

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: P251539

Luminaire Tested: **LD4B20D010 EU4B10209040 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251539
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 EU4B10209040 4LBSW1LI
Description: PORTFOLIO 4 INCH 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: 1621.0 lumens
Efficiency: N/A
Efficacy: 77.9 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

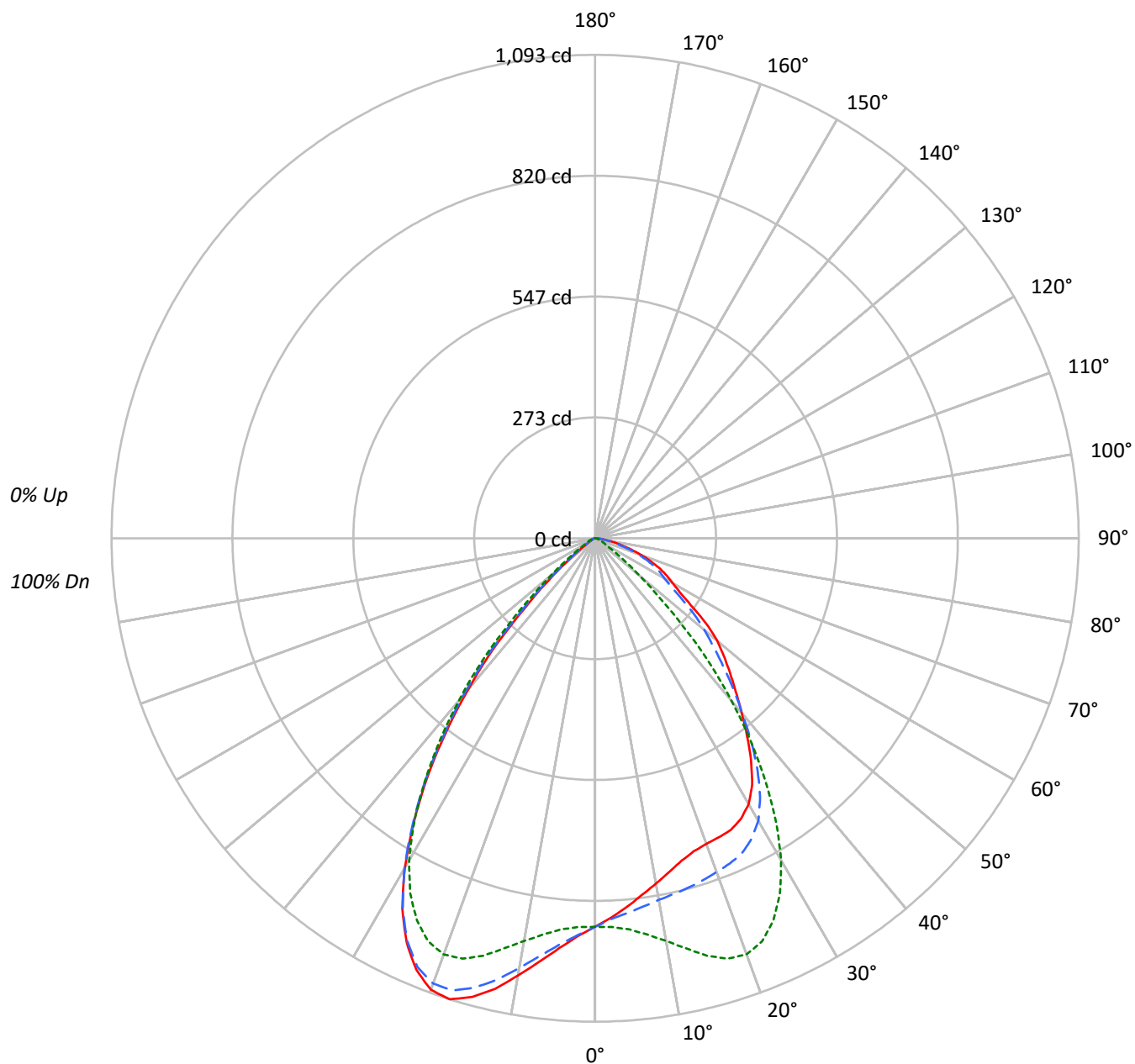
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				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	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°	85607	85607	85607
5°	81786	86834	90982
10°	78417	91470	99298
15°	76136	98575	108302
20°	76239	103827	112632
25°	78177	102479	108393
30°	78077	94597	96791
35°	73134	79951	78856
40°	65507	60978	56894
45°	59431	38729	31769
50°	54598	19650	13555
55°	44823	8768	4486
60°	39334	4912	2456
65°	37012	3713	1845
70°	31686	2935	1624
75°	24174	2146	1280
80°	17398	1291	617
85°	12859	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	85.3	5.3
10°-20°	265.9	16.4
20°-30°	411.4	25.4
30°-40°	405.4	25.0
40°-50°	248.9	15.4
50°-60°	110.7	6.8
60°-70°	61.8	3.8
70°-80°	26.7	1.6
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°	762.7	47.1
0°-40°	1168.0	72.1
0°-60°	1527.6	94.2
0°-90°	1621.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1621.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	878	878	878	878	878	
5°	836	850	888	922	930	78
15°	755	818	977	1052	1073	214
25°	727	786	953	1005	1008	334
35°	615	640	672	670	663	382
45°	431	409	281	245	230	334
55°	264	238	52	30	26	242
65°	160	144	16	9	8	157
75°	64	55	6	3	3	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°	878.4	878.4	878.4	878.4	878.4	878.4	878.4	878.4	878.4	878.4	878.4
2.5°	857.8	857.8	857.8	857.8	860.1	856.6	860.1	860.1	863.5	864.7	861.2
5°	836.0	834.8	836.0	836.0	838.3	837.1	840.6	842.9	847.5	849.7	849.7
7.5°	813.1	813.1	813.1	815.3	818.8	817.6	821.1	824.5	831.4	836.0	839.4
10°	792.4	791.3	794.7	795.8	799.3	799.3	805.0	808.5	816.5	825.7	830.3
12.5°	772.9	771.8	774.1	777.5	783.2	783.2	787.8	793.6	805.0	815.3	823.4
