

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: P251588

Luminaire Tested: **LD4B10D010 EU4B10209027 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251588
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B10D010 EU4B10209027 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 782.0 lumens
Efficiency: N/A
Efficacy: 77.8 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

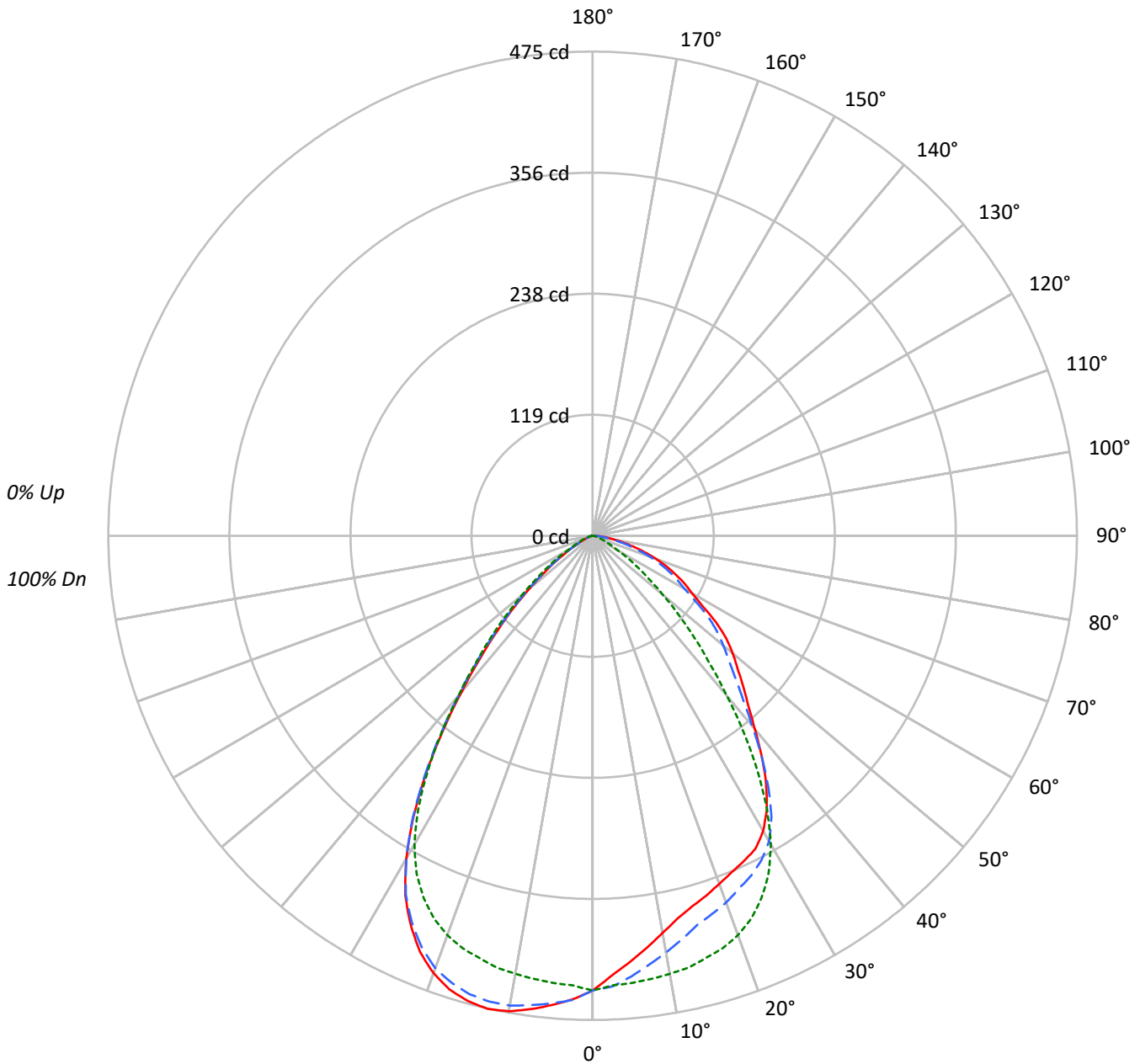
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89																			
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79																			
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70																			
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62																			
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56																			
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50																			
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46																			
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42																			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38																			
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	43476	43476	43476
5°	41059	43084	45217
10°	39139	43177	46878
15°	37997	43274	47683
20°	37679	43227	47345
25°	37830	42164	45379
30°	37654	39331	41143
35°	35288	33586	33920
40°	31449	26042	25457
45°	28764	19420	18221
50°	27200	13600	12296
55°	25011	9175	7714
60°	21850	5380	4249
65°	20685	3436	2375
70°	18835	2451	1482
75°	15589	1732	1092
80°	12235	954	617
85°	10958	671	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	42.1	5.4
10°-20°	120.9	15.5
20°-30°	179.3	22.9
30°-40°	179.5	23.0
40°-50°	125.5	16.0
50°-60°	74.6	9.5
60°-70°	39.0	5.0
70°-80°	17.3	2.2
80°-90°	3.8	0.5
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°	342.3	43.8
0°-40°	521.8	66.7
0°-60°	721.9	92.3
0°-90°	782.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	782.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	446	446	446	446	446	
5°	420	434	440	460	462	39
15°	377	396	429	466	473	107
25°	352	368	392	419	422	162
35°	297	300	282	287	285	184
45°	209	198	141	136	132	162
55°	147	138	54	47	45	131
65°	90	82	15	11	10	89
75°	41	36	5	3	3	45
85°	10	8	1	1	0	11
