|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Measurement of roundness by Dial gauge deflections of 6-mm Diameter Aluminium (Al) Round Bar After Straightening** | | | | | | | | | | | | | | | | | | | | | | | |  |
|  | Mean values of Dial Gauge Deflection Readings after straightening of 6 mm Aluminium (Al) round bar x 0.01 mm | | | | | | | | | | | | | | | | | | | | | | | |  |
|  | Angles in Degrees | | | | | | | | | | | | | | | | | | | | | | | |  |
| Length in cm | 0o | 15o | 30o | 45o | 60o | 75o | 90o | 105o | 120o | 135o | 150o | 165o | 180o | 195o | 210o | 225o | 240o | 255o | 270o | 285o | 300o | 315o | 330o | 345o | STD  DEV (mm) |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16.5 | 241.0 | 244.0 | 244.5 | 243.0 | 242.5 | 240.0 | 242.0 | 244.0 | 241.0 | 238.0 | 236.0 | 234.0 | 231.0 | 230.0 | 232.0 | 231.0 | 233.0 | 235.0 | 234.0 | 231.0 | 229.0 | 233.0 | 237.0 | 237.5 | 0.0506 |
| 20.0 | 236.0 | 237.0 | 233.5 | 232.0 | 230.0 | 236.0 | 237.0 | 235.0 | 234.0 | 236.0 | 230.0 | 232.0 | 233.0 | 234.0 | 233.0 | 232.0 | 231.0 | 234.0 | 231.0 | 233.0 | 234.0 | 235.0 | 229.5 | 235.0 | 0.0220 |
| 25.0 | 237.0 | 235.5 | 237.5 | 236.5 | 233.5 | 231.0 | 235.0 | 234.0 | 234.0 | 232.0 | 230.0 | 231.0 | 231.0 | 233.0 | 231.0 | 230.0 | 232.0 | 233.0 | 232.0 | 234.0 | 235.0 | 231.0 | 227.5 | 230.0 | 0.0251 |
| 30.0 | 235.5 | 236.5 | 237.0 | 236.0 | 235.0 | 233.0 | 233.0 | 232.0 | 229.0 | 231.0 | 228.0 | 230.0 | 229.0 | 234.0 | 232.0 | 231.0 | 230.0 | 231.0 | 234.0 | 235.0 | 233.5 | 232.5 | 235.5 | 234.0 | 0.0255 |
| 35.0 | 236.0 | 239.0 | 242.0 | 243.5 | 245.0 | 247.0 | 245.5 | 243.0 | 240.0 | 236.0 | 233.0 | 232.0 | 234.5 | 234.0 | 234.5 | 233.5 | 233.0 | 234.0 | 233.0 | 232.0 | 235.0 | 233.0 | 236.0 | 235.0 | 0.0476 |
| 40.0 | 237.0 | 240.0 | 241.0 | 238.0 | 233.0 | 231.5 | 242.0 | 241.0 | 242.0 | 241.0 | 237.0 | 234.0 | 233.0 | 235.0 | 235.0 | 234.0 | 235.0 | 235.0 | 233.5 | 234.0 | 234.0 | 235.0 | 235.0 | 236.0 | 0.0318 |
| 45.0 | 238.0 | 243.0 | 242.0 | 241.0 | 239.0 | 236.0 | 236.0 | 238.0 | 240.0 | 242.0 | 235.0 | 233.0 | 231.0 | 233.0 | 234.0 | 233.0 | 234.0 | 233.0 | 230.0 | 234.0 | 236.5 | 236.0 | 238.5 | 238.0 | 0.0358 |
| 50.0 | 237.0 | 238.0 | 238.0 | 238.0 | 238.0 | 239.0 | 238.0 | 236.0 | 236.0 | 234.0 | 237.0 | 234.0 | 232.0 | 232.0 | 232.0 | 235.0 | 236.0 | 235.0 | 233.0 | 233.5 | 237.0 | 238.0 | 239.0 | 237.0 | 0.0228 |
| 55.0 | 236.0 | 241.5 | 243.0 | 245.5 | 243.5 | 242.0 | 240.0 | 237.0 | 235.5 | 238.0 | 233.5 | 237.0 | 234.0 | 233.0 | 231.0 | 232.0 | 230.0 | 233.5 | 236.5 | 235.0 | 236.0 | 238.0 | 239.0 | 241.0 | 0.0414 |
