

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: P219488

Luminaire Tested: **LDSQ4B10D010 EU4B10209727 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219488
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35471)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQ4B10D010 EU4B10209727 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 97CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 598.3 lumens
Efficiency: N/A
Efficacy: 59.5 lumens/watt
Spacing Criteria (0/90/45): 1.01 / 1 / 1.06
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

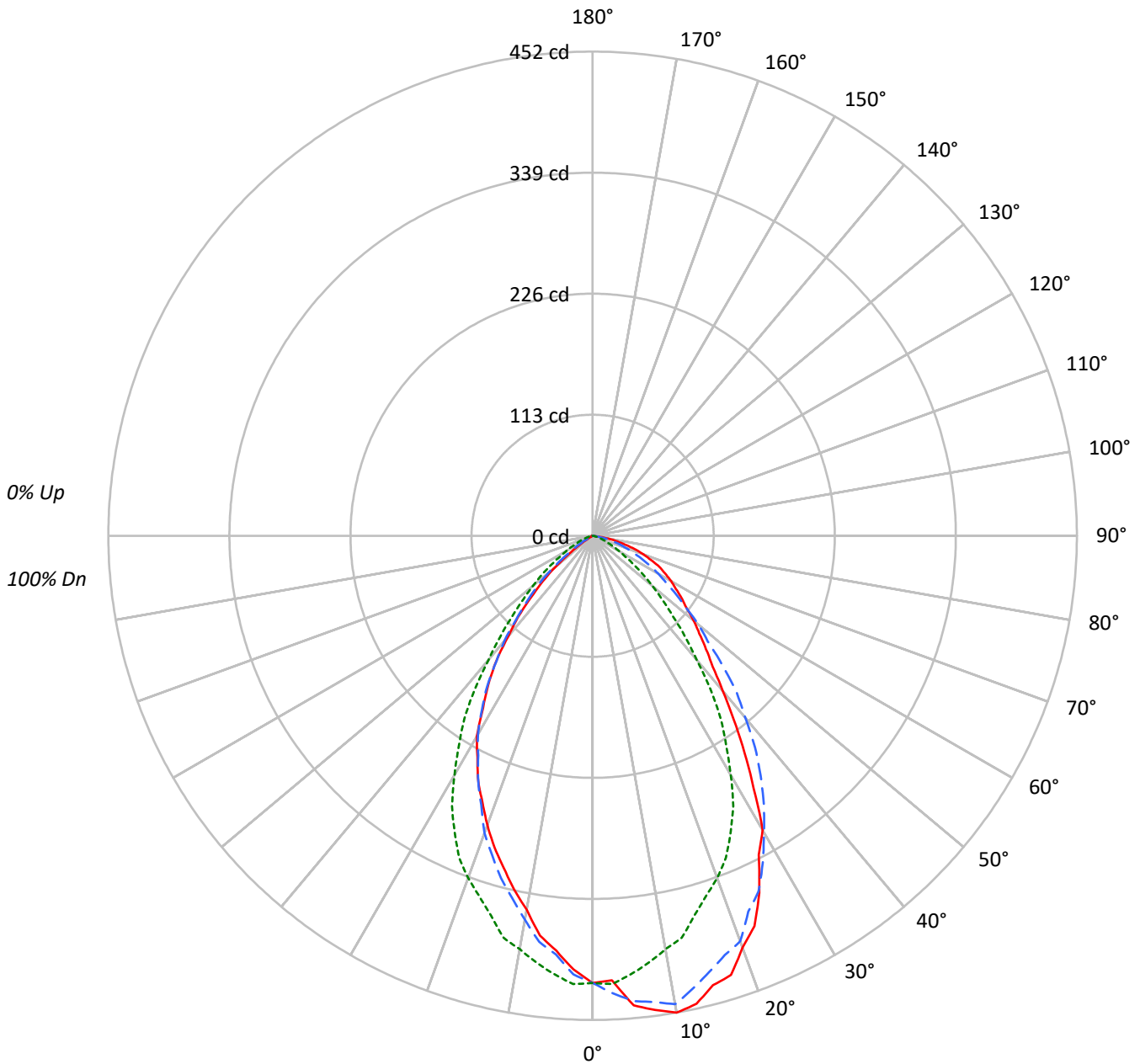
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	84	82	80																			
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72																			
4	91	81	74	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	80	69	61	56	78	68	61	56	66	60	55	65	59	55	63	58	54	53																			
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48																			
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44																			
9	66	55	48	43	65	54	47	43	53	47	43	52	46	42	51	46	42	41																			
10	62	51	44	40	61	51	44	40	50	44	39	49	43	39	48	43	39	38																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	40436	40436	40436
5°	42788	39958	37819
10°	44463	38551	34862
15°	43567	36797	32174
20°	42155	35031	29619
25°	39325	32580	27022
30°	35494	28838	24185
35°	29246	24682	20069
40°	23863	19058	15441
45°	20509	14467	11111
50°	18553	11017	7008
55°	17076	7938	2533
60°	16391	5425	388
65°	15840	3668	115
70°	14191	2549	142
75°	11603	1310	0
80°	7252	558	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	39.1	6.5
10°-20°	105.4	17.6
20°-30°	140.7	23.5
30°-40°	133.6	22.3
40°-50°	92.3	15.4
50°-60°	51.0	8.5
60°-70°	25.3	4.2
70°-80°	10.0	1.7
80°-90°	0.9	0.2
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°	285.2	47.7
0°-40°	418.7	70.0
0°-60°	562.1	93.9
0°-90°	598.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	598.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	417	417	417	417	417	
5°	440	436	411	392	389	42
15°	434	421	367	331	321	123
25°	368	366	305	253	253	168
