

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: P274339

Luminaire Tested: **LD4B20DE010W2N2765 EU4B1020W2N902765 4LBDW0H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P274339  
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: LD4B20DE010W2N2765 EU4B1020W2N902765 4LBDW0H  
Description: PORTFOLIO 4" W2N RN DOWNLIGHT, DOUBLE WALLWASH WITH HAZE FINISH  
Light Source: W2N 2700K-6500K CCT TUNING RANGE  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1418.4 lumens  
Efficiency: N/A  
Efficacy: 50.7 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

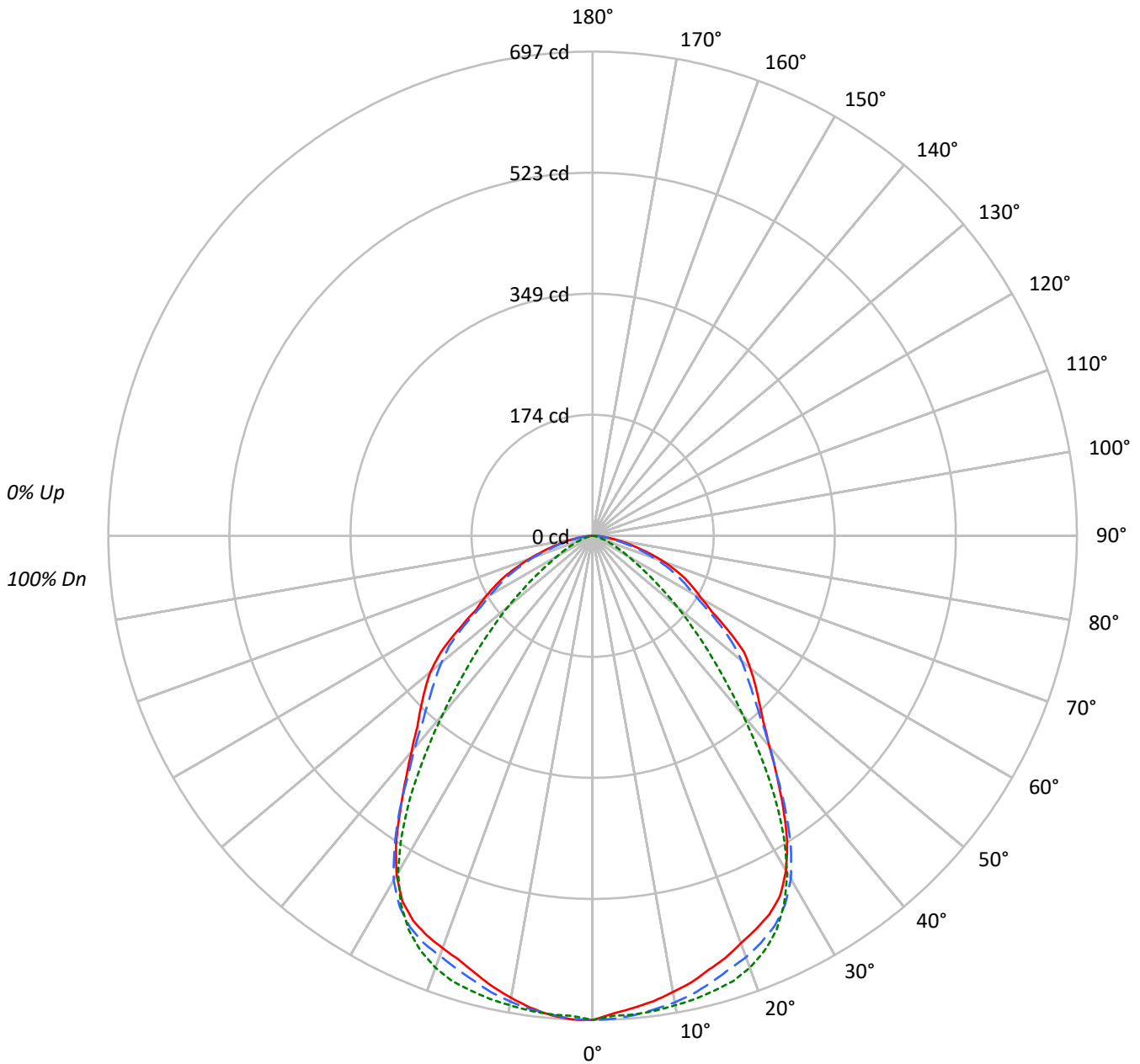
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	67928	67928	67928
5°	66720	67659	67767
10°	65997	67907	66849
15°	65239	68377	65774
20°	64727	68616	65505
25°	64681	67337	65724
30°	62626	62986	63470
35°	56894	54217	57405
40°	50342	42696	51563
45°	46696	32513	48184
50°	44864	24062	46168
55°	40626	16584	40082
60°	35319	11286	35104
65°	34130	8163	32400
70°	30860	5500	27498
75°	25455	3653	21802
80°	20485	2413	16276
85°	16773	1230	10847



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	65.8	4.6
10°-20°	188.1	13.3
20°-30°	284.2	20.0
30°-40°	297.4	21.0
40°-50°	240.9	17.0
50°-60°	175.2	12.4
60°-70°	108.1	7.6
70°-80°	48.8	3.4
80°-90°	9.9	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°	538.1	37.9
0°-40°	835.5	58.9
0°-60°	1251.6	88.2
0°-90°	1418.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1418.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	697	697	697	697	697	
5°	682	693	692	692	693	65
15°	647	665	678	663	652	183
25°	602	620	626	622	611	276
35°	478	485	456	485	482	298
45°	339	328	236	332	350	263
55°	239	224	98	226	236	213
65°	148	133	35	131	140	145
75°	68	58	10	50	58	73
85°	15	12	1	9	10	17
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°	697.0	697.0	697.0	697.0	697.0	697.0	697.0	697.0	697.0	697.0	697.0
2.5°	688.4	688.4	694.8	702.3	695.9	689.5	693.8	691.6	699.1	699.1	695.9
5°	682.0	684.1	689.5	695.9	690.5	684.1	689.5	687.3	694.8	694.8	692.7
7.5°	675.5	676.6	683.0	690.5	685.2	678.7	683.0	682.0	688.4	689.5	687.3
10°	666.9	668.0	674.5	682.0	676.6	671.2	675.5	674.5	683.0	683.0	682.0
12.5°	658.4	659.4	665.9	672.3	666.9	661.6	665.9	665.9	674.5	675.5	674.5
15°	646.6	648.7	654.1	660.5	657.3	650.9	655.1	655.1	662.7	664.8	664.8
