

Measurement of roundness by Dial gauge deflections of 6-mm Diameter Aluminium (Al) Round Bar Before Straightening

Mean values of Dial Gauge Deflection Readings before straightening of 6 mm Aluminium(Al) round bar x 0.01 mm

| | Angles in Degrees | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------------|
| Length in cm | 0° | 15° | 30° | 45° | 60° | 75° | 90° | 105° | 120° | 135° | 150° | 165° | 180° | 195° | 210° | 225° | 240° | 255° | 270° | 285° | 300° | 315° | 330° | 345° | STD DEV (mm) |
| 16.5 | 241.0 | 244.0 | 244.5 | 243.0 | 242.5 | 239.5 | 233.5 | 233.0 | 231.0 | 228.0 | 226.0 | 222.0 | 221.5 | 221.5 | 221.0 | 220.0 | 221.0 | 223.5 | 223.0 | 229.0 | 229.0 | 233.0 | 237.0 | 237.5 | 0.0844 |
| 20.0 | 231.0 | 233.5 | 233.5 | 231.5 | 230.0 | 229.0 | 222.5 | 224.5 | 221.0 | 219.5 | 220.0 | 218.0 | 217.0 | 216.5 | 215.5 | 217.0 | 217.5 | 217.5 | 220.0 | 225.0 | 223.5 | 225.5 | 229.5 | 235.0 | 0.0630 |
| 25.0 | 231.5 | 235.5 | 237.5 | 236.5 | 233.5 | 231.0 | 225.5 | 226.0 | 224.0 | 221.0 | 219.5 | 216.0 | 217.0 | 217.5 | 215.5 | 215.0 | 216.5 | 218.5 | 219.0 | 222.0 | 226.5 | 225.0 | 227.5 | 230.0 | 0.0715 |
| 30.0 | 233.5 | 236.5 | 237.0 | 236.0 | 235.0 | 233.0 | 229.0 | 228.0 | 229.0 | 225.0 | 225.0 | 222.5 | 221.5 | 221.5 | 222.0 | 222.0 | 223.0 | 224.0 | 226.5 | 229.5 | 233.5 | 232.5 | 235.5 | 238.5 | 0.0575 |
| 35.0 | 249.0 | 253.0 | 254.0 | 253.5 | 253.5 | 251.0 | 245.5 | 243.5 | 240.0 | 239.0 | 236.5 | 235.0 | 234.5 | 234.0 | 234.5 | 233.5 | 236.0 | 237.0 | 237.5 | 240.5 | 243.0 | 243.5 | 245.5 | 248.5 | 0.0707 |
| 40.0 | 239.0 | 240.0 | 239.0 | 238.0 | 233.0 | 231.5 | 225.0 | 221.0 | 224.0 | 219.5 | 221.0 | 219.0 | 221.0 | 220.0 | 222.5 | 226.0 | 228.0 | 229.5 | 233.5 | 238.5 | 239.5 | 239.0 | 240.0 | 238.0 | 0.0799 |
| 45.0 | 244.5 | 245.0 | 244.5 | 241.0 | 239.0 | 236.0 | 233.0 | 229.0 | 226.5 | 223.0 | 219.5 | 219.0 | 217.5 | 220.5 | 219.0 | 222.5 | 225.0 | 228.0 | 230.0 | 234.0 | 236.5 | 238.0 | 238.5 | 240.5 | 0.0910 |
| 50.0 | 234.0 | 236.5 | 238.0 | 238.0 | 238.0 | 239.0 | 234.0 | 234.0 | 233.5 | 231.0 | 229.0 | 228.5 | 225.0 | 224.0 | 222.0 | 223.5 | 224.0 | 226.0 | 231.0 | 233.5 | 237.0 | 238.0 | 239.0 | 237.0 | 0.0566 |
| 55.0 | 240.0 | 241.5 | 245.0 | 245.5 | 243.5 | 242.0 | 239.0 | 237.0 | 235.5 | 234.0 | 233.5 | 230.0 | 229.5 | 228.5 | 228.5 | 229.5 | 230.0 | 233.5 | 236.5 | 235.0 | 240.0 | 238.0 | 239.0 | 241.0 | 0.0534 |
| 60.0 | 247.5 | 252.0 | 254.5 | 255.5 | 254.5 | 256.0 | 252.5 | 251.5 | 247.5 | 248.0 | 244.5 | 244.0 | 241.0 | 239.5 | 238.0 | 238.5 | 238.5 | 239.0 | 239.0 | 238.5 | 243.5 | 240.0 | 244.5 | 246.5 | 0.0624 |
| 65.0 | 246.5 | 251.0 | 253.0 | 253.0 | 253.5 | 253.5 | 250.0 | 247.5 | 246.5 | 244.0 | 241.5 | 239.5 | 235.5 | 232.5 | 233.0 | 229.5 | 229.5 | 230.0 | 229.5 | 230.5 | 238.0 | 240.0 | 239.0 | 241.0 | 0.0861 |