| 60.0 | 239.0 | 243.0 | 245.0 | 248.0 | 249.0 | 243.0 | 245.0 | 246.0 | 243.0 | 241.0 | 243.0 | 239.0 | 236.0 | 235.0 | 234.0 | 233.0 | 234.0 | 235.0 | 235.0 | 236.0 | 235.0 | 237.0 | 240.0 | 240.0 | 0.0480 |
| 65.0 | 237.0 | 241.0 | 242.0 | 243.0 | 245.0 | 244.0 | 246.0 | 247.5 | 246.5 | 244.0 | 241.5 | 237.0 | 235.0 | 232.5 | 233.0 | 234.0 | 232.0 | 234.0 | 234.0 | 233.0 | 234.0 | 235.0 | 239.0 | 241.0 | 0.0513 |
| 70.0 | 238.5 | 242.5 | 243.0 | 244.5 | 246.0 | 245.0 | 244.0 | 245.0 | 245.0 | 243.0 | 239.0 | 235.0 | 237.0 | 236.0 | 234.0 | 235.0 | 234.0 | 235.0 | 234.0 | 232.0 | 233.5 | 235.0 | 236.5 | 239.0 | 0.0463 |
| 75.0 | 237.0 | 238.0 | 239.0 | 241.0 | 242.0 | 240.0 | 238.0 | 237.5 | 237.0 | 236.0 | 232.5 | 233.0 | 235.0 | 234.0 | 232.0 | 234.0 | 235.0 | 234.0 | 231.0 | 231.0 | 233.5 | 233.0 | 234.0 | 236.5 | 0.0306 |
| 80.0 | 238.0 | 235.5 | 233.5 | 232.0 | 236.0 | 237.0 | 235.0 | 236.0 | 233.0 | 234.0 | 233.0 | 231.0 | 234.0 | 235.0 | 234.0 | 233.0 | 231.0 | 233.0 | 234.5 | 234.0 | 235.0 | 236.0 | 240.0 | 239.5 | 0.0231 |
| 85.0 | 237.0 | 247.0 | 248.0 | 246.0 | 244.0 | 243.0 | 240.5 | 239.0 | 239.0 | 238.0 | 236.0 | 235.0 | 236.0 | 237.0 | 235.0 | 235.0 | 233.0 | 236.0 | 235.0 | 235.0 | 237.0 | 238.0 | 242.0 | 238.0 | 0.0418 |
| 90.0 | 235.0 | 246.5 | 242.5 | 242.0 | 243.0 | 244.0 | 242.0 | 241.0 | 238.0 | 235.0 | 231.0 | 233.0 | 234.0 | 236.0 | 234.0 | 236.5 | 234.0 | 235.0 | 236.0 | 236.0 | 236.0 | 239.0 | 238.0 | 237.0 | 0.0396 |
| 95.0 | 238.5 | 242.0 | 244.0 | 245.0 | 244.0 | 243.0 | 241.5 | 243.0 | 241.0 | 238.0 | 234.0 | 235.0 | 235.0 | 237.0 | 235.0 | 237.0 | 235.0 | 234.0 | 234.0 | 233.0 | 234.0 | 236.0 | 236.0 | 235.0 | 0.0391 |
| 100.0 | 239.0 | 241.5 | 240.5 | 238.0 | 236.0 | 238.0 | 233.0 | 236.0 | 237.0 | 236.0 | 235.0 | 236.0 | 236.0 | 235.0 | 234.0 | 236.0 | 237.5 | 238.5 | 236.0 | 235.0 | 233.0 | 234.0 | 237.0 | 236.0 | 0.0211 |
| 105.0 | 239.0 | 240.0 | 238.5 | 240.0 | 239.0 | 238.0 | 239.5 | 237.5 | 235.5 | 235.0 | 234.0 | 235.0 | 233.0 | 236.0 | 235.0 | 234.0 | 235.0 | 237.0 | 238.0 | 236.0 | 234.0 | 235.0 | 236.0 | 236.0 | 0.0209 |
| 109.0 | 242.5 | 241.0 | 243.0 | 244.0 | 244.0 | 243.5 | 241.0 | 242.0 | 241.0 | 238.0 | 239.0 | 237.0 | 234.0 | 234.0 | 236.0 | 235.0 | 233.0 | 235.0 | 236.0 | 234.0 | 235.0 | 236.0 | 238.0 | 235.0 | 0.0369 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Measurement of roundness by Dial gauge deflections of 8-mm Diameter Aluminium (Al) Round Bar After Straightening** | | | | | | | | | | | | | | | | | | | | | | | |  |
|  | **Mean values of Dial Gauge Deflection Readings after straightening of 8 mm Aluminium (Al) round bar x 0.01 mm** | | | | | | | | | | | | | | | | | | | | | | | |  |
|  | **Angles in Degrees** | | | | | | | | | | | | | | | | | | | | | | | |  |
