

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: P251509

Luminaire Tested: **LD4B10D010 EU4B10209024 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251509
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: LD4B10D010 EU4B10209024 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2400K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 716.0 lumens
Efficiency: N/A
Efficacy: 71.2 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

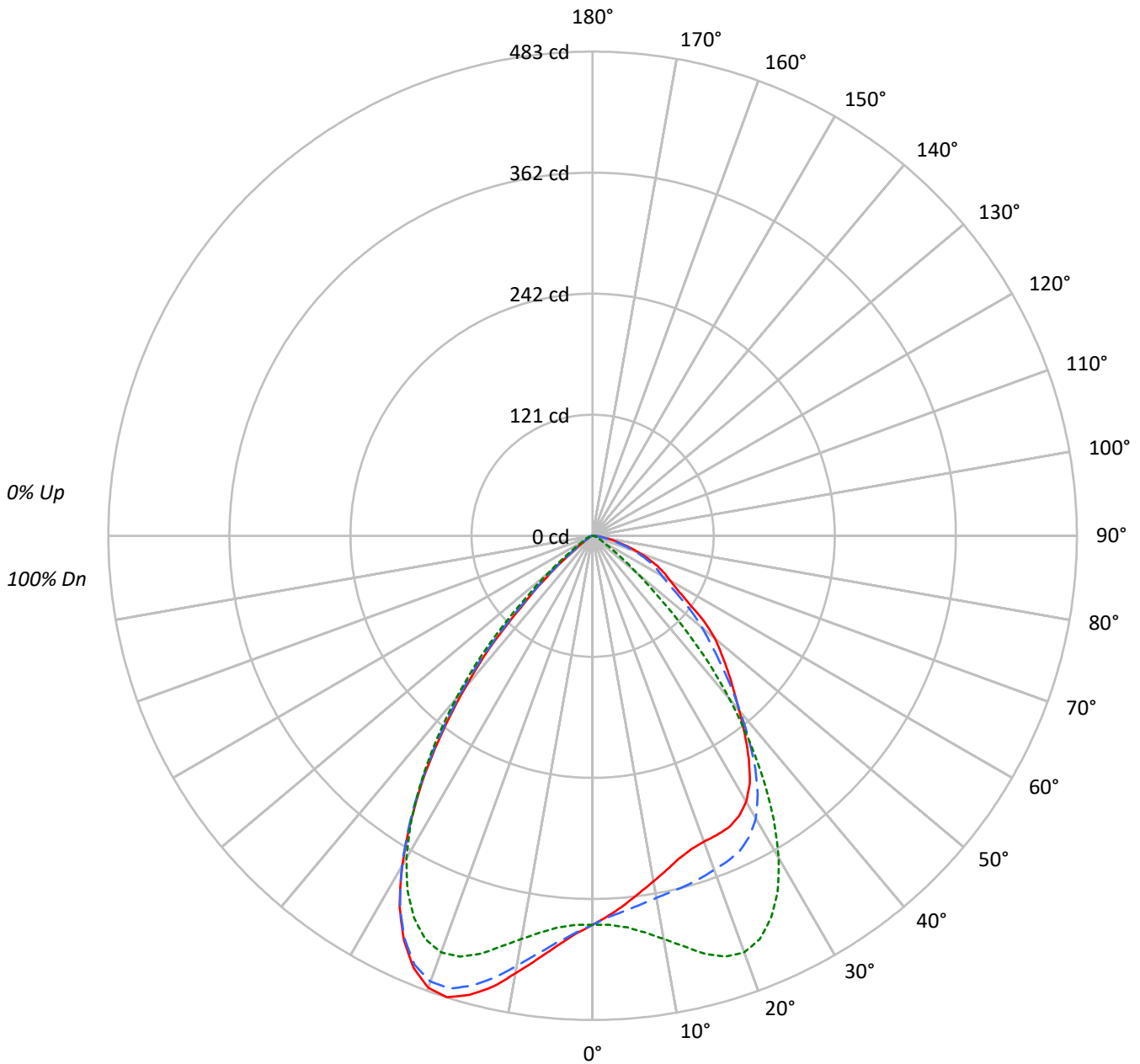
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	37814	37814	37814
5°	36129	38359	40189
10°	34637	40406	43860
15°	33629	43547	47835
20°	33676	45862	49751
25°	34529	45261	47874
30°	34481	41784	42752
35°	32302	35312	34836
40°	28930	26933	25126
45°	26256	17104	14031
50°	24107	8673	5989
55°	19795	3874	1988
60°	17367	2164	1092
65°	16350	1637	807
70°	13991	1311	712
75°	10694	941	565
80°	7689	561	281
85°	5703	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.7	5.3
10°-20°	117.5	16.4
20°-30°	181.7	25.4
30°-40°	179.1	25.0
40°-50°	109.9	15.4
50°-60°	48.9	6.8
60°-70°	27.3	3.8
70°-80°	11.8	1.6
80°-90°	2.1	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°	336.9	47.1
0°-40°	515.9	72.1
0°-60°	674.8	94.2
0°-90°	716.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	716.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	388	388	388	388	388	
5°	369	375	392	407	411	35
15°	333	361	432	464	474	95
25°	321	347	421	444	445	147
35°	272	283	297	296	293	169
45°	190	181	124	108	102	148
55°	116	105	23	13	12	107
65°	71	64	7	4	4	69
75°	28	24	2	2	2	31
85°	5	4	0	0	0	6
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°	388.0	388.0	388.0	388.0	388.0	388.0	388.0	388.0	388.0	388.0	388.0
2.5°	378.9	378.9	378.9	378.9	379.9	378.4	379.9	379.9	381.4	381.9	380.4
5°	369.3	368.8	369.3	369.3	370.3	369.8	371.3	372.3	374.3	375.3	375.3
7.5°	359.1	359.1	359.1	360.1	361.7	361.2	362.7	364.2	367.2	369.3	370.8
10°	350.0	349.5	351.0	351.5	353.0	353.0	355.6	357.1	360.6	364.7	366.7
12.5°	341.4	340.9	341.9	343.4	346.0	346.0	348.0	350.5	355.6	360.1	363.7
15°	333.3	333.8	335.3	336.3	339.4	339.4	341.9	344.9	350.5	356.1	361.2