35°	247	273	209	172	170	155
45°	150	172	106	87	81	117
55°	101	95	47	24	15	91
65°	69	50	16	0	0	67
75°	31	19	4	0	0	33
85°	0	0	0	0	0	3
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°	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4
2.5°	415.4	426.9	427.9	426.9	428.4	427.9	430.4	427.9	430.9	426.4	427.4
5°	440.0	435.4	445.0	440.0	440.0	439.5	438.0	437.4	439.5	432.9	435.9
7.5°	446.5	453.0	461.5	451.0	451.5	451.5	448.5	447.5	447.5	435.4	439.0
10°	452.0	448.0	452.5	448.5	452.0	451.5	453.5	447.0	451.5	444.5	444.0
12.5°	447.5	446.0	452.0	445.5	443.5	444.0	441.5	440.0	441.5	433.4	432.9
15°	434.4	435.9	445.0	438.0	436.9	435.9	432.9	427.9	431.9	420.9	421.4
17.5°	429.9	427.4	428.9	422.9	424.4	423.4	422.9	418.4	417.4	410.4	410.4
20°	408.9	414.4	414.4	410.4	410.4	409.9	403.4	407.4	402.9	400.9	402.9
22.5°	394.4	394.9	394.9	391.4	391.9	389.9	386.4	383.9	386.4	383.9	379.9
25°	367.9	368.9	374.9	368.4	367.4	369.4	366.4	364.9	364.4	358.4	366.4
27.5°	335.8	345.9	345.4	342.9	345.9	341.9	340.3	340.9	342.4	341.9	343.9
30°	317.3	318.8	320.3	318.3	318.8	317.3	317.3	317.8	321.8	320.3	319.8
32.5°	279.8	284.8	288.8	288.8	289.3	290.8	290.3	300.8	303.3	298.3	297.3
35°	247.3	250.8	254.3	254.8	261.3	261.8	262.3	265.3	272.3	273.8	273.3
37.5°	216.2	219.7	220.7	225.2	228.7	232.2	236.2	240.2	246.3	251.3	248.8
40°	188.7	190.2	192.7	194.7	201.7	201.7	203.7	211.7	218.2	222.2	221.7
42.5°	165.7	166.2	168.2	171.7	178.2	176.7	178.2	183.7	193.2	193.7	199.2
45°	149.7	149.2	150.7	151.2	155.2	157.2	158.2	162.2	170.2	171.2	171.7
47.5°	135.1	134.6	137.1	138.1	139.6	141.6	141.6	142.1	145.1	147.7	145.6
50°	123.1	123.1	123.1	124.1	126.6	126.1	126.6	128.6	130.1	129.1	128.6
52.5°	110.1	112.1	113.6	114.1	114.6	114.6	115.1	114.1	113.6	112.1	109.1
55°	101.1	103.1	103.1	103.1	103.1	105.1	102.6	103.1	103.1	99.1	95.1
57.5°	92.1	94.1	95.6	93.6	95.6	93.6	92.6	92.1	91.1	87.1	81.1
60°	84.6	85.6	85.1	84.6	85.6	84.1	83.1	81.1	80.1	74.6	70.6
62.5°	76.1	76.6	77.1	76.1	75.1	74.6	72.6	69.6	67.6	63.1	59.6
65°	69.1	67.6	67.1	66.6	65.6	64.1	62.6	59.1	57.6	53.6	50.1
67.5°	58.6	58.1	59.1	57.6	55.1	55.1	53.6	50.6	47.0	44.5	41.0
70°	50.1	49.6	48.5	47.0	46.5	44.5	44.5	41.0	40.0	35.5	32.5
