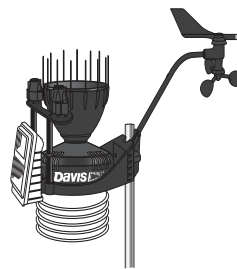


Vantage Pro2™ GroWeather®



6820
6820C

GroWeather wireless and cabled weather stations include an Integrated Sensor Suite (ISS) which houses and manages the external sensor array. The wireless ISS communicates 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 cabled sensor suite communicates via cable.

The temperature and humidity sensors are shielded with both passive shielding and a solar-powered fan that draws outside air in over the sensors, providing a much more accurate temperature reading than that available using passive shielding alone.

The ISS also includes a Solar Radiation Sensor to provide accurate evapotranspiration calculations.

General

Operating Temperature	.....-40° to +150°F (-40° to +65°C)
Non-operating Temperature	.....-40° to +158°F (-40° to +70°C)
Wireless	
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)
Battery (ISS SIM)	.....CR-123 3-Volt Lithium cell
Battery Life (3-Volt Lithium cell)	.....8 months without sunlight - greater than 2 years depending on solar charging
Cabled	
Current Draw (ISS SIM only)	.....5 mA (average) at 4 to 6 VDC
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)

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).

Wind Speed Sensor	.....Solid state magnetic sensor
Wind Direction Sensor	.....Wind vane with potentiometer
Rain Collector Type	.....Tipping spoon, 0.01" per tip for US versions (0.2 mm for metric versions), 33.2 in ² (214 cm ²) collection area
Temperature Sensor Type	.....PN Junction Silicon Diode
Relative Humidity Sensor Type	.....Film capacitor element
Housing Material	.....UV-resistant ABS
ISS Dimensions	
(not including anemometer or bird spikes)	.....14.3" x 9.7" x 14.5" (363 mm x 246 mm x 368 mm)

Sensors

Relative Humidity (Outside)

Resolution1%
Range1 to 100% RH
Accuracy±2%
Drift<0.25% per year

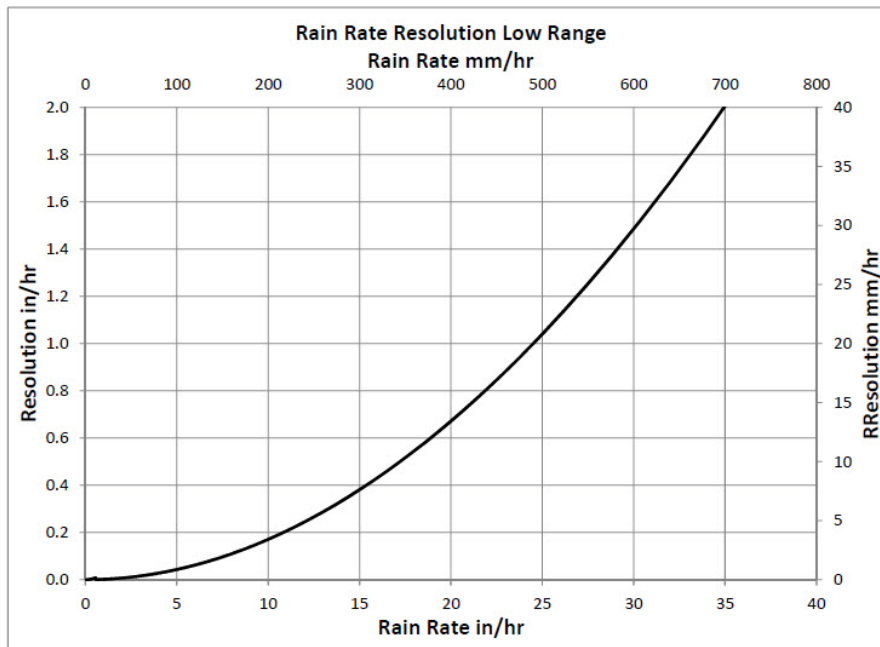
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Rainfall

Resolution 0.01" or 0.2 mm (user-selectable) (1 mm at totals \geq 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): \pm 3% of total or one tip of the spoon (0.01"/0.2mm), whichever is greater
 Update Interval 20 to 24 seconds

Rain Rate

Resolution and Units 0.01" or 0.1 mm (user-selectable) at typical rates (see below)



Range 0, 0.04"/hr (1 mm/hr) to 30"/hr (0 to 762 mm/hr)
 Accuracy \pm 5% for rates up to 10"/hour (250 mm/hour)
 Update Interval 20 to 24 seconds

Solar Radiation

Resolution and Units 1 W/m²
 Range 0 to 1800 W/m²
 Accuracy \pm 5% of full scale (Reference: Eppley PSP at 1000 W/m²)
 Drift up to \pm 2% per year
 Cosine Response \pm 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)

Temperature (Outside)

Resolution 0.1°F or 1°F or 0.1°C or 1°C nominal
 °C is converted from °F rounded to the nearest 1°C
 Range -40° to +150°F (-40° to +65°C)
 Sensor Accuracy \pm 0.5°F (\pm 0.3°C)
 Radiation Induced Error (Passive Shield) +4°F (2°C) at solar noon (insolation = 1040 W/m², avg. wind speed \leq 2 mph (1 m/s) (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/m², avg. wind speed \leq 2 mph (1 m/s)) (reference: RM Young Model 43408 Fan-Aspirated Radiation Shield)
 Update Interval 10 to 12 seconds

Wind

Wind Direction

- Range 1 - 360°
- Display Resolution 16 points (22.5°) on compass rose, 1° in numeric display
- Accuracy ±3°
- Update Interval 2.5 to 3 seconds

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 ±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)

Wireless Communications (wireless versions only)

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
- Russia Models 868.7 - 869.2 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.
- Russia Models 868-7- 869.2MHz, less than 8 mW, 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

Package Dimensions

Product #	Package Dimensions (Length x Width x Height)	Package Weight	UPC Codes
6820 6820OV	17.5" x 10.63" x 16" (L x W x H) (445 mm x 270 mm x 406 mm)	11 lbs 1 oz. (5.0 kg)	011698012770 011698012794
6820C 6820CM	17.5" x 10.63" x 16" (L x W x H) (445 mm x 270 mm x 406 mm)	11 lbs 2 oz. (5.1 kg)	011698012787 011698012817