

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: P251604

Luminaire Tested: **LD4B15D010 EU4B10209040 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251604
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: LD4B15D010 EU4B10209040 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1152.0 lumens
Efficiency: N/A
Efficacy: 80.1 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

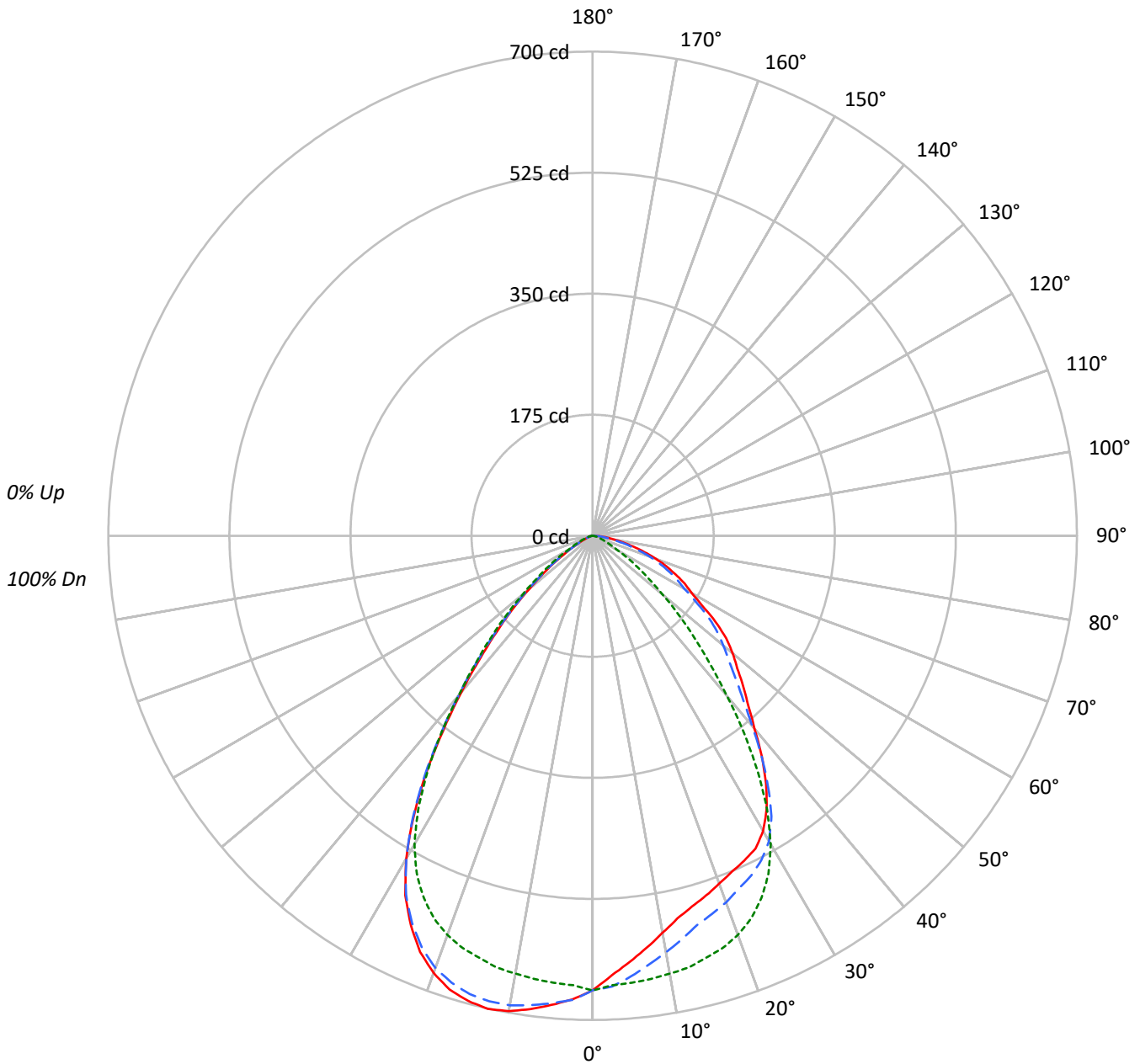
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	64049	64049	64049
5°	60479	63463	66613
10°	57665	63612	69065
15°	55967	63746	70244
20°	55507	63680	69736
25°	55734	62111	66843
30°	55468	57944	60611
35°	51992	49470	49981
40°	46334	38358	37492
45°	42368	28599	26849
50°	40057	20029	18103
55°	36837	13525	11367
60°	32181	7933	6276
65°	30463	5073	3505
70°	27754	3619	2166
75°	22969	2561	1582
80°	18072	1403	954
85°	16102	895	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.1	5.4
10°-20°	178.1	15.5
20°-30°	264.1	22.9
30°-40°	264.4	23.0
40°-50°	184.8	16.0
50°-60°	110.0	9.5
60°-70°	57.4	5.0
70°-80°	25.5	2.2
80°-90°	5.6	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°	504.3	43.8
0°-40°	768.7	66.7
0°-60°	1063.5	92.3
0°-90°	1152.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1152.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	657	657	657	657	657	
5°	618	639	649	678	681	58
15°	555	583	632	686	696	157
25°	518	542	578	617	622	239
35°	437	442	416	424	420	271
45°	307	292	208	201	195	239
55°	217	203	80	69	67	192
65°	132	121	22	16	15	131
75°	61	53	7	4	4	66
85°	14	11	1	1	0	16
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°	657.2	657.2	657.2	657.2	657.2	657.2	657.2	657.2	657.2	657.2	657.2
2.5°	636.0	643.7	636.0	638.6	648.7	639.4	644.5	644.5	642.0	647.9	652.1
5°	618.2	625.9	618.2	621.6	632.6	623.3	629.3	627.6	628.4	633.5	639.4
7.5°	600.5	606.4	599.6	603.8	614.0	606.4	611.5	611.5	612.3	619.9	625.0
10°	582.7	587.8	582.7	586.1	597.1	590.3	593.7	594.5	597.1	603.8	611.5
12.5°	566.6	570.8	565.7	570.8	580.1	573.4	577.6	578.4	581.0	588.6	597.1
15°	554.7	559.0	553.9	558.1	566.6	561.5	564.9	566.6	568.3	575.1	582.7
17.5°	545.4	548.8	544.6	549.6	556.4	550.5	555.6	555.6	558.1	564.9	573.4
