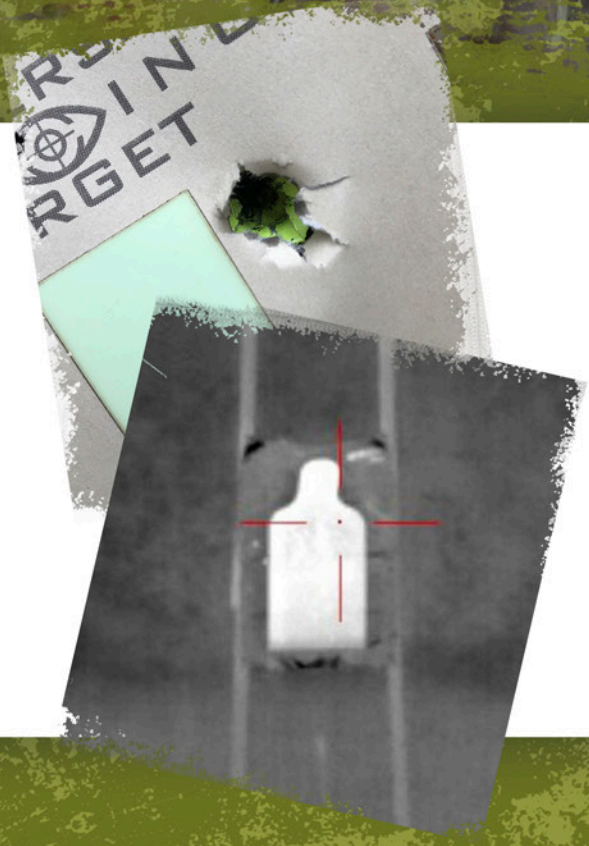
IR.TOOLS™
IDENTIFICATION TECHNOLOGY

HOW TO SHARPEN YOUR CUSTOMERS' THERMAL SCOPE RESULTS



Can you imagine your life without the internet, GPS, or a microwave oven?

If history is any indicator of how products birthed in the military explode in the civilian market, then weapons with infrared (thermal) scopes are about to steamroll. According to Vantage Research Group (Nov. 2021 report), the military thermal weapons scope market is expected to reach USD 21.32 billion by 2028. The growth in the military market is already impacting the civilian market with a steady increase of thermal scopes for small and large weapons.

Are you positioning your business to meet this demand?

Along with this growth in thermal scope purchases, the need for thermal training targets is also growing. Targets pair well with scope sales because they pair a long-term, regular cash flow item with a large one-time purchase. Not to mention the time you save with calls from frustrated customers unable to zero their new scope accurately.

Together, a scope and a ready-made target system sale provide your customers with a confident and accurate shooting experience. In turn, your 5-star customer service will multiply your customer base.

So let's dive in to learn why pairing a thermal scope with a thermal target system benefits you and your customers.

What is a Thermal Scope?

An infrared scope is an optical system that sees the invisible heat or infrared energy in a scene. People, animals, natural or manmade objects all give off infrared energy. The infrared scope detects this invisible energy that the naked eye does not see. Soldiers, officers, and hunters find thermal scopes best equip them for those split-seconds, critical shots.

What is a Thermal Target?

A thermal target is visible to thermal scopes.

The thermal target material is a specialized film that reflects heat energy in the environment to create a contrast of color. This contrast of color - in most cases, shades of black, white, and gray - is seen only with a thermal scope.

Some of the targets are cut from the film in a variety of geometric shapes and sizes. Other targets are printed as an E-type, custom friend or foe, or animal designs.

There are two types of thermal targets – passive thermal and powered thermal. Powered thermal requires a power source, while passive thermal targets do not.

Why Train with a Thermal Target

Paper targets are useless for thermal scopes.

Therefore, a thermal target is a must-have for zeroing, downrange training, and scope mastery. It provides an excellent life-like picture for the shooter (unlike a paper target), zeros the weapon accurately, accelerates the learning curve, and saves money on ammunition because of quality practice shots.

IR.Tools' Thermal Target 3 Step System guides and supports soldiers, officers, and sportsmen to train effectively with their thermal scopes.

What is the IR.Tools Thermal Target System?

