

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: P251540

Luminaire Tested: **LD4B20D010 EU4B10209050 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251540
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-10)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B20D010 EU4B10209050 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1628.0 lumens
Efficiency: N/A
Efficacy: 78.3 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.19
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

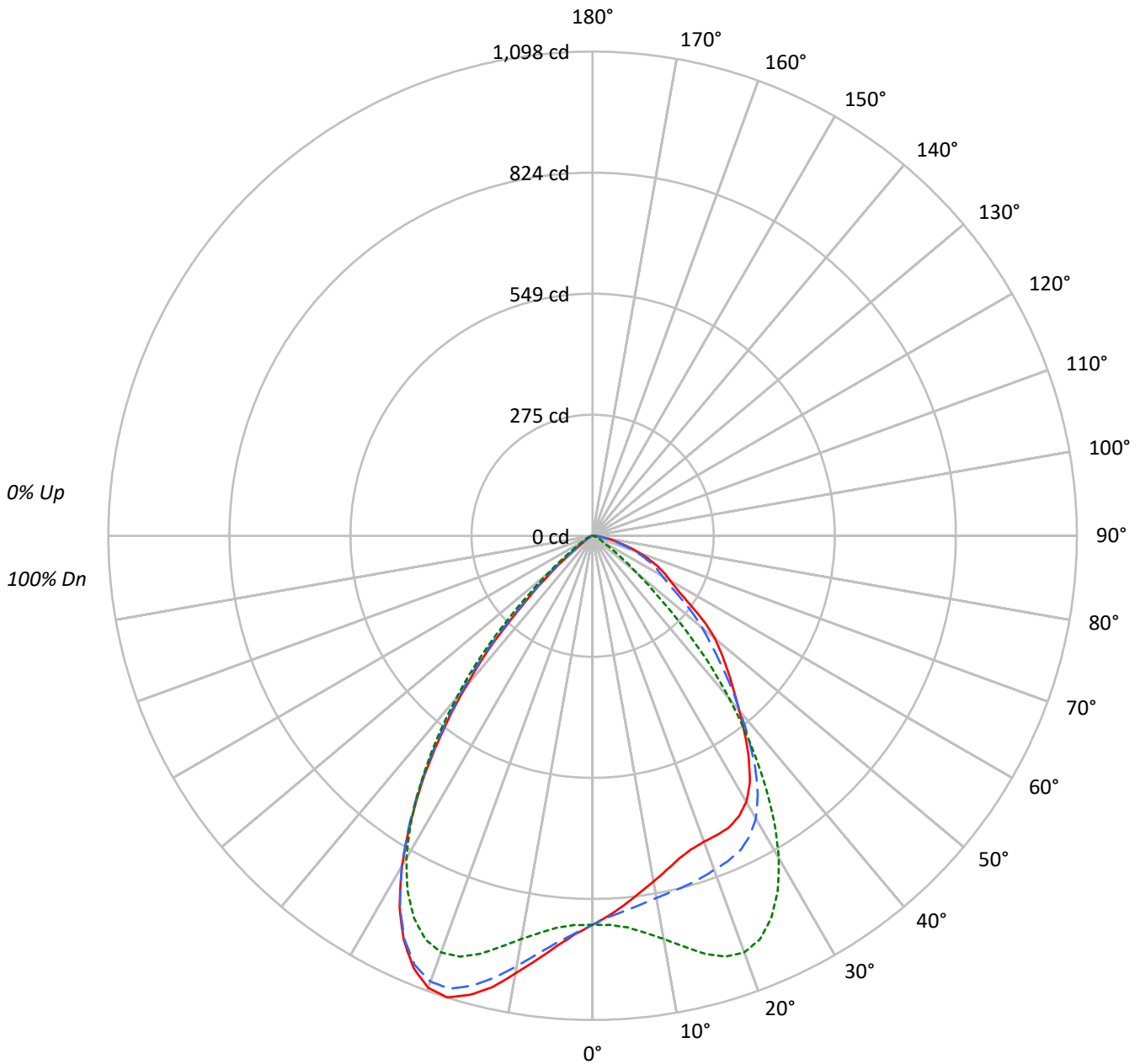
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	85	82	80																			
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72																			
4	91	81	75	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	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53																			
7	75	63	56	51	73	62	55	51	61	55	50	60	54	50	58	53	50	48																			
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44																			
9	66	54	47	42	65	54	47	42	53	46	42	52	46	42	51	46	42	40																			
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	85978	85978	85978
5°	82138	87206	91374
10°	78754	91866	99724
15°	76459	99009	108766
20°	76561	104273	113119
25°	78521	102920	108867
30°	78414	95002	97208
35°	73443	80296	79201
40°	65787	61245	57148
45°	59679	38895	31907
50°	54825	19725	13615
55°	45010	8801	4503
60°	39510	4931	2475
65°	37174	3713	1868
70°	31829	2963	1653
75°	24287	2184	1318
80°	17455	1291	673
85°	12859	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	85.7	5.3
10°-20°	267.1	16.4
20°-30°	413.2	25.4
30°-40°	407.1	25.0
40°-50°	250.0	15.4
50°-60°	111.2	6.8
60°-70°	62.1	3.8
70°-80°	26.9	1.7
80°-90°	4.8	0.3
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°	766.0	47.0
0°-40°	1173.1	72.1
0°-60°	1534.2	94.2
0°-90°	1628.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1628.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	882	882	882	882	882	
5°	840	853	891	926	934	79
15°	758	821	981	1056	1078	215
25°	730	789	957	1009	1012	335
35°	617	643	675	673	666	383
45°	433	411	282	246	232	335
55°	265	240	52	30	26	243
65°	161	145	16	9	8	158
75°	64	55	6	4	4	71
85°	12	9	0	0	0	14
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°	882.2	882.2	882.2	882.2	882.2	882.2	882.2	882.2	882.2	882.2	882.2