17.5°	636.9	638.0	643.4	649.8	645.5	640.1	644.4	644.4	651.9	654.1	654.1
20°	624.1	626.2	631.6	638.0	634.8	630.5	633.7	633.7	642.3	644.4	645.5
22.5°	613.3	615.5	619.8	628.3	623.0	619.8	624.1	623.0	632.6	633.7	633.7
25°	601.5	603.7	609.0	614.4	611.2	608.0	611.2	611.2	618.7	619.8	619.8
27.5°	584.4	585.5	590.8	596.2	593.0	588.7	593.0	591.9	599.4	600.5	599.4
30°	556.5	558.6	560.8	568.3	565.1	561.9	566.2	564.0	571.5	571.5	570.4
32.5°	521.1	521.1	525.4	530.8	526.5	524.3	527.6	528.6	534.0	534.0	530.8
35°	478.2	480.4	483.6	486.8	483.6	481.4	484.7	483.6	490.0	487.9	484.7
37.5°	435.3	436.4	439.6	443.9	439.6	436.4	437.5	436.4	441.8	441.8	436.4
40°	395.7	397.8	400.0	404.2	400.0	397.8	398.9	395.7	402.1	400.0	396.7
42.5°	363.5	364.6	367.8	369.9	365.6	364.6	365.6	363.5	366.7	364.6	358.1
45°	338.8	338.8	339.9	343.1	338.8	337.8	337.8	335.6	338.8	334.5	328.1
47.5°	317.4	318.5	319.5	321.7	318.5	315.2	316.3	312.0	314.2	311.0	302.4
50°	295.9	298.1	299.2	301.3	298.1	295.9	297.0	292.7	292.7	287.4	279.9
52.5°	274.5	275.6	274.5	276.6	274.5	271.3	272.4	268.1	268.1	261.6	254.1
55°	239.1	240.2	241.3	243.4	241.3	238.0	240.2	237.0	237.0	232.7	224.1
57.5°	203.7	204.8	205.9	206.9	206.9	204.8	205.9	203.7	202.7	199.4	193.0
60°	181.2	181.2	181.2	182.3	181.2	180.1	180.1	178.0	178.0	173.7	167.3
62.5°	164.1	165.1	165.1	166.2	165.1	164.1	163.0	160.8	159.8	155.5	150.1
65°	148.0	148.0	146.9	149.0	148.0	146.9	146.9	144.8	142.6	138.3	133.0
67.5°	128.7	129.7	128.7	129.7	129.7	128.7	127.6	125.5	124.4	121.2	114.7
70°	108.3	108.3	108.3	109.4	108.3	108.3	109.4	106.2	105.1	100.8	95.4
72.5°	87.9	89.0	89.0	87.9	89.0	86.9	86.9	86.9	85.8	81.5	76.1
75°	67.6	68.6	68.6	69.7	68.6	67.6	67.6	66.5	65.4	62.2	57.9
77.5°	50.4	50.4	51.5	51.5	51.5	50.4	50.4	48.3	48.3	46.1	41.8
80°	36.5	36.5	35.4	36.5	36.5	35.4	35.4	34.3	34.3	32.2	29.0
82.5°	23.6	24.7	24.7	24.7	24.7	23.6	23.6	23.6	22.5	21.4	19.3
85°	15.0	15.0	15.0	15.0	16.1	15.0	16.1	15.0	15.0	12.9	11.8
87.5°	6.4	6.4	6.4	7.5	7.5	6.4	6.4	6.4	6.4	6.4	5.4
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°	697.0	697.0	697.0	697.0	697.0	697.0	697.0	697.0	697.0	697.0	697.0
2.5°	695.9	697.0	693.8	698.0	694.8	695.9	697.0	695.9	691.6	691.6	703.4
5°	691.6	693.8	690.5	695.9	693.8	693.8	695.9	694.8	690.5	691.6	702.3
