

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: P219515

Luminaire Tested: **LDSQ4B20D010 EU4B10209730 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219515
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: LDSQ4B20D010 EU4B10209730 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 97CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1179.7 lumens
Efficiency: N/A
Efficacy: 56.7 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

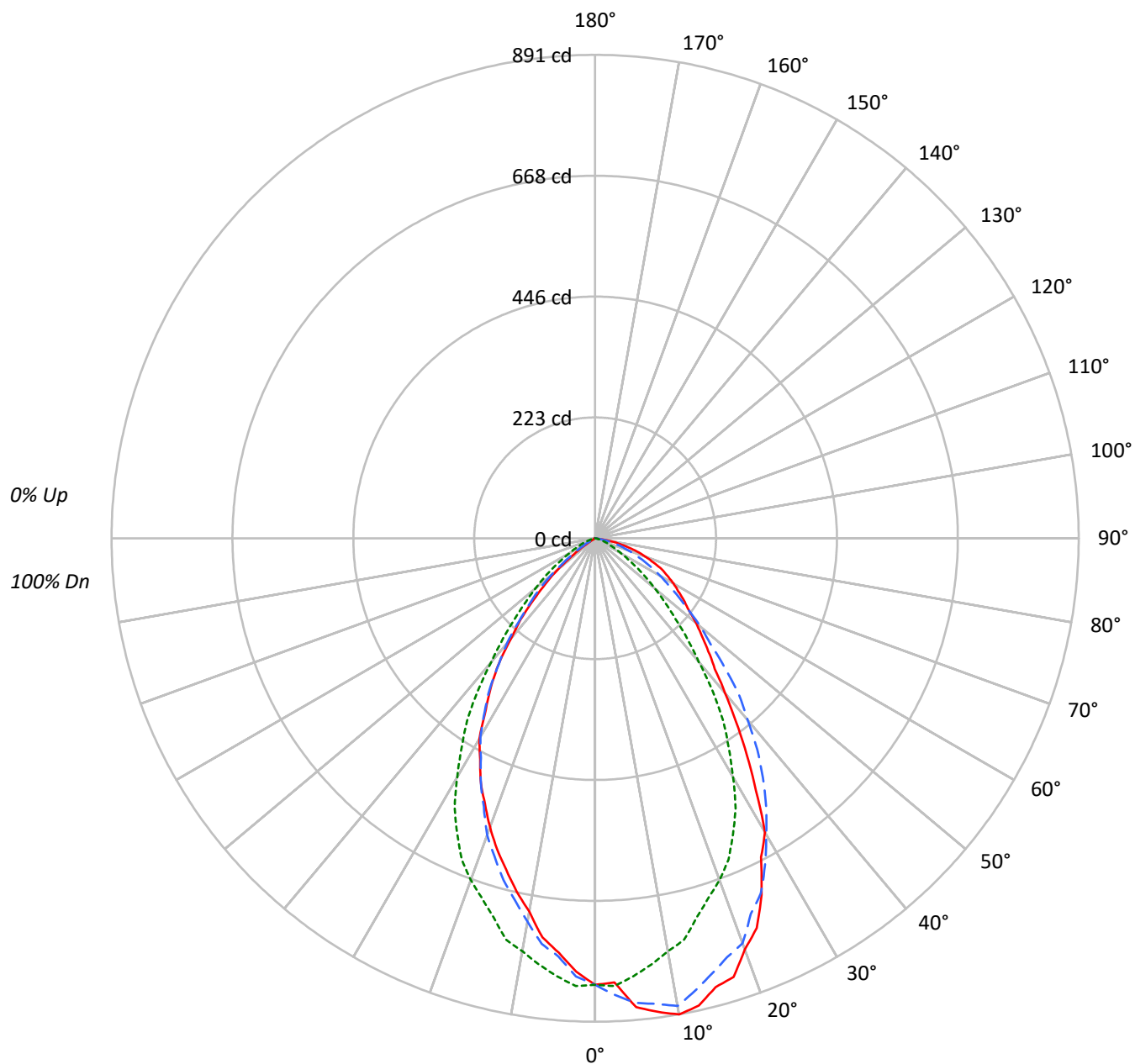
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					10
RW	70	50	30	10	70	50	30	10		50	30	10		50	30	10		50	30	10
RCR																				
0	119	119	119	119	116	116	116	116		111	111	111		106	106	106		102	102	102
1	112	108	105	102	109	106	103	101		102	100	98		98	96	95		95	93	92
2	104	98	93	89	102	96	92	88		93	89	86		90	87	84		87	84	82
3	97	89	83	78	95	88	82	77		85	80	76		82	78	75		80	77	74
4	91	81	74	69	89	80	74	69		78	72	68		76	71	67		74	70	66
5	85	75	67	62	83	74	67	62		72	66	61		70	65	60		68	64	60
6	80	69	61	56	78	68	61	56		66	60	55		65	59	55		63	58	54
7	75	63	56	51	73	63	56	51		61	55	50		60	54	50		59	54	50
8	70	59	52	47	69	58	51	46		57	51	46		56	50	46		55	50	46
9	66	55	48	43	65	54	47	43		53	47	43		52	46	42		51	46	42
10	62	51	44	40	61	51	44	40		50	44	39		49	43	39		48	43	39

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	79728	79728	79728
5°	84351	78788	74568
10°	87657	76010	68731
15°	85911	72542	63445
20°	83113	69082	58392
25°	77527	64241	53263
30°	69992	56848	47687
35°	57653	48665	39559
40°	47044	37559	30452
45°	40429	28524	21907
50°	36593	21718	13835
55°	33661	15674	4999
60°	32318	10714	756
65°	31221	7244	229
70°	27956	5042	283
75°	22907	2583	0
80°	14338	1116	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	77.1	6.5
10°-20°	207.7	17.6
20°-30°	277.4	23.5
30°-40°	263.3	22.3
40°-50°	182.0	15.4
50°-60°	100.6	8.5
60°-70°	49.9	4.2
70°-80°	19.7	1.7
80°-90°	1.9	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°	562.3	47.7
0°-40°	825.6	70.0
0°-60°	1108.2	93.9
0°-90°	1179.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1179.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	823	823	823	823	823	
5°	867	860	810	774	767	83
15°	857	831	723	652	633	242
25°	725	722	601	498	498	331