2.5°	861.5	861.5	861.5	861.5	863.8	860.3	863.8	863.8	867.2	868.4	864.9
5°	839.6	838.4	839.6	839.6	841.9	840.7	844.2	846.5	851.1	853.4	853.4
7.5°	816.6	816.6	816.6	818.9	822.3	821.2	824.6	828.1	835.0	839.6	843.1
10°	795.8	794.7	798.1	799.3	802.7	802.7	808.5	812.0	820.0	829.2	833.8
12.5°	776.3	775.1	777.4	780.9	786.6	786.6	791.2	797.0	808.5	818.9	826.9
15°	757.8	759.0	762.4	764.7	771.6	771.6	777.4	784.3	797.0	809.7	821.2
17.5°	745.2	746.3	748.6	752.1	759.0	759.0	764.7	772.8	786.6	800.4	814.3
20°	738.2	739.4	741.7	745.2	750.9	752.1	756.7	765.9	778.6	793.5	806.2
22.5°	734.8	737.1	739.4	741.7	747.5	747.5	753.2	760.1	772.8	787.8	799.3
25°	730.2	732.5	733.6	737.1	741.7	741.7	745.2	753.2	764.7	777.4	788.9
27.5°	717.5	719.8	721.0	724.4	729.0	727.9	732.5	738.2	748.6	760.1	769.3
30°	696.8	697.9	700.2	701.4	704.8	704.8	708.3	714.1	721.0	731.3	740.5
32.5°	663.4	665.7	666.8	668.0	671.4	670.3	671.4	674.9	681.8	691.0	696.8
35°	617.3	621.9	621.9	624.2	625.4	624.2	624.2	628.8	632.3	639.2	642.7
37.5°	566.6	570.1	568.9	571.2	572.4	568.9	571.2	572.4	577.0	580.5	581.6
40°	517.1	518.3	518.3	518.3	518.3	517.1	518.3	519.4	522.9	522.9	519.4
42.5°	472.2	473.4	473.4	471.0	473.4	472.2	472.2	472.2	472.2	467.6	464.1
45°	433.0	434.2	434.2	433.0	433.0	430.7	429.6	428.4	425.0	419.2	411.2
47.5°	396.2	398.5	399.6	397.3	396.2	393.9	393.9	387.0	382.4	375.5	363.9
50°	361.6	363.9	363.9	361.6	361.6	358.2	354.7	352.4	345.5	337.5	323.6
52.5°	317.9	321.3	321.3	320.2	320.2	315.6	314.4	309.8	304.1	294.8	283.3
55°	264.9	269.5	268.3	267.2	264.9	264.9	264.9	261.4	258.0	251.1	239.6
57.5°	226.9	228.0	228.0	226.9	226.9	224.6	224.6	221.1	220.0	213.1	203.9
60°	202.7	202.7	203.9	202.7	201.5	200.4	199.2	196.9	193.5	188.9	182.0
62.5°	183.1	184.3	184.3	183.1	182.0	180.8	179.7	177.4	175.1	171.6	164.7
65°	161.2	163.5	162.4	161.2	160.1	158.9	158.9	156.6	154.3	152.0	145.1
67.5°	137.1	138.2	139.4	137.1	137.1	135.9	135.9	133.6	132.4	127.8	123.2
70°	111.7	112.9	112.9	111.7	111.7	110.6	110.6	109.4	108.3	104.8	100.2
72.5°	87.5	88.7	87.5	86.4	86.4	86.4	85.2	84.1	82.9	80.6	77.2
75°	64.5	64.5	65.6	64.5	63.3	63.3	62.2	62.2	59.9	58.7	55.3
77.5°	46.1	47.2	46.1	46.1	44.9	43.8	43.8	42.6	42.6	41.5	39.2
80°	31.1	31.1	32.2	31.1	29.9	31.1	29.9	28.8	28.8	27.6	25.3
82.5°	19.6	20.7	19.6	19.6	19.6	19.6	19.6	18.4	18.4	17.3	16.1