7.5°	687.3	690.5	688.4	693.8	690.5	690.5	692.7	692.7	688.4	689.5	699.1
10°	680.9	685.2	684.1	689.5	686.2	686.2	689.5	689.5	685.2	686.2	695.9
12.5°	675.5	679.8	678.7	684.1	682.0	683.0	684.1	686.2	680.9	683.0	691.6
15°	666.9	671.2	671.2	676.6	674.5	676.6	678.7	682.0	677.7	677.7	686.2
17.5°	657.3	662.7	662.7	666.9	666.9	668.0	672.3	675.5	671.2	672.3	679.8
20°	646.6	653.0	653.0	658.4	657.3	659.4	662.7	665.9	661.6	661.6	670.2
22.5°	635.8	641.2	642.3	645.5	645.5	646.6	649.8	651.9	646.6	646.6	655.1
25°	620.8	626.2	627.3	629.4	627.3	627.3	629.4	631.6	626.2	626.2	633.7
27.5°	600.5	605.8	605.8	604.8	602.6	603.7	602.6	603.7	598.3	597.2	604.8
30°	570.4	573.7	573.7	572.6	569.4	569.4	566.2	567.2	559.7	559.7	566.2
32.5°	529.7	532.9	530.8	528.6	524.3	522.2	520.0	519.0	511.5	511.5	519.0
35°	481.4	483.6	480.4	476.1	470.7	467.5	464.3	460.0	454.6	455.7	460.0
37.5°	432.1	432.1	427.8	419.3	415.0	409.6	404.2	404.2	395.7	394.6	397.8
40°	390.3	386.0	378.5	366.7	359.2	353.8	346.3	342.1	335.6	335.6	341.0
42.5°	352.8	344.2	334.5	318.5	311.0	304.5	294.9	290.6	283.1	282.0	285.2
45°	319.5	311.0	297.0	279.9	270.2	262.7	248.8	243.4	237.0	235.9	238.0
47.5°	292.7	283.1	265.9	243.4	233.8	224.1	210.2	202.7	197.3	194.1	197.3
50°	269.1	256.3	238.0	214.5	201.6	193.0	175.9	168.3	160.8	158.7	159.8
52.5°	243.4	230.5	211.2	186.6	174.8	161.9	145.8	135.1	128.7	125.5	128.7
55°	215.5	202.7	183.4	158.7	145.8	134.0	116.9	108.3	100.8	97.6	100.8
57.5°	185.5	173.7	156.5	131.9	120.1	109.4	93.3	84.7	77.2	75.1	77.2
60°	159.8	150.1	133.0	109.4	99.7	87.9	74.0	65.4	59.0	57.9	59.0
62.5°	142.6	131.9	115.8	93.3	83.6	74.0	61.1	52.5	47.2	46.1	47.2
65°	125.5	113.7	98.6	79.3	69.7	62.2	49.3	41.8	36.5	35.4	36.5
67.5°	106.2	95.4	82.6	65.4	57.9	50.4	39.7	32.2	27.9	26.8	27.9
70°	87.9	78.3	65.4	52.5	45.0	39.7	30.0	24.7	20.4	19.3	20.4
72.5°	69.7	61.1	50.4	39.7	35.4	30.0	23.6	18.2	15.0	13.9	15.0
75°	53.6	47.2	38.6	29.0	25.7	22.5	16.1	12.9	10.7	9.7	10.7
77.5°	37.5	33.2	26.8	21.4	18.2	16.1	11.8	8.6	7.5	6.4	7.5
80°	25.7	22.5	18.2	13.9	11.8	9.7	7.5	5.4	4.3	4.3	4.3
82.5°	17.2	13.9	10.7	8.6	7.5	6.4	4.3	3.2	3.2	2.1	2.1
85°	9.7	8.6	6.4	5.4	4.3	3.2	2.1	2.1	1.1	1.1	1.1
87.5°	4.3	3.2	2.1	2.1	1.1	1.1	1.1	1.1	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°	697.0	697.0	697.0	697.0	697.0	697.0	697.0	697.0	697.0	697.0	697.0
