

## I. Accuracy, Resolution and Range

Excellent	Very Good	Good	N/A or ?
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**Accuracy** is the ability of a measurement to match the actual value of the quantity being measured

**Resolution** is the number of significant digits (decimal places) to which a value is being reliably measured

**Range** is the amount or extent a value can be measured

Weather Station	Spec	Wind Speed (mph)	Wind Direction (°)	Outdoor Temperature (°F)	Indoor Temperature (°F)	Water Temperature (°F)	Outdoor Humidity (%)	Indoor Humidity (%)	Barometric Pressure ("Hg)	Rainfall (in)	UV	Solar Radiation (W/m <sup>2</sup> )
Davis Vantage Pro2	Resolution	1	1	0.1	0.1	1	1	1	0.01	0.01	0.1	1
	Range	2 - 150	0-360	-40 to 140	-32 to 140	-50 to 140	0 to 100	10 to 90	18 to 33.5	0 to 99.99	0 to 16	0 to 1800
	Accuracy +/-	2 or 5%	7	1	1	1	3	5	0.03	4%	5%	5%
Davis Weather Monitor II	Resolution	1 mph	1	0.1	0.1	N/A	1	1	0.01	0.01	N/A	N/A
	Range	2 - 175	0-360	-50 to 140	32 to 140	N/A	0 to 100	10 to 90	18 to 33.5	0 to 99.99	N/A	N/A
	Accuracy +/-	5%	7	1	1	N/A	3	5	0.05	4%	N/A	N/A
Oregon Scientific WM-918	Resolution	1	1	0.2	0.2	N/A	1	1	0.03	0.04	N/A	N/A
	Range	2 - 125	0-360	-40 to 140	32 to 122	N/A	10 to 97	10 to 97	23.5 to 31.0	0 to 394	N/A	N/A
	Accuracy +/-	10%	8	2 to 6	2 to 4	N/A	6 to 10	6 to 10	0.21	5%	N/A	N/A
Oregon Scientific WMR-968	Resolution	1	1	0.2	0.2	0.2	1	1	0.03	0.04	N/A	N/A
	Range	2 - 125	0-360	-58 to 158	-58 to 158	-58 to 158	2 to 96	2 to 96	17.72 to 31.0	0 to 394	N/A	N/A

Weather Station	Spec	Wind Speed (mph)	Wind Direction (°)	Outdoor Temperature (°F)	Indoor Temperature (°F)	Water Temperature (°F)	Outdoor Humidity (%)	Indoor Humidity (%)	Barometric Pressure ("Hg)	Rainfall (in)	UV	Solar Radiation (W/m <sup>2</sup> )
WMR-968 Oregon Scientific WMR-112A	Accuracy +/-	10%	8	2 to 6	2 to 6	4 to 6	6 to 7	6 to 7	0.21	5%	N/A	N/A
Oregon Scientific WMR-100	Resolution	1	22.5	0.1	0.1	0.1	1	1	0.01	0.04	N/A	N/A
	Range	2 - 125	0-360	-58 to 158	-4 to 148	-58 to 158	2 to 98	2 to 98	20.67 to 31.01	0 to 394		
	Accuracy +/-	10%	?	2 to 6	2 to 4	2 to 6	5 to 7	5 to 7	0.29	7%		
Rainwise MKIII	Resolution	1	22.5	0.1	0.1	N/A	1	N/A	0.01	0.01	N/A	N/A
	Range	2 - 150	0-360	-66 to 166	-40 to 127	N/A	0 to 100	N/A	16.3 to 32.0	none	N/A	N/A
	Accuracy +/-	2%	?	2	2	N/A	2	N/A	0.05	2%	N/A	N/A
Campbell Scientific WeatherHawk	Resolution	1	1	0.1	N/A	N/A	1	N/A	0.01	0.04	N/A	1
	Range	2 - 220	0 to 360	-40 to 150	N/A	N/A	0 to 100	N/A	4.4 to 34.0	none	N/A	0 to 1000
	Accuracy +/-	?	8	1	N/A	N/A	3 to 5	N/A	0.12	?	N/A	2%
Lacrosse Technology WS2010, WS2210	Resolution	1	1	0.1	0.1	0.1	1	1	0.01	0.015	N/A	N/A
	Range	2 - 125	0 to 360	-22 to 158	-32 to 158	-22 to 158	20 to 95	20 to 95	23.6 to 32.5	0 to 157	N/A	N/A
	Accuracy +/-	3%	?	2	2	2	4	4	0.03	2%	N/A	N/A
La Crosse Technology 2310, 2315	Resolution	0.1	22.5	0.2	?	N/A	1	?	0.01	?	N/A	N/A
	Range	2 - 111	0 to 360	-21 to 157	?	N/A	20 to 95	?	8.85 to 32.5	0 to 98	N/A	N/A
	Accuracy +/-	?	?	2	?	N/A	4	?	?	?	N/A	N/A
La Crosse Technology 2310, 2315	Resolution	0.1	22.5	0.1	0.1	N/A	1	1	0.003	0.02	N/A	N/A