| **Length in cm** | **0o** | **15o** | **30o** | **45o** | **60o** | **75o** | **90o** | **105o** | **120o** | **135o** | **150o** | **165o** | **180o** | **195o** | **210o** | **225o** | **240o** | **255o** | **270o** | **285o** | **300o** | **315o** | **330o** | **345o** | **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 | 175 | 174 | 174 | 0.1018 |
| 15 | 172 | 170 | 168 | 165 | 164 | 160 | 158 | 156 | 152 | 148 | 151 | 153 | 152 | 150 | 153 | 157 | 161 | 166 | 169 | 173 | 173 | 173 | 174 | 174 | 0.0886 |
| 20 | 171 | 170 | 168 | 165 | 166 | 159 | 157 | 155 | 156 | 154 | 157 | 153 | 154 | 153 | 155 | 157 | 160 | 165 | 169 | 170 | 171 | 172 | 173 | 173 | 0.0729 |
| 24 | 169 | 167 | 166 | 167 | 168 | 162 | 160 | 158 | 158 | 156 | 156 | 156 | 159 | 157 | 156 | 157 | 159 | 162 | 166 | 168 | 169 | 170 | 170 | 169 | 0.0535 |
| 28 | 170 | 168 | 167 | 166 | 169 | 165 | 163 | 161 | 163 | 159 | 157 | 157 | 158 | 158 | 158 | 162 | 159 | 162 | 163 | 166 | 167 | 168 | 168 | 168 | 0.0428 |
| 32 | 167 | 166 | 168 | 168 | 171 | 168 | 165 | 163 | 160 | 162 | 160 | 158 | 162 | 159 | 162 | 165 | 158 | 160 | 157 | 159 | 161 | 162 | 163 | 163 | 0.0376 |
| 36 | 169 | 171 | 170 | 171 | 169 | 172 | 171 | 167 | 169 | 165 | 161 | 162 | 164 | 165 | 166 | 168 | 167 | 167 | 166 | 166 | 166 | 167 | 168 | 169 | 0.028 |
| 40 | 170 | 169 | 172 | 172 | 170 | 173 | 170 | 168 | 167 | 166 | 163 | 164 | 163 | 164 | 168 | 167 | 167 | 167 | 167 | 167 | 167 | 169 | 170 | 170 | 0.0275 |
| 44 | 171 | 170 | 171 | 172 | 171 | 171 | 172 | 169 | 166 | 164 | 164 | 163 | 162 | 165 | 167 | 167 | 167 | 168 | 167 | 167 | 168 | 169 | 169 | 169 | 0.0283 |
| 48 | 171 | 171 | 169 | 171 | 170 | 170 | 169 | 168 | 170 | 167 | 166 | 165 | 164 | 165 | 166 | 166 | 168 | 167 | 168 | 168 | 169 | 169 | 170 | 171 | 0.0211 |
| 52 | 167 | 170 | 171 | 171 | 169 | 166 | 168 | 167 | 169 | 168 | 165 | 167 | 165 | 166 | 167 | 168 | 168 | 169 | 170 | 170 | 170 | 171 | 168 | 171 | 0.0189 |
| 56 | 171 | 171 | 170 | 169 | 167 | 167 | 164 | 165 | 167 | 166 | 164 | 163 | 163 | 164 | 166 | 167 | 167 | 168 | 168 | 168 | 168 | 169 | 170 | 171 | 0.0242 |
| 59 | 171 | 172 | 171 | 169 | 169 | 167 | 167 | 165 | 166 | 169 | 163 | 163 | 165 | 164 | 166 | 167 | 168 | 169 | 169 | 169 | 170 | 172 | 171 | 171 | 0.028 |
| 62 | 169 | 169 | 170 | 168 | 166 | 166 | 165 | 167 | 165 | 168 | 164 | 162 | 164 | 163 | 163 | 164 | 164 | 165 | 166 | 167 | 167 | 169 | 169 | 168 | 0.0232 |
| 65 | 168 | 167 | 167 | 169 | 168 | 167 | 164 | 165 | 164 | 167 | 163 | 165 | 163 | 164 | 162 | 163 | 164 | 165 | 165 | 166 | 166 | 167 | 168 | 167 | 0.019 |
| 69 | 168 | 167 | 166 | 168 | 167 | 165 | 165 | 164 | 165 | 168 | 167 | 166 | 164 | 165 | 164 | 162 | 163 | 163 | 164 | 163 | 164 | 166 | 166 | 166 | 0.0175 |