| 70.0 | 238.5 | 242.5 | 243.0 | 246.5 | 248.0 | 249.5 | 247.0 | 248.5 | 245.0 | 245.5 | 245.0 | 242.0 | 239.0 | 239.0 | 237.0 | 235.0 | 235.0 | 235.0 | 234.0 | 232.0 | 233.5 | 235.0 | 236.5 | 239.0 | 0.0544 |
| 75.0 | 237.0 | 238.0 | 239.0 | 241.0 | 241.0 | 240.0 | 238.0 | 237.5 | 237.0 | 236.0 | 232.5 | 230.5 | 228.5 | 226.5 | 227.0 | 224.5 | 224.5 | 224.5 | 227.0 | 225.0 | 233.5 | 233.0 | 234.0 | 236.5 | 0.0575 |
| 80.0 | 235.5 | 235.5 | 233.5 | 232.0 | 230.0 | 224.5 | 225.5 | 221.0 | 220.5 | 220.0 | 218.5 | 217.5 | 220.0 | 219.5 | 221.5 | 225.5 | 230.0 | 230.0 | 234.5 | 237.0 | 238.0 | 240.0 | 240.0 | 239.5 | 0.0773 |
| 85.0 | 257.0 | 256.0 | 252.0 | 250.0 | 247.5 | 244.0 | 240.5 | 239.0 | 239.0 | 238.0 | 239.0 | 239.5 | 241.5 | 245.0 | 246.0 | 249.0 | 253.0 | 252.0 | 256.5 | 257.5 | 259.0 | 260.0 | 262.0 | 260.0 | 0.0801 |
| 90.0 | 245.0 | 246.5 | 242.5 | 242.0 | 243.0 | 238.0 | 235.5 | 236.5 | 234.5 | 233.0 | 231.0 | 229.5 | 235.0 | 236.0 | 238.0 | 236.5 | 239.0 | 243.5 | 245.0 | 245.5 | 248.0 | 249.0 | 253.5 | 249.0 | 0.0632 |
| 95.0 | 253.5 | 252.0 | 250.0 | 248.0 | 244.0 | 243.0 | 241.5 | 237.5 | 238.5 | 238.0 | 234.0 | 236.5 | 235.0 | 240.0 | 240.0 | 242.5 | 245.5 | 243.5 | 247.5 | 248.0 | 250.5 | 254.5 | 254.5 | 251.0 | 0.0636 |
| 100.0 | 246.5 | 241.5 | 240.5 | 238.0 | 236.0 | 235.0 | 233.0 | 229.5 | 225.0 | 226.5 | 224.0 | 225.5 | 225.5 | 229.5 | 229.0 | 236.0 | 237.5 | 238.5 | 240.5 | 244.0 | 241.5 | 245.5 | 244.5 | 245.0 | 0.0737 |
| 105.0 | 239.0 | 240.0 | 238.5 | 240.0 | 239.0 | 238.0 | 239.5 | 237.5 | 235.5 | 232.0 | 234.0 | 233.5 | 233.0 | 236.0 | 237.0 | 238.0 | 239.0 | 238.5 | 238.0 | 239.0 | 239.5 | 241.5 | 240.5 | 242.5 | 0.0267 |
| 109.0 | 242.5 | 244.0 | 245.0 | 244.0 | 244.0 | 243.5 | 247.0 | 244.5 | 246.5 | 244.5 | 242.5 | 244.5 | 243.5 | 244.5 | 241.5 | 243.0 | 242.5 | 244.0 | 240.5 | 244.5 | 243.0 | 244.0 | 244.0 | 242.5 | 0.0141 |

Measurement of roundness by Dial gauge deflections of 8-mm Diameter Aluminium (Al) Round Bar Before Straightening

Mean values of Dial Gauge Deflection Readings before straightening of 8 mm Aluminium round bar x 0.01 mm

| | Angles in Degrees | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|-------------------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------|
| Length in cm | 0° | 15° | 30° | 45° | 60° | 75° | 90° | 105° | 120° | 135° | 150° | 165° | 180° | 195° | 210° | 225° | 240° | 255° | 270° | 285° | 300° | 315° | 330° | 345° | STD DEV (mm) |
| 12 | 173 | 172 | 168 | 166 | 163 | 161 | 158 | 157 | 153 | 150 | 147 | 146 | 147 | 149 | 153 | 157 | 163 | 166 | 171 | 175 | 175 | 174 | 174 | 174 | 0.1017828 |
| 15 | 172 | 170 | 168 | 165 | 164 | 160 | 158 | 156 | 152 | 148 | 145 | 145 | 146 | 149 | 153 | 157 | 161 | 166 | 169 | 173 | 173 | 173 | 174 | 174 | 0.1018878 |
