



YOUR PERFECT PALETTE

Developing preferences for different thermal palettes allows confident decision-making when it counts

Both formal law enforcement training and longstanding hunting practices assume there's a right and wrong way to do things. Defined procedures help remove uncertainty and increase the chance of success, such as how to legally apprehend a suspect or safely handle a firearm.

However, thermal imaging for law enforcement and hunting is dynamic. Users interpret thermal images differently and often must draw from personal experience to resolve specific situations. Understanding the strengths of different camera settings is vital for quick, confident detection. When it comes to choosing the right thermal imaging palette—personal preference is king.

UNDERSTANDING THERMAL PALETTES

Thermal imaging cameras, riflescopes, and handheld optics all operate on the same basic premise. An onboard thermal sensor detects different amounts of heat energy, then generates an image. While thermal images may sometimes look like standard photographs, their vivid colors or contrasting grayscale details represent a very specific, very large data set. Understanding what these colors and shades represent—and learning how to best-leverage them in the field—allows law enforcement professionals, hunters, and outdoor enthusiasts to quickly detect suspects, targets, and objects of interest.

Like any digital image, thermal images are made up of pixels. The number of pixels in a thermal image is determined by the camera's resolution. Higher-resolution sensors generate images with a higher pixel-count and generally produce clearer results. In thermal imaging, each individual pixel represents a specific temperature data point. These data points are assigned a unique color or shade based on their value, meaning that as the thermal sensor detects changes in heat energy, it will express this change by adjusting the color or shade of a pixel. These preset gradients—or thermal palettes—determine pixel appearance and help identify different heat sources throughout a scene.



Top image - FLIR Outdoor Alert palette option

Bottom image - Thermal imaging monoculars like the FLIR Breach™ give law enforcement professionals an advantage in the field



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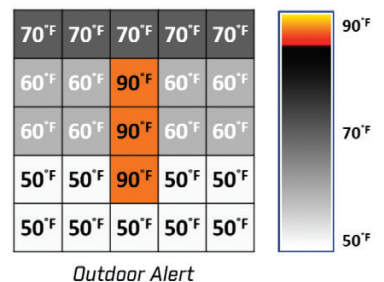
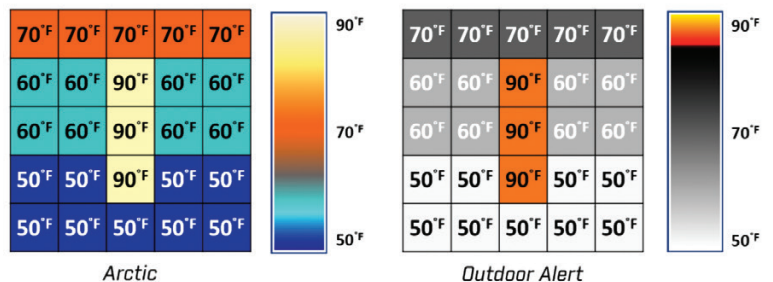
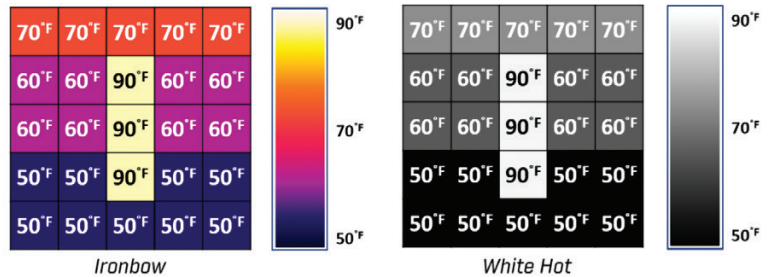
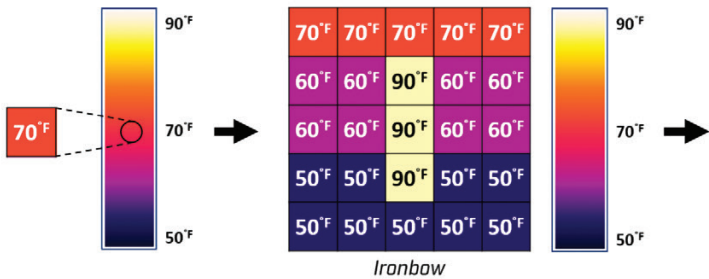
Thermal imagers provide superior tactical awareness in complete darkness and through glaring light

UNDERSTANDING THERMAL PALETTES CONTINUED...

Most law enforcement, search and rescue, and hunting applications focus on qualitative thermal imaging, which looks at the relative presence or absence of heat in a scene —rather than focusing on numeric temperature values. Reliable, qualitative thermal imaging hinges on recognizing contrast between targets, objects of interest, and their environment. Detecting body heat is the priority and establishing thermal palette preferences allows users to confidently pinpoint heat sources. Familiarity with an optic and its imaging capability will be the difference-maker in quickly apprehending a suspect, finding discarded evidence, locating a lost hiker, or recovering downed game.



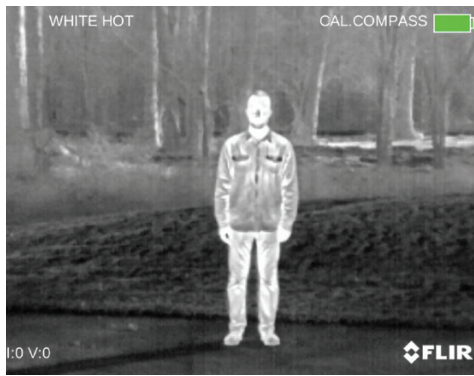
THERMAL PALETTES



User-controlled thermal palettes assign color or shading to individual pixels based on their heat energy. Switching palettes changes the appearance of a scene and highlights key areas of a thermal image without altering any temperature data.

