



Orion LX™ Vehicle-Mount

Internet-Ready Weather Stations with CAMEO/ALOHA Interface

Ultrasonic Wind | Temperature | Relative Humidity | Rainfall | Barometric Pressure



Columbia Weather Systems Inc. - Mozilla Firefox

http://www.columbiaweather.com/hillsboro

Columbia Weather Systems Call for a quote 1-866-625-0620 or Email

Hillsboro, Oregon Time Stamp: 12/13/06 9:55:13

Wind Speed 4MPH	Wind Direction 182°
3-Sec Avg. 4MPH	3-Sec Avg. 180°
2-Min Avg. 4MPH	2-Min Avg. 179°
2-Min Avg. 4MPH	2-Min Avg. 179°

WeatherMaster 2000

12/13/2006 9:20:08 PM

Temperature 1 **51.2** °F

Relative Humidity **64.0** %

Dew Point **39.4** °F

Heat Index **51.0** °F

Wind Chill **46.9** °F

Rain for Today **0.33** inches

Bar. Pressure **30.09** in.Hg

Wind Direction **220°**

Wind Speed **6** MPH

WeatherMaster 2000™

3-Sec Avg	7 MPH	224 °
2-min Avg	6 MPH	221 °
10-min Avg	6 MPH	220 °

Wind Gusts	10 MPH	180 °
10-min Gust	21 MPH	259 °
1-Hour Peak	21 MPH	259 °

Density Altitude **-336**

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Sophisticated Simplicity

The vehicle-mounted Orion LX™ Weather Station offers **simultaneous**, site-specific **weather monitoring** from multiple locations via WeatherMaster Software and/or Internet website. For example, first responders, commanders, officers, and Emergency Managers at various locations simultaneously can view current weather conditions being monitored at an incident scene.

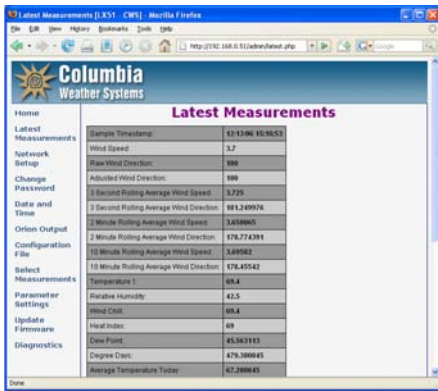
The Orion LX Vehicle-Mount Weather Station consists of a high-tech, **all-in-one sensor module**, the Orion Weather **MicroServer** and a **9-foot telescoping mast** which attaches quickly and easily to any Command or Response Vehicle. (Exterior mounting brackets are permanently installed.)

The Orion sensor module includes ultrasonic wind direction and speed measurements, an impact rain gauge, and capacitive relative humidity, temperature and barometric pressure sensors. *There are no moving parts to wear out or calibrate.*

