SMARTGROWTH ™

Spectrum®
Technologies, Inc.
"To Measure Is To Know"

TOOLS FOR BETTER
CROP PRODUCTION

SMARTGROWTH™

Spectrum®
Technologies, Inc.

Welcome!

It's our mission to enhance the work you do by bringing you products that solve your problems and simplify managing the crops you grow.

Since 1987, we have been committed to meeting your needs. That commitment encompasses many things. We listen to you and your needs by constantly developing innovative solutions. Add to that our comprehensive range of customer support services, and you'll find a unique partner willing to develop actionable and cost effective plant measurement solutions used around the world.

As an innovator, Spectrum has developed a broad line of professional, quality products in the area of crop environmental monitoring, nutrient management, soil moisture measurement/irrigation scheduling and pest management.

This could not have occurred without the input from our valued customers and the talents of a passionate team of employees. Thank you for your support and commitment to innovation!

Best Regards,

Mike Thurow

Mike Thurow
CEO & Founder
Spectrum Technologies, Inc.

EASY ORDERING - REQUEST A QUOTE

Online	**www.specmeters.com**	
E-mail	**info@specmeters.com**	
☎ Phone	**1 (800) 248-8873** (U.S. & Canada)	
	1 (815) 436-4440	
Fax	**1 (815) 436-4460**	

3600 Thayer Court
Aurora, IL 60504 USA

VISA DISCOVER MasterCard American Express Card

	Order Total	Shipping/Handling USA Only
Standard Ground Delivery:	$25.01 to $99.99	$17.50
	$100.00 to $499.99	$21.50
Express Delivery:	$500.00 to $999.99	$27.00
(Contact for charges)	$1,000.00 to $1,999.99	$31.00
Canadian Delivery:	$2,000.00 to $2,999.99	$39.50
(Contact for charges)	$3,000.00 to $4,999.99	$48.00
	$5,000.00 or more	Contact for pricing

ORDERING INFORMATION

Purchase Orders: We accept purchase orders from accredited universities, governments, businesses, and nonprofit organizations. Completed credit application may be required.
Terms: Net 30 days on approved Open Account purchases. A late payment charge of 1.5% per month or the maximum rate permitted by law, whichever is less, will be imposed on amounts unpaid after due date.
International Orders: Call, fax, or e-mail request for quote and terms.
Dealers/Distributors: Call for quantity discounts.
Prices: The pricing highlighted in this catalog is for calendar year 2017.
Min. Order: US: $25.00 excluding S&H; Canada: $75.00 excluding S&H

Spectrum Technologies, Inc. reserves the right to change the specifications, features or prices of its products without notice or obligation.

100% MONEY-BACK GUARANTEE

YOUR SATISFACTION IS OUR BUSINESS

Order from Spectrum Technologies with total confidence. If you're not satisfied—for any reason—call our toll-free number for a Return Materials Authorization (RMA). Simply return the item you ordered within 30 days for a prompt refund, excluding shipping & handling. We ask that you return the item in restockable condition with all original packaging, parts, instruction manuals, etc. Failure to meet these conditions may result in a restocking fee.

100% Guaranteed Satisfaction **RISK-FREE 30 DAY TRIAL** *Or Your Money Back*

The AE50 Award recognizes products ranked highest in innovation, significant engineering advancement, and impact on the market served.

Award Winning Products

Since 1987, Spectrum Technologies has received 23 AE50 Awards from the American Society of Agricultural and Biological Engineers, which demonstrates our deep commitment to innovation and quality.

2015 SpecConnect™ Web Portal

WatchDog® Retriever & Pups Wireless Network

2013 FieldScout® GreenIndex+® SmartPhone App

WatchDog® Cellular Alert Stations

2012 WaterScout® SMEC 300 Soil Moisture/EC/Temp Sensor

2011 WatchDog® 1000 Series Micro Station

LightScout® DLI 100 Light Meter

2008 WatchDog® Sprayer Station

SpecMaps™ Web Mapping Utility Software

2007 WatchDog® 2000 Series Mini Weather Station

2005 SpecWare™ Software

2004 FieldScout® Direct Soil EC Probe

FieldScout® TCM 500 Turf Color Meter

WeatherTracker Greenhouse Growth Tracker

2003 WatchDog® WeatherTracker

FieldScout® SC 900 Soil Compaction Meter

2002 WatchDog® Weather Station

FieldScout® TDR 300 Soil Moisture Meter

2001 FieldScout® CM 1000 Chlorophyll Meter

2000 WatchDog® Data Logger

1999 StarLogger Data Logger

Investigator Soil Compaction Meter

WatchDog® Leaf Wetness/Temperature Logger

Table of Contents

COMPANY OVERVIEW

Spectrum Technologies, Inc. manufactures affordable, leading-edge measurement information technology to the agricultural market throughout the world.

We develop peak plant performance tools for better field output. Using the most advanced plant measurement technology, we provide growers with actionable plant health data that translates into more profitable decisions.

INDUSTRY FUTURE

With consumers demanding higher quality food and environmental conditions, the need for measurement and monitoring technology will continue to grow. The need to conserve resources such as soil and water will drive the need to CREATE more measurement information technology.

PRODUCTS

1
WEATHER
Temperature, Light, Wind, Rain, Relative Humidity and Leaf Wetness Monitoring

2
INTEGRATED PEST MANAGEMENT (IPM) TOOLS
Insect and Disease Models, IPM Scopes

3
SOIL MOISTURE & QUALITY MEASUREMENT
Soil Moisture, Soil Compaction and Water Quality Meters

4
NUTRIENT MANAGEMENT
Nutrient, Chlorophyll, pH, EC and Nitrogen Meters
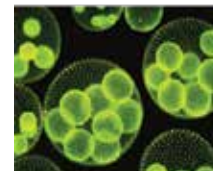
CUTTING EDGE TECHNOLOGY

We are constantly developing exciting new products while offering our customers an amazing, award winning array of products.

Imagine a meter that can measure light as it hits your plant, or receivers that send information about soil moisture so your crops can be managed on the fly.

We're innovating for you.

Spectrum® Technologies, Inc.

PEAK PLANT PERFORMANCE TOOLS
FOR BETTER CROP PRODUCTION

SPECCONNECT - DEVICE TO CLOUD
CONNECTIVITY

SPECCONNECT - FAST ACTIONABLE DATA

SPECTRUM TO YOU.

SpecConnect >
DASHBOARD
YOUR NETWORK

What will you see when using our SpecConnect software to monitor your system?

Customized Alerts
Current Conditions
Multi-Sensor Station Report
Equipment Inventory & Activity
Area Map with Sensor Placement

SpecConnect

DEVICE TO CLOUD.
SPECTRUM TO YOU.

SpecConnect

- Web Portal connection requires a WatchDog Retriever & Pup network or any 2000 Series Weather Station to collect and log data, and DataScout Modem to send data to the internet
- FieldScout subscriptions require a TDR 300 or TruFirm Meter and the free FieldScout Mobile Basic App
- For more information about SpecConnect and FieldScout Mobile App, see pages 21, 35

Pro WatchDog Subscriptions (includes one device)

3010	SpecConnect Pro 1-yr Subscription - Cellular **For WatchDog devices, includes cellular plan**	$399.00
3030	SpecCw Pro 1-yr Subscription - WiFi	$249.00

Basic WatchDog Subscriptions (includes one device)

3005	SpecConnect Basic 1-yr Subscription - Cellular **For WatchDog devices, includes cellular plan**	$299.00
3025	SpecConnect Basic 1-yr Subscription - WiFi	$149.00
3000	SpecConnect Set-up Fee (Initial Setup Fee) **Per device with modem - one time charge**	$49.00

Additional Devices and Services

3045	Additional WatchDog Device - Cellular (1-yr) **Needed per Pup or Station, includes cellular plan**	$175.00
3055	Additional WatchDog Device - WiFi (1-yr) **Needed per Pup or Station**	$24.00
3040	Additional Login (1-yr) **Limit of three users per subscription**	$24.00
3070	Alerts Function (1-yr) **Needed per device**	$49.00
3065	API Service - (one-time-charge)	$49.00

Pro FieldScout Subscriptions (includes one device)

3035	SpecConnect FieldScout Pro 1-yr Subscription	$99.00
3060	Additional FieldScout Device (1-yr) **Needed per device**	$24.00

SpecConnect BASIC VS. PRO SUBSCRIPTIONS

	Basic	Pro
Customizable Dashboard	✓	✓
Current Conditions	✓	✓
Basic Wind Speed/Direction & Temp Gauges	✓	✓
Advanced Wind Rose		✓
Data Storage	✓	✓
Mapping	✓	✓
Calibration Adjustment		✓
Disease Models (additional fee)		✓
Reports		
Basic Reporting	✓	✓
Custom Reporting		✓
Evapotranspiration (ET) Reports		✓
Degree Days Reports	✓	✓
Daily Light Integral (DLI) Reports	✓	✓
Chill Hours/Units/Portions Reports	✓	✓
Other		
Alerts (additional fee)	✓	✓
API Service (additional fee)	✓	✓

Disease & Insect Forecast Model Packages

1-YR SUBSCRIPTIONS

Become more proactive in your management of diseases and insects by adding forecast models to your SpecConnect subscription

- Each package uses field-tested and validated algorithms along with your data to forecast the potential for the appearance of your crop's most notorious enemies
- Save money by spraying only when necessary
- Quickly produce the documentation needed to support your IPM decisions
- 1-yr subscriptions

3095APP   SpecConnect Apple/Pear Alert Package $149.00

Required Sensors: Leaf wetness and temperature
Models Included: Apple Scab (Modified Mills, Cornell, UC Davis California)
Fire Blight (Maryblyt, Cougarblight)
Sooty Blotch/Flyspeck
Insect Models

3095CHP   SpecConnect Cherry Alert Package $99.00

Required Sensors: Leaf wetness and temperature
Models Included: Leaf Spot
Insect Models

3095GAP   SpecConnect Grape Alert Package $149.00

Required Sensors: Leaf wetness, relative humidity, and temperature
Models Included: Powdery Mildew (Thomas-Gubler)
Black Rot (Spotts)
Downey Mildew
Botrytis
Phomopsis Cane Leaf Spot
Insect Models

3095POP   SpecConnect Potato Alert Package $149.00

Required Sensors: Temperature, relative humidity, and rain
Models Included: Early Blight
Late Blight (BliteCast)
Insect Models

3095TOP   SpecConnect Tomato Alert Package $99.00

Required Sensors: Leaf wetness and temperature
Models Included: Tomcast
Insect Models

3095TUP   SpecConnect Turf Alert Package $149.00

Required Sensors: Air and soil temperature, relative humidity, and rain
Models Included: Brown Patch (Schumann)
Pythium (Nutter, Schein)
Dollar Spot (Hall, Mills/Rockwell)
Insect Model

3095NUP   SpecConnect Nut Alert Package $149.00

Required Sensors: Temperature, leaf wetness, relative humidity, rain
Models Included: Almond Alternaria Leaf Spot
Almond Anthracnose
Pecan Scab
Pistachio Panicle and Shoot Blight
Walnut Blight
Insect Models

WatchDog

THE RETRIEVER & PUPS SYSTEM.
LET YOUR PLANTS TALK TO YOU.

GROWERS, WINEMAKERS, FARMERS AND RESEARCHERS USE IT TO EXPERTLY MONITOR THEIR FIELDS, GREENHOUSES AND ORCHARDS WHEN THEY AREN'T AROUND.

Our Retriever & Pups System brings real time data to your mobile device anywhere you can access the internet.

Smarter decisions just got easier.

Each Retriever can support up to 16 Pups. Each Pup can hold four different sensors. And, you can send threshold alerts!

Our sensors measure everything from moisture to light, wind, rain, humidity, temperature and more. We can customize your setup, even add weather stations, to bring data from every nook and cranny of your property directly to you.

With SpecConnect Wireless Pups & Retrievers, send data to your personal dashboard and view the measurements instantly. Trust the data and eliminate the guesswork.

INNOVATIVE AGRONOMY

SPECCONNECT INTEGRATED
WIRELESS SOLUTION

SpecConnect

VINEYARDS
& OCHARDS

VINEYARDS & ORCHARDS

Easily spot frost and be alerted of conditions in your crops, monitor and note site-specific conditions for insect and disease pressures, and monitor soil moisture remotely.

Frost & Irrigation Station **Plant Disease Station**

IRRIGATION

IRRIGATION SOLUTIONS

Flexibly monitor both soil moisture and EC in a variety of soil textures for better irrigation decisions.

Connect WatchDog Weather Stations to the network using a Station Pup.

Irrigation Station **2900 ET Weather Station**

RESEARCH PLOTS

RESEARCH PLOTS/ FARM & GREENHOUSE STUDIES

Capture site-specific conditions remotely for insect and disease pressures, soil moisture monitoring, weather conditions, light and more.

Plant Disease Station **Pup Weather Station with Soil Moisture**

GREENHOUSES
& NURSERIES

GREENHOUSES & NURSERIES

Measure DLI (Daily Light Integral) and intensity for consistently better plant quality across greenhouse and high-tunnel structures. For outdoor growing, monitor soil moisture, temperature and EC for more efficient irrigation practices.

Plant Growth Pup Station **Irrigation Pup Station**
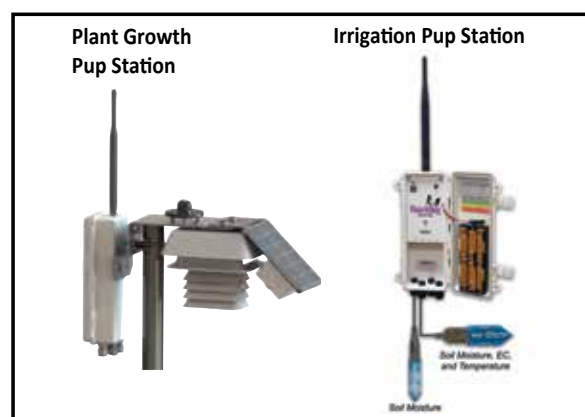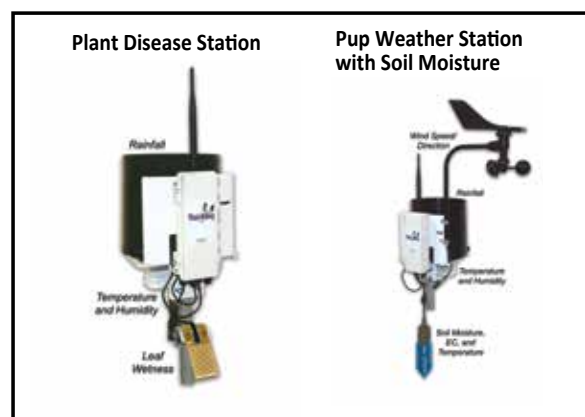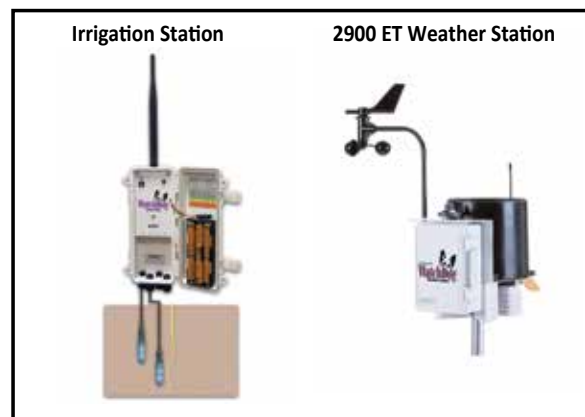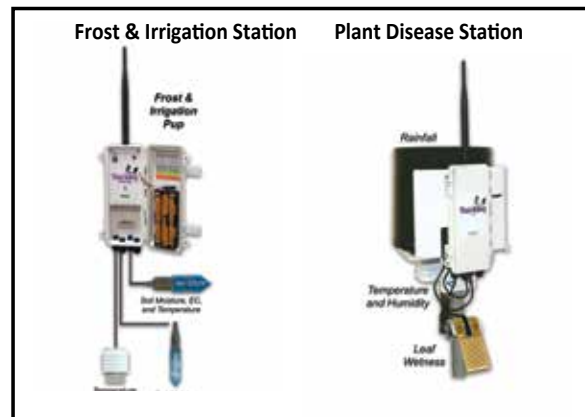
WatchDog Pups

SETUP A NETWORK >

Multiple Pups with a variety of sensors to choose from give you unlimited measurement options within a single network.

