SENSOR	1000	2000	2500	3000	3500	3500 DT	4000	4200	4250	4300	4400	4500	4500	ACCURACY (+/-)*	SENSO!	SPECIFICATION RANGE	OPERATIONAL RANGE	NOTES
Wind Speed Air Flow	•	•	•	•	•	•	•	•	•	•	•	٠	HOR.	Larger of 3% of reading, least algoificant digit or 20 filmin	0.1 m/s 1 t/min 0.1 km/h 0.1 mph 0.1 knots 1 B	0.6 to 40.0 m/s 118 to 7,874 Wmin 2.2 to 144.0 km/h 1.3 to 89.5 mph 1.2 to 77.8 knots 0 to 12 B	0.6 to 60.0 m/s 118 to 11,811 ft/min 2.2 to 216.0 km/h 1.3 to 134.2 mph 1.2 to 116.6 knots 0 to 12 B	I inch/25 mm diameter impoler with precision ask and low-friction Zyto/B bearings. Startup as talled as twee first, readings may be black above to 0.4 mis /170 firstn 1.5 km/h j.8 mph j.8 mp
Ambient Temperature		9	•	•	•	•	•	٠	•	•	•	•	•	0.9 °F 0.5 °C	0.1 °F 0.1 °C	-20.0 to 158.0 °F -29.0 to 70.0 °C	14.0.0 to 131.0 °F -10.0 to 55.0 °C	Hermelicaly-seeled, precision themristor mounted externally and thermally isolated (US Pales 5,939,645) or rapid response. Artifloword 2.2 mph)1 m/s or greater provides feather tesponse reduction of Insolation effect. California of intringetipies. Themristor may also be used to meet interperature of veater or snow by submerging thermistor position into material—remove impole prior to taking submerged measurements and ensure furnifiely sensor membrane is free of tigouet prior to taking submerging descriptions.
Globe Temperature - Tg		2.000	e a recension de la	Cortain mice	Anthri estamo	- Verena W					•	Addition on an	NAME OF THE OWNER, OWNE	"F 1.4 °C	0.1 °F 0.1 °C	-20.0 to 140.0 °F -29.0 to 60.0 °C	14.0 to 131.0 *F -10.0 to 55.0 *C	Temporature inside 1in 25 mm black powder coated copper globe converted to Tg equivalent standard 6 in 150 mm globe. Closest equivalence obtained with airflow greater than 2.2 mph m/s.
Relative Humidity				٠	•	•	•	•	٠	•	•	•	•	3.D %RH	0.1 %RH	5 to 95% non-condensing	0 to 100%	Felymar capacitive hurridity sensor maunted in thin-walled chamber external to case for rapi accurate response (US Patent 6,237,074). To achieve stated accuracy, unit must be pormit qualiblatio to othermal Interportative whom exposed to large, noted temperature changes and be out of direct sturigit. California of the 14-2 % over 24 months. Hurridity sensor may be recall at facility or in float using National Hurridity California (MIX MP4-0020).
Pressure		arriva di sajo in	•		•	•	•	٠	•	٠	•	•	•	0.03 inHg 1.0 hPa mbar 0.01 PSI	0.01 inHg 0.1 hPa mbar 0.01 PSI	8.86 to 32.49 inHg 300.0 to 1100.0 hPalmbar 4.35 to 15.95 PSI and 32.0 to 155.0 *F 0.0 to 85.0 *C	0.30 to 48.87 inHg 10.0 to 1654.7 hPa mbar 0.14 to 24.00 PSI and 14.0 to 131.0 °F -10.0 to 55.0 °C	Monothic silicon piezareaistice pressure sensor with second-order temperature correction. Pressure sensor may be recallificated at bactry or in flat. Adjustable reference attitude adversariation of sensor or barometric pressure corrected to MSL. Kestirel 4200 displays of sation pressure or barometric pressure corrected to MSL. Kestirel 4200 displays and sation pressure on a declarated screen. Restral 4200 and \$500 displays continuously updates there-have barometric pressure trend indicator: rising rapidity, rising, steady, falling, falling rapidity function. PSI display on Kestire 4000 series displays pressure trend through graphing function. PSI display on Kestire 4000 series only.
Compass							AND REAL PROPERTY AND REAL PROPERTY.	A Particular de la Carte de la				•	•	5*	1* 1/16th Cardinal Scale	0 to 360*	0 to 360*	2-axis sold-state magnetoresistive sensor mounted perpendicular to und plane. Accuracy of sensor dependent upon units vertical position. Self-calibration routine eliminates magnetic e from balteries or unit and must be run after every full power-down (battery remark) or change Resident indicates direction to which the back of the unit is polined when held in a vertical orientation. Declaritation/variation adjustable for True North readout.
MEASUREMENT	1000	2000	2500	3000	3500	3500 DT	4000	4200	4250	4300	4400	4500	4500 HOR	and the second second second second	ATED MEA	SUREMENTS SPECIFICATION RANGE	SENSORS EMPLOYED	NOTES
Air Density								•	•					0.0002 lb/ft ³ 0.0033 kg/m ³	0.001 lbs/ft ³ 0.001 kg/m ³	Refer to Ranges for Sensors Employed	Temperature Relative Humidity Pressure	Mass of air per unit volume
Air Flow	in mainly deligher a manning or	LISTANIA	nde gruberera					•						6,71%	1 cfm 1 m/hr 1 m/m 0.1m/s	Refer to Ranges for Sensors Employed	Air Flow Usor Input (Duct Shape & Size)	Volume of air llowing through an opening, Automatically calculated from Air Velocity measure and user-specified duct shape (circle or rectangle) and dimensions (units: in, ft, emor m). Maximum duct dimension input: 259.0 in 21.5 ft 655.3 cm 6.55 m.