| 20 | 171 | 170 | 168 | 165 | 161 | 159 | 157 | 155 | 150 | 147 | 147 | 146 | 147 | 150 | 155 | 157 | 160 | 165 | 169 | 170 | 171 | 172 | 173 | 173 | 0.094518 |
| 24 | 168 | 167 | 164 | 161 | 159 | 156 | 154 | 152 | 148 | 146 | 145 | 145 | 147 | 150 | 153 | 157 | 159 | 162 | 166 | 168 | 169 | 170 | 170 | 169 | 0.0886861 |
| 28 | 168 | 165 | 163 | 161 | 158 | 154 | 153 | 149 | 147 | 145 | 145 | 145 | 147 | 150 | 154 | 155 | 159 | 162 | 163 | 166 | 167 | 168 | 168 | 168 | 0.0842612 |
| 32 | 161 | 161 | 159 | 157 | 155 | 153 | 150 | 149 | 147 | 146 | 147 | 146 | 147 | 149 | 149 | 151 | 153 | 155 | 157 | 159 | 161 | 162 | 163 | 163 | 0.0604452 |

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|
| 36 | 172 | 174 | 175 | 175 | 174 | 174 | 175 | 174 | 174 | 173 | 172 | 170 | 170 | 168 | 169 | 168 | 167 | 167 | 166 | 166 | 166 | 167 | 168 | 169 | 0.0336838 |
| 40 | 173 | 173 | 175 | 174 | 173 | 173 | 173 | 172 | 171 | 170 | 169 | 167 | 168 | 168 | 168 | 167 | 167 | 167 | 167 | 167 | 167 | 169 | 170 | 170 | 0.0274522 |
| 44 | 171 | 172 | 172 | 172 | 170 | 171 | 171 | 169 | 168 | 168 | 168 | 167 | 166 | 166 | 167 | 167 | 167 | 168 | 167 | 167 | 168 | 169 | 169 | 169 | 0.0192512 |
| 48 | 171 | 172 | 172 | 171 | 170 | 170 | 169 | 168 | 167 | 167 | 166 | 165 | 165 | 165 | 166 | 166 | 168 | 167 | 168 | 168 | 169 | 169 | 170 | 171 | 0.0223728 |
| 52 | 171 | 172 | 172 | 171 | 169 | 169 | 168 | 167 | 166 | 165 | 165 | 164 | 165 | 166 | 167 | 168 | 168 | 169 | 170 | 170 | 170 | 171 | 172 | 171 | 0.0247999 |
| 56 | 171 | 171 | 170 | 169 | 167 | 167 | 166 | 165 | 164 | 164 | 164 | 163 | 163 | 164 | 166 | 167 | 167 | 168 | 168 | 168 | 168 | 169 | 170 | 171 | 0.0253874 |
| 59 | 171 | 172 | 171 | 169 | 169 | 167 | 167 | 165 | 164 | 164 | 163 | 163 | 163 | 164 | 166 | 167 | 168 | 169 | 169 | 169 | 170 | 172 | 171 | 171 | 0.0309387 |
| 62 | 168 | 169 | 168 | 168 | 166 | 166 | 165 | 163 | 163 | 163 | 162 | 162 | 162 | 163 | 163 | 164 | 164 | 165 | 166 | 167 | 167 | 169 | 169 | 168 | 0.0251193 |
| 65 | 168 | 167 | 167 | 166 | 164 | 164 | 164 | 161 | 160 | 160 | 160 | 160 | 160 | 161 | 162 | 163 | 164 | 165 | 165 | 166 | 166 | 167 | 168 | 167 | 0.0279719 |
| 69 | 167 | 167 | 166 | 164 | 163 | 162 | 162 | 160 | 158 | 159 | 158 | 157 | 158 | 159 | 160 | 160 | 161 | 163 | 164 | 163 | 164 | 166 | 166 | 166 | 0.0315647 |
| 73 | 166 | 166 | 165 | 164 | 162 | 161 | 161 | 159 | 158 | 157 | 156 | 156 | 156 | 157 | 158 | 159 | 160 | 161 | 162 | 163 | 163 | 165 | 165 | 166 | 0.0341883 |
| 77 | 170 | 169 | 168 | 166 | 166 | 165 | 164 | 161 | 160 | 160 | 159 | 158 | 159 | 160 | 160 | 161 | 162 | 163 | 164 | 166 | 167 | 168 | 168 | 168 | 0.0379925 |
| 80 | 169 | 170 | 168 | 168 | 165 | 164 | 163 | 161 | 160 | 158 | 158 | 157 | 157 | 159 | 160 | 161 | 162 | 163 | 164 | 164 | 167 | 169 | 169 | 168 | 0.0428296 |
