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TRIAL BY FIRE

Pocket Meteorologist

The Kestrel 4500 provides a convenient way to monitor & predict weather

By Chuck Sallade

The Kestrel 4500 Pocket Weather Tracker by Nielson-Kellerman (NK) is a useful tool. Developed for a wide range of applications—sailing, military maneuvers and landing aircraft—it also has a variety of uses on the fireground.

I already own the Kestrel 3500, and I was curious what more the 4500 could offer on the fireline. The 4500 is about one-third thicker than the 3500, as well as a touch longer, wider and heavier, but it's still smaller than a handheld global positioning system (GPS). The 4500 features the following weather readings: wind speed, wind direction/forward heading, temperature, relative humidity, atmospheric pressure, altitude,



PHOTO DAWN DE VILLE-RYAN

Kestrel pocket weather trackers account for altitude when providing readings, and the 4500 can also determine altitude, something a belt weather kit can't.

wind chill, heat index, cross wind, head/tail-wind, dew-point, wet bulb temperature and density altitude.

I must admit, I was skeptical as to the practicality of such a high-tech tool, but the 4500 does have advantages over simpler tools on the fireline, such as a sling psychrometer. The 4500 is much easier to use, faster and offers more features. About the only feature the Kestrel 4500 doesn't have is an integrated GPS—which may be next.

All tools have a margin of error, but knowing the specific relative humidity (RH) is less important than determining whether it's getting drier or wetter over time. The 4500 not only stores previous information on RH, but can also graph it with the touch of a button. From a command standpoint, the data storage capabilities (up to 2,000 items), coupled with the graphing capabilities, makes weather forecasting on the spot quick and easy. Weather trends can be tracked, and within a reasonable degree of accuracy, forecasted.

I had been led to believe that Kestrels, unlike sling psychrometers, were only accurate at sea level because they were made for sailing. Well, it's time to debunk that old



Compared to the Kestrel 3500, the 4500 is about one-third thicker, as well as a touch longer, wider and heavier, but it's still smaller than a handheld global positioning system.

Nielson-Kellerman's Kestrel 4500

Pros

- + Compact;
- + Water-resistant;
- + Features many weather readings;
- + Stores and graphs readings;
- + Can be used at altitude and calibrated to determine altitude;
- + Backlit for nighttime use; and
- + Can be outfitted with useful accessories.

Cons

- Price may be out of the range of some firefighters.

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(included) and features a backlight for night-time use, belt clip carrying cases, replacement impellers and RH field calibration kits.

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myth! Kestrel pocket weather trackers account for altitude when providing readings, and the 4500 can also determine altitude, something a belt weather kit can't. The 4500 requires the user to input an accurate altitude it can use as a reference point. It then takes barometric pressure (your location's pressure reduced to sea level), and converts it to station pressure (the atmospheric pressure at your location *and* at your altitude).

This is all quite helpful since most of us don't have a personal meteorologist to take along with us, and weather reports are often less detailed than we need them to be if we're in a remote area. I can think of more than a few line-of-duty deaths that may have been prevented had crew bosses had access to this piece of equipment. A Kestrel 4500, in conjunction with experience and common sense, can help keep us out of harm's way. Look up, look down, look around!

I am, to say the least, impressed with the array of features the Kestrel 4500 offers users, but I'm reluctant to recommend it to *all* wildland firefighters. It's a very useful tool for a mobile command unit, or even a division supervisor, but at \$399 per unit it might not be practical for the average Joe. However, NK makes models with fewer features, such as the 2500 or the 3500, which are more affordable at \$199 and \$249, respectively, that would suffice for the common groundpounder.

NK also makes a weather vane that mounts to the 4500, creating a hands-free weather station. The entire package weighs less than 8 oz., and is small enough to fit into its 2" x 6" pouch. (Although we haven't had a chance to field test the weather station yet, my department has purchased one and will be setting it up on longer incidents at our mobile command center.)

The Kestrel 4500, which is water-resistant and floats, requires two AA batteries