2.5°	700.2	697.0	701.3	697.0	694.8	697.0	694.8	701.3	695.9	691.6	695.9
5°	699.1	694.8	699.1	695.9	692.7	693.8	691.6	698.0	691.6	688.4	690.5
7.5°	697.0	693.8	695.9	692.7	689.5	690.5	688.4	693.8	687.3	684.1	686.2
10°	693.8	690.5	691.6	689.5	686.2	686.2	684.1	688.4	680.9	676.6	678.7
12.5°	689.5	685.2	687.3	684.1	679.8	679.8	677.7	680.9	673.4	669.1	670.2
15°	684.1	679.8	679.8	676.6	672.3	672.3	668.0	671.2	662.7	658.4	658.4
17.5°	677.7	672.3	672.3	669.1	663.7	662.7	659.4	662.7	653.0	648.7	648.7
20°	668.0	663.7	662.7	660.5	655.1	654.1	649.8	650.9	643.4	640.1	639.1
22.5°	655.1	650.9	651.9	648.7	644.4	643.4	639.1	642.3	634.8	631.6	632.6
25°	632.6	630.5	632.6	631.6	628.3	628.3	626.2	628.3	621.9	619.8	620.8
27.5°	606.9	605.8	606.9	606.9	604.8	604.8	604.8	608.0	601.5	600.5	600.5
30°	569.4	569.4	570.4	571.5	571.5	573.7	572.6	576.9	572.6	570.4	572.6
32.5°	520.0	524.3	527.6	527.6	527.6	529.7	531.8	535.1	530.8	531.8	531.8
35°	464.3	467.5	469.6	475.0	471.8	479.3	481.4	485.7	484.7	486.8	485.7
37.5°	402.1	406.4	410.7	418.2	417.1	425.7	430.0	438.6	436.4	440.7	442.8
40°	344.2	350.6	357.1	362.4	366.7	375.3	383.9	394.6	397.8	401.0	402.1
42.5°	288.4	294.9	305.6	313.1	319.5	333.5	345.3	358.1	361.4	367.8	369.9
45°	243.4	248.8	261.6	271.3	276.6	297.0	311.0	327.0	332.4	339.9	343.1
47.5°	201.6	211.2	224.1	235.9	243.4	264.8	283.1	300.2	307.7	316.3	320.6
50°	165.1	175.9	193.0	203.7	214.5	238.0	258.4	276.6	284.1	293.8	298.1
52.5°	135.1	146.9	163.0	174.8	186.6	211.2	232.7	249.8	259.5	265.9	272.4
55°	106.2	119.0	135.1	148.0	157.6	184.4	202.7	219.8	226.2	231.6	234.8
57.5°	82.6	92.2	108.3	119.0	130.8	154.4	172.6	185.5	190.9	197.3	199.4
60°	64.3	74.0	89.0	99.7	110.4	133.0	151.2	164.1	169.4	174.8	178.0
62.5°	51.5	61.1	75.1	84.7	94.4	114.7	130.8	143.7	150.1	155.5	158.7
65°	40.7	49.3	61.1	70.8	78.3	96.5	112.6	124.4	130.8	136.2	139.4
67.5°	32.2	39.7	50.4	56.8	64.3	79.3	93.3	104.0	109.4	115.8	119.0
70°	24.7	30.0	39.7	45.0	50.4	63.3	74.0	84.7	90.1	94.4	96.5
72.5°	18.2	22.5	30.0	34.3	37.5	48.3	56.8	64.3	68.6	72.9	75.1
75°	12.9	16.1	21.4	24.7	26.8	34.3	41.8	47.2	50.4	53.6	56.8
77.5°	8.6	10.7	13.9	16.1	18.2	23.6	27.9	32.2	35.4	38.6	39.7
80°	5.4	7.5	9.7	10.7	11.8	15.0	19.3	21.4	23.6	25.7	26.8
82.5°	3.2	4.3	5.4	6.4	7.5	9.7	11.8	13.9	15.0	17.2	18.2
85°	1.1	2.1	2.1	3.2	3.2	5.4	6.4	7.5	8.6	9.7	10.7
