

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: P251511

Luminaire Tested: **LD4B10D010 EU4B10209030 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251511
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 EU4B10209030 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 846.0 lumens
Efficiency: N/A
Efficacy: 84.2 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

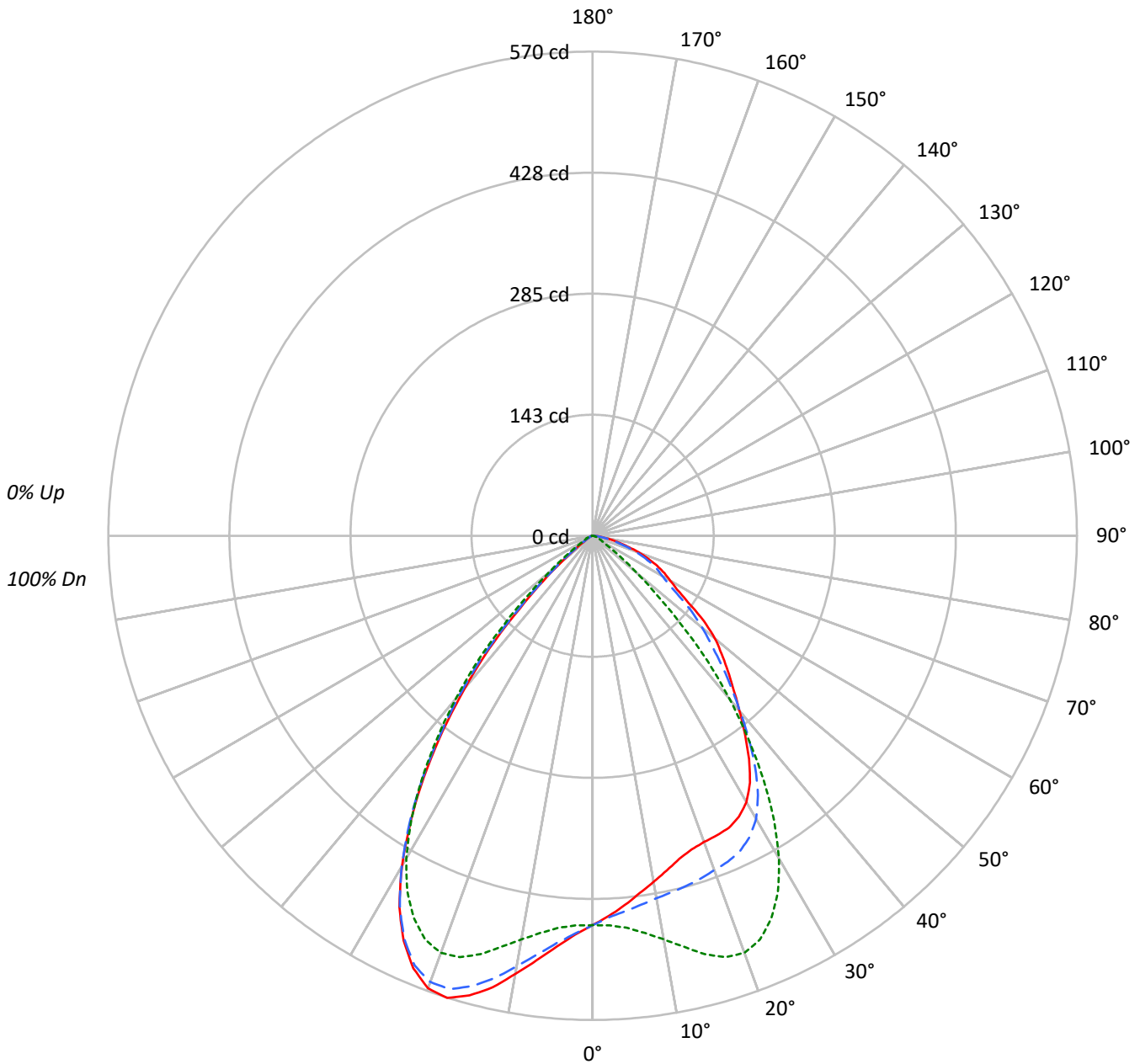
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	44675	44675	44675
5°	42683	45315	47487
10°	40930	47739	51826
15°	39733	51447	56522
20°	39784	54190	58784
25°	40798	53476	56573
30°	40749	49369	50517
35°	38167	41724	41153
40°	34185	31831	29694
45°	31011	20205	16581
50°	28489	10249	7081
55°	23397	4571	2345
60°	20525	2573	1286
65°	19325	1937	969
70°	16555	1539	855
75°	12614	1130	678
80°	9092	673	337
85°	6709	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	44.5	5.3
10°-20°	138.8	16.4
20°-30°	214.7	25.4
30°-40°	211.6	25.0
40°-50°	129.9	15.4
50°-60°	57.8	6.8
60°-70°	32.3	3.8
70°-80°	14.0	1.7
80°-90°	2.5	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°	398.0	47.0
0°-40°	609.6	72.1
0°-60°	797.3	94.2
0°-90°	846.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	846.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	458	458	458	458	458	
5°	436	444	463	481	485	41
15°	394	427	510	549	560	112
25°	379	410	497	524	526	174
35°	321	334	351	350	346	199
45°	225	214	147	128	120	174
55°	138	124	27	16	14	127
65°	84	75	8	5	4	82
75°	34	29	3	2	2	37
85°	6	5	0	0	0	7
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°	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4
2.5°	447.7	447.7	447.7	447.7	448.9	447.1	448.9	448.9	450.7	451.3	449.5
5°	436.3	435.7	436.3	436.3	437.5	436.9	438.7	439.9	442.3	443.5	443.5
7.5°	424.3	424.3	424.3	425.5	427.3	426.7	428.5	430.3	433.9	436.3	438.1
10°	413.6	413.0	414.8	415.4	417.1	417.1	420.1	421.9	426.1	430.9	433.3
12.5°	403.4	402.8	404.0	405.8	408.8	408.8	411.2	414.2	420.1	425.5	429.7
15°	393.8	394.4	396.2	397.4	401.0	401.0	404.0	407.6	414.2	420.7	426.7