| 83 | 169 | 169 | 168 | 165 | 164 | 163 | 162 | 160 | 159 | 158 | 157 | 155 | 157 | 157 | 159 | 161 | 161 | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 0.0411469 |
| 87 | 168 | 169 | 169 | 167 | 165 | 164 | 163 | 159 | 159 | 157 | 156 | 155 | 156 | 156 | 157 | 158 | 159 | 161 | 162 | 163 | 164 | 166 | 167 | 167 | 0.0463427 |
| 90 | 170 | 169 | 169 | 168 | 165 | 164 | 163 | 161 | 159 | 158 | 155 | 156 | 156 | 157 | 158 | 158 | 159 | 161 | 162 | 164 | 165 | 165 | 167 | 168 | 0.0472462 |
| 93 | 166 | 164 | 164 | 165 | 165 | 165 | 164 | 164 | 163 | 162 | 160 | 159 | 157 | 157 | 157 | 157 | 157 | 157 | 159 | 159 | 160 | 162 | 163 | 164 | 0.0323862 |
| 96 | 165 | 165 | 165 | 165 | 164 | 164 | 167 | 163 | 162 | 160 | 161 | 159 | 158 | 156 | 156 | 156 | 157 | 157 | 158 | 159 | 160 | 161 | 163 | 164 | 0.0328369 |
| 100 | 165 | 165 | 165 | 167 | 167 | 166 | 165 | 165 | 164 | 163 | 162 | 160 | 159 | 157 | 157 | 158 | 158 | 159 | 161 | 161 | 162 | 164 | 165 | 167 | 0.0334166 |
| 104 | 168 | 168 | 169 | 167 | 167 | 166 | 165 | 164 | 163 | 162 | 161 | 159 | 158 | 156 | 157 | 157 | 157 | 158 | 160 | 161 | 162 | 164 | 166 | 167 | 0.0407782 |
| 108 | 168 | 168 | 168 | 168 | 167 | 166 | 165 | 164 | 163 | 163 | 161 | 160 | 157 | 156 | 156 | 157 | 158 | 158 | 160 | 161 | 162 | 164 | 166 | 167 | 0.0422703 |
| 112 | 169 | 169 | 169 | 168 | 168 | 166 | 165 | 164 | 163 | 163 | 160 | 158 | 157 | 155 | 155 | 157 | 157 | 158 | 160 | 161 | 163 | 165 | 167 | 168 | 0.0480263 |
| 116 | 169 | 169 | 169 | 169 | 168 | 166 | 166 | 165 | 163 | 162 | 161 | 158 | 156 | 156 | 156 | 156 | 157 | 158 | 159 | 162 | 162 | 165 | 166 | 168 | 0.0483716 |
| 120 | 169 | 169 | 170 | 169 | 168 | 167 | 166 | 164 | 163 | 162 | 160 | 158 | 157 | 156 | 156 | 157 | 157 | 159 | 160 | 162 | 164 | 165 | 168 | 169 | 0.04903 |
| 124 | 170 | 170 | 170 | 170 | 169 | 168 | 166 | 166 | 163 | 161 | 160 | 157 | 157 | 156 | 157 | 157 | 158 | 158 | 161 | 163 | 164 | 166 | 168 | 170 | 0.052205 |
| 128 | 170 | 170 | 170 | 171 | 170 | 169 | 168 | 166 | 164 | 162 | 161 | 160 | 158 | 156 | 157 | 157 | 157 | 158 | 159 | 161 | 162 | 166 | 167 | 169 | 0.0524089 |
| 132 | 169 | 168 | 168 | 169 | 170 | 167 | 165 | 164 | 162 | 160 | 159 | 157 | 155 | 155 | 154 | 155 | 156 | 156 | 159 | 161 | 162 | 165 | 166 | 167 | 0.0534053 |
| 136 | 168 | 169 | 170 | 169 | 168 | 168 | 168 | 164 | 162 | 161 | 159 | 157 | 155 | 154 | 155 | 154 | 156 | 157 | 159 | 160 | 163 | 165 | 167 | 169 | 0.0554425 |
| 140 | 168 | 169 | 170 | 170 | 169 | 167 | 167 | 165 | 164 | 162 | 160 | 160 | 157 | 157 | 156 | 157 | 157 | 158 | 162 | 164 | 164 | 166 | 168 | 169 | 0.0475253 |