17.5°	327.7	328.2	329.2	330.8	333.8	333.8	336.3	339.9	346.0	352.0	358.1
20°	324.7	325.2	326.2	327.7	330.3	330.8	332.8	336.8	342.4	349.0	354.6
22.5°	323.2	324.2	325.2	326.2	328.7	328.7	331.3	334.3	339.9	346.5	351.5
25°	321.1	322.2	322.7	324.2	326.2	326.2	327.7	331.3	336.3	341.9	347.0
27.5°	315.6	316.6	317.1	318.6	320.6	320.1	322.2	324.7	329.2	334.3	338.4
30°	306.4	307.0	308.0	308.5	310.0	310.0	311.5	314.0	317.1	321.6	325.7
32.5°	291.8	292.8	293.3	293.8	295.3	294.8	295.3	296.8	299.9	303.9	306.4
35°	271.5	273.5	273.5	274.5	275.0	274.5	274.5	276.6	278.1	281.1	282.6
37.5°	249.2	250.7	250.2	251.2	251.7	250.2	251.2	251.7	253.8	255.3	255.8
40°	227.4	227.9	227.9	227.9	227.9	227.4	227.9	228.4	230.0	230.0	228.4
42.5°	207.7	208.2	208.2	207.2	208.2	207.7	207.7	207.7	207.7	205.6	204.1
45°	190.5	191.0	191.0	190.5	190.5	189.4	188.9	188.4	186.9	184.4	180.8
47.5°	174.2	175.3	175.8	174.8	174.2	173.2	173.2	170.2	168.2	165.1	160.1
50°	159.0	160.1	160.1	159.0	159.0	157.5	156.0	155.0	152.0	148.4	142.3
52.5°	139.8	141.3	141.3	140.8	140.8	138.8	138.3	136.3	133.7	129.7	124.6
55°	116.5	118.5	118.0	117.5	116.5	116.5	116.5	115.0	113.5	110.4	105.4
57.5°	99.8	100.3	100.3	99.8	99.8	98.8	98.8	97.3	96.7	93.7	89.7
60°	89.1	89.1	89.7	89.1	88.6	88.1	87.6	86.6	85.1	83.1	80.0
62.5°	80.5	81.0	81.0	80.5	80.0	79.5	79.0	78.0	77.0	75.5	72.4
65°	70.9	71.9	71.4	70.9	70.4	69.9	69.9	68.9	67.9	66.9	63.8
67.5°	60.3	60.8	61.3	60.3	60.3	59.8	59.8	58.8	58.3	56.2	54.2
70°	49.1	49.6	49.6	49.1	49.1	48.6	48.6	48.1	47.6	46.1	44.1
72.5°	38.5	39.0	38.5	38.0	38.0	38.0	37.5	37.0	36.5	35.5	33.9
75°	28.4	28.4	28.9	28.4	27.9	27.9	27.4	27.4	26.3	25.8	24.3
77.5°	20.3	20.8	20.3	20.3	19.8	19.2	19.2	18.7	18.7	18.2	17.2
80°	13.7	13.7	14.2	13.7	13.2	13.7	13.2	12.7	12.7	12.2	11.1
82.5°	8.6	9.1	8.6	8.6	8.6	8.6	8.6	8.1	8.1	7.6	7.1
85°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	4.6	4.6	4.6	4.1
87.5°	2.5	2.5	2.0	2.0	2.5	2.5	2.5	2.0	2.0	2.0	2.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	388.0	388.0	388.0	388.0	388.0	388.0	388.0	388.0	388.0	388.0	388.0
