|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Table 6.14 Measurement of roundness by Dial gauge deflections of 6-mm Diameter Stainless Steel (SS) Round Bar** | | | | | | | | | | | | | | | | | | | | | | | |  |
|  | **Mean values of Dial Gauge Deflection Readings after straightening of 6 mm SS 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) |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | 193 | 193 | 191 | 188 | 185 | 181 | 178 | 175 | 170 | 168 | 167 | 159 | 160 | 158 | 153 | 157 | 160 | 165 | 174 | 179 | 182 | 188 | 191 | 194 | 0.1343 |
| 20 | 192 | 191 | 192 | 193 | 191 | 188 | 187 | 185 | 179 | 176 | 172 | 168 | 164 | 162 | 156 | 163 | 159 | 163 | 167 | 174 | 179 | 185 | 189 | 192 | 0.1248 |
| 25 | 192 | 193 | 194 | 194 | 194 | 193 | 190 | 187 | 186 | 184 | 182 | 178 | 176 | 174 | 171 | 168 | 165 | 168 | 166 | 172 | 179 | 184 | 189 | 192 | 0.1002 |
| 30 | 194 | 196 | 195 | 196 | 195 | 196 | 195 | 193 | 188 | 186 | 181 | 176 | 175 | 178 | 175 | 172 | 163 | 166 | 170 | 177 | 176 | 188 | 186 | 198 | 0.109 |
| 35 | 192 | 195 | 194 | 195 | 196 | 197 | 194 | 192 | 190 | 188 | 186 | 183 | 173 | 176 | 172 | 169 | 168 | 167 | 172 | 168 | 173 | 176 | 181 | 188 | 0.1062 |
| 40 | 194 | 197 | 196 | 196 | 197 | 198 | 196 | 195 | 193 | 190 | 188 | 185 | 178 | 177 | 174 | 167 | 166 | 165 | 165 | 169 | 175 | 182 | 183 | 195 | 0.1191 |
| 45 | 192 | 196 | 198 | 199 | 198 | 199 | 199 | 194 | 191 | 187 | 186 | 184 | 183 | 180 | 176 | 173 | 169 | 171 | 166 | 166 | 172 | 176 | 185 | 186 | 0.112 |
| 50 | 189 | 192 | 195 | 194 | 196 | 195 | 197 | 191 | 188 | 185 | 184 | 183 | 180 | 179 | 174 | 171 | 175 | 172 | 169 | 168 | 174 | 178 | 185 | 179 | 0.0925 |
| 54 | 188 | 190 | 192 | 193 | 194 | 193 | 194 | 189 | 182 | 183 | 181 | 177 | 175 | 176 | 172 | 170 | 172 | 173 | 175 | 171 | 182 | 182 | 186 | 193 | 0.084 |
| 57.5 | 190 | 189 | 190 | 191 | 192 | 193 | 191 | 187 | 185 | 182 | 179 | 176 | 173 | 171 | 170 | 173 | 168 | 169 | 176 | 175 | 184 | 183 | 184 | 190 | 0.0832 |
| 62.5 | 189 | 188 | 189 | 190 | 189 | 192 | 188 | 185 | 183 | 180 | 178 | 174 | 171 | 168 | 169 | 168 | 166 | 172 | 179 | 174 | 185 | 184 | 186 | 190 | 0.0842 |
| 66.5 | 187 | 186 | 188 | 189 | 188 | 190 | 187 | 182 | 180 | 178 | 175 | 172 | 169 | 167 | 168 | 169 | 169 | 171 | 183 | 181 | 184 | 185 | 188 | 187 | 0.0796 |
| 71.5 | 186 | 184 | 186 | 187 | 186 | 188 | 186 | 184 | 178 | 175 | 176 | 174 | 170 | 163 | 164 | 165 | 172 | 177 | 181 | 184 | 182 | 184 | 189 | 188 | 0.08 |
| 75.3 | 178 | 177 | 174 | 168 | 173 | 178 | 181 | 172 | 175 | 157 | 165 | 163 | 167 | 160 | 165 | 172 | 175 | 184 | 187 | 189 | 186 | 183 | 188 | 187 | 0.0934 |



**Figure 6.19(a): Box Plot of dial gauge readings dataset of mean values of 6-mm diameter Stainless Steel (SS) round bar before straightening**

**Figure 6.19(b): Error Plot of dial gauge readings on 6 mm Stainless Steel Round Bar after straightening**