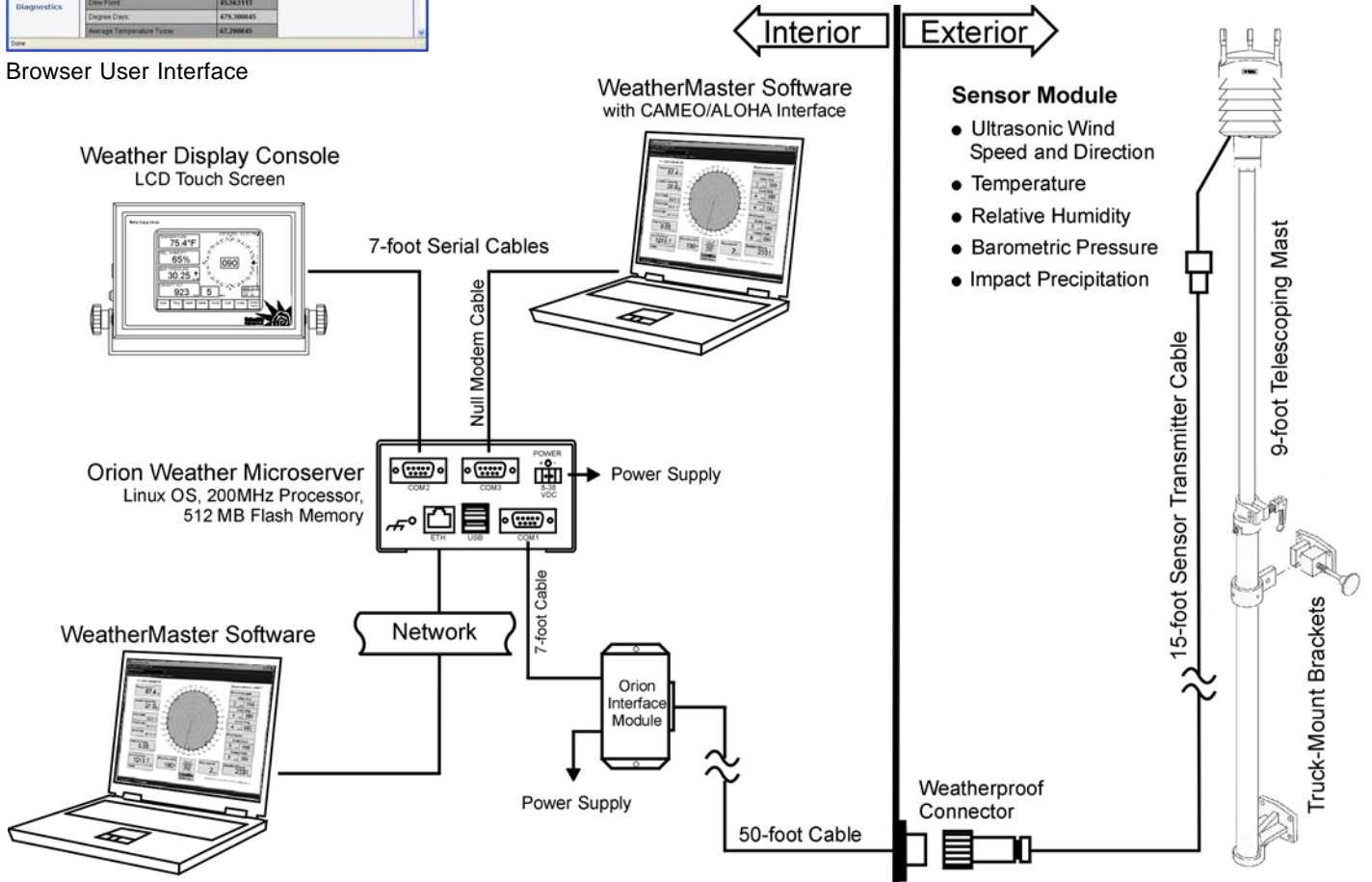
Running Linux operating system, the powerful Weather MicroServer **automatically transmits** weather data to a **website** and/or to **WeatherMaster software**. The MicroServer includes **datalogging** capability and **two serial communication ports**. The weather station can be connected to a computer and/or our proprietary Weather Display Console for direct, on-scene data viewing.

The Orion LX Weather MicroServer connects directly into your existing computer network **without a dedicated computer**. The MicroServer allows **secure operation** of the weather station from any computer on the network with an **intuitive browser user interface**. Using the browser you can also view real time weather data, download the data log and output data using FTP.

High accuracy and fine resolution make this weather monitoring system ideal for **precision weather monitoring**. *Orion's sensors meet FAA and WMO specs for aviation operations, as well as EPA requirements for scientific environmental monitoring applications.*



Browser User Interface



Please call for a price quote toll-free 1 888-508-7375 or email sales@columbiaweather.com.

Orion LX-VM™

Internet-Ready Weather Stations

Parameters Monitored

Barometric Pressure, Temperature, and Humidity

These three measurements are combined in an advanced tri-sensor module utilizing a capacitive measurement method for each parameter.

This module is mounted in a specially-designed **radiation shield** which **protects** the sensors from both scattered and direct sunlight and precipitation. The composite material in the plates offers excellent thermal characteristics and UV stabilized construction. The white outer surface reflects radiation, while the black inside absorbs accumulated heat.

The internal tri-sensor module is easily replaceable and readily available as a spare component.

Barometric pressure is measured using a silicon-based sensor. The **temperature** sensor is ceramic.

