

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: P219494

Luminaire Tested: **LDSQ4B15D010 EU4B10208050 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219494
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: LDSQ4B15D010 EU4B10208050 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1208.1 lumens
Efficiency: N/A
Efficacy: 84.0 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')

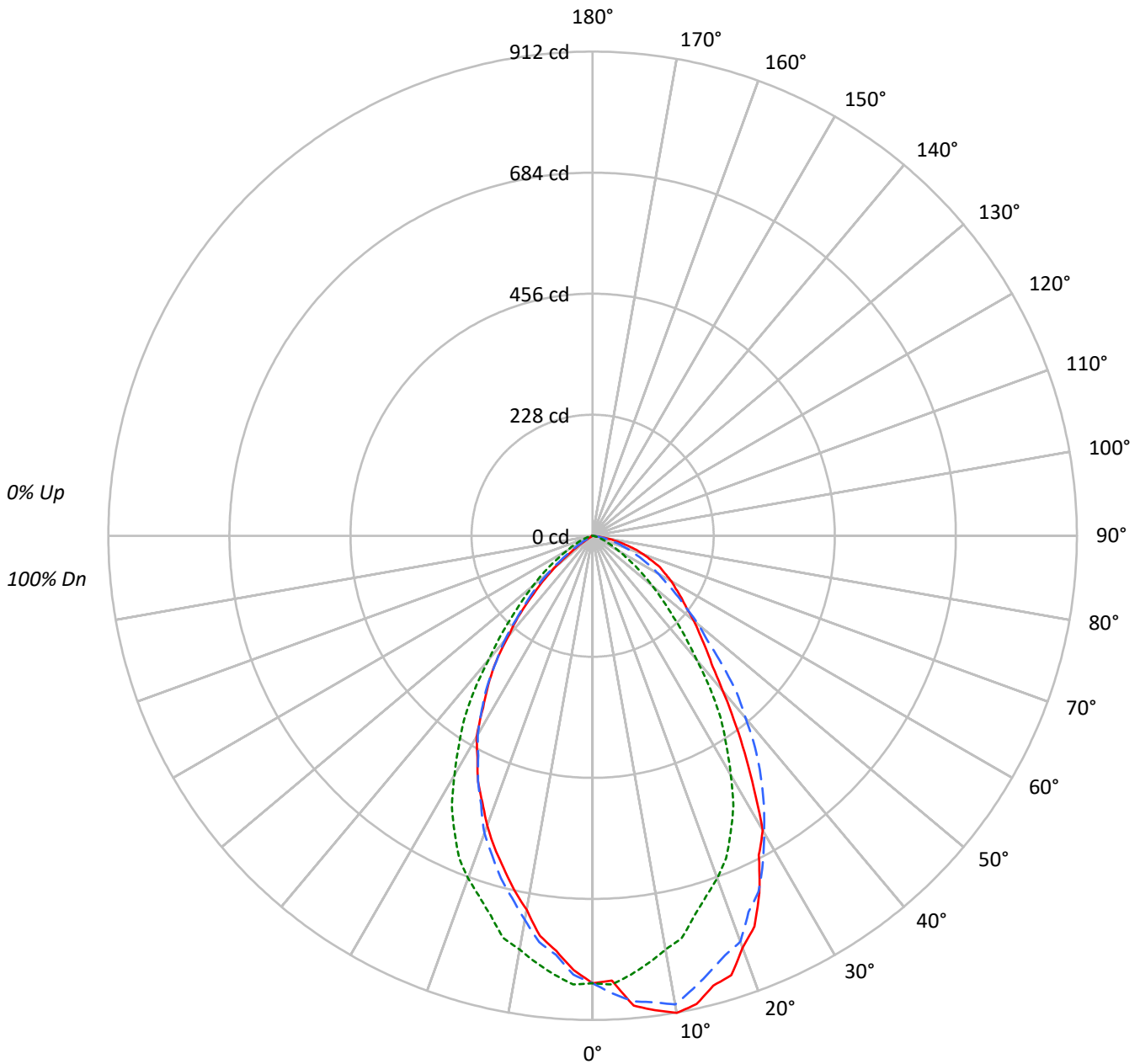
CIE Type: Direct
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20					
RC	80					70					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°	81647	81647	81647
5°	86383	80685	76357
10°	89763	77840	70384
15°	87977	74297	64970
20°	85113	70742	59804
25°	79398	65780	54546
30°	71670	58213	48839
35°	59037	49836	40517
40°	48182	38470	31186
45°	41402	29209	22427
50°	37467	22230	14167
55°	34472	16045	5118
60°	33093	10966	775
65°	31977	7404	229
70°	28636	5155	283
75°	23468	2658	0
80°	14672	1116	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	79.0	6.5
10°-20°	212.7	17.6
20°-30°	284.1	23.5
30°-40°	269.7	22.3
40°-50°	186.4	15.4
50°-60°	103.0	8.5
60°-70°	51.1	4.2
70°-80°	20.1	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°	575.8	47.7
0°-40°	845.5	70.0
0°-60°	1134.9	93.9
0°-90°	1208.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1208.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	843	843	843	843	843	
5°	888	880	830	792	785	85
15°	877	851	741	668	648	248
25°	743	740	615	510	510	339
35°	499	552	421	347	343	313
45°	302	347	213	175	164	236
55°	204	192	95	48	30	184
65°	140	101	32	1	1	135
75°	63	38	7	0	0	67
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°	842.8	842.8	842.8	842.8	842.8	842.8	842.8	842.8	842.8	842.8	842.8
2.5°	838.8	862.0	864.0	862.0	865.1	864.0	869.1	864.0	870.1	861.0	863.0
5°	888.3	879.2	898.4	888.3	888.3	887.3	884.3	883.2	887.3	874.1	880.2
7.5°	901.4	914.6	931.7	910.5	911.5	911.5	905.5	903.5	903.5	879.2	886.3
10°	912.5	904.5	913.6	905.5	912.5	911.5	915.6	902.4	911.5	897.4	896.4
