InteliMet Advantage Weather Station

The InteliMet Advantage is ideal for growers, environmental, and irrigation scheduling applications. The Advantage has high performance combined with durability, low maintenance and low cost.

Advanced Model Features

The main Vaisala Weather Transmitter combines the six most essential weather parameters in one instrument (left side):

1. **Wind speed**
2. **Wind direction**
3. **Precipitation**
4. **Barometric pressure**
5. **Temperature**
6. **Relative humidity**

- **Separate Solar radiation with leveling base**
- **Accurate and stable measurement**
- **Compact and light weight**
- **No moving parts**
- **Low power consumption**
- **Fast and simple installation**
- **Low maintenance**
- **Dynamax Integrated logger, software and communications**
- **Integrated ETo reporting with accurate processing**

Dynamax introduces the most efficient weather station ever produced for low cost and accurate commercial applications. Growers asked us to produce a compact, light and rugged low cost system that is maintenance free but has good quality.

This automatic ET weather station includes features offered only by the leaders in weather instrument technology. We back all components with a one-year warranty.

Simple one-pipe, and one-crossbar construction installs in under 30 minutes. The sensors require no wiring and minimal assembly tasks with simple hand tools.

Logger, battery and data retrieval software are included and ready to go. Data may be retrieved by a PC, a portable PDA or by long distance communication options. All parts and cables are supplied except for a 6 ft. base pole (a standard 2 in. water pipe) in a cement footing. The crossbar system installed 6 ft. high is light and strong. We supply all the unique parts and let you save money on a costly tripod or tower.

1 in. x 3 ft long pole and cross-arm give flexibility and is easy to mount on any 2” pipe or tower with pipe adapters and mounting hardware supplied by Dynamax.

Dynamax proprietary software records data from the innovative Vaisala Weather Transmitter and a reliable radiation sensor for plant or crop weather applications. The station internally calculates ETo evapotranspiration from the most advanced solution prepared by the Texas A&M University research staff to enhance the accuracy of prior ET computations, (Lascano, Van Bavel – A.S.A. 2006).

Options

- **Solar power, 5 watt, with regulator and mounting bracket**
- **Lightning rod**
- **High accuracy rain gage**
- **Pulse flow meters**
- **Soil moisture sensors**
- **Additional Temperature sensors**
- **Radio (10-20 mile line of sight)**
- **Cellular Modem communications**

Normally our weather station logger will record four extra soil or temperature sensors beyond the standard 7 featured sensors in the standard kit. In addition, a high spec rain gage and a digital flow meter may be added for special precision monitoring projects. A small custom software program will be generated for these options.

Our options are designed to cover 90% of the commercial growers needs. We have produced the kit that all our customers asked for, and yet have some flexibility for special needs.

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Sensor Technical Specifications

Wind Speed	
Range	0...60 m/s
Response time	0.25 s
Available variables	average, maximum and minimum
Accuracy	± 0.3 m/s or ± 2% whichever is greater
Output resolution, units	0.1 m/s (km/h, mph, knots)
Wind Direction	
Azimuth	0...360°
Response time	250 ms
Available variables	Average, maximum and minimum
Accuracy	± 2°
Output resolution	1°
Rainfall	cumulative accumulation
Collection area	60 cm^2
Output resolution, units	0.01 mm (0.001 in.)
Accuracy	+/- 5%*
Rain Intensity	one minute running average in ten second steps
Barometric Pressure	
Range	600...1 100 hPa
Accuracy	± 0.5 hPa at 0...+30° C (+32...+86° F) ± 1 hPa at -52...+60° C (-60...+140° F)
Output resolution, units	0.1 hPa, 10 Pa, 0.0001 bar, 0.1 mmHg, 0.01 inHg
Air Temperature	
Range	-52...+60° C (-60...+140° F)
Accuracy (for sensor element) at +20° C (+68° F)	± 0.3° C (± 0.5° F)
Relative Humidity	
Range	0...100%RH
Accuracy	± 3%RH within 0...90%RH ± 5%RH within 90...100%RH
Output resolution	0.1%RH
Solar Radiation	Model PYR-P
Cosine response	± 4% at 75° ± 1% at 45°
Daily total radiation absolute accuracy	Solar radiation output 280-2800 nm ± 5%
Reproducibility	± 1%
Output	0.200 mV/W m^{-2} output linear to: 320 mV (1,600 W m^{-2})
Sensitivity	5.00 W m^{-2}/mV
Operating Environment	-40 to 55° C; 0 to 100% relative humidity
General	Station Environmental
Operating temperature	-40...+50° C (-40...+122° F)
Operating humidity	0...100%RH

