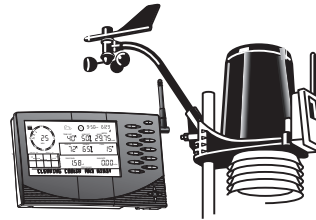


# Wireless Vantage Pro2™ & Vantage Pro2™ Plus Stations

(Including Fan-Aspirated Models)



**6152    6162**  
**6153    6163**

Vantage Pro2™ (6152, 6153) and Vantage Pro2™ Plus (6162, 6163) Wireless Weather Stations include two components: the Integrated Sensor Suite (ISS) which houses and manages the external sensor array, and the console which provides the user interface, data display, and calculations. The ISS and Vantage Pro2 console communicate via an FCC-certified, license-free, spread-spectrum frequency-hopping (FHSS) transmitter and receiver. User-selectable transmitter ID codes allow up to eight stations to coexist in the same geographic area. The frequency hopping spread spectrum technology provides greater communication strength over longer distances and areas of weaker reception. The Wireless Vantage Pro2 Plus weather station includes two additional sensors that are optional on the Vantage Pro2: the UV sensor and the solar radiation sensor.

The console may be powered by batteries or by the included AC-power adapter. The wireless ISS is solar powered with a battery backup. Use WeatherLink® for Vantage Pro2 and Vantage Vue® to let your weather station interface with a computer, to log weather data, and to upload weather information to the internet.

The 6152 and 6162 rely on passive shielding to reduce solar-radiation induced temperature errors in the outside temperature sensor readings. The Fan-aspirated 6153 and 6163 combine passive shielding with a solar-powered fan that draws outside air in over the temperature and humidity sensors, providing a much more accurate temperature reading than that available using passive shielding alone.

## Integrated Sensor Suite (ISS)

(Includes product numbers: 6152, 6153, 6162, 6163, 6322, 6323, 6327 & 6328)

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|  |  |
|--|--|
| Operating Temperature . . . . .                      | -40° to +150°F (-40° to +65°C)   |
| Non-operating Temperature . . . . .                  | -40° to +158°F (-40° to +70°C)   |
| Current Draw (ISS SIM only) . . . . .                | 0.14 mA (average), 30 mA (peak) at 4 to 6 VDC                                |
| Solar Power Panel . . . . .                          | 0.5 Watts (ISS SIM), plus 0.75 Watts (Fan-Aspirated)                         |
| Battery (ISS SIM /Fan-Aspirated) . . . . .           | CR-123 3-Volt Lithium cell / 2 - 1.2 Volt NiMH C-cells                       |
| Battery Life (3-Volt Lithium cell) . . . . .         | 8 months without sunlight - greater than 2 years depending on solar charging |
| Battery Life (NiMH C-cells, Fan-Aspirated) . . . . . | Up to 2 years  |
| Fan Aspiration Rate (Fan-Aspirated only)             |  |
| Intake Flow Rate, full sun . . . . .                 | 190 feet/min. (0.9 m/s)  |
| Intake Flow Rate, battery only . . . . .             | 80 feet/min. (0.4 m/s)   |
| Sensor Chamber Flow Rate, full sun . . . . .         | 500 feet/min. (2.5 m/s)  |
| Sensor Chamber Flow Rate, battery only . . . . .     | 180 feet/min. (0.9 m/s)  |
| Connectors, Sensor . . . . .                         | Modular RJ-11  |
| Cable Type . . . . .                                 | 4-conductor, 26 AWG  |
| Cable Length, Anemometer . . . . .                   | 40 feet (12 m) (included) 240 feet (73 m) (maximum recommended)              |

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Note: Maximum displayable wind decreases as the length of cable increases. At 140' (42 m) of cable, the maximum wind speed displayed is 135 mph (60 m/s); at 240' (73 m), the maximum wind speed displayed is 100 mph (34 m/s).

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|   |  |
|---|--|
| Wind Speed Sensor . . . . .             | Solid state magnetic sensor  |
| Wind Direction Sensor . . . . .         | Wind vane with potentiometer   |
| Rain Collector Type . . . . .           | Tipping bucket, 0.01" per tip (0.2 mm with metric rain adapter), 33.2 in <sup>2</sup> (214 cm <sup>2</sup> ) collection area |
| Temperature Sensor Type . . . . .       | PN Junction Silicon Diode  |
| Relative Humidity Sensor Type . . . . . | Film capacitor element   |
| Housing Material . . . . .              | UV-resistant ABS, ASA plastic (SPARS only)   |

ISS Dimensions (not including anemometer or bird spikes):

## 2

### Wireless Vantage Pro2™

|   |   |
|---|---|
| Vantage Pro2 with Standard Rad Shield . . . . .           | 14.0" x 9.4" x 14.5" (356 mm x 239 mm x 368 mm) |
| Vantage Pro2 with Fan-Aspirated Rad Shield . . . . .      | 20.8" x 9.4" x 16.0" (528 mm x 239 mm x 406 mm) |
| Vantage Pro2 Plus with Standard Rad Shield . . . . .      | 14.3" x 9.7" x 14.5" (363 mm x 246 mm x 368 mm) |
| Vantage Pro2 Plus with Fan-Aspirated Rad Shield . . . . . | 21.1" x 9.7" x 16.0" (536 mm x 246 mm x 406 mm) |

