

sensing technology for the soil environment

Technology Resources

Device	Model	Unit Cost	Website
Sub-surface-deployed sensors			
Soil heat flux	HFP01SC-L, Hukseflux Self-Calibrating Soil Heat Flux Plate	\$800.00	http://www.hukseflux.com/heat%20flux/hfp01sc.htm
Soil moisture	EC5, ECH2O Probe	\$200.00	http://www.decagon.com/ECH2O/
Soil moisture	CS616-L, Water Content Reflectometer	\$200.00	http://www.campbellsci.com/
Soil temperature	107-L, Temperature Sensor	\$50.00	http://www.campbellsci.com/
Thermocouple wire	TT-T-30-25, 25 feet of 30 gage copper-constantan	\$24.00	http://www.omega.com/pptst/FineWire_Duplnsul.html
Soil CO2 Flux System	Licor 8100		http://www.licor.com/env/Products/li8100/8100.jsp
Soil CO2 probes	Vaisala Carbocap		http://www.vaisala.com/instruments/products/carbondioxide
Automated Minirhizotron and Arrayed Rhizosphere Sensing Systems (AMARSS)			
HOBO® Weather Station Data Logger	Onset H21-001	\$399.00	http://www.onsetcomp.com/
HOBOware Pro for Windows	Onset BHW-PC	\$99.00	http://www.onsetcomp.com/
HOBO® Weather Station Photosynthetic Light (PAR) Smart Sensor	Onset S-LIA-M003	\$210.00	http://www.onsetcomp.com/
Light Sensor Bracket	Onset M-LBA	\$20.00	http://www.onsetcomp.com/
HOBO® Weather Station Temperature/RH Smart Sensor	Onset S-THA-M002	discontinued	http://www.onsetcomp.com/
Solar Radiation Shield	Onset M-RSA	\$90.00	http://www.onsetcomp.com/
HOBO® Weather Station Barometric Pressure Smart Sensor	Onset S-BPA-CM10	\$119.00	http://www.onsetcomp.com/
HOBO® Weather Station 12-bit Temperature Smart Sensor	Onset S-TMB-M002	\$90.00	http://www.onsetcomp.com/
HOBO® Weather S-SMA Station Soil Moisture Smart Sensor	Onset S-SMA-M005	\$139.00	http://www.onsetcomp.com/

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Vaisala CARBOCAP® Carbon Dioxide Transmitter Module and Probe	Vaisala GMM220; GMP222	\$680.00	http://www.vaisala.com/
12-bit 4-20mA Input Adapter	Onset S-CIA-CM14	\$79.00	http://www.onsetcomp.com/
Probe	Wescor PST-55 5F	\$63.00	http://www.wescor.com
Dew Point Microvoltmeter	Wescor HR-33T	\$3,000.00	http://www.wescor.com
Nitrate Sensor	Sentek 360-073	£299.00	http://www.sentek.co.uk/
Ammonium Sensor	Sentek 362-073	£299.00	http://www.sentek.co.uk/
HOBO® U12 Outdoor/Industrial 4-Channel External Data Logger	Onset U12-008	\$199.00	http://www.onsetcomp.com/
Surface-deployed sensors			
All-in-one Weather	WXT510, Vaisala; CM220 to mount from CS	\$3,040.00	
Sunshine Sensor	BF3, Delta-T	\$3,286.00	http://www.delta-t.co.uk/products.html
Net radiometer	*Q7.1-L REBS16 Net Radiometer (Fritschen)	\$1,250.00	http://www.campbellsci.com/
Net radiometer	CNR1, Kipp & Zonen	\$6,195.00	http://www.kippzonen.com/
Net radiometer	NR LITE, Kipp & Zonen	\$1,630.00	http://www.kippzonen.com/
Pyranometer (silicon) sensor	LI-200, Licor Pyranometer	\$300.00	http://www.licor.com/env/Products/Sensors/rad.jsp
Pyranometer (silicon) sensor	PYR-P, Apogee Instruments	\$169.00	http://www.apogeeinstruments.com
Photosynthetically Active Radiation (PAR) sensors	LI-190 Sensor, Licor quantum sensor	\$320.00	http://www.licor.com/env/Products/Sensors/rad.jsp
PAR and other wavelengths	photodiode G1115, Hamamatsu	\$15.00	http://sales.hamamatsu.com/en/products/solid-state-division/compound-semiconductors.php
PAR	QSO-SUN, Apogee Instruments	\$139.00	http://www.apogeeinstruments.com
Air temperature	107-L Temperature Probe; requires 41303-5A radiation shield	\$78.00	http://www.campbellsci.com/
Air temperature	7817, Davis Instruments	\$18.00	http://www.davisnet.com
Air Temperature and Relative Humidity	HMP50-L Vaisala; requires 41303-5A radiation shield	\$360.00	http://www.campbellsci.com/
Radiation Shield, RM Young 6-Plate Gill	41303-5A, Campbell Scientific	\$115.00	http://www.campbellsci.com/
Humidity	Digi-Key HM1500LF-ND	\$31.00	http://www.digikey.com/
Solar Shield	Davis Instruments, 7714	\$65.00	http://www.davisnet.com
Barometric Pressure	Vaisala CS105	\$570.00	http://www.campbellsci.com/
Precipitation	07852, Rain Collector II, Davis Instruments	\$75.00	http://www.davisnet.com
Precipitation	Hydrological Services Tipping Bucket	\$805.00	http://www.campbellsci.com/
Precipitation	TE525WS-L Texas Electronics 8" Tipping Bucket Rain Gage	\$385.00	http://www.campbellsci.com/

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Snowfall Adapter for 6" or 8" Texas Electronics Tipping Bucket Rain Gage	CS705	\$460.00	http://www.campbellsci.com/
Wind speed and direction	7911, Davis Instruments	\$120.00	http://www.davisnet.com
Wind speed and direction	WindSonic1-L, Gill	\$1,850.00	http://www.campbellsci.com/
Leaf wetness	Campbell 237 Wetness Sensing Grid	\$100.00	http://www.campbellsci.com/
Leaf wetness	Vantage Pro and Vantage Pro2, Davis Instruments	\$95.00	http://www.davisnet.com
Specialty			
Infrared thermometer	IRR-PN, Apogee Instruments	\$598.00	http://www.apogeeinstruments.com
Laser Measurement System		\$1,200.00	
Remotely accessible PTZ camera with shroud		\$1,500.00	
All weather microphone system		\$50.00	
Up and down viewing spectroradiometers	Ocean Optics, ASD or PP - Visual Spectrum	\$5,000.00	
CO2 concentration	PP Systems AGA400	\$1,500.00	
Optical spectrometer	PP Systems UNI002	\$10,700.00	
Laser scintillometers		\$30,000.00	