| 143 | 169 | 169 | 169 | 168 | 167 | 167 | 165 | 164 | 164 | 162 | 161 | 159 | 159 | 158 | 158 | 159 | 161 | 162 | 163 | 164 | 166 | 168 | 169 | 169 | 0.0395147 |

Measurement of roundness by Dial gauge deflections of 10-mm Diameter Aluminium (Al) Round Bar Before Straightening
Mean values of Dial Gauge Deflection Readings before straightening of 10 mm Aluminium round bar x 0.01 mm

| | Angles in Degrees | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|-------------------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------|
| Length in cm | 0° | 15° | 30° | 45° | 60° | 75° | 90° | 105° | 120° | 135° | 150° | 165° | 180° | 195° | 210° | 225° | 240° | 255° | 270° | 285° | 300° | 315° | 330° | 345° | STD DEV (mm) |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | 115 | 107 | 100 | 91 | 83 | 75 | 72 | 66 | 61 | 60 | 64 | 75 | 81 | 85 | 98 | 102 | 111 | 118 | 120 | 119 | 121 | 122 | 122 | 122 | 0.22284 |

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------|
| 16 | 127 | 116 | 108 | 97 | 87 | 78 | 72 | 63 | 54 | 50 | 49 | 61 | 72 | 81 | 89 | 106 | 110 | 116 | 120 | 121 | 125 | 127 | 128 | 129 | 0.27635 |
| 19 | 132 | 122 | 112 | 102 | 90 | 77 | 66 | 55 | 49 | 41 | 49 | 59 | 70 | 87 | 93 | 105 | 113 | 121 | 126 | 127 | 130 | 132 | 136 | 137 | 0.31978 |
| 22 | 144 | 132 | 120 | 108 | 93 | 77 | 66 | 53 | 49 | 41 | 41 | 50 | 69 | 84 | 95 | 109 | 118 | 123 | 132 | 136 | 138 | 140 | 142 | 145 | 0.36806 |
| 25 | 149 | 133 | 123 | 105 | 90 | 75 | 62 | 49 | 41 | 33 | 41 | 53 | 72 | 92 | 110 | 125 | 134 | 138 | 143 | 146 | 149 | 151 | 154 | 156 | 0.42223 |
| 28 | 153 | 144 | 130 | 113 | 98 | 79 | 64 | 50 | 49 | 33 | 33 | 41 | 61 | 85 | 100 | 116 | 129 | 137 | 142 | 146 | 148 | 152 | 155 | 157 | 0.43784 |
| 31 | 152 | 147 | 130 | 116 | 98 | 81 | 64 | 49 | 41 | 33 | 25 | 33 | 49 | 69 | 91 | 113 | 125 | 135 | 139 | 146 | 148 | 150 | 155 | 158 | 0.46423 |
| 31 | 157 | 145 | 133 | 120 | 102 | 83 | 66 | 50 | 49 | 25 | 33 | 41 | 50 | 74 | 93 | 111 | 126 | 138 | 141 | 146 | 149 | 152 | 155 | 158 | 0.45628 |
| 34 | 153 | 149 | 135 | 123 | 105 | 87 | 71 | 53 | 49 | 33 | 17 | 25 | 49 | 66 | 86 | 105 | 118 | 129 | 135 | 138 | 142 | 147 | 150 | 154 | 0.45514 |
| 37 | 156 | 139 | 128 | 113 | 95 | 78 | 65 | 50 | 41 | 33 | 33 | 41 | 58 | 79 | 98 | 115 | 126 | 138 | 143 | 149 | 149 | 152 | 155 | 157 | 0.44786 |
| 40 | 152 | 141 | 129 | 116 | 99 | 84 | 68 | 56 | 49 | 41 | 33 | 41 | 54 | 64 | 87 | 113 | 125 | 131 | 141 | 148 | 151 | 152 | 153 | 153 | 0.43317 |
| 43 | 103 | 95 | 82 | 72 | 57 | 49 | 41 | 41 | 41 | 51 | 68 | 90 | 106 | 116 | 124 | 127 | 130 | 131 | 135 | 136 | 137 | 136 | 126 | 120 | 0.34866 |
| 46 | 102 | 94 | 85 | 80 | 73 | 64 | 57 | 52 | 51 | 56 | 64 | 77 | 85 | 97 | 105 | 111 | 117 | 117 | 120 | 119 | 118 | 118 | 112 | 104 | 0.23790 |
| 49 | 83 | 80 | 76 | 74 | 71 | 67 | 63 | 56 | 51 | 51 | 56 | 62 | 66 | 70 | 75 | 80 | 83 | 85 | 85 | 86 | 87 | 88 | 82 | 81 | 0.11628 |