## Console

(Includes product number 6312)

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|  |  |
|--|--|
| Console Operating Temperature . . . . .                | +32° to +140°F (0° to +60°C)   |
| Non-Operating (Storage) Temperature . . . . .          | +14° to +158°F (-10° to +70°C)   |
| Current Draw . . . . .                                 | 0.9 mA average, 30 mA peak, (add 120 mA for display lamps, add 0.125 mA for each optional wireless transmitter received by the console) at 4 - 6 VDC |
| AC Power Adapter . . . . .                             | 5 VDC, 300 mA, regulated   |
| Batteries . . . . .                                    | 3 C-cells  |
| Battery Life . . . . .                                 | up to 9 months   |
| Connectors . . . . .                                   | Modular RJ-11  |
| Housing Material . . . . .                             | UV-resistant ABS plastic   |
| Console Display Type . . . . .                         | LCD Transflective  |
| Display Backlight . . . . .                            | LEDs   |
| Console Dimensions                                     |  |
| Console with antenna down (L x H x D) . . . . .        | 10.625" x 6.125" x 1.625" (270 mm x 156 mm x 41 mm)  |
| Console with antenna extended up (L x H x D) . . . . . | 10.625" x 9.625" x 1.625" (270 mm x 245 mm x 41 mm)  |
| Display (L x H) . . . . .                              | 5.94" x 3.375" (151 mm x 86 mm)  |
| Weight (with batteries) . . . . .                      | 1.88 lbs. (.85 kg)   |

## Data Displayed on Console

Data display categories are listed with General first, then in alphabetical order.

### General

|  |  |
|--|--|
| Historical Data . . . . .                      | Includes the past 24 values listed unless otherwise noted; all can be cleared and all totals reset   |
| Daily Data . . . . .                           | Includes the earliest time of occurrence of highs and lows; period begins/ends at 12:00 am   |
| Monthly Data . . . . .                         | Period begins/ends at 12:00 am on the first of the month   |
| Yearly Data . . . . .                          | Period begins/ends at 12:00 am on the first of January unless otherwise noted  |
| Current Display Data . . . . .                 | Current display data describes the current reading for each weather variable. In most cases, the variable lists the most recently updated reading or calculation. Some current variable displays can be adjusted so there is an offset for the reading                                 |
| Current Graph Data . . . . .                   | Current graph data appears in the right-most column in the console graph and represents the latest value within the last period on the graph; totals can be set or reset. Display intervals vary. Examples include: Instant, 15-min., and Hourly Reading; Daily, Monthly, High and Low |
| Graph Time Interval . . . . .                  | 1 min., 10 min., 15 min., 1 hour, 1 day, 1 month, 1 year (user-selectable, availability depends upon variable selected)  |
| Graph Time Span . . . . .                      | 24 Intervals + Current Interval (see Graph Intervals to determine time span)   |
| Graph Variable Span (Vertical Scale) . . . . . | Automatic (varies depending upon data range); Maximum and Minimum value in range appear in ticker  |
| Alarm Indication . . . . .                     | Alarms sound for only 2 minutes (time alarm is always 1 minute) if operating on battery power. Alarm message is displayed in ticker as long as threshold is met or exceeded. Alarms can be silenced (but not cleared) by pressing the DONE key.  |
| Transmission Interval . . . . .                | Varies with transmitter ID code from 2.25 seconds (#1=shortest), to 3 seconds (#8=longest)   |
| Update Interval . . . . .                      | Varies with sensor - see individual sensor specs   |