35°	488	539	412	338	334	305
45°	295	338	208	171	160	230
55°	199	188	93	47	30	179
65°	136	99	32	1	1	132
75°	61	38	7	0	0	65
85°	0	1	0	0	0	6
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°	823.0	823.0	823.0	823.0	823.0	823.0	823.0	823.0	823.0	823.0	823.0
2.5°	819.1	841.8	843.7	841.8	844.7	843.7	848.7	843.7	849.7	840.8	842.8
5°	867.4	858.5	877.3	867.4	867.4	866.4	863.5	862.5	866.4	853.6	859.5
7.5°	880.3	893.1	909.9	889.1	890.1	890.1	884.2	882.2	882.2	858.5	865.5
10°	891.1	883.2	892.1	884.2	891.1	890.1	894.1	881.2	890.1	876.3	875.3
12.5°	882.2	879.3	891.1	878.3	874.3	875.3	870.4	867.4	870.4	854.6	853.6
15°	856.6	859.5	877.3	863.5	861.5	859.5	853.6	843.7	851.6	829.9	830.9
17.5°	847.7	842.8	845.7	833.9	836.8	834.9	833.9	825.0	823.0	809.2	809.2
20°	806.2	817.1	817.1	809.2	809.2	808.2	795.4	803.3	794.4	790.5	794.4
22.5°	777.6	778.6	778.6	771.7	772.7	768.7	761.8	756.9	761.8	756.9	749.0
25°	725.3	727.3	739.1	726.3	724.3	728.3	722.4	719.4	718.4	706.6	722.4
27.5°	662.2	681.9	680.9	676.0	681.9	674.0	671.0	672.0	675.0	674.0	678.0
30°	625.7	628.6	631.6	627.6	628.6	625.7	625.7	626.6	634.5	631.6	630.6
32.5°	551.6	561.5	569.4	569.4	570.4	573.3	572.4	593.1	598.0	588.2	586.2
35°	487.5	494.4	501.3	502.3	515.1	516.1	517.1	523.0	536.8	539.8	538.8
37.5°	426.3	433.2	435.2	444.1	451.0	457.9	465.8	473.7	485.5	495.4	490.5
40°	372.0	375.0	379.9	383.9	397.7	397.7	401.6	417.4	430.3	438.2	437.2
42.5°	326.6	327.6	331.6	338.5	351.3	348.4	351.3	362.2	380.9	381.9	392.8
45°	295.1	294.1	297.0	298.0	305.9	309.9	311.8	319.7	335.5	337.5	338.5
47.5°	266.4	265.5	270.4	272.4	275.3	279.3	279.3	280.3	286.2	291.1	287.2
50°	242.8	242.8	242.8	244.7	249.7	248.7	249.7	253.6	256.6	254.6	253.6
52.5°	217.1	221.1	224.0	225.0	226.0	226.0	227.0	225.0	224.0	221.1	215.1
55°	199.3	203.3	203.3	203.3	203.3	207.2	202.3	203.3	203.3	195.4	187.5
57.5°	181.6	185.5	188.5	184.5	188.5	184.5	182.6	181.6	179.6	171.7	159.9
60°	166.8	168.7	167.8	166.8	168.7	165.8	163.8	159.9	157.9	147.0	139.1
62.5°	150.0	151.0	152.0	150.0	148.0	147.0	143.1	137.2	133.2	124.3	117.4
65°	136.2	133.2	132.2	131.2	129.3	126.3	123.4	116.4	113.5	105.6	98.7
67.5°	115.5	114.5	116.4	113.5	108.6	108.6	105.6	99.7	92.8	87.8	80.9
70°	98.7	97.7	95.7	92.8	91.8	87.8	87.8	80.9	78.9	70.1	64.1