** Due to the nature of the phenomenon, deviations caused by spatial variations may exist in precipitation readings, especially in short time scale. The accuracy specification does not include possible wind induced error. A TE525 6" rain gage is recommended for higher accuracy needs (+/- 1%).*

Vaisala Weather Transmitter

The Vaisala Weather Transmitter is a compact lightweight multi-sensor instrument that measures the most essential weather parameters. It is a configurable product that can measure wind speed and direction, liquid precipitation, barometric pressure, temperature and relative humidity - all in one transmitter. The Transmitter is a high quality instrument that reliably measures all essential weather parameters. The transmitter is easy to install with its one-bolt-mounting method. The materials used are also highly resistant against UV radiation and corrosion.

Proven Technology

Accurate measurement begins with the sensors. Vaisala has decades of experience in designing and manufacturing weather sensors with field proven reliability and accuracy.

The Solar radiation sensor model PYR-P installed on the NEW InteliMet Advantage. The pyranometer measures total radiation for the most responsive transpiration and evaporation predictions.

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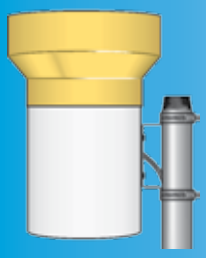
InteliMet Advantage Weather Station

Options, Sensors for the InteliMet Advantage

GSM Cell Data MODEM

TE525 6” Rain Gauge



SM200 - Soil Moisture Sensor

Soil Temperature Sensor - 109 thermistor

5W Solar Panel

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Datalogger Included

The CR200-series dataloggers are small measurement and control devices that measure sensors, process the results, and transmit data via their on-board spread spectrum radio (model dependent). These loggers have an operating temperature range of -40° to +50°C, a 12-bit A/D converter, a battery-backed clock, a 1 Hz scan rate, and a table-based memory structure. They communicate using the PAKBUS® protocol, which is a simplified variation of Internet protocols.

All of the loggers below can communicate with a PC via direct connect, Ethernet, MD485 multidrop modems, and digital cellular modems. Data can also be viewed on a PDA (PConnect or PConnectCE software required).

- **CR200**—base model (i.e, only supports direct connect, Ethernet, and digital cellular modems.)

Optional upgrades for InteliMet Advantage

- **CR206**—includes an on-board 915 MHz spread spectrum radio that transmits data to another CR206 logger or an RF401 radio. The 915 MHz frequency is used in the US/Canada.
- **CR216**—includes an on-board 2.4 GHz spread spectrum radio that transmits data to another CR216 logger or an RF416 radio. The 2.4 GHz frequency can be used in many countries worldwide.

Programs and data are stored in a non-volatile Flash memory. Approximately 32,000 data points can be stored.

Communication and Data Collection Tools

PC400 Datalogger Support Software supports programming, manual data collection, and data display. Both direct and telecommunications are supported.

LoggerNet 2.1 or later Besides providing all of PC400’s functions, LoggerNet Datalogger Support Software supports automatic data collection and PAKBUS® routing.

The CR206 and CR216 can be used in a wireless sensor network. Wireless sensor networks are appealing because they are often more economical than trenching, laying conduit, and pulling wire. In some applications, cabled sensors are impractical due to man-made or natural causes, including construction, lightning, moving platforms, agricultural production, or bodies of water.

Logger Specifications

Analog Input Range, Channels	0 ≤ V < 2.5 Vdc, 5 channels, 1 used for solar radiation, 4 open
Measurement Resolution	0.6 mV
Measurement Accuracy	Typical: ±(0.25% of reading + 1.2 mV offset) over -40° to +50°C
Switch Closure (P_SW):	Maximum Count rate: 100 Hz
Pulse Count (P_SW,C1, AND C2)	Voltage Threshold: <0.9 V to >2.7 Vdc
Low Level AC (P_LL):	Voltage Threshold: <0.5 to >2 V
Final Storage	128 kbyte Flash, data format is 4 bytes per data point (table-based)
Battery Voltage Range	18 Vdc, 120-220 Vac adapter supplied