12.5°	903.5	900.4	912.5	899.4	895.4	896.4	891.3	888.3	891.3	875.2	874.1
15°	877.2	880.2	898.4	884.3	882.2	880.2	874.1	864.0	872.1	849.9	850.9
17.5°	868.1	863.0	866.1	853.9	857.0	854.9	853.9	844.8	842.8	828.7	828.7
20°	825.6	836.8	836.8	828.7	828.7	827.7	814.5	822.6	813.5	809.5	813.5
22.5°	796.3	797.3	797.3	790.3	791.3	787.2	780.2	775.1	780.2	775.1	767.0
25°	742.8	744.8	756.9	743.8	741.8	745.8	739.7	736.7	735.7	723.6	739.7
27.5°	678.1	698.3	697.3	692.2	698.3	690.2	687.2	688.2	691.2	690.2	694.3
30°	640.7	643.7	646.8	642.7	643.7	640.7	640.7	641.7	649.8	646.8	645.8
32.5°	564.9	575.0	583.1	583.1	584.1	587.1	586.1	607.4	612.4	602.3	600.3
35°	499.2	506.3	513.4	514.4	527.5	528.5	529.5	535.6	549.8	552.8	551.8
37.5°	436.6	443.6	445.7	454.8	461.8	468.9	477.0	485.1	497.2	507.3	502.3
40°	381.0	384.0	389.1	393.1	407.3	407.3	411.3	427.5	440.6	448.7	447.7
42.5°	334.5	335.5	339.6	346.6	359.8	356.7	359.8	370.9	390.1	391.1	402.2
45°	302.2	301.2	304.2	305.2	313.3	317.3	319.3	327.4	343.6	345.6	346.6
47.5°	272.9	271.8	276.9	278.9	282.0	286.0	286.0	287.0	293.1	298.1	294.1
50°	248.6	248.6	248.6	250.6	255.7	254.7	255.7	259.7	262.7	260.7	259.7
52.5°	222.3	226.4	229.4	230.4	231.4	231.4	232.4	230.4	229.4	226.4	220.3
55°	204.1	208.2	208.2	208.2	208.2	212.2	207.2	208.2	208.2	200.1	192.0
57.5°	185.9	190.0	193.0	189.0	193.0	189.0	187.0	185.9	183.9	175.8	163.7
60°	170.8	172.8	171.8	170.8	172.8	169.8	167.8	163.7	161.7	150.6	142.5
62.5°	153.6	154.6	155.6	153.6	151.6	150.6	146.5	140.5	136.4	127.3	120.3
65°	139.5	136.4	135.4	134.4	132.4	129.4	126.3	119.2	116.2	108.1	101.1
67.5°	118.2	117.2	119.2	116.2	111.2	111.2	108.1	102.1	95.0	89.9	82.9
70°	101.1	100.0	98.0	95.0	94.0	89.9	89.9	82.9	80.8	71.8	65.7
72.5°	82.9	82.9	79.8	76.8	73.8	71.8	70.7	65.7	62.7	57.6	52.5
75°	62.7	62.7	61.6	58.6	56.6	54.6	53.6	49.5	46.5	41.4	38.4
77.5°	44.5	44.5	40.4	38.4	39.4	37.4	35.4	34.4	33.3	30.3	26.3
80°	26.3	25.3	22.2	23.2	22.2	22.2	21.2	20.2	18.2	16.2	14.1
82.5°	7.1	8.1	8.1	8.1	9.1	7.1	7.1	7.1	8.1	8.1	5.1