Allitude		SELECT ON-			•	•	•	A constant			•	•	•	typical: 23.6 ft 7.2 m max: 48.2 ft 14.7 m	1 tt 1 m	typical: 750 to 1100 mBar max: 300 to 750 mBar	Pressure User Input (Reference Pressure)	Height above Mean Sea Level ("MSL"). Temperature compensated pressure (baremetric) atimater requires accurate reference baremetric pressure to produce maximum absolute accuracy. Both accuracy specs corresponds to a reference pressure anywhere from 850 to mBar.
Barometric Pressure	Mark, Car Grope		•		•	•	•	•	•		•	•	•	0,07 inHg 2.4 hPajmbar 0.03 PSI	0.01 inHg 0.1 hPajmbar 0.01 PSI	Refer to Ranges for Sensors Employed	Pressure User Input (Reference Atitude)	Air pressure that would be present in identical conditions at MSL. Station pressure compens for local elevation provided by reference attitude. Requires accurate reference attitude to pr maximum absolute accuracy.
Crosswind & Headwind/Tallwind									- Contraction of the contraction	Commence of tenders where		•	•	7.1%	1 mph 1 f/min 8.1 km/h 0.1 m/s 0.1 knots	Refer to Ranges for Sensors Employed	Wind Speed Compass	Effective wind relative to a target or travel direction. Auto-avaiching headwind/traikvind indicate
Delta Y		**********			1	•		1	ļ					3.2 °F 1.8 °C	0.1 °F 0.1 °C	Refer to Ranges for Sensors Employed	Temperature Relative Humidity Pressure	Difference between dry buib temperature and wet bulb temperature. When spraying, indicat evaporation rate and droplet ffeitime. Safe range for positicide spraying is 4 to 16 °F / 2 to 5
Density Altitude												•	•	226 ft 69 m	1 ft 1 m	Refer to Ranges for Sensors Employed	Temperature Relative Hurridity	Local air density converted to equivalent elevation above sea level in a uniform layer constitute international Standard Almosphere.
Dewpoint				•			•	•	•		•	•	•	3.4 °F 1.9 °C	0.1 °F 0.1 °C	15 to 95 % RH Refer to Range for Temporature Sensor	Pressure Temperature Relative Hurridity	Temperature that a volume of air must be cooled to at constant pressure for the water vap present to condense into doward form on a solid surface. Can also be considered to be it voter-to-air saturation temperature.
Evaporation Rate	mare e le		North Law		- Parisan					•				0.01 lb/ft ² /hr 0.06 kg/m2/tr	0.01 b/tt²/hr 0.01 kg/m²/hr	Refer to Ranges for Sensors Employed	Wind Speed Temperature Relative Humidity Pressure User Ingut (Concrete Temperature)	The rate at which moisture is best from the surface of curing concrete. Requires user measurement and ordry of concrete temperature obtained with an accurate IR or probe thermometer ("For "C, not included). Readings should be taken 20 inches above pour with the thermiter shaded, and averaged for 6-10 seconds using taken haveraging function.
Heat Index	road Lorries		•	•	•	1	•	•		•	•	•	•	7.1 °F 4.0 °C	0.1 °F 0.1 °C	Refer to Ranges for Sensors Employed	Temperature Rolative Hurridity	Perceived temperature resulting from the combined effect of temperature and relative human Calculated based on NWS Heat Index (HI) tables. Measurement range limited by extent of published tables.
Moisture Content Humidity Ratio ("Grains")	obstale a finer e								•		2000	1	Charles are an	.3 gpp .04		Refer to Ranges for Sensors Employed	Temperature Relative Humidity	pulpasned labels. Mass of water vapor in a mass of air.
Relative Air Density				1	ļ	İ	1	-	•	1	1		<u> </u>	0,3%	0.1%	Refer to Ranges for Sensors Employed	Pressure Temperature Relative Humidity Pressure	The ratio, expressed as a percentage, of measured air density to the air density of a stand atmosphere as defined by the ICAO.
Thermal Work Limit (TWL)											•			10.9 W/m²	0.1 Wint ²	Refer to Ranges for Sensors Employed	Wind Speed Temperature Globe Temperature Rolative Humiday Pressure	Estimated safe maximum continuously sustainable human motabolic rate (Wim2) for the conditions and civiling factors. Based off of estimated metabolic output of typical human. C screen zone warnings.
Outdoor Wet Bulb Globe Temperature (WBGT)					*********						•			1.3 *F 0.7 *C	0.1 °F 0.1 °C	Refer to Ranges for Sensors Employed	Wind Spood Temperature Globo Temperature Relative Humidity Pressure	Measure of human heat stress defined as the combination of effects due to radiation, com- and conduction, Outdoor WBGT is calculated from a weighted sum of natural wet but (Time globe temperature (Tg), and dry but temperature (Td). User settable on-screen warning ac
