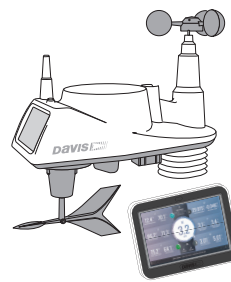


Vantage Vue[®] Weather Station with WeatherLink Console



6242 **6357**
6313

VANTAGE VUE[®]

The Vantage Vue (#6242) wireless weather station includes two components: the Sensor Suite (#6357) which houses and manages the external sensor array, and the WeatherLink[®] Console (#6313) which provides the user interface, data display, and calculations, as well as the option to upload data to WeatherLink.com. The Vantage Vue sensor suite and console communicate via an FCC-certified, license-free frequency-hopping transmitter and receiver. Frequency-hopping spread-spectrum (FHSS) technology provides greater communication strength over longer distances and areas of weaker reception. User-selectable transmitter ID codes allow up to eight stations to coexist in the same geographic area. The WeatherLink Console can receive and display data from up to eight Davis transmitters, including Vantage Pro2™ or Vantage Pro2 Plus sensor suites. The WeatherLink Console is powered with an included AC-power adapter with backup battery. The wireless sensor suite is solar-powered with a battery backup.

The Vantage Vue station relies on passive shielding to reduce solar-radiation induced temperature errors in the outside temperature sensor readings.

Integrated Sensor Suite (ISS)

Operating Temperature	-40° to +150°F (-40° to +65°C)
Non-operating (Storage) Temperature	-40° to +158°F (-40° to +70°C)
Current Draw	0.20 mA (average), 30 mA (peak) at 3.3 VDC
Solar Power Panel	0.5 Watts
Battery	CR-123 3-Volt Lithium cell
Battery Life (3-Volt Lithium cell)	8 months without sunlight - greater than 2 years depending on solar charging
Wind Speed Sensor	Wind cups with magnetic detection
Wind Direction Sensor	Wind vane with magnetic encoder
Rain Collector Type	Tipping spoon, 0.01" per tip (0.2 mm with metric rain cartridge, Part No. 7345.319), 18.0 in ² (116 cm ²) collection area
Temperature Sensor Type	PN Junction Silicon Diode
Relative Humidity Sensor Type	Film capacitor element
Housing Material	UV-resistant ABS & ASA plastic
ISS Dimensions	12.95" x 5.75" x 13.40" (329 mm x 146 mm x 340 mm)
Package weight:	5.44 lbs (2.47 kg)

WeatherLink Console

(Product number 6313)

Console Operating Temperature	+32° to +122°F (0° to +50°C)
Non-Operating (Storage) Temperature	-4° to +140°F (-20° to +60°C)
Current Draw	1.3 A max; 500 mA average (depending on battery charging state and Console brightness)
AC Power Adapter	5 VDC, 2000 mA
Power Adapter Connector	USB-C
Battery Backup	Lithium Polymer
Backup Battery Life (no AC power)	About 14 hours depending Energy Saver Mode settings
Housing Material	ABS plastic
Console Display Type	In-Plane Switching LCD with LED backlight
Console Dimensions	
Console (L x H x D)	8.25" x 6" x 0.75" (210 mm x 152 mm x 19 mm)
Display (L x H)	6.75" x 4.25" (171 mm x 107 mm)
Weight	1.1 lbs. (491 g)



Data Displayed on Console

General

Display Screen	Current reading for selected weather variables. 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
Tabs	
Current Weather Home Tab	Details of current weather including sunrise and sunset, daily highs, lows and averages. See historical data and forecasts for hourly, 7-day, monthly, and annual.
Graph Tab	Graphs of weather data from selected sensors over a selected time period
Data Tab	Archived (or historical) data over any selected day.
Map Tab	See conditions and details for stations worldwide
Account Tab	Account information, console configuration (including console name, stations and sensors), display customization, console settings, alarms, device information
Operating System Update	Console and operating system are both updated automatically at 3:00 am local time when they become available.
Alarm Indication	Console will show an alarm icon and play an audible alarm (if you choose) when alarm thresholds are met. Alarms will go off automatically after one minute or can be silenced by tapping the Off Alarm icon.
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 1100.0 hPa/mb
Sensor Installation Elevation Maximum	Up to +15,000' (4570 m)
Sea-Level Reduction Equation Used	Altimeter
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 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
Alarms	High and Low Threshold for Sea-Level Barometer and Absolute Barometer High Threshold from Current Trend for Storm Clearing (Rising Trend) 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

Source & Accuracy	On Wi-Fi in online mode: Network Time Protocol, converted from Universal Time, updated continuously In offline mode: ±8 seconds/month
Resolution	1 minute
Units	Time: 12 or 24 hour format (user-selectable)
Date	US or International format (user-selectable)
Adjustments	Time: Automatic Time Zone and Daylight Saving Time for your location as set on the map Date: Automatic Leap Year
Alarms	One per day

Dewpoint (calculated)