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°	446.1	446.1	446.1	446.1	446.1	446.1	446.1	446.1	446.1	446.1	446.1
2.5°	431.7	436.9	431.7	433.5	440.4	434.0	437.5	437.5	435.8	439.8	442.7
5°	419.7	424.8	419.7	422.0	429.4	423.1	427.1	426.0	426.6	430.0	434.0
7.5°	407.6	411.6	407.0	409.9	416.8	411.6	415.1	415.1	415.7	420.8	424.3
10°	395.5	399.0	395.5	397.8	405.3	400.7	403.0	403.6	405.3	409.9	415.1
12.5°	384.6	387.5	384.0	387.5	393.8	389.2	392.1	392.7	394.4	399.6	405.3
15°	376.6	379.4	376.0	378.9	384.6	381.2	383.5	384.6	385.8	390.4	395.5
17.5°	370.2	372.5	369.7	373.1	377.7	373.7	377.1	377.1	378.9	383.5	389.2
20°	363.3	365.6	363.3	366.2	371.4	367.9	370.8	370.8	372.5	377.7	382.9
22.5°	357.0	358.2	357.0	359.3	364.5	361.6	363.3	363.9	365.6	370.2	374.8
25°	351.8	354.1	353.0	355.3	358.7	355.9	357.6	358.2	359.9	363.9	367.9
27.5°	346.1	347.2	346.1	349.0	351.8	349.5	351.3	350.7	351.8	355.3	358.7
30°	334.6	335.7	335.7	337.5	339.8	338.6	340.3	338.6	339.8	342.6	346.1
32.5°	317.9	318.5	319.1	320.8	322.5	320.8	321.9	321.9	321.9	324.2	326.5
35°	296.6	297.8	297.2	298.4	300.1	299.5	299.5	298.9	297.8	298.9	300.1
37.5°	272.5	270.8	270.8	272.5	273.7	271.4	272.5	271.4	271.4	271.9	271.9
40°	247.2	245.5	247.2	247.8	248.4	247.2	246.6	245.5	243.8	244.3	243.2
42.5°	225.9	224.8	225.4	225.4	225.9	224.8	225.4	223.1	221.3	220.2	218.5
45°	208.7	207.0	208.7	207.5	207.5	207.0	206.4	205.2	202.9	201.2	198.3
47.5°	192.6	192.6	193.2	193.2	193.2	192.0	192.0	189.7	187.4	185.1	181.1
50°	179.4	178.2	180.5	180.5	178.8	178.2	178.8	175.9	174.2	171.3	167.3
52.5°	165.0	165.0	165.6	165.6	165.0	163.8	164.4	162.1	160.4	157.5	153.5
55°	147.2	146.0	147.7	147.7	147.2	146.6	147.2	145.4	143.7	141.4	138.0
57.5°	127.1	126.5	127.6	128.2	127.1	127.1	127.6	125.9	125.3	123.0	119.6
60°	112.1	111.5	112.7	113.3	112.1	112.1	112.1	109.8	108.7	106.4	104.1
62.5°	101.8	101.2	102.3	101.8	101.2	100.6	101.2	98.9	97.7	95.4	93.1
65°	89.7	90.3	90.8	90.8	90.3	89.7	89.7	88.5	87.4	85.1	82.2
67.5°	78.2	78.2	78.8	79.3	78.8	78.8	78.8	77.0	75.9	74.2	70.7
70°	66.1	65.5	67.3	67.3	66.1	66.7	66.1	65.5	64.4	62.1	59.2
72.5°	53.5	53.5	54.0	54.0	53.5	53.5	53.5	52.9	51.2	50.0	47.1
75°	41.4	41.4	42.0	42.5	41.4	41.4	42.0	40.8	39.7	37.9	36.2
77.5°	31.0	30.5	31.0	31.0	30.5	30.5	30.5	29.9	29.3	27.6	25.9
