

Guidelines for Barrel and Overall Length Measurements of Firearms



WHAT IS AN AAFS STANDARD FACTSHEET?

The AAFS produces clear, concise, and easy-to-understand factsheets to summarize the contents of technical and professional forensic science standards on the OSAC Registry. They are not intended to provide an interpretation for any portion of a published standard.

WHAT IS THE PURPOSE OF THIS STANDARD?

This best practice recommendation provides guidelines for measuring barrel length and overall length (BL-OL) of firearms, including guidelines for measurement traceability and estimating the uncertainty of BL-OL measurements.

This standard is intended to be used alongside [ANSI/ASB 068, 1st Ed., 2020](#) and [ANSI/ASB 093, 1st Ed., 2020](#).

WHY IS THIS STANDARD IMPORTANT? WHAT ARE ITS BENEFITS?

United States Federal law requires rifles to have a barrel length of at least 16 inches, shotguns to have a barrel length of at least 18 inches, and both types of firearms to have an overall length of at least 26 inches. Some states or other jurisdictions have similar legal requirements regarding firearms size.

Utilizing the procedures found in this Best Practice Recommendation Guideline can assist forensic science service providers (FSSPs) in reporting accurate barrel and overall length measurements with estimated measurement uncertainty.



HOW IS THIS STANDARD USED, AND WHAT ARE THE KEY ELEMENTS?

This best practice recommendation contains the elements needed for measuring the barrel and overall length of firearms and providing a measurement uncertainty for the length measurements. It may assist the FSSP in developing an internal procedure.

Key elements include background information, different procedures for different types of barrels being measured (i.e., revolvers and integral chamber barrels) and for different measuring devices being used (i.e., ruler/measuring tape, measuring rod, and calipers), measurement traceability, an outline of the factors used when calculating measurement uncertainty, an example of how an FSSP could conduct its measurement uncertainty study, and FSSP records requirements.

- Measurement traceability, also referred to as metrological traceability, ties a measurement result made by a forensic science service provider to the International System of Units (SI). A tie to the SI brings uniformity, consistency, comparability, and reliability to measurement results.
- Measurement uncertainty quantifies the variability in a measurement process at a stated level of confidence.

Annex A contains a [link to a usable spreadsheet](#) that may assist with measurement uncertainty calculations.

This best practice recommendation does not apply to descriptive measurements of firearms.