72.5°	80.9	80.9	78.0	75.0	72.0	70.1	69.1	64.1	61.2	56.2	51.3
75°	61.2	61.2	60.2	57.2	55.3	53.3	52.3	48.4	45.4	40.5	37.5
77.5°	43.4	43.4	39.5	37.5	38.5	36.5	34.5	33.6	32.6	29.6	25.7
80°	25.7	24.7	21.7	22.7	21.7	21.7	20.7	19.7	17.8	15.8	13.8
82.5°	6.9	7.9	7.9	7.9	8.9	6.9	6.9	6.9	7.9	7.9	4.9
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0
87.5°	1.0	2.0	3.9	3.9	3.9	3.9	3.9	3.0	3.0	3.0	2.0
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°	823.0	823.0	823.0	823.0	823.0	823.0	823.0	823.0	823.0	823.0	823.0
2.5°	832.9	831.9	832.9	826.0	841.8	829.9	828.0	826.0	832.9	826.0	816.1
5°	850.6	840.8	837.8	834.9	843.7	829.9	827.0	828.0	823.0	810.2	811.2
7.5°	856.6	847.7	838.8	820.1	828.0	825.0	817.1	811.2	803.3	792.4	790.5
10°	858.5	848.7	835.8	829.9	818.1	814.1	811.2	801.3	791.4	772.7	767.8
12.5°	852.6	840.8	825.0	820.1	811.2	798.3	791.4	781.6	772.7	757.9	747.0
15°	827.0	817.1	812.2	795.4	791.4	783.5	769.7	755.9	743.1	723.3	717.4
17.5°	797.4	793.4	788.5	775.6	774.7	766.8	753.9	742.1	725.3	694.7	684.9
20°	766.8	766.8	751.0	746.0	755.9	740.1	730.3	719.4	684.9	670.1	652.3
22.5°	744.1	733.2	724.3	716.4	717.4	707.6	693.7	672.0	659.2	641.4	620.7
25°	699.7	703.6	683.9	680.9	683.9	661.2	654.3	636.5	617.8	601.0	585.2
27.5°	672.0	661.2	648.3	637.5	637.5	628.6	608.9	604.9	576.3	560.5	540.8
30°	630.6	622.7	611.8	596.0	594.1	587.2	571.4	561.5	531.9	508.2	497.4
32.5°	578.3	575.3	566.4	548.7	542.8	534.9	515.1	498.3	484.5	457.9	445.1
35°	540.8	529.9	511.2	496.4	491.4	477.6	461.8	450.0	435.2	411.5	394.7
37.5°	484.5	473.7	455.9	438.2	438.2	424.3	402.6	390.8	370.1	356.2	342.4
40°	435.2	421.4	403.6	382.9	379.9	360.2	351.3	331.6	318.7	297.0	295.1
42.5°	379.9	367.1	351.3	335.5	323.7	313.8	291.1	276.3	262.5	251.6	248.7
45°	329.6	312.8	299.0	279.3	267.4	255.6	240.8	230.9	220.1	208.2	201.3
47.5°	286.2	272.4	252.6	234.9	223.0	217.1	200.3	189.5	180.6	172.7	167.8
50°	241.8	225.0	214.1	194.4	192.4	178.6	164.8	155.9	151.0	144.1	137.2
52.5°	208.2	192.4	177.6	162.8	154.9	150.0	137.2	128.3	121.4	116.4	112.5
55°	175.7	161.8	150.0	135.2	130.3	123.4	108.6	106.6	99.7	92.8	87.8
57.5°	151.0	138.2	124.3	114.5	105.6	100.7	88.8	80.9	77.0	71.1	66.1
60°	128.3	114.5	103.6	91.8	87.8	80.9	72.0	65.1	60.2	55.3	50.3
