

K4250 FEATURES

- Multifunction instrument
- Graphical three-line displays
- Data capture up to 2000 readings
- Minimum/maximum/average values
- User defined screens
- Compact, rugged design
- High accuracy
- Wide operating range
- Precision jewel mounted impeller
- User-replaceable impeller
- Fast response temperature sensor
- Easy to read back-lit display
- Hard cover protects impeller
- Language selection
- Runs from 2 AAA batteries
- Data upload (with optional PC interface)
- Available in safety orange

K4250 FUNCTIONS

- Wind Speed
- Temperature
- Relative humidity
- Moisture content / humidity ratio / water grains
- Dew point
- Station pressure
- Barometric pressure
- Air density
- Relative air density
- Density altitude
- Wind chill
- Heat index
- Wet bulb temperature
- Altitude
- Time & Date



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The Kestrel 4250 Racing Weather Tracker has been designed for those on the motor racing track, providing a portable weather monitoring station.

The Kestrel 4250 Racing Weather Tracker allows you to take instant accurate readings of environmental conditions to help make those last minute dial-in or tuning decisions. At the touch of a button important weather information is clearly shown in digital or graphical form.

The Kestrel 4250 offers a multitude of features to help you monitor your environment in one single instrument. Specifically for motor racers it provides key measurements of air density, station pressure, humidity ratio and density altitude.

Individual functions can be displayed in three different formats: current, minimum/maximum/average and chart. There are also three user screens, which can be customised to simultaneously display the three most appropriate functions for the application.

The Kestrel 4250 can be set up to log data automatically (as well as manually) at programmable intervals, in order to display a history of weather information. Graphs display up to 2000 data points and the value, time and date of capture point can be shown. The stored data can also be uploaded to a PC, for analysis/storage with

the optional Kestrel Interface and Communicator software.

High precision jewel bearings and a lightweight impeller provide accurate air flow measurements (+/-3% of reading) and the ability to operate at speeds as low as 0.4 m/s. The impeller is user-replaceable in case of damage, also ensuring high accuracy levels are maintained for life. An integral flip-open hard cover protects the impeller when not in use.

A precision external thermistor sensor provides fast response temperature readings and accuracy of +/- 1°C. The 0.1 degree resolution of the display aids in determining when a consistent reading has been reached. A special housing protects the relative humidity sensor from contamination providing an accuracy of +/-3%.

A monolithic silicon based pressure sensor enables pressure and density altitude to be calculated, with a resolution of 0.1mbar and 1m respectively.

The Kestrel 4250 is powered by two easily replaceable, AAA batteries and has two power saving modes to prolong battery life. All text can be displayed in one of five languages: English, French, Italian, Spanish or German.

