

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: P251930

Luminaire Tested: **LD4B20D010 EU4B10209050 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251930
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-15)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B20D010 EU4B10209050 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1524.0 lumens
Efficiency: N/A
Efficacy: 73.3 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

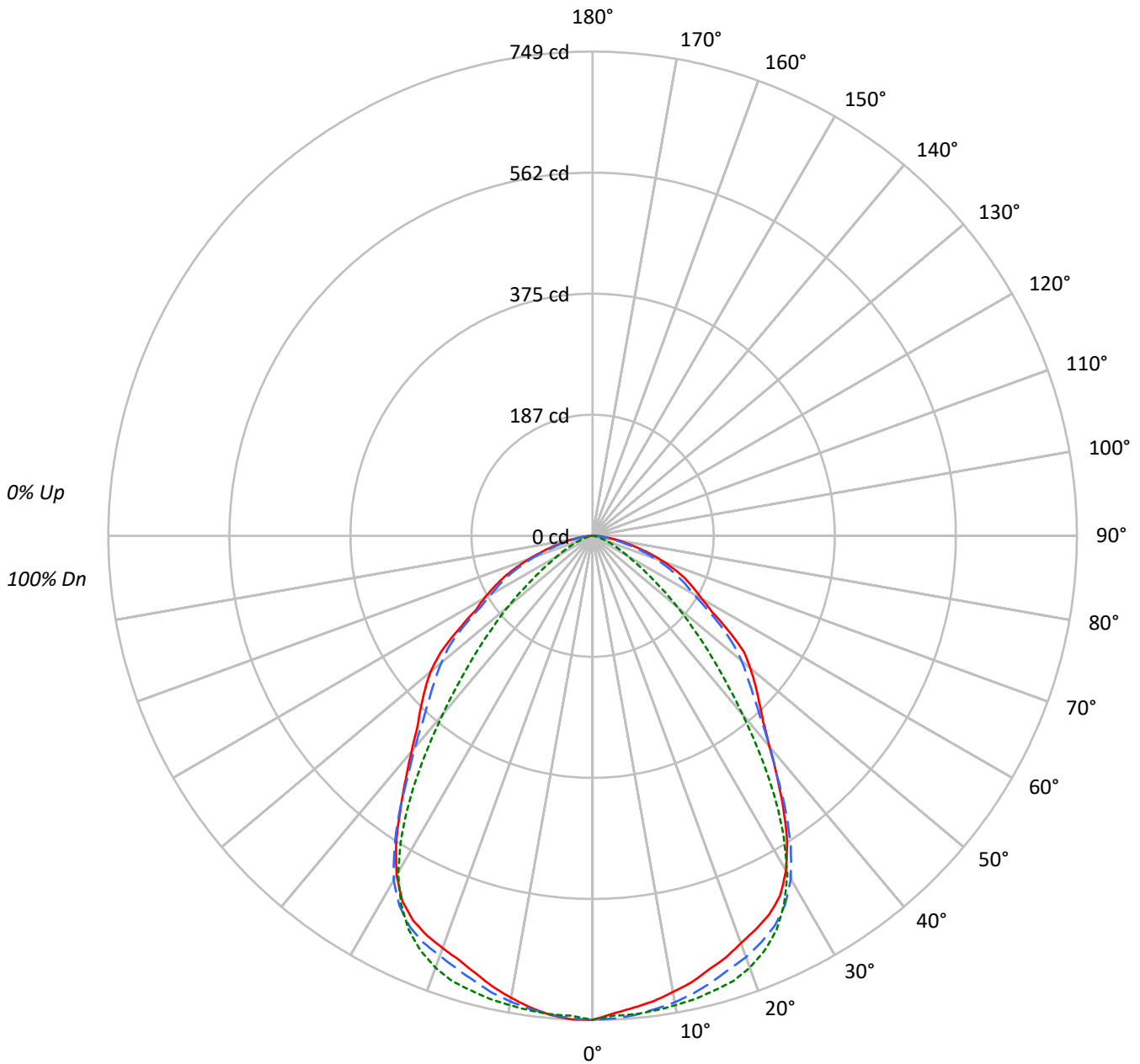
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88																			
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76																			
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66																			
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58																			
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51																			
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46																			
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41																			
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37																			
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34																			
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	72977	72977	72977
5°	71680	72698	72805
10°	70916	72964	71826
15°	70092	73462	70668
20°	69539	73719	70379
25°	69499	72348	70617
30°	67285	67678	68196
35°	61129	58250	61676
40°	54082	45876	55405
45°	50169	34939	51768
50°	48214	25851	49609
55°	43651	17807	43073
60°	37950	12124	37716
65°	36666	8763	34798
70°	33168	5898	29549
75°	27337	3916	23421
80°	22001	2582	17455
85°	18003	1342	11629



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	70.7	4.6
10°-20°	202.1	13.3
20°-30°	305.4	20.0
30°-40°	319.6	21.0
40°-50°	258.8	17.0
50°-60°	188.3	12.4
60°-70°	116.1	7.6
70°-80°	52.5	3.4
80°-90°	10.7	0.7
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°	578.2	37.9
0°-40°	897.7	58.9
0°-60°	1344.8	88.2
0°-90°	1524.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1524.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	749	749	749	749	749	
5°	733	744	743	743	744	69
15°	695	714	728	712	700	196
25°	646	666	673	668	657	296
35°	514	521	490	521	518	320
45°	364	352	254	357	376	283
55°	257	241	105	243	254	229
65°	159	143	38	141	151	156
75°	73	62	10	54	62	79
85°	16	13	1	9	10	18