## Barometric Pressure

|   |   |
|---|---|
| Resolution and Units                      | 0.01" Hg, 0.1 mm Hg, 0.1 hPa/mb (user-selectable)   |
| Range                                     | 16.00" to 32.50" Hg, 410 to 820 mm Hg, 540 to 1100 hPa/mb   |
| Elevation Range                           | -999' to +15,000' (-600 m to 4570 m) (Note that console screen limits entry of lower elevation to -999' when using feet as elevation unit.) |
| Uncorrected Reading Accuracy              | ±0.03" Hg (±0.8 mm Hg, ±1.0 hPa/mb) (at room temperature)   |
| Sea-Level Reduction Equation Used         | United States Method employed prior to use of current "R Factor" method   |
| Equation Source                           | Smithsonian Meteorological Tables   |
| Equation Accuracy                         | ±0.01" Hg (±0.3 mm Hg, ±0.3 hPa/mb)   |
| Elevation Accuracy Required               | ±10' (3m) to meet equation accuracy specification   |
| Overall Accuracy                          | ±0.03" Hg (±0.8 mm Hg, ±1.0 hPa/mb)   |
| Trend (change in 3 hours)                 | Change 0.06" (2 hPa/mb, 1.5 mm Hg) = Rapidly<br>Change 0.02" (0.7hPa/mb, 0.5 mm Hg)= Slowly   |
| Trend Indication                          | 5 position arrow: Rising (rapidly or slowly), Steady, or Falling (rapidly or slowly)  |
| Update Interval                           | 1 minute or when console BAR key is pressed twice   |
| Current Display                           | Instant   |
| Current Graph Data                        | Instant, 15-min., and Hourly Reading; Daily, Monthly, High and Low  |
| Historical Graph Data                     | 15-min. and Hourly Reading; Daily, Monthly Highs and Lows   |
| Alarms                                    | High Threshold from Current Trend for Storm Clearing (Rising Trend)<br>Low Threshold from Current Trend for Storm Warning (Falling Trend)   |
| Range for Rising and Falling Trend Alarms | 0.01 to 0.25" Hg (0.1 to 6.4 mm Hg, 0.1 to 8.5 hPa/mb)  |

## Clock

|             |   |
|-------------|---|
| Resolution  | 1 minute  |
| Units       | Time: 12 or 24 hour format (user-selectable)  |
| Date        | US or International format (user-selectable)  |
| Accuracy    | ±8 seconds/month  |
| Adjustments | Time: Automatic Daylight Savings Time (for users in North America and Europe that observe it in AUTO mode, MANUAL setting available for all other areas)<br>Date: Automatic Leap Year |
| Alarms      | Once per day at set time when active  |

## Dewpoint (calculated)

|                       |   |
|-----------------------|---|
| Resolution and Units  | 1°F or 1°C (user-selectable) °C is converted from °F rounded to the nearest 1°C |
| Range                 | -105° to +130°F (-76° to +54°C)   |
| Accuracy              | ±2°F (±1°C) (typical)   |
| Update Interval       | 10 to 12 seconds  |
| Source                | World Meteorological Organization (WMO)   |
| Equation Used         | WMO Equation with respect to saturation of moist air over water                 |
| Variables Used        | Instant Outside Temperature and Instant Outside Relative Humidity               |
| Current Display Data  | Instant Calculation   |
| Current Graph Data    | Instant Calculation; Daily, Monthly High and Low                                |
| Historical Graph Data | Hourly Calculations; Daily, Monthly Highs and Lows                              |
| Alarms                | High and Low Threshold from Instant Calculation                                 |

## Evapotranspiration (calculated, requires solar radiation sensor)

|                        |  |
|------------------------|--|
| Resolution and Units   | 0.01" or 0.1 mm (user-selectable)  |
| Range                  | Daily to 32.67" (832.1 mm); Monthly & Yearly to 199.99" (1999.9 mm)  |
| Accuracy               | Greater of 0.01" (0.25 mm) or ±5%, Reference: side-by-side comparison against a CIMIS ET weather station                                   |
| Update Interval        | 1 hour   |
| Calculation and Source | Modified Penman Equation as implemented by CIMIS (California Irrigation Management Information System) including Net Radiation calculation |
| Current Display Data   | Latest Hourly Total Calculation  |
| Current Graph Data     | Latest Hourly Total Calculation, Daily, Monthly, Yearly Total  |
| Historical Graph Data  | Hourly, Daily, Monthly, Yearly Totals  |
| Alarm                  | High Threshold from Latest Daily Total Calculation   |

**Wireless Vantage Pro2™****Forecast**

|                     |   |
|---------------------|---|
| Variables Used      | Barometric Reading & Trend, Wind Speed & Direction, Rainfall, Temperature, Humidity, Latitude & Longitude, Time of Year |
| Update Interval     | 1 hour  |
| Display Format      | Icons on top center of display; detailed message in ticker at bottom  |
| Variables Predicted | Sky Condition, Precipitation, Temperature Changes, Wind Direction and Speed   |

**Heat Index (calculated)**

|                       |  |
|-----------------------|--|
| Resolution and Units  | 1°F or 1°C (user-selectable) °C is converted from °F rounded to the nearest 1°C        |
| Range                 | -40° to +165°F (-40° to +74°C)   |
| Accuracy              | ±2°F (±1°C) (typical)  |
| Update Interval       | 10 to 12 seconds   |
| Source                | United States National Weather Service (NWS)/NOAA                                      |
| Formulation Used      | Steadman (1979) modified by US NWS/NOAA and Davis Instruments to increase range of use |
| Variables Used        | Instant Outside Temperature and Instant Outside Relative Humidity                      |
| Current Display Data  | Instant Calculation  |
| Current Graph Data    | Instant Calculation; Daily, Monthly High   |
| Historical Graph Data | Hourly Calculations; Daily, Monthly Highs  |
| Alarm                 | High Threshold from Instant Calculation  |

