

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: P219512

Luminaire Tested: **LDSQ4B20D010 EU4B10209040 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219512
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 EU4B10209040 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1371.0 lumens
Efficiency: N/A
Efficacy: 65.9 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

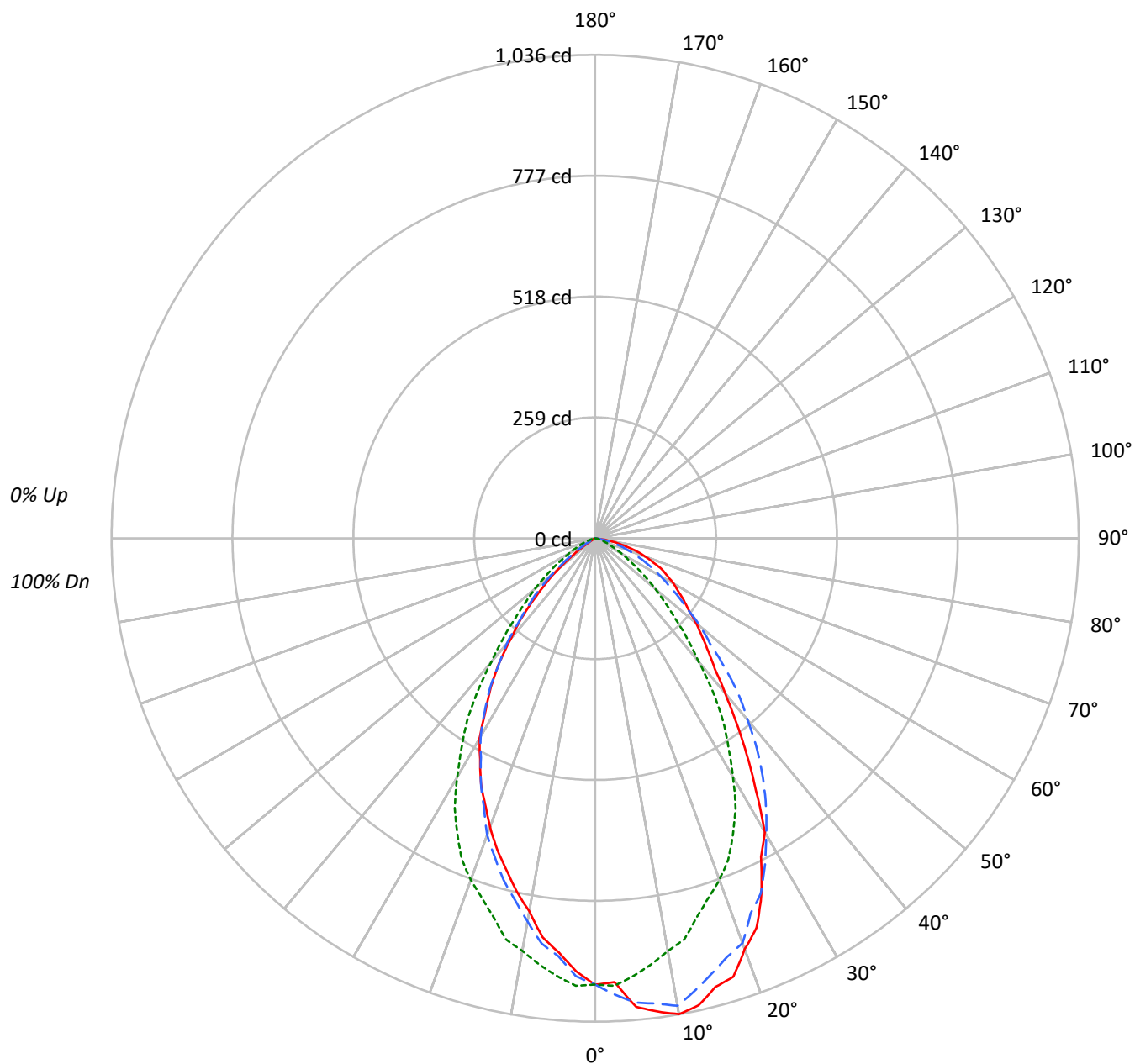
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	92661	92661	92661
5°	98033	91566	86655
10°	101872	88336	79876
15°	99842	84316	73735
20°	96598	80278	67866
25°	90108	74663	61911
30°	81335	66066	55428
35°	67008	56565	45981
40°	54682	43655	35384
45°	46978	33155	25455
50°	42516	25229	16081
55°	39133	18207	5810
60°	37549	12439	891
65°	36287	8413	252
70°	32488	5835	312
75°	26613	2994	0
80°	16625	1283	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	89.6	6.5
10°-20°	241.4	17.6
20°-30°	322.4	23.5
30°-40°	306.1	22.3
40°-50°	211.6	15.4
50°-60°	116.9	8.5
60°-70°	58.0	4.2
70°-80°	22.9	1.7
80°-90°	2.2	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°	653.5	47.7
0°-40°	959.5	70.0
0°-60°	1288.0	93.9
0°-90°	1371.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1371.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	956	956	956	956	956	
5°	1008	999	942	899	891	97
15°	996	966	841	758	735	282
25°	843	840	698	579	579	384
35°	567	626	478	393	389	355
45°	343	393	242	198	186	267
55°	232	218	108	55	34	209
65°	158	115	37	1	1	154
75°	71	44	8	0	0	76
85°	0	1	0	0	0	7
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°	956.5	956.5	956.5	956.5	956.5	956.5	956.5	956.5	956.5	956.5	956.5
2.5°	951.9	978.3	980.6	978.3	981.7	980.6	986.3	980.6	987.5	977.1	979.4
5°	1008.1	997.8	1019.6	1008.1	1008.1	1007.0	1003.5	1002.4	1007.0	992.1	998.9
7.5°	1023.0	1037.9	1057.4	1033.3	1034.5	1034.5	1027.6	1025.3	1025.3	997.8	1005.8
10°	1035.6	1026.5	1036.8	1027.6	1035.6	1034.5	1039.1	1024.2	1034.5	1018.4	1017.3