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°	748.8	748.8	748.8	748.8	748.8	748.8	748.8	748.8	748.8	748.8	748.8
2.5°	739.6	739.6	746.5	754.6	747.7	740.8	745.4	743.1	751.1	751.1	747.7
5°	732.7	735.0	740.8	747.7	741.9	735.0	740.8	738.5	746.5	746.5	744.2
7.5°	725.8	726.9	733.9	741.9	736.2	729.2	733.9	732.7	739.6	740.8	738.5
10°	716.6	717.7	724.6	732.7	726.9	721.2	725.8	724.6	733.9	733.9	732.7
12.5°	707.4	708.5	715.4	722.3	716.6	710.8	715.4	715.4	724.6	725.8	724.6
15°	694.7	697.0	702.8	709.7	706.2	699.3	703.9	703.9	712.0	714.3	714.3
17.5°	684.3	685.5	691.2	698.1	693.5	687.8	692.4	692.4	700.4	702.8	702.8
20°	670.5	672.8	678.6	685.5	682.0	677.4	680.9	680.9	690.1	692.4	693.5
22.5°	659.0	661.3	665.9	675.1	669.3	665.9	670.5	669.3	679.7	680.9	680.9
25°	646.3	648.6	654.4	660.1	656.7	653.2	656.7	656.7	664.7	665.9	665.9
27.5°	627.9	629.0	634.8	640.5	637.1	632.5	637.1	635.9	644.0	645.1	644.0
30°	597.9	600.2	602.5	610.6	607.1	603.7	608.3	606.0	614.0	614.0	612.9
32.5°	559.9	559.9	564.5	570.3	565.7	563.4	566.8	568.0	573.7	573.7	570.3
35°	513.8	516.1	519.6	523.0	519.6	517.3	520.7	519.6	526.5	524.2	520.7
37.5°	467.7	468.9	472.3	476.9	472.3	468.9	470.0	468.9	474.6	474.6	468.9
40°	425.1	427.4	429.7	434.3	429.7	427.4	428.6	425.1	432.0	429.7	426.3
42.5°	390.5	391.7	395.2	397.5	392.8	391.7	392.8	390.5	394.0	391.7	384.8
45°	364.0	364.0	365.2	368.7	364.0	362.9	362.9	360.6	364.0	359.4	352.5
47.5°	341.0	342.2	343.3	345.6	342.2	338.7	339.9	335.2	337.6	334.1	324.9
50°	318.0	320.3	321.4	323.7	320.3	318.0	319.1	314.5	314.5	308.8	300.7
52.5°	294.9	296.1	294.9	297.2	294.9	291.5	292.6	288.0	288.0	281.1	273.0
55°	256.9	258.1	259.2	261.5	259.2	255.8	258.1	254.6	254.6	250.0	240.8
57.5°	218.9	220.0	221.2	222.3	222.3	220.0	221.2	218.9	217.7	214.3	207.4
60°	194.7	194.7	194.7	195.8	194.7	193.5	193.5	191.2	191.2	186.6	179.7
62.5°	176.3	177.4	177.4	178.6	177.4	176.3	175.1	172.8	171.7	167.0	161.3
65°	159.0	159.0	157.8	160.1	159.0	157.8	157.8	155.5	153.2	148.6	142.9
67.5°	138.2	139.4	138.2	139.4	139.4	138.2	137.1	134.8	133.6	130.2	123.3
70°	116.4	116.4	116.4	117.5	116.4	116.4	117.5	114.1	112.9	108.3	102.5
72.5°	94.5	95.6	95.6	94.5	95.6	93.3	93.3	93.3	92.2	87.6	81.8
75°	72.6	73.7	73.7	74.9	73.7	72.6	72.6	71.4	70.3	66.8	62.2
77.5°	54.1	54.1	55.3	55.3	55.3	54.1	54.1	51.8	51.8	49.5	44.9
80°	39.2	39.2	38.0	39.2	39.2	38.0	38.0	36.9	36.9	34.6	31.1
82.5°	25.3	26.5	26.5	26.5	26.5	25.3	25.3	25.3	24.2	23.0	20.7