62.5°	107.6	95.7	83.9	74.0	68.1	64.1	57.2	51.3	46.4	42.4	38.5
65°	88.8	78.0	68.1	58.2	55.3	50.3	45.4	40.5	36.5	31.6	27.6
67.5°	73.0	63.2	53.3	46.4	43.4	41.4	35.5	30.6	27.6	24.7	20.7
70°	57.2	50.3	42.4	36.5	33.6	30.6	26.6	23.7	19.7	17.8	14.8
72.5°	44.4	38.5	31.6	26.6	24.7	22.7	18.7	15.8	13.8	11.8	9.9
75°	31.6	26.6	22.7	17.8	16.8	15.8	12.8	10.9	8.9	6.9	5.9
77.5°	21.7	17.8	13.8	11.8	10.9	8.9	7.9	5.9	4.9	3.9	3.0
80°	11.8	8.9	6.9	5.9	4.9	3.9	3.9	3.0	2.0	2.0	1.0
82.5°	3.9	3.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0
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°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	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°	823.0	823.0	823.0	823.0	823.0	823.0	823.0	823.0	823.0	823.0	823.0
2.5°	822.0	811.2	814.1	814.1	812.2	812.2	810.2	807.2	808.2	802.3	789.5
5°	813.1	799.3	797.4	799.3	791.4	789.5	785.5	791.4	773.7	780.6	772.7
7.5°	787.5	774.7	771.7	778.6	768.7	762.8	761.8	769.7	753.9	746.0	737.2
10°	758.9	753.9	745.1	740.1	737.2	738.1	730.3	720.4	717.4	715.5	707.6
12.5°	733.2	722.4	714.5	708.5	706.6	706.6	693.7	691.8	682.9	680.9	669.1
15°	702.6	689.8	684.9	677.0	670.1	674.0	659.2	655.3	652.3	639.5	641.4
17.5°	676.0	662.2	650.3	645.4	639.5	633.5	619.7	622.7	615.8	615.8	598.0
20°	641.4	626.6	617.8	607.9	607.9	600.0	590.1	591.1	582.2	573.3	557.6
22.5°	604.9	589.1	578.3	574.3	564.5	562.5	550.7	547.7	535.8	536.8	523.0
25°	566.4	550.7	535.8	536.8	528.0	524.0	517.1	503.3	498.3	492.4	488.5
27.5°	521.0	510.2	497.4	496.4	479.6	480.6	471.7	467.8	455.9	458.9	450.0
30°	479.6	463.8	452.0	449.0	442.1	440.1	426.3	420.4	422.4	414.5	409.5
32.5°	437.2	413.5	408.5	402.6	398.7	393.7	383.9	387.8	378.9	380.9	373.0
35°	380.9	371.0	358.2	358.2	354.3	350.3	343.4	347.4	338.5	334.5	326.6
37.5°	333.5	324.7	311.8	315.8	308.9	303.0	297.0	298.0	290.1	289.1	281.2
40°	282.2	277.3	268.4	268.4	263.5	263.5	260.5	257.6	252.6	246.7	237.8
42.5°	233.9	229.9	226.0	227.0	220.1	226.0	218.1	223.0	207.2	206.2	200.3
45°	198.4	189.5	190.5	186.5	182.6	184.5	177.6	179.6	170.7	168.7	162.8
47.5°	160.9	157.9	152.0	150.0	150.0	147.0	144.1	143.1	139.1	134.2	126.3
50°	132.2	121.4	119.4	116.4	114.5	114.5	110.5	104.6	105.6	100.7	92.8
52.5°	103.6	94.7	90.8	89.8	85.9	83.9	78.9	75.0	72.0	70.1	65.1