Resolution and Units	1°F or 1°C (user-selectable)
Range	-105° to +150°F (-76° to +65°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.....	Current Outside Temperature and current Outside Relative Humidity
Alarms	High and Low Threshold

Evapotranspiration (calculated, requires Vantage Pro2 ISS with solar radiation sensor)

Resolution and Units	0.01" or 0.001", or 0.1 mm (user-selectable)
Range	Daily to 0.255" (6.5mm); Monthly & Yearly to 65.535" (1664.6 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
<u>Display Screen</u>	Latest Total Calculation for daily, last 7 days, monthly, or yearly
Data Tab	Latest Hourly Total Calculation
Alarm	High Threshold from Latest Daily Total Calculation

Forecast

Online Forecast	Provided by CustomWeather
Offline Forecast	Classic Davis algorithm Variables used: Barometric Reading & Trend, Wind Speed & Direction, Rainfall, Temperature, Humidity, Latitude & Longitude, Time of Year Variables Predicted: Sky Condition, Precipitation, Temperature Changes, Wind Direction and Speed
Online Update Interval	6 hours
Offline Update Interval	1 hour

Heat Index (calculated)

Resolution and Units	1°F or 1°C (user-selectable)
Range	-40° to +200°F (-40° to +93°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.....	Current Outside Temperature and current Outside Relative Humidity
Alarm	High Threshold from current Calculation

Humidity

Inside Relative Humidity (sensor located in console)

Resolution and Units	0.1% or 1% (user selectable)
Range	0.1 to 100.0% RH
Accuracy	±2%
Update Interval	1 minute
Calibration Available	User-adjustable offset (±20.0%) available
Alarms	High and Low Threshold from Current Reading

Outside Relative Humidity (sensor located in sensor suite)

Resolution and Units	0.1% or 1% (user selectable)
Range	0.1 to 100.0% RH
Accuracy	±2%
Drift	<0.25% per year
Update Interval	50 seconds to 1 minute
Calibration Available	User-adjustable offset (±20.0%) available
Alarms	High and Low Threshold from Current Reading

Moon Phase

Console Resolution	1/8 (12.5%) of a lunar cycle, 1/4 (25%) of lighted face on console
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 10"/hr (250 mm/hr): ±3% of total or ± one tip of the spoon (0.01"/0.2mm), whichever is greater.
Update Interval	20 to 24 seconds
Storm Determination Method	0.02" (0.4 mm) begins a storm event, 24 hours without further accumulation ends a storm event
Current Display Data	Totals for last 15-min, last one hour, last 24 hours, daily, last seven days, monthly, yearly, current rain storm, last storm total
Alarms	Thresholds for 15 minute rain total, 60 minute rain total, 24 hour rain total, current rain storm, and last rain storm
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) (See Figure 1 on page 9)
Range	0, 0.04"/hr (1 mm/hr) to 30"/hr (0 to 762 mm/hr)
Accuracy	±5% for rain rates up to 10"/hr (250 mm/hr)
Update Interval	20 to 24 seconds
Calculation Method	Measures time between successive tips of tipping spoon. Elapsed time greater than 15 minutes or only one tip of the rain collector constitutes a rain rate of zero.
Alarm	High Threshold for current and 15 minute rain rate

Solar Radiation (requires Vantage Pro2 ISS with solar radiation sensor)

Resolution and Units	1 W/m ²
Range	0 to 1800 W/m ²
Accuracy	±5% of full scale (Reference: Eppley PSP at 1000 W/m ²)
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)
Alarm	High Threshold from Current 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	0.1 or 1°F or °C (user-selectable)
Range	+32° to +122°F (0° to +50°C)
Sensor Accuracy	±0.4°F (±0.2°C)
Update Interval	1 minute
Calibration Available	User-adjustable offset (±20.0°F/11.0°C) available
Alarms	High and Low Thresholds from Current Reading

Outside Temperature (sensor located in ISS)

Resolution and Units	0.1 or 1°F or °C (user-selectable)
Range	-40° to +150°F (-40° to +65°C)
Sensor Accuracy	±0.5°F (±0.3°C)
Radiation Induced Error (Passive Shield)	+4°F (2°C) at solar noon (insolation = 1040 W/m ² , avg. wind speed ≤ 2 mph (1 ms)) (reference: RM Young Model 43408 Fan-Aspirated)
Update Interval	10 to 12 seconds
Calibration Available	User-adjustable offset (±20.0°F/11.0°C) available
Alarms	High and Low Thresholds from Current Reading

Temperature Humidity Sun Wind Index (THSW, requires Vantage Pro2 sensor suite with solar radiation sensor)

Resolution and Units	0.1 or 1°F or °C (user-selectable)
Range	-110° to +200°F (-79° to +93°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, effects of wind and solar radiation are either added or subtracted from this base to give an overall effective temperature
Alarm	High Threshold from Current Reading

Temperature Humidity Wind Index (THW)

Resolution and Units	0.1 or 1°F or °C (user-selectable)
Range	-110° to +200°F (-79° to +93°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, effects of wind is either added or subtracted from this base to give an overall effective temperature
Alarm	High and Low Threshold from Current Reading