3 models >

Sensor Pups
Station Pups
Repeater Pups

- Single button operation: check battery status, signal strength, and join sensor network
- Tri-colored LEDs indicate battery level, signal strength, and data communication status
- Includes six non-rechargeable AA batteries (up to 8 months typical life)
- Communication range of 2,500 ft (about 1/2 mile), line-of-sight installation between devices
- Pups act as repeaters to get data to the Retriever
- 900 MHz radios; 868 MHz and 2.4 GHz also available for international use - Call for details

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Which type?

Sensor Pups
- Connect up to 4 external sensors via 2.5mm stereo plug
- Can monitor high, low, current, and average values for each sensor during each logging period - up to 16 parameters

WatchDog Sensor Pup
- Connect up to 4 sensor inputs per Pup
- Transmits data to Retriever (directly or via other Pups)
- Includes 6 standard non-rechargeable AA batteries (solar-power option below)
- Available as Pre-Packaged Pup Stations, includes sensors

3900	WatchDog Sensor Pup	$495.00

Most Popular Sensors
Choose what you will measure. Choose up to 4 per Sensor Pup.

3613ARS	Temperature/RH Sensor with Aspirated Radiation Shield	$499.00
3613THS	Temperature/RH Sensor with Passive Radiation Shield	$199.00
3665RD	Digital Rain Collector	$299.00
3305ADD	Digital Anemometer	$379.00
6470-20	WaterScout SMEC 300 Sensor with 20 ft (6.1 m) Cable	$229.00
6460-20	WaterScout SM 100 Sensor with 20 ft (6.1 m) Cable	$97.00
6450WD20	Watermark Sensor with 25 ft (7.6 m) Cable	$79.00
3667	External (Soil) Temperature Sensor with 6 ft (1.8 m) Cable	$45.00
3666	Leaf Wetness Sensor	$99.00
3670I	LightScout Silicon Pyranometer	$249.00
3668I	LightScout Quantum Light Sensor	$219.00

Station Pups
- Connect to a WatchDog 2000 Series (Full or Mini) Weather Station
- Adds your Weather Station sensor data to your Retriever network
- No external sensors

WatchDog Station Pup
- Connects to WatchDog 2000 Series Weather Stations and transmits all station sensor data to the network
- Includes 6 standard non-rechargeable AA batteries (solar-power option below)

3901	WatchDog Station Pup	$445.00

Repeater Pups
- Provide added range to WatchDog Retriever networks
- Serves as a "signal booster" around buildings or obstacles, or over high sections of your fields

WatchDog Repeater Pup
- Serves as "signal booster" to help provide a path for the transmission signal around obstacles or to extend range; no sensor inputs of its own
- Includes 6 standard non-rechargeable AA batteries (solar-power option below)

3902	WatchDog Repeater Pup	$395.00

Retriever >
COLLECT THE DATA

WatchDog Retriever
- Receives all data from Pup network, each Retriever supports up to 16 Pups
- Includes USB Flash Drive and USB data cable
- Includes 6 standard non-rechargeable batteries. Can also be powered by DataScout modem, Direct-Connect cable or Solar Power Package

3910	WatchDog Retriever	$595.00

Solar Power >
NEW! POWER UP

3999	Solar Power Package for Pups & Retrievers	$200.00

Includes 5W solar panel and 6V 4.5Ah rechargeable battery

WatchDog

Sensor Pup Stations

• The most common Sensor Pups and sensors have been bundled together to simplify ordering

• Pup Stations are built on a unique mounting bracket to allow for simple installation

• Pup Stations (except ET Pup) have available sensor ports, allowing for additional/future expansion

• 900 MHz radio; 868 MHz and 2.4 GHz also available for international use - Contact for details

3900ET

WatchDog ET Pup Station
• Includes Pup and sensors:
    Rainfall
    Temperature/RH
    Solar Light
    Wind Speed/Direction
• No available sensor ports

3900ET
WatchDog ET Pup Station $1,695.00

3396TPS
Tripod Mount with Stakes $104.00

3900WS

WatchDog Pup Weather Station
• Includes Pup and sensors:
    Rainfall
    Temperature/RH
    Wind Speed/Direction
• One available sensor port

3900WS
WatchDog Pup Weather Station $1,445.00

3396TPS
Tripod Mount with Stakes $104.00
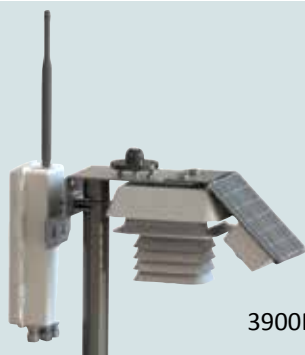
3900PG

WatchDog Plant Growth Pup Station
• Includes Pup and these sensors:
    PAR Light
    Temperature/RH with Aspirated
    Radiation Shield and solar
    charging system
• Two available sensor ports

3900PG WatchDog
Plant Growth Pup Station $1,195.00

3396TPS
Tripod Mount with Stakes $104.00

3900PD

WatchDog Plant Disease Pup Station
• Includes Pup and these sensors:
    Rainfall
    Temperature/RH
    Leaf Wetness
• One available sensor port

3900PD WatchDog
Plant Disease Pup Station $1,145.00

3396TPS
Tripod Mount with Stakes $104.00

100% Customizable

WatchDog

Pressure Transducer

Digital Rain Collector

Digital Anemometer

Irrigation On/Off Sensor

CO2 Sensor

LightScout UV / Solar Radiation / PAR Light Sensors

Barometric Pressure Sensor

LightScout Quantum Sensor Bars

External (Soil) Temperature Sensor

WaterScout SM 100 Soil Moisture Sensor

Temperature (Micro) Sensor

WaterScout SMEC 300 Soil Moisture, EC, and Temperature Sensor

Watermark Soil Moisture Sensor

Leaf Wetness Sensor

Digital Temperature / Humidity Sensor with Passive Radiation Shield

Digital Temperature / Humidity Sensor with Aspirated Radiation Shield

Sensor Specifications on Pages 22-23

WatchDog®

Column reference item numbers: Alarm Output-Ready = 3672 · Solar Radiation Sensor = 3670I · Quantum Light Sensor = 3668I · Ext. (Soil) Temperature Sensor = 3667 · Leaf Wetness Sensor = 3666 · WaterScout Soil Moisture Sensor = 6460 · WaterScout Soil Moisture/EC/Temperature Sensor = 6470S

STANDARD FEATURES | OPTIONAL SENSORS & ACCESSORIES

Item #	Model	SpecConnect Compatible	LCD Display	Wireless	Evapotranspiration	Alarm Output-Ready	Air Temperature Sensor	Relative Humidity Sensor	Dew Point	Wind Speed & Direction	Tipping Bucket Rain Collector	Solar Radiation Sensor	Available Sensor Ports	Quantum Light Sensor	Ext. (Soil) Temperature Sensor	Leaf Wetness Sensor	WaterScout Soil Moisture Sensor	WaterScout Soil Moisture/EC/Temp Sensor	Digital Sensor Compatible	Radiation Shield (P=Passive or A=Aspirated)
2000 Series Weather Stations																				
3350WD2	2900ET	✔	✔	Opt	✔	✔	✔	✔	✔	✔	✔	✔	5	Opt	Opt	Opt	Opt	Opt		P
3345WD2	2800	✔	✔	Opt		✔					Opt	Opt	9	Opt	Opt	Opt	Opt	Opt		
3340WD2	2700	✔	✔	Opt	✔	✔	✔	✔	✔	✔	✔	Opt	6	Opt	Opt	Opt	Opt	Opt		P
3320WD2	2550	✔	✔	Opt	✔	✔	✔	✔	✔	✔		Opt	6	Opt	Opt	Opt	Opt	Opt		P
2000 Series Mini Station																				
3684WDPD	Plant Disease Station	✔	✔	Opt	✔	✔	✔	✔	✔			✔	0			✔				P
3686WD	2475	✔	✔	Opt	✔	✔	✔	✔	✔		Opt	Opt	1	✔	Opt	Opt	Opt	Opt		P
3684WD	2450	✔	✔	Opt	✔	✔	✔	✔			Opt	Opt	2	Opt	Opt	Opt	Opt	Opt		P
3683WD	2425	✔	✔	Opt	✔	✔	✔				Opt	Opt	3	Opt	Opt	Opt	Opt	Opt		P
3685WD	2400	✔	✔	Opt	✔						Opt	Opt	4	Opt	Opt	Opt	Opt	Opt		
Retriever & Pups Wireless Sensor Network																				
3900ET	ET Pup Station	✔		✔			✔	✔		✔	✔	✔	0						✔	P
3900WS	Pup Weather Station	✔		✔			✔	✔		✔	✔	Opt	1	Opt	Opt	Opt	Opt	Opt	✔	P
3900PD	Plant Disease Pup Station	✔		✔			✔	✔		Opt	✔	Opt	3	Opt	Opt	✔	Opt	Opt	✔	P
3900PG	Plant Growth Pup Station	✔		✔			✔	✔		Opt	Opt	Opt	2	✔	Opt	Opt	Opt	Opt	✔	A
3900	Sensor Pup	✔		✔	Opt	Opt				Opt	Opt	Opt	4	Opt	Opt	Opt	Opt	Opt	✔	P
3901	Station Pup	✔		✔									0							
3902	Repeater Pup	✔		✔									0							
1000 Series Micro Stations																				
3685SM14	Irrigation Station		✔										0				✔ (4)			
3685SM13	Irrigation Station		✔								Opt	Opt	1	Opt	Opt	Opt	✔ (3)	Opt		
3684PD1	Plant Disease Station		✔				✔	✔			✔		0			✔				P
3684PAR1	Plant Growth Station		✔				✔	✔					1	✔	Opt	Opt	Opt	Opt		P
3688WD1	1650		✔				✔	✔			Opt	Opt	4	Opt	Opt	Opt	Opt			
3687WD1	1525		✔				✔				Opt	Opt	4	Opt	Opt	Opt	Opt			
3684WD1	1450		✔				✔	✔			Opt	Opt	2	Opt	Opt	Opt	Opt	Opt		
3683WD1	1425		✔				✔				Opt	Opt	3	Opt	Opt	Opt	Opt	Opt		
3685WD1	1400		✔								Opt	Opt	4	Opt	Opt	Opt	Opt	Opt		
3682WD1	1250		✔				✔	✔					0							
3681WD1	1225		✔				✔				Opt	Opt	1	Opt	Opt	Opt	Opt			
3680WD1	1200		✔								Opt	Opt	2	Opt	Opt	Opt	Opt	Opt		
A-Series Loggers																				
3611A	A160 Temp/RH/CO$_2$		✔				✔	✔					0					+CO$_2$		
3612A	A150 Temp/RH		✔				✔	✔					0							
3610A	A130 Leaf Wetness/Temp		✔				✔						0			✔				
3617ARS	A125 Soil/Air Temp Station		✔				✔						0		✔					P
3617A	A125 Soil/Air Temp		✔				✔						0		✔					
3618A	A110 Temperature		✔				✔						0							
Sprayer Station																				
3349SSCH	Sprayer Station			✔			✔	✔		✔	✔		0							

REFERENCE:

✔ STANDARD	Opt OPTIONAL	BLANK NOT AVAILABLE

Retriever logs sensor data from its network of Pups - up to 16 Pups per network.

- Single button operation: switch modes, download data, upload configuration, and check battery status
- Tri-colored LEDs indicate mode, battery level, data communication status, and configuration status
- Non-volatile memory preserves your logged data, even when the batteries are removed
- Transfer data or configure the system via flash drive, direct PC connection, or Datascout Modem (see next page)
- Internal flash memory on the Retriever will hold approximately 6 months of data (for a 10-Pup network using 15 minute logging intervals)
- Spectrum-supplied USB flash drive will hold several years of data at the Retriever (for a 10-Pup network using 15 minute logging intervals)
- 3.5mm stereo port for computer connection USB cable (included)
- AUX port for wireless communication and power connection (DataScout Cellular or WiFi modem)
- Includes six non-rechargeable AA batteries (up to 8 months typical life)
- DC port for optional AC/DC power adapter (Max 17VDC)
- Optional solar power package includes 5W solar panel and 6V 4.5Ah rechargeable battery
- 900 MHz radios; 868 MHz and 2.4 GHz also available for international use - Call for details
- Retriever & Pups Launch Utility software included on USB flash drive

Retriever >
COLLECT THE DATA

WatchDog Retriever
- Receives all data from Pup network, each Retriever supports up to 16 Pups
- Includes USB Flash Drive and USB data cable
- Includes Standard Non-Rechargeable Batteries. Can also be powered by DataScout modem, Direct-Connect cable or Solar Power Package.

3910	WatchDog Retriever	$595.00

Optional Accessories

3999	Solar Power Package	$200.00

Includes 5W solar panel and 6V 4.5Ah rechargeable battery

3396TPS	Tripod Mount with Stakes	$104.00
3925	Antenna Extension Cable - 10 ft (3 m)	$75.00

Includes Mounting Bracket and Hardware

3388USB	Replacement USB Flash Drive (for Retriever)	$25.00
3927C75	PC Direct Connection Cable - 75 ft (for Retriever) Connect your Retriever directly to your PC. Includes power and data cables, AC/DC power adapter, and DC plug adapter	$119.00
3926	AC/DC Power Cord (for Retriever)	$24.00

SpecWare Software
- SpecWare Pro software version 9.6 or later may be used to view Pup data on PC
- If using the SpecConnect Web Portal, then all data can be viewed online (SpecWare software not required)

3654P9	Spec 9 Pro Software	$195.00

DATASCOUT® Modems

3920 DataScout Wi-Fi Modem

3922 DataScout CDMA Modem

3922 DataScout Modem mounted with a WatchDog Retriever

3923 DataScout Modem mounted with a WatchDog 2000 Series Full Weather Station

- Communicate data to the web using either a Cellular or Wi-Fi signal
- Single button operation: test communications, pair with station, and check battery status
- Tri-colored LEDs indicate battery level, data communication, and wireless signal/connection status
- Power options: Choose between Solar power package which includes rechargeable battery and 5W solar panel, or the AC/DC power adapter (Max 17VDC)
- Required for connection to SpecConnect, sold separately
- Provides power to attached Watchdog Stations and Retrievers

Compatibility Requirements:

- WatchDog Retriever - Item 3910 WatchDog Retriever (with non-rechargable batteries). The DataScout Modem and the Retriever will share the power from the solar power package
- Use with WatchDog 2000 Series Weather Stations - the station must be running firmware version 7.6 or above. Contact for details
- Partner with WatchDog 2000 Series Mini Stations - The station must be running firmware version 4.1 or above. Contact for details

Cellular Modems

3922M CDMA Cellular Modem
$795.00

CDMA Cellular (US customers)
Requires power selection from options below

3923M 3G HSPA+ Cellular Modem
$795.00

GSM 3G HSPA+ Cellular (Canadian and US customers). Requires power selection from options below

GSM 3G HSPA+ Cellular also available for International use - call for details

Wi-Fi Modems

3920 Wi-Fi Modem - AC/DC Powered
$545.00

Includes AC/DC Power Cord

Power Options

3999 Solar Power Package
$200.00

Includes 5W solar panel and 6V 4.5Ah rechargeable battery

3926 AC/DC Power Cord
$24.00

What Do You Want To Measure?
You can customize your WatchDog network, using different sensors based on the data you want to collect and analyze for better output performance. See WatchDog Sensors and Accessories, pages 12, 22-23

WatchDog

Model 2900ET
Shown with optional
Tripod Mount
(Tripod not included)

AE50
outstanding innovations
AWARD WINNER
FOR TECHNOLOGY
INNOVATION

Our award winner for Innovation in Technology. Manage your crop based on YOUR weather, not the airport's.