85°	16.1	16.1	16.1	16.1	17.3	16.1	17.3	16.1	16.1	13.8	12.7
87.5°	6.9	6.9	6.9	8.1	8.1	6.9	6.9	6.9	6.9	6.9	5.8
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°	748.8	748.8	748.8	748.8	748.8	748.8	748.8	748.8	748.8	748.8	748.8
2.5°	747.7	748.8	745.4	750.0	746.5	747.7	748.8	747.7	743.1	743.1	755.7
5°	743.1	745.4	741.9	747.7	745.4	745.4	747.7	746.5	741.9	743.1	754.6
7.5°	738.5	741.9	739.6	745.4	741.9	741.9	744.2	744.2	739.6	740.8	751.1
10°	731.6	736.2	735.0	740.8	737.3	737.3	740.8	740.8	736.2	737.3	747.7
12.5°	725.8	730.4	729.2	735.0	732.7	733.9	735.0	737.3	731.6	733.9	743.1
15°	716.6	721.2	721.2	726.9	724.6	726.9	729.2	732.7	728.1	728.1	737.3
17.5°	706.2	712.0	712.0	716.6	716.6	717.7	722.3	725.8	721.2	722.3	730.4
20°	694.7	701.6	701.6	707.4	706.2	708.5	712.0	715.4	710.8	710.8	720.0
22.5°	683.2	688.9	690.1	693.5	693.5	694.7	698.1	700.4	694.7	694.7	703.9
25°	667.0	672.8	674.0	676.3	674.0	674.0	676.3	678.6	672.8	672.8	680.9
27.5°	645.1	650.9	650.9	649.8	647.5	648.6	647.5	648.6	642.8	641.7	649.8
30°	612.9	616.3	616.3	615.2	611.7	611.7	608.3	609.4	601.4	601.4	608.3
32.5°	569.1	572.6	570.3	568.0	563.4	561.0	558.7	557.6	549.5	549.5	557.6
35°	517.3	519.6	516.1	511.5	505.8	502.3	498.8	494.2	488.5	489.6	494.2
37.5°	464.3	464.3	459.7	450.5	445.8	440.1	434.3	434.3	425.1	424.0	427.4
40°	419.3	414.7	406.7	394.0	385.9	380.2	372.1	367.5	360.6	360.6	366.4
42.5°	379.0	369.8	359.4	342.2	334.1	327.2	316.8	312.2	304.1	303.0	306.4
45°	343.3	334.1	319.1	300.7	290.3	282.3	267.3	261.5	254.6	253.5	255.8
47.5°	314.5	304.1	285.7	261.5	251.1	240.8	225.8	217.7	212.0	208.5	212.0
50°	289.2	275.3	255.8	230.4	216.6	207.4	188.9	180.9	172.8	170.5	171.7
52.5°	261.5	247.7	227.0	200.5	187.8	174.0	156.7	145.2	138.2	134.8	138.2
55°	231.6	217.7	197.0	170.5	156.7	144.0	125.6	116.4	108.3	104.8	108.3
57.5°	199.3	186.6	168.2	141.7	129.0	117.5	100.2	91.0	82.9	80.6	82.9
60°	171.7	161.3	142.9	117.5	107.1	94.5	79.5	70.3	63.4	62.2	63.4
62.5°	153.2	141.7	124.4	100.2	89.9	79.5	65.7	56.5	50.7	49.5	50.7
65°	134.8	122.1	106.0	85.3	74.9	66.8	53.0	44.9	39.2	38.0	39.2
67.5°	114.1	102.5	88.7	70.3	62.2	54.1	42.6	34.6	30.0	28.8	30.0
70°	94.5	84.1	70.3	56.5	48.4	42.6	32.3	26.5	21.9	20.7	21.9
72.5°	74.9	65.7	54.1	42.6	38.0	32.3	25.3	19.6	16.1	15.0	16.1
75°	57.6	50.7	41.5	31.1	27.6	24.2	17.3	13.8	11.5	10.4	11.5
