



### **B129 Useful Characteristics to Assist With Identifying Hornady® Bullets and Their Potential Caliber**

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After attending this presentation, attendees will be aware of the various features that can be used to identify Hornady® polymer-tipped bullets. Furthermore, attendees will understand the potential use of cannelure height as a means to determine the specific caliber of .38 caliber-class Hornady® Critical Defense® bullets.

This presentation will impact the forensic science community by increasing awareness of the various features of Hornady® polymer-tipped bullets and the many ways they can be identified. In addition, this presentation will provide insight regarding the potential for cannelure height to be used to determine the specific caliber of .38 caliber-class Hornady® Critical Defense® bullets.

Bullet examinations are a pivotal aspect of firearm/tool mark examinations, especially for cases in which a suspect firearm is not recovered. Information, such as caliber, ammunition manufacturer, and the potential type of firearm, are valuable details that help guide detectives' investigations. For this reason, it is important for examiners to be knowledgeable about the various characteristics that can be used to identify specific ammunition brands and bullet calibers.

Hornady® is an ammunition manufacturer whose signature polymer-tipped bullets (specifically, Critical Defense®, Zombie Max™, and Critical Duty®) have begun to appear more often in casework. There are a few important characteristics that examiners should be aware of to assist in identifying these bullets. Initially, the bullets can be recognized by their polymer tips. The majority of the polymer tips are red; however, pink and green have also been used. Additional features, such as the number of cannelures and the characteristics of the expanded hollow point, can be useful for identifying Hornady® polymer-tipped bullets.

Furthermore, the potential to differentiate 38 caliber-class Hornady® Critical Defense® bullets based on cannelure height, in combination with bullet weight, was explored. In casework, firearm examiners often receive damaged bullets, which can make caliber determination challenging. The ability to utilize cannelure height, along with bullet weight, as a means to determine caliber could further assist in providing specific, useful, investigational information to detectives.

An assortment of 38 caliber-class Hornady® Critical Defense® ammunition was obtained. A bullet was pulled from each specific caliber. The cannelure height was measured from the base of the bullet to the base of the cannelure using calipers and a stage micrometer. From the measurements, it was determined that cannelure height does differ with respect to specific caliber; however, some of the cannelures were fairly close in height. Therefore, it would be difficult to narrow down to one specific caliber. In general, the cannelure height increased as bullet weight increased.

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#### **Hornady®, Cannelure, Caliber**