87.5°	0.0	0.0	1.1	1.1	1.1	1.1	2.1	2.1	2.1	2.1	2.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0





TEST NUMBER: P274339

CATALOG NUMBER: LD4B20DE010W2N2765 EU4B1020W2N902765 4LBDW0H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	697.0	697.0	697.0	697.0	697.0	697.0	697.0	697.0
2.5°	700.2	697.0	694.8	693.8	701.3	691.6	695.9	697.0
5°	695.9	692.7	690.5	689.5	695.9	687.3	690.5	692.7
7.5°	689.5	687.3	684.1	683.0	689.5	679.8	684.1	685.2
10°	682.0	678.7	676.6	675.5	680.9	671.2	675.5	675.5
12.5°	672.3	670.2	665.9	665.9	670.2	661.6	664.8	664.8
15°	659.4	657.3	653.0	653.0	657.3	648.7	651.9	651.9
17.5°	648.7	646.6	643.4	642.3	646.6	638.0	641.2	640.1
20°	640.1	638.0	633.7	633.7	636.9	628.3	631.6	631.6
22.5°	632.6	631.6	627.3	627.3	631.6	623.0	625.1	623.0
25°	620.8	619.8	615.5	616.5	618.7	610.1	613.3	611.2
27.5°	601.5	601.5	597.2	596.2	599.4	591.9	594.0	593.0
30°	571.5	572.6	567.2	567.2	568.3	561.9	565.1	564.0
32.5°	530.8	531.8	527.6	526.5	529.7	524.3	526.5	526.5
35°	485.7	486.8	483.6	483.6	486.8	483.6	483.6	482.5
37.5°	440.7	442.8	440.7	441.8	443.9	440.7	442.8	441.8
40°	404.2	406.4	403.2	405.3	407.5	404.2	407.5	405.3
42.5°	371.0	374.2	372.1	374.2	376.4	374.2	376.4	373.1
45°	346.3	348.5	347.4	348.5	350.6	349.6	350.6	349.6
47.5°	322.7	327.0	324.9	327.0	330.3	328.1	330.3	327.0
50°	301.3	304.5	303.4	305.6	306.7	305.6	307.7	304.5
52.5°	273.4	276.6	275.6	275.6	277.7	275.6	277.7	275.6
55°	237.0	238.0	238.0	239.1	238.0	237.0	238.0	235.9
57.5°	201.6	203.7	200.5	203.7	202.7	201.6	201.6	199.4
60°	179.1	182.3	180.1	182.3	181.2	181.2	181.2	180.1
62.5°	160.8	163.0	160.8	161.9	161.9	161.9	160.8	159.8
65°	140.5	143.7	141.5	142.6	141.5	140.5	141.5	140.5
67.5°	120.1	121.2	121.2	120.1	120.1	120.1	120.1	117.9
70°	97.6	98.6	97.6	99.7	98.6	97.6	98.6	96.5
72.5°	76.1	77.2	76.1	77.2	76.1	76.1	76.1	76.1
75°	56.8	57.9	57.9	57.9	57.9	57.9	55.8	57.9
77.5°	40.7	40.7	40.7	41.8	40.7	40.7	40.7	40.7
80°	27.9	27.9	27.9	29.0	27.9	29.0	27.9	29.0
82.5°	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2
85°	9.7	10.7	10.7	9.7	9.7	9.7	9.7	9.7
87.5°	2.1	1.1	1.1	1.1	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



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— 0°-180°    - - 45°-225°    - - - - 90°-270°















(END OF REPORT)