15°	754.6	755.7	759.2	761.4	768.3	768.3	774.1	780.9	793.6	806.2	817.6
17.5°	742.0	743.1	745.4	748.8	755.7	755.7	761.4	769.5	783.2	797.0	810.8
20°	735.1	736.2	738.5	742.0	747.7	748.8	753.4	762.6	775.2	790.1	802.7
22.5°	731.6	733.9	736.2	738.5	744.2	744.2	750.0	756.9	769.5	784.4	795.8
25°	727.0	729.3	730.5	733.9	738.5	738.5	742.0	750.0	761.4	774.1	785.5
27.5°	714.4	716.7	717.9	721.3	725.9	724.8	729.3	735.1	745.4	756.9	766.0
30°	693.8	694.9	697.2	698.4	701.8	701.8	705.3	711.0	717.9	728.2	737.4
32.5°	660.5	662.8	664.0	665.1	668.6	667.4	668.6	672.0	678.9	688.1	693.8
35°	614.7	619.2	619.2	621.5	622.7	621.5	621.5	626.1	629.6	636.5	639.9
37.5°	564.2	567.6	566.5	568.8	569.9	566.5	568.8	569.9	574.5	578.0	579.1
40°	514.9	516.0	516.0	516.0	516.0	514.9	516.0	517.2	520.6	520.6	517.2
42.5°	470.2	471.3	471.3	469.0	471.3	470.2	470.2	470.2	470.2	465.6	462.1
45°	431.2	432.3	432.3	431.2	431.2	428.9	427.7	426.6	423.2	417.4	409.4
47.5°	394.5	396.8	397.9	395.6	394.5	392.2	392.2	385.3	380.7	373.8	362.4
50°	360.1	362.4	362.4	360.1	360.1	356.6	353.2	350.9	344.0	336.0	322.2
52.5°	316.5	319.9	319.9	318.8	318.8	314.2	313.1	308.5	302.7	293.6	282.1
55°	263.8	268.3	267.2	266.0	263.8	263.8	263.8	260.3	256.9	250.0	238.5
57.5°	225.9	227.1	227.1	225.9	225.9	223.6	223.6	220.2	219.0	212.2	203.0
60°	201.8	201.8	203.0	201.8	200.7	199.5	198.4	196.1	192.7	188.1	181.2
62.5°	182.3	183.5	183.5	182.3	181.2	180.0	178.9	176.6	174.3	170.9	164.0
65°	160.5	162.8	161.7	160.5	159.4	158.3	158.3	156.0	153.7	151.4	144.5
67.5°	136.5	137.6	138.8	136.5	136.5	135.3	135.3	133.0	131.9	127.3	122.7
70°	111.2	112.4	112.4	111.2	111.2	110.1	110.1	108.9	107.8	104.4	99.8
72.5°	87.2	88.3	87.2	86.0	86.0	86.0	84.9	83.7	82.6	80.3	76.8
75°	64.2	64.2	65.4	64.2	63.1	63.1	61.9	61.9	59.6	58.5	55.0
77.5°	45.9	47.0	45.9	45.9	44.7	43.6	43.6	42.4	42.4	41.3	39.0
80°	31.0	31.0	32.1	31.0	29.8	31.0	29.8	28.7	28.7	27.5	25.2
82.5°	19.5	20.6	19.5	19.5	19.5	19.5	19.5	18.3	18.3	17.2	16.1
85°	11.5	11.5	11.5	11.5	11.5	11.5	11.5	10.3	10.3	10.3	9.2
87.5°	5.7	5.7	4.6	4.6	5.7	5.7	5.7	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°	878.4	878.4	878.4	878.4	878.4	878.4	878.4	878.4	878.4	878.4	878.4