20°	535.2	538.6	535.2	539.5	547.1	542.0	546.3	546.3	548.8	556.4	564.0
22.5°	525.9	527.6	525.9	529.3	536.9	532.7	535.2	536.1	538.6	545.4	552.2
25°	518.3	521.7	520.0	523.4	528.5	524.2	526.8	527.6	530.2	536.1	542.0
27.5°	509.8	511.5	509.8	514.1	518.3	514.9	517.5	516.6	518.3	523.4	528.5
30°	492.9	494.6	494.6	497.1	500.5	498.8	501.4	498.8	500.5	504.8	509.8
32.5°	468.3	469.2	470.0	472.6	475.1	472.6	474.3	474.3	474.3	477.7	481.0
35°	437.0	438.7	437.9	439.5	442.1	441.2	441.2	440.4	438.7	440.4	442.1
37.5°	401.4	398.9	398.9	401.4	403.1	399.7	401.4	399.7	399.7	400.6	400.6
40°	364.2	361.6	364.2	365.0	365.9	364.2	363.3	361.6	359.1	359.9	358.2
42.5°	332.8	331.1	332.0	332.0	332.8	331.1	332.0	328.6	326.1	324.4	321.8
45°	307.4	304.9	307.4	305.7	305.7	304.9	304.0	302.3	299.0	296.4	292.2
47.5°	283.7	283.7	284.6	284.6	284.6	282.9	282.9	279.5	276.1	272.7	266.8
50°	264.2	262.5	265.9	265.9	263.4	262.5	263.4	259.2	256.6	252.4	246.5
52.5°	243.1	243.1	243.9	243.9	243.1	241.4	242.2	238.8	236.3	232.1	226.1
55°	216.8	215.1	217.7	217.7	216.8	216.0	216.8	214.3	211.7	208.3	203.3
57.5°	187.2	186.3	188.0	188.9	187.2	187.2	188.0	185.5	184.6	181.2	176.2
60°	165.1	164.3	166.0	166.8	165.1	165.1	165.1	161.8	160.1	156.7	153.3
62.5°	149.9	149.1	150.7	149.9	149.1	148.2	149.1	145.7	144.0	140.6	137.2
65°	132.1	133.0	133.8	133.8	133.0	132.1	132.1	130.4	128.7	125.3	121.1
67.5°	115.2	115.2	116.0	116.9	116.0	116.0	116.0	113.5	111.8	109.3	104.2
70°	97.4	96.5	99.1	99.1	97.4	98.2	97.4	96.5	94.9	91.5	87.2
72.5°	78.8	78.8	79.6	79.6	78.8	78.8	78.8	77.9	75.4	73.7	69.4
75°	61.0	61.0	61.8	62.7	61.0	61.0	61.8	60.1	58.4	55.9	53.4
77.5°	45.7	44.9	45.7	45.7	44.9	44.9	44.9	44.0	43.2	40.7	38.1
80°	32.2	31.3	32.2	32.2	32.2	31.3	31.3	30.5	30.5	28.8	26.3
82.5°	22.0	21.2	22.0	22.0	22.0	21.2	21.2	21.2	20.3	19.5	17.8
85°	14.4	13.6	13.6	14.4	13.6	13.6	13.6	13.6	12.7	11.9	11.0
87.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	5.9	5.9	5.9	5.1
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°	657.2	657.2	657.2	657.2	657.2	657.2	657.2	657.2	657.2	657.2	657.2
2.5°	648.7	647.0	652.1	650.4	651.3	647.0	653.8	650.4	654.7	650.4	658.9
5°	637.7	636.0	643.7	642.8	643.7	640.3	647.9	647.0	652.1	648.7	658.0