| 52 | 64 | 66 | 65 | 66 | 68 | 69 | 68 | 64 | 63 | 58 | 57 | 55 | 62 | 56 | 60 | 63 | 66 | 69 | 69 | 69 | 69 | 69 | 68 | 64 | 0.04370 |
| 55 | 59 | 63 | 64 | 67 | 72 | 75 | 76 | 76 | 74 | 70 | 68 | 66 | 64 | 62 | 65 | 66 | 66 | 66 | 65 | 64 | 65 | 64 | 62 | 58 | 0.05093 |
| 58 | 50 | 52 | 54 | 58 | 64 | 66 | 69 | 68 | 68 | 65 | 63 | 61 | 59 | 57 | 58 | 57 | 56 | 55 | 54 | 51 | 51 | 50 | 50 | 50 | 0.06450 |
| 61 | 50 | 50 | 50 | 53 | 59 | 64 | 67 | 67 | 67 | 65 | 63 | 61 | 58 | 56 | 56 | 56 | 55 | 53 | 50 | 50 | 50 | 50 | 50 | 50 | 0.06317 |
| 64 | 78 | 83 | 85 | 91 | 98 | 96 | 97 | 97 | 94 | 90 | 87 | 83 | 76 | 74 | 72 | 71 | 69 | 67 | 66 | 66 | 68 | 68 | 65 | 72 | 0.11455 |
| 67 | 66 | 78 | 83 | 91 | 93 | 98 | 101 | 101 | 97 | 93 | 88 | 84 | 77 | 74 | 70 | 67 | 64 | 62 | 61 | 62 | 63 | 68 | 68 | 68 | 0.13686 |
| 70 | 64 | 67 | 77 | 83 | 93 | 97 | 97 | 99 | 98 | 93 | 89 | 84 | 77 | 71 | 66 | 62 | 60 | 56 | 56 | 55 | 56 | 62 | 61 | 61 | 0.15539 |
| 73 | 72 | 74 | 79 | 88 | 93 | 101 | 100 | 102 | 100 | 94 | 90 | 85 | 79 | 73 | 70 | 65 | 62 | 60 | 58 | 57 | 59 | 62 | 63 | 61 | 0.15545 |
| 76 | 63 | 73 | 77 | 82 | 91 | 96 | 95 | 98 | 98 | 94 | 91 | 85 | 80 | 76 | 72 | 69 | 66 | 63 | 62 | 60 | 60 | 61 | 64 | 63 | 0.13670 |
| 79 | 95 | 98 | 103 | 105 | 110 | 115 | 114 | 114 | 103 | 109 | 105 | 101 | 97 | 92 | 90 | 91 | 89 | 87 | 87 | 87 | 89 | 90 | 92 | 94 | 0.09238 |
| 81 | 56 | 56 | 53 | 54 | 54 | 60 | 63 | 65 | 66 | 68 | 69 | 69 | 71 | 71 | 70 | 71 | 73 | 72 | 73 | 72 | 71 | 68 | 66 | 63 | 0.06612 |
| 82 | 88 | 90 | 92 | 94 | 98 | 99 | 99 | 96 | 94 | 90 | 86 | 85 | 82 | 80 | 78 | 81 | 83 | 84 | 85 | 87 | 88 | 89 | 92 | 88 | 0.05902 |
| 84 | 50 | 50 | 50 | 50 | 50 | 50 | 52 | 54 | 56 | 62 | 67 | 70 | 75 | 77 | 80 | 81 | 84 | 82 | 81 | 80 | 78 | 72 | 67 | 61 | 0.12880 |
| 85 | 108 | 108 | 107 | 106 | 107 | 106 | 104 | 101 | 98 | 92 | 90 | 87 | 86 | 87 | 88 | 92 | 96 | 101 | 105 | 108 | 111 | 113 | 104 | 110 | 0.08632 |
| 87 | 55 | 51 | 51 | 51 | 51 | 51 | 51 | 54 | 57 | 66 | 67 | 74 | 78 | 82 | 87 | 88 | 89 | 90 | 86 | 86 | 84 | 79 | 72 | 66 | 0.15046 |
| 90 | 53 | 51 | 51 | 51 | 51 | 51 | 51 | 54 | 58 | 61 | 68 | 71 | 77 | 82 | 82 | 87 | 90 | 90 | 89 | 89 | 85 | 78 | 69 | 64 | 0.15388 |
| 93 | 54 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 55 | 60 | 65 | 70 | 75 | 79 | 83 | 84 | 84 | 88 | 86 | 85 | 83 | 78 | 72 | 66 | 0.14326 |
| 96 | 59 | 53 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 51 | 56 | 59 | 65 | 68 | 69 | 79 | 76 | 78 | 79 | 76 | 71 | 66 | 0.11386 |
| 99 | 61 | 59 | 55 | 53 | 50 | 59 | 51 | 52 | 49 | 49 | 51 | 50 | 58 | 61 | 63 | 63 | 69 | 71 | 73 | 74 | 76 | 75 | 73 | 70 | 0.09303 |