72.5°	41.0	41.0	39.5	38.0	36.5	35.5	35.0	32.5	31.0	28.5	26.0
75°	31.0	31.0	30.5	29.0	28.0	27.0	26.5	24.5	23.0	20.5	19.0
77.5°	22.0	22.0	20.0	19.0	19.5	18.5	17.5	17.0	16.5	15.0	13.0
80°	13.0	12.5	11.0	11.5	11.0	11.0	10.5	10.0	9.0	8.0	7.0
82.5°	3.5	4.0	4.0	4.0	4.5	3.5	3.5	3.5	4.0	4.0	2.5
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5
87.5°	0.5	1.0	2.0	2.0	2.0	2.0	2.0	1.5	1.5	1.5	1.0
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°	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4
2.5°	422.4	421.9	422.4	418.9	426.9	420.9	419.9	418.9	422.4	418.9	413.9
5°	431.4	426.4	424.9	423.4	427.9	420.9	419.4	419.9	417.4	410.9	411.4
7.5°	434.4	429.9	425.4	415.9	419.9	418.4	414.4	411.4	407.4	401.9	400.9
10°	435.4	430.4	423.9	420.9	414.9	412.9	411.4	406.4	401.4	391.9	389.4
12.5°	432.4	426.4	418.4	415.9	411.4	404.9	401.4	396.4	391.9	384.4	378.9
15°	419.4	414.4	411.9	403.4	401.4	397.4	390.4	383.4	376.9	366.9	363.9
17.5°	404.4	402.4	399.9	393.4	392.9	388.9	382.4	376.4	367.9	352.4	347.4
20°	388.9	388.9	380.9	378.4	383.4	375.4	370.4	364.9	347.4	339.8	330.8
22.5°	377.4	371.9	367.4	363.4	363.9	358.9	351.9	340.9	334.3	325.3	314.8
25°	354.9	356.9	346.9	345.4	346.9	335.3	331.8	322.8	313.3	304.8	296.8
27.5°	340.9	335.3	328.8	323.3	323.3	318.8	308.8	306.8	292.3	284.3	274.3
30°	319.8	315.8	310.3	302.3	301.3	297.8	289.8	284.8	269.8	257.8	252.3
32.5°	293.3	291.8	287.3	278.3	275.3	271.3	261.3	252.8	245.8	232.2	225.7
35°	274.3	268.8	259.3	251.8	249.3	242.2	234.2	228.2	220.7	208.7	200.2
37.5°	245.8	240.2	231.2	222.2	222.2	215.2	204.2	198.2	187.7	180.7	173.7
40°	220.7	213.7	204.7	194.2	192.7	182.7	178.2	168.2	161.7	150.7	149.7
42.5°	192.7	186.2	178.2	170.2	164.2	159.2	147.7	140.1	133.1	127.6	126.1
45°	167.2	158.7	151.7	141.6	135.6	129.6	122.1	117.1	111.6	105.6	102.1
47.5°	145.1	138.1	128.1	119.1	113.1	110.1	101.6	96.1	91.6	87.6	85.1
50°	122.6	114.1	108.6	98.6	97.6	90.6	83.6	79.1	76.6	73.1	69.6
52.5°	105.6	97.6	90.1	82.6	78.6	76.1	69.6	65.1	61.6	59.1	57.1
55°	89.1	82.1	76.1	68.6	66.1	62.6	55.1	54.1	50.6	47.0	44.5
57.5°	76.6	70.1	63.1	58.1	53.6	51.1	45.0	41.0	39.0	36.0	33.5
60°	65.1	58.1	52.6	46.5	44.5	41.0	36.5	33.0	30.5	28.0	25.5
