

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: P251525

Luminaire Tested: **LD4B15D010 EU4B10209035 4LBSW1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251525  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-10)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B15D010 EU4B10209035 4LBSW1LI  
Description: PORTFOLIO 4 INCH SINGLE 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: 1195.0 lumens  
Efficiency: N/A  
Efficacy: 83.0 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.19  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

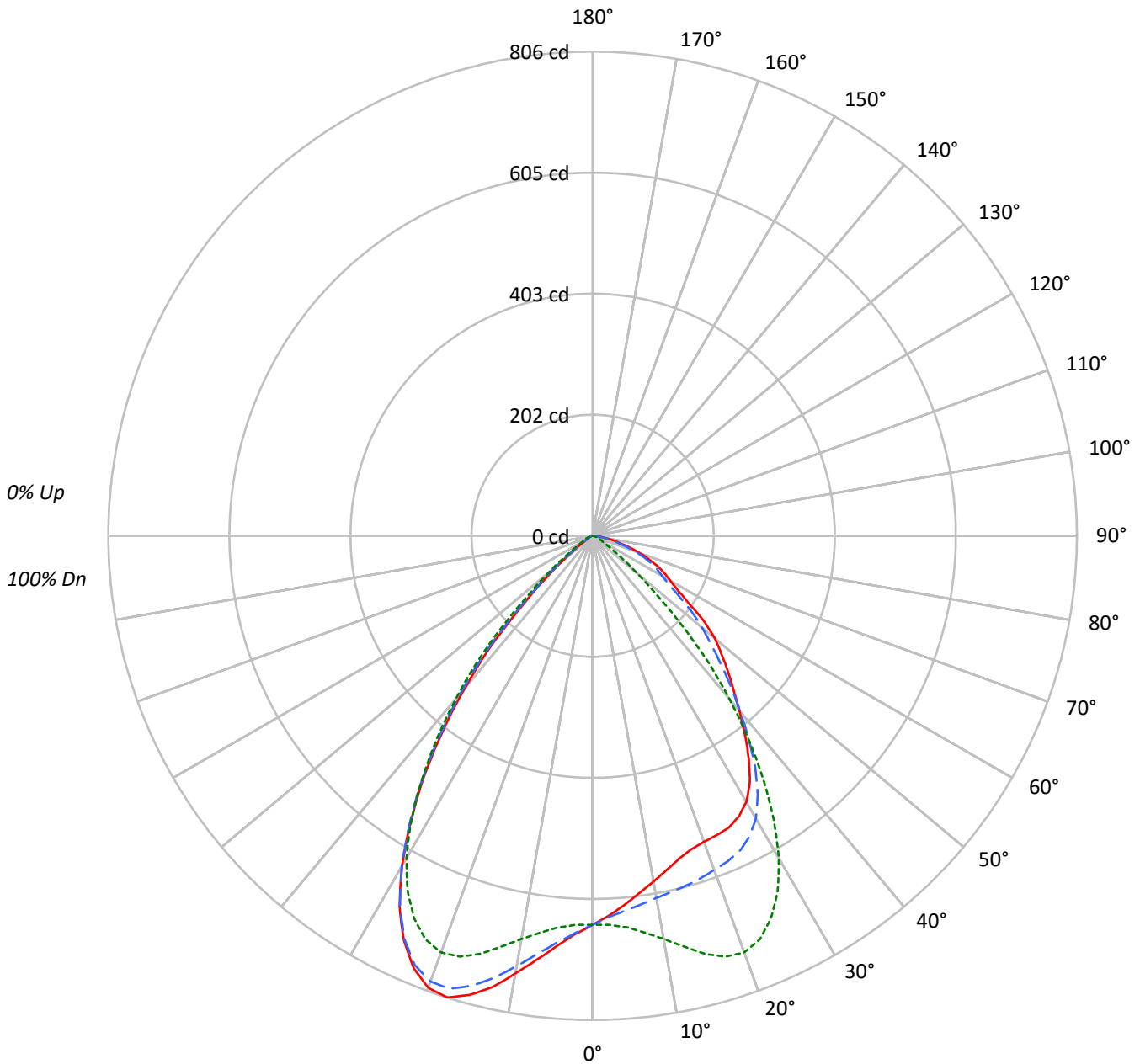
Input Watts (W): 14.39  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									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																			
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90																			
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	85	82	80																			
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72																			
4	91	81	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64																			
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58																			
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53																			
7	75	63	56	51	73	62	55	51	61	55	50	60	54	50	58	53	50	48																			
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44																			
9	66	54	47	42	65	54	47	42	53	46	42	52	46	42	51	46	42	40																			
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37																			

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

	0°	90°	180°
0°	63114	63114	63114
5°	60293	64010	67072
10°	57813	67432	73202
15°	56128	72675	79839
20°	56202	76540	83032
25°	57638	75542	79908
30°	57562	69738	71347
35°	53907	58940	58131
40°	48294	44960	41945
45°	43815	28544	23417
50°	40255	14480	9992
55°	33031	6457	3296
60°	29004	3625	1813
65°	27304	2721	1361
70°	23366	2166	1197
75°	17811	1582	941
80°	12796	954	449
85°	9505	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	62.9	5.3
10°-20°	196.0	16.4
20°-30°	303.3	25.4
30°-40°	298.8	25.0
40°-50°	183.5	15.4
50°-60°	81.6	6.8
60°-70°	45.6	3.8
70°-80°	19.7	1.6
80°-90°	3.5	0.3
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°	562.2	47.1
0°-40°	861.1	72.1
0°-60°	1126.2	94.2
