

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: P219510

Luminaire Tested: **LDSQ4B20D010 EU4B10209030 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219510
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 EU4B10209030 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1349.9 lumens
Efficiency: N/A
Efficacy: 64.9 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

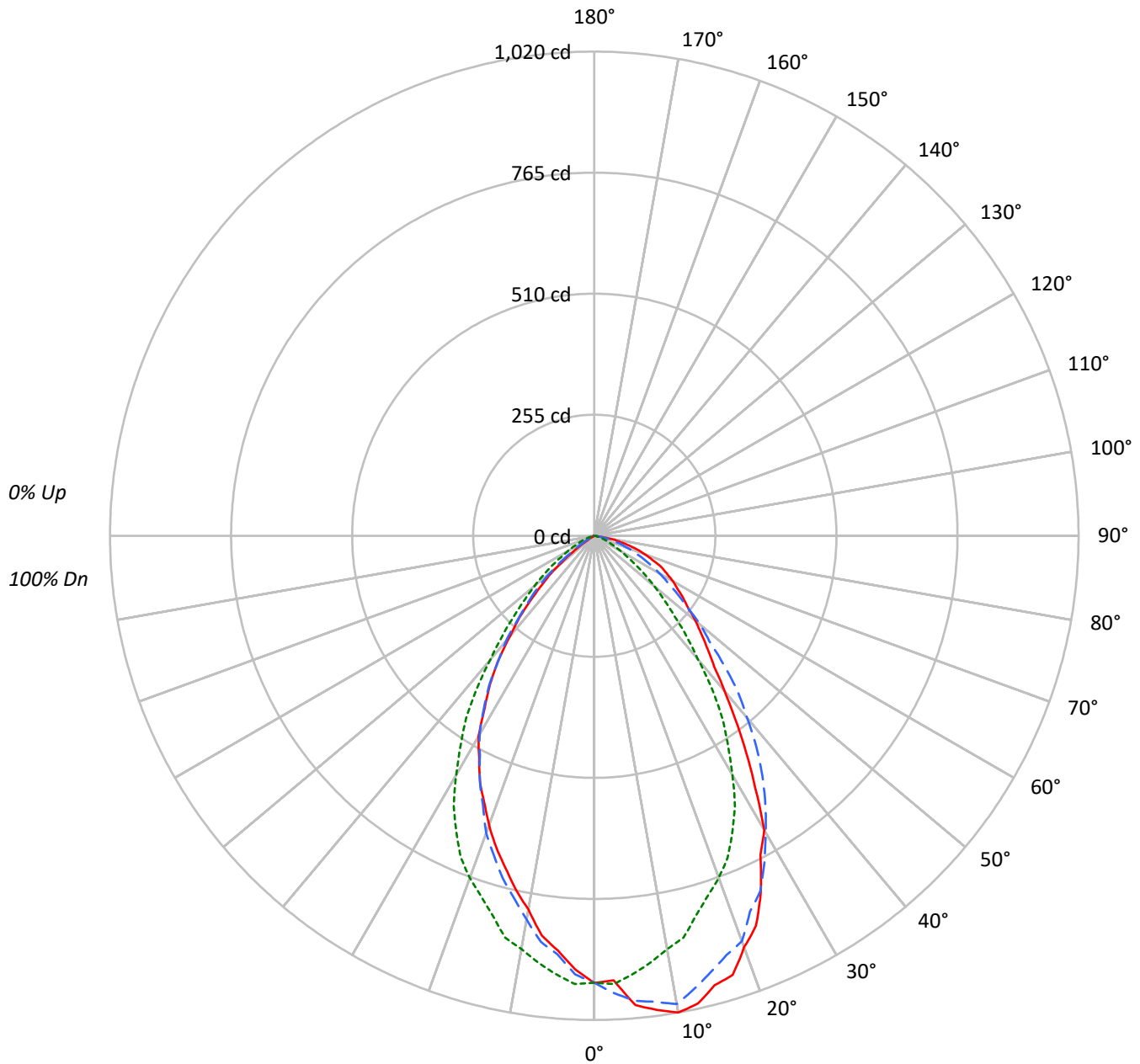
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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				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°	91237	91237	91237
5°	96526	90156	85323
10°	100308	86979	78647
15°	98307	83012	72592
20°	95113	79041	66825
25°	88719	73508	60959
30°	80082	65048	54566
35°	65967	55690	45271
40°	53835	42984	34840
45°	46252	32648	25058
50°	41868	24852	15825
55°	38525	17920	5726
60°	36968	12245	872
65°	35714	8275	252
70°	31978	5750	312
75°	26201	2957	0
80°	16402	1283	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	88.2	6.5
10°-20°	237.7	17.6
20°-30°	317.4	23.5
30°-40°	301.3	22.3
40°-50°	208.3	15.4
50°-60°	115.1	8.5
60°-70°	57.1	4.2
70°-80°	22.5	1.7
80°-90°	2.1	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°	643.4	47.7
0°-40°	944.7	70.0
0°-60°	1268.1	93.9
0°-90°	1349.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1349.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	942	942	942	942	942	
5°	993	984	927	885	877	95
15°	980	951	828	746	724	277
25°	830	827	688	570	570	378
35°	558	617	471	387	383	349
45°	338	387	238	195	183	263
55°	228	215	106	54	34	205
65°	156	113	36	1	1	151
75°	70	43	8	0	0	75
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°	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8
2.5°	937.3	963.2	965.5	963.2	966.6	965.5	971.1	965.5	972.3	962.1	964.4
5°	992.6	982.4	1003.9	992.6	992.6	991.5	988.1	986.9	991.5	976.8	983.5
7.5°	1007.3	1021.9	1041.1	1017.4	1018.6	1018.6	1011.8	1009.5	1009.5	982.4	990.3
10°	1019.7	1010.6	1020.8	1011.8	1019.7	1018.6	1023.1	1008.4	1018.6	1002.7	1001.6
12.5°	1009.5	1006.1	1019.7	1005.0	1000.5	1001.6	996.0	992.6	996.0	977.9	976.8