- Full-featured weather stations measure temperature, humidity, rainfall, wind, and solar radiation (varies by model). Also calculates degree days and chill hours
- Customize your station with plug-in sensors to meet your needs
- Accurate, real-time weather information directly from your field, orchard or vineyard
- Monitor, record, and analyze over a dozen important environmental inputs
- Log your data in fail-safe, non-volatile memory
- Choose measurement intervals from 1 to 60 minutes (holds 183 days of data with a 30 minute interval)
- Multiple PCs can access the station without impacting data collection

- Use the LCD display to check all current and daily high/low readings without a PC
- Communicate via wireless, cellular, shuttle, or direct connect, also compatible with the new WatchDog Station Pups and DataScout™ Modems
- Powered by four AA batteries - 10 months battery life with alkaline (included), 12 months with lithium
- Requires SpecWare™ Pro software or DataScout Modem and SpecConnect

2900ET

2550

2800

Model 2900 ET
- The most powerful package for optimizing your irrigation and IPM decisions
- Measures wind direction, wind speed, air temperature, relative humidity, dew point, rainfall, solar radiation, evapotranspiration, with 5 available external sensor ports
3350WD2 WatchDog® 2900ET Weather Station $1,895.00

Model 2550
- Ideal for fast, on-demand deployment without measuring rainfall
- Measures wind direction, wind speed, air temperature, relative humidity, dew point, with 6 available external sensor ports
3320WD2 WatchDog® 2550 Weather Station $1,195.00

Model 2800
- Ideal where multiple sensor measurements are required for temperature, soil moisture, crop canopy light, or leaf wetness data
- Plug in up to 8 external sensors, plus 1 optional rainfall sensor
3345WD2 WatchDog® 2800 Weather Station $895.00

Model 2700
- Affordable and versatile solution for growers, researchers, and consultants
- Measures wind direction, wind speed, air temperature, relative humidity, dew point, rainfall, with 6 available external sensor ports
3340WD2 WatchDog® 2700 Weather Station $1,445.00

Weather Station Recertification
Now Available - see website

WATCHDOG 2000 SERIES WEATHER STATION FEATURES

Sensors	2900ET	2700	2550	2800	Specifications	Accuracy
Wind Direction	✔	✔	✔		1°	±3°
Wind Speed	✔	✔	✔		0, 1 to 200 mph (0, 1 to 322 km/h)	±2 mph (±3 km/h) , ±5%
Air Temperature	✔	✔	✔	OPT	-40° to 257°F (-40° to 125°C)	±0.54°F at -40 to 194°C(±0.3°C)
Relative Humidity	✔	✔	✔		0% to 100%	±2% at 25°C
Dew Point	✔	✔	✔		-99° to 140°F (-73° to 60°C)	±4°F (±2°C)
Rainfall	✔	✔		OPT	0.01 in (0.25 mm)	±2% at < 2 in (5 cm) per hour
Solar Radiation	✔	OPT	OPT	OPT	0 to 1500 W/m²	±5%
Evapotranspiration	✔					
External Sensor Ports	5	6	6	9		
Available ports for SMEC 300 Sensors	1	2	2	2		
Operating temperature range: -22 to 130°F (-30 to 55°C)						

AE50
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FOR TECHNOLOGY
INNOVATION

2000 Series Mini Stations

Monitor microclimates with up to 4 external sensor channels.

• Same power, flexibility, and accuracy as the 2000 Series Weather Stations

• Measure temperature, humidity, quantum light, and more (varies by model). Also monitors degree day models and chill hour data

• Customize your Mini Station with 1 to 4 plug-in sensors to meet your needs

• Accurate, real-time weather information directly from where you grow

• Log your data in fail-safe, non-volatile memory

• Choose measurement intervals from 1 to 60 minutes (holds 198 days of data with a 30 minute interval). Capacity is 89 days when using WaterScout SMEC 300 sensors

• Reliable NEMA-4 type IP 66 enclosure and weatherproof connectors

• Use the LCD display to check current and daily high/low readings without a PC

• Run disease models on the station, providing field viewing of disease severity indicators

• Use the optional alarms to warn if a sensor exceeds high and low limits

• Communicate via wireless, cellular, shuttle, or direct connect also compatible with the new WatchDog® Station Pups, DataScout™ Modems

• 12-month battery power source (four AA alkaline batteries included)

• Requires SpecWare™ Basic or Pro software, or DataScout™ Modem and SpecConnect

Model 2475 Plant Growth Station

• Ideal for greenhouses - includes sensors for quantum (PAR) light, air temperature, relative humidity, with 1 available external sensor port
• Computes and displays Daily Light Integral (DLI), dew point and degree days; live display of current light and cumulative light over the day
• Computes and displays DIF – Average day/night temperatures differences
• Computes and displays VPD – Vapor Pressure Deficit

**3686WD Model 2475
WatchDog® Weather Station $895.00**

Model 2425 Temperature Station

• Measures air temperature with 3 available external sensor ports
• Plug in up to 3 external sensors

**3683WD Model 2425
WatchDog® Weather Station $615.00**

LCD display on all 2000 Series Mini Stations

Model 2400 External Sensor Station

• Ideal where multiple sensor measurements are required for temperature, soil moisture, crop canopy light, or leaf wetness data
• Plug in up to 4 external sensors

**3685WD Model 2400
WatchDog® Weather Station $565.00**

Model 2450 Temperature/RH Station

• Measures air temperature, relative humidity, with 2 available external sensor ports
• Computes and displays dew point.

**3684WD Model 2450
WatchDog® Weather Station $665.00**

Weather Station
Recertification
Now Available - see website

WATCHDOG® 2000 SERIES MINI WEATHER STATION FEATURES

Sensors	2475	2450	2425	2400	Specifications	Accuracy
Air Temperature	✔	✔	✔	OPT	-25° to 212°F (-32° to 100°C)	±1°F (±0.5°C)
Relative Humidity	✔	✔			10% to 100%	±3% at 20% to 100% and 25°C
Dew Point	✔	✔			-99° to 140°F (-73° to 60°C)	±4°F (±2°C)
Quantum Light (PAR)	✔	OPT	OPT	OPT	0 to 2500 µmol·m⁻²·s⁻¹	±5%
External Sensor Ports	1	2	3	4		
Available ports for SMEC 300 Sensors	1	2	3	4		

Operating temperature range: -22 to 130°F (-30 to 55°C)

What Do You Want To Measure?

You can customize your WatchDog network, using different sensors based on the data you want to collect and analyze for better output performance.

Pre-Packaged Stations >

WatchDog® 2000 Series Plant Disease Station

3684WDPD

• Includes WatchDog Mini Station Model 2450, leaf wetness sensor and rainfall sensor
• View current conditions on LCD screen, as well as track severity indicators from onboard plant disease models
• Requires SpecWare™ Basic or Pro software or a DataScout Modem and SpecConnect
• University published disease models (sold separately) can be added to Specware or SpecConnect **(Pro version required)** for more accurate disease and pest monitoring
• Optional Wireless communication allows you to receive real-time conditions and send condition alarms to your PC
• Buy this station as a package and save $20.00

**3684WDPD WatchDog 2000 Series Plant Disease Station
$913.00**

Soil/Air Temperature Station

3617ARS

Study soil and air temperature trends across multiple microclimates
• Includes Model A125 Data Logger, external temperature sensor and radiation shield
• SpecWare 9 Basic or Pro and the A-Series PC Connection Cable are required

**3617ARS Soil/Air Temperature Station
$219.00**

WatchDog® 1000 Series Plant Disease Micro Station

3684PD1

Mounting post not included

• Data log current conditions and historical plant disease severity indicators
• Includes Watchdog Model 1450 Micro Station, leaf wetness sensor, tipping bucket rain gauge, and radiation shield
• Requires SpecWare™ Basic or Pro software
• University published disease models (sold separately-**requires SpecWare 9 Pro**) can be added for more accurate disease and insect monitoring
• Buy this station as a package and save $20.00

**3684PD1 WatchDog® Plant Disease Micro Station
$702.00**

Plant Growth Micro Stations

3684PAR1

Monitor conditions crucial to growing high quality plants
• Includes a WatchDog Model 1450 Micro Station, Quantum/PAR light sensor and radiation shield
• Requires SpecWare 9 Basic or Pro software
• Buy this station as a package and save $20.00

**3684PAR1 WatchDog® Plant Growth Micro Station
$653.00**

TIP:
WatchDog Irrigation Stations can be found on page 40.

1000 Series Micro Stations

Micro Stations offer a cost-effective way to record multiple environmental conditions.

• Internal sensors can include temperature and humidity (radiation shield recommended)
• With up to 4 external sensor ports, you choose the sensors you need
• Up to 8 sensor values with the Model 1650 using the WaterScout® SMEC 300 Soil Moisture/EC/Temperature Sensor
• LCD displays current sensor readings and battery level
• Select measurement intervals from 1 to 60 minutes
• Log 10,584 (8,064 with SMEC 300) intervals (220 days at 30 minute intervals)
• Data is stored in fail-safe non-volatile memory
• Water-resistant case (radiation shield or enclosure recommended for outdoor use)
• 12-month battery life (CR2450, included)
• Transfer data with a pc cable (supplied with SpecWare) or Data Shuttle
• Requires SpecWare™ 9 Basic or Pro software

Operating temperature range:
-4 to 130°F (-20 to 55°C)
Temperature range: -40 to 185°F (-40 to 85°C)
Accuracy: ±1°F (±0.5°C) at -4 to 122°F (-20 to 50°C), else ±2.2°F (±1.2°C)
RH range: 0 - 100%, Accuracy: ±3% at 77°F (25°C, 10 - 90%), else ±5%

Rainfall

Soil Moisture/EC/Temperature

Leaf Wetness

Air, Soil, Water Temperature

DESCRIPTION	INTERNAL SENSOR	EXTERNAL PORTS	MAX. NUMBER OF SMEC 300 SENSORS	PRICE
MODEL 1650 Item 3688WD1	TEMPERATURE RELATIVE HUMIDITY	4	2	$445.00
MODEL 1525 Item 3687WD1	TEMPERATURE	4	2	$360.00
MODEL 1450 Item 3684WD1	TEMPERATURE RELATIVE HUMIDITY	2	1	$370.00
MODEL 1425 Item 3683WD1	TEMPERATURE	3	1	$325.00
MODEL 1400 Item 3685WD1	NONE (EXTERNAL ONLY)	4	2	$310.00
MODEL 1250 Item 3682WD1	TEMPERATURE RELATIVE HUMIDITY	NONE	0	$300.00
MODEL 1225 Item 3681WD1	TEMPERATURE	1	0	$255.00
MODEL 1200 Item 3680WD1	NONE (EXTERNAL ONLY)	2	1	$240.00
MODEL 1120 Item 3554WD1	RAINFALL (SEE BELOW FOR DETAILS)	NONE	0	$359.00
MODEL 1115 Item 3635WD1	REQUIRES EXTERNAL RAINFALL (SEE WEBSITE FOR DETAILS)	1	0	$199.00

1120 Data-Logging Rain Guage

High accuracy, low-maintenance tipping bucket rain collector
• Meets NWS guidelines with an 8 in (20.5 cm) diameter collector
• The included data logger can log up to 10,584 intervals
• Select intervals from 1 to 60 minutes [maximum 10.23 in (26.0 cm) per interval]
• Rain collector mounting bracket and hardware included
• Record rainfall in either metric (mm) or US (in) units
• Accuracy: ±2% at < 2 in (5 cm) per hour
• Requires SpecWare 9 Basic or Pro

3554WD1 Data-Logging Rain Gauge $359.00

A-Series Data Loggers

The most affordable way to track environmental conditions for analysis.
• Measure temperature, humidity, leaf wetness and CO_2
• LCD display confirms logger operation and displays last sensor readings
• Select measurement intervals from 1 to 120 minutes
• Log 4,000 to 8,000 intervals in fail-safe EEPROM data memory
• Water-resistant case (IP65 for A150 and A110, IP54 for A125 and A130); A160 is for indoor use only and must be protected from moisture
• Removable soft caps keep ports clear of debris

• Includes CR2 battery, 12-month life (except A160, which requires A/C; international adapter included)
• SpecWare™ 9 Basic or Pro (Page 24) and the A-Series PC Connection Cable are required (see below)

Operating temperature range: -22 to 140ºF (-30 to 60ºC); A160: 32 to 122°F (0 to 50°C)
Temperature range: -40 to 185ºF (-40 to 85ºC); A160: 14 to 140°F (-10 to 60°C)
Accuracy: ±1.1ºF (±0.6°C) at -4 to 122°F (-20 to 50°C), else ±2.2°F (±1.2°C); A160: ±1.0°F (±0.6°C)
RH range: 0 to 100%, Accuracy: ±3% from 10-90% at 77°F (25°C), else ±5%
CO_2 range: 0 to 9999 ppm, Accuracy: ±50 ppm ±5% of reading (0 to 2000 ppm), else unspecified

3611A

3612A

3617A

DESCRIPTION	INTERNAL SENSOR	INTERVALS	LCD DISPLAY	PRICE
MODEL A160 3611A	AIR TEMPERATURE RH, CO_2	5,333	INDOOR USE ONLY (NO SHIELD AVAILABLE)	**$349.00**
MODEL A150 3612A	AIR TEMPERATURE RELATIVE HUMIDITY	5,333	OPTIONAL	**$169.00**
MODEL A130 3610A	AIR TEMPERATURE EXTERNAL LEAF WETNESS	4,000	INCLUDED	**$299.00**
MODEL A125 3617A	AIR TEMPERATURE EXTERNAL TEMPERATURE	4,000	RECOMMENDED	**$129.00**
MODEL A110 3618A	AIR TEMPERATURE	8,000	OPTIONAL	**$74.00**

3661A	**WatchDog A-Series PC Connection Cable - USB**	**$29.00**
3663A	**Radiation Shield (needed for outdoor use)**	**$84.00**

B-Series Data Loggers

Space efficient and inexpensive logging technology.
• Ideal for shipping containers or situations where multiple areas need to be monitored
• Choose from temperature-only or temperature/humidity models
• Water resistant (IP56) stainless steel case
• Select measurement intervals from 1 to 120 minutes
• Log 2,000 to 8,000 intervals
• Integral non-replaceable battery
• SpecWare Basic or Pro software and the B-Series Docking Station are required