Weather Station	Spec	Wind Speed (mph)	Wind Direction (°)	Outdoor Temperature (°F)	Indoor Temperature (°F)	Water Temperature (°F)	Outdoor Humidity (%)	Indoor Humidity (%)	Barometric Pressure ("Hg)	Rainfall (in)	UV	Solar Radiation (W/m <sup>2</sup> )
Technology WS-3600 series	Range	2 - 111	0 to 360	-40 to 140	14.2 to 140	N/A	1 to 99	1 to 99	8.86 to 32.45	0 to 394	N/A	N/A
	Accuracy +/-	?	?	?	?	N/A	?	?	?	?	N/A	N/A
Peet Bros Ultimeter 2000	Resolution	1	22.5	1	1	N/A	1	1	0.01	0.01	N/A	N/A
	Range	0 - 170	0 to 360	-55 to 150	32 to 110	N/A	0 to 100	0 to 100	27.5 to 31.5 <sup>1</sup>	none	N/A	N/A
	Accuracy +/-	2%	?	2	2	N/A	5	5	0.05	?	N/A	N/A
Maximum WeatherMax	Resolution	1	22.5	0.1	0.1	N/A	1	1	0.01	0.01	N/A	N/A
	Range	2 - 225	0 to 360	-40 to 122	50 to 122	N/A	10 to 90	20 to 90	28 to 32 <sup>1</sup>	0 to 99	N/A	N/A
	Accuracy +/-	2%	11.25	2	2	N/A	8	8	0.08	?	N/A	N/A
Texas Weather Instruments Weather Report	Resolution	1	22.5	0.1	0.1	0.1	1	?	0.01	?	N/A	?
	Range	0 - 170	0 to 360	-70 to 140	-70 to 140	-70 to 140	0 to 100	?	28 to 32 <sup>1</sup>	0 to 999	N/A	?
	Accuracy +/-	2%	?	2	2	2	3	?	1%	?	N/A	?
Columbia Weather Systems	Resolution	1	22.5	0.01	1	1	1	1	0.01	0.01	N/A	?
	Range	0 to 125	0 to 360	-67 to 257	0 to 100	0 to 100	0 to 100	0 to 100	27 to 34 <sup>1</sup>	none	N/A	0 to 2000
	Accuracy +/-	1 to 5%	?	1	3	3	3	3	0.03	1%	N/A	10%
Honeywell TE923W	Resolution	2	22.5	0.2	0.2	0.2	1	1	0.003	?	0.1	N/A
	Range	0 to 200	0 to 360	-40 to 176	14.2 to 140	-40 to 176	0 to 99	0 to 99	14.75 to 32.44	0 to 787	0 to 36	N/A
	Accuracy +/-	1 to 5%	11.25	2	2	2	5	5	0.015	?	10%	N/A

Note: Specifications are to the best of our knowledge. Any errors or omissions are unintentional. Some sensors sold separately.

<sup>1</sup> Corrected to sea-level pressure. Raw pressure and altitude range unknown



## II. Wireless Range

All wireless transmission ranges listed in the following table are line of site, unless otherwise stated. Standard construction walls can reduce the transmission distance by as much as 50%.

Metal enclosures (trailers), aluminum siding, reflective insulation materials, water (rain), reflective window treatments, and radio interference can greatly degrade the wireless transmission signal.

Weather Station	Transmission Frequency	Distance	With Repeater(s) or High Gain Antenna
Oregon Scientific WMR-968 Oregon Scientific WMR-112A	433 MHz	Outdoor Sensors: 300'	Outdoor Sensors: 600'
		Indoor Sensors: 100'	Indoor Sensors: 400'
Oregon Scientific WMR-100	433 MHz	330'	N/A
La Crosse Technology WS-2010, 2210	433 MHz	330'	630'
La Crosse Technology WS-2310, 2315	433 MHz	100'	N/A
La Crosse Technology WS-3600 series	433 MHz	330'	N/A
Davis Vantage Pro2 Davis Vantage Pro2 Plus	868.0-868.8 MHz (Europe) 902-928 MHz (North America)	1000'	2000' (one repeater) – 5000' (long range repeater)
Honeywell TE923W	433 MHz	328'	N/A
Rainwise MKIII	418 MHz	433 <sup>1</sup>	N/A
WeatherHawk	2.4 GHz	0.25 miles	3.0 miles
	916/922 MHz	0.50 miles	5.5 miles

<sup>1</sup> Through walls

### III. Wired Range (Cable Length)

Wired or cabled weather stations in general use CAT5 cable with standard RJ11 or RJ45 cable. Thus, it is similar to running telephone wire. It is recommended that all exposed wire run in conduit.

Weather Station	Cable Length	With Cable Extension Kits
Oregon Scientific WM-918	30'	<sup>1</sup> See Footnote
Davis Vantage Pro2 Davis Vantage Pro2 Plus	Sensor Suite: 100' Anemometer: 140'	Sensor Suite: 300' Anemometer: 340'
La Crosse Technology WS-2310, 2315	Thermo/Hygrometer: 32' Rain Gauge and Anemometer: 64'	N/A

<sup>1</sup> You may extend the cables, but there is a limitation due to the signal strength. Use CAT5, and route in conduit for long installations. Telephone extension wire off a portable reel is advisable, as it is intended for crimp connections. The single core wire will work, but its long term reliability (the crimp connection) may not be as good.

### IV. Update Interval

The weather changes rapidly, particularly windspeed. Rapid weather station update rates are an important factor in capturing data. The following table summarizes the Wind Speed update interval.

Weather Station	Windspeed Update Interval
Oregon Scientific WMR-968	14 seconds
La Crosse Technology WS-2010, 2210	3 minutes
La Crosse Technology WS-2310, 2315	Wireless: 32 - 128 seconds Wired: 8 seconds



La Crosse Technology WS-3600 series	Wireless: 32 - 128 seconds
	Wired: 32 seconds
Davis Vantage Pro2 Davis Vantage Pro2 Plus	2.5 seconds
Rainwise MKIII	30 seconds
Davis Weather Monitor II	2.25 seconds
Peet Bros™	?
Oregon Scientific WM-918	5 seconds
WeatherHawk	10+ seconds
Maximum WeatherMax	1.5 seconds
Honeywell TE923W	10+ seconds