80°	21.8	21.3	21.8	21.8	21.8	21.3	21.3	20.7	20.7	19.5	17.8
82.5°	14.9	14.4	14.9	14.9	14.9	14.4	14.4	14.4	13.8	13.2	12.1
85°	9.8	9.2	9.2	9.8	9.2	9.2	9.2	9.2	8.6	8.0	7.5
87.5°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.0	4.0	4.0	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°	446.1	446.1	446.1	446.1	446.1	446.1	446.1	446.1	446.1	446.1	446.1
2.5°	440.4	439.2	442.7	441.5	442.1	439.2	443.8	441.5	444.4	441.5	447.3
5°	432.9	431.7	436.9	436.3	436.9	434.6	439.8	439.2	442.7	440.4	446.7
7.5°	424.8	423.7	429.4	430.0	431.2	428.9	435.8	435.8	439.2	438.6	445.5
10°	415.7	416.2	422.0	423.1	425.4	424.3	430.6	432.3	436.9	436.3	445.0
12.5°	407.0	407.0	414.5	416.8	418.5	418.0	425.4	427.7	432.9	434.0	442.1
15°	398.4	399.0	405.9	409.3	411.6	411.1	419.1	422.0	428.3	428.9	438.6
17.5°	391.5	390.9	398.4	401.3	404.7	404.2	412.8	416.2	422.6	424.3	433.5
20°	385.8	385.2	392.1	395.5	397.8	397.3	405.9	409.9	415.7	416.8	426.0
22.5°	378.9	377.7	384.6	387.5	389.8	389.2	396.7	399.6	405.3	406.5	415.1
25°	370.8	369.7	376.0	377.7	379.4	378.3	384.6	386.3	390.9	392.1	400.7
27.5°	361.6	358.7	363.9	363.9	365.1	363.3	367.9	369.7	373.7	373.7	381.7
30°	347.2	343.2	346.1	345.5	346.1	343.8	346.7	347.2	350.1	349.5	355.3
32.5°	327.1	321.4	323.1	321.4	319.6	316.2	319.6	318.5	320.8	318.5	323.7
35°	299.5	293.8	293.2	290.9	289.2	286.3	286.3	283.4	284.0	282.3	285.7
37.5°	269.6	262.2	261.0	256.4	253.5	250.1	250.1	247.8	244.9	243.8	246.6
40°	240.3	232.3	229.4	221.9	219.0	215.6	213.3	210.4	209.3	204.7	207.0
42.5°	215.0	206.4	200.1	192.0	189.1	184.0	180.5	177.1	175.3	170.2	172.5
45°	193.7	183.4	176.5	166.1	162.1	156.4	151.2	147.2	143.1	140.9	139.7
47.5°	175.9	165.0	155.8	144.3	138.0	132.8	125.9	121.9	116.7	113.8	112.1
50°	161.0	148.9	138.6	125.3	119.0	113.3	105.2	98.9	94.3	89.7	88.5
52.5°	147.7	135.1	123.6	108.7	101.2	94.3	85.7	78.8	74.7	69.6	69.0
55°	132.2	121.3	108.7	93.1	85.7	78.8	69.6	62.7	57.5	54.0	52.9
57.5°	115.6	105.2	93.1	77.6	70.1	62.7	54.0	47.7	43.1	40.2	39.7
60°	100.0	90.3	78.8	63.2	55.8	49.4	40.2	33.9	29.9	27.6	26.4
62.5°	88.5	79.3	68.4	54.0	47.1	40.8	32.2	26.4	23.0	20.7	19.5
65°	77.6	68.4	58.6	45.4	39.7	33.9	25.9	20.7	17.2	14.9	13.8
67.5°	66.1	58.1	48.9	37.9	32.2	27.6	20.7	16.1	13.2	11.5	10.3
70°	54.6	47.1	39.7	30.5	26.4	21.8	16.1	12.6	9.8	8.6	7.5