17.5°	387.2	387.8	389.0	390.8	394.4	394.4	397.4	401.6	408.8	416.0	423.1
20°	383.6	384.2	385.4	387.2	390.2	390.8	393.2	398.0	404.6	412.4	418.9
22.5°	381.8	383.0	384.2	385.4	388.4	388.4	391.4	395.0	401.6	409.4	415.4
25°	379.4	380.6	381.2	383.0	385.4	385.4	387.2	391.4	397.4	404.0	410.0
27.5°	372.9	374.1	374.7	376.5	378.8	378.2	380.6	383.6	389.0	395.0	399.8
30°	362.1	362.7	363.9	364.5	366.3	366.3	368.1	371.1	374.7	380.0	384.8
32.5°	344.7	345.9	346.5	347.1	348.9	348.3	348.9	350.7	354.3	359.1	362.1
35°	320.8	323.2	323.2	324.4	325.0	324.4	324.4	326.8	328.6	332.2	334.0
37.5°	294.5	296.3	295.7	296.9	297.5	295.7	296.9	297.5	299.8	301.6	302.2
40°	268.7	269.3	269.3	269.3	269.3	268.7	269.3	269.9	271.7	271.7	269.9
42.5°	245.4	246.0	246.0	244.8	246.0	245.4	245.4	245.4	245.4	243.0	241.2
45°	225.0	225.6	225.6	225.0	225.0	223.8	223.2	222.6	220.8	217.9	213.7
47.5°	205.9	207.1	207.7	206.5	205.9	204.7	204.7	201.1	198.7	195.1	189.1
50°	187.9	189.1	189.1	187.9	187.9	186.1	184.3	183.1	179.5	175.4	168.2
52.5°	165.2	167.0	167.0	166.4	166.4	164.0	163.4	161.0	158.0	153.2	147.2
55°	137.7	140.0	139.4	138.9	137.7	137.7	137.7	135.9	134.1	130.5	124.5
57.5°	117.9	118.5	118.5	117.9	117.9	116.7	116.7	114.9	114.3	110.7	105.9
60°	105.3	105.3	105.9	105.3	104.7	104.1	103.5	102.3	100.5	98.2	94.6
62.5°	95.2	95.8	95.8	95.2	94.6	94.0	93.4	92.2	91.0	89.2	85.6
65°	83.8	85.0	84.4	83.8	83.2	82.6	82.6	81.4	80.2	79.0	75.4
67.5°	71.2	71.8	72.4	71.2	71.2	70.6	70.6	69.4	68.8	66.4	64.0
70°	58.1	58.7	58.7	58.1	58.1	57.5	57.5	56.9	56.3	54.5	52.1
72.5°	45.5	46.1	45.5	44.9	44.9	44.9	44.3	43.7	43.1	41.9	40.1
75°	33.5	33.5	34.1	33.5	32.9	32.9	32.3	32.3	31.1	30.5	28.7
77.5°	23.9	24.5	23.9	23.9	23.3	22.7	22.7	22.1	22.1	21.5	20.3
80°	16.2	16.2	16.8	16.2	15.6	16.2	15.6	15.0	15.0	14.4	13.2
82.5°	10.2	10.8	10.2	10.2	10.2	10.2	10.2	9.6	9.6	9.0	8.4
85°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.4	5.4	5.4	4.8
87.5°	3.0	3.0	2.4	2.4	3.0	3.0	3.0	2.4	2.4	2.4	2.4
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°	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4
2.5°	451.9	452.5	453.7	455.5	455.5	454.3	457.2	457.2	458.4	459.0	461.4
