



MIKE ADASKAVEG

Seeing the Possibilities

The Intercomp thermal imager offers a new perspective of your race car.

By **Mike Adaskaveg**

The future is now. With Intercomp's thermal imager, affordable thermal imaging is about to make its mark in racing (\$369.99), capturing heat visually in brilliant colors while recording temperatures of target areas and the time they were taken.

Thermal imaging became wildly popular when fire departments across North America began using the cameras to find sources of heat. Then public safety officials began to use them

to find people or animals, whose bodies radiate heat.

Racers can point the thermal imager at a variety of objects, and with the squeeze of the trigger it records a rendering of that object and its heat signatures.

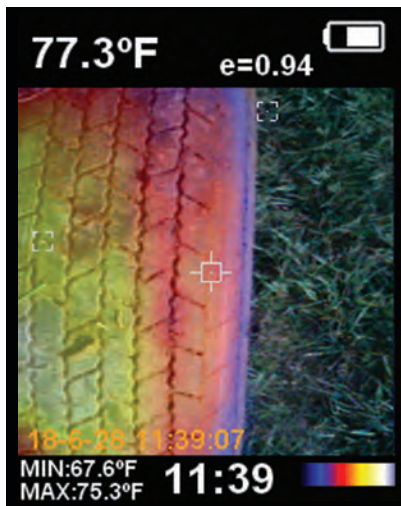
“Thermal imagers are powerful tools that give racers more information about a wide variety of race-related subjects,” says Andy May, of Zeta Performance Vehicle Technologies. “You can gather information quickly, store it, and make comparisons of the photos you took in the field or back in the shop.”

Intercomp’s thermal imager reads temperatures from -4°F to 572°F . It is sensitive to 32°F . It uses a mini SD card to record images at 3,600 ppi.

While it does not have as wide an operating range as Intercomp’s infrared temperature gun or deluxe pyrometer, the thermal imager offers real-time visual representation with a complete view of heat distribution in the area at which you point it.

The thermal imager visualizes heat signatures and allows racers to gather all relevant information in one reading, while probes and pyrometers would have to be used multiple times to gather just a rough image of heat distribution.

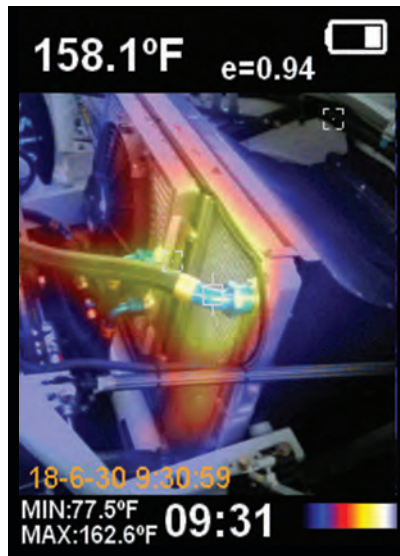
We asked several racers and racing experts what they would use it for.



Tire Temperatures

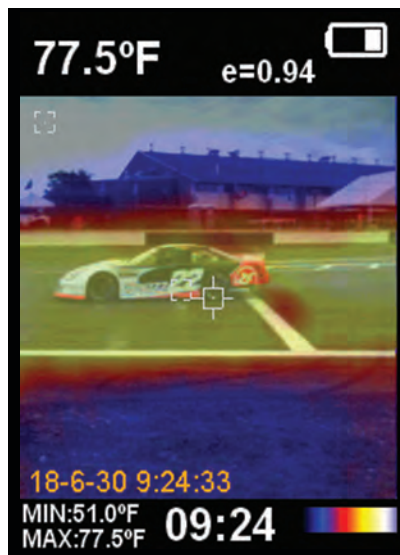
“The first usage that would benefit racers is to take a picture across a tire for visual distribution of heat to indicate tire wear” says May. “Then make adjustments such as camber or tire pressure.”

This image shows the heat distribution across the tire of a dirt modified driven by Bakersfield, California’s Ethan Dotson.



Cooling System

This image shows where heat concentrates in the cooling system of a pavement late model, as taken by Kelly Tanner, of Auburn, Washington.



Track Surface

As mentioned in June’s article, “On a Rail,” Nesquehoning, Pennsylvania’s Mike Sweeney studies the pavement surface before he races on it with his late model.

“This is an exciting and useful tool that can be used by most racers to do precise setup for track conditions,” Sweeney says.

May agrees.

“This is very powerful information that can be gathered rapidly,” says May. “Taking a temperature gradient across a track or watching the heat of the track build as the race goes on keeps crews ahead of conditions and allows them to make changes in tire strategy.”



Engine Block or Cylinder Head

“You can fire up an engine and see instantly which cylinder is not up to snuff,” says Tanner. “While headers may exceed the range of the camera in race conditions, the heat distribution can still be recorded during fire up and cooldown.”



Wheel Bearings

The Thermal Imaging camera measures the heat of an object and its radiant heat, which is reflected in the objects that surround it. Heat soak can be visualized. An example would be how brake heat raises the temperature of hubs, wheel bearings, and wheels. 🏆

Tire Management Toolbox

Tire management can be complex, but no other component of a racecar has as big an impact on performance than its tires. On average, the contact patch of each tire is equal to the area of a credit card. The use of Intercomp measuring equipment can help maximize the relationship between contact patch and racing surface.

[Tire management] is very important, one of the most important parts to a good day at the track. You need a good air gauge, like Intercomp, but I also use a probe pyrometer to make sure the tires are performing at their best. I use my durometer to make sure I have the best tires on the car.
- Scott Atkinson, No. 18A Hilmerson RV & Sports Center Modified

Air pressure is the primary setting affecting tire performance, meaning a reliable gauge is critical. Intercomp's Digital and Analog Air Pressure Gauges allow racers to easily read and adjust tire pressures. With an accuracy of 0.1%, Digital Air Gauges allow precise adjustments down to 0.01 PSI, while Analog Gauges provide an economical, rugged alternative. In general, higher pressures produce less grip and higher tire temperatures due to the tire's reduced contact patch, while low pressures provide more grip and sidewall flex.

Air pressure affects how a tire builds and sustains temperature, a vital component to the grip provided by performance tires. Intercomp offers three options to monitor tire temperatures: Deluxe Probe Pyrometer, Infrared Temperature Gun and Thermal Imager. The IR Gun and Thermal Imager read the surface temperature of the tire, while the Pyrometer's probe is pressed into the tire tread to read the rubber's internal temperature. Each method will provide usable data through consistent measuring across the tread – inside, middle, outside – once the car is parked.

Tire design and compound conclude the primary factors that directly affect tire performance. Intercomp's Digital and Analog Durometers measure the hardness of tire compounds, while Digital and Analog Depth Gauges measure tread wear. With these tools, racers can better understand characteristics of a particular tire brand, compound and construction.

Many uncontrollable factors can affect tire performance, but properly monitoring and adjusting the relationship among tire pressure, temperature and wear can equate to serious gains. Well-performing tires are not necessarily a 'silver bullet' to dominate the competition, but good finishes are impossible without proper management of the only component connecting the car to the racing surface.



Intercomp's Digital Air Gauge provides racers the ability to make the precision air pressure adjustments that allow racing tires to perform at their best.



An IR Temp Gun, Deluxe Pyrometer and Thermal Imager help to monitor on-track performance and keep each corner of the car providing optimal grip when needed most.



A Tread Depth Gauge and Durometer provide the information needed to assess the condition of any tire, ensuring the most effective tires are on the car at all times.