7.5°	625.9	624.2	632.6	633.5	635.2	631.8	642.0	642.0	647.0	646.2	656.4
10°	612.3	613.2	621.6	623.3	626.7	625.0	634.3	636.9	643.7	642.8	655.5
12.5°	599.6	599.6	610.6	614.0	616.5	615.7	626.7	630.1	637.7	639.4	651.3
15°	586.9	587.8	597.9	603.0	606.4	605.5	617.4	621.6	630.9	631.8	646.2
17.5°	576.7	575.9	586.9	591.1	596.2	595.4	608.1	613.2	622.5	625.0	638.6
20°	568.3	567.4	577.6	582.7	586.1	585.2	597.9	603.8	612.3	614.0	627.6
22.5°	558.1	556.4	566.6	570.8	574.2	573.4	584.4	588.6	597.1	598.8	611.5
25°	546.3	544.6	553.9	556.4	559.0	557.3	566.6	569.1	575.9	577.6	590.3
27.5°	532.7	528.5	536.1	536.1	537.8	535.2	542.0	544.6	550.5	550.5	562.3
30°	511.5	505.6	509.8	509.0	509.8	506.5	510.7	511.5	515.8	514.9	523.4
32.5°	481.9	473.4	476.0	473.4	470.9	465.8	470.9	469.2	472.6	469.2	476.8
35°	441.2	432.8	431.9	428.5	426.0	421.8	421.8	417.5	418.4	415.8	420.9
37.5°	397.2	386.2	384.5	377.7	373.5	368.4	368.4	365.0	360.8	359.1	363.3
40°	354.0	342.2	337.9	326.9	322.7	317.6	314.2	310.0	308.3	301.5	304.9
42.5°	316.7	304.0	294.7	282.9	278.6	271.0	265.9	260.8	258.3	250.7	254.1
45°	285.4	270.2	260.0	244.8	238.8	230.4	222.7	216.8	210.9	207.5	205.8
47.5°	259.2	243.1	229.5	212.6	203.3	195.6	185.5	179.5	171.9	167.7	165.1
50°	237.1	219.3	204.1	184.6	175.3	166.8	155.0	145.7	138.9	132.1	130.4
52.5°	217.7	199.0	182.1	160.1	149.1	138.9	126.2	116.0	110.1	102.5	101.6
55°	194.8	178.7	160.1	137.2	126.2	116.0	102.5	92.3	84.7	79.6	77.9
57.5°	170.2	155.0	137.2	114.3	103.3	92.3	79.6	70.3	63.5	59.3	58.4
60°	147.4	133.0	116.0	93.2	82.2	72.8	59.3	50.0	44.0	40.7	39.0
62.5°	130.4	116.9	100.8	79.6	69.4	60.1	47.4	39.0	33.9	30.5	28.8
65°	114.3	100.8	86.4	66.9	58.4	50.0	38.1	30.5	25.4	22.0	20.3
67.5°	97.4	85.5	72.0	55.9	47.4	40.7	30.5	23.7	19.5	16.9	15.2
70°	80.5	69.4	58.4	44.9	39.0	32.2	23.7	18.6	14.4	12.7	11.0
72.5°	63.5	55.0	45.7	34.7	29.6	25.4	18.6	13.6	11.0	9.3	7.6
75°	47.4	41.5	33.9	26.3	22.0	18.6	13.6	10.2	8.5	6.8	5.9
77.5°	33.9	28.8	23.7	17.8	16.1	13.6	9.3	7.6	5.9	4.2	3.4
80°	22.9	20.3	16.1	12.7	10.2	9.3	6.8	5.1	3.4	2.5	2.5
82.5°	15.2	12.7	10.2	7.6	6.8	5.9	4.2	3.4	2.5	1.7	1.7
85°	9.3	7.6	5.9	4.2	4.2	3.4	2.5	1.7	0.8	0.8	0.8