77.5°	40.3	35.7	28.8	23.0	19.6	17.3	12.7	9.2	8.1	6.9	8.1
80°	27.6	24.2	19.6	15.0	12.7	10.4	8.1	5.8	4.6	4.6	4.6
82.5°	18.4	15.0	11.5	9.2	8.1	6.9	4.6	3.5	3.5	2.3	2.3
85°	10.4	9.2	6.9	5.8	4.6	3.5	2.3	2.3	1.2	1.2	1.2
87.5°	4.6	3.5	2.3	2.3	1.2	1.2	1.2	1.2	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°	748.8	748.8	748.8	748.8	748.8	748.8	748.8	748.8	748.8	748.8	748.8
2.5°	752.3	748.8	753.4	748.8	746.5	748.8	746.5	753.4	747.7	743.1	747.7
5°	751.1	746.5	751.1	747.7	744.2	745.4	743.1	750.0	743.1	739.6	741.9
7.5°	748.8	745.4	747.7	744.2	740.8	741.9	739.6	745.4	738.5	735.0	737.3
10°	745.4	741.9	743.1	740.8	737.3	737.3	735.0	739.6	731.6	726.9	729.2
12.5°	740.8	736.2	738.5	735.0	730.4	730.4	728.1	731.6	723.5	718.9	720.0
15°	735.0	730.4	730.4	726.9	722.3	722.3	717.7	721.2	712.0	707.4	707.4
17.5°	728.1	722.3	722.3	718.9	713.1	712.0	708.5	712.0	701.6	697.0	697.0
20°	717.7	713.1	712.0	709.7	703.9	702.8	698.1	699.3	691.2	687.8	686.6
22.5°	703.9	699.3	700.4	697.0	692.4	691.2	686.6	690.1	682.0	678.6	679.7
25°	679.7	677.4	679.7	678.6	675.1	675.1	672.8	675.1	668.2	665.9	667.0
27.5°	652.1	650.9	652.1	652.1	649.8	649.8	649.8	653.2	646.3	645.1	645.1
30°	611.7	611.7	612.9	614.0	614.0	616.3	615.2	619.8	615.2	612.9	615.2
32.5°	558.7	563.4	566.8	566.8	566.8	569.1	571.4	574.9	570.3	571.4	571.4
35°	498.8	502.3	504.6	510.4	506.9	515.0	517.3	521.9	520.7	523.0	521.9
37.5°	432.0	436.6	441.2	449.3	448.1	457.4	462.0	471.2	468.9	473.5	475.8
40°	369.8	376.7	383.6	389.4	394.0	403.2	412.4	424.0	427.4	430.9	432.0
42.5°	309.9	316.8	328.3	336.4	343.3	358.3	371.0	384.8	388.2	395.2	397.5
45°	261.5	267.3	281.1	291.5	297.2	319.1	334.1	351.4	357.1	365.2	368.7
47.5°	216.6	227.0	240.8	253.5	261.5	284.6	304.1	322.6	330.6	339.9	344.5
50°	177.4	188.9	207.4	218.9	230.4	255.8	277.6	297.2	305.3	315.7	320.3
52.5°	145.2	157.8	175.1	187.8	200.5	227.0	250.0	268.4	278.8	285.7	292.6
55°	114.1	127.9	145.2	159.0	169.4	198.2	217.7	236.2	243.1	248.8	252.3
57.5°	88.7	99.1	116.4	127.9	140.6	165.9	185.5	199.3	205.1	212.0	214.3
60°	69.1	79.5	95.6	107.1	118.7	142.9	162.4	176.3	182.0	187.8	191.2
62.5°	55.3	65.7	80.6	91.0	101.4	123.3	140.6	154.4	161.3	167.0	170.5
65°	43.8	53.0	65.7	76.0	84.1	103.7	121.0	133.6	140.6	146.3	149.8
67.5°	34.6	42.6	54.1	61.1	69.1	85.3	100.2	111.7	117.5	124.4	127.9
70°	26.5	32.3	42.6	48.4	54.1	68.0	79.5	91.0	96.8	101.4	103.7
72.5°	19.6	24.2	32.3	36.9	40.3	51.8	61.1	69.1	73.7	78.3	80.6