DESCRIPTION	INTERNAL SENSOR	INTERVALS	LCD DISPLAY	PRICE
MODEL B102 T/RH **3621WD** Temp Range: -4 to 185°F (-20 to 85°C) Temp Accuracy: ±1.1°F from 5 to 149°F (±0.6°C from -15 to 65°C) Humidity: 0 to 100%, ±5%	TEMPERATURE RELATIVE HUMIDITY	4000	NO	**$205.00**
MODEL B101 8K **3620WD** Range: -40 to 185°F (-40 to 85°C) Accuracy: ±1.1°F from 5 to 149°F (±0.6°C from -15 to 65°C)	TEMPERATURE	8000	NO	**$109.00**
MODEL B100 2K **3619WD** Range: -40 to 185°F (-40 to 85°C) Accuracy: ±1.8°F from -22 to 158°F (±1.0°C from -30 to 70°C) *Use included plastic bag when measuring soil temperature*	TEMPERATURE	2000	NO	**$59.00**

Docking Station

3655K1	**WatchDog B-Series Docking Station - USB**	**$149.00**
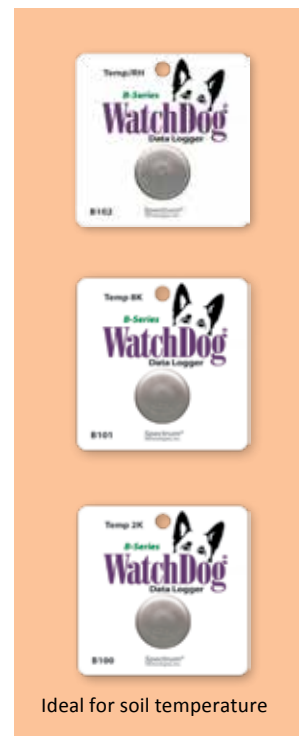
Ideal for soil temperature

Accessories

3396TPS

3658A

3663A

3672

3659WD1

Communication Options

3388SI

3679WD1   3660-75SP

Cables & Adapters

3661U
(Black cable

3661
(Grey cable)

3661USB
(Silver, braided cable)

Tripod Mount

Rugged galvanized steel folding tripod and 3 ft (1 m) pole

3396TPS   **Tripod Mount with Ground Stakes**   **$104.00**

Radiation Shield

Protect your Micro Station or logger from rain and measurement-distorting solar radiation. Compatible with 1000 Series Micro Stations and A-Series Data Loggers

3663A   **Radiation Shield**   **$84.00**

Sliding Enclosure

Water resistant - mounts to pole or post. Compatible with 1000 Series Micro Stations

3658A   **Sliding Enclosure**   **$39.00**

Waterproof Enclosure

Clamshell enclosure. Compatible with 1000 Series Micro Stations (Models 1400 or 1200, plus soil sensors)

3659WD1   **Waterproof Enclosure**   **$89.00**

Alarm Output Module

Triggers an external device based on a sensor reading. Compatible with WatchDog 2000 Series Stations (Full and Mini)

3672   **Alarm Output Module**   **$199.00**

Satellite Communications

Sends your weather data to the web – anywhere there's sky. Ideal for extremely remote locations with limited or no cellular signal. Includes satellite modem and solar panel with mounting brackets. Fully-charged power supply can operate 28 days without recharge. Option to power weather station with modem solar panel power supply. Iridium or Orbcomm data subscription required

3388SI   **WatchDog Comm Satellite**   **$1,870.00**

Mid Range Wireless Communications - up to 2 mi (3 km)

Experience the advantages of real-time weather information by connecting your 2000 Series Remote Weather Stations to a PC up to 2 mi (3 km) away (requires line of sight from Station to Base. Base station features a weatherproof case and 50 ft (15 m) cable (terminating in a 9-pin serial connection) to allow high mounting for the greatest range. Remotes include whip antenna, solar panel, and rechargeable batteries. 900 MHz

3393B   **Mid Range Wireless Base Station**   **$450.00**
3393W   **Mid Range Wireless for Remote Station**   **$425.00**

Optional Yagi antennas increase line of sight range to 7 mi (11 km); see website for details

WatchDog® 1000/2000 Series Data Shuttle

Transport weather data from your 2000 Series Stations or 1000 Series Micro Stations to your host PC. Holds data for multiple stations (up to 5 Full, 10 Mini, or 12 Micro Stations). Includes soft-sided case (also available separately as Item 7500, see page 41). Requires SpecWare 8 Basic or Pro or greater (page 24).

3679WD1   **WatchDog 1000/2000 Data Shuttle**   **$330.00**

Short Range Modem Pair

Use short-range modems to maintain signal on wired connections up to 4,000 ft (1.2 km). Has 9-pin serial connection on PC end.

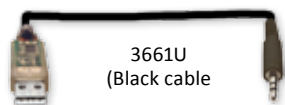**3365WD2**   **Short Range Modem Pair**   **$329.00**

Direct Connect Cables for Weather Stations

Connect your WatchDog Weather Station directly to your PC with a 75 ft (22.8 m) cable. Has 9-pin serial connection on PC end, may require USB adapter (Item 3661USB)

3660-75SP   **75 ft (22.8 m) Direct Connect Cable**   **$81.00**
          Includes surge protectors for both ends of the cable connection
3660DP   **75 ft (22.8 m) Powered Direct Connect Cable**   **$119.00**
          Includes AC adapter; no surge protectors

USB-to-3.5mm-Stereo-Plug Adapter

Connect WatchDog and FieldScout® devices directly to your computer's USB port

3661U   **USB-to-3.5mm-Stereo-Plug Adapter**   **$59.00**

9-Pin-Serial-to-3.5mm-Stereo-Plug Adapter

Connect WatchDog and FieldScout devices directly to your computer's 9-pin Serial Port

3661   **9-Pin-Serial-to-3.5mm-Stereo-Plug Adapter**   **$49.00**

USB-to-9-Pin-Serial Adapter

Connect 9-pin Serial cables (such as Item 3661) directly to your computer's USB port

3661USB   **USB-to-9-Pin-Serial Adapter**   **$39.00**

Soil Sensors

6470-6

6460

6450WD

3667

3669

6451

WaterScout® SMEC 300 Soil Moisture/EC/Temperature Sensor

Measures soil moisture (Volumetric Water Content), EC, and temperature. Range: VWC: 0 to saturation (typically 50%), Accuracy: ±3%; EC: 0 to 10 mS/cm, Accuracy: ±2%. May require WaterScout Calibration Device. See page 41 for more information. Compatible with WatchDog 2000 Series Stations (Full and Mini), 1000 Series Micro Stations, and Pups

6470-6	WaterScout SMEC 300 Sensor with 6 ft (1.8 m) Cable	$219.00
6470-20	WaterScout SMEC 300 Sensor with 20 ft (6.1 m) Cable	$229.00
6470CAL3V	WaterScout Calibration Device	$69.00
2251	Conductivity Standard, 1.41 mS/cm, 250 mL	$21.00

WaterScout® SM 100 Soil Moisture Sensor

Measures soil moisture (Volumetric Water Content) with little or no disturbance to the root zone. Range: 0 to saturation (typically 50%), Accuracy: ±3%. Optional WaterScout Calibration Device. See page 40 for more information. Compatible with WatchDog 2000 Series Stations (Full and Mini), 1000 Series Micro Stations, and Pups

6460	WaterScout SM 100 Sensor with 6 ft (1.8 m) Cable	$89.00
6460-20	WaterScout SM 100 Sensor with 20 ft (6.1 m) Cable	$97.00
6470CAL3V	WaterScout Calibration Device	$69.00

Watermark Soil Moisture Sensor

Measures soil moisture tension from 0 to 200 centibars. May require Watermark Adapter to connect original Watermarks to stations. See page 43 for more information. Compatible with WatchDog 2000 Series Stations (Full and Mini), 1000 Series Micro Stations, and Pups

6450WD	Watermark Sensor with 11 ft (3.3 m) Cable	$69.00
6450WD20	Watermark Sensor with 25 ft (7.6 m) Cable	$79.00

External (Soil) Temperature Sensor

Measure soil, air, or water temperature with a resistance-based sensor. Range: -25 to 212°F (-32 to 100°C). Accuracy: ± 1°F (±0.5°C). Compatible with WatchDog 2000 Series Stations (Full and Mini), 1000 Series Micro Stations, and Pups

3667	External (Soil) Temperature Sensor with 6 ft (1.8 m) Cable	$45.00
3667-20	External (Soil) Temperature Sensor with 20 ft (6.1 m) Cable	$55.00

Pressure Transducer

Adapts to Irrometer tensiometers and utilizes the dial gauge for measurements. See page 43 for more information. Accuracy: ±2%. Compatible with WatchDog 2000 Series Stations (Full and Mini), 1000 Series Micro Stations, and Pups

3669	Pressure Transducer	$269.00

Irrigation On/Off Sensor

Record and analyze relationships between irrigation periods and soil moisture. Does not control irrigation system, but monitors on/off periods. Range: On at 5psi. Compatible with WatchDog 2000 Series Stations (Full and Mini), 1000 Series Micro Stations, and Pups

6451	Irrigation On/Off Sensor	$185.00

Light Sensors

3670I

3676I

3668I6

LightScout® Silicon Pyranometer

Measure solar radiation between 300 and 1100 nanometers. Range: 2000 Series & Pups: 0 to 1500 W/m^2, Accuracy: ±5%; Micro Stations: 0 to 1250 W/m^2, Accuracy: ±5%. Compatible with WatchDog 2000 Series Stations (Full and Mini), 1000 Series Micro Stations, and Pups

3670I	LightScout Silicon Pyranometer	$249.00

LightScout® UV Light Sensor

Measure UV radiation between 250 and 400 nanometers.. Range: 0 to 200 µmol m^{-2} s^{-1}, Accuracy: ±5%

Compatible with WatchDog 2000 Series Stations (Full and Mini), 1000 Series Micro Stations, and Pups

3676I	LightScout UV Light Sensor	$249.00

LightScout® Quantum Light Sensors

Measure PAR light between 400 and 700 nanometers. Sensor bars average PAR light readings to minimize the effects of small shadows. Sensor bars are 19 in long and include mounting brackets. Range: 2000 Series & Pups: 0 to 3000 umol m-2 s-1, Accuracy: ±5%; Micro Stations: 0 to 2500 umol m^{-2} s^{-1}, Accuracy: ±5%. Compatible with WatchDog 2000 Series Stations (Full and Mini), 1000 Series Micro Stations, and Pups

3668I	LightScout Quantum Light Sensor	$219.00
3668I3	LightScout Quantum 3 Light Sensor Bar	$315.00
3668I6	LightScout Quantum 6 Light Sensor Bar	$369.00

3667S

3665R

3666

3671

2655

3664

3673

3613ARS

3613THS

3665RD

3305ADD

Temperature (Micro) Sensor

Measure surface temperature of leaves, buds, and other tiny mediums.
Range: -25 to 212°F (-32 to 100°C). Accuracy: ± 1°F (±0.5 °C).Compatible with WatchDog 2000 Series Stations (Full and Mini), 1000 Series Micro Stations, and Pups

3667S	Temperature (Micro) Sensor	$77.00

Tipping Bucket Rain Collector

Measure rainfall in 1/100 inch increments. Self-emptying and freeze resistant. Range: 0.01", 0.25 mm, Accuracy: ±2% at < 2 in (5 cm) per hour. Compatible with WatchDog 2000 Series Stations (Full and Mini) and 1000 Series Micro Stations

3665R	Tipping Bucket Rain Collector	$169.00

Leaf Wetness Sensor

Measure leaf wetness with a resistance-based sensor designed to replicate a leaf. Range: 0 (dry) to 15 (wet). Compatible with WatchDog 2000 Series Stations (Full and Mini), 1000 Series Micro Stations, and Pups

3666	Leaf Wetness Sensor	$99.00

Barometric Pressure Sensor

Measure atmospheric pressure. Range: Standard Sensor: 26 to 32 inHg, 880-1080 hPa, Accuracy: ±0.05 inHg, ±1.7 hPa; High Altitude Sensor: 18.75 to 33.1 inHg, 635-1121 hPa, Accuracy: ±0.057 inHg, ±1.9 hPa
Compatible with WatchDog 2000 Series Stations (Full and Mini), 1000 Series Micro Stations, and Pups

3671	Barometric Pressure Sensor - Standard	$239.00
3671M	Barometric Pressure Sensor - High Altitude	$239.00

CO$_2$ Sensor

Measure CO$_2$ levels in ppm using NDIR technology. Requires AC power. Not waterproof. Range: 0 to 4000 ppm, Accuracy: ±5% or 50 ppm . Compatible with WatchDog 2000 Series Stations (Full and Mini), 1000 Series Micro Stations, and Pups

2655	CO2 Sensor	$689.00

Sensor Extension Cable

20 ft (6 m) extension for all sensors (except digital sensors), connect up to 3 cables per sensor

3664	Sensor Extension Cable	$25.00

General Input Cables

Connect non-WatchDog sensors to your WatchDog Station. (Item 3673) Range: 0 to 3v, Accuracy: ±0.005V. (Item 3674) Range: 0 to 20.1 mA, Accuracy: ±1%. Compatible with WatchDog 2000 Series Stations (Full and Mini), 1000 Series Micro Stations, and Pups

3673	0-3V Input Cable	$20.00
3674	4-20mA Input Cable	$30.00

Digital Temperature/RH Sensor with Aspirated Radiation Shield

Digital temperature and RH sensor with 6 ft (2 m) cable, includes solar charging system to power internal fan. Range: -40 to 212°F (-40 to 100°C), 0 to 100% RH, Accuracy: ±0.54°F from 50 to 131°F (0.3°C from 10 to 55°C) , ±2.5% RH Compatible with WatchDog Pups only. Operating temperature 14 to 140°F (-10 to 60°C)

3613ARS	Temperature/RH Sensor with Aspirated Radiation Shield	$499.00

Digital Temperature/RH Sensor with Passive Radiation Shield

Digital temperature and RH sensor with 6 ft (2 m) cable. Range: -40 to 212°F (-40 to 100°C), 0 to 100% RH, Accuracy: ±0.54°F from 50 to 131°F (0.3°C from 10 to 55°C) , ±2.5% RH Compatible with WatchDog Pups only

3613THS	Temperature/RH Sensor with Passive Radiation Shield	$199.00

Digital Rain Collector

Measure rainfall in 1/100 inch increments. Self-emptying and freeze resistant. Range: 0.01", 0.25 mm, Accuracy: ±2% at < 2 in (5 cm) per hour. 6 ft cable. Compatible with WatchDog Pups only

3665RD	Digital Rain Collector	$299.00
3665DC	Digital Cable - 6 ft	$119.00
	Cable with tinned wire termination - for Pup connection to existing rain collectors only	

Digital Anemometer

Measure wind speed and direction. 40 ft cable. Range: 0 - 359°, Accuracy: ±3°, Range: 0, 1 to 200 mph (0, 1 to 322 km/h, Accuracy: ±2 mph (±3 km/h), ±5%. Compatible with WatchDog Pups only

3305ADD	Digital Anemometer	$379.00

SpecConnect

- Monitor your crops from wherever you are with the SpecConnect cloud solution
- See real-time conditions on your computer, smart phone, or tablet
- View current conditions with a mapped view of your stations
- Set custom thresholds to send alerts via text message and/or email
- Configure your equipment network from your computer
- Choose among a wide selection of standard reports for your weather data
- Create your own customized reports (Pro subscription required)
- Proactively manage disease and insects using forecast models (optional subscription)
- Easily export data and reports to share or import to other applications

SpecWare 9 Basic

- Easily download, analyze, and produce basic reports from the weather data collected on your WatchDog® Micro Stations and data loggers
- Eliminate valuable time exporting the data and performing calculations in tedious spreadsheet programs
- Spec 9 Basic automatically assigns each WatchDog Data Logger Station to its own "logger location" directory, which is appended every time you download new data
- Includes USB cable and manual
- Download the software from specmeters.com (activation required)

Spec 9 Basic does not support disease models or the 2000 Series Full or Mini Weather Stations, or Retriever & Pups

3654B9	Spec 9 Basic Software	$99.00
3654B9X	Spec 9 Basic Extra User License	$69.00
3654B9U	Spec 9 Basic Upgrade*	$39.00
3661U	USB-to-3.5mm-Stereo-Plug Adapter	$59.00

* Does not include USB cable

SpecWare 9 Pro

Powerful analysis tools that are easy to use.
- Graph on-the-fly with an interactive graphing window
- Build, customize, and save your most important report formats or choose from 15 standard reports
- Add optional insect and disease models to forecast pest pressures and reduce pesticide costs; produce reports with graphs for each pest
- Set a frost alarm that will call your phone at frost temperatures or other sensor conditions
- Automate logger downloads with wireless or directly connected stations
- Generate scheduled log files for data-to-web applications or create an XML file that can be posted on the web
- Find and use data easily with an open file management system - all logger data is stored in one file per month, simplifying data sharing and exporting
- Import data files from other applications
- International features include handling date, time, and numbers with regional formats and Metric or US measurements
- Includes USB cable and manual
- Download the software from specmeters.com (activation required)

3654P9	Spec 9 Pro Software	$195.00
3654P9X	Spec 9 Pro Extra User License	$95.00
3654P9U	Spec 9 Pro Upgrade*	$75.00
3661U	USB-to-3.5mm-Stereo-Plug Adapter	$59.00

* Does not include USB cable

BASIC VS. PRO
COMPARING SPEC 9 BASIC TO SPEC 9 PRO

	Basic	Pro
View Data		
On-demand graphing	✔	✔
Manage Data		
Calibration adjustment	✔	✔
Automatic data append	✔	✔
Single file per logger	✔	✔
International data format	✔	✔
Reports		
Standard reports	✔	✔
Custom reports		✔
Disease & Insect models		OPT
"Pest Alert" report models		OPT
Communications		
Direct connect or modem	✔	✔
Wireless capability		✔
Cellular or wi-fi modem		✔
Auto download		✔
Supported Products		
2000 Series Full Stations		✔
2000 Series Mini Stations	✔	✔
Retriever & Pups		✔
1000 Series Micro Stations	✔	✔
A-Series & B-Series	✔	✔

SpecWare™ 9 software is compatible with Windows XP and later.