62.5°	54.6	48.5	42.5	37.5	34.5	32.5	29.0	26.0	23.5	21.5	19.5
65°	45.0	39.5	34.5	29.5	28.0	25.5	23.0	20.5	18.5	16.0	14.0
67.5°	37.0	32.0	27.0	23.5	22.0	21.0	18.0	15.5	14.0	12.5	10.5
70°	29.0	25.5	21.5	18.5	17.0	15.5	13.5	12.0	10.0	9.0	7.5
72.5°	22.5	19.5	16.0	13.5	12.5	11.5	9.5	8.0	7.0	6.0	5.0
75°	16.0	13.5	11.5	9.0	8.5	8.0	6.5	5.5	4.5	3.5	3.0
77.5°	11.0	9.0	7.0	6.0	5.5	4.5	4.0	3.0	2.5	2.0	1.5
80°	6.0	4.5	3.5	3.0	2.5	2.0	2.0	1.5	1.0	1.0	0.5
82.5°	2.0	1.5	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.5
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°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	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°	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4
2.5°	416.9	411.4	412.9	412.9	411.9	411.9	410.9	409.4	409.9	406.9	400.4
5°	412.4	405.4	404.4	405.4	401.4	400.4	398.4	401.4	392.4	395.9	391.9
7.5°	399.4	392.9	391.4	394.9	389.9	386.9	386.4	390.4	382.4	378.4	373.9
10°	384.9	382.4	377.9	375.4	373.9	374.4	370.4	365.4	363.9	362.9	358.9
12.5°	371.9	366.4	362.4	359.4	358.4	358.4	351.9	350.9	346.4	345.4	339.3
15°	356.4	349.9	347.4	343.4	339.8	341.9	334.3	332.3	330.8	324.3	325.3
17.5°	342.9	335.8	329.8	327.3	324.3	321.3	314.3	315.8	312.3	312.3	303.3
20°	325.3	317.8	313.3	308.3	308.3	304.3	299.3	299.8	295.3	290.8	282.8
22.5°	306.8	298.8	293.3	291.3	286.3	285.3	279.3	277.8	271.8	272.3	265.3
25°	287.3	279.3	271.8	272.3	267.8	265.8	262.3	255.3	252.8	249.8	247.8
27.5°	264.3	258.8	252.3	251.8	243.3	243.8	239.2	237.2	231.2	232.7	228.2
30°	243.3	235.2	229.2	227.7	224.2	223.2	216.2	213.2	214.2	210.2	207.7
32.5°	221.7	209.7	207.2	204.2	202.2	199.7	194.7	196.7	192.2	193.2	189.2
35°	193.2	188.2	181.7	181.7	179.7	177.7	174.2	176.2	171.7	169.7	165.7
37.5°	169.2	164.7	158.2	160.2	156.7	153.7	150.7	151.2	147.2	146.7	142.6
40°	143.1	140.6	136.1	136.1	133.6	133.6	132.1	130.6	128.1	125.1	120.6
42.5°	118.6	116.6	114.6	115.1	111.6	114.6	110.6	113.1	105.1	104.6	101.6
45°	100.6	96.1	96.6	94.6	92.6	93.6	90.1	91.1	86.6	85.6	82.6
47.5°	81.6	80.1	77.1	76.1	76.1	74.6	73.1	72.6	70.6	68.1	64.1
50°	67.1	61.6	60.6	59.1	58.1	58.1	56.1	53.1	53.6	51.1	47.0