85°	11.5	11.5	11.5	11.5	11.5	11.5	11.5	10.4	10.4	10.4	9.2
87.5°	5.8	5.8	4.6	4.6	5.8	5.8	5.8	4.6	4.6	4.6	4.6
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°	882.2	882.2	882.2	882.2	882.2	882.2	882.2	882.2	882.2	882.2	882.2
2.5°	869.5	870.7	873.0	876.5	876.5	874.1	879.9	879.9	882.2	883.4	888.0
5°	860.3	862.6	867.2	873.0	874.1	873.0	881.1	884.5	888.0	891.4	898.3
7.5°	852.3	856.9	864.9	873.0	876.5	876.5	889.1	893.7	900.6	907.5	915.6
10°	847.7	854.6	866.1	878.8	882.2	885.7	900.6	909.9	919.1	928.3	939.8
12.5°	841.9	854.6	869.5	885.7	892.6	897.2	917.9	929.4	942.1	953.6	968.6
15°	840.7	855.7	875.3	896.0	905.2	912.2	935.2	951.3	966.3	981.3	996.2
17.5°	836.1	854.6	878.8	901.8	913.3	922.5	949.0	968.6	985.9	1000.8	1018.1
20°	830.4	851.1	877.6	902.9	915.6	924.8	953.6	972.0	991.6	1005.4	1021.6
22.5°	822.3	843.1	869.5	894.9	906.4	914.5	943.3	959.4	976.6	990.5	1005.4
25°	808.5	828.1	851.1	871.8	883.4	890.3	915.6	930.6	943.3	957.1	970.9
27.5°	788.9	803.9	823.5	838.4	845.4	852.3	873.0	885.7	897.2	908.7	917.9
30°	754.4	765.9	779.7	792.4	799.3	800.4	820.0	826.9	836.1	844.2	851.1
32.5°	708.3	717.5	725.6	732.5	737.1	738.2	753.2	755.5	764.7	764.7	775.1
35°	649.6	654.2	659.9	659.9	663.4	659.9	670.3	672.6	673.8	674.9	683.0
37.5°	582.8	585.1	588.5	581.6	581.6	578.2	581.6	583.9	579.3	579.3	585.1
40°	519.4	514.8	510.2	503.3	499.8	492.9	492.9	487.2	483.7	481.4	482.6
42.5°	458.4	448.0	437.6	422.7	415.8	408.9	401.9	393.9	391.6	385.8	382.4
45°	399.6	384.7	370.9	346.7	332.8	325.9	311.0	294.8	284.5	282.2	273.0
47.5°	350.1	328.2	305.2	276.4	262.6	249.9	228.0	214.2	200.4	193.5	187.7
50°	306.4	286.8	256.8	225.7	208.5	195.8	171.6	155.5	140.5	130.1	123.2
52.5°	268.3	246.5	218.8	183.1	165.8	152.0	125.5	107.1	94.4	84.1	76.0
55°	225.7	208.5	180.8	147.4	130.1	114.0	91.0	71.4	58.7	51.8	46.1
57.5°	194.6	179.7	153.2	120.9	104.8	89.8	66.8	50.7	40.3	33.4	29.9
60°	173.9	160.1	137.1	106.0	91.0	77.2	55.3	40.3	31.1	25.3	23.0
62.5°	156.6	142.8	122.1	93.3	80.6	66.8	47.2	33.4	25.3	20.7	17.3
65°	137.1	124.4	106.0	80.6	69.1	57.6	40.3	27.6	20.7	16.1	13.8
67.5°	116.3	104.8	88.7	66.8	57.6	48.4	32.2	23.0	17.3	13.8	11.5
70°	94.4	85.2	70.3	54.1	46.1	38.0	26.5	18.4	12.7	10.4	9.2
72.5°	72.6	64.5	54.1	41.5	34.6	28.8	19.6	13.8	10.4	8.1	6.9
75°	51.8	46.1	38.0	29.9	25.3	20.7	15.0	10.4	6.9	5.8	4.6
77.5°	35.7	32.2	26.5	20.7	17.3	15.0	10.4	6.9	5.8	4.6	3.5