2.5°	865.8	866.9	869.2	872.7	872.7	870.4	876.1	876.1	878.4	879.6	884.1
5°	856.6	858.9	863.5	869.2	870.4	869.2	877.3	880.7	884.1	887.6	894.5
7.5°	848.6	853.2	861.2	869.2	872.7	872.7	885.3	889.9	896.8	903.6	911.7
10°	844.0	850.9	862.4	875.0	878.4	881.9	896.8	905.9	915.1	924.3	935.8
12.5°	838.3	850.9	865.8	881.9	888.7	893.3	914.0	925.4	938.0	949.5	964.4
15°	837.1	852.0	871.5	892.2	901.4	908.2	931.2	947.2	962.1	977.0	991.9
17.5°	832.5	850.9	875.0	897.9	909.4	918.6	944.9	964.4	981.6	996.5	1013.7
20°	826.8	847.5	873.8	899.1	911.7	920.8	949.5	967.9	987.4	1001.1	1017.2
22.5°	818.8	839.4	865.8	891.0	902.5	910.5	939.2	955.2	972.5	986.2	1001.1
25°	805.0	824.5	847.5	868.1	879.6	886.4	911.7	926.6	939.2	953.0	966.7
27.5°	785.5	800.4	819.9	834.8	841.7	848.6	869.2	881.9	893.3	904.8	914.0
30°	751.1	762.6	776.4	789.0	795.8	797.0	816.5	823.4	832.5	840.6	847.5
32.5°	705.3	714.4	722.5	729.3	733.9	735.1	750.0	752.3	761.4	761.4	771.8
35°	646.8	651.4	657.1	657.1	660.5	657.1	667.4	669.7	670.9	672.0	680.0
37.5°	580.3	582.6	586.0	579.1	579.1	575.7	579.1	581.4	576.8	576.8	582.6
40°	517.2	512.6	508.0	501.1	497.7	490.8	490.8	485.1	481.6	479.3	480.5
42.5°	456.4	446.1	435.8	420.9	414.0	407.1	400.2	392.2	389.9	384.2	380.7
45°	397.9	383.0	369.3	345.2	331.4	324.5	309.6	293.6	283.2	281.0	271.8
47.5°	348.6	326.8	303.9	275.2	261.5	248.8	227.1	213.3	199.5	192.7	186.9
50°	305.0	285.5	255.7	224.8	207.6	194.9	170.9	154.8	139.9	129.6	122.7
52.5°	267.2	245.4	217.9	182.3	165.1	151.4	125.0	106.6	94.0	83.7	75.7
55°	224.8	207.6	180.0	146.8	129.6	113.5	90.6	71.1	58.5	51.6	45.9
57.5°	193.8	178.9	152.5	120.4	104.4	89.4	66.5	50.5	40.1	33.3	29.8
60°	173.2	159.4	136.5	105.5	90.6	76.8	55.0	40.1	31.0	25.2	22.9
62.5°	156.0	142.2	121.6	92.9	80.3	66.5	47.0	33.3	25.2	20.6	17.2
65°	136.5	123.8	105.5	80.3	68.8	57.3	40.1	27.5	20.6	16.1	13.8
67.5°	115.8	104.4	88.3	66.5	57.3	48.2	32.1	22.9	17.2	13.8	11.5
70°	94.0	84.9	70.0	53.9	45.9	37.8	26.4	18.3	12.6	10.3	9.2
72.5°	72.2	64.2	53.9	41.3	34.4	28.7	19.5	13.8	10.3	8.0	6.9
75°	51.6	45.9	37.8	29.8	25.2	20.6	14.9	10.3	6.9	5.7	4.6
77.5°	35.5	32.1	26.4	20.6	17.2	14.9	10.3	6.9	5.7	4.6	3.4
80°	22.9	20.6	17.2	12.6	10.3	9.2	5.7	4.6	3.4	2.3	2.3