**Humidity**

## Inside Relative Humidity (sensor located in console)

|                       |  |
|-----------------------|--|
| Resolution and Units  | 1%   |
| Range                 | 1 to 100% RH   |
| Accuracy              | ±3% from 1% to 90%; ±5% from 90% to 100%             |
| Update Interval       | 1 minute   |
| Current Display Data  | Instant (user-adjustable offset available)           |
| Current Graph Data    | Instant; Hourly Reading; Daily, Monthly High and Low |
| Historical Graph Data | Hourly Readings; Daily, Monthly Highs and Lows       |
| Alarms                | High and Low Threshold from Instant Reading          |

## Outside Relative Humidity (sensor located in ISS)

|                       |  |
|-----------------------|--|
| Resolution and Units  | 1%   |
| Range                 | 1 to 100% RH   |
| Accuracy              | ±2%  |
| Drift                 | <0.25% per year                                      |
| Update Interval       | 50 seconds to 1 minute                               |
| Current Display Data  | Instant (user-adjustable offset available)           |
| Current Graph Data    | Instant; Hourly Reading; Daily, Monthly High and Low |
| Historical Graph Data | Hourly Readings; Daily, Monthly Highs and Lows       |
| Alarms                | High and Low Threshold from Instant Reading          |

## Extra Outside Relative Humidity (sensor located inside Temperature/Humidity Station)

|                      |   |
|----------------------|---|
| Resolution and Units | 1%  |
| Range                | 1 to 100% RH                                |
| Accuracy             | ±2%   |
| Drift                | <0.25% per year                             |
| Update Interval      | 50 seconds to 1 minute                      |
| Current Display Data | Instant Reading (user adjustable)           |
| Alarms               | High and Low Threshold from Instant Reading |

## Leaf Wetness (requires leaf wetness sensor)

|                       |  |
|-----------------------|--|
| Resolution            | 1  |
| Range                 | 0 to 15  |
| Dry/Wet Threshold     | User-selectable                                      |
| Accuracy              | ±0.5   |
| Update Interval       | 46 to 54 seconds                                     |
| Current Graph Data    | Instant Reading; Daily High and Low; Monthly High    |
| Historical Graph Data | Hourly Readings; Daily Highs and Lows; Monthly Highs |
| Alarms                | High and Low Thresholds from Instant Reading         |

## Moon Phase

|                        |  |
|------------------------|--|
| Console Resolution     | 1/8 (12.5%) of a lunar cycle, 1/4 (25%) of lighted face on console   |
| WeatherLink Resolution | 0.09% of a lunar cycle, 0.18% of lighted face maximum (depends on screen resolution)                               |
| Range                  | New Moon, Waxing Crescent, First Quarter, Waxing Gibbous, Full Moon, Waning Gibbous, Last Quarter, Waning Crescent |
| Accuracy               | ±38 minutes  |

## Rainfall

|                                     |  |
|-------------------------------------|--|
| Resolution and Units                | 0.01" or 0.2 mm (user-selectable) (1 mm at totals ≥ 2000 mm)   |
| Daily/Storm Rainfall Range          | 0 to 99.99" (0 to 999.8 mm)  |
| Monthly/Yearly/Total Rainfall Range | 0 to 199.99" (0 to 6553 mm)  |
| Accuracy                            | For rain rates up to 4"/hr (100 mm/hr): ±4% of total or ± one tip of the bucket (0.01"/0.2mm), whichever is greater.   |
| Update Interval                     | 20 to 24 seconds   |
| Storm Determination Method          | 0.02" (0.5 mm) begins a storm event, 24 hours without further accumulation ends a storm event  |
| Current Display Data                | Totals for Past 15-min   |
| Current Graph Data                  | Totals for Past 15-min, Past 24-hour, Daily, Monthly, Yearly (start date user-selectable) and Storm (with begin date); Umbrella is displayed when 15-minute total exceeds zero |
| Historical Graph Data               | Totals for 15-min, Daily, Monthly, Yearly (start date user-selectable) and Storm (with begin and end dates)  |
| Alarms                              | High Threshold from Latest Flash Flood (15-min. total, default is 0.50", 12.7 mm), 24-Hour Total, Storm Total,   |
| Range for Rain Alarms               | 0 to 99.99" (0 to 999.7 mm)  |

## Rain Rate

|                       |  |
|-----------------------|--|
| Resolution and Units  | 0.01" or 0.1 mm (user-selectable) at typical rates (see Fig. 4 and 5)  |
| Range                 | 0, 0.04"/hr (1 mm/hr) to 96"/hr (0 to 2438 mm/hr)  |
| Accuracy              | ±5% for rates less than 5" per hour (127 mm/hr)  |
| Update Interval       | 20 to 24 seconds   |
| Calculation Method    | Measures time between successive tips of tipping bucket. Elapsed time greater than 15 minutes or only one tip of the rain collector constitutes a rain rate of zero. |
| Current Display Data  | Instant  |
| Current Graph Data    | Instant and 1-min. Reading; Hourly, Daily, Monthly and Yearly High   |
| Historical Graph Data | 1-min Reading; Hourly, Daily, Monthly and Yearly Highs   |
| Alarm                 | High Threshold from Instant Reading  |