5°	447.1	448.3	450.7	453.7	454.3	453.7	457.8	459.6	461.4	463.2	466.8
7.5°	442.9	445.3	449.5	453.7	455.5	455.5	462.0	464.4	468.0	471.6	475.8
10°	440.5	444.1	450.1	456.6	458.4	460.2	468.0	472.8	477.6	482.4	488.4
12.5°	437.5	444.1	451.9	460.2	463.8	466.2	477.0	483.0	489.6	495.6	503.3
15°	436.9	444.7	454.9	465.6	470.4	474.0	486.0	494.4	502.1	509.9	517.7
17.5°	434.5	444.1	456.6	468.6	474.6	479.4	493.2	503.3	512.3	520.1	529.1
20°	431.5	442.3	456.1	469.2	475.8	480.6	495.6	505.1	515.3	522.5	530.9
22.5°	427.3	438.1	451.9	465.0	471.0	475.2	490.2	498.5	507.5	514.7	522.5
25°	420.1	430.3	442.3	453.1	459.0	462.6	475.8	483.6	490.2	497.3	504.5
27.5°	410.0	417.7	427.9	435.7	439.3	442.9	453.7	460.2	466.2	472.2	477.0
30°	392.0	398.0	405.2	411.8	415.4	416.0	426.1	429.7	434.5	438.7	442.3
32.5°	368.1	372.9	377.1	380.6	383.0	383.6	391.4	392.6	397.4	397.4	402.8
35°	337.5	339.9	342.9	342.9	344.7	342.9	348.3	349.5	350.1	350.7	354.9
37.5°	302.8	304.0	305.8	302.2	302.2	300.4	302.2	303.4	301.0	301.0	304.0
40°	269.9	267.5	265.1	261.5	259.7	256.2	256.2	253.2	251.4	250.2	250.8
42.5°	238.2	232.8	227.4	219.6	216.1	212.5	208.9	204.7	203.5	200.5	198.7
45°	207.7	199.9	192.7	180.1	173.0	169.4	161.6	153.2	147.8	146.6	141.8
47.5°	181.9	170.6	158.6	143.6	136.5	129.9	118.5	111.3	104.1	100.5	97.6
50°	159.2	149.0	133.5	117.3	108.3	101.7	89.2	80.8	73.0	67.6	64.0
52.5°	139.4	128.1	113.7	95.2	86.2	79.0	65.2	55.7	49.1	43.7	39.5
55°	117.3	108.3	94.0	76.6	67.6	59.3	47.3	37.1	30.5	26.9	23.9
57.5°	101.1	93.4	79.6	62.8	54.5	46.7	34.7	26.3	20.9	17.4	15.6
60°	90.4	83.2	71.2	55.1	47.3	40.1	28.7	20.9	16.2	13.2	12.0
62.5°	81.4	74.2	63.4	48.5	41.9	34.7	24.5	17.4	13.2	10.8	9.0
65°	71.2	64.6	55.1	41.9	35.9	29.9	20.9	14.4	10.8	8.4	7.2
67.5°	60.4	54.5	46.1	34.7	29.9	25.1	16.8	12.0	9.0	7.2	6.0
70°	49.1	44.3	36.5	28.1	23.9	19.8	13.8	9.6	6.6	5.4	4.8
72.5°	37.7	33.5	28.1	21.5	18.0	15.0	10.2	7.2	5.4	4.2	3.6
75°	26.9	23.9	19.8	15.6	13.2	10.8	7.8	5.4	3.6	3.0	2.4
77.5°	18.6	16.8	13.8	10.8	9.0	7.8	5.4	3.6	3.0	2.4	1.8
80°	12.0	10.8	9.0	6.6	5.4	4.8	3.0	2.4	1.8	1.2	1.2