| 73 | 169 | 168 | 169 | 170 | 168 | 166 | 164 | 165 | 164 | 163 | 160 | 161 | 163 | 163 | 158 | 163 | 164 | 164 | 162 | 163 | 163 | 165 | 165 | 166 | 0.0298 |
| 77 | 170 | 169 | 168 | 166 | 169 | 165 | 164 | 162 | 163 | 160 | 159 | 158 | 159 | 160 | 160 | 161 | 162 | 163 | 164 | 166 | 167 | 168 | 168 | 168 | 0.0384 |
| 80 | 169 | 171 | 168 | 168 | 167 | 167 | 163 | 161 | 162 | 164 | 158 | 157 | 162 | 159 | 160 | 163 | 162 | 163 | 164 | 164 | 167 | 169 | 169 | 168 | 0.0398 |
| 83 | 169 | 169 | 168 | 165 | 164 | 166 | 166 | 163 | 160 | 163 | 157 | 163 | 157 | 161 | 159 | 161 | 161 | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 0.0349 |
| 87 | 170 | 169 | 169 | 167 | 165 | 165 | 163 | 163 | 163 | 160 | 158 | 160 | 161 | 160 | 157 | 158 | 159 | 161 | 162 | 163 | 164 | 166 | 167 | 167 | 0.0373 |
| 90 | 170 | 169 | 169 | 168 | 165 | 164 | 165 | 161 | 159 | 158 | 159 | 161 | 162 | 157 | 158 | 158 | 162 | 161 | 162 | 164 | 165 | 165 | 167 | 168 | 0.0399 |
| 93 | 169 | 168 | 167 | 169 | 165 | 165 | 164 | 164 | 163 | 162 | 160 | 159 | 157 | 159 | 157 | 157 | 157 | 157 | 159 | 159 | 160 | 162 | 163 | 164 | 0.0402 |
| 96 | 168 | 167 | 168 | 166 | 164 | 164 | 167 | 163 | 162 | 160 | 161 | 159 | 158 | 160 | 159 | 158 | 163 | 157 | 158 | 159 | 160 | 161 | 163 | 164 | 0.0339 |
| 100 | 169 | 166 | 167 | 167 | 167 | 166 | 165 | 165 | 164 | 163 | 162 | 160 | 159 | 157 | 157 | 158 | 158 | 159 | 161 | 161 | 162 | 164 | 165 | 167 | 0.0368 |
| 104 | 170 | 168 | 169 | 167 | 167 | 166 | 165 | 164 | 163 | 162 | 161 | 159 | 158 | 160 | 157 | 159 | 157 | 158 | 160 | 161 | 162 | 164 | 166 | 167 | 0.0391 |
| 108 | 168 | 168 | 168 | 168 | 167 | 166 | 165 | 164 | 163 | 163 | 161 | 160 | 157 | 162 | 162 | 157 | 158 | 158 | 160 | 161 | 162 | 164 | 166 | 167 | 0.0374 |
| 112 | 169 | 169 | 169 | 168 | 168 | 166 | 165 | 164 | 163 | 163 | 160 | 158 | 157 | 158 | 160 | 157 | 157 | 158 | 160 | 161 | 163 | 165 | 167 | 168 | 0.0438 |
| 116 | 169 | 169 | 169 | 169 | 168 | 166 | 166 | 165 | 163 | 162 | 161 | 162 | 161 | 161 | 159 | 159 | 160 | 158 | 159 | 162 | 162 | 165 | 166 | 168 | 0.0368 |
| 120 | 169 | 169 | 170 | 169 | 168 | 167 | 166 | 164 | 163 | 162 | 160 | 158 | 160 | 158 | 156 | 157 | 157 | 159 | 160 | 162 | 164 | 165 | 168 | 169 | 0.0461 |
| 124 | 170 | 170 | 170 | 170 | 169 | 168 | 166 | 166 | 163 | 161 | 160 | 161 | 162 | 163 | 157 | 157 | 158 | 158 | 161 | 163 | 164 | 166 | 168 | 170 | 0.0458 |
| 128 | 170 | 170 | 170 | 171 | 170 | 169 | 168 | 166 | 164 | 162 | 161 | 160 | 164 | 161 | 157 | 157 | 157 | 158 | 159 | 161 | 162 | 166 | 167 | 169 | 0.0485 |