## Soil Moisture (requires soil moisture sensor)

|                       |   |
|-----------------------|---|
| Resolution            | 1 cb  |
| Range                 | 0 to 200 cb                                       |
| Update Interval       | 77 to 90 seconds                                  |
| Current Graph Data    | Instant Reading; Daily and Monthly High and Low   |
| Historical Graph Data | Hourly Readings; Daily and Monthly Highs and Lows |
| Alarms                | High and Low Thresholds from Instant Reading      |

**Wireless Vantage Pro2™****Solar Radiation (requires solar radiation sensor)**

|                         |  |
|-------------------------|--|
| Resolution and Units    | 1 W/m <sup>2</sup>   |
| Range                   | 0 to 1800 W/m <sup>2</sup>   |
| Accuracy                | ±5% of full scale (Reference: Eppley PSP at 1000 W/m <sup>2</sup> )  |
| Drift                   | up to ±2% per year   |
| Cosine Response         | ±3% for angle of incidence from 0° to 75°                            |
| Temperature Coefficient | -0.067% per °F (-0.12% per °C); reference temperature = 77°F (25 °C) |
| Update Interval         | 50 seconds to 1 minute (5 minutes when dark)                         |
| Current Graph Data      | Instant Reading and Hourly Average; Daily, Monthly High              |
| Historical Graph Data   | Hourly Average, Daily, Monthly Highs                                 |
| Alarm                   | High Threshold from Instant Reading                                  |

**Sunrise and Sunset**

|            |                                 |
|------------|---------------------------------|
| Resolution | 1 minute                        |
| Accuracy   | ±1 minute                       |
| Reference  | United States Naval Observatory |

**Temperature**

## Inside Temperature (sensor located in console)

|                       |   |
|-----------------------|---|
| Resolution and Units  | Current Data: 0.1°F or 1°F or 0.1°C or 1°C (user-selectable) °C is converted from °F rounded to the nearest 1°C<br>Historical Data and Alarms: 1°F or 1°C (user-selectable) |
| Range                 | +32° to +140°F (0° to +60°C)  |
| Sensor Accuracy       | ±1°F (±0.5°C) (typical) See Fig. 2  |
| Update Interval       | 1 minute  |
| Current Display Data  | Instant (user-adjustable offset available)  |
| Current Graph Data    | Instant Reading; Daily and Monthly High and Low   |
| Historical Graph Data | Hourly Readings; Daily and Monthly Highs and Lows   |
| Alarms                | High and Low Thresholds from Instant Reading  |

## Outside Temperature (sensor located in ISS)

|  |   |
|--|---|
| Resolution and Units                           | Current Data: 0.1°F or 1°F or 0.1°C or 1°C (user-selectable) nominal °C is converted from °F rounded to the nearest 1°C<br>Historical Data and Alarms: 1°F or 1°C (user-selectable) |
| Range  | -40° to +150°F (-40° to +65°C)  |
| Sensor Accuracy                                | ±0.5°F (±0.3°C) See Fig. 1  |
| Radiation Induced Error (Passive Shield)       | +4°F (2°C) at solar noon (insolation = 1040 W/m <sup>2</sup> , avg. wind speed ≤ 2 mph (1 ms)) (reference: RM Young Model 43408 Fan-Aspirated Radiation Shield)                     |
| Radiation Induced Error (Fan-Aspirated Shield) | +0.6°F (0.3°C) at solar noon (insolation = 1040 W/m <sup>2</sup> , avg. wind speed ≤ 2 mph (1 m/s)) (reference: RM Young Model 43408 Fan-Aspirated Radiation Shield)                |
| Update Interval                                | 10 to 12 seconds  |
| Current Display Data                           | Instant (user-adjustable offset available)  |
| Current Graph Data                             | Instant Reading; Daily, Monthly, Yearly High and Low  |
| Historical Graph Data                          | Hourly Readings; Daily, Monthly, Yearly Highs and Lows  |
| Alarms   | High and Low Thresholds from Instant Reading  |

## Extra Temperature Probes

|                      |   |
|----------------------|---|
| Resolution and Units | Current Data: 1°F or 1°C (user-selectable) °C is converted from °F rounded to the nearest 1°C<br>Historical Data and Alarms: 1°F or 1°C (user-selectable) |
| Range                | -40° to +150°F (-40° to +65°C)  |
| Sensor Accuracy      | ±1°F (±0.5°C) (typical) See Fig. 3  |
| Update Interval      | 10 to 12 seconds (77 to 90 seconds for Leaf Wetness/Temperature and Soil Moisture/Temperature Stations)   |
| Current Display Data | Instant Reading (user-adjustable offset available)  |
| Alarms               | High and Low Thresholds from Instant Reading  |