80°	23.0	20.7	17.3	12.7	10.4	9.2	5.8	4.6	3.5	2.3	2.3
82.5°	13.8	12.7	10.4	6.9	5.8	4.6	3.5	2.3	2.3	1.2	1.2
85°	8.1	6.9	4.6	3.5	3.5	2.3	2.3	1.2	1.2	0.0	0.0
87.5°	3.5	2.3	2.3	1.2	1.2	1.2	1.2	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	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°	882.2	882.2	882.2	882.2	882.2	882.2	882.2	882.2	882.2	882.2	882.2
2.5°	885.7	891.4	890.3	893.7	892.6	892.6	898.3	896.0	901.8	901.8	902.9
5°	898.3	906.4	906.4	912.2	911.0	913.3	919.1	919.1	926.0	928.3	928.3
7.5°	916.8	927.1	929.4	935.2	936.3	940.9	945.6	946.7	955.9	958.2	959.4
10°	942.1	954.8	958.2	964.0	966.3	970.9	976.6	979.0	990.5	991.6	996.2
12.5°	973.2	987.0	990.5	997.4	998.5	1004.3	1012.4	1014.7	1026.2	1029.6	1033.1
15°	1003.1	1015.8	1021.6	1028.5	1029.6	1036.5	1043.4	1045.8	1056.1	1060.7	1064.2
17.5°	1023.9	1038.8	1042.3	1051.5	1051.5	1057.3	1064.2	1066.5	1076.8	1080.3	1082.6
20°	1028.5	1042.3	1046.9	1053.8	1055.0	1058.4	1064.2	1066.5	1075.7	1076.8	1080.3
22.5°	1011.2	1025.0	1027.3	1034.2	1035.4	1038.8	1043.4	1042.3	1053.8	1052.7	1053.8
25°	974.3	987.0	987.0	995.1	993.9	997.4	999.7	998.5	1008.9	1008.9	1008.9
27.5°	921.4	932.9	934.0	939.8	936.3	937.5	939.8	938.6	945.6	945.6	945.6
30°	855.7	864.9	861.5	866.1	863.8	866.1	863.8	862.6	864.9	867.2	866.1
32.5°	773.9	780.9	780.9	782.0	782.0	775.1	772.8	772.8	771.6	770.5	770.5
35°	679.5	685.3	683.0	683.0	681.8	674.9	671.4	669.1	672.6	665.7	670.3
37.5°	582.8	583.9	580.5	579.3	573.6	573.6	567.8	563.2	565.5	564.3	559.7
40°	476.8	481.4	474.5	472.2	475.7	471.0	465.3	459.5	464.1	458.4	460.7
42.5°	373.2	372.0	369.7	369.7	369.7	362.8	361.6	360.5	361.6	357.0	353.6
45°	269.5	266.0	262.6	262.6	258.0	255.7	255.7	252.2	246.5	246.5	239.6
47.5°	182.0	173.9	171.6	170.5	168.1	168.1	165.8	163.5	162.4	156.6	156.6
50°	118.6	110.6	108.3	107.1	108.3	106.0	103.7	101.4	99.0	97.9	95.6
52.5°	71.4	68.0	65.6	64.5	62.2	61.0	59.9	57.6	56.4	56.4	55.3
55°	42.6	39.2	34.6	34.6	34.6	33.4	32.2	31.1	29.9	29.9	28.8
57.5°	26.5	24.2	21.9	20.7	20.7	20.7	19.6	19.6	19.6	19.6	18.4
60°	19.6	17.3	16.1	16.1	16.1	15.0	15.0	15.0	15.0	13.8	13.8
62.5°	15.0	13.8	12.7	12.7	11.5	11.5	11.5	11.5	11.5	11.5	10.4
65°	12.7	10.4	10.4	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
67.5°	9.2	8.1	8.1	8.1	8.1	6.9	6.9	6.9	6.9	6.9	6.9
70°	6.9	6.9	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