0°-90°	1195.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1195.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	648	648	648	648	648	
5°	616	626	654	680	686	58
15°	556	603	720	775	791	158
25°	536	579	702	741	743	246
35°	453	472	495	494	489	281
45°	318	302	207	181	170	246
55°	194	176	38	22	19	179
65°	118	106	12	7	6	116
75°	47	41	4	2	2	52
85°	8	7	0	0	0	10
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°	647.6	647.6	647.6	647.6	647.6	647.6	647.6	647.6	647.6	647.6	647.6
2.5°	632.4	632.4	632.4	632.4	634.0	631.5	634.0	634.0	636.6	637.4	634.9
5°	616.3	615.4	616.3	616.3	618.0	617.1	619.7	621.4	624.7	626.4	626.4
7.5°	599.4	599.4	599.4	601.1	603.6	602.8	605.3	607.8	612.9	616.3	618.8
10°	584.2	583.3	585.9	586.7	589.2	589.2	593.5	596.0	601.9	608.7	612.1
12.5°	569.8	568.9	570.6	573.2	577.4	577.4	580.8	585.0	593.5	601.1	607.0
15°	556.3	557.1	559.6	561.3	566.4	566.4	570.6	575.7	585.0	594.3	602.8
17.5°	547.0	547.8	549.5	552.0	557.1	557.1	561.3	567.3	577.4	587.5	597.7
20°	541.9	542.7	544.4	547.0	551.2	552.0	555.4	562.2	571.5	582.5	591.8
22.5°	539.4	541.0	542.7	544.4	548.7	548.7	552.9	558.0	567.3	578.2	586.7
25°	536.0	537.7	538.5	541.0	544.4	544.4	547.0	552.9	561.3	570.6	579.1
27.5°	526.7	528.4	529.2	531.7	535.1	534.3	537.7	541.9	549.5	558.0	564.7
30°	511.5	512.3	514.0	514.8	517.4	517.4	519.9	524.1	529.2	536.8	543.6
32.5°	486.9	488.6	489.5	490.3	492.9	492.0	492.9	495.4	500.5	507.2	511.5
35°	453.1	456.5	456.5	458.2	459.0	458.2	458.2	461.6	464.1	469.2	471.7
37.5°	415.9	418.5	417.6	419.3	420.2	417.6	419.3	420.2	423.5	426.1	426.9
40°	379.6	380.4	380.4	380.4	380.4	379.6	380.4	381.3	383.8	383.8	381.3
42.5°	346.6	347.5	347.5	345.8	347.5	346.6	346.6	346.6	346.6	343.2	340.7
45°	317.9	318.7	318.7	317.9	317.9	316.2	315.3	314.5	311.9	307.7	301.8
47.5°	290.8	292.5	293.3	291.7	290.8	289.1	289.1	284.1	280.7	275.6	267.1
50°	265.5	267.1	267.1	265.5	265.5	262.9	260.4	258.7	253.6	247.7	237.6
52.5°	233.3	235.9	235.9	235.0	235.0	231.6	230.8	227.4	223.2	216.4	208.0
55°	194.4	197.8	197.0	196.1	194.4	194.4	194.4	191.9	189.4	184.3	175.8
57.5°	166.5	167.4	167.4	166.5	166.5	164.9	164.9	162.3	161.5	156.4	149.6
60°	148.8	148.8	149.6	148.8	147.9	147.1	146.3	144.6	142.0	138.6	133.6
62.5°	134.4	135.3	135.3	134.4	133.6	132.7	131.9	130.2	128.5	126.0	120.9
65°	118.4	120.0	119.2	118.4	117.5	116.7	116.7	115.0	113.3	111.6	106.5