The IR.Tools Thermal Target System consists of three parts:
- Zeroing targets
- Training targets
- Pasters to repair targets

In 2006, IR.Tools developed a thermal zeroing target to quell the difficulties in zeroing a thermal weapon scope. The success of the zeroing target was the first step towards a complete thermal target training system. While the system is most efficient when used in tandem, each step does work independently of the others.

Step 1 - Zeroing Your Weapon

There are two zeroing targets to choose from. Both zeroing targets provide tight aim points for pinpoint accuracy.

1. Thermal Zeroing for Exclusive Use With a Thermal Scope.

Inspired by Army methods used for years, the Thermal Zeroing target eliminates the complicated into a quick, accurate, zeroing solution. The patented design includes a lightweight frame with thermal film and a heater. The target is stapled to a target backer.

2. Universal Zeroing for Dual Use With Night Vision/Thermal Scopes, Plus Lasers.

The patented Universal Zeroing target is built for multiple optics systems: night vision, thermal, and lasers. The adhesive stickers easily move to correct the aim point, point of impact offset. Built on Rite in the Rain® paper, the target resists all forms of moisture and can be used for multiple zeroing sessions.

ADVANTAGES AND DISADVANTAGES TO COMMON ZEROING METHODS

Guiding your customers to a pleasurable zeroing experience.

METHOD	ADVANTAGE	DISADVANTAGE	HINT
Patented Thermal Zeroing Target	» Indoors and cloudy days » Easy setup » Saves ammo with a consistent aim point	» Upfront costs	» Use pasters to extend target life » In many situations, the target is accurate without a heater
Patented Universal Zeroing Target	» One target for night vision, laser, and thermal scopes » Easy setup » Saves ammo with a consistent aim point	» Upfront costs	» Use pasters to extend target life
MRE Heaters	» Great hot spot	» Hot spot grows quickly, resulting in blooming	» Have all weapons ready to zero, reducing aim point bloom
9V Batteries	» Quick, distinct hot spot	» Hot spot grows quickly, resulting in blooming	» Have all weapons ready to zero, reducing aim point bloom » Avoid lithium or hazardous batteries
Paper with Hole	» Simple	» Difficult to see target » Time-consuming setup	» Seek out a spot where the thermal energy behind the hole is different from ambient

Step 2 - Practice Shots Downrange

The best downrange training targets are built in two categories: passive and powered. Each has its advantages and disadvantages. The shooter will have to determine which aligns best with their training.