Relative humidity measurement is highly accurate with negligible hysteresis and excellent long-term stability in a wide range of environments.

Weather Display Console™

The Weather Display Console uses “intelligent” **touch-screen** technology. With its programmable microprocessor and abundant memory, the console displays weather information on five weather **viewing** screens including **max/min and trends**, performs complex **computations**, and **stores** relatively large amounts of weather data.

The Weather Display Console features a graphic LCD (320 x 240 pixels) having a luminescent white background with blue text and images for legibility. The screens are designed to be **viewed clearly** from a distance.

The display console is flexible and can be factory-programmed to suit specific market and industry requirements. It is available in three mounting options:

- Desktop/Wall-Mount
- Panel Mount/Flush Mount
- 19" Rack Mount

Ultrasonic Wind Measurement

Wind speed and direction are measured using advanced ultrasonic technology. Three equally-spaced ultrasonic transducers on a horizontal plane ensure **accurate** wind measurement from all directions, without blind angles or corrupted readings.

Rainfall Measurement

Rainfall is measured with an **impact** sensor which detects the size and impact of individual rain drops. The resulting signals are proportional to the volume of the drops. Hence, the signal from each drop can be converted directly to the accumulated rainfall.

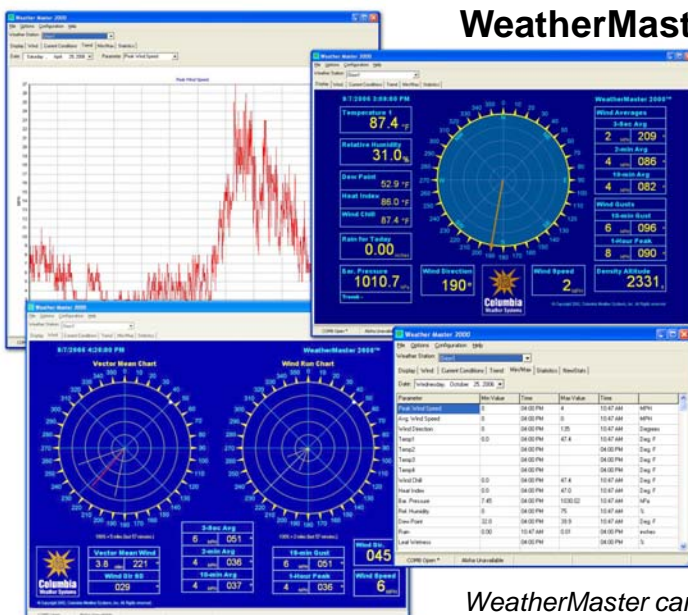
This measurement method **eliminates distortion** from scattering, flooding and clogging, as well as wetting and evaporation losses.

Additional Calculated Parameters

Data from these sensors are computed to provide calculated parameters including Dew Point, Heat Index, Wind Chill, Degree-Day Temperatures and Density Altitude.



WeatherMaster™ Software



This professional-grade software provides real-time computer weather monitoring including:

- Display and logging of measured and calculated parameters
- Automatic interface with CAMEO/ALOHA software for plume modeling and evacuation corridor predictions
- An open Microsoft Access® database for archival with easy retrieval and compatibility with other Windows® programs
- On-the-fly graphing and trend display of all parameters
- Alarm notification via computer, email, pager or cell phone
- Multi-station monitoring and data acquisition
- Quick-North orientation

Additional site licenses enable up to 10 users on your network to access these features simultaneously.

WeatherMaster can be customized to meet specific industry needs.