## Temperature Humidity Sun Wind Index (requires solar radiation sensor)

|                              |   |
|------------------------------|---|
| Resolution and Units         | 1°F or 1°C (user-selectable) °C is converted from °F rounded to the nearest 1°C   |
| Range                        | -90° to +165°F (-68° to +74°C)  |
| Accuracy                     | ±4°F (±2°C) (typical)   |
| Update Interval              | 10 to 12 seconds  |
| Sources and Formulation Used | United States National Weather Service (NWS)/NOAA Steadman (1979) modified by US NWS/NOAA and Davis Instruments to increase range of use and allow for cold weather use |
| Variables Used               | Instant Outside Temperature, Instant Outside Relative Humidity, 10-minute Average Wind Speed, 10-minute Average Solar Radiation   |
| Formulation Description      | Uses Heat Index as base temperature, affects of wind and solar radiation are either added or subtracted from this base to give an overall effective temperature         |
| Current Graph Data           | Instant and Hourly Calculation; Daily, Monthly High   |
| Historical Graph Data        | Hourly Calculation; Daily, Monthly Highs  |
| Alarm                        | High Threshold from Instant Reading   |

## Ultra Violet (UV) Radiation Dose (requires UV sensor)

|                       |  |
|-----------------------|--|
| Resolution and Units  | 0.1 MEDs to 19.9 MEDs; 1 MED above 19.9 MEDS                                       |
| Range                 | 0 to 199 MEDs  |
| Accuracy              | ±5% of daily total   |
| Drift                 | up to ±2% per year   |
| Update Interval       | 50 seconds to 1 minute (5 minutes when dark)                                       |
| Current Graph Data    | Latest Daily Total (user resettable at any time from Current Screen)               |
| Historical Graph Data | Hourly, Daily Totals (user reset from Current Screen does not affect these values) |
| Alarm                 | High Threshold from Daily Total  |
| Alarm Range           | 0 to 19.9 MEDs   |

## Ultra Violet (UV) Radiation Index (requires UV sensor)

|                       |   |
|-----------------------|---|
| Resolution and Units  | 0.1 Index   |
| Range                 | 0 to 16 Index   |
| Accuracy              | ±5% of full scale (Reference: Yankee UVB-1 at UV index 10 (Extremely High)) |
| Cosine Response       | ±4% FS (0° to 90° zenith angle)   |
| Update Interval       | 50 seconds to 1 minute (5 minutes when dark)                                |
| Current Graph Data    | Instant Reading and Hourly Average; Daily, Monthly High                     |
| Historical Graph Data | Hourly Average, Daily, Monthly Highs  |
| Alarm                 | High Threshold from Instant Calculation                                     |

**Wind**

## Wind Chill (Calculated)

|                       |   |
|-----------------------|---|
| Resolution and Units  | 1°F or 1°C (user-selectable) °C is converted from °F rounded to the nearest 1°C |
| Range                 | -110° to +135°F (-79° to +57°C)   |
| Accuracy              | ±2°F (±1°C) (typical)   |
| Update Interval       | 10 to 12 seconds  |
| Source                | United States National Weather Service (NWS)/NOAA                               |
| Equation Used         | Osczevski (1995) (adopted by US NWS in 2001)                                    |
| Variables Used        | Instant Outside Temperature and 10-min. Avg. Wind Speed                         |
| Current Display Data  | Instant Calculation   |
| Current Graph Data    | Instant Calculation; Hourly, Daily and Monthly Low                              |
| Historical Graph Data | Hourly, Daily and Monthly Lows  |
| Alarm                 | Low Threshold from Instant Calculation  |

## Wind Direction

|                       |   |
|-----------------------|---|
| Range                 | 0 - 360°  |
| Display Resolution    | 16 points (22.5°) on compass rose, 1° in numeric display                        |
| Accuracy              | ±3°   |
| Update Interval       | 2.5 to 3 seconds  |
| Current Display Data  | Instant (user-adjustable offset available)                                      |
| Current Graph Data    | Instant; 10-min. Dominant; Hourly, Daily, Monthly Dominant                      |
| Historical Graph Data | Past 6 10-min. Dominants on compass rose only; Hourly, Daily, Monthly Dominants |

## Wind Speed

|                       |  |
|-----------------------|--|
| Resolution and Units  | 1 mph, 1 km/h, 0.4 m/s, or 1 knot (user-selectable). Measured in mph, other units are converted from mph and rounded to nearest 1 km/hr, 0.1 m/s, or 1 knot. |
| Range                 | 0 to 200 mph, 0 to 173 knots, 0 to 89 m/s, 0 to 322 km/h   |
| Update Interval       | Instant Reading: 2.5 to 3 seconds, 10-minute Average: 1 minute   |
| Accuracy              | ±1 mph (1 kts, 1.5 km/h, 0.5 m/s) or ±5%, whichever is greater   |
| Maximum Cable Length  | 240 feet (73 m) (See note on page 1)   |
| Current Display Data  | Instant  |
| Current Graph Data    | Instant; 10-minute and Hourly Average; Hourly High; Daily, Monthly and Yearly High with Direction of High  |
| Historical Graph Data | 10-min. and Hourly Averages; Hourly Highs; Daily, Monthly and Yearly Highs with Direction of Highs   |
| Alarms                | High Thresholds from Instant Reading and 10-minute Average   |