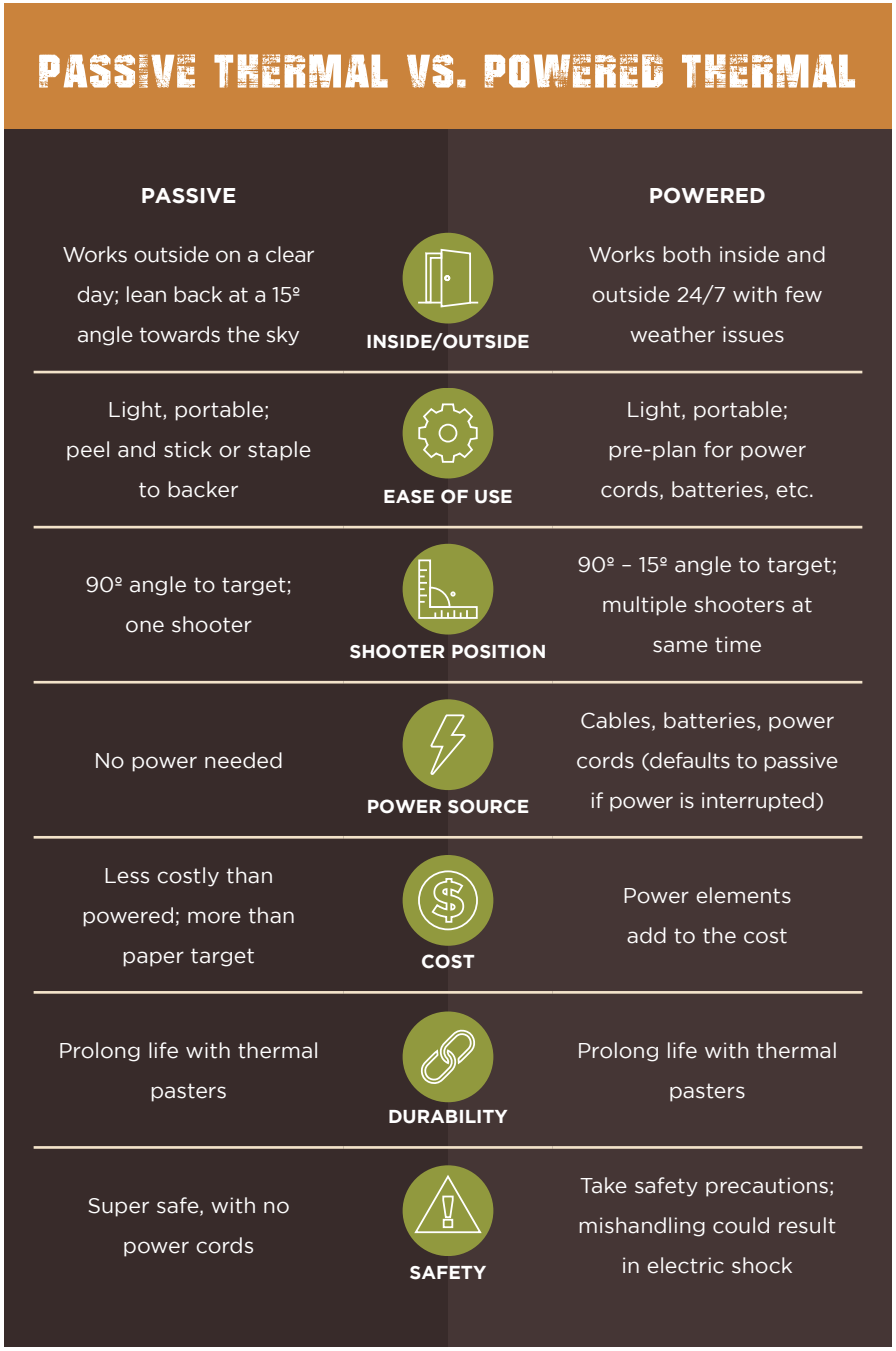
In the end, it is all about the contrast of the target for an optimal shooting experience. A thermal target needs no power source to work because the target reflects the temperature of the cold sky. The temperature differential between the target and its background generates a life-like target for the shooter.

But what if heat is added to the passive target? A darker, more consistent contrast results. While passive targets are practical in their ease of use, the benefits of power on a passive target are important to recognize.

Let's take a closer look at the differences and advantages of each.

Passive Thermal vs. Powered Thermal Targets

Keep in mind all powered targets are passive targets. If the heating element fails on a powered thermal target, fear not, the target still functions in all passive capabilities.



Are You Shooting Inside or Outside?

Passive thermal is an outside target only and will not work inside at all. The target must be placed outside, preferably in the open on a clear, cloudless day. Lean the target back towards the sky at a 15º angle. For instance, attaching it vertically to a tree trunk will hinder the contrast.

Powered thermal targets work inside, outside, and in obstructed areas. The target is not affected by clouds or temperatures. Therefore, the target maintains a consistent contrast regardless of the environment. Your target training is seldom interrupted because of weather conditions.

How Easy Is It to Use?

The **passive target** travels light, and you will like the flexibility. Peel and Stick or staple the passive target onto any target backer. Lean back at a 15º angle towards the sky. The target needs no power source to produce a high contrast image to shoot. The shooter's position must be at a 90º angle (directly in front).

The **powered thermal target** requires a handful of logistics and pre-planning before engaging. Cables, extension cords, or batteries must be on hand before shooting. The target is light, portable, and takes only 4 minutes to power up the contrast.

Because of the power element, the target does not need to lean at a 15º angle. The shooter's position to the target can range from 90º-15º, and multiple shooters can shoot simultaneously.

What Are the Cost Differences?

The **passive thermal** costs less to operate. After the initial purchase, which is dependent on the size and volume of targets, expenses are minimal. The life of the target is extended with low-cost thermal pasters. Depending on the caliber size, expect over 500 rounds.

The heating element in the **powered thermal target** and the extra cables, batteries, etc., will add an additional cost. Like the passive target, thermal pasters will extend the target's life. Depending on the caliber size, expect over 1000 rounds.

What Are My Safety Concerns?

The **passive target** is extremely safe. Put aside any worries about electric shock or fire because it will not happen.