72.5°	43.1	37.4	31.0	23.6	20.1	17.2	12.6	9.2	7.5	6.3	5.2
75°	32.2	28.2	23.0	17.8	14.9	12.6	9.2	6.9	5.7	4.6	4.0
77.5°	23.0	19.5	16.1	12.1	10.9	9.2	6.3	5.2	4.0	2.9	2.3
80°	15.5	13.8	10.9	8.6	6.9	6.3	4.6	3.4	2.3	1.7	1.7
82.5°	10.3	8.6	6.9	5.2	4.6	4.0	2.9	2.3	1.7	1.1	1.1
85°	6.3	5.2	4.0	2.9	2.9	2.3	1.7	1.1	0.6	0.6	0.6
87.5°	2.9	2.3	1.7	1.1	1.1	0.6	0.6	0.6	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°	446.1	446.1	446.1	446.1	446.1	446.1	446.1	446.1	446.1	446.1	446.1
2.5°	451.9	448.4	446.1	449.0	450.1	448.4	450.1	453.0	455.9	456.5	448.4
5°	452.4	449.0	447.8	451.3	451.9	451.3	453.0	457.0	460.5	461.6	453.6
7.5°	452.4	450.1	449.6	453.6	454.2	453.6	456.5	461.1	464.5	466.8	458.8
10°	451.3	450.1	450.7	454.2	455.3	455.3	459.3	464.5	468.0	470.3	462.2
12.5°	449.6	449.6	449.6	453.6	454.7	455.3	458.8	465.7	468.0	471.4	463.4
15°	446.7	446.7	446.7	450.7	452.4	452.4	456.5	462.8	465.7	469.1	461.1
17.5°	441.5	441.5	442.1	445.5	447.3	447.3	451.3	458.2	459.9	463.9	455.9
20°	434.0	434.0	434.6	438.1	439.8	438.6	443.8	449.6	451.3	454.7	446.7
22.5°	423.1	423.1	423.1	426.6	427.7	427.1	432.3	437.5	437.5	442.1	433.5
25°	407.0	408.2	407.0	410.5	411.6	411.1	415.7	420.3	419.1	424.3	415.7
27.5°	387.5	386.9	386.9	389.8	389.8	389.2	392.7	397.8	396.7	400.1	392.1
30°	360.5	362.2	359.3	363.3	361.6	360.5	362.8	367.4	365.6	368.5	362.2
32.5°	329.4	327.1	327.1	327.1	328.3	325.4	327.7	330.0	328.3	331.1	324.2
35°	288.6	289.2	287.4	288.0	288.6	285.1	287.4	289.7	287.4	289.2	282.8
37.5°	247.8	248.4	244.3	246.6	244.3	243.2	245.5	246.6	244.3	246.1	239.2
40°	207.0	205.8	205.2	205.2	205.8	202.9	204.7	206.4	204.7	205.8	199.5
42.5°	171.3	170.7	169.6	170.2	168.4	167.9	168.4	170.2	168.4	169.6	165.0
45°	140.3	139.1	137.4	138.0	138.0	135.1	136.8	138.0	136.3	136.8	132.8
47.5°	111.5	109.8	109.8	109.2	109.2	108.1	109.8	109.2	107.5	108.7	104.6
50°	86.8	85.7	85.7	85.7	85.7	83.9	84.5	85.7	83.9	83.9	81.6
52.5°	67.8	66.1	65.0	65.0	65.0	64.4	64.4	65.0	63.2	63.2	62.7
55°	51.2	50.6	48.9	48.9	48.9	47.1	47.7	47.7	47.1	47.1	45.4
57.5°	37.9	36.2	35.1	35.1	33.9	33.9	33.3	33.9	32.8	32.8	31.6
60°	25.3	24.1	23.6	23.0	23.0	22.4	23.0	22.4	22.4	21.8	21.3
62.5°	18.4	17.2	16.1	16.1	16.1	15.5	15.5	15.5	15.5	15.5	14.9
65°	13.2	12.1	12.1	11.5	11.5	10.9	10.9	10.9	10.9	10.9	10.3