**Wireless Communications**

## Transmit/Receive Frequency

|              |                          |
|--------------|--------------------------|
| US Models    | 902 - 928 MHz FHSS,      |
| EU Models    | 868.0 - 868.6 MHz FHSS   |
| Japan Models | 928.15 - 929.65 MHz FHSS |
| NZ Models    | 921 - 928 MHz FHSS       |
| India Models | 865.0 - 867.0 MHz FHSS   |

ID Codes Available . . . . . 8

## Output Power

|              |  |
|--------------|--|
| US Models    | 902 - 928 MHz FHSS: FCC-certified low power, less than 8 mW, no license required |
| EU Models    | 868.0 - 868.6 MHz FHSS. CE-certified, less than 8 mW, no license required.       |
| Japan Models | 928.15 - 929.65 MHz FHSS, less than 1 mW, no license required.                   |
| NZ Models    | 921- 928 MHz FHSS, less than 10mW, no license required.                          |
| India Models | 865.0 - 867.0 MHz, less than 10mW, no license required.                          |

## Range: All models except Japan

|               |                               |
|---------------|-------------------------------|
| Line of Sight | up to 1000 feet (300 m)       |
| Through Walls | 200 to 400 feet (60 to 120 m) |

## Range: Japan models

|               |                            |
|---------------|----------------------------|
| Line of Sight | up to 300 feet (100 m)     |
| Through Walls | 50 to 200 feet (15 to 60m) |

## Sensor Inputs

|              |  |
|--------------|--|
| RF Filtering | RC low-pass filter on each signal line |
|--------------|--|