The **powered thermal** requires extra safety precautions. Misuse or mishandling targets could lead to electric shock, injury or fire. The higher the voltage (120v), the more dangerous the shock. Warnings and precautions should be reviewed and adhered to at all times.

Step 3 - Repair Shot Holes with Pasters

Last but not least, the target repair paster will extend the life of zeroing or training targets. The most common pushback on a thermal target purchase is the cost. While upfront costs are more than a paper target, pasters do significantly extend the target's life.

Peel and stick the 2cm x 2m paster and cover the shot holes. This process can repeat itself over and over until the target is in shreds.

Troubleshooting Tips for Your Customer's Training Experience

Sometimes shooters will run into difficulty zeroing their weapons or get frustrated in a training session because they can't see the infrared target.

The first thing a shooter must do is check the user manual to confirm the scope is functioning properly. Once all those are checked, the shooter can turn his attention to the target.

The Passive Thermal Target is Not Working

1. The target must be at about a 15° angle, leaning back towards the sky.
2. Adjust target position. Move the target away from trees or a building.
3. Change the color palette to Black Hot or White Hot. See more info below.
4. Shoot from a straight-on position.

The Powered Thermal Target is Not Working

1. Check to ensure all wires and batteries are hooked up/ charged correctly.
2. Touch the target to see if it is hot.
3. Move the target out of direct sunlight.
4. Change the color palette to Black Hot or White Hot.

Understanding the Scope Color Palette

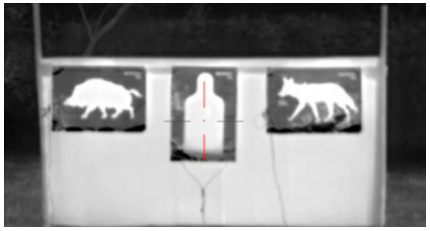
The number of color settings on a thermal scope is daunting, especially for a first-time shooter. The shooter will see that a thermal target looks different for each color setting. There is no formula for selecting a color palette. In the end, it comes down to personal choice, but there are points to consider for each palette.

Palette names include but are not limited to: White Hot, Black Hot, Ironbow, Rainbow, Arctic, and Sepia. White Hot and Black Hot are the most popular settings used, especially in law enforcement and among sportsmen. White Hot detects the warm temperatures in white and cooler temps in black to various shades of gray. Black Hot detects the warm temperatures in black and cooler temps in white to various shades of gray.

Remember that your scene's temperatures don't change, just the color pattern. So it is important to understand what temperature each color represents. Not all color palettes are best suited for every job or situation.

For instance, looking at a uniformly hot scene, such as a Texas plain, Black Hot will pick up faint movements better than White Hot. So while it would be nice to be able to recommend a specific palette in a given situation, trial and error - along with familiarity - is the best formula to limit mistakes and aid in wise decisions.

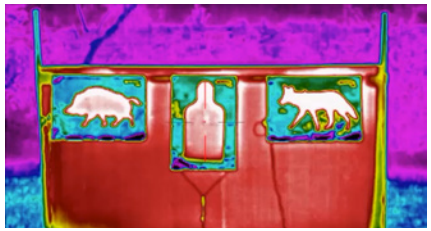
Generally, a thermal scope will display cooler temperatures in black, blue, and purple colors and warmer temperatures in brighter red, orange, yellow, and white colors. As previously described, White Hot and Black Hot are the exceptions to this rule.



White Hot

Black Hot

Ironbow



Rainbow

Arctic

Sepia

Benefits of Pairing a Scope with Thermal Targets

Together, a scope and a ready-made target produce a prepared, poised, and confident shooter. Mastering the scope gained by consistent zeroing and downrange shots leaves little room for error.

Ultimately, your customers will find pairing their scope with a thermal target provides the results every shooter seeks – precision aim and safer operations.

IR.Tools Founder Tom with ATN Dealer (www.atncorp.com)

WE ARE LOOKING FOR NEW DEALERS. JOIN OUR TEAM.

IR Tools wants to partner with compatible dealers ready to provide premium infrared targets to the Military, Law Enforcement, and Sportsmen.

Join our team and help your customers reach their goals while building loyalty to your business.

To start the process, fill out the application form at: ir.tools/become-a-distributor/

Any questions? Contact us at: jsams@ir.tools