87.5°	4.2	3.4	2.5	1.7	1.7	0.8	0.8	0.8	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°	657.2	657.2	657.2	657.2	657.2	657.2	657.2	657.2	657.2	657.2	657.2
2.5°	665.7	660.6	657.2	661.4	663.1	660.6	663.1	667.4	671.6	672.4	660.6
5°	666.5	661.4	659.7	664.8	665.7	664.8	667.4	673.3	678.4	680.1	668.2
7.5°	666.5	663.1	662.3	668.2	669.1	668.2	672.4	679.2	684.3	687.7	675.8
10°	664.8	663.1	664.0	669.1	670.8	670.8	676.7	684.3	689.4	692.8	680.9
12.5°	662.3	662.3	662.3	668.2	669.9	670.8	675.8	686.0	689.4	694.5	682.6
15°	658.0	658.0	658.0	664.0	666.5	666.5	672.4	681.8	686.0	691.1	679.2
17.5°	650.4	650.4	651.3	656.4	658.9	658.9	664.8	675.0	677.5	683.5	671.6
20°	639.4	639.4	640.3	645.3	647.9	646.2	653.8	662.3	664.8	669.9	658.0
22.5°	623.3	623.3	623.3	628.4	630.1	629.3	636.9	644.5	644.5	651.3	638.6
25°	599.6	601.3	599.6	604.7	606.4	605.5	612.3	619.1	617.4	625.0	612.3
27.5°	570.8	570.0	570.0	574.2	574.2	573.4	578.4	586.1	584.4	589.4	577.6
30°	531.0	533.6	529.3	535.2	532.7	531.0	534.4	541.2	538.6	542.9	533.6
32.5°	485.3	481.9	481.9	481.9	483.6	479.4	482.7	486.1	483.6	487.8	477.7
35°	425.1	426.0	423.5	424.3	425.1	420.1	423.5	426.8	423.5	426.0	416.7
37.5°	365.0	365.9	359.9	363.3	359.9	358.2	361.6	363.3	359.9	362.5	352.3
40°	304.9	303.2	302.3	302.3	303.2	299.0	301.5	304.0	301.5	303.2	293.9
42.5°	252.4	251.5	249.8	250.7	248.1	247.3	248.1	250.7	248.1	249.8	243.1
45°	206.6	205.0	202.4	203.3	203.3	199.0	201.6	203.3	200.7	201.6	195.6
47.5°	164.3	161.8	161.8	160.9	160.9	159.2	161.8	160.9	158.4	160.1	154.1
50°	127.9	126.2	126.2	126.2	126.2	123.6	124.5	126.2	123.6	123.6	120.3
52.5°	99.9	97.4	95.7	95.7	95.7	94.9	94.9	95.7	93.2	93.2	92.3
55°	75.4	74.5	72.0	72.0	72.0	69.4	70.3	70.3	69.4	69.4	66.9
57.5°	55.9	53.4	51.7	51.7	50.0	50.0	49.1	50.0	48.3	48.3	46.6
60°	37.3	35.6	34.7	33.9	33.9	33.0	33.9	33.0	33.0	32.2	31.3
62.5°	27.1	25.4	23.7	23.7	23.7	22.9	22.9	22.9	22.9	22.9	22.0
65°	19.5	17.8	17.8	16.9	16.9	16.1	16.1	16.1	16.1	16.1	15.2
67.5°	13.6	12.7	11.9	11.9	11.9	11.9	11.9	11.9	11.0	11.0	11.0
70°	10.2	9.3	8.5	8.5	8.5	8.5	8.5	7.6	8.5	8.5	7.6
72.5°	6.8	6.8	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
75°	5.1	5.1	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