| 102 | 69 | 67 | 62 | 60 | 58 | 56 | 59 | 57 | 56 | 55 | 53 | 52 | 54 | 54 | 56 | 58 | 62 | 63 | 65 | 67 | 70 | 72 | 71 | 72 | 0.06515 |
| 105 | 71 | 67 | 65 | 64 | 61 | 59 | 60 | 58 | 55 | 51 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 51 | 58 | 61 | 66 | 68 | 70 | 71 | 0.08004 |
| 108 | 71 | 68 | 68 | 66 | 65 | 65 | 62 | 58 | 52 | 50 | 50 | 50 | 50 | 47 | 47 | 50 | 50 | 50 | 56 | 60 | 65 | 69 | 73 | 72 | 0.09307 |
| 111 | 68 | 66 | 65 | 63 | 60 | 61 | 58 | 53 | 50 | 50 | 47 | 45 | 45 | 47 | 47 | 47 | 47 | 50 | 50 | 55 | 59 | 61 | 66 | 69 | 0.08488 |
| 114 | 74 | 78 | 76 | 75 | 69 | 65 | 60 | 52 | 50 | 47 | 45 | 43 | 45 | 45 | 47 | 47 | 47 | 47 | 50 | 56 | 62 | 67 | 75 | 76 | 0.13079 |
| 117 | 76 | 76 | 75 | 72 | 70 | 65 | 57 | 50 | 47 | 45 | 45 | 43 | 41 | 43 | 45 | 47 | 47 | 49 | 50 | 57 | 63 | 69 | 74 | 76 | 0.13300 |
| 120 | 83 | 81 | 82 | 79 | 76 | 71 | 64 | 52 | 50 | 47 | 45 | 43 | 43 | 41 | 43 | 45 | 47 | 47 | 50 | 57 | 61 | 69 | 77 | 81 | 0.15687 |
| 123 | 80 | 83 | 82 | 77 | 75 | 70 | 62 | 52 | 50 | 47 | 45 | 43 | 41 | 43 | 45 | 47 | 47 | 47 | 50 | 54 | 61 | 69 | 76 | 79 | 0.15251 |
| 126 | 80 | 79 | 77 | 73 | 71 | 65 | 55 | 50 | 47 | 45 | 41 | 39 | 39 | 41 | 43 | 45 | 47 | 47 | 50 | 57 | 66 | 74 | 81 | 84 | 0.16279 |
| 129 | 106 | 104 | 104 | 100 | 101 | 93 | 85 | 73 | 63 | 51 | 50 | 47 | 45 | 44 | 43 | 44 | 45 | 47 | 51 | 51 | 60 | 67 | 73 | 78 | 0.22627 |
| 132 | 109 | 108 | 107 | 105 | 99 | 93 | 82 | 72 | 59 | 50 | 50 | 47 | 45 | 47 | 47 | 49 | 56 | 65 | 73 | 82 | 92 | 99 | 105 | 107 | 0.24830 |

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|---------|
| 135 | 93 | 91 | 90 | 88 | 89 | 86 | 79 | 72 | 64 | 53 | 49 | 47 | 45 | 47 | 49 | 57 | 67 | 75 | 87 | 92 | 97 | 102 | 103 | 103 | 0.20368 |
| 135 | 102 | 96 | 95 | 91 | 89 | 85 | 88 | 71 | 60 | 52 | 49 | 47 | 47 | 47 | 49 | 55 | 63 | 72 | 85 | 91 | 98 | 102 | 103 | 103 | 0.21439 |
| 138 | 94 | 93 | 92 | 95 | 92 | 88 | 80 | 73 | 63 | 54 | 49 | 47 | 45 | 47 | 49 | 49 | 56 | 67 | 73 | 79 | 84 | 88 | 90 | 91 | 0.18580 |
| 141 | 81 | 83 | 86 | 89 | 87 | 82 | 76 | 69 | 60 | 51 | 49 | 47 | 47 | 49 | 50 | 55 | 65 | 71 | 78 | 82 | 87 | 88 | 90 | 88 | 0.16086 |

Measurement of roundness by Dial gauge deflections of 12-mm Diameter Aluminium (Al) Round Bar Before Straightening
Mean values of Dial Gauge Deflection Readings before straightening of 12 mm Aluminium (Al) round bar x 0.01 mm

| | Angles in Degrees | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|-------------------|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------|
| Length in cm | 0° | 15° | 30° | 45° | 60° | 75° | 90° | 105° | 120° | 135° | 150° | 165° | 180° | 195° | 210° | 225° | 240° | 255° | 270° | 285° | 300° | 315° | 330° | 345° | STD DEV (mm) |
| 11 | 56 | 53 | 52 | 52 | 52 | 54 | 56 | 58 | 60 | 61 | 62 | 66 | 69 | 70 | 71 | 71 | 70 | 68 | 66 | 66 | 66 | 64 | 62 | 60 | 0.06543 |