15°	980.2	983.5	1003.9	988.1	985.8	983.5	976.8	965.5	974.5	949.7	950.8
17.5°	970.0	964.4	967.7	954.2	957.6	955.3	954.2	944.0	941.8	926.0	926.0
20°	922.6	935.0	935.0	926.0	926.0	924.8	910.1	919.2	909.0	904.5	909.0
22.5°	889.8	891.0	891.0	883.0	884.2	879.7	871.8	866.1	871.8	866.1	857.1
25°	830.0	832.2	845.8	831.1	828.8	833.4	826.6	823.2	822.1	808.5	826.6
27.5°	757.7	780.3	779.2	773.5	780.3	771.3	767.9	769.0	772.4	771.3	775.8
30°	715.9	719.3	722.7	718.2	719.3	715.9	715.9	717.1	726.1	722.7	721.6
32.5°	631.2	642.5	651.6	651.6	652.7	656.1	654.9	678.7	684.3	673.0	670.8
35°	557.8	565.7	573.6	574.8	589.5	590.6	591.7	598.5	614.3	617.7	616.6
37.5°	487.8	495.7	498.0	508.1	516.1	524.0	533.0	542.0	555.6	566.9	561.2
40°	425.7	429.1	434.7	439.3	455.1	455.1	459.6	477.7	492.3	501.4	500.2
42.5°	373.8	374.9	379.4	387.3	402.0	398.6	402.0	414.4	435.9	437.0	449.4
45°	337.6	336.5	339.9	341.0	350.1	354.6	356.8	365.9	383.9	386.2	387.3
47.5°	304.9	303.8	309.4	311.7	315.1	319.6	319.6	320.7	327.5	333.1	328.6
50°	277.8	277.8	277.8	280.0	285.7	284.6	285.7	290.2	293.6	291.3	290.2
52.5°	248.4	252.9	256.3	257.5	258.6	258.6	259.7	257.5	256.3	252.9	246.2
55°	228.1	232.6	232.6	232.6	232.6	237.1	231.5	232.6	232.6	223.6	214.6
57.5°	207.8	212.3	215.7	211.2	215.7	211.2	208.9	207.8	205.5	196.5	182.9
60°	190.8	193.1	192.0	190.8	193.1	189.7	187.5	182.9	180.7	168.3	159.2
62.5°	171.6	172.8	173.9	171.6	169.4	168.3	163.7	157.0	152.4	142.3	134.4
65°	155.8	152.4	151.3	150.2	147.9	144.5	141.2	133.2	129.9	120.8	112.9
67.5°	132.1	131.0	133.2	129.9	124.2	124.2	120.8	114.1	106.1	100.5	92.6
70°	112.9	111.8	109.5	106.1	105.0	100.5	100.5	92.6	90.3	80.2	73.4
72.5°	92.6	92.6	89.2	85.8	82.4	80.2	79.0	73.4	70.0	64.4	58.7
75°	70.0	70.0	68.9	65.5	63.2	61.0	59.8	55.3	51.9	46.3	42.9
77.5°	49.7	49.7	45.2	42.9	44.0	41.8	39.5	38.4	37.3	33.9	29.4
80°	29.4	28.2	24.8	26.0	24.8	24.8	23.7	22.6	20.3	18.1	15.8
82.5°	7.9	9.0	9.0	9.0	10.2	7.9	7.9	7.9	9.0	9.0	5.6
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1
87.5°	1.1	2.3	4.5	4.5	4.5	4.5	4.5	3.4	3.4	3.4	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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8