55°	79.9	72.0	67.1	67.1	61.2	61.2	54.3	51.3	47.4	43.4	40.5
57.5°	60.2	56.2	51.3	47.4	45.4	40.5	36.5	31.6	28.6	22.7	18.7
60°	45.4	41.4	36.5	33.6	31.6	26.6	21.7	17.8	10.9	8.9	7.9
62.5°	33.6	29.6	24.7	22.7	20.7	16.8	11.8	5.9	3.0	3.0	3.0
65°	24.7	19.7	15.8	13.8	11.8	8.9	3.9	2.0	1.0	1.0	1.0
67.5°	16.8	12.8	8.9	7.9	5.9	3.0	1.0	1.0	1.0	1.0	1.0
70°	10.9	7.9	3.9	3.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
72.5°	6.9	3.9	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	3.9	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	1.0	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	1.0	1.0	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):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	823.0	823.0	823.0	823.0	823.0	823.0	823.0	823.0
2.5°	803.3	796.4	800.3	791.4	795.4	802.3	797.4	799.3
5°	775.6	771.7	766.8	753.9	763.8	771.7	767.8	766.8
7.5°	746.0	732.2	739.1	735.2	733.2	741.1	732.2	742.1
10°	715.5	705.6	704.6	697.7	697.7	703.6	704.6	698.7
12.5°	670.1	665.1	665.1	664.1	663.2	669.1	670.1	667.1
15°	637.5	635.5	630.6	629.6	623.7	632.6	633.5	632.6
17.5°	598.0	599.0	594.1	594.1	598.0	601.0	593.1	601.0
20°	571.4	566.4	564.5	555.6	560.5	565.5	565.5	566.4
22.5°	532.9	525.0	528.0	523.0	520.1	527.0	527.0	529.9
25°	489.5	489.5	491.4	488.5	490.5	494.4	491.4	498.3
27.5°	448.0	452.0	452.0	448.0	450.0	461.8	466.8	458.9
30°	409.5	410.5	413.5	411.5	417.4	421.4	420.4	426.3
32.5°	366.1	371.0	373.0	370.1	372.0	380.9	376.0	375.0
35°	332.6	323.7	322.7	323.7	327.6	329.6	327.6	334.5
37.5°	284.2	281.2	277.3	278.3	281.2	285.2	287.2	292.1
40°	237.8	233.9	233.9	232.9	229.9	240.8	240.8	240.8
42.5°	197.4	196.4	191.4	191.4	195.4	198.4	196.4	203.3
45°	161.8	157.9	154.9	154.9	157.9	157.9	160.9	159.9
47.5°	127.3	123.4	124.3	121.4	124.3	128.3	123.4	124.3
50°	95.7	95.7	93.7	95.7	94.7	95.7	93.7	91.8
52.5°	65.1	74.0	75.0	71.1	62.2	54.3	49.3	53.3
55°	37.5	33.6	33.6	32.6	30.6	29.6	26.6	29.6
57.5°	18.7	16.8	16.8	16.8	15.8	14.8	12.8	12.8
60°	7.9	6.9	6.9	5.9	4.9	3.9	3.0	3.9
62.5°	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
65°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
67.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
70°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)