GO TO SPECMETERS.COM/UPDATES TO ENSURE YOUR SOFTWARE VERSION IS COMPATIBLE WITH OUR NEWEST WATCHDOG MODELS.

Disease & Insect Models

Become more proactive in your management of disease and insects by adding forecast modules to your Spec 9 Pro software.

Each package uses field-tested and validated algorithms along with your data to forecast the potential for the appearance of your crop's most notorious enemies.

Quickly produce the documentation needed to support your IPM decisions.

Forecast Model Packages
for SpecWare Pro

3656AP   **Apple/Pear Alert Package**   **$295.00**

Required Sensors: **Leaf wetness and temperature**
Models Included: **Apple Scab* (Modified Mills, Cornell, Washington State)**
    Fire Blight (Maryblyt, Cougarblight)
    Sooty Blotch/Flyspeck*
    Insect Models

3656CH   **Cherry Alert Package**   **$199.00**

Required Sensors: **Leaf wetness and temperature**
Models Included: **Leaf Spot**
    Insect Models

3656GA   **Grape Alert Package**   **$295.00**

Required Sensors: **Leaf wetness, relative humidity, and temperature**
Models Included: **Powdery Mildew* (Thomas-Gubler)**
    Black Rot* (Spotts)
    Downey Mildew
    Botrytis
    Phomopsis Cane Leaf Spot
    Insect Models

3656PO   **Potato Alert Package**   **$295.00**

Required Sensors: **Temperature, relative humidity, and rain**
Models Included: **Early Blight**
   **Late Blight (BliteCast)**
    Insect Models

3656TO   **Tomato Alert Package**   **$199.00**

Required Sensors: **Leaf wetness and temperature**
Models Included: **Tomcast***
    Insect Models
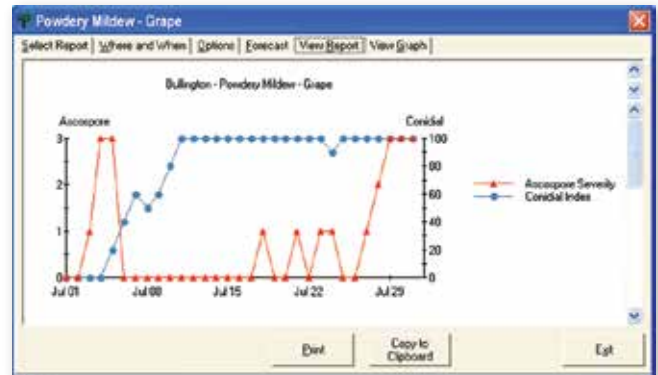

3656TU   **Turf Alert Package**   **$249.00**

Required Sensors: **Air and soil temperature, relative humidity, and rain**
Models Included: **Brown Patch (Schumann)**
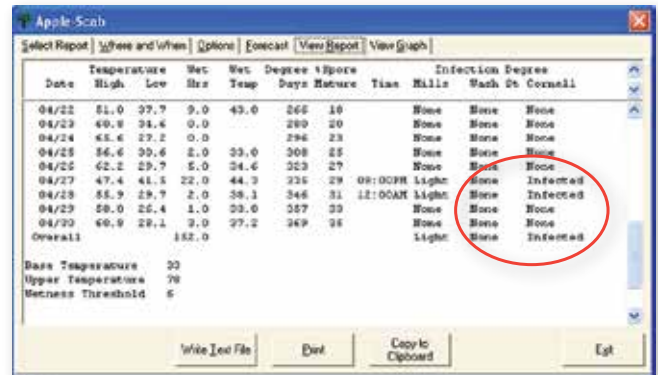   **Pythium (Nutter, Schein)**
    Dollar Spot (Hall, Mills/Rockwell)
    Insect Models

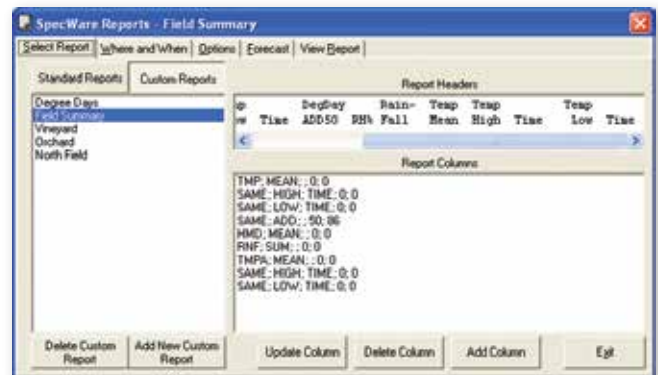***Can be displayed on WatchDog® 2000 Series Mini Stations**
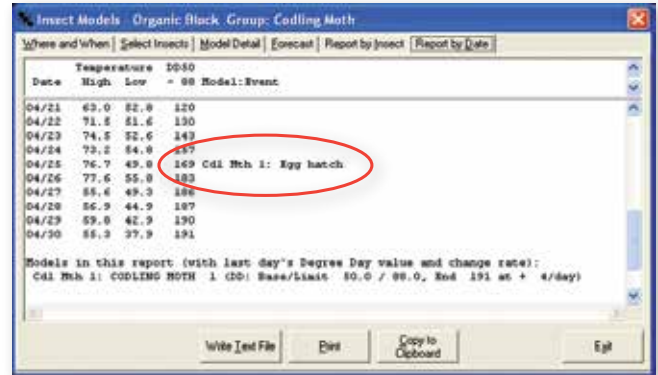
Codling Moth Insect Model

Powdery Mildew Report for Grapes

Apple Scab Report

Custom Reports

GO-TO STRATEGY
KEEP SPRAY WHERE IT BELONGS FOR SAFE, PRECISE CHEMICAL APPLICATION

Reduce pesticide drift complaints and monitor your current weather conditions. Mount it right on your equipment or vehicle!

Pesticide drift is increasingly important to commercial applicators. Now you can monitor wind speed and direction and log weather conditions with the ultrasonic WatchDog® Sprayer Station. Accurate data helps pesticide applicators make important decisions regarding weather conditions that affect safety, drift, and proper pesticide application. User controlled data logging of weather conditions provides evidence of suitable conditions for pesticide application.

Weather will never be an issue for you with this tool.

• This all-in-one weather station measures air temperature, humidity, dew point, wind chill, barometric pressure and apparent wind speed and direction
• Station uses an internal compass and GPS to adjust the wind sensor values by subtracting the vehicle speed and direction to compute the true values
• Field replaceable humidity sensor
• Handles adverse conditions with a UV-stabilized, compact housing that is fully waterproof and resistant to chemicals
• Reliability is enhanced by eliminating moving parts: the traditional wind vane and cups have been replaced with ultrasonic transducers
• Continuously log your weather parameters at a user-selectable rate or hit the snapshot button to capture current conditions at a specific moment

Integrates with Raven Envizio Pro, Viper Pro and Viper 4

2.75 in (7 cm)

12.75 in (33 cm)

Replaceable Humidity Sensor

WatchDog® Sprayer Station

Course and Speed — Apparent Wind Speed — Wind Speed — Drift Direction

WatchDog® Sprayer Station Console

Sprayer Station

Code	Description	Price
3349SSCH	**WatchDog® Sprayer Station with Console**	**$2,390.00**
	Save $50.00 by purchasing the Station and Console together	
3349SSH	**WatchDog® Sprayer Station**	**$1,895.00**
	Includes sensor unit with magnetic base, 21 ft (7 m) cable with vehicle power and 9-pin serial connectors, and display/logging program for Windows Mobile PDA or Windows Laptop	
3349CN	**WatchDog® Sprayer Station Console**	**$565.00**
	Includes console with built-in data logger, USB-to-3.5mm stereo cable, and software CD	
349H	**Replacement Humidity Sensor**	**$195.00**
3661USB	**USB-to-9-Pin-Serial Adapter**	**$39.00**

SPECIFICATIONS FOR SPRAYER STATION

Wind Resolution - Speed: 0.1 mph (0.2 km/h); Direction 1°
Wind Speed Range: 0 to 90 mph (0 to 145 km/h)
Wind Speed Accuracy: <12 mph (19 km/h): ±1.1 mph (1.7 km/h) ±10%; >12 mph (19 km/h): ±2.3 mph (3.7 km/h) or ±5%
Wind Direction Accuracy: 4 to 11 mph (6 to 18 km/h): ±5°; >12 mph (19 km/h): ±2°
Wind Accuracy Temperature Range: 32° to 131°F (0° to 55°C)
Operating Temperature: -13° to 131°F (-25° to 55°C)
Temperature Accuracy: ±1.8°F (±1°C) with wind above 4.6 mph (7.4 km/h)
Relative Humidity Range: 10 to 95%
Relative Humidity Accuracy: ±5% with wind above 4.6 mph (7.4 km/h)
Barometric Pressure Range: 24 to 33 in-Hg (800 to 1100 hPa)
Barometric Pressure Accuracy: ±0.029 in-Hg (±1 hPa)
Power Supply Voltage: 9 to 40 VDC; Current: <90 mA

WeatherTrackers

Monitor weather conditions <u>without</u> the need for a computer.

• Record and display conditions in your orchard, vineyard or greenhouse that can alert you to insect and plant disease pressure
• Values are calculated based on sensor readings taken every 15 minutes

Degree days:
• Program up to three degree-day memories and one chill-hour memory
• Solar radiation shield and 15-minute degree-day data point intervals result in exceptionally accurate degree-day calculations

Built-in Data Logger:
• Store your events in fail-safe, non-volatile memory
• Replace the batteries without losing valuable weather data
• More than enough memory for a complete growing season

LCD display:
• Displays the current conditions in addition to the daily high/low temperature readings, degree days, leaf wetness hours*, disease pressure*, DLI/DIF (Daily Light Integral and day/night temperature difference)
• Recall the last 30 days of detail data, as well as 12 months of summaries
• Current readings are updated every 15 seconds
  * on applicable models

Battery powered:
• 8-month battery power source (9V battery included) means no solar panels to purchase or maintain

NO PC NEEDED!

3501PAR

3512

SPECIFICATIONS FOR WEATHERTRACKERS

Item #	Model #	Air Temp	Quantum Light	Leaf Wetness	Disease Forecast	Price
Greenhouse Growth Tracker **3501PAR**	305	Yes	Yes	No	No	**$645.00**
Degree Day Tracker **3500**	300	Yes	No	No	No	**$449.00**
Apple/Pear Pest Alert **3504**	320	Yes	No	Yes	Apple Scab Sooty Blotch	**$489.00**
Grape Pest Alert **3512**	330	Yes	No	Yes	Powdery Mildew Black Rot	**$489.00**

```
80° F        AVG 79° F
352um        6.6M/DAY
```
Greenhouse Growth Tracker
Monitor both current and cumulative light levels

```
APPLE SCAB
INFECT = NONE
```
Apple/Pear Pest Alert

```
DD#1   50-86o      18
SINCE  04/12     0377
```
All Models
Shows current degree days

```
POWDERY MILDEW
ASC=NONE      CON=70
```
Grape Pest Alert
Built-in disease models allow you to make adjustmests as soon as it is needed.

Vantage Pro 2
Economical weather station
- Innovative, integrated sensor suite combines a rain collector, temperature/ humidity sensor, and an anemometer into one package, allowing for easy setup and improved performance and reliability
- Temperature and humidity sensors are housed inside a radiation shield for improved accuracy
- Also measures barometric pressure and dew point, and user-set audible alarms for frost
- Forecasting, on-screen graphing, and much more
- Quick view icons show the forecast at a glance while a moving ticker-tape display gives details
- Transmits wirelessly up to 1,000 ft (300 m)
- Cabled station includes 100 ft (30 m) cable from console to sensor suite

3340CVP2	Vantage Pro 2 Cabled	$595.00
3340WVP2	Vantage Pro 2 Wireless	$650.00

VANTAGE PRO 2 AND VUE SPECIFICATIONS	
	Accuracy
Wind: Direction: 1°	±3°
Speed: 1 to 180 mph (1 to 290 km/h)	±5%
Wind Chill: -134° to 140°F, -92° to 60°C	±4°F, ±2°C
Humidity: Inside: 0% to 100%	±3%
Outside: 0% to 100%	±2%
Barometer: 16 in to 32.50 in Hg (410 to 820 mm Hg)	±0.03 in Hg, ±1.3 mm Hg
Temperature: Inside: 32° to 140°F, 0° to 60°C	±1°F, ±0.5°C
Outside: -40°F to 150°F, -40° to 65.5°C	±1°F, ±0.5°C
Rainfall: Daily: 0 to 199.99 in (0 to 6553 mm)	±4%
Accumulation: 0 to 199.99 in (0 to 6553 mm)	±4%
Time & Date: 12 or 24 Hour Clock, Time Alarm and Date	

Vantage Vue
Basic weather station
- Compact, self-contained, and easy to install
- Combines a rain collector, temperature/humidity sensor, and an anemometer into one package
- Also measures barometric pressure and dew point, and user-set audible alarms for frost
- Transmits wirelessly up to 1,000 ft (300 m)
- Includes console

|		
3340VV	Vantage Vue	$395.00

WeatherLink – Windows version

Upgrade your Vantage Pro 2 or Vantage Vue Station to track and record weather history on your PC.
- The included data logger fits neatly into the weather station console, storing weather data at user-defined intervals, even when it's not connected to your PC
- Download the data and create graphs, generate summaries, and more
- Plot daily, weekly, monthly, and annual data, as well as track degree-days (Item N0006 required for degree-days)
- Depending on the logging interval, store up to six months of data
- One WeatherLink required for each console connected to a PC
- Includes USB or serial port adapter, 8 ft (2 m) cable, software, and manual

3362VP2	WeatherLink for Vantage - USB	$165.00
3362VP2S	WeatherLink for Vantage - Serial Port	$165.00
N0006	Growing Degree Day Software Upgrade	$95.00

WatchDog
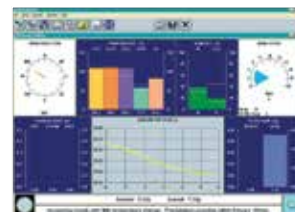
Frost Cellular Alert

Ideal for temperature-sensitive fruits and vegetables - be alerted when frost conditions are near.