82.5°	13.8	12.6	10.3	6.9	5.7	4.6	3.4	2.3	2.3	1.1	1.1
85°	8.0	6.9	4.6	3.4	3.4	2.3	2.3	1.1	1.1	0.0	0.0
87.5°	3.4	2.3	2.3	1.1	1.1	1.1	1.1	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°	878.4	878.4	878.4	878.4	878.4	878.4	878.4	878.4	878.4	878.4	878.4
2.5°	881.9	887.6	886.4	889.9	888.7	888.7	894.5	892.2	897.9	897.9	899.1
5°	894.5	902.5	902.5	908.2	907.1	909.4	915.1	915.1	922.0	924.3	924.3
7.5°	912.8	923.1	925.4	931.2	932.3	936.9	941.5	942.6	951.8	954.1	955.2
10°	938.0	950.7	954.1	959.8	962.1	966.7	972.5	974.7	986.2	987.4	991.9
12.5°	969.0	982.8	986.2	993.1	994.2	1000.0	1008.0	1010.3	1021.8	1025.2	1028.6
15°	998.8	1011.4	1017.2	1024.1	1025.2	1032.1	1039.0	1041.3	1051.6	1056.2	1059.6
17.5°	1019.5	1034.4	1037.8	1047.0	1047.0	1052.7	1059.6	1061.9	1072.2	1075.7	1078.0
20°	1024.1	1037.8	1042.4	1049.3	1050.4	1053.9	1059.6	1061.9	1071.1	1072.2	1075.7
22.5°	1006.9	1020.6	1022.9	1029.8	1030.9	1034.4	1039.0	1037.8	1049.3	1048.1	1049.3
25°	970.2	982.8	982.8	990.8	989.7	993.1	995.4	994.2	1004.6	1004.6	1004.6
27.5°	917.4	928.9	930.0	935.8	932.3	933.5	935.8	934.6	941.5	941.5	941.5
30°	852.0	861.2	857.8	862.4	860.1	862.4	860.1	858.9	861.2	863.5	862.4
32.5°	770.6	777.5	777.5	778.6	778.6	771.8	769.5	769.5	768.3	767.2	767.2
35°	676.6	682.3	680.0	680.0	678.9	672.0	668.6	666.3	669.7	662.8	667.4
37.5°	580.3	581.4	578.0	576.8	571.1	571.1	565.4	560.8	563.1	561.9	557.3
40°	474.8	479.3	472.5	470.2	473.6	469.0	463.3	457.6	462.1	456.4	458.7
42.5°	371.5	370.4	368.1	368.1	368.1	361.2	360.1	358.9	360.1	355.5	352.1
45°	268.3	264.9	261.5	261.5	256.9	254.6	254.6	251.1	245.4	245.4	238.5
47.5°	181.2	173.2	170.9	169.7	167.4	167.4	165.1	162.8	161.7	156.0	156.0
50°	118.1	110.1	107.8	106.6	107.8	105.5	103.2	100.9	98.6	97.5	95.2
52.5°	71.1	67.7	65.4	64.2	61.9	60.8	59.6	57.3	56.2	56.2	55.0
55°	42.4	39.0	34.4	34.4	34.4	33.3	32.1	31.0	29.8	29.8	28.7
57.5°	26.4	24.1	21.8	20.6	20.6	20.6	19.5	19.5	19.5	19.5	18.3
60°	19.5	17.2	16.1	16.1	16.1	14.9	14.9	14.9	14.9	13.8	13.8
62.5°	14.9	13.8	12.6	12.6	11.5	11.5	11.5	11.5	11.5	11.5	10.3
65°	12.6	10.3	10.3	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
67.5°	9.2	8.0	8.0	8.0	8.0	6.9	6.9	6.9	6.9	6.9	6.9
