

KESTREL POCKET WEATHER METERS ON THE FIRELINE

The vital hand-held tool that
replaces an entire belt weather kit.



Kestrel Pocket Weather Meters measure the following:

- Relative Humidity
- Temperature
- Wind Speed
- Wet Bulb
- Density Altitude
- Barometric Pressure
- Altitude
- Wind Direction
- Cross Wind
- Heat Stress Index
- Dewpoint
- Pressure Trend
- Wind Chill



Wildland Firefighting & Kestrel Meters

- Of the major environmental elements affecting fire behavior- *weather, fuel, topography*- **weather** is the most volatile.
- Getting accurate, reliable environmental data right at the line of fire is critical for containing and fighting the fire.
- The Kestrel provides **instant RH, wind, temperature, wet bulb** & more to replace an entire belt weather kit with a meter the size of a cell phone.

Kestrel 3000

The **Kestrel 3000** provides accurate relative humidity readings along with calculating the dewpoint and heat stress index.

Measures:

- ▣ **Wind Speed**
(Current/Max/Ave)
- ▣ **Temperature**
(Air/Water/Snow)
- ▣ **Wind Chill**
- ▣ **Relative Humidity**
- ▣ **Heat Stress Index**
- ▣ **Dewpoint**

Also features:

- ▣ Patented quick-response RH sensor



Kestrel 3500

The Kestrel 3500 offers the comprehensive environmental data of the Kestrel 3000 with the addition of barometric pressure, altitude and pressure trend.

Measures:

- ❑ **Wind Speed**
(Current/Max/Ave)
- ❑ **Temperature**
(Air/Water/Snow)
- ❑ **Wind Chill**
- ❑ **Relative Humidity**
- ❑ **Heat Stress Index**
- ❑ **Dewpoint**
- ❑ **Barometric Pressure**
- ❑ **Altitude**
- ❑ **Pressure Trend**

Additional Features:

- ❑ **Real-time clock**
- ❑ **Three-hour pressure trend**



Kestrel 4000

The Kestrel 4000 gives you every environmental reading, with the addition of data storage, charting and optional Bluetooth data transfer.

Measures:

- Wind Speed (Current/Max/Ave)
- Temperature (Air/Water/Snow)
- Wind Chill
- Relative Humidity
- Heat Stress Index
- Dewpoint
- Barometric Pressure
- Altitude
- Pressure Trend
- Density Altitude

Additional Features:

- Auto store options, even when unit is turned off
- Customizable data storage- up to 2900 data points
- Graph and recall trends
- Data charting
- Five Languages
- Optional Bluetooth® data transfer



Kestrel 4500

The **Kestrel 4500** offers all the environmental data of the other units PLUS adds in wind direction with a built-in digital compass.

Measures:

- ❑ Wind Speed (Current/Max/Ave)
- ❑ Temperature (Air/Water/Snow)
- ❑ Wind Chill
- ❑ Relative Humidity
- ❑ Heat Stress Index
- ❑ Dewpoint
- ❑ Barometric Pressure
- ❑ Altitude
- ❑ Pressure Trend
- ❑ Density Altitude
- ❑ Digital Compass
- ❑ Wind Direction
- ❑ Crosswind
- ❑ Headwind/Tailwind

Additional Features:

- ❑ The only unit that offers wind direction!
- ❑ Optional Bluetooth® data transfer for instant upload to fire behavior modeling software.



What makes a Kestrel special?

- External temperature and humidity sensors for ultimate accuracy
- Multiple patents on design and technology
- Waterproof and floats
- Simple, user-replaceable impeller
- Tested against NIST-traceable standards
- Made in the USA
- Backed by full 5-year warranty

The Kestrel Can Take the Heat!



Actual Kestrel 3000 sent to us from wildland firefighter customer. Left tied to a tree in 500 degree extreme temperature. The impeller was still working!

We offer a Customer Care Discount Program. Trade-in any of the following NK products, no matter the age or condition, and receive a discount on a replacement product.

Kestrel Meter vs Sling Psychrometer

Why might the sling psychrometer show a slightly higher humidity reading?

If the **sock** on the wet bulb thermometer is not clean, the humidity measured from a sling will err on the high side.

If the **water** used for the wet bulb thermometer is not clean, the humidity measured from a sling will err on the high side.

If the **sling** is not swung around long enough, the humidity measured from a sling will err on the high side.

If the **thermometer** measurements are not read quickly enough after swinging the sling, the humidity measured from a sling will err on the high side.

Tips for Taking Most Accurate Humidity Readings

The Kestrel Meter is an extremely sensitive unit with external temperature and humidity sensors. Because of this, it's important to remember the following tips for getting the most accurate humidity reading.

- **Avoid taking measurements in direct sunlight.**
- **Hold the Kestrel upright at a comfortable distance from your body.**

*Direct sunlight and/or heat from your body can potentially impact the temperature reading.

Tips for Taking Most Accurate Humidity Readings (cont'd)

- **Be sure there is airflow (at least 2 m/s) over the sensors.**

Why?

Airflow over the sensors is necessary to measure accurate temperature and humidity readings, especially if you expose the Kestrel Meter to a large temperature swing prior to taking a reading (such as taking a Kestrel from the indoors to the outdoors in the winter or from a normal temperature range to an extreme heat found on the fire line).

How?

You can ensure airflow by either placing the Kestrel Meter in a breeze, or by waving it back and forth if there is very little airflow. If no airflow can be provided, you must allow at least 15 minutes for the values to stabilize in the environment and accurate readings to be displayed.

Kestrel Calibration

There are 2 ways to recalibrate your Kestrel:

1. **Return your Kestrel to us** for Factory Recalibration of the relative humidity and related measurements.

Recalibration is available with and without certification of NIST traceability and calibration stickers.

**NK can recalibrate and certify any of the values measured by your Kestrel - wind speed/ air flow; temperature; barometric pressure and humidity.*

The Kestrel RH Calibration Kit

2. The Kestrel can also be recalibrated by you with the RH Calibration Kit.
- Step-by-step instructions can be found on our website and are included with the kit.
(Also available on our website)



How Often Do I Need to Recalibrate?



- Because of the extreme conditions wildland firefighters face on a regular basis *and* the importance of accuracy in humidity readings on the fire line, we recommend you **recalibrate your Kestrel meter every fire season.**

Kestrel Meter Q & A

- How does the Kestrel measure humidity so accurately?

The Kestrel features a patented dual temperature sensor configuration for rapid response and accurate measurement. Every Kestrel is calibrated against NIST-traceable standards, and can be recalibrated in the field with the Kestrel RH kit.

Kestrel Meter Q & A

- How does the altimeter work? Is the reference pressure the same as an altimeter setting?

The Kestrel models with altimeter calculate altitude from barometric pressure in exactly the same manner and according to the same rules as an aircraft altimeter. The "reference pressure" on the Altitude screen is the same as the altimeter setting obtained from a local airfield.

Kestrel Meter Q & A

- Does the Kestrel have a GPS in it?

No, not yet. We may add basic GPS location to a future Kestrel model, but we'll leave the full-blown mapping and navigation to the companies that specialize in GPS as much as we specialize in weather.

Any Questions?