You take every step of the hunt seriously, hashing out key decisions before the truck ever leaves the driveway: wearing an appropriate pattern, mounting and sighting your favorite optics, and finding the perfect set-up spot. You chose everything up to this point based on merit for its role in getting a shot on-target. Does your reticle selection get the same consideration?

**THE PERFECT RETICLE**

Choosing the right thermal reticle for your weapon sight can be the difference between a hit or a miss

You take every step of the hunt seriously, hashing out key decisions before the truck ever leaves the driveway: wearing an appropriate pattern, mounting and sighting your favorite optics, and finding the perfect set-up spot. You chose everything up to this point based on merit for its role in getting a shot on-target. Does your reticle selection get the same consideration?

**PROPERLY SELECTING RETICLE PATTERN AND COLOR**

Reticle preference is too often overlooked. The attention to detail that leads up to a shot should not end with a hastily selected reticle. It is important to make an informed decision on your reticle pattern and color beyond a shoulder shrug and defaulting to the factory settings.

**PATTERN**

Reticle patterns are often designed for specific circumstances. While pattern selection largely comes down to personal preference, several variables can influence the effectiveness of one reticle over another.

- **Grouping:** Is the target isolated or among a group? (Isolated/Group)
- **Movement:** Is the target stationary or in motion? (Stationary/Moving)
- **Scene:** Does the environment provide a uniform or cluttered background? (Uniform/Cluttered)
- **Pace:** Are quick adjustments needed for shots on multiple targets? (Single/Rapid Target Acquisition)

*Top image - FLIR thermal image of a feral hog  
Bottom image - Feral hogs can disrupt sensitive ecosystems*
TYPES OF RETICLES

FLIR thermal imaging weapon sights combat these challenges by offering six reticle patterns set to deliver precise shot placement in the trickiest conditions.

The **DOT 4 MOA** is best-suited for high-contrast, uniform environments. Its simplicity allows rapid target acquisition on solitary targets, but a lack of horizontal or vertical guides hinders the reticle in cluttered scenes.

- **Grouping:** Isolated
- **Movement:** Stationary
- **Scene:** Uniform
- **Pace:** Rapid Target Acquisition

The **Line Dot** pattern’s horizontal guides allow level tracking of a moving target and is often used in tandem with a tripod. The Line Dot is most effective with single targets in a uniform environment.

- **Grouping:** Isolated
- **Movement:** Moving
- **Scene:** Uniform
- **Pace:** Rapid Target Acquisition

The **Cross Center Dot**’s horizontal and vertical lines keep the user focused on shot location and provide contrast against cluttered backgrounds. Gaps between the guides and dot make the Cross Center Dot best-suited for isolated targets.

- **Grouping:** Isolated
- **Movement:** Moving
- **Scene:** Cluttered
- **Pace:** Rapid Target Acquisition
The **Cross** merges vertical and horizontal lines to pinpoint shot location on grouped targets in cluttered environments. The pattern’s small size allows rapid target acquisition, but maintaining contrast between the reticle, target, and background can be difficult.

- **Grouping:** Group
- **Movement:** Moving
- **Scene:** Cluttered
- **Pace:** Rapid Target Acquisition

The **Crosshair** pattern’s large, bold guides and thin cross allow precise shot placement on grouped targets in cluttered environments. While the reticle’s size improves its visibility, it is not ideal for rapid target acquisition.

- **Grouping:** Group
- **Movement:** Stationary
- **Scene:** Cluttered
- **Pace:** Single

FLIR’s exclusive, patent pending **Crossdash** reticle uses Highly Visible Technology (HVT) to clearly display a cross pattern on any scene — regardless of palette. While other reticles depend on large pattern sizes and contrasting color to remain visible, HVT’s alternating black and white line dashes take advantage of how the human eye detects edges. The Crossdash’s unique ability to remain visible in any scene — despite having a small footprint — makes it ideal for rapid acquisition of multiple targets in any background.