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	4.0	4.0	4.0	4.0	4.0	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°	842.8	842.8	842.8	842.8	842.8	842.8	842.8	842.8	842.8	842.8	842.8
2.5°	852.9	851.9	852.9	845.9	862.0	849.9	847.9	845.9	852.9	845.9	835.7
5°	871.1	861.0	858.0	854.9	864.0	849.9	846.9	847.9	842.8	829.7	830.7
7.5°	877.2	868.1	859.0	839.8	847.9	844.8	836.8	830.7	822.6	811.5	809.5
10°	879.2	869.1	856.0	849.9	837.8	833.7	830.7	820.6	810.5	791.3	786.2
12.5°	873.1	861.0	844.8	839.8	830.7	817.6	810.5	800.4	791.3	776.1	765.0
15°	846.9	836.8	831.7	814.5	810.5	802.4	788.2	774.1	761.0	740.8	734.7
17.5°	816.5	812.5	807.4	794.3	793.3	785.2	772.1	760.0	742.8	711.4	701.3
20°	785.2	785.2	769.0	764.0	774.1	757.9	747.8	736.7	701.3	686.2	668.0
22.5°	762.0	750.9	741.8	733.7	734.7	724.6	710.4	688.2	675.1	656.9	635.7
25°	716.5	720.5	700.3	697.3	700.3	677.1	670.0	651.8	632.6	615.4	599.3
27.5°	688.2	677.1	663.9	652.8	652.8	643.7	623.5	619.5	590.2	574.0	553.8
30°	645.8	637.7	626.6	610.4	608.4	601.3	585.1	575.0	544.7	520.4	509.3
32.5°	592.2	589.2	580.1	561.9	555.8	547.7	527.5	510.3	496.2	468.9	455.8
35°	553.8	542.7	523.5	508.3	503.3	489.1	472.9	460.8	445.7	421.4	404.2
37.5°	496.2	485.1	466.9	448.7	448.7	434.5	412.3	400.2	379.0	364.8	350.7
40°	445.7	431.5	413.3	392.1	389.1	368.9	359.8	339.6	326.4	304.2	302.2
42.5°	389.1	375.9	359.8	343.6	331.5	321.4	298.1	283.0	268.8	257.7	254.7
45°	337.5	320.4	306.2	286.0	273.9	261.7	246.6	236.5	225.4	213.2	206.2
47.5°	293.1	278.9	258.7	240.5	228.4	222.3	205.1	194.0	184.9	176.9	171.8
50°	247.6	230.4	219.3	199.1	197.1	182.9	168.8	159.7	154.6	147.5	140.5
52.5°	213.2	197.1	181.9	166.7	158.7	153.6	140.5	131.4	124.3	119.2	115.2
55°	179.9	165.7	153.6	138.4	133.4	126.3	111.2	109.1	102.1	95.0	89.9
57.5°	154.6	141.5	127.3	117.2	108.1	103.1	91.0	82.9	78.8	72.8	67.7
60°	131.4	117.2	106.1	94.0	89.9	82.9	73.8	66.7	61.6	56.6	51.5
62.5°	110.2	98.0	85.9	75.8	69.7	65.7	58.6	52.5	47.5	43.5	39.4
65°	91.0	79.8	69.7	59.6	56.6	51.5	46.5	41.4	37.4	32.3	28.3