2.5°	382.4	382.9	383.9	385.5	385.5	384.5	387.0	387.0	388.0	388.5	390.5
5°	378.4	379.4	381.4	383.9	384.5	383.9	387.5	389.0	390.5	392.1	395.1
7.5°	374.8	376.9	380.4	383.9	385.5	385.5	391.0	393.1	396.1	399.1	402.7
10°	372.8	375.8	380.9	386.5	388.0	389.5	396.1	400.2	404.2	408.3	413.3
12.5°	370.3	375.8	382.4	389.5	392.6	394.6	403.7	408.8	414.3	419.4	426.0
15°	369.8	376.3	385.0	394.1	398.1	401.2	411.3	418.4	425.0	431.6	438.1
17.5°	367.7	375.8	386.5	396.6	401.7	405.7	417.4	426.0	433.6	440.2	447.8
20°	365.2	374.3	386.0	397.1	402.7	406.7	419.4	427.5	436.1	442.2	449.3
22.5°	361.7	370.8	382.4	393.6	398.6	402.2	414.8	421.9	429.5	435.6	442.2
25°	355.6	364.2	374.3	383.4	388.5	391.5	402.7	409.3	414.8	420.9	427.0
27.5°	347.0	353.6	362.2	368.8	371.8	374.8	383.9	389.5	394.6	399.6	403.7
30°	331.8	336.8	342.9	348.5	351.5	352.0	360.6	363.7	367.7	371.3	374.3
32.5°	311.5	315.6	319.1	322.2	324.2	324.7	331.3	332.3	336.3	336.3	340.9
35°	285.7	287.7	290.2	290.2	291.8	290.2	294.8	295.8	296.3	296.8	300.4
37.5°	256.3	257.3	258.8	255.8	255.8	254.3	255.8	256.8	254.8	254.8	257.3
40°	228.4	226.4	224.4	221.4	219.8	216.8	216.8	214.3	212.7	211.7	212.2
42.5°	201.6	197.0	192.5	185.9	182.9	179.8	176.8	173.2	172.2	169.7	168.2
45°	175.8	169.2	163.1	152.5	146.4	143.3	136.8	129.7	125.1	124.1	120.0
47.5°	154.0	144.4	134.2	121.6	115.5	109.9	100.3	94.2	88.1	85.1	82.6
50°	134.7	126.1	113.0	99.3	91.7	86.1	75.5	68.4	61.8	57.2	54.2
52.5°	118.0	108.4	96.2	80.5	72.9	66.9	55.2	47.1	41.5	37.0	33.4
55°	99.3	91.7	79.5	64.8	57.2	50.1	40.0	31.4	25.8	22.8	20.3
57.5°	85.6	79.0	67.4	53.2	46.1	39.5	29.4	22.3	17.7	14.7	13.2
60°	76.5	70.4	60.3	46.6	40.0	33.9	24.3	17.7	13.7	11.1	10.1
62.5°	68.9	62.8	53.7	41.0	35.5	29.4	20.8	14.7	11.1	9.1	7.6
65°	60.3	54.7	46.6	35.5	30.4	25.3	17.7	12.2	9.1	7.1	6.1
67.5°	51.2	46.1	39.0	29.4	25.3	21.3	14.2	10.1	7.6	6.1	5.1
70°	41.5	37.5	30.9	23.8	20.3	16.7	11.7	8.1	5.6	4.6	4.1
72.5°	31.9	28.4	23.8	18.2	15.2	12.7	8.6	6.1	4.6	3.5	3.0
75°	22.8	20.3	16.7	13.2	11.1	9.1	6.6	4.6	3.0	2.5	2.0
77.5°	15.7	14.2	11.7	9.1	7.6	6.6	4.6	3.0	2.5	2.0	1.5
80°	10.1	9.1	7.6	5.6	4.6	4.1	2.5	2.0	1.5	1.0	1.0
82.5°	6.1	5.6	4.6	3.0	2.5	2.0	1.5	1.0	1.0	0.5	0.5