| 132 | 169 | 168 | 168 | 169 | 170 | 167 | 165 | 164 | 162 | 160 | 159 | 157 | 162 | 159 | 162 | 160 | 163 | 159 | 159 | 161 | 162 | 165 | 166 | 167 | 0.0386 |
| 136 | 168 | 169 | 170 | 169 | 168 | 168 | 168 | 164 | 162 | 161 | 159 | 161 | 159 | 158 | 159 | 159 | 158 | 157 | 159 | 160 | 163 | 165 | 167 | 169 | 0.0432 |
| 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 | 0.0475 |
| 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 | 0.0395 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Measurement of roundness by Dial gauge deflections of 10-mm Diameter Aluminium (Al) Round Bar After Straightening** | | | | | | | | | | | | | | | | | | | | | | | |  |
|  | **Mean values of Dial Gauge Deflection Readings after straightening of 10 mm Aluminium (Al) round bar x 0.01 mm** | | | | | | | | | | | | | | | | | | | | | | | |  |
|  | **Angles in Degrees** | | | | | | | | | | | | | | | | | | | | | | | |  |
| **Length in cm** | **0o** | **15o** | **30o** | **45o** | **60o** | **75o** | **90o** | **105o** | **120o** | **135o** | **150o** | **165o** | **180o** | **195o** | **210o** | **225o** | **240o** | **255o** | **270o** | **285o** | **300o** | **315o** | **330o** | **345o** | **STD**  **DEV (mm)** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 | 152 | 152 | 153 | 153 | 154 | 155 | 156 | 156 | 157 | 156 | 155 | 154 | 153 | 150 | 147 | 146 | 146 | 146 | 146 | 147 | 149 | 151 | 152 | 152 | 0.036 |
| 17 | 137 | 138 | 138 | 139 | 140 | 141 | 142 | 142 | 142 | 141 | 141 | 140 | 139 | 138 | 137 | 136 | 136 | 135 | 134 | 136 | 138 | 139 | 140 | 139 | 0.022 |
| 20 | 141 | 141 | 141 | 142 | 142 | 144 | 145 | 145 | 144 | 143 | 142 | 140 | 138 | 136 | 135 | 134 | 134 | 134 | 135 | 137 | 139 | 140 | 142 | 142 | 0.036 |
| 23 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 142 | 141 | 140 | 138 | 137 | 136 | 136 | 136 | 136 | 137 | 139 | 141 | 142 | 144 | 144 | 0.029 |
| 26 | 145 | 145 | 146 | 145 | 145 | 145 | 145 | 144 | 142 | 141 | 140 | 139 | 138 | 136 | 135 | 135 | 136 | 136 | 137 | 140 | 143 | 144 | 145 | 145 | 0.04 |
| 29 | 141 | 140 | 140 | 140 | 140 | 139 | 138 | 137 | 135 | 135 | 134 | 133 | 132 | 131 | 130 | 130 | 130 | 131 | 132 | 135 | 138 | 140 | 141 | 141 | 0.04 |
| 32 | 144 | 143 | 142 | 141 | 140 | 139 | 138 | 136 | 134 | 134 | 133 | 133 | 133 | 132 | 131 | 132 | 133 | 134 | 136 | 139 | 142 | 143 | 144 | 144 | 0.046 |
| 35 | 148 | 147 | 147 | 145 | 143 | 140 | 138 | 136 | 134 | 133 | 132 | 131 | 131 | 131 | 131 | 132 | 134 | 136 | 138 | 141 | 145 | 147 | 149 | 148 | 0.067 |
| 38 | 148 | 146 | 145 | 142 | 140 | 137 | 135 | 132 | 128 | 127 | 127 | 126 | 126 | 126 | 126 | 129 | 132 | 134 | 136 | 140 | 144 | 146 | 149 | 148 | 0.083 |