82.5°	7.2	6.6	5.4	3.6	3.0	2.4	1.8	1.2	1.2	0.6	0.6
85°	4.2	3.6	2.4	1.8	1.8	1.2	1.2	0.6	0.6	0.0	0.0
87.5°	1.8	1.2	1.2	0.6	0.6	0.6	0.6	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°	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4
2.5°	460.2	463.2	462.6	464.4	463.8	463.8	466.8	465.6	468.6	468.6	469.2
5°	466.8	471.0	471.0	474.0	473.4	474.6	477.6	477.6	481.2	482.4	482.4
7.5°	476.4	481.8	483.0	486.0	486.6	489.0	491.4	492.0	496.7	497.9	498.5
10°	489.6	496.2	497.9	500.9	502.1	504.5	507.5	508.7	514.7	515.3	517.7
12.5°	505.7	512.9	514.7	518.3	518.9	521.9	526.1	527.3	533.3	535.1	536.8
15°	521.3	527.9	530.9	534.5	535.1	538.6	542.2	543.4	548.8	551.2	553.0
17.5°	532.1	539.8	541.6	546.4	546.4	549.4	553.0	554.2	559.6	561.4	562.6
20°	534.5	541.6	544.0	547.6	548.2	550.0	553.0	554.2	559.0	559.6	561.4
22.5°	525.5	532.7	533.9	537.4	538.0	539.8	542.2	541.6	547.6	547.0	547.6
25°	506.3	512.9	512.9	517.1	516.5	518.3	519.5	518.9	524.3	524.3	524.3
27.5°	478.8	484.8	485.4	488.4	486.6	487.2	488.4	487.8	491.4	491.4	491.4
30°	444.7	449.5	447.7	450.1	448.9	450.1	448.9	448.3	449.5	450.7	450.1
32.5°	402.2	405.8	405.8	406.4	406.4	402.8	401.6	401.6	401.0	400.4	400.4
35°	353.1	356.1	354.9	354.9	354.3	350.7	348.9	347.7	349.5	345.9	348.3
37.5°	302.8	303.4	301.6	301.0	298.0	298.0	295.1	292.7	293.9	293.3	290.9
40°	247.8	250.2	246.6	245.4	247.2	244.8	241.8	238.8	241.2	238.2	239.4
42.5°	193.9	193.3	192.1	192.1	192.1	188.5	187.9	187.3	187.9	185.5	183.7
45°	140.0	138.3	136.5	136.5	134.1	132.9	132.9	131.1	128.1	128.1	124.5
47.5°	94.6	90.4	89.2	88.6	87.4	87.4	86.2	85.0	84.4	81.4	81.4
50°	61.6	57.5	56.3	55.7	56.3	55.1	53.9	52.7	51.5	50.9	49.7
52.5°	37.1	35.3	34.1	33.5	32.3	31.7	31.1	29.9	29.3	29.3	28.7
55°	22.1	20.3	18.0	18.0	18.0	17.4	16.8	16.2	15.6	15.6	15.0
57.5°	13.8	12.6	11.4	10.8	10.8	10.8	10.2	10.2	10.2	10.2	9.6
60°	10.2	9.0	8.4	8.4	8.4	7.8	7.8	7.8	7.8	7.2	7.2
62.5°	7.8	7.2	6.6	6.6	6.0	6.0	6.0	6.0	6.0	6.0	5.4
65°	6.6	5.4	5.4	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
67.5°	4.8	4.2	4.2	4.2	4.2	3.6	3.6	3.6	3.6	3.6	3.6
70°	3.6	3.6	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