70°	6.9	6.9	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
72.5°	5.7	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	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
77.5°	3.4	3.4	3.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
80°	2.3	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	1.1	1.1	1.1	1.1	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°	878.4	878.4	878.4	878.4	878.4	878.4	878.4	878.4
2.5°	899.1	904.8	899.1	899.1	902.5	901.4	903.6	900.2
5°	925.4	933.5	927.7	926.6	932.3	931.2	932.3	930.0
7.5°	957.5	965.6	959.8	959.8	965.6	964.4	967.9	965.6
10°	994.2	1003.4	995.4	996.5	1004.6	1003.4	1003.4	1003.4
12.5°	1032.1	1041.3	1036.7	1036.7	1042.4	1043.5	1044.7	1043.5
15°	1063.0	1072.2	1066.5	1066.5	1074.5	1073.4	1074.5	1073.4
17.5°	1081.4	1090.6	1083.7	1083.7	1090.6	1090.6	1091.7	1092.9
20°	1076.8	1087.1	1081.4	1079.1	1087.1	1087.1	1086.0	1086.0
22.5°	1050.4	1059.6	1055.0	1052.7	1058.5	1056.2	1055.0	1056.2
25°	1004.6	1013.7	1004.6	1004.6	1009.1	1008.0	1009.1	1008.0
27.5°	942.6	949.5	940.3	939.2	943.8	941.5	940.3	943.8
30°	860.1	866.9	862.4	858.9	864.7	861.2	858.9	860.1
32.5°	766.0	770.6	768.3	762.6	766.0	763.7	762.6	763.7
35°	662.8	668.6	659.4	658.2	664.0	659.4	657.1	662.8
37.5°	556.2	563.1	555.0	556.2	552.7	553.9	551.6	555.0
40°	455.3	454.1	451.8	450.7	451.8	448.4	450.7	447.2
42.5°	346.3	348.6	347.5	346.3	347.5	342.9	340.6	345.2
45°	240.8	239.7	237.4	235.1	235.1	233.9	233.9	230.5
47.5°	154.8	153.7	149.1	150.2	152.5	150.2	146.8	151.4
50°	94.0	92.9	92.9	91.7	94.0	91.7	89.4	89.4
52.5°	52.8	52.8	51.6	51.6	51.6	51.6	50.5	49.3
55°	28.7	27.5	27.5	27.5	26.4	26.4	26.4	26.4
57.5°	18.3	18.3	18.3	18.3	18.3	18.3	17.2	17.2
60°	13.8	13.8	13.8	13.8	12.6	13.8	12.6	12.6
62.5°	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
65°	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
67.5°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
70°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
72.5°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
75°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
77.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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)