2.5°	953.1	951.9	953.1	945.2	963.2	949.7	947.4	945.2	953.1	945.2	933.9
5°	973.4	962.1	958.7	955.3	965.5	949.7	946.3	947.4	941.8	927.1	928.2
7.5°	980.2	970.0	959.8	938.4	947.4	944.0	935.0	928.2	919.2	906.8	904.5
10°	982.4	971.1	956.4	949.7	936.1	931.6	928.2	916.9	905.6	884.2	878.5
12.5°	975.6	962.1	944.0	938.4	928.2	913.5	905.6	894.3	884.2	867.2	854.8
15°	946.3	935.0	929.3	910.1	905.6	896.6	880.8	865.0	850.3	827.7	820.9
17.5°	912.4	907.9	902.2	887.6	886.4	877.4	862.7	849.2	830.0	795.0	783.7
20°	877.4	877.4	859.3	853.7	865.0	846.9	835.6	823.2	783.7	766.7	746.4
22.5°	851.4	839.0	828.8	819.8	820.9	809.6	793.8	769.0	754.3	734.0	710.3
25°	800.6	805.1	782.5	779.2	782.5	756.6	748.7	728.3	706.9	687.7	669.6
27.5°	769.0	756.6	741.9	729.5	729.5	719.3	696.7	692.2	659.5	641.4	618.8
30°	721.6	712.5	700.1	682.0	679.8	671.9	653.8	642.5	608.6	581.5	569.1
32.5°	661.7	658.3	648.2	627.8	621.1	612.0	589.5	570.3	554.4	524.0	509.3
35°	618.8	606.4	584.9	568.0	562.4	546.5	528.5	514.9	498.0	470.9	451.7
37.5°	554.4	542.0	521.7	501.4	501.4	485.6	460.7	447.2	423.5	407.6	391.8
40°	498.0	482.2	461.8	438.1	434.7	412.2	402.0	379.4	364.7	339.9	337.6
42.5°	434.7	420.1	402.0	383.9	370.4	359.1	333.1	316.2	300.4	288.0	284.6
45°	377.2	358.0	342.2	319.6	306.0	292.5	275.5	264.2	251.8	238.3	230.4
47.5°	327.5	311.7	289.1	268.8	255.2	248.4	229.2	216.8	206.6	197.6	192.0
50°	276.7	257.5	245.0	222.5	220.2	204.4	188.6	178.4	172.8	164.9	157.0
52.5°	238.3	220.2	203.3	186.3	177.3	171.6	157.0	146.8	138.9	133.2	128.7
55°	201.0	185.2	171.6	154.7	149.1	141.2	124.2	122.0	114.1	106.1	100.5
57.5°	172.8	158.1	142.3	131.0	120.8	115.2	101.6	92.6	88.1	81.3	75.7
60°	146.8	131.0	118.6	105.0	100.5	92.6	82.4	74.5	68.9	63.2	57.6
62.5°	123.1	109.5	96.0	84.7	77.9	73.4	65.5	58.7	53.1	48.6	44.0
65°	101.6	89.2	77.9	66.6	63.2	57.6	51.9	46.3	41.8	36.1	31.6
67.5°	83.6	72.3	61.0	53.1	49.7	47.4	40.7	35.0	31.6	28.2	23.7
70°	65.5	57.6	48.6	41.8	38.4	35.0	30.5	27.1	22.6	20.3	16.9
72.5°	50.8	44.0	36.1	30.5	28.2	26.0	21.5	18.1	15.8	13.6	11.3