67.5°	9.2	8.6	8.0	8.0	8.0	8.0	8.0	8.0	7.5	7.5	7.5
70°	6.9	6.3	5.7	5.7	5.7	5.7	5.7	5.2	5.7	5.7	5.2
72.5°	4.6	4.6	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
75°	3.4	3.4	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
77.5°	2.3	2.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	1.7	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	1.1	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
85°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	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°	446.1	446.1	446.1	446.1	446.1	446.1	446.1	446.1
2.5°	457.0	456.5	455.3	457.0	452.4	450.7	450.1	455.3
5°	463.4	462.2	462.2	463.9	458.8	457.6	456.5	462.2
7.5°	469.1	468.0	468.0	469.7	465.1	463.9	462.8	468.5
10°	472.6	472.6	472.6	473.7	469.7	468.5	468.0	473.7
12.5°	474.3	474.3	473.7	476.0	470.8	470.8	469.7	475.4
15°	472.0	472.0	472.0	473.7	469.1	468.0	468.0	472.6
17.5°	466.2	466.2	465.7	467.4	462.2	462.2	461.6	466.8
20°	457.6	457.6	456.5	458.8	453.6	451.9	451.3	456.5
22.5°	443.8	443.2	442.7	443.8	439.2	438.1	437.5	442.1
25°	426.0	425.4	424.3	425.4	420.3	418.5	418.5	422.0
27.5°	400.7	400.7	399.0	400.7	395.0	394.4	393.8	397.8
30°	369.7	367.4	366.2	368.5	362.8	362.8	361.6	365.6
32.5°	331.1	328.8	328.3	329.4	324.2	322.5	324.8	327.1
35°	286.9	287.4	285.1	285.1	280.6	281.1	281.7	285.1
37.5°	244.3	243.2	242.6	243.2	239.7	238.6	237.4	240.9
40°	204.7	201.8	201.2	201.2	198.3	197.8	198.3	200.1
42.5°	167.3	166.7	164.4	165.6	162.7	163.8	163.3	163.3
45°	135.1	135.7	133.4	135.1	132.8	131.1	131.1	132.2
47.5°	106.9	106.9	106.4	106.4	104.6	105.2	104.1	105.8
50°	82.8	82.8	81.6	82.2	81.1	81.1	80.5	81.1
52.5°	63.2	62.7	62.7	62.1	60.9	61.5	62.1	60.9
55°	46.0	46.6	45.4	46.0	44.8	45.4	44.8	45.4
57.5°	31.6	32.2	31.0	32.2	31.0	31.6	31.0	31.0
60°	21.8	21.8	21.3	21.8	21.3	21.3	20.7	21.8
62.5°	14.9	14.9	14.9	14.9	14.9	14.4	14.9	14.9
65°	10.9	10.3	10.3	10.3	10.3	10.3	10.3	10.3
67.5°	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
70°	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
72.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
75°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
77.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
85°	0.6	0.6	0.6	0.0	0.6	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)