• LCD display (current settings, signal strength, etc.)
• Key pad for user set up: user-defined thresholds, system test operation
• Relay terminal connections to control an external device
• NEMA 4 (IP66) enclosure
• GSM 3G/HSPA+ cellular module included (user provides SIM card and service plan —Pay-As-You-Go recommended)
• CDMA model for Verizon Wireless (service plan required)
• Set a second limit to periodically send texts with current conditions
• Makes voice call or sends text message (or both) to up to 4 phone numbers
• Makes voice call again, if calls go unanswered
• Requires 6-volt lantern battery (not included)
• Includes 6 ft (1.8 m) external temperature sensor

Go to www.specmeters.com for more options and models for humidity, flood irrigation, and power monitoring

Temperature range: -22 to 130°F (-30 to 55°C)
Accuracy: ±1.1°F (±0.6°C) at -4 to 122°F (-20 to 50°C), else ±2.2°F (±1.2°C)

3453	WatchDog® Frost Cellular Alert Pro - GSM 3G HSPA+	$1,095.00
3452	WatchDog® Frost Cellular Alert Pro - CDMA	$1,145.00

Visual Frost Alert

Spot frost conditions easily in your vineyard or orchard.

• When temperatures approach freezing, the high-powered LED light
  (visible from about two miles) changes flash frequency and pattern to indicate
  temperature conditions at a glance
• Sensor cable is 6 ft (1.8 m) long for ease of placement
• Requires 3 AAA lithium batteries (not included)

3435	WatchDog® Visual Frost Alert	$99.00
3435PK3	BUY TWO GET ONE FREE!	3/$198.00

Temperature	Interval	Flashes per Interval
Above 37°F (3°C)	30 Seconds	1
34 to 37°F (1 to 3°C)	30 Seconds	2
32 to 34°F (0 to 1°C)	15 Seconds	3
30 to 32°F (-1 to 0°C)	5 Seconds	4
Below 30°F (-1°C)	1 Second	1

Color Frost Alert

Protect your high-value crops.

• Easy visual signal for helicopter pilots or distance viewing
• When temperatures approach freezing, the high-powered LED light
  (visible from about two miles) changes color and flash frequency to
  indicate temperature conditions at-a-glance
• Shuts off above 37°F (2.8°C) to conserve power
• Requires 6V lantern battery (not included)

3430	WatchDog® Color Frost Alert	$239.00

Color Frost Alert Warning Colors

Lights will warn you of falling temperatures and risk of frost.

Green – Above 34°F (1°C)
White – 32° to 34°F (0-1°C)
Red – Below 32°F (0°C)
Flashing Red – Below 30°F (-1°C)

IPM Scope

Portable digital microscope at an affordable price.

The IPM Scope combines a digital camera, precision optics, and LED lighting into a powerful handheld microscope that connects to your computer via USB

- 40x and 140x magnification
- View magnified image right on your computer screen
- Included software allows you to customize your images with labels, markers, time stamps, and measurement scales
- Archive still images or send files via e-mail
- Requires computer connection to operate, includes software
- Video software upgrade provides the ability to capture live videos and time lapse sequences of insect movement

2860	IPM Scope	$349.00
2860V	Video Software Upgrade	$49.00
2860UV	IPM Scope-Ultra Violet	$495.00
2860MP	IPM Scope-Mega Pixel	$845.00
2860HS	Plastic Horseshoe-3D images	$25.00
2860MAC	Software for Mac Computers	$35.00

Go to www.specmeters.com for more models and accessories

IPM Scope shown with optional Plastic Horseshoe to view 3D images

SPECIFICATIONS FOR IPM SCOPE

Image Sensor: 1/3 in CMOS	**Pixels:** 640 x 480
Power: USB Port	**Light Source:** Super-bright LEDs
Field of View: @40x: 7.5 x 10 mm	**Resolution:** 4 microns
@140x: 1.8 x 2.5 mm	

Image taken by IPM Scope

Image taken by IPM Scope - Mega Pixel

Macroscopes

Identify pests and diseases up close.

- Macroscope 25 provides 25X magnification over a wide 5 mm (3/16 in) field of view
- Macroscope 45 provides 45X magnification over a wide 3 mm (2/16 in) field of view
- Positionally correct image includes an interchangeable scale
- Incorporates a measuring scale providing measurements in inches or millimeters
- Can be used for distance viewing when close-up lens is removed

2851	Macroscope 25 with hard carrying case	$225.00
2852	Macroscope 45 with hard carrying case	$270.00

photo courtesy of Derek Settle

Sunlight >How much or how little?

Put as many as you like anywhere you like to find out exactly what light is available in that precise location. A simple way to measure how much sunlight even a shaded area really gets. Stick it in a pot, in your turf or anywhere!

Growers can position the meters throughout the greenhouse, as well as outside, to compare differences in light levels and the effect on plant growth and quality.

Works Everywhere!

LIGHTSCOUT® DLI 100 Light Meter

Greenhouse and Turf Models
Measure the light "falling" on your plants.

- Measures PAR light (Photosynthetically Active Radiation)
- Meter runs for 24 hours to calculate the Daily Light Integral (DLI)
- Real-time intensity levels are shown in $\mu mol \cdot m^{-2} \cdot s^{-1}$ every 4 seconds
- Greenhouse and Turf models available - each model provides greater resolution where it's needed most
- Helps you make decisions to increase plant growth and quality
- Simultaneously compare light between multiple locations
- Simple, one button operation
- Affordable, first step in measuring light
- Battery included

3405G3	LightScout® DLI 100 Meter - Greenhouse (set of 3)	BUY TWO GET ONE FREE	$118.00
3405G	LightScout DLI 100 Meter - Greenhouse (1 unit)		$59.00
3405T3	LightScout® DLI 100 Meter - Turf(set of 3)	BUY TWO GET ONE FREE	$118.00
3405T	LightScout DLI 100 Meter - Turf (1 unit)		$59.00

"Measuring DLI inside the greenhouse can be very revealing, since growers usually rely on their eyes to determine the light levels and the human eye is a terrible light sensor because it is so effective at adjusting to different light environments."

James E. Faust
Associate Professor of Horticulture
Clemson University

GENERALIZED PLANT RESPONSES TO DIFFERENT LIGHT LEVELS

Relative Light Level	DLI* - Daily Light Integral	Light Intensity** at Noon	Generalized Plant Growth Response
Very Low	2 to 5	100 to 200	Poor quality
Low	5 to 10	200 to 400	Minimum acceptable
Medium	10 to 20	400 to 800	Good quality
High	20 to 30	800 to 1,200	Excellent quality
Very High	30 to 60	1,200 to 2,000	Excellent quality

* Moles
** Micromoles ($\mu mol/m^2 \cdot s$)

Note: It is not possible to make a direct conversion between an instantaneous light measurement and the Daily Light Integral. Also, temperature is a key factor in plant quality and growth. Source: Hamrick, Debbie, ed. Ball Red Book. Batavia, IL: Ball Publishing, 2003.

3412

LIGHTSCOUT® Red/Far-Red Meter

Red/Far-Red light ratio helps plants determine their proximity to each other, which affects how tall or full they grow.

- Cost-effective Red/Far-Red measurement
- Displays the Red/Far-Red ratio on the LCD screen
- Press a button to display 660 nm and 730 nm readings
- Includes soft-sided case (also available separately as Item 7500)

3412	**LightScout® Red/Far-Red Meter**	**$895.00**

3414F

LIGHTSCOUT® UV Meter

Handheld meter monitors critical UV radiation (250-400 nm).

- Determine UV filtering capacity of greenhouse shades and glass barriers
- Range is 0 to 200.0 $\mu mol \cdot m^{-2} \cdot s^{-1}$ (full sunlight)

3414F	**LightScout® UV Meter**	**$289.00**
7500	**Soft-Sided Carrying Case**	**$35.00**

3415FXSE

LIGHTSCOUT® Quantum/PAR Meters

Measure the light used for plant growth - PAR is a more valuable measurement than foot-candles, as it measures only the light used by plants for photosynthesis.

- Measures photosynthetically active radiation (PAR) from 400 to 700 nm
- Range of 0 to 2,000 $\mu mol \cdot m^{-2} \cdot s^{-1}$
- Available in a variety of configurations for your convenience

3415F	**LightScout® Quantum Meter**	**$199.00**
3415FSE	**LightScout® Dual Solar/Electric Quantum Meter**	**$249.00**
3415FXSE	**LightScout® Dual Solar/Electric Quantum Meter - External Sensor**	**$299.00**
3415FQF	**LightScout® Quantum and Foot-Candle Meter**	**$299.00**
7500	**Soft-Sided Carrying Case Sold separately**	**$35.00**

Learn more about light - read our "Measuring Light" brochure. Scan code & download the PDF

LIGHTSCOUT® Foot-Candle Meter

Displays immediate light level in units of foot-candles.
- An affordable light measurement solution
- Precision photodiode with cosine correction

3413F	**LightScout® Foot-Candle Meter**	**$199.00**
7500	**Soft-Sided Carrying Case Sold separately**	**$35.00**

LIGHTSCOUT® External Light Sensor Reader

Reads any of Spectrum's external light sensors.

- Plug in a sensor, choose it on the LCD, and start measuring UV, Quantum Light, or Solar Radiation
- Sensors can also be used with WatchDog® Weather, Mini, and Micro Stations
- LightScout® External Light Sensor Reader includes soft-sided case (also available separately as Item 7500)

3415FX	LightScout® External Light Sensor Reader	$279.00
	Compatable light sensors sold separately:	
3668I	LightScout® Quantum Light Sensor (PAR Light)	$219.00
3668I3	LightScout® Quantum Light 3 Sensor Bar	$315.00
3668I6	LightScout® Quantum Light 6 Sensor Bar	$369.00
3670I	LightScout® Silicon Pyranometer Sensor (Solar Radiation)	$249.00
3676I	LightScout® UV Sensor	$249.00

3415FX

3670I

3668I6

WatchDog® Model 2475 Plant Growth Station

Ideal for Greenhouses - monitor microclimates with four sensor channels.

- Computes and displays Daily Light Integral (DLI), current light levels, dew point, degree day models, and chill hours
- Computes and displays DIF – Average day/night temperature difference
- Computes and displays VPD – Vapor Pressure Deficit
- Monitor and record temperature, humidity and light conditions, plus 1 additional sensor port
- Easily check current conditions and up to 12 months of historical data on the LCD display
- Calculate DLI and compare to research guidelines (from your extension office or at www.specmeters.com/articles)
- Requires SpecWare™ software

3686WD	WatchDog® Model 2475 Plant Growth Station	$895.00

SpecWare plant growth report   Displays Daily Light Integral (DLI) and Day/Night Temperature Difference on the LCD

WatchDog® WeatherTracker Model 305 Greenhouse Growth Tracker

Keep tabs on the conditions affecting your plants on the LCD display.

- Temperature sensor tracks degree-days without a computer
- Quantum light sensor measures your plants' light exposure over time (in moles/day) - displays current and cumulative DLI (Daily Light Integral)
- Computes and displays DIF – average day/night temperature difference
- Comprehensive tool to assess physiological maturity of your plants
- Stand-alone device – all information is shown on the LCD display
- One-button review of 30 days of values and 12 months of summaries
- LCD (updates every 15 seconds) with easy-to-use keypad
- 9V battery with 8-month life; memory protection in case of power loss

3501PAR	WeatherTracker® Model 305 Greenhouse Growth	$645.00

Water   >   How much or how little?

Soil Moisture Meters

Keep everything healthy by eliminating
standing water or dry spots.

AE50
outstanding innovations
AWARD WINNER
FOR TECHNOLOGY
INNOVATION

FIELDSCOUT® TDR 100

Obtain soil moisture readings at the press of a button
- Instantaneous readings of root zone soil moisture
- Ideal for measuring containers on benches
- Probe block comes with a 5 ft (1.5 m) cable
- Configure meter with FieldScout® software (free web download)
- USB-to 3.5 mm Stereo Plug Cable included
- Variable length rods sold separately (see next page)

6440FS	**FieldScout® TDR 100 Soil Moisture Meter**	**$735.00**
	Includes hard-sided carrying case	
6440FSS	**Replacement TDR 100 Probe Block**	**$265.00**
	(with cable)	
6440CASE	**TDR 100 Carrying Case**	**$39.00**

FIELDSCOUT® TDR 300

Portable soil moisture meter to help manage water evenly and
responsibly and reduce operating expenses.
- Instantaneous readings of root zone soil moisture
- FieldScout Bluetooth Device connects to the FieldScout Mobile
  App, instantly see your data on your smart phone or tablet
- Compatible with SpecMaps™ online web-mapping application, create
  2-dimensional maps of your data (see website for details)
- Connects to a GPS receiver that has a serial output option (GPS required
  with SpecMaps*), we recommend the Garmin 73 GPS unit (see below)
- Equipped with internal data logger and RS-232 port
- Configure and download meter with FieldScout® software (free web download)
- USB -to-3.5mm Stereo Plug Cable included
- TDR Rods required and sold separately (see next page)

* GPS interface requires two cables. The GPS/DGPS cable (item 2950CV5) and the PC serial interface
  cable for the GPS unit (Item 7072CABLE for the Garmin 73).

6430FS	**FieldScout® TDR 300 Soil Moisture Meter**	**$1,069.00**
	Includes soft-sided carrying case	
6453BT	**FieldScout® Bluetooth Device**	**$199.00**
2950CV5	**GPS/DGPS Cable**	**$39.00**
7250	**GPS Unit Mounting Bracket**	**$149.00**
6430CASE	**Replacement TDR 300 Carrying Case**	**$109.00**
	TDR Rods required (see next page)	

TDR 300 LCD display shows
current measurement, rod
length, number of readings,
and running average

SPECIFICATIONS FOR TDR SOIL MOISTURE METERS

Measurement Principle: Time-domain measurement methods

Measurement Units: Percent volumetric water content

Resolution: 0.1% volumetric water content

Accuracy: ±3.0% volumetric water content with electrical conductivity < 2 mS/cm

Range: 0% to saturation (Saturation typically around 50% volumetric water)

Battery/Life: 4 AAA alkaline batteries; approximately 12-month battery life

Data Logger: (TDR 300) 2,320 measurements without GPS; 1160 with GPS/DGPS

Bluetooth™

Install the FieldScout Mobile App to capture and analyze measurements on your turf using Bluetooth wireless technology on a FieldScout® TDR 300 Soil Moisture Meter or the FieldScout® TruFirm Turf Firmness Meter. Works on iOS and Android devices. TDR 300 requires the FieldScout® Bluetooth Device for connection.