75°	36.1	30.5	26.0	20.3	19.2	18.1	14.7	12.4	10.2	7.9	6.8
77.5°	24.8	20.3	15.8	13.6	12.4	10.2	9.0	6.8	5.6	4.5	3.4
80°	13.6	10.2	7.9	6.8	5.6	4.5	4.5	3.4	2.3	2.3	1.1
82.5°	4.5	3.4	2.3	1.1	1.1	1.1	1.1	1.1	1.1	0.0	1.1
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°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	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°	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8
2.5°	940.6	928.2	931.6	931.6	929.3	929.3	927.1	923.7	924.8	918.1	903.4
5°	930.5	914.7	912.4	914.7	905.6	903.4	898.9	905.6	885.3	893.2	884.2
7.5°	901.1	886.4	883.0	891.0	879.7	872.9	871.8	880.8	862.7	853.7	843.5
10°	868.4	862.7	852.6	846.9	843.5	844.7	835.6	824.3	820.9	818.7	809.6
12.5°	839.0	826.6	817.6	810.8	808.5	808.5	793.8	791.6	781.4	779.2	765.6
15°	804.0	789.3	783.7	774.6	766.7	771.3	754.3	749.8	746.4	731.7	734.0
17.5°	773.5	757.7	744.2	738.5	731.7	725.0	709.1	712.5	704.6	704.6	684.3
20°	734.0	717.1	706.9	695.6	695.6	686.6	675.3	676.4	666.2	656.1	638.0
22.5°	692.2	674.1	661.7	657.2	645.9	643.7	630.1	626.7	613.2	614.3	598.5
25°	648.2	630.1	613.2	614.3	604.1	599.6	591.7	575.9	570.3	563.5	559.0
27.5°	596.2	583.8	569.1	568.0	548.8	549.9	539.8	535.2	521.7	525.1	514.9
30°	548.8	530.7	517.2	513.8	505.9	503.6	487.8	481.0	483.3	474.3	468.6
32.5°	500.2	473.1	467.5	460.7	456.2	450.6	439.3	443.8	433.6	435.9	426.8
35°	435.9	424.6	409.9	409.9	405.4	400.9	393.0	397.5	387.3	382.8	373.8
37.5°	381.7	371.5	356.8	361.3	353.4	346.7	339.9	341.0	332.0	330.9	321.8
40°	323.0	317.3	307.1	307.1	301.5	301.5	298.1	294.7	289.1	282.3	272.1
42.5°	267.6	263.1	258.6	259.7	251.8	258.6	249.6	255.2	237.1	236.0	229.2
45°	227.0	216.8	217.9	213.4	208.9	211.2	203.3	205.5	195.4	193.1	186.3
47.5°	184.1	180.7	173.9	171.6	171.6	168.3	164.9	163.7	159.2	153.6	144.5
50°	151.3	138.9	136.6	133.2	131.0	131.0	126.5	119.7	120.8	115.2	106.1
52.5°	118.6	108.4	103.9	102.8	98.2	96.0	90.3	85.8	82.4	80.2	74.5
55°	91.5	82.4	76.8	76.8	70.0	70.0	62.1	58.7	54.2	49.7	46.3
57.5°	68.9	64.4	58.7	54.2	51.9	46.3	41.8	36.1	32.7	26.0	21.5
60°	51.9	47.4	41.8	38.4	36.1	30.5	24.8	20.3	12.4	10.2	9.0