- **Grouping:** Group
- **Scene:** Cluttered
- **Movement:** Moving
- **Pace:** Rapid Target Acquisition

In general, the complexity of a reticle pattern should match that of its scene (Figure 1). Simple options — such as the DOT 4 MOA — pair well with single targets on a uniform scene, while more complex patterns — such as the Crossdash — will hold up against the challenge of grouped targets within a cluttered scene.

---

**Figure 1:** Each available reticle pattern shown in order of preferred scene and target complexity
Aside from choosing a standout pattern, adjusting reticle color is a crucial part of maintaining contrast. FLIR units offer four distinct color options that can be applied to each reticle pattern: black, white, red, and cyan. Leveraging these options with appropriate palette combinations can significantly improve a reticle's visibility. Users should make color decisions based on two major factors:

**On-Target Contrast**: Maintaining reticle visibility on-target for precise shot placement.

**Scene Contrast**: Maintaining reticle visibility within a scene for rapid target acquisition.

Achieving both on-target and scene contrast means that a user will be able to see the entire reticle while moving across any object or background.

Color selection is particularly important for thin pattern options, such as the DOT 4 MOA, Line Dot, Cross Center Dot, and Cross. Pairing incompatible palette and reticle colors can cause inaccurate and potentially unsafe shot placement. Different environments will span varying degrees of a color palette.

---

**ON-TARGET AND SCENE CONTRAST EXAMPLES**

| Palette: White Hot | Reticle: Red Crosshair | On-Target Contrast: STRONG | Scene Contrast: STRONG |
| Palette: White Hot | Reticle: White Crosshair | On-Target Contrast: WEAK | Scene Contrast: STRONG |
| Palette: Outdoor Alert | Reticle: White Crosshair | On-Target Contrast: WEAK | Scene Contrast: WEAK |
RETICLE COLOR/PALETTE COMBINATION

The best way to ensure proper on-target and scene contrast is to select a reticle color/palette combination that maintains visibility across the entire color gradient. Figures 2 and 3 illustrate how reticle colors interact with each available FLIR palette. Strong pairings can span the entire palette without losing contrast, while poor pairings can result in the reticle getting lost on-target or in the background.

Figure 2: Each available thermal palette shown with all reticle color options to identify best pairings
**RETICLE COLORS**

<table>
<thead>
<tr>
<th>THERMAL PALETTES</th>
<th>IRONBOW PALETTE</th>
<th>OUTDOOR ALERT PALETTE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Figure 2 Continued:</strong> Each available thermal palette shown with all reticle color options to identify best pairings</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Black</th>
<th>White</th>
<th>Cyan</th>
<th>Red</th>
<th>Crossdash</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Black hot</strong></td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>White hot</strong></td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Sepia</strong></td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Rainbow</strong></td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Arctic</strong></td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Iron bow</strong></td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Outdoor alert</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

**Figure 3:** Reference table to quickly identify effective and ineffective reticle color/palette combinations
THE DIFFERENCE MAKER

Selecting an appropriate reticle pattern and color will ultimately lead to users who are confident in their ability to place a shot on-target. What may have initially been an afterthought could be the difference-maker for a clean shot. Understanding how to establish strong contrast between your preferred reticle, a target, and the background will be key in getting the most out of your thermal weapon sight.
Equipment described herein is subject to US export regulations and may require a license prior to export. Diversion contrary to US law is prohibited. Imagery for illustration purposes only. Specifications are subject to change without notice. ©2018 FLIR Systems, Inc. All rights reserved. 07/11/18

Specifications are subject to change without notice. For the most up-to-date specs, go to www.flir.com

www.flir.com
NASDAQ: FLIR

Equipment described herein is subject to US export regulations and may require a license prior to export. Diversion contrary to US law is prohibited. Imagery for illustration purposes only. Specifications are subject to change without notice. ©2018 FLIR Systems, Inc. All rights reserved. 07/11/18

18-0937-OTS