67.5°	100.6	101.4	102.3	100.6	100.6	99.8	99.8	98.1	97.2	93.8	90.5
70°	82.0	82.8	82.8	82.0	82.0	81.2	81.2	80.3	79.5	76.9	73.5
72.5°	64.2	65.1	64.2	63.4	63.4	63.4	62.6	61.7	60.9	59.2	56.6
75°	47.3	47.3	48.2	47.3	46.5	46.5	45.7	45.7	44.0	43.1	40.6
77.5°	33.8	34.7	33.8	33.8	33.0	32.1	32.1	31.3	31.3	30.4	28.7
80°	22.8	22.8	23.7	22.8	22.0	22.8	22.0	21.1	21.1	20.3	18.6
82.5°	14.4	15.2	14.4	14.4	14.4	14.4	14.4	13.5	13.5	12.7	11.8
85°	8.5	8.5	8.5	8.5	8.5	8.5	8.5	7.6	7.6	7.6	6.8
87.5°	4.2	4.2	3.4	3.4	4.2	4.2	4.2	3.4	3.4	3.4	3.4
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°	647.6	647.6	647.6	647.6	647.6	647.6	647.6	647.6	647.6	647.6	647.6
2.5°	638.3	639.1	640.8	643.3	643.3	641.6	645.9	645.9	647.6	648.4	651.8
5°	631.5	633.2	636.6	640.8	641.6	640.8	646.7	649.3	651.8	654.3	659.4
7.5°	625.6	629.0	634.9	640.8	643.3	643.3	652.6	656.0	661.1	666.2	672.1
10°	622.2	627.3	635.7	645.0	647.6	650.1	661.1	667.9	674.6	681.4	689.8
12.5°	618.0	627.3	638.3	650.1	655.2	658.6	673.8	682.2	691.5	700.0	711.0
15°	617.1	628.1	642.5	657.7	664.5	669.5	686.5	698.3	709.3	720.3	731.3
17.5°	613.8	627.3	645.0	661.9	670.4	677.2	696.6	711.0	723.7	734.6	747.3
20°	609.5	624.7	644.2	662.8	672.1	678.8	700.0	713.5	727.9	738.0	749.9
22.5°	603.6	618.8	638.3	656.9	665.3	671.2	692.4	704.2	716.9	727.0	738.0
25°	593.5	607.8	624.7	640.0	648.4	653.5	672.1	683.1	692.4	702.5	712.7
27.5°	579.1	590.1	604.5	615.4	620.5	625.6	640.8	650.1	658.6	667.0	673.8
30°	553.7	562.2	572.3	581.6	586.7	587.5	601.9	607.0	613.8	619.7	624.7
32.5°	519.9	526.7	532.6	537.7	541.0	541.9	552.9	554.6	561.3	561.3	568.9
35°	476.8	480.2	484.4	484.4	486.9	484.4	492.0	493.7	494.6	495.4	501.3
37.5°	427.8	429.5	432.0	426.9	426.9	424.4	426.9	428.6	425.2	425.2	429.5
40°	381.3	377.9	374.5	369.4	366.9	361.8	361.8	357.6	355.1	353.4	354.2
42.5°	336.5	328.9	321.2	310.3	305.2	300.1	295.0	289.1	287.4	283.2	280.7
45°	293.3	282.4	272.2	254.5	244.3	239.2	228.3	216.4	208.8	207.1	200.4
47.5°	257.0	240.9	224.0	202.9	192.7	183.4	167.4	157.2	147.1	142.0	137.8
50°	224.9	210.5	188.5	165.7	153.0	143.7	126.0	114.1	103.1	95.5	90.5
52.5°	197.0	180.9	160.6	134.4	121.7	111.6	92.1	78.6	69.3	61.7	55.8
55°	165.7	153.0	132.7	108.2	95.5	83.7	66.8	52.4	43.1	38.0	33.8
57.5°	142.9	131.9	112.4	88.8	76.9	65.9	49.0	37.2	29.6	24.5	22.0
60°	127.7	117.5	100.6	77.8	66.8	56.6	40.6	29.6	22.8	18.6	16.9