Sensor Specifications

Temperature

Range: -60 to 140°F (-52 to +60°C)
Accuracy: $\pm 0.5^\circ\text{F}$ ($\pm 0.3^\circ\text{C}$) at 68°F (+20°C)
Resolution: 0.1°F (0.1°C)
Units Available: °F, °C

Barometric Pressure

Range: 17.50 to 32.50 InHg (600 to 1100 mbar)
Accuracy: ± 0.015 InHg (0.5 mbar) at +32 to 86°F (0 to 30°C)
Resolution: 0.01 InHg (0.1 mbar)
Units Available: KPa, mbar, InHg, HPa

Wind Speed

Range: 0 - 135 mph (0 - 60 m/s)
Accuracy: ± 0.7 mph (± 0.3 m/s)
Resolution: 1 mph (1 m/s)
Units Available: knots, mph, km/hr, m/s

Wind Direction

Azimuth: 0 - 360°
Accuracy: $\pm 2^\circ$
Resolution: 1°

Relative Humidity

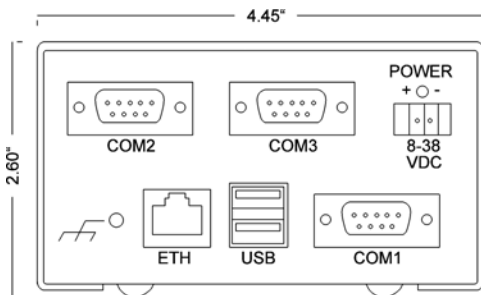
Range: 0 - 100%RH
Accuracy: $\pm 3\%$ RH (0-90%), $\pm 5\%$ (90-100%)
Resolution: 1%RH
Units Available: %RH

Rainfall

Range: cumulative
Collection Area: 60 cm²
Accuracy: $\pm 5\%$ (spatial variations may exist)
Resolution 0.01 in. (0.254mm)
Units Available: mm, inches

MicroServer

Dimensions: 4.45" W x 2.60" H x 5.71" D
200 MHz ARM9 Processor
32 MB SDRAM, 512 MB Flash Memory
8-38 VDC Power Supply
2 Communication Serial Ports, 1 Ethernet Port
Linux Operating System



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Orion LX™ Vehicle-Mount Weather Stations

Key Features

- Multiple users can simultaneously monitor the same weather event by accessing a web page or WeatherMaster Software on a network.
- The Orion all-in-one sensor unit is very durable and has no moving parts.
- The Orion LX Weather MicroServer automatically updates your weather web page and WeatherMaster Software using FTP and a browser user interface.
- The 9-ft telescoping sensor mast is made of rugged anodized aluminum, with heavy-duty, powdered-coated steel mounting brackets.
- A permanent twist-lock mounting adaptor allows you to quickly remove and reinstall the sensor head without losing North orientation.

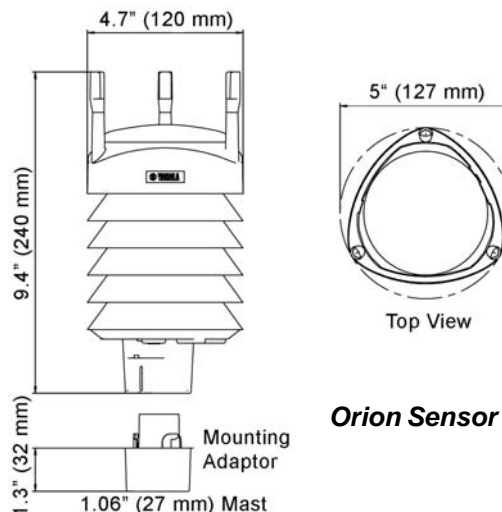
Standard systems include

- Orion sensor head (with 15-foot cable to external connector plug) contains:
 - Ultrasonic wind speed and direction sensor with alignment adapter
 - Impact rainfall sensor
 - Barometric pressure, temperature, humidity sensor module in radiation shield
- Connector Plate assembly for external to internal cable connection
- Orion Interface Module with 50-foot cable to connector plug
- Orion Weather MicroServer with 7-foot cable to Interface Module
- Ethernet Cable, 7-foot from MicroServer to computer
- Interior wall-mount power supply
- Comprehensive User Manual
- Telescoping Sensor Mast (9-foot) and Truck Mount Brackets

Orion LX Vehicle-Mount Ordering Information

- 9620-A-1 Orion LX VM Weather Station without viewing option
- 9620-B-1 Orion LX VM Weather Station with WeatherMaster Software
- 9620-C-1 Orion LX VM Weather Station with Desktop Display Console
- 9620-D-1 Orion LX VM Weather Station with WeatherMaster and Display Console
- 8296 WeatherMaster Software Additional Site Licence

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Orion Sensor Module