WEIGHING THE OPTIONS

FLIR thermal riflescopes and handheld optics offer multiple palettes for different personal preferences, environments, and situations.



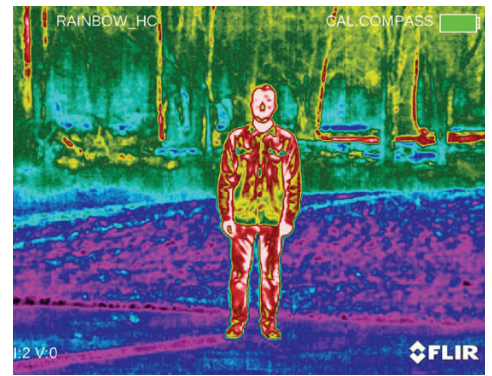
WHITE HOT:

The most commonly used palette, White Hot displays warmer objects in white and cooler objects in black. Grayscale palettes offer simplicity for scenes with a wide temperature span and generate images with realistic details. The versatility of White Hot makes it appealing for use in shifting landscapes and urban areas.



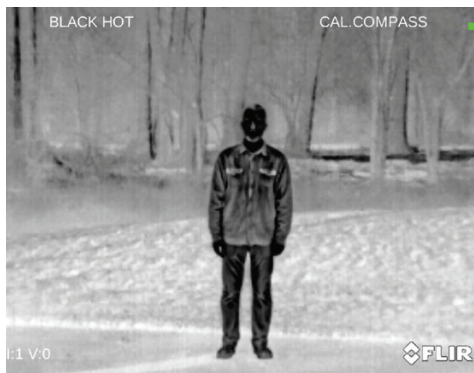
SEPIA:

The Sepia palette applies a warm, golden hue to the White Hot palette for reduced eye and mental fatigue. Ideal for instances of prolonged thermal surveillance or scouting, Sepia's narrow visual spectrum keeps users comfortable during long viewing periods.



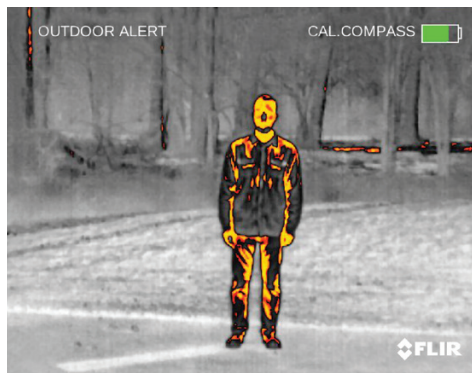
RAINBOW HC:

Using different colors to display minute temperature differences, Rainbow HC is best suited for scenes with minimal heat change. Focusing on an area with similar heat energy allows the Rainbow HC to detect objects and slight temperature changes despite low-contrast conditions.



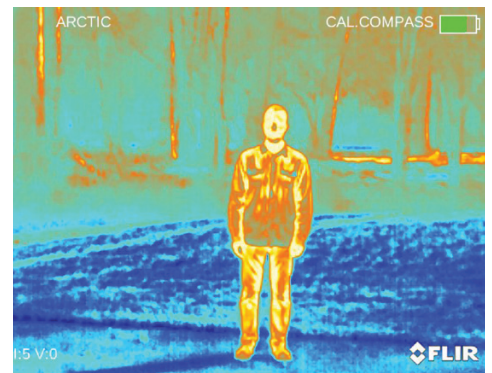
BLACK HOT:

Black Hot is the inverted version of White Hot, displaying warmer objects as black and cooler objects as white. A favorite among law enforcement and hunters, Black Hot displays body heat in a clear, lifelike image.



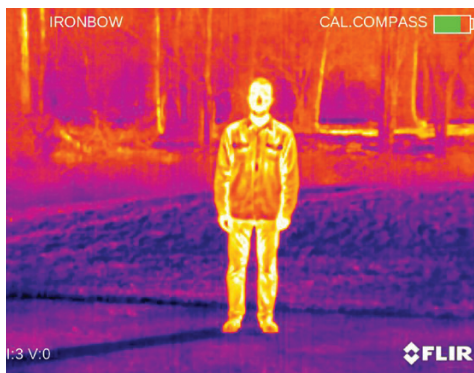
OUTDOOR ALERT:

Built on the trusted Black Hot gradient, Outdoor Alert was designed for one purpose—quickly detecting body heat. Highlighting the warmest 10% of a scene in a mix of vibrant oranges and yellows, Outdoor Alert is best suited for high-contrast environments and offers stellar nighttime body heat detection.



ARCTIC:

Identifying warm objects with a golden color and colder objects with shades of blue, the Arctic palette mixes the simple coloring of Ironbow with the low-contrast performance of Rainbow HC. Differing colors quickly detect heat sources while darker shading picks out slight temperature changes.



IRONBOW:

A general-purpose palette that quickly identifies thermal anomalies and body heat, Ironbow uses color to show heat distribution and subtle details. Hot objects are shown in lighter, warm colors while colder objects are dark, cool colors.

CONCLUSION

Each user views and interprets thermal images differently. The simplicity of White Hot may not provide enough detail for some, while the shifting colors of Ironbow may distract others. Thermal imagers are most effective in the hands of users who can quickly interpret a scene, and hands-on experience with each available palette is the best way to make confident, split-second decisions when it truly matters.

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

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