62.5°	38.4	33.9	28.2	26.0	23.7	19.2	13.6	6.8	3.4	3.4	3.4
65°	28.2	22.6	18.1	15.8	13.6	10.2	4.5	2.3	1.1	1.1	1.1
67.5°	19.2	14.7	10.2	9.0	6.8	3.4	1.1	1.1	1.1	1.1	1.1
70°	12.4	9.0	4.5	3.4	2.3	1.1	1.1	1.1	1.1	1.1	1.1
72.5°	7.9	4.5	2.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	4.5	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	2.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	1.1	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	1.1	1.1	1.1
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):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8
2.5°	919.2	911.3	915.8	905.6	910.1	918.1	912.4	914.7
5°	887.6	883.0	877.4	862.7	874.0	883.0	878.5	877.4
7.5°	853.7	837.9	845.8	841.3	839.0	848.0	837.9	849.2
10°	818.7	807.4	806.3	798.4	798.4	805.1	806.3	799.5
12.5°	766.7	761.1	761.1	760.0	758.8	765.6	766.7	763.4
15°	729.5	727.2	721.6	720.4	713.7	723.8	725.0	723.8
17.5°	684.3	685.4	679.8	679.8	684.3	687.7	678.7	687.7
20°	653.8	648.2	645.9	635.7	641.4	647.0	647.0	648.2
22.5°	609.8	600.7	604.1	598.5	595.1	603.0	603.0	606.4
25°	560.1	560.1	562.4	559.0	561.2	565.7	562.4	570.3
27.5°	512.7	517.2	517.2	512.7	514.9	528.5	534.1	525.1
30°	468.6	469.8	473.1	470.9	477.7	482.2	481.0	487.8
32.5°	418.9	424.6	426.8	423.5	425.7	435.9	430.2	429.1
35°	380.5	370.4	369.3	370.4	374.9	377.2	374.9	382.8
37.5°	325.2	321.8	317.3	318.4	321.8	326.3	328.6	334.2
40°	272.1	267.6	267.6	266.5	263.1	275.5	275.5	275.5
42.5°	225.8	224.7	219.1	219.1	223.6	227.0	224.7	232.6
45°	185.2	180.7	177.3	177.3	180.7	180.7	184.1	182.9
47.5°	145.7	141.2	142.3	138.9	142.3	146.8	141.2	142.3
50°	109.5	109.5	107.3	109.5	108.4	109.5	107.3	105.0
52.5°	74.5	84.7	85.8	81.3	71.1	62.1	56.5	61.0
55°	42.9	38.4	38.4	37.3	35.0	33.9	30.5	33.9
57.5°	21.5	19.2	19.2	19.2	18.1	16.9	14.7	14.7
60°	9.0	7.9	7.9	6.8	5.6	4.5	3.4	4.5
62.5°	3.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3
65°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
67.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
70°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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)