72.5°	3.0	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
75°	2.4	2.4	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
77.5°	1.8	1.8	1.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
80°	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
82.5°	0.6	0.6	0.6	0.6	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°	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4
2.5°	469.2	472.2	469.2	469.2	471.0	470.4	471.6	469.8
5°	483.0	487.2	484.2	483.6	486.6	486.0	486.6	485.4
7.5°	499.7	503.9	500.9	500.9	503.9	503.3	505.1	503.9
10°	518.9	523.7	519.5	520.1	524.3	523.7	523.7	523.7
12.5°	538.6	543.4	541.0	541.0	544.0	544.6	545.2	544.6
15°	554.8	559.6	556.6	556.6	560.8	560.2	560.8	560.2
17.5°	564.4	569.2	565.6	565.6	569.2	569.2	569.8	570.4
20°	562.0	567.4	564.4	563.2	567.4	567.4	566.8	566.8
22.5°	548.2	553.0	550.6	549.4	552.4	551.2	550.6	551.2
25°	524.3	529.1	524.3	524.3	526.7	526.1	526.7	526.1
27.5°	492.0	495.6	490.8	490.2	492.6	491.4	490.8	492.6
30°	448.9	452.5	450.1	448.3	451.3	449.5	448.3	448.9
32.5°	399.8	402.2	401.0	398.0	399.8	398.6	398.0	398.6
35°	345.9	348.9	344.1	343.5	346.5	344.1	342.9	345.9
37.5°	290.3	293.9	289.7	290.3	288.5	289.1	287.9	289.7
40°	237.6	237.0	235.8	235.2	235.8	234.0	235.2	233.4
42.5°	180.7	181.9	181.3	180.7	181.3	178.9	177.8	180.1
45°	125.7	125.1	123.9	122.7	122.7	122.1	122.1	120.3
47.5°	80.8	80.2	77.8	78.4	79.6	78.4	76.6	79.0
50°	49.1	48.5	48.5	47.9	49.1	47.9	46.7	46.7
52.5°	27.5	27.5	26.9	26.9	26.9	26.9	26.3	25.7
55°	15.0	14.4	14.4	14.4	13.8	13.8	13.8	13.8
57.5°	9.6	9.6	9.6	9.6	9.6	9.6	9.0	9.0
60°	7.2	7.2	7.2	7.2	6.6	7.2	6.6	6.6
62.5°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
65°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
67.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
70°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
72.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
75°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
80°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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)