85°	3.5	3.0	2.0	1.5	1.5	1.0	1.0	0.5	0.5	0.0	0.0
87.5°	1.5	1.0	1.0	0.5	0.5	0.5	0.5	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°	388.0	388.0	388.0	388.0	388.0	388.0	388.0	388.0	388.0	388.0	388.0
2.5°	389.5	392.1	391.5	393.1	392.6	392.6	395.1	394.1	396.6	396.6	397.1
5°	395.1	398.6	398.6	401.2	400.7	401.7	404.2	404.2	407.2	408.3	408.3
7.5°	403.2	407.8	408.8	411.3	411.8	413.8	415.9	416.4	420.4	421.4	421.9
10°	414.3	419.9	421.4	424.0	425.0	427.0	429.5	430.5	435.6	436.1	438.1
12.5°	428.0	434.1	435.6	438.7	439.2	441.7	445.2	446.2	451.3	452.8	454.4
15°	441.2	446.8	449.3	452.3	452.8	455.9	458.9	459.9	464.5	466.5	468.0
17.5°	450.3	456.9	458.4	462.5	462.5	465.0	468.0	469.0	473.6	475.1	476.1
20°	452.3	458.4	460.4	463.5	464.0	465.5	468.0	469.0	473.1	473.6	475.1
22.5°	444.7	450.8	451.8	454.9	455.4	456.9	458.9	458.4	463.5	463.0	463.5
25°	428.5	434.1	434.1	437.6	437.1	438.7	439.7	439.2	443.7	443.7	443.7
27.5°	405.2	410.3	410.8	413.3	411.8	412.3	413.3	412.8	415.9	415.9	415.9
30°	376.3	380.4	378.9	380.9	379.9	380.9	379.9	379.4	380.4	381.4	380.9
32.5°	340.4	343.4	343.4	343.9	343.9	340.9	339.9	339.9	339.4	338.9	338.9
35°	298.9	301.4	300.4	300.4	299.9	296.8	295.3	294.3	295.8	292.8	294.8
37.5°	256.3	256.8	255.3	254.8	252.2	252.2	249.7	247.7	248.7	248.2	246.2
40°	209.7	211.7	208.7	207.7	209.2	207.2	204.6	202.1	204.1	201.6	202.6
42.5°	164.1	163.6	162.6	162.6	162.6	159.6	159.0	158.5	159.0	157.0	155.5
45°	118.5	117.0	115.5	115.5	113.5	112.4	112.4	110.9	108.4	108.4	105.4
47.5°	80.0	76.5	75.5	75.0	74.0	74.0	72.9	71.9	71.4	68.9	68.9
50°	52.2	48.6	47.6	47.1	47.6	46.6	45.6	44.6	43.6	43.1	42.0
52.5°	31.4	29.9	28.9	28.4	27.4	26.8	26.3	25.3	24.8	24.8	24.3
55°	18.7	17.2	15.2	15.2	15.2	14.7	14.2	13.7	13.2	13.2	12.7
57.5°	11.7	10.6	9.6	9.1	9.1	9.1	8.6	8.6	8.6	8.6	8.1
60°	8.6	7.6	7.1	7.1	7.1	6.6	6.6	6.6	6.6	6.1	6.1
62.5°	6.6	6.1	5.6	5.6	5.1	5.1	5.1	5.1	5.1	5.1	4.6
65°	5.6	4.6	4.6	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
67.5°	4.1	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0
70°	3.0	3.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