77.5°	3.4	3.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
80°	2.5	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
82.5°	1.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
85°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	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°	657.2	657.2	657.2	657.2	657.2	657.2	657.2	657.2
2.5°	673.3	672.4	670.8	673.3	666.5	664.0	663.1	670.8
5°	682.6	680.9	680.9	683.5	675.8	674.1	672.4	680.9
7.5°	691.1	689.4	689.4	691.9	685.1	683.5	681.8	690.2
10°	696.2	696.2	696.2	697.9	691.9	690.2	689.4	697.9
12.5°	698.7	698.7	697.9	701.2	693.6	693.6	691.9	700.4
15°	695.3	695.3	695.3	697.9	691.1	689.4	689.4	696.2
17.5°	686.8	686.8	686.0	688.5	680.9	680.9	680.1	687.7
20°	674.1	674.1	672.4	675.8	668.2	665.7	664.8	672.4
22.5°	653.8	653.0	652.1	653.8	647.0	645.3	644.5	651.3
25°	627.6	626.7	625.0	626.7	619.1	616.5	616.5	621.6
27.5°	590.3	590.3	587.8	590.3	581.8	581.0	580.1	586.1
30°	544.6	541.2	539.5	542.9	534.4	534.4	532.7	538.6
32.5°	487.8	484.4	483.6	485.3	477.7	475.1	478.5	481.9
35°	422.6	423.5	420.1	420.1	413.3	414.1	415.0	420.1
37.5°	359.9	358.2	357.4	358.2	353.2	351.5	349.8	354.9
40°	301.5	297.3	296.4	296.4	292.2	291.3	292.2	294.7
42.5°	246.5	245.6	242.2	243.9	239.7	241.4	240.5	240.5
45°	199.0	199.9	196.5	199.0	195.6	193.1	193.1	194.8
47.5°	157.5	157.5	156.7	156.7	154.1	155.0	153.3	155.8
50°	122.0	122.0	120.3	121.1	119.4	119.4	118.6	119.4
52.5°	93.2	92.3	92.3	91.5	89.8	90.6	91.5	89.8
55°	67.8	68.6	66.9	67.8	66.1	66.9	66.1	66.9
57.5°	46.6	47.4	45.7	47.4	45.7	46.6	45.7	45.7
60°	32.2	32.2	31.3	32.2	31.3	31.3	30.5	32.2
62.5°	22.0	22.0	22.0	22.0	22.0	21.2	22.0	22.0
65°	16.1	15.2	15.2	15.2	15.2	15.2	15.2	15.2
67.5°	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
70°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
72.5°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
75°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
77.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
80°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
82.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
85°	0.8	0.8	0.8	0.0	0.8	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)