12.5°	1025.3	1021.9	1035.6	1020.7	1016.1	1017.3	1011.6	1008.1	1011.6	993.2	992.1
15°	995.5	998.9	1019.6	1003.5	1001.2	998.9	992.1	980.6	989.8	964.5	965.7
17.5°	985.2	979.4	982.9	969.1	972.6	970.3	969.1	958.8	956.5	940.4	940.4
20°	937.0	949.6	949.6	940.4	940.4	939.3	924.4	933.6	923.2	918.7	923.2
22.5°	903.7	904.9	904.9	896.9	898.0	893.4	885.4	879.7	885.4	879.7	870.5
25°	843.0	845.3	859.0	844.1	841.8	846.4	839.5	836.1	834.9	821.2	839.5
27.5°	769.6	792.5	791.4	785.6	792.5	783.3	779.9	781.0	784.5	783.3	787.9
30°	727.1	730.6	734.0	729.4	730.6	727.1	727.1	728.3	737.4	734.0	732.9
32.5°	641.1	652.6	661.8	661.8	662.9	666.3	665.2	689.3	695.0	683.5	681.2
35°	566.6	574.6	582.6	583.8	598.7	599.8	601.0	607.8	623.9	627.3	626.2
37.5°	495.5	503.5	505.8	516.1	524.1	532.2	541.3	550.5	564.3	575.7	570.0
40°	432.4	435.8	441.6	446.1	462.2	462.2	466.8	485.1	500.0	509.2	508.1
42.5°	379.6	380.8	385.4	393.4	408.3	404.9	408.3	420.9	442.7	443.8	456.5
45°	342.9	341.8	345.2	346.4	355.5	360.1	362.4	371.6	389.9	392.2	393.4
47.5°	309.7	308.5	314.2	316.5	320.0	324.6	324.6	325.7	332.6	338.3	333.7
50°	282.1	282.1	282.1	284.4	290.2	289.0	290.2	294.7	298.2	295.9	294.7
52.5°	252.3	256.9	260.3	261.5	262.6	262.6	263.8	261.5	260.3	256.9	250.0
55°	231.7	236.3	236.3	236.3	236.3	240.8	235.1	236.3	236.3	227.1	217.9
57.5°	211.0	215.6	219.1	214.5	219.1	214.5	212.2	211.0	208.7	199.6	185.8
60°	193.8	196.1	195.0	193.8	196.1	192.7	190.4	185.8	183.5	170.9	161.7
62.5°	174.3	175.5	176.6	174.3	172.0	170.9	166.3	159.4	154.8	144.5	136.5
65°	158.3	154.8	153.7	152.5	150.2	146.8	143.4	135.3	131.9	122.7	114.7
67.5°	134.2	133.0	135.3	131.9	126.2	126.2	122.7	115.8	107.8	102.1	94.0
70°	114.7	113.5	111.2	107.8	106.7	102.1	102.1	94.0	91.8	81.4	74.5
72.5°	94.0	94.0	90.6	87.2	83.7	81.4	80.3	74.5	71.1	65.4	59.6
75°	71.1	71.1	70.0	66.5	64.2	61.9	60.8	56.2	52.8	47.0	43.6
77.5°	50.5	50.5	45.9	43.6	44.7	42.4	40.1	39.0	37.8	34.4	29.8
80°	29.8	28.7	25.2	26.4	25.2	25.2	24.1	22.9	20.6	18.4	16.1