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TECHNICAL SPECIFICATION

Physical	Dimensions	127mm x 45mm x 28mm	
	Weight	102g	
	Lanyards	0.2m and 0.5m (for wrist and neck)	
	Case colour	Safety orange	
Display	Display type	Dot matrix LCD with electro-luminescent backlighting	
	Display update	1 second	
	Data logging	Programmable 2 second to 12 hour intervals, 2000 data points with graphical display. Manual data capture. Data upload with optional PC interface.	
	Functions	Wind speed (current, maximum and average)	Air density
		Temperature	Relative air density
		Relative Humidity	Density altitude
		Moisture content / humidity ratio / water grains	Altitude
		Dew Point	Wind chill
		Station pressure	Heat index
		Barometric pressure	Wet bulb temperature
	Speed units	kt, m/s, km/h, mph, ft/min, Beaufort Force (B)	
	Temperature units	°C, °F	
	Relative humidity units	%	
	Pressure units	mbar, inHg, hPa, psi	
	Density altitude units	m, ft	
	Air density units	kg/m ³ , lb/ft ³	
	Relative air density units	%	
Moisture content / humidity ratio units	g/kg, gpp		
Altitude units	m, ft		
Date and time display	dd/mm/yy, mm/dd/yy, 12 hour, 24 hour		
Performance	Speed (1 sec response)	Operational range	0.4m/s to 60m/s (0.8 to 135.0mph)
		Specification range	0.4m/s to 40m/s (0.8 to 89.0mph)
		On axis accuracy	± 3% of reading or ± 0.1 m/s. (Some loss of accuracy from bearing wear may occur with sustained operation at or near maximum speed)
		Off -axis response	-1% @ 5°, -2% @ 10°, -3% at 15°
		Calibration drift	<1% after 100hrs operation at 7m/s
	Temperature (1 sec response)	Resolution	0.1 kt, m/s, km/h, mph. 1 FPM below 1999 FPM, 10 FPM above 2000 FPM. 1 Beaufort (0 to 12)
		Operational range	-45.0°C to +125.0°C
		Specification range	-29.0°C to +70.0°C
		Accuracy	±1°C
	Relative Humidity (1 min response)	Resolution	0.1°
		Wind chill accuracy	±1.0°C (from wind speed and temperature)
		Operational range	0% to 100%
		Specification range	5% to 95% non-condensing
		Accuracy	±3% (when unit allowed to equilibrate to external temperature)
	Pressure (1 sec response)	Calibration drift	±2% over 24 months (correctable)
		Heat index accuracy	±2°C (between 21.1°C and 54.4°C)
		Dew point accuracy	±2°C (above 20% relative humidity)
		Operational range	10 to 1100 mbar at 25°C
		Specification range	750 to 1100 mbar at 25°C
		Resolution	0.1 mbar
Accuracy		±1.5 mbar (max error over range 0°C to 70°C: ±2.0 mbar)	
Wet bulb temperature accuracy	Calibration drift	Typically ±1 mbar per year (correctable)	
	Wet bulb temperature accuracy	±2°C (between 0°C and 37.8°C)	
	Density altitude accuracy	±75m (between 0°C and 37.8°C)	
	Air density accuracy	±2% (between 0°C and 70°C)	
	Moisture content accuracy	±10% (typical, between -29°C and 54°C)	
	Altitude (1 sec response)	Operational range	-2000m to +9000m (-6000 ft to +30,000 ft)
		Specification range	-2000m to +6000m at 25°C
Accuracy		±15m (max error out of spec range: ±30m)	
Resolution		1m or 1ft	
Sensors	Impeller	Diameter 25mm. High precision axle and jewel (sapphire) bearings. User replaceable impeller assembly	
	Temperature	Thermally isolated, hermetically sealed precision thermistor	
	Relative Humidity	Polymer capacitive sensor, mounted externally in thin-walled chamber	
	Pressure	Monolithic piezo-resistive silicon based sensor with second-order temperature correction	
Environmental	Sealing	Electronics enclosure IP67 [Water resistant]	
	Shock	Drop tested (MIL.STD.810F - unit only)	
	Temperature	Operating range: -10°C to +55°C (for LCD readability and batteries) Storage range: -30°C to +60°C	
	EMC	CE marked	
Miscellaneous	Battery	2 off AAA alkaline, included, user replaceable	
	Battery Life	400 hours of use, average, ± depending on backlight use	
	Auto switch off	Selectable to remain switched on or switch off 15 or 60 minutes after last key press	
	Wind chill equivalent temperature calculation	Utilises the (US) NWS Wind Chill Temperature (WCT) Index, revised 2001, with wind speed adjusted by a factor of 1.5 to yield equivalent results for wind speed measured at 10m above ground	
	Heat Index calculation	Steadman, from temperature and relative humidity	
	Certification	Wind speed, temperature, pressure and humidity measurements are tested during manufacture. A certificate of conformity (C of C) is included with each Kestrel. Calibration certificates are available for an additional fee.	
Guarantee	5 years		

The manufacturer reserves the right to amend the specification and therefore the information in this document may be subject to change. Please check our website www.r-p-r.co.uk for details