



## Certificate of Conformity

This instrument was produced under rigorous factory production control and documented standard procedures. It was individually inspected and leak tested and the functioning of its buttons, communication and firmware was verified. The accuracy of each of its primary measurements was individually calibrated and/or validated against standards traceable to the National Institute of Standards and Technology (“NIST”) or other calibrated standards in accordance with the documented standard test methods detailed below. This instrument is warranted to perform in compliance with the published specifications for the specific measurements and features of its model number including specified typical drift since its date of manufacture. (See *Kestrel Limited Warranty for full warranty terms.*)

### Methods Used in Calibration and Testing

#### Temperature:

Temperature response is verified in comparison with a Fluke Calibration 1502A Thermometer Readout. The 1502A is calibrated annually and is traceable to NIST with a maximum relative expanded uncertainty of  $\pm 0.027\text{C}$ .

#### Relative Humidity:

Relative humidity is verified in comparison with an Edgetech HT120 Humidity Transmitter. The HT120 is calibrated annually and is traceable to NIST with a maximum relative expanded uncertainty of  $\pm 1.0\%RH$ .

#### Barometric Pressure:

Pressure response is verified against a Vaisala PTB210A Digital Barometer. The Vaisala Barometer is calibrated annually and is traceable to NIST with a maximum relative expanded uncertainty of  $\pm 0.3hPa$ .

Approved By:

Michael Naughton  
Chief Product Officer, Nielsen-Kellerman

# Product Specifications for Kestrel DROP Wireless Environmental Data Loggers

## SENSORS

SENSOR	ACCURACY (+/-)	RESOLUTION	SPECIFICATION RANGE	NOTES
Ambient Temperature / Probe Temperature (D1P)	0.9 °F 0.5 °C	0.1 °F 0.1 °C	14 to 131°F -10 to 55 °C	Airflow of 2.2 mph 1 m/s or greater provides fastest response and reduction of insulation effect. For greatest accuracy, avoid direct sunlight on the temperature sensor and prolonged sunlight exposure to the unit in low airflow conditions. Calibration drift is negligible for the life of the product. For further details, see Battery Operational Temperature Limits.
Relative Humidity	2%RH	0.1 %RH	10 to 90% 25°C non-condensing	To achieve stated accuracy, unit must be permitted to equilibrate to external temperature when exposed to large, rapid temperature changes and be kept out of direct sunlight. Calibration drift is typically less than ±0.25% per year. While not a complete list, vapors from cleaning solvents, HCl, H2SO4, HNO3, NH3, and ozone in high concentrations in combination with long exposure times may permanently damage the sensors.
Pressure	1.5 hPa mbar 0.044 inHg 0.022 PSI	0.1 hPa mbar 0.01 inHg 0.01 PSI	25°C/77°F 700-1100 hPa mbar 20.67-32.48 inHg 10.15-15.95 PSI	Monolithic silicon piezo-resistive pressure sensor with second-order temperature correction. Between 1100-1600 mbar, unit will operate with reduced accuracy. Sensor may not operate above 1600 mbar and can be damaged above 6,000 mbar or below 10 mbar. Calibration drift is negligible for the life of the product.

## CALCULATED MEASUREMENTS

MEASUREMENT	ACCURACY (+/-)	RESOLUTION	SENSORS EMPLOYED
Density Altitude	226 ft 69 m	1 ft 1 m	Temperature, Relative Humidity, Pressure
Dew Point	3.4 °F 1.9 °C 15-95% RH. Refer to Range for Temperature Sensor	0.1 °F 0.1 °C	Temperature, Relative Humidity
Heat Index	7.1°F 4.0°C	0.1 °F 0.1 °C	Temperature, Relative Humidity
THI (NRC)	1.5 °F 0.8 °C	0.1 °F 0.1 °C	Temperature, Relative Humidity
THI (Yousef)	2.3 °F 1.3 °C	0.1 °F 0.1 °C	Temperature, Relative Humidity
Wet Bulb Temperature - Psychrometric	3.2 °F 1.8 °C	0.1 °F 0.1 °C	Temperature, Relative Humidity, Pressure

## ADDITIONAL PRODUCT INFO

Response Time & Display Update	Display updates every 1 second. After exposure to large environmental changes, all sensors require an equilibration period to reach stated accuracy. Measurements employing RH may require longer periods particularly after prolonged exposure to very high or very low humidity. WBGT requires about 8 minutes to reach 95% accuracy and about 15 minutes to reach 99% accuracy after exposure to large environmental changes.
Data Storage	Logged history stored for every measured value. Auto-store interval settable from 2 seconds to 12 hours*, overwrite on or off. D1: >13,000 data points, D2: >7,000 data points, D3: >6,000 data points.
Bluetooth® Data Connect Option	Wireless range up to 100ft 30m. Compatible with Kestrel LiNK app for iOS (model 4s and later) and select Android products (Android 4.3 and higher) (See website for complete list of compatible 3 <sup>rd</sup> party apps).
Certifications	CE certified, UKCA, RoHS, FCC, IC tested and WEEE compliant. Individually tested to NIST-traceable standards.
Origin	Designed and manufactured in the USA from US and imported components. Complies with Regional Value Content and Tariff Code Transformation requirements for NAFTA Preference Criterion B.
Battery	User-replaceable CR2032 (included).
Shock Resistance	MIL-STD-810H, Transit Shock, Method 516.8 Procedure IV; unit only; impact may damage replaceable impeller.
Sealing	Waterproof (IP67 and NEMA-6)
Battery Operational Temperature Limits	0° F to 140° F   -18 °C to 60 °C Measurements may be taken beyond the limits of the operational temperature range of batteries by maintaining the unit within the operational range and then exposing it to the more extreme environment for the minimum time necessary to take reading.
Storage Temperature	-22.0 °F to 140.0 °F   -30.0 °C to 60.0 °C.
Altitude Operating Range	Sea level to 10,000m / 33,000 ft
Pollution Degree of the Intended Environment	4
Size & Weight	D1/D2/D3 2.4 x 1.8 x 0.9 in   6 x 4.5 x 2.3 cm 1.2 oz   34 g (Lithium battery included)  D1P 2.4 x 1.8 x 0.9 in   6 x 4.5 x 2.3 cm (body dimensions) 2.2 x 0.16 in   5.6 x .4 cm (probe dimensions) 38 in   1 m (probe cable) 1.5 oz   42 g (Lithium battery included)