	167.9	165.3
57.5°	160.0	156.0	153.4	152.0	150.7	146.8	145.4	142.8	140.1	137.5	136.2
60°	134.9	130.9	126.9	125.6	124.3	120.3	119.0	115.0	113.7	111.1	109.7
62.5°	111.1	108.4	103.1	101.8	99.2	96.5	92.5	91.2	89.9	91.2	91.2
65°	89.9	85.9	82.0	80.6	78.0	75.4	74.0	72.7	74.0	74.0	75.4
67.5°	71.4	67.4	63.5	63.5	62.1	59.5	59.5	59.5	60.8	60.8	62.1
70°	56.9	54.2	51.6	50.2	50.2	48.9	50.2	50.2	51.6	51.6	51.6
72.5°	45.0	43.6	42.3	41.0	41.0	41.0	41.0	41.0	41.0	41.0	42.3
75°	34.4	33.1	31.7	31.7	30.4	30.4	30.4	30.4	30.4	30.4	29.1
77.5°	22.5	21.2	19.8	19.8	18.5	17.2	17.2	15.9	15.9	15.9	15.9
80°	11.9	10.6	9.3	7.9	7.9	6.6	6.6	6.6	6.6	5.3	5.3
82.5°	5.3	4.0	4.0	4.0	4.0	2.6	2.6	2.6	2.6	2.6	2.6
85°	2.6	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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°	901.7	901.7	901.7	901.7	901.7	901.7	901.7	901.7
2.5°	897.7	895.1	897.7	899.0	896.4	895.1	897.7	892.4
5°	896.4	892.4	893.7	895.1	892.4	891.1	893.7	889.8
7.5°	893.7	892.4	893.7	895.1	891.1	891.1	893.7	889.8
10°	893.7	891.1	892.4	895.1	892.4	892.4	895.1	889.8
12.5°	892.4	888.5	892.4	893.7	891.1	891.1	893.7	888.5
15°	883.2	883.2	884.5	887.1	885.8	887.1	891.1	887.1
17.5°	863.3	866.0	871.3	875.2	877.9	880.5	884.5	881.8
20°	839.5	843.5	850.1	854.1	859.4	860.7	867.3	862.0
22.5°	802.5	810.5	815.7	819.7	823.7	827.6	832.9	831.6
25°	757.6	762.9	766.8	770.8	776.1	778.7	781.4	780.0
27.5°	703.4	706.0	711.3	713.9	716.6	719.2	724.5	717.9
30°	643.9	645.2	647.8	651.8	651.8	654.4	657.1	655.8
32.5°	583.1	583.1	585.7	588.3	587.0	588.3	593.6	587.0
35°	523.6	522.2	526.2	527.5	527.5	526.2	530.2	528.8
37.5°	465.4	466.7	468.0	469.3	466.7	469.3	469.3	466.7
40°	412.5	411.2	413.8	415.1	413.8	415.1	415.1	409.9
42.5°	364.9	362.3	363.6	364.9	363.6	364.9	363.6	360.9
45°	318.6	317.3	317.3	318.6	316.0	316.0	316.0	316.0
47.5°	275.0	273.7	275.0	275.0	272.4	272.4	273.7	272.4
50°	235.3	234.0	234.0	234.0	232.7	232.7	234.0	234.0
52.5°	199.6	197.0	197.0	197.0	197.0	197.0	198.3	195.7
55°	163.9	163.9	163.9	163.9	165.3	165.3	165.3	165.3
57.5°	134.9	136.2	136.2	137.5	136.2	137.5	137.5	136.2
60°	112.4	111.1	112.4	112.4	113.7	113.7	113.7	113.7
62.5°	92.5	92.5	92.5	93.9	93.9	93.9	95.2	93.9
65°	76.7	76.7	78.0	78.0	78.0	79.3	79.3	79.3
67.5°	63.5	63.5	63.5	63.5	64.8	64.8	66.1	64.8
70°	52.9	52.9	52.9	52.9	52.9	54.2	54.2	54.2
72.5°	42.3	42.3	42.3	42.3	43.6	43.6	43.6	43.6
75°	29.1	29.1	29.1	30.4	29.1	29.1	29.1	29.1
77.5°	14.5	14.5	14.5	14.5	14.5	13.2	13.2	13.2
80°	5.3	5.3	5.3	5.3	5.3	5.3	4.0	5.3
82.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	1.3
85°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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)