| 41 | 152 | 150 | 149 | 146 | 143 | 139 | 136 | 132 | 129 | 127 | 126 | 125 | 125 | 126 | 127 | 129 | 132 | 135 | 139 | 143 | 148 | 150 | 152 | 152 | 0.101 |
| 44 | 156 | 154 | 153 | 150 | 146 | 143 | 140 | 135 | 131 | 129 | 127 | 126 | 126 | 126 | 126 | 128 | 130 | 134 | 137 | 142 | 146 | 151 | 155 | 155 | 0.111 |
| 47 | 157 | 156 | 155 | 152 | 150 | 146 | 142 | 137 | 132 | 129 | 126 | 125 | 125 | 126 | 127 | 129 | 131 | 135 | 139 | 144 | 149 | 153 | 157 | 157 | 0.121 |
| 50 | 153 | 152 | 151 | 149 | 146 | 143 | 140 | 135 | 130 | 128 | 126 | 124 | 123 | 123 | 124 | 125 | 127 | 131 | 134 | 140 | 146 | 148 | 151 | 152 | 0.111 |
| 53 | 153 | 152 | 152 | 150 | 148 | 144 | 141 | 137 | 134 | 131 | 128 | 127 | 126 | 126 | 126 | 127 | 129 | 132 | 135 | 140 | 145 | 147 | 149 | 151 | 0.1 |
| 56 | 150 | 149 | 148 | 147 | 146 | 143 | 141 | 138 | 135 | 133 | 131 | 131 | 132 | 130 | 129 | 129 | 130 | 132 | 134 | 139 | 144 | 146 | 148 | 148 | 0.076 |
| 59 | 149 | 148 | 148 | 146 | 145 | 144 | 143 | 140 | 138 | 137 | 136 | 135 | 134 | 133 | 132 | 132 | 133 | 135 | 137 | 140 | 143 | 145 | 147 | 148 | 0.058 |
| 62 | 145 | 145 | 145 | 143 | 142 | 140 | 139 | 136 | 134 | 133 | 132 | 131 | 130 | 129 | 129 | 129 | 130 | 132 | 135 | 138 | 141 | 143 | 145 | 145 | 0.061 |
| 65 | 148 | 147 | 146 | 145 | 144 | 142 | 141 | 138 | 136 | 134 | 133 | 132 | 131 | 130 | 130 | 130 | 130 | 132 | 135 | 139 | 143 | 144 | 146 | 146 | 0.065 |
| 68 | 151 | 150 | 150 | 148 | 147 | 144 | 142 | 138 | 135 | 133 | 131 | 131 | 130 | 130 | 129 | 130 | 131 | 134 | 138 | 141 | 144 | 147 | 150 | 151 | 0.082 |
| 71 | 151 | 150 | 150 | 148 | 146 | 143 | 140 | 136 | 133 | 130 | 128 | 127 | 126 | 126 | 126 | 127 | 128 | 131 | 134 | 139 | 143 | 146 | 148 | 149 | 0.092 |
| 74 | 155 | 154 | 154 | 152 | 150 | 147 | 145 | 141 | 137 | 133 | 130 | 128 | 127 | 126 | 126 | 127 | 128 | 131 | 135 | 139 | 144 | 146 | 149 | 151 | 0.104 |
| 77 | 153 | 153 | 153 | 152 | 151 | 149 | 147 | 143 | 140 | 137 | 134 | 132 | 131 | 130 | 130 | 130 | 130 | 133 | 136 | 140 | 145 | 147 | 149 | 151 | 0.088 |
| 80 | 148 | 149 | 150 | 150 | 150 | 149 | 148 | 144 | 141 | 139 | 136 | 133 | 130 | 128 | 126 | 126 | 126 | 128 | 130 | 133 | 137 | 140 | 143 | 145 | 0.088 |
| 83 | 153 | 154 | 156 | 156 | 157 | 155 | 154 | 151 | 147 | 143 | 138 | 133 | 129 | 126 | 124 | 123 | 123 | 125 | 128 | 133 | 138 | 142 | 145 | 149 | 0.123 |
| 86 | 110 | 107 | 104 | 104 | 103 | 107 | 111 | 118 | 124 | 131 | 137 | 141 | 145 | 146 | 147 | 146 | 146 | 142 | 139 | 135 | 130 | 125 | 120 | 115 | 0.16 |
| 89 | 112 | 109 | 106 | 106 | 106 | 108 | 111 | 117 | 123 | 128 | 133 | 137 | 140 | 142 | 143 | 142 | 141 | 139 | 136 | 132 | 128 | 125 | 121 | 117 | 0.134 |