62.5°	115.0	104.8	89.6	68.5	59.2	49.0	34.7	24.5	18.6	15.2	12.7
65°	100.6	91.3	77.8	59.2	50.7	42.3	29.6	20.3	15.2	11.8	10.1
67.5°	85.4	76.9	65.1	49.0	42.3	35.5	23.7	16.9	12.7	10.1	8.5
70°	69.3	62.6	51.6	39.7	33.8	27.9	19.4	13.5	9.3	7.6	6.8
72.5°	53.3	47.3	39.7	30.4	25.4	21.1	14.4	10.1	7.6	5.9	5.1
75°	38.0	33.8	27.9	22.0	18.6	15.2	11.0	7.6	5.1	4.2	3.4
77.5°	26.2	23.7	19.4	15.2	12.7	11.0	7.6	5.1	4.2	3.4	2.5
80°	16.9	15.2	12.7	9.3	7.6	6.8	4.2	3.4	2.5	1.7	1.7
82.5°	10.1	9.3	7.6	5.1	4.2	3.4	2.5	1.7	1.7	0.8	0.8
85°	5.9	5.1	3.4	2.5	2.5	1.7	1.7	0.8	0.8	0.0	0.0
87.5°	2.5	1.7	1.7	0.8	0.8	0.8	0.8	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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	647.6	647.6	647.6	647.6	647.6	647.6	647.6	647.6	647.6	647.6	647.6
2.5°	650.1	654.3	653.5	656.0	655.2	655.2	659.4	657.7	661.9	661.9	662.8
5°	659.4	665.3	665.3	669.5	668.7	670.4	674.6	674.6	679.7	681.4	681.4
7.5°	672.9	680.5	682.2	686.5	687.3	690.7	694.1	694.9	701.7	703.4	704.2
10°	691.5	700.8	703.4	707.6	709.3	712.7	716.9	718.6	727.0	727.9	731.3
12.5°	714.4	724.5	727.0	732.1	733.0	737.2	743.1	744.8	753.2	755.8	758.3
15°	736.3	745.6	749.9	754.9	755.8	760.8	765.9	767.6	775.2	778.6	781.1
17.5°	751.6	762.5	765.1	771.8	771.8	776.1	781.1	782.8	790.4	793.0	794.7
20°	754.9	765.1	768.5	773.5	774.4	776.9	781.1	782.8	789.6	790.4	793.0
22.5°	742.3	752.4	754.1	759.2	760.0	762.5	765.9	765.1	773.5	772.7	773.5
25°	715.2	724.5	724.5	730.4	729.6	732.1	733.8	733.0	740.6	740.6	740.6
27.5°	676.3	684.8	685.6	689.8	687.3	688.1	689.8	689.0	694.1	694.1	694.1
30°	628.1	634.9	632.4	635.7	634.0	635.7	634.0	633.2	634.9	636.6	635.7
32.5°	568.1	573.2	573.2	574.0	574.0	568.9	567.3	567.3	566.4	565.6	565.6
35°	498.8	503.0	501.3	501.3	500.5	495.4	492.9	491.2	493.7	488.6	492.0
37.5°	427.8	428.6	426.1	425.2	421.0	421.0	416.8	413.4	415.1	414.2	410.9
40°	350.0	353.4	348.3	346.6	349.1	345.8	341.5	337.3	340.7	336.5	338.2
42.5°	273.9	273.1	271.4	271.4	271.4	266.3	265.5	264.6	265.5	262.1	259.5
45°	197.8	195.3	192.7	192.7	189.4	187.7	187.7	185.1	180.9	180.9	175.8
47.5°	133.6	127.7	126.0	125.1	123.4	123.4	121.7	120.0	119.2	115.0	115.0
50°	87.1	81.2	79.5	78.6	79.5	77.8	76.1	74.4	72.7	71.9	70.2
52.5°	52.4	49.9	48.2	47.3	45.7	44.8	44.0	42.3	41.4	41.4	40.6
55°	31.3	28.7	25.4	25.4	25.4	24.5	23.7	22.8	22.0	22.0	21.1
57.5°	19.4	17.8	16.1	15.2	15.2	15.2	14.4	14.4	14.4	14.4	13.5