82.5°	8.0	9.2	9.2	9.2	10.3	8.0	8.0	8.0	9.2	9.2	5.7
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	4.6	4.6	4.6	4.6	4.6	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°	956.5	956.5	956.5	956.5	956.5	956.5	956.5	956.5	956.5	956.5	956.5
2.5°	968.0	966.8	968.0	959.9	978.3	964.5	962.2	959.9	968.0	959.9	948.5
5°	988.6	977.1	973.7	970.3	980.6	964.5	961.1	962.2	956.5	941.6	942.7
7.5°	995.5	985.2	974.9	953.1	962.2	958.8	949.6	942.7	933.6	920.9	918.7
10°	997.8	986.3	971.4	964.5	950.8	946.2	942.7	931.3	919.8	898.0	892.3
12.5°	990.9	977.1	958.8	953.1	942.7	927.8	919.8	908.3	898.0	880.8	868.2
15°	961.1	949.6	943.9	924.4	919.8	910.6	894.6	878.5	863.6	840.7	833.8
17.5°	926.7	922.1	916.4	901.5	900.3	891.1	876.2	862.5	843.0	807.4	795.9
20°	891.1	891.1	872.8	867.0	878.5	860.2	848.7	836.1	795.9	778.7	758.1
22.5°	864.8	852.1	841.8	832.6	833.8	822.3	806.3	781.0	766.1	745.5	721.4
25°	813.1	817.7	794.8	791.4	794.8	768.4	760.4	739.7	718.0	698.5	680.1
27.5°	781.0	768.4	753.5	740.9	740.9	730.6	707.6	703.0	669.8	651.4	628.5
30°	732.9	723.7	711.1	692.7	690.4	682.4	664.0	652.6	618.2	590.6	578.0
32.5°	672.1	668.6	658.3	637.7	630.8	621.6	598.7	579.2	563.1	532.2	517.2
35°	628.5	615.9	594.1	576.9	571.1	555.1	536.7	523.0	505.8	478.3	458.8
37.5°	563.1	550.5	529.9	509.2	509.2	493.2	467.9	454.2	430.1	414.0	398.0
40°	505.8	489.7	469.1	445.0	441.6	418.6	408.3	385.4	370.4	345.2	342.9
42.5°	441.6	426.6	408.3	389.9	376.2	364.7	338.3	321.1	305.1	292.5	289.0
45°	383.1	363.6	347.5	324.6	310.8	297.0	279.8	268.4	255.8	242.0	234.0
47.5°	332.6	316.5	293.6	273.0	259.2	252.3	232.8	220.2	209.9	200.7	195.0
50°	281.0	261.5	248.9	225.9	223.6	207.6	191.5	181.2	175.5	167.4	159.4
52.5°	242.0	223.6	206.4	189.2	180.1	174.3	159.4	149.1	141.1	135.3	130.7
55°	204.1	188.1	174.3	157.1	151.4	143.4	126.2	123.9	115.8	107.8	102.1
57.5°	175.5	160.6	144.5	133.0	122.7	117.0	103.2	94.0	89.5	82.6	76.8
60°	149.1	133.0	120.4	106.7	102.1	94.0	83.7	75.7	70.0	64.2	58.5