52.5°	52.6	48.0	46.0	45.5	43.5	42.5	40.0	38.0	36.5	35.5	33.0
55°	40.5	36.5	34.0	34.0	31.0	31.0	27.5	26.0	24.0	22.0	20.5
57.5°	30.5	28.5	26.0	24.0	23.0	20.5	18.5	16.0	14.5	11.5	9.5
60°	23.0	21.0	18.5	17.0	16.0	13.5	11.0	9.0	5.5	4.5	4.0
62.5°	17.0	15.0	12.5	11.5	10.5	8.5	6.0	3.0	1.5	1.5	1.5
65°	12.5	10.0	8.0	7.0	6.0	4.5	2.0	1.0	0.5	0.5	0.5
67.5°	8.5	6.5	4.5	4.0	3.0	1.5	0.5	0.5	0.5	0.5	0.5
70°	5.5	4.0	2.0	1.5	1.0	0.5	0.5	0.5	0.5	0.5	0.5
72.5°	3.5	2.0	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	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	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5
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°	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4
2.5°	407.4	403.9	405.9	401.4	403.4	406.9	404.4	405.4
5°	393.4	391.4	388.9	382.4	387.4	391.4	389.4	388.9
7.5°	378.4	371.4	374.9	372.9	371.9	375.9	371.4	376.4
10°	362.9	357.9	357.4	353.9	353.9	356.9	357.4	354.4
12.5°	339.8	337.3	337.3	336.8	336.3	339.3	339.8	338.3
15°	323.3	322.3	319.8	319.3	316.3	320.8	321.3	320.8
17.5°	303.3	303.8	301.3	301.3	303.3	304.8	300.8	304.8
20°	289.8	287.3	286.3	281.8	284.3	286.8	286.8	287.3
22.5°	270.3	266.3	267.8	265.3	263.8	267.3	267.3	268.8
25°	248.3	248.3	249.3	247.8	248.8	250.8	249.3	252.8
27.5°	227.2	229.2	229.2	227.2	228.2	234.2	236.7	232.7
30°	207.7	208.2	209.7	208.7	211.7	213.7	213.2	216.2
32.5°	185.7	188.2	189.2	187.7	188.7	193.2	190.7	190.2
35°	168.7	164.2	163.7	164.2	166.2	167.2	166.2	169.7
37.5°	144.1	142.6	140.6	141.1	142.6	144.6	145.6	148.2
40°	120.6	118.6	118.6	118.1	116.6	122.1	122.1	122.1
42.5°	100.1	99.6	97.1	97.1	99.1	100.6	99.6	103.1
45°	82.1	80.1	78.6	78.6	80.1	80.1	81.6	81.1
47.5°	64.6	62.6	63.1	61.6	63.1	65.1	62.6	63.1
50°	48.5	48.5	47.5	48.5	48.0	48.5	47.5	46.5
52.5°	33.0	37.5	38.0	36.0	31.5	27.5	25.0	27.0
55°	19.0	17.0	17.0	16.5	15.5	15.0	13.5	15.0
57.5°	9.5	8.5	8.5	8.5	8.0	7.5	6.5	6.5
60°	4.0	3.5	3.5	3.0	2.5	2.0	1.5	2.0
62.5°	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0
65°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
67.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
70°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)