72.5°	2.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
75°	2.0	2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
77.5°	1.5	1.5	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
80°	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
82.5°	0.5	0.5	0.5	0.5	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°	388.0	388.0	388.0	388.0	388.0	388.0	388.0	388.0
2.5°	397.1	399.6	397.1	397.1	398.6	398.1	399.1	397.6
5°	408.8	412.3	409.8	409.3	411.8	411.3	411.8	410.8
7.5°	422.9	426.5	424.0	424.0	426.5	426.0	427.5	426.5
10°	439.2	443.2	439.7	440.2	443.7	443.2	443.2	443.2
12.5°	455.9	459.9	457.9	457.9	460.4	460.9	461.4	460.9
15°	469.5	473.6	471.1	471.1	474.6	474.1	474.6	474.1
17.5°	477.7	481.7	478.7	478.7	481.7	481.7	482.2	482.7
20°	475.6	480.2	477.7	476.6	480.2	480.2	479.7	479.7
22.5°	464.0	468.0	466.0	465.0	467.5	466.5	466.0	466.5
25°	443.7	447.8	443.7	443.7	445.7	445.2	445.7	445.2
27.5°	416.4	419.4	415.4	414.8	416.9	415.9	415.4	416.9
30°	379.9	382.9	380.9	379.4	381.9	380.4	379.4	379.9
32.5°	338.4	340.4	339.4	336.8	338.4	337.3	336.8	337.3
35°	292.8	295.3	291.3	290.7	293.3	291.3	290.2	292.8
37.5°	245.7	248.7	245.2	245.7	244.1	244.7	243.6	245.2
40°	201.1	200.6	199.6	199.1	199.6	198.1	199.1	197.5
42.5°	153.0	154.0	153.5	153.0	153.5	151.5	150.4	152.5
45°	106.4	105.9	104.9	103.8	103.8	103.3	103.3	101.8
47.5°	68.4	67.9	65.8	66.4	67.4	66.4	64.8	66.9
50°	41.5	41.0	41.0	40.5	41.5	40.5	39.5	39.5
52.5°	23.3	23.3	22.8	22.8	22.8	22.8	22.3	21.8
55°	12.7	12.2	12.2	12.2	11.7	11.7	11.7	11.7
57.5°	8.1	8.1	8.1	8.1	8.1	8.1	7.6	7.6
60°	6.1	6.1	6.1	6.1	5.6	6.1	5.6	5.6
62.5°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
65°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
67.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
70°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
72.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
75°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
77.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
80°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
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)