- On-the-go means of collecting data
- Collects data from FieldScout® TDR 300 Soil Moisture Meter (Bluetooth device required) and FieldScout® TruFirm Turf Firmness Meter using Bluetooth Smart connection
- Uses your smart phone for time-stamping and geo-referencing the data (Pro features)
- Upload to SpecConnect Web Portal and view your entire course's data at once and export for further analysis (Pro features)
- Color-coded to represent a scale of turf firmness or moisture
- Eliminates the need for hooking up to a GPS or computer
- Visualize readings in real time
- E-mail relevant information
- FieldScout® TDR 300 requires FieldScout® Bluetooth Device
- Compatible with iOS and Android smart phones and tablets, device requires Bluetooth Smart Ready
- Free download from App Store or Google Play,
- Use all the Basic functions free. Unlock the Pro features with a SpecConnect FieldScout® subscription

FieldScout Mobile App		**FREE**
6453BT	**FieldScout® Bluetooth Device for TDR 300**	**$249.00**
3035	**SpecConnect FieldScout® Pro Subscription (1-yr)**	**$99.00**
3060	**SpecConnect Additional FieldScout® Device (1-yr)**	**$24.00**

FIELDSCOUT MOBILE APP BASIC vs. PRO

	Basic	Pro
Basic Grid of Zones	✔	✔
Change Number of Zones	✔	✔
Customizable Google Map Image		✔
Saves the Average Measurement by Zone	✔	✔
Email the Map/Results View	✔	✔
Freeform Notes		✔
Freeform Mode		✔
Guided Mode (Auto-Advancing through Zones)		✔
SpecConnect Data Sharing		✔
Auto-Upload to SpecConnect		✔
Add User Note or Comment to Individual Reading or Zone		✔

TDR Rods

Multiple depth options for varying root zones.
- Sturdy stainless-steel construction
- Field replaceable
- Rods must be fully inserted for valid measurements

6428FS4	**Two 1.5 inch (3.8 cm) Rods**	**$59.00**
6429FS4	**Two 3 inch (7.5 cm) Rods**	**$59.00**
6431FS4	**Two 4.8 inch (12 cm) Rods**	**$59.00**
6432FS	**Two 8 inch (20 cm) Rods**	**$59.00**
6430PH	**Pilot Hole Maker for TDR Meters** **Includes two 3 inch (7.5 cm) rods**	**$70.00**

SpecConnect Web Portal showing TDR 300 data

Pilot Hole Maker for TDR Meters   Field replaceable rods

FIELDSCOUT®
TruFirm®

Supported with
USGA®
Developed Technology
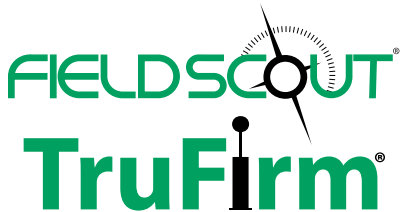
Based on technology developed by the United States Golf Association (USGA), the FieldScout® TruFirm® offers a quick, easy, and affordable method to measure the firmness of turf, bunker sands, and other playing surfaces. Data acquired from the device allows researchers and turf management professionals to measure the relationship between the compaction of the soil and the moisture level, in order to quantify playing conditions.

- View measurement on LCD Display
- Evaluate trends and monitor sections of turf relative to one another
- With FieldScout® Mobile App, instantly see your data on your smart phone or tablet
- The lower the value, the firmer the turf or surface
- Logged data can be sent via Bluetooth to a iOS or Android device for plotting specific greens or other surfaces
- Lightweight design results in an easily portable device without the need for extra parts
- Includes soft-sided carrying case

6490S	FieldScout® TruFirm Turf Firmness Meter with Bluetooth 4.0	$899.00
6490	FieldScout® TruFirm Turf Firmness Meter Base model without Bluetooth	$749.00
6491S	Bluetooth 4.0 Upgrade for TruFirm	$179.00

SPECIFICATIONS FOR TRUFIRM

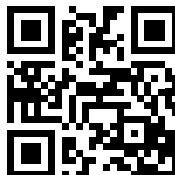| |
|---|
| Power: 2 AA batteries (included) |
| Weight: 4.3 lb (1.95 kg) |
| Height: 27 in (69 cm) |
| Diameter of Hammer: 1.68 in (4.45 cm) |
| Measurement Units: Depth of travel (inches) |
| Range: 0.1 in - 1.5 in (2.54 mm - 38.1 mm) |
| Resolution: 0.01 in at 1.00 in - 1.50 in (0.25 mm at 25.4 mm - 38.1 mm) 0.003 in at 0.00 in - 0.999 in (0.076 mm at 0 mm - 25.4 mm) |
| Display: LCD with backlight |

Watch the TruFirm in action. Scan code & watch our YouTube video

Available on the App Store

- **VALIDATE YOUR CULTURAL PRACTICES**
- **QUICK & EASY 1 PIECE DIGITAL TOOL**
- **HANDS-FREE DATA COLLECTION WITH BLUETOOTH**
- **MONITOR ALL KEY PLAYING SURFACES FOR IMPROVED PERFORMANCE ON GOLF COURSES, ATHLETIC FIELDS AND MORE**

FIELDSCOUT® SC 900 Soil Compaction Meter

Help make decisions regarding areas of the field that require tillage, changes to crop rotation, and planting of cover crops.

- Includes 1/2 in and 3/4 in cone tip
- Takes compaction readings every inch from 0 to 18 in (45 cm)
- Exclusive ultrasonic depth sensor captures readings in 1 in (2.5 cm) increments
- Penetration resistance measured by internal load cell
- Compaction data is displayed in PSI or kPa (1 psi = 6.9 kPa)
- Connects to any GPS receiver that has a serial output option*
- Equipped with internal data logger and RS-232 port
- Configure and download meter with FieldScout® software (included)**
- Compatible with SpecMaps™ online web-mapping application, create 2-dimensional maps of your data (see website for details)
- Includes USB cable, carrying case, and depth target

* GPS interface requires two cables. The GPS/DGPS cable (item 2950CV5) is available from Spectrum. A PC serial interface cable supplied by the manufacturer of the GPS receiver is also required.

** PC cable connects to a computer USB port. See our website for other cable connection options.

6110FS	FieldScout® SC 900 Soil Compaction Meter	$1,795.00
2950CV5	GPS/DGPS Cable	$39.00
7250	GPS Unit Mounting Bracket	$149.00
6110FST	Replacement Depth Target	$30.00
6106	1/2 in Replacement Tip (Fine soils)	$35.00
6107	3/4 in Replacement Tip (Coarse soils)	$40.00

FieldScout SC 900
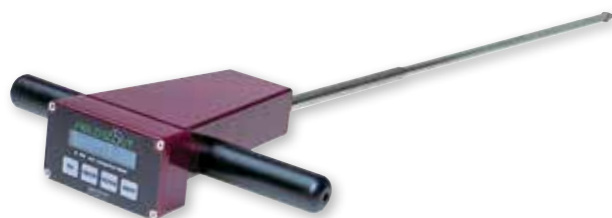
SPECIFICATIONS FOR FIELDSCOUT SC 900

Measurement Units:	Cone Index (PSI or kPa)
Resolution:	1 in (2.5 cm), 5 PSI (35 kPa)
Accuracy:	±0.5 in (1.25 cm) Depth, ±15 PSI (103 kPa) Pressure
Range:	0 to18 in (0 to 45 cm), 0 to 1,000 PSI (0 to 7,000 kPa)
Battery/Life:	4 AAA alkaline batteries; approximately 12-month life
Data Logger Capacity:	772 profiles without GPS; 579 profiles with GPS

Soil Compaction Tester

Economical way to measure soil compaction with analog read out.

- Large and small tip included with convenient storage in tester housing
- 24 in stainless steel rod with adjustable shock collar to prevent damage to the gauge during transport or storage
- Easy to read, color-coded, stainless steel dial that is liquid filled to reduce shock
- Durable molded housing with rubber grip handles
- Penetration Depth: Up to 24 in (60 cm) in 3 in (7.6 cm) increments

6120	Soil Compaction Tester	$235.00
6121	1/2 in Replacement Tip (Fine Soils)	$22.00
6122	3/4 in Replacement Tip (Coarse Soils)	$29.50

Actual size

WATERSCOUT®

SM 100 Soil Moisture Sensor

Place at multiple depths to help determine both when and how much to water.

• Measures Volumetric Water Content (VWC) of soil
• Capacitance-type sensor responds immediately to changes in soil moisture content for better irrigation decisions
• Calibrated for mineral soils or soilless media
• Installs easily into 3/4 in (1.9 cm) hole
• Install permanently or use to take spot measurements
• Can be read with the FieldScout® Soil Sensor Reader (Item 6466) or WatchDog® 2000, 1000 Series Stations, and WatchDog Pups
• Connect up to 8 sensors to one station
• WaterScout Calibration Device can be used to reset the baseline reading

6460	WaterScout® SM 100 Sensor - 6 ft (1.8 m)	$89.00
6460-20	WaterScout SM 100 Sensor - 20 ft (6 m)	$97.00
6470CAL3V	WaterScout Calibration Device	$69.00

SPECIFICATIONS FOR WATERSCOUT SM 100 SENSOR

Standard Interface: WatchDog weather station, Pups, and FieldScout soil moisture reader

Range: 0% VWC to saturation

Power Requirements: 3 to 5V @ 6 to 10 mA

Output: Analog voltage 0.5 - 1.5V for a 3V excitation (ratiometric for other excitation voltages)
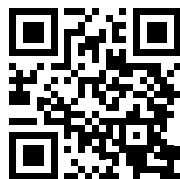
Resolution: 0.1% VWC

Cable Length: 6 ft (1.8 m) and 20 ft (6 m) standard, extendable up to 50 ft (15 m)

Accuracy: 3% VWC @ EC < 8 mS/cm

Sensing Area: 2.4 in (6 cm) x 0.8 in (2 cm)
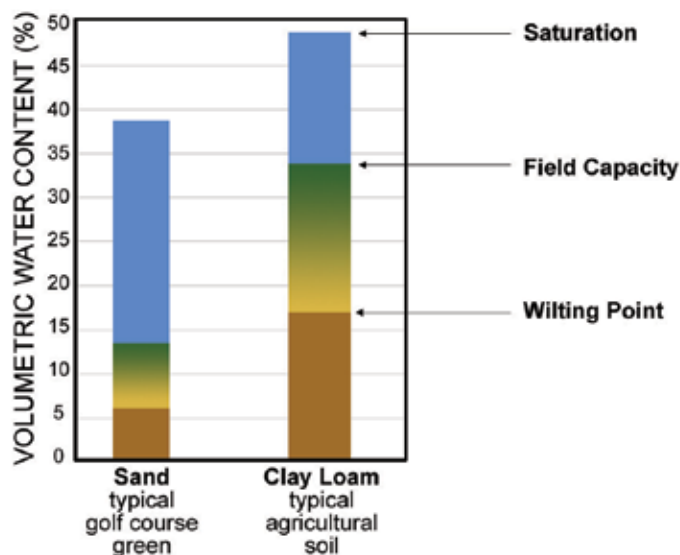

Shown measuring in soilless media mode to gather immediate data

Watch SM 100 Installation Tips Scan code & watch our YouTube video

Water Holding Capacity By Soil Type

WATERSCOUT

SMEC 300 Soil Moisture/EC/Temperature Sensor

Identify situations where soil salinity is an issue or where certain moisture and temperature conditions facilitate soil-borne diseases.

- Capacitance-type soil moisture sensor
- Carbon ink electrodes provide large measuring surface for electrical conductivity (EC)
- Easy, 1-step EC calibration process
- Can be read with the FieldScout® Soil Sensor Reader (Item 6466) or WatchDog® 2000, 1000 Series Stations, and WatchDog Pups
- Connect up to 4 sensors per station
  Recommended placement of sensors is 10 feet separation to prevent EC interference when in the same medium
- WaterScout® Calibration Device required unless using Soil Sensor Reader (Item 6466)

WatchDog Stations sold prior to 2012 must be upgraded (Contact for support)

6470-6	WaterScout SMEC 300 Sensor - 6 ft (1.8 m)	$219.00
6470-20	WaterScout SMEC 300 Sensor - 20 ft (6 m)	$229.00
6470CAL3V	WaterScout Calibration Device	$69.00
2251	Conductivity Standard, 1.41 mS/cm, 250 mL	$21.00

SPECIFICATIONS FOR WATERSCOUT SMEC 300

Standard Interface: WatchDog weather station, Pups, and FieldScout soil moisture reader

Range: VWC: 0% VWC to saturation, EC: 0 to 10 mS/cm, Temp: 33 - 175°F (0.5 - 80°C)

Resolution: VWC: 0.1%, EC: 0.01 mS/cm, Temp: 0.1°F (0.1°C)

Accuracy: VWC: 3%, EC: ±2%, Temp: ±1°F (0.6°C)

Cable Length: 6 ft (1.8 m) and 20 ft (6 m) standard, extendable up to 50 ft (15 m)

Power Requirements: 3V @ 6 to 10 mA

Output: Analog voltage, time division multiplexed

Sensing Area: 2.25 in. x 0.75 in.(5.7 x 2 cm)

Actual size

FIELDSCOUT Soil Sensor Reader

Spot-check WaterScout SM 100 and SMEC 300 sensors in the field.
- Also reads Watermark sensors (page 41) (requires separate adapter)
- Includes soft-sided case (also available separately)

6466	FieldScout® Soil Sensor Reader	$279.00
6450FSADPT	Watermark Adapter for Soil Sensor Reader	$36.00
7500	Soft-Sided Carrying Case*	$35.00

* Item 7500 will also fit the WatchDog 1000/2000 Series Data Shuttle (Item 3679WD), LightScout Red/Far-Red Meter (Item 3412), LightScout Quantum Light Meters (four models) and the LightScout External Light Sensor Reader (Item 3415FX)
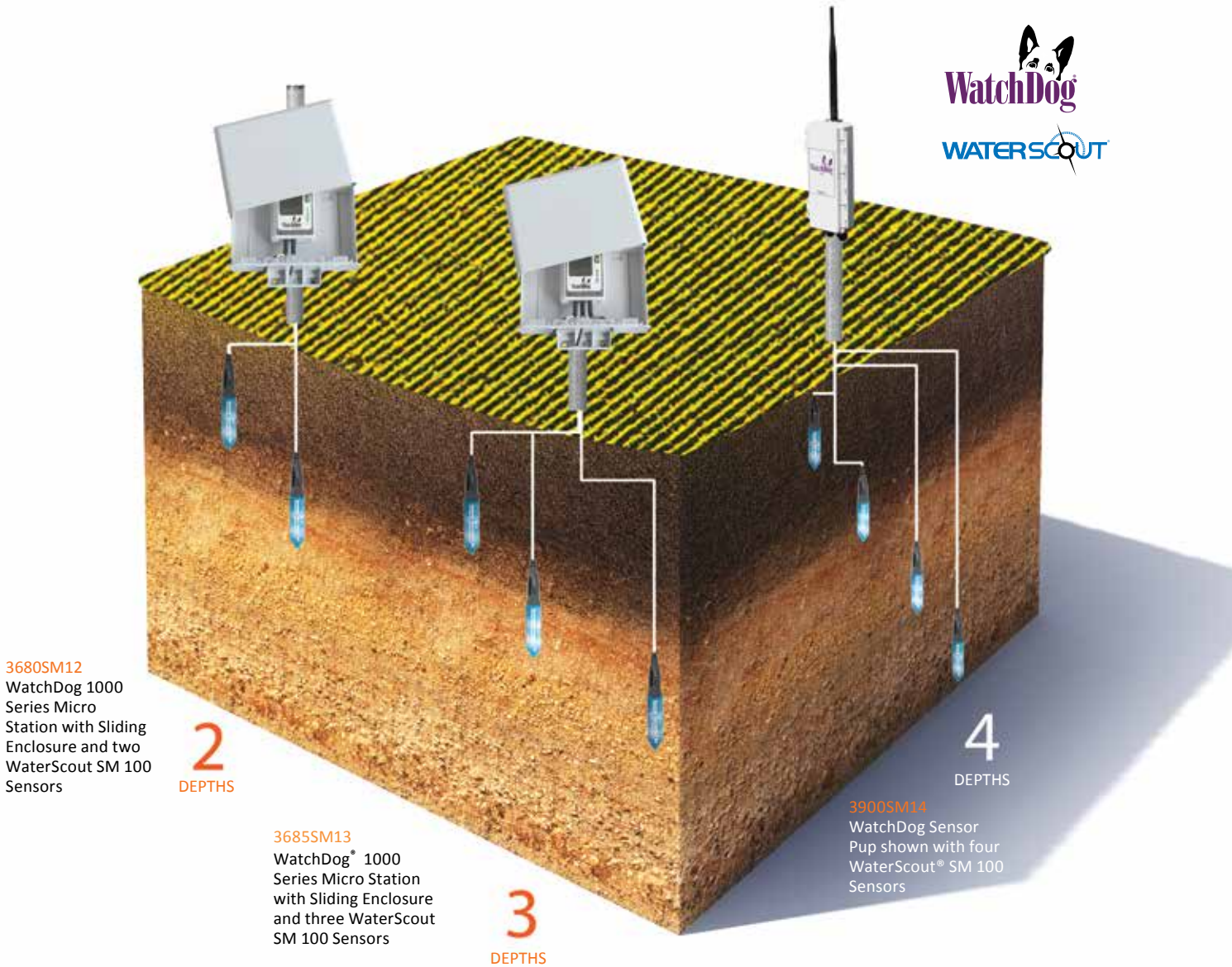
3680SM12
WatchDog 1000 Series Micro Station with Sliding Enclosure and two WaterScout SM 100 Sensors