|  | **Mean values of Dial Gauge Deflection Readings after straightening of 10 mm Aluminium (Al) round bar x 0.01 mm** | | | | | | | | | | | | | | | | | | | | | | | |  |
|  | **Angles in Degrees** | | | | | | | | | | | | | | | | | | | | | | | |  |
| **Length in cm** | **0o** | **15o** | **30o** | **45o** | **60o** | **75o** | **90o** | **105o** | **120o** | **135o** | **150o** | **165o** | **180o** | **195o** | **210o** | **225o** | **240o** | **255o** | **270o** | **285o** | **300o** | **315o** | **330o** | **345o** | **STD**  **DEV (mm)** |
| 92 | 116 | 114 | 113 | 112 | 112 | 114 | 117 | 122 | 127 | 131 | 135 | 137 | 140 | 141 | 141 | 141 | 141 | 139 | 137 | 134 | 131 | 127 | 122 | 119 | 0.109 |
| 95 | 115 | 114 | 113 | 113 | 113 | 116 | 120 | 124 | 129 | 132 | 135 | 137 | 139 | 139 | 139 | 138 | 137 | 134 | 132 | 129 | 126 | 124 | 121 | 118 | 0.096 |
| 98 | 103 | 103 | 103 | 104 | 105 | 113 | 122 | 127 | 133 | 136 | 139 | 139 | 139 | 137 | 136 | 133 | 131 | 128 | 126 | 123 | 120 | 118 | 116 | 110 | 0.13 |
| 101 | 119 | 118 | 118 | 119 | 120 | 123 | 126 | 131 | 135 | 138 | 141 | 142 | 142 | 140 | 138 | 136 | 134 | 131 | 129 | 126 | 124 | 122 | 121 | 120 | 0.086 |
| 104 | 107 | 107 | 106 | 112 | 118 | 122 | 126 | 130 | 135 | 138 | 141 | 141 | 141 | 140 | 138 | 136 | 133 | 130 | 128 | 125 | 123 | 121 | 119 | 113 | 0.115 |
| 107 | 117 | 116 | 115 | 117 | 118 | 122 | 125 | 129 | 133 | 135 | 137 | 138 | 139 | 138 | 137 | 134 | 132 | 129 | 127 | 124 | 122 | 120 | 119 | 117 | 0.083 |
| 110 | 119 | 118 | 118 | 118 | 119 | 123 | 128 | 132 | 137 | 140 | 143 | 144 | 144 | 143 | 142 | 140 | 138 | 135 | 132 | 130 | 127 | 125 | 122 | 121 | 0.095 |
| 113 | 118 | 117 | 117 | 118 | 119 | 123 | 128 | 133 | 138 | 141 | 144 | 145 | 146 | 144 | 142 | 139 | 137 | 134 | 130 | 127 | 124 | 122 | 120 | 119 | 0.103 |
| 116 | 146 | 144 | 143 | 140 | 137 | 133 | 130 | 127 | 125 | 122 | 120 | 118 | 117 | 118 | 120 | 125 | 129 | 134 | 139 | 139 | 140 | 143 | 146 | 146 | 0.101 |
| 119 | 152 | 150 | 148 | 145 | 143 | 140 | 138 | 135 | 132 | 130 | 129 | 128 | 127 | 127 | 127 | 130 | 133 | 137 | 142 | 146 | 151 | 153 | 155 | 153 | 0.097 |

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|  | **Measurement of roundness by Dial gauge deflections of 12-mm Diameter Aluminium (Al) Round Bar After Straightening** | | | | | | | | | | | | | | | | | | | | | | | |  |
|  | **Mean values of Dial Gauge Deflection Readings after straightening of 12 mm Aluminium (AL) round bar x 0.01 mm** | | | | | | | | | | | | | | | | | | | | | | | |  |
|  | **Angles in Degrees** | | | | | | | | | | | | | | | | | | | | | | | |  |