67.5°	74.8	64.7	54.6	47.5	44.5	42.4	36.4	31.3	28.3	25.3	21.2
70°	58.6	51.5	43.5	37.4	34.4	31.3	27.3	24.3	20.2	18.2	15.2
72.5°	45.5	39.4	32.3	27.3	25.3	23.2	19.2	16.2	14.1	12.1	10.1
75°	32.3	27.3	23.2	18.2	17.2	16.2	13.1	11.1	9.1	7.1	6.1
77.5°	22.2	18.2	14.1	12.1	11.1	9.1	8.1	6.1	5.1	4.0	3.0
80°	12.1	9.1	7.1	6.1	5.1	4.0	4.0	3.0	2.0	2.0	1.0
82.5°	4.0	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°	842.8	842.8	842.8	842.8	842.8	842.8	842.8	842.8	842.8	842.8	842.8
2.5°	841.8	830.7	833.7	833.7	831.7	831.7	829.7	826.6	827.7	821.6	808.5
5°	832.7	818.6	816.5	818.6	810.5	808.5	804.4	810.5	792.3	799.4	791.3
7.5°	806.4	793.3	790.3	797.3	787.2	781.2	780.2	788.2	772.1	764.0	754.9
10°	777.1	772.1	763.0	757.9	754.9	755.9	747.8	737.7	734.7	732.7	724.6
12.5°	750.9	739.7	731.7	725.6	723.6	723.6	710.4	708.4	699.3	697.3	685.2
15°	719.5	706.4	701.3	693.3	686.2	690.2	675.1	671.0	668.0	654.9	656.9
17.5°	692.2	678.1	666.0	660.9	654.9	648.8	634.6	637.7	630.6	630.6	612.4
20°	656.9	641.7	632.6	622.5	622.5	614.4	604.3	605.3	596.2	587.1	571.0
22.5°	619.5	603.3	592.2	588.2	578.0	576.0	563.9	560.9	548.7	549.8	535.6
25°	580.1	563.9	548.7	549.8	540.7	536.6	529.5	515.4	510.3	504.3	500.2
27.5°	533.6	522.5	509.3	508.3	491.1	492.1	483.1	479.0	466.9	469.9	460.8
30°	491.1	475.0	462.8	459.8	452.7	450.7	436.6	430.5	432.5	424.4	419.4
32.5°	447.7	423.4	418.4	412.3	408.3	403.2	393.1	397.2	388.1	390.1	382.0
35°	390.1	380.0	366.8	366.8	362.8	358.8	351.7	355.7	346.6	342.6	334.5
37.5°	341.6	332.5	319.3	323.4	316.3	310.2	304.2	305.2	297.1	296.1	288.0
40°	289.0	284.0	274.9	274.9	269.8	269.8	266.8	263.8	258.7	252.6	243.5
42.5°	239.5	235.5	231.4	232.4	225.4	231.4	223.3	228.4	212.2	211.2	205.1
45°	203.1	194.0	195.0	191.0	187.0	189.0	181.9	183.9	174.8	172.8	166.7
47.5°	164.7	161.7	155.6	153.6	153.6	150.6	147.5	146.5	142.5	137.4	129.4
50°	135.4	124.3	122.3	119.2	117.2	117.2	113.2	107.1	108.1	103.1	95.0
52.5°	106.1	97.0	93.0	92.0	87.9	85.9	80.8	76.8	73.8	71.8	66.7