60°	14.4	12.7	11.8	11.8	11.8	11.0	11.0	11.0	11.0	10.1	10.1
62.5°	11.0	10.1	9.3	9.3	8.5	8.5	8.5	8.5	8.5	8.5	7.6
65°	9.3	7.6	7.6	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
67.5°	6.8	5.9	5.9	5.9	5.9	5.1	5.1	5.1	5.1	5.1	5.1
70°	5.1	5.1	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
72.5°	4.2	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
75°	3.4	3.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
77.5°	2.5	2.5	2.5	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	1.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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°	647.6	647.6	647.6	647.6	647.6	647.6	647.6	647.6
2.5°	662.8	667.0	662.8	662.8	665.3	664.5	666.2	663.6
5°	682.2	688.1	683.9	683.1	687.3	686.5	687.3	685.6
7.5°	705.9	711.8	707.6	707.6	711.8	711.0	713.5	711.8
10°	733.0	739.7	733.8	734.6	740.6	739.7	739.7	739.7
12.5°	760.8	767.6	764.2	764.2	768.5	769.3	770.1	769.3
15°	783.7	790.4	786.2	786.2	792.1	791.3	792.1	791.3
17.5°	797.2	804.0	798.9	798.9	804.0	804.0	804.8	805.7
20°	793.8	801.4	797.2	795.5	801.4	801.4	800.6	800.6
22.5°	774.4	781.1	777.8	776.1	780.3	778.6	777.8	778.6
25°	740.6	747.3	740.6	740.6	743.9	743.1	743.9	743.1
27.5°	694.9	700.0	693.2	692.4	695.8	694.1	693.2	695.8
30°	634.0	639.1	635.7	633.2	637.4	634.9	633.2	634.0
32.5°	564.7	568.1	566.4	562.2	564.7	563.0	562.2	563.0
35°	488.6	492.9	486.1	485.3	489.5	486.1	484.4	488.6
37.5°	410.0	415.1	409.2	410.0	407.5	408.3	406.6	409.2
40°	335.6	334.8	333.1	332.2	333.1	330.5	332.2	329.7
42.5°	255.3	257.0	256.2	255.3	256.2	252.8	251.1	254.5
45°	177.5	176.7	175.0	173.3	173.3	172.5	172.5	169.9
47.5°	114.1	113.3	109.9	110.7	112.4	110.7	108.2	111.6
50°	69.3	68.5	68.5	67.6	69.3	67.6	65.9	65.9
52.5°	38.9	38.9	38.0	38.0	38.0	38.0	37.2	36.4
55°	21.1	20.3	20.3	20.3	19.4	19.4	19.4	19.4
57.5°	13.5	13.5	13.5	13.5	13.5	13.5	12.7	12.7
60°	10.1	10.1	10.1	10.1	9.3	10.1	9.3	9.3
62.5°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
65°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
67.5°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
70°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
72.5°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
75°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
77.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)