Wet Bulb Temperature - laturally Aspirated (Tnwb)													-	1.4 °F 0.6 °C	0.1 °F 0.1 °C	Refer to Ranges for Sensors Employed	Wind Speed Temperature Globe Temperature Relative Humidity Pressure	Similar to psychrometric wet-buth temperature (see below). However, Travb only undergoes convection from the ambient air velocity. Travb is a measure of the evaporative cooling that vill allow. This is accounted for by combining the effects of, mainly, relative humidity and windspeed.
Wet Bulb Temperature - Psychrometric				-	•	•	•	•	•		•	•	•	3.2 °F 1.8 °C	0.1 °F 0.1 °C	Refer to Ranges for Sensors Employed	Temperature Relative Hurridity Pressure	Temporature indicated by a sing psychromater. Due to nature of the psychrometric ratio for wollow-lif system, this approximates the thermodynamic well-bub temporature. The thermodynamic well-bub temporature. The thermodynamic well-bub temporature is the temporature a parcel of all rooted have if cocled adiobatically to saluration temporature via water evaporating find it.
Wind Chill	District Comme	•	•	•	•			•		•		•	•	1.6 °F 0.9 °C	0.1 °F 0.1 °C	Refer to Ranges for Sensors Employed	Wind Speed Temperature	Perceived temperature resulting from combined effect of wind speed and temperature, Cal- based on the NWS Wind Chill Temperature (WCT) index, revised 2001, with wind speed a by a factor of 1.5 to yield equivalent results to wind speed measured at 10 m above ground Measurement range timed by extent of published tables.
and the second second				•										Reflective 3 1/2 digit L	.CD. Digit height 0.36 in	CIFICATIONS 1/9 mm. Aviation green electro	oluminescent backlight. Manual activati	an with auto-off.
Display & Backlight		-					. 6	-	•			ļ.,		Multifunction, multi-dig	t monochrome dot-mat	rix display. Choice of aviation	green or visible red (NV models only)	kurrinoscent backlight. Manual activation with auto-off. electroluminescent backlight. Automatic or manual activation. and all massurements which include RH in their calculation may require as long as 1 minute to i
& Display Update Max/Avg Wind									•		•			oquilibrate to a large of One-button clear and	hange in the measuren restart of Max Wind Gu I calculation may be sta	ont environment. Display upd st and Average Wind measure	ates every 1 second. errent.	with all other wind-related functions: air velocity, crosswind, headwindtallwind, wind chill, WB
Data Storage & Graphical Display, Min/Max/Avg History			1			THE REAL PROPERTY.	4000 points		3200 s point	360 s point	2300 5 point	2900 points	2500 point	independently Auto-st	verage and logged hist lore interval settable fro	ory stored and displayed for e m 2 seconds to 12 hours, ove	very measured value. Large capacity d erwrite on or off. Logs even when displa	lata logger with graphical display. Manual and auto data storage. Min/Max/Avg history may be f y off except for 2 and 5 second intervals (code version 4.18 and later). Data capacity shown.
Data Upload & Bluetooth® Data Connect Option		\$19.90 Mark	To brong the	(C) ACCOPAGE		rijanen	•				•	•		Bluetooth Data Tran	sfer Option: Adjustat			dividual unit ID and 4-digit PIN code preprogrammed for easy Identification and data security t
Clock / Calendar								-						Requires optional PC Requires optional PC	interface (USB or RS-2 interface (USB or RS-2	(32) or Bluetooth data transfe (32) or Bluetooth data transfe	er option and provided software, er option and provided software, er option and provided software,	
Auto Shutdown Languages				•							6			Requires optional PC English, French, Gern	interface (USB or RS-2 ran, Italian, Spanish.	232) or Bluetooth data transfe	r option and provided software.	
Certifications Origin	•		•						•			•		Designed and manufa CR2032, one, include	ctured in the USA from d. Average life, 300 hou	US and imported components urs. Battery life reduced by ba	cklight use in 2000 to 3500 models,	nt and Tariff Code Transformation requirements for NAFTA Preference Criterion E.
Battery Life Shock Resistance				1.0					17 2 17 17 10 10 10 10 10 10 10 10 10 10 10 10 10					Standard Models: A	AA Alkaline, two, includ iit Shock, Method 516.5	ed. Average life, 400 hours of	use, reduced by backlight or Bluetooth ct may damage replaceable impeller.	radio transmission use.
Sealing Operational Temperature Limits	•	•									•	•	NAME OF THE OWNER	14° F to 131° F -10° to the more extreme of	C to 55 °C Measurem invironment for the mini	ents may be taken beyond the mum time necessary to take r		ange of the display and batteries by maintaining the unit within the operational range and expe
Storage Temperature		1 200			1				2	- 3				-22.0 °F to 140.0 °F				