62.5°	125.0	111.2	97.5	86.0	79.1	74.5	66.5	59.6	53.9	49.3	44.7
65°	103.2	90.6	79.1	67.7	64.2	58.5	52.8	47.0	42.4	36.7	32.1
67.5°	84.9	73.4	61.9	53.9	50.5	48.2	41.3	35.6	32.1	28.7	24.1
70°	66.5	58.5	49.3	42.4	39.0	35.6	31.0	27.5	22.9	20.6	17.2
72.5°	51.6	44.7	36.7	31.0	28.7	26.4	21.8	18.4	16.1	13.8	11.5
75°	36.7	31.0	26.4	20.6	19.5	18.4	14.9	12.6	10.3	8.0	6.9
77.5°	25.2	20.6	16.1	13.8	12.6	10.3	9.2	6.9	5.7	4.6	3.4
80°	13.8	10.3	8.0	6.9	5.7	4.6	4.6	3.4	2.3	2.3	1.1
82.5°	4.6	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°	956.5	956.5	956.5	956.5	956.5	956.5	956.5	956.5	956.5	956.5	956.5
2.5°	955.4	942.7	946.2	946.2	943.9	943.9	941.6	938.2	939.3	932.4	917.5
5°	945.0	929.0	926.7	929.0	919.8	917.5	912.9	919.8	899.2	907.2	898.0
7.5°	915.2	900.3	896.9	904.9	893.4	886.5	885.4	894.6	876.2	867.0	856.7
10°	882.0	876.2	865.9	860.2	856.7	857.9	848.7	837.2	833.8	831.5	822.3
12.5°	852.1	839.5	830.3	823.5	821.2	821.2	806.3	804.0	793.6	791.4	777.6
15°	816.6	801.7	795.9	786.8	778.7	783.3	766.1	761.5	758.1	743.2	745.5
17.5°	785.6	769.6	755.8	750.1	743.2	736.3	720.2	723.7	715.7	715.7	695.0
20°	745.5	728.3	718.0	706.5	706.5	697.3	685.8	687.0	676.7	666.3	648.0
22.5°	703.0	684.7	672.1	667.5	656.0	653.7	640.0	636.5	622.8	623.9	607.8
25°	658.3	640.0	622.8	623.9	613.6	609.0	601.0	584.9	579.2	572.3	567.7
27.5°	605.6	592.9	578.0	576.9	557.4	558.5	548.2	543.6	529.9	533.3	523.0
30°	557.4	539.0	525.3	521.8	513.8	511.5	495.5	488.6	490.9	481.7	476.0
32.5°	508.1	480.5	474.8	467.9	463.3	457.6	446.1	450.7	440.4	442.7	433.5
35°	442.7	431.2	416.3	416.3	411.7	407.1	399.1	403.7	393.4	388.8	379.6
37.5°	387.6	377.3	362.4	367.0	359.0	352.1	345.2	346.4	337.2	336.0	326.9
40°	328.0	322.3	312.0	312.0	306.2	306.2	302.8	299.3	293.6	286.7	276.4
42.5°	271.8	267.2	262.6	263.8	255.8	262.6	253.5	259.2	240.8	239.7	232.8
45°	230.5	220.2	221.3	216.8	212.2	214.5	206.4	208.7	198.4	196.1	189.2
47.5°	186.9	183.5	176.6	174.3	174.3	170.9	167.4	166.3	161.7	156.0	146.8