Ultra Violet (UV) Radiation Index (requires Vantage Pro2 sensor suite with UV sensor)

UV Dose

Resolution and Units	0.1 or 0.01 MEDs (user selectable)
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)
Alarm	High Threshold from Daily Total
Alarm Range	0 to 19.9 MEDs

UV Index

Resolution and Units	0.1 or 1 Index (user selectable)
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)
Alarm	High Threshold from Current Calculation

Wet Bulb (calculated)

Resolution and Units	0.1 or 1°F or °C (user-selectable)
Range	-40° to +150°F (-40° to +65°C)
Accuracy	±2°F (±1°C) (typical)
Update Interval	10 to 12 seconds
Source	NOAA
Variables Used	Current Outside Temperature and Current Outside Relative Humidity
Alarms	High and Low Threshold

Wind

Wind Chill (Calculated)

Resolution and Units	1°F or 1°C (user-selectable)
Range	-110° to +150°F (-79° to +65°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	Current Outside Temperature and 10-min. Avg. Wind Speed
Alarm	Low Threshold from current Calculation

Wind Direction

Range	1 - 360°
Display Resolution	16 points (i.e. SSW) and also 1° in numeric display on compass rose
Accuracy	±3°
Update Interval	2.5 to 3 seconds
Calibration Available	User adjustable

Wind Speed

Resolution and Units	1 mph or 0.1 mph, 1 km/h or 0.1 km/h, 1 m/s, or 0.1 m/s, or 1 knot or 0.1 knot (user-selectable)
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	±2 mph (2 kts, 3.2 km/h, 0.9 m/s) or ±5%, whichever is greater
Maximum Cable Length	240 feet (73 m) (See note on page 1)
Alarms	High Thresholds for Current Reading and 2- and 10-minute Averages

Wireless Communication Specifications

Transmit/Receive Frequency Range and Power Output:

REGION	FREQUENCY RANGE & POWER OUTPUT
USA	902 - 928 MHz FHSS, <10 mW
EU	868.0 - 868.6 MHz FHSS, <10 mW
Australia, Brazil	918 - 926 MHz FHSS, <10 mW
New Zealand, Peru	921 - 928 MHz FHSS, <10 mW
India	865 - 867 MHz FHSS, <10 mW
Taiwan, Pakistan	920 - 925 MHz FHSS, <10 mW

Transmitter ID codes: 8 user-selectable

License: Low power (less than 10 mW), no license required

Range:

Line of Sight up to 1000 feet (300 m)

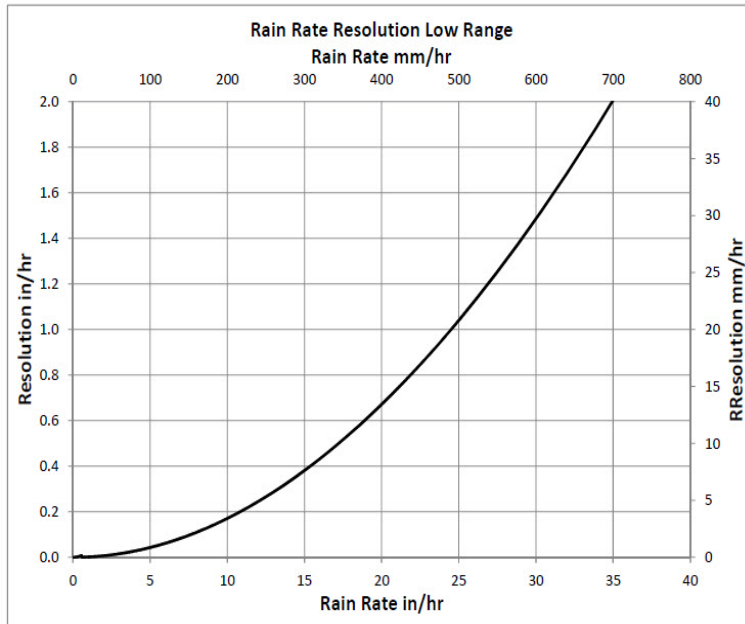
Through Walls 200 to 400 feet (60 to 120 m)

Sensor Inputs

RF Filtering RC low-pass filter on each signal line

Sensor Charts

Figure1: Rain Rate Resolution



Package Dimensions

Product #	Package Dimensions (Length x Width x Height)	Package Weight	UPC Codes
6242 Complete Station	18.00" x 7.25" x 15.13" (45.7 cm x 18.4 cm x 38.4 cm)	6.2 lbs (2.8 kg)	011698015191
6242AU			011698015481
6242EU			011698015238
6242UK			011698009176
6242USB			011698015177
6313	13.7" x 7" x 2.5" (348 mm x 178 mm x 64 mm)	2 lbs. (0.9 kg)	011698015146
6313EU			011698015153
6313UK			011698015160
6313USB			011698015177
6357 ISS	18.00" x 7.25" x 15.13" (45.7 cm x 18.4 cm x 38.4 cm)	4.50 lbs (2.04 kg)	011698009145
6357OV			011698009237
6357M			011698009220