NOTE: Accuracy calculated as uncertainty of the measurement derived from statistical analysis considering the comined effects from primary sensor specifications, circuit conversions, and all other sources of error using a coverage factor of k=2, or two standard deviations (2\(\mu\)).





This instrument was produced under rigorous factory production control and documented standard procedures. It was individually visually inspected, leak tested and function tested for display, backlight, button and software performance. The accuracy of each of its primary measurements was individually calibrated and/or tested against standards traceable to the National Institute of Standards and Technology ("NIST") or calibrated intermediary standards. This instrument is certified to have performed at the time of manufacture in compliance with the following specifications as they apply to this meter's specific model, measurements and features.

Methods Used in Calibration and Testing

Wind Speed:

The Kestrel Pocket Weather Meter impeller installed in this unit was individually tested in a subsonic wind tunnel operating at approximately 300 fpm (1.5 m/s) and 1200 fpm (6.1 m/s) monitored by a Gill Instruments Model 1350 ultrasonic time-of-flight anemometer. The Standard's maximum combined uncertainty is $\pm -1.04\%$ within the airspeed range 706.6 to 3923.9 fpm (3.59 to 19.93 m/s), and $\pm -1.66\%$ within the airspeed range 166.6 to 706.6 fpm (0.85 to 3.59 m/s).

Temperature:

Temperature response is verified in comparison with a Eutechnics 4600 Precision Thermometer or a standard Kestrel 4000 Weather and Environmental Meter calibrated weekly against the Eutechnics 4600. The Eutechnics 4600 is calibrated annually and is traceable to NIST with a system accuracy of +/- 0.05 °C.

Direction / Heading

The sensitivity of the magnetic directional sensor is verified at the component level by applying a magnetic field to the sensor and measuring the signal output at 4 points, as well as after assembly by orienting the unit to the cardinal directions and measuring the magnetic field output. In both cases the compass output must be accurate to within +/- 5 degrees.

Relative Humidity:

Relative humidity receives a two-point calibration in humidity and temperature controlled chambers at 75.3% RH and 32.8% RH at 25° C. The calibration tanks are monitored with an Edgetech Model 2002 DewPrime II Standard Chilled Mirror Hygrometer. Following calibration, performance is further verified at an RH of approximately 43.2% against the Edgetech Hygrometer. The Edgetech Hygrometer is calibrated annually and is traceable to NIST with a maximum relative expanded uncertainty of +/- 0.2% RH.

Barometric Pressure:

Pressure response is verified against a Mensor Series 6000 Digital Barometer or a standard Kestrel 4000 Weather and Environmental Meter calibrated weekly against the Mensor Barometer. The Mensor Barometer is calibrated annually and is traceable to NIST with a maximum relative expanded uncertainty of +/- 0.02% F.S.

Approved By:

Michael Naughton, Engineering Manager