55°	81.9	73.8	68.7	68.7	62.7	62.7	55.6	52.5	48.5	44.5	41.4
57.5°	61.6	57.6	52.5	48.5	46.5	41.4	37.4	32.3	29.3	23.2	19.2
60°	46.5	42.4	37.4	34.4	32.3	27.3	22.2	18.2	11.1	9.1	8.1
62.5°	34.4	30.3	25.3	23.2	21.2	17.2	12.1	6.1	3.0	3.0	3.0
65°	25.3	20.2	16.2	14.1	12.1	9.1	4.0	2.0	1.0	1.0	1.0
67.5°	17.2	13.1	9.1	8.1	6.1	3.0	1.0	1.0	1.0	1.0	1.0
70°	11.1	8.1	4.0	3.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
72.5°	7.1	4.0	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	4.0	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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CATALOG NUMBER: LDSQ4B15D010 EU4B10208050 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	842.8	842.8	842.8	842.8	842.8	842.8	842.8	842.8
2.5°	822.6	815.5	819.6	810.5	814.5	821.6	816.5	818.6
5°	794.3	790.3	785.2	772.1	782.2	790.3	786.2	785.2
7.5°	764.0	749.8	756.9	752.9	750.9	758.9	749.8	760.0
10°	732.7	722.6	721.5	714.5	714.5	720.5	721.5	715.5
12.5°	686.2	681.1	681.1	680.1	679.1	685.2	686.2	683.1
15°	652.8	650.8	645.8	644.7	638.7	647.8	648.8	647.8
17.5°	612.4	613.4	608.4	608.4	612.4	615.4	607.4	615.4
20°	585.1	580.1	578.0	569.0	574.0	579.1	579.1	580.1
22.5°	545.7	537.6	540.7	535.6	532.6	539.6	539.6	542.7
25°	501.2	501.2	503.3	500.2	502.3	506.3	503.3	510.3
27.5°	458.8	462.8	462.8	458.8	460.8	472.9	478.0	469.9
30°	419.4	420.4	423.4	421.4	427.5	431.5	430.5	436.6
32.5°	374.9	380.0	382.0	379.0	381.0	390.1	385.0	384.0
35°	340.6	331.5	330.5	331.5	335.5	337.5	335.5	342.6
37.5°	291.0	288.0	284.0	285.0	288.0	292.1	294.1	299.1
40°	243.5	239.5	239.5	238.5	235.5	246.6	246.6	246.6
42.5°	202.1	201.1	196.1	196.1	200.1	203.1	201.1	208.2
45°	165.7	161.7	158.7	158.7	161.7	161.7	164.7	163.7
47.5°	130.4	126.3	127.3	124.3	127.3	131.4	126.3	127.3
50°	98.0	98.0	96.0	98.0	97.0	98.0	96.0	94.0
52.5°	66.7	75.8	76.8	72.8	63.7	55.6	50.5	54.6
55°	38.4	34.4	34.4	33.3	31.3	30.3	27.3	30.3
57.5°	19.2	17.2	17.2	17.2	16.2	15.2	13.1	13.1
60°	8.1	7.1	7.1	6.1	5.1	4.0	3.0	4.0
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)