72.5°	5.8	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
75°	4.6	4.6	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
77.5°	3.5	3.5	3.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
80°	2.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
82.5°	1.2	1.2	1.2	1.2	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	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):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	882.2	882.2	882.2	882.2	882.2	882.2	882.2	882.2
2.5°	902.9	908.7	902.9	902.9	906.4	905.2	907.5	904.1
5°	929.4	937.5	931.7	930.6	936.3	935.2	936.3	934.0
7.5°	961.7	969.7	964.0	964.0	969.7	968.6	972.0	969.7
10°	998.5	1007.7	999.7	1000.8	1008.9	1007.7	1007.7	1007.7
12.5°	1036.5	1045.8	1041.1	1041.1	1046.9	1048.1	1049.2	1048.1
15°	1067.6	1076.8	1071.1	1071.1	1079.2	1078.0	1079.2	1078.0
17.5°	1086.1	1095.3	1088.4	1088.4	1095.3	1095.3	1096.4	1097.6
20°	1081.5	1091.8	1086.1	1083.8	1091.8	1091.8	1090.7	1090.7
22.5°	1055.0	1064.2	1059.6	1057.3	1063.0	1060.7	1059.6	1060.7
25°	1008.9	1018.1	1008.9	1008.9	1013.5	1012.4	1013.5	1012.4
27.5°	946.7	953.6	944.4	943.3	947.9	945.6	944.4	947.9
30°	863.8	870.7	866.1	862.6	868.4	864.9	862.6	863.8
32.5°	769.3	773.9	771.6	765.9	769.3	767.0	765.9	767.0
35°	665.7	671.4	662.2	661.1	666.8	662.2	659.9	665.7
37.5°	558.6	565.5	557.4	558.6	555.1	556.3	554.0	557.4
40°	457.2	456.1	453.8	452.6	453.8	450.3	452.6	449.2
42.5°	347.8	350.1	349.0	347.8	349.0	344.4	342.1	346.7
45°	241.9	240.7	238.4	236.1	236.1	234.9	234.9	231.5
47.5°	155.5	154.3	149.7	150.9	153.2	150.9	147.4	152.0
50°	94.4	93.3	93.3	92.1	94.4	92.1	89.8	89.8
52.5°	53.0	53.0	51.8	51.8	51.8	51.8	50.7	49.5
55°	28.8	27.6	27.6	27.6	26.5	26.5	26.5	26.5
57.5°	18.4	18.4	18.4	18.4	18.4	18.4	17.3	17.3
60°	13.8	13.8	13.8	13.8	12.7	13.8	12.7	12.7
62.5°	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
65°	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
67.5°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
70°	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
72.5°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
75°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
77.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
80°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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)