50°	153.7	141.1	138.8	135.3	133.0	133.0	128.5	121.6	122.7	117.0	107.8
52.5°	120.4	110.1	105.5	104.4	99.8	97.5	91.8	87.2	83.7	81.4	75.7
55°	92.9	83.7	78.0	78.0	71.1	71.1	63.1	59.6	55.1	50.5	47.0
57.5°	70.0	65.4	59.6	55.1	52.8	47.0	42.4	36.7	33.3	26.4	21.8
60°	52.8	48.2	42.4	39.0	36.7	31.0	25.2	20.6	12.6	10.3	9.2
62.5°	39.0	34.4	28.7	26.4	24.1	19.5	13.8	6.9	3.4	3.4	3.4
65°	28.7	22.9	18.4	16.1	13.8	10.3	4.6	2.3	1.1	1.1	1.1
67.5°	19.5	14.9	10.3	9.2	6.9	3.4	1.1	1.1	1.1	1.1	1.1
70°	12.6	9.2	4.6	3.4	2.3	1.1	1.1	1.1	1.1	1.1	1.1
72.5°	8.0	4.6	2.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	4.6	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°	956.5	956.5	956.5	956.5	956.5	956.5	956.5	956.5
2.5°	933.6	925.5	930.1	919.8	924.4	932.4	926.7	929.0
5°	901.5	896.9	891.1	876.2	887.7	896.9	892.3	891.1
7.5°	867.0	851.0	859.0	854.4	852.1	861.3	851.0	862.5
10°	831.5	820.0	818.9	810.8	810.8	817.7	818.9	812.0
12.5°	778.7	773.0	773.0	771.9	770.7	777.6	778.7	775.3
15°	740.9	738.6	732.9	731.7	724.8	735.2	736.3	735.2
17.5°	695.0	696.2	690.4	690.4	695.0	698.5	689.3	698.5
20°	664.0	658.3	656.0	645.7	651.4	657.2	657.2	658.3
22.5°	619.3	610.1	613.6	607.8	604.4	612.4	612.4	615.9
25°	568.9	568.9	571.1	567.7	570.0	574.6	571.1	579.2
27.5°	520.7	525.3	525.3	520.7	523.0	536.7	542.5	533.3
30°	476.0	477.1	480.5	478.3	485.1	489.7	488.6	495.5
32.5°	425.5	431.2	433.5	430.1	432.4	442.7	437.0	435.8
35°	386.5	376.2	375.0	376.2	380.8	383.1	380.8	388.8
37.5°	330.3	326.9	322.3	323.4	326.9	331.4	333.7	339.5
40°	276.4	271.8	271.8	270.7	267.2	279.8	279.8	279.8
42.5°	229.4	228.2	222.5	222.5	227.1	230.5	228.2	236.3
45°	188.1	183.5	180.1	180.1	183.5	183.5	186.9	185.8
47.5°	147.9	143.4	144.5	141.1	144.5	149.1	143.4	144.5
50°	111.2	111.2	109.0	111.2	110.1	111.2	109.0	106.7
52.5°	75.7	86.0	87.2	82.6	72.3	63.1	57.3	61.9
55°	43.6	39.0	39.0	37.8	35.6	34.4	31.0	34.4
57.5°	21.8	19.5	19.5	19.5	18.4	17.2	14.9	14.9
60°	9.2	8.0	8.0	6.9	5.7	4.6	3.4	4.6
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)