| **Length in cm** | **0o** | **15o** | **30o** | **45o** | **60o** | **75o** | **90o** | **105o** | **120o** | **135o** | **150o** | **165o** | **180o** | **195o** | **210o** | **225o** | **240o** | **255o** | **270o** | **285o** | **300o** | **315o** | **330o** | **345o** | **STD**  **DEV (mm)** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | 126 | 127 | 128 | 128 | 128 | 129 | 130 | 129 | 128 | 126 | 124 | 122 | 120 | 120 | 119 | 120 | 121 | 121 | 122 | 122 | 122 | 123 | 125 | 125 | 0.036 |
| 20 | 121 | 122 | 123 | 123 | 123 | 125 | 126 | 125 | 124 | 123 | 121 | 119 | 118 | 117 | 117 | 118 | 119 | 119 | 120 | 119 | 119 | 120 | 121 | 121 | 0.026 |
| 30 | 117 | 117 | 118 | 118 | 119 | 120 | 121 | 120 | 119 | 117 | 115 | 114 | 113 | 113 | 112 | 113 | 115 | 115 | 116 | 116 | 116 | 116 | 117 | 117 | 0.023 |
| 40 | 120 | 120 | 121 | 121 | 121 | 122 | 122 | 121 | 120 | 118 | 117 | 115 | 113 | 112 | 112 | 113 | 115 | 116 | 117 | 117 | 117 | 118 | 119 | 120 | 0.032 |
| 45 | 120 | 120 | 120 | 120 | 120 | 121 | 122 | 120 | 119 | 117 | 115 | 114 | 113 | 112 | 112 | 114 | 115 | 116 | 117 | 117 | 118 | 118 | 118 | 118 | 0.028 |
| 50 | 114 | 114 | 115 | 115 | 116 | 116 | 117 | 116 | 116 | 114 | 113 | 112 | 111 | 110 | 110 | 111 | 112 | 113 | 114 | 113 | 113 | 113 | 114 | 114 | 0.019 |
| 60 | 113 | 113 | 114 | 114 | 115 | 115 | 116 | 115 | 114 | 113 | 112 | 111 | 109 | 109 | 110 | 111 | 113 | 113 | 114 | 113 | 113 | 113 | 114 | 113 | 0.018 |
| 70 | 114 | 114 | 114 | 114 | 115 | 115 | 116 | 115 | 115 | 112 | 110 | 109 | 108 | 108 | 108 | 109 | 110 | 111 | 112 | 112 | 112 | 112 | 113 | 113 | 0.025 |
| 80 | 117 | 117 | 117 | 116 | 116 | 116 | 117 | 116 | 115 | 113 | 111 | 110 | 110 | 110 | 110 | 112 | 114 | 114 | 115 | 113 | 112 | 114 | 116 | 116 | 0.025 |
| 90 | 109 | 109 | 109 | 109 | 110 | 110 | 110 | 109 | 108 | 107 | 107 | 107 | 106 | 105 | 104 | 106 | 108 | 105 | 102 | 102 | 101 | 101 | 101 | 101 | 0.032 |
| 100 | 108 | 107 | 106 | 106 | 105 | 105 | 105 | 105 | 105 | 104 | 103 | 102 | 101 | 101 | 101 | 103 | 104 | 106 | 108 | 108 | 108 | 108 | 108 | 108 | 0.023 |
| 110 | 106 | 105 | 105 | 105 | 105 | 105 | 106 | 106 | 106 | 105 | 105 | 103 | 102 | 102 | 101 | 102 | 103 | 105 | 106 | 106 | 105 | 105 | 105 | 105 | 0.015 |
| 120 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 106 | 105 | 105 | 103 | 102 | 102 | 102 | 103 | 104 | 106 | 107 | 107 | 106 | 106 | 105 | 105 | 0.013 |
| 90 | 143 | 142 | 141 | 141 | 141 | 141 | 141 | 141 | 141 | 139 | 138 | 137 | 135 | 135 | 135 | 136 | 138 | 140 | 142 | 141 | 141 | 141 | 142 | 142 | 0.025 |
| 120 | 139 | 139 | 139 | 139 | 139 | 139 | 139 | 139 | 140 | 139 | 139 | 137 | 136 | 136 | 136 | 137 | 138 | 140 | 141 | 141 | 140 | 140 | 139 | 139 | 0.013 |