75°	13.8	17.3	23.0	26.5	28.8	36.9	44.9	50.7	54.1	57.6	61.1
77.5°	9.2	11.5	15.0	17.3	19.6	25.3	30.0	34.6	38.0	41.5	42.6
80°	5.8	8.1	10.4	11.5	12.7	16.1	20.7	23.0	25.3	27.6	28.8
82.5°	3.5	4.6	5.8	6.9	8.1	10.4	12.7	15.0	16.1	18.4	19.6
85°	1.2	2.3	2.3	3.5	3.5	5.8	6.9	8.1	9.2	10.4	11.5
87.5°	0.0	0.0	1.2	1.2	1.2	1.2	2.3	2.3	2.3	2.3	2.3
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°	748.8	748.8	748.8	748.8	748.8	748.8	748.8	748.8
2.5°	752.3	748.8	746.5	745.4	753.4	743.1	747.7	748.8
5°	747.7	744.2	741.9	740.8	747.7	738.5	741.9	744.2
7.5°	740.8	738.5	735.0	733.9	740.8	730.4	735.0	736.2
10°	732.7	729.2	726.9	725.8	731.6	721.2	725.8	725.8
12.5°	722.3	720.0	715.4	715.4	720.0	710.8	714.3	714.3
15°	708.5	706.2	701.6	701.6	706.2	697.0	700.4	700.4
17.5°	697.0	694.7	691.2	690.1	694.7	685.5	688.9	687.8
20°	687.8	685.5	680.9	680.9	684.3	675.1	678.6	678.6
22.5°	679.7	678.6	674.0	674.0	678.6	669.3	671.6	669.3
25°	667.0	665.9	661.3	662.4	664.7	655.5	659.0	656.7
27.5°	646.3	646.3	641.7	640.5	644.0	635.9	638.2	637.1
30°	614.0	615.2	609.4	609.4	610.6	603.7	607.1	606.0
32.5°	570.3	571.4	566.8	565.7	569.1	563.4	565.7	565.7
35°	521.9	523.0	519.6	519.6	523.0	519.6	519.6	518.4
37.5°	473.5	475.8	473.5	474.6	476.9	473.5	475.8	474.6
40°	434.3	436.6	433.2	435.5	437.8	434.3	437.8	435.5
42.5°	398.6	402.1	399.8	402.1	404.4	402.1	404.4	400.9
45°	372.1	374.4	373.3	374.4	376.7	375.6	376.7	375.6
47.5°	346.8	351.4	349.1	351.4	354.8	352.5	354.8	351.4
50°	323.7	327.2	326.0	328.3	329.5	328.3	330.6	327.2
52.5°	293.8	297.2	296.1	296.1	298.4	296.1	298.4	296.1
55°	254.6	255.8	255.8	256.9	255.8	254.6	255.8	253.5
57.5°	216.6	218.9	215.4	218.9	217.7	216.6	216.6	214.3
60°	192.4	195.8	193.5	195.8	194.7	194.7	194.7	193.5
62.5°	172.8	175.1	172.8	174.0	174.0	174.0	172.8	171.7
65°	150.9	154.4	152.1	153.2	152.1	150.9	152.1	150.9
67.5°	129.0	130.2	130.2	129.0	129.0	129.0	129.0	126.7
70°	104.8	106.0	104.8	107.1	106.0	104.8	106.0	103.7
72.5°	81.8	82.9	81.8	82.9	81.8	81.8	81.8	81.8
75°	61.1	62.2	62.2	62.2	62.2	62.2	59.9	62.2
77.5°	43.8	43.8	43.8	44.9	43.8	43.8	43.8	43.8
80°	30.0	30.0	30.0	31.1	30.0	31.1	30.0	31.1
82.5°	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6
85°	10.4	11.5	11.5	10.4	10.4	10.4	10.4	10.4
87.5°	2.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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)