Sensor Charts

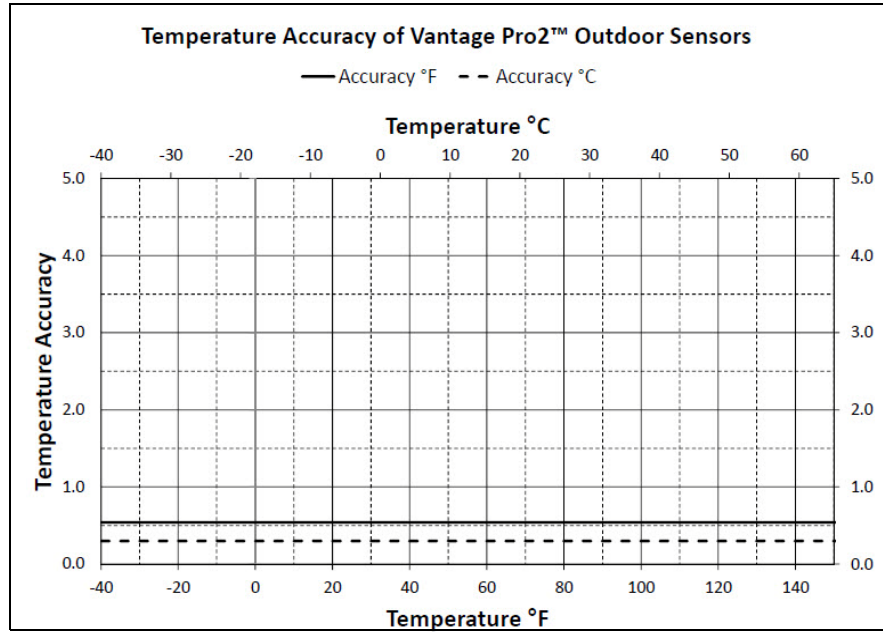


Figure 1. Temperature Accuracy of Vantage Pro2 ISS Sensors

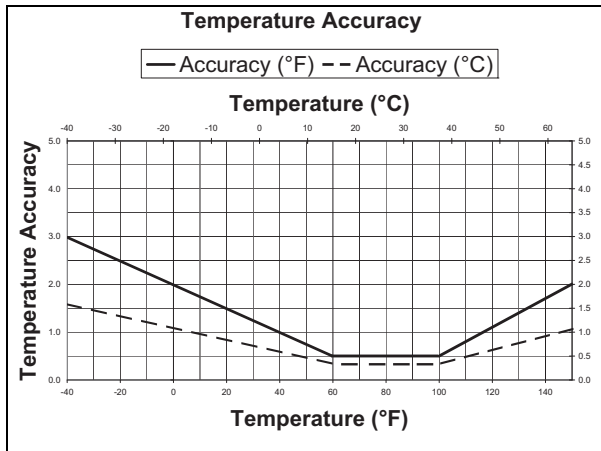


Figure 2. Inside Temperature Accuracy

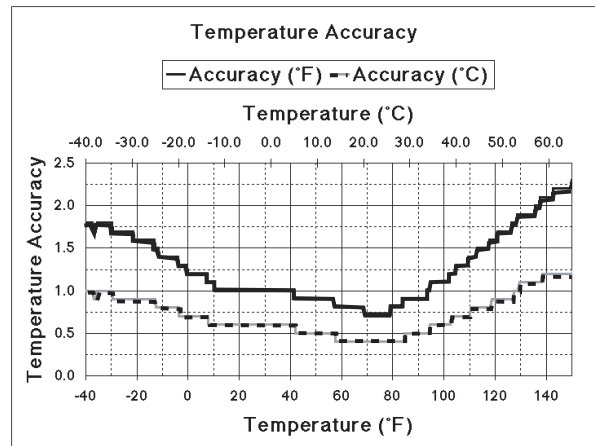


Figure 3. External Temperature Probe Accuracy

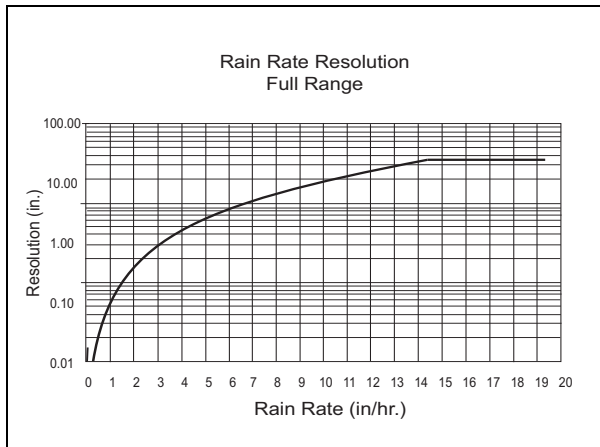


Figure 4. Low Range Rain Rate Resolution

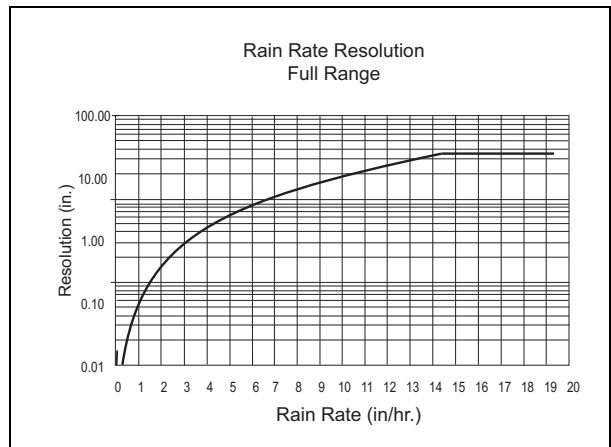


Figure 5: Full Range Rain Rate Resolution

## Package Dimensions

| Product #                | Package Dimensions<br>(Length x Width x Height)      | Package Weight          | UPC Codes  |
|--------------------------|--|-------------------------|--|
| 6152<br>6152EU<br>6152UK | 17.50" x 10.4" x 16.0"<br>(445 mm x 264 mm x 406 mm) | 11 lbs. 13 oz. (5.4 kg) | 011698 00229 0<br>011698 00347 1<br>011698 00348 8 |
| 6162<br>6162EU<br>6162UK |  | 11 lbs. 15 oz. (5.4 kg) | 011698 00306 8<br>011698 00307 5<br>001698 00308 2 |
| 6153<br>6153EU<br>6153UK | 14.9 x 12.9" x 23.4"<br>(378 mm x 327 mm x 594 mm)   | 16 lbs. 11 oz. (7.6 kg) | 011698 00335 8<br>011698 00336 5<br>001698 00337 2 |
| 6163<br>6163EU<br>6163UK |  | 17 lbs. 5 oz. (7.9 kg)  | 011698 00341 9<br>011698 00342 6<br>001698 00342 3 |
| 6322<br>6322OV           | 17.50" x 10.4" x 16.0"<br>(445 mm x 264 mm x 406 mm) | 9 lbs.. 1 oz. (4.1 kg)  | 011698 00776 9<br>011698 00778 3                   |
| 6327<br>6327OV           |  | 11 lbs. 1 oz. (5.0 kg)  | 011698 00781 3<br>011698 00783 7                   |
| 6323<br>6323OV           | 14.9" x 12.9" x 23.4"<br>(378 mm x 327 mm x 594 mm)  | 15 lbs. 15 oz. (7.2 kg) | 011698 00779 0<br>011698 00780 6                   |
| 6328<br>6328OV           |  | 16 lbs. 8 oz. (7.5 kg)  | 011698 00784 4<br>011698 00785 1                   |
| 6312<br>6312EU<br>6312UK | 12.6" x 9.3" x 2.5"<br>(320 mm x 235 mm x 64 mm)     | 2 lbs. 10 oz. (1.2 kg)  | 011698 00724 0<br>011698 00766 0<br>011698 00767 7 |