| 16 | 55 | 52 | 51 | 51 | 51 | 53 | 55 | 57 | 58 | 59 | 61 | 64 | 67 | 68 | 69 | 69 | 68 | 66 | 65 | 64 | 65 | 63 | 61 | 58 | 0.06213 |
| 20 | 53 | 51 | 50 | 50 | 51 | 52 | 54 | 55 | 57 | 57 | 59 | 62 | 65 | 66 | 67 | 67 | 66 | 64 | 63 | 63 | 63 | 61 | 59 | 56 | 0.05823 |
| 25 | 54 | 52 | 51 | 52 | 54 | 53 | 56 | 57 | 58.5 | 58 | 60 | 63 | 66 | 66 | 67 | 67 | 66 | 64 | 63 | 64 | 63 | 62 | 59 | 57 | 0.05266 |
| 30 | 54 | 53 | 53 | 54 | 56 | 57 | 58 | 59 | 60 | 60 | 62 | 64 | 67 | 67 | 68 | 67 | 66 | 64 | 63 | 64 | 64 | 62 | 60 | 58 | 0.04733 |
| 35 | 53 | 53 | 53 | 53 | 55 | 56 | 57 | 58 | 59 | 59 | 61 | 63 | 65 | 66 | 66 | 65 | 64 | 62 | 61 | 62 | 63 | 61 | 59 | 57 | 0.04302 |
| 40 | 51 | 53 | 53 | 53 | 55 | 56 | 57 | 57 | 58 | 58 | 59 | 62 | 63 | 64 | 63 | 64 | 62 | 61 | 60 | 61 | 61 | 59 | 59 | 56 | 0.03753 |
| 45 | 54 | 55 | 54 | 55 | 57 | 58 | 60 | 60 | 61 | 61 | 62 | 65 | 66 | 66 | 67 | 66 | 64 | 63 | 63 | 64 | 64 | 62 | 62 | 59 | 0.03985 |
| 50 | 58 | 58 | 58 | 58 | 59 | 60 | 62 | 63 | 64 | 64 | 65 | 67 | 69 | 68 | 69 | 67 | 66 | 65 | 66 | 66 | 66 | 65 | 64 | 62 | 0.03595 |
| 55 | 59 | 59 | 59 | 60 | 61 | 62 | 63 | 65 | 64 | 65 | 66 | 67 | 70 | 69 | 70 | 68 | 68 | 67 | 67 | 68 | 67 | 66 | 65 | 63 | 0.03476 |
| 60 | 61 | 60 | 60 | 61 | 62 | 63 | 64 | 66 | 65 | 66 | 67 | 70 | 71 | 71 | 72 | 72 | 69 | 69 | 68 | 69 | 68 | 66 | 65 | 63 | 0.03804 |
| 65 | 60 | 59 | 58 | 59 | 60 | 62 | 62 | 62 | 63 | 63 | 64 | 67 | 67 | 68 | 68 | 67 | 66 | 65 | 65 | 66 | 65 | 64 | 63 | 61 | 0.02993 |
| 70 | 58 | 57 | 57 | 58 | 59 | 60 | 60 | 60 | 60 | 60 | 61 | 63 | 64 | 64 | 64 | 63 | 62 | 61 | 62 | 63 | 62 | 61 | 60 | 58 | 0.02136 |
| 75 | 58 | 58 | 58 | 58 | 58 | 60 | 60 | 61 | 61 | 61 | 61 | 63 | 64 | 64 | 64 | 63 | 63 | 61 | 62 | 63 | 63 | 62 | 61 | 59 | 0.02083 |
| 80 | 58 | 58 | 58 | 58 | 60 | 61 | 61 | 61 | 61 | 62 | 62 | 64 | 64 | 64 | 64 | 64 | 63 | 62 | 62 | 64 | 63 | 63 | 62 | 60 | 0.02039 |
| 85 | 58 | 58 | 58 | 58 | 59 | 60 | 61 | 60 | 61 | 62 | 62 | 63 | 65 | 65 | 65 | 64 | 63 | 63 | 63 | 64 | 63 | 64 | 63 | 60 | 0.02382 |
| 90 | 58 | 57 | 58 | 58 | 59 | 60 | 61 | 61 | 61 | 61 | 63 | 64 | 66 | 66 | 66 | 65 | 64 | 64 | 64 | 64 | 64 | 64 | 63 | 60 | 0.02813 |
| 95 | 57 | 56 | 57 | 58 | 58.5 | 60 | 60.8 | 61 | 60.3 | 61 | 63 | 63 | 65 | 65 | 65 | 64 | 63 | 62 | 62 | 63 | 62 | 62 | 61 | 59 | 0.02588 |
| 100 | 55 | 55 | 56 | 57 | 58 | 60 | 61 | 61 | 60 | 61 | 62 | 64 | 65 | 64 | 64 | 63 | 61 | 60 | 61 | 61 | 60 | 60 | 60 | 58 | 0.02763 |
| 105 | 58 | 57 | 57 | 58 | 59 | 61 | 62 | 61 | 60 | 61 | 60 | 61 | 62 | 62 | 61 | 61 | 59 | 58 | 59 | 59 | 61 | 59 | 60 | 58 | 0.01567 |
| 109 | 60 | 59 | 58 | 59 | 60 | 62 | 63 | 61 | 59 | 58 | 58 | 59 | 60 | 59 | 58 | 58 | 57 | 56 | 56 | 56 | 58 | 58 | 59 | 58 | 0.01605 |