2 DEPTHS

3685SM13
WatchDog® 1000 Series Micro Station with Sliding Enclosure and three WaterScout SM 100 Sensors

3 DEPTHS

4 DEPTHS

3900SM14
WatchDog Sensor Pup shown with four WaterScout® SM 100 Sensors

WatchDog® Irrigation Stations with WaterScout® Sensors and Watermark Sensors

Affordably monitor, compare and evaluate soil moisture levels from two, three, or four user-defined soil depths.
• Includes WatchDog® Station and WaterScout® Sensors with 20 ft (6 m) cables - save money when purchased as a system

• Micro Stations also include the Protective Sliding Enclosure
• Watermark Stations include Watermark Soil Moisture Sensors with 11 ft (3.3 m) cables
• Add soil moisture sensors to your WatchDog Pup network and see your data on SpecConnect.net
• Add a WaterScout® SMEC 300 Soil Moisture/EC/Temp Sensor (Item 6470-20) and monitor soil temperature and EC levels
• Requires SpecConnect, or SpecWare 9 Basic or Pro software

	MODEL 1200 MICRO STATION	MODEL 1400 MICRO STATION	SENSOR PUP IRRIGATION STATION
2 WaterScout SM 100 Soil Moisture Sensors	3680SM12 $458.00	3685SM12 $528.00	3900SM12 $674.00
3 WaterScout SM 100 Soil Moisture Sensors		3685SM13 $625.00	3900SM13 $771.00
4 WaterScout SM 100 Soil Moisture Sensors		3685SM14 $722.00	3900SM14 $868.00

	MODEL 1200 MICRO STATION	MODEL 1400 MICRO STATION
2 Watermark Soil Moisture Sensors	3680WM12 $407.00	I3685WM12 $477.00
3 Watermark Soil Moisture Sensors		3685WM13 $546.00
4 Watermark Soil Moisture Sensors		3685WM14 $615.00

Watermark Soil Moisture Sensor

Economical way to measure soil moisture tension.
• Works with FieldScout® Soil Sensor Reader (Item 6466, page 39)
• Reads moisture tension from 0 (saturated) to 200 (dry) centibars

6450	Watermark Sensor with 5 ft (1.5 m) cable	$39.00
6450FSADPT	Watermark Adapter for Soil Sensor Reader	$36.00

Watermark Sensors for WatchDog® Weather Stations

6450WD	Watermark Sensor for WatchDog® Stations & Pups with 11 ft (3.3 m) cable	$69.00
6450WD20	Watermark Sensor for WatchDog® Stations & Pups with 25 ft (7.6 m) cable	$79.00
6450AH	Watermark Adapter for WatchDog® Stations* & Pups	$43.00

6450

Irrometer Tensiometers

Schedule irrigation based on how hard plant roots are working to draw water from the soil.

• "R" models (items 6419 thru 6423) are for general use with field or tree crops
• Low Tension (LT) models (see www.specmeters.com) are for coarse soils or soilless media
• Portable models for specialized applications (see www.specmeters.com)
• Can be connected to WatchDog Data Loggers and Stations with Pressure Transducer (Item 3669)
• Pressure gauge has a quarter inch pipe thread
• Service kit required (Item 6425)

6425	Service Kit - Required	$62.00
6419	R Model 6 in (15 cm) Depth	$80.00
6420	R Model 12 in (30 cm) Depth	$83.00
6421	R Model 18 in (45 cm) Depth	$90.00
6422	R Model 24 in (60 cm) Depth	$92.00
6423	R Model 36 in (90 cm) Depth	$97.00

6421

• Connect your "R" model (Items 6419 thru 6423) tensiometer to your weather station. The Pressure Transducer adapts to Irrometer tensiometers and allows use of the dial gauge for in-field measurements

3669	Pressure Transducer	$269.00

Economy Soil Moisture Tester

Analog soil moisture meter measures any type of soil with just one calibration.
• Resistance-type sensor located at the tip of the shaft
• Provides instant results ranging from 0 (dry) to 10 (saturated)
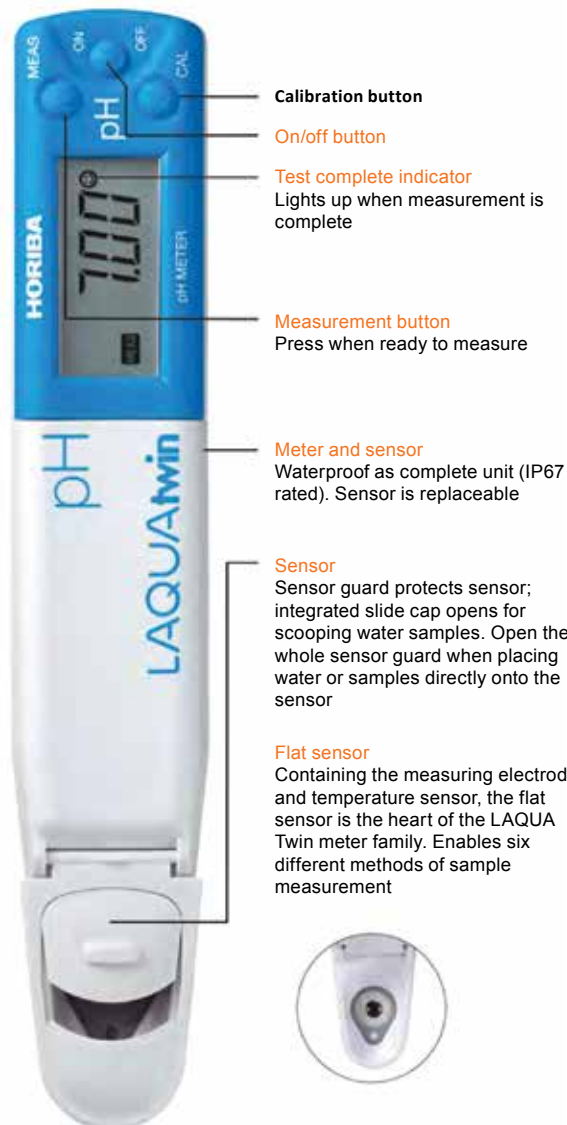• 3-month warranty

6400

6400	9 in (22 cm) Soil Moisture Tester	$112.00
6405	24 in (60 cm) Soil Moisture Tester	$122.00

LAQUA**twin**

pH   K⁺   Ca²⁺   Na⁺   NO₃⁻   EC

Calibration button

On/off button

Test complete indicator
Lights up when measurement is complete

Measurement button
Press when ready to measure

Meter and sensor
Waterproof as complete unit (IP67 rated). Sensor is replaceable

Sensor
Sensor guard protects sensor; integrated slide cap opens for scooping water samples. Open the whole sensor guard when placing water or samples directly onto the sensor

Flat sensor
Containing the measuring electrode and temperature sensor, the flat sensor is the heart of the LAQUA Twin meter family. Enables six different methods of sample measurement

Put the power of a laboratory right in your hands.

- Professional grade meters
- Measure samples in nutrient solutions, water, soils, and tissue sap (Two plant sap press options available on page 44)
- Waterproof pocket-sized meter with digital calibration
- Sensors store dry and are field replaceable
- Accuracy correlates well with laboratory analysis
- Unique flat sensor allows you to conveniently and accurately measure samples as small as 0.3 ml
- Automatic temperature compensation, waterproof, auto power-off
- Includes two CR2032 batteries, case and calibration standards

Learn how to calibrate the LAQUA Twin Meters Scan code & watch our YouTube video

LAQUA Twin pH Meter
Ideal for testing irrigation water, leachate, pesticides, or dairy rumen pH.

2103AL	**LAQUA Twin pH meter**	**$310.00**
	Includes case, batteries, and pH 4 & 7 standards	
2110	**Refill Solutions - pH 4 and 7, 60 mL ea.**	**$34.00**
2143L	**LAQUA Twin pH Replacement Sensor**	**$125.00**
2135L	**Sampling Sheets - 100 pieces**	**$79.00**

LAQUA Twin EC Meter
Ideal for water quality and greenhouse applications.

Item 2205L	**LAQUA Twin EC Meter**	**$395.00**
	Includes case, batteries, and calibration standards	
2210L	**Conductivity Standard, 1.41 mS/cm (6 - 14 mL bottles)**	**$55.00**
2242L	**Replacement Sensor**	**$125.00**

	pH	Conductivity (EC)	Sodium	Potassium	Nitrate	Calcium
Measurement Principle:	Glass electrode method	2 AC bipolar	Ion electrode method	Ion electrode method	Ion electrode method	Ion electrode method
Sample Volume Required:	0.1 mL to 2.0 mL	0.12 mL to 2.0 mL	0.3 mL to 2.0 mL	0.3 mL to 2.0 mL	0.3 mL to 2.0 mL	0.3 mL to 2.0 mL
Measurement Range:	2 to 12 pH	0 to 19.9 mS/cm	23 to 2300 ppm	39 to 3900 ppm	62 to 6200 ppm	40 to 4,000 ppm
Calibration:	pH 4 and pH 7	1.41 mS/cm	150 ppm and 2000 ppm	150 ppm and 2000 ppm	34 ppm and 450 ppm	150 ppm and 2000 ppm
Reproducibility:	± 0.1 pH	± 2%	± 10% or ± 10 ppm	± 10% or ± 10 ppm	± 10% or ± 10 ppm	± 20% or ± 20 ppm
Display:	4-digit digital LCD display					
Power:	CR2032 coin batteries (x2)					
Battery Life:	400 hours continuous operation					
Operating Range:	40°F (5°C) to 105°F (40°C), 85% relative humidity					
Dimensions:	164mm x 29mm x 20mm					

LAQUA Twin Sodium Na$^+$

2500GL	**LAQUA Twin Sodium (Na$^+$) Meter**	**$435.00**
	Includes case, batteries, and calibration standards	
2540L	**Replacement Sodium Sensor**	**$185.00**
2514L	**150 ppm Na$^+$ Standard, 6 - 14 mL bottles**	**$55.00**
2518L	**2000 ppm Na$^+$ Standard, 6 - 14 mL bottles**	**$55.00**
2535	**Na$^+$ Soil Test Kit w/30 Samples**	**$40.00**
	Includes filter paper, cups, and soil scoop	
2135L	**Sampling Sheets - 100 pieces**	**$79.00**

LAQUA Twin Potassium K$^+$

2400GL	**LAQUA Twin Potassium (K$^+$) Meter**	**$435.00**
	Includes case, batteries, and calibration standards	
2440L	**Replacement Potassium Sensor**	**$191.00**
2414L	**150 ppm K$^+$ DI Standard, 6 - 14 mL bottles**	**$55.00**
2418L	**2,000 ppm K$^+$ DI Standard, 6 - 14 mL bottles**	**$55.00**
2434	**K$^+$ Soil Test Kit w/30 Samples**	**$44.00**
	Includes solutions, filter paper, cups, and soil scoop	
2135L	**Sampling Sheets - 100 pieces**	**$79.00**

LAQUA Twin Nitrate NO$_3^-$

2305GL	**LAQUA Twin Nitrate (NO$_3^-$) Meter**	**$435.00**
	Includes case, batteries, and calibration standards	
2345L	**Replacement Nitrate Sensor**	**$195.00**
2311	**450 ppm NO$_3^-$-N Standard, 6 - 14 mL bottles**	**$55.00**
2312	**34 ppm NO$_3^-$-N Standard, 6 - 14 mL bottles**	**$55.00**
2330	**NO$_3^-$ Soil Test Kit w/30 Samples**	**$59.00**
	Includes solutions, filter paper, cups, and soil scoop	
2135L	**Sampling Sheets - 100 pieces**	**$79.00**

LAQUA Twin Calcium Ca^{2+}

2450L	**LAQUA Twin Calcium (Ca^{2+}) Meter**	**$495.00**
	Includes case, batteries, and calibration standards	
2455L	**Replacement Calcium Sensor**	**$195.00**
2460L	**150 ppm Ca^{2+} Standard, 6 - 14 mL bottles**	**$55.00**
2461L	**2000 ppm Ca^{2+} Standard, 6 - 14 mL bottles**	**$55.00**
2135L	**Sampling Sheets - 100 pieces**	**$79.00**

2726

Handheld Plant Sap Press

• Use with LAQUA Twin meters or Brix meters (see below) for on-site testing
• Made of high quality, non-corrosive metal
• Includes cleaning device

2726   **Hand Held Plant Sap Press**   **$20.00**

2720

Hydraulic Plant Sap Press

• Speed up collection of large or less succulent samples
• Hydraulic press extracts sap into a collection vial
• Includes plunger, grate, cylinder, expeller rod and six collection vials

2720   **Hydraulic Plant Sap Press**   **$425.00**

2812

Digital Refractometer

Easy and convenient way to measure Brix.
• Small sensor area allows measurement of minute samples
• Measures Brix from 0 to 53.0% (Accuracy ±0.2%)
• Automatic temperature compensation
• Large digital display of Brix and temperature
• Operates on two AAA batteries (included)

2812   **Digital Refractometer**   **$379.00**

Suggested Brix Values
See our website for suggested Brix values
www.specmeters.com/articles
under the Miscellaneous section

Handheld Refractometers

Compact meter ideal for field or lab use.
• Measures Brix from 0 to 32.0% (Accuracy ±0.2%)
• Place a couple drops of sample on the scale and read the results in Brix
  through the shaded area on the eyepiece
• Available with or without automatic temperature compensation
• Includes case and instructions

2801	Refractometer 0–32% Brix	$84.00
2806	Refractometer 0–32% with Automatic Temperature Compensation	$104.00

FIELDSCOUT®   SoilStik pH Meter

Easy to use and cost-efficient meter.

• Flat surface electrode measures pH in soils, semi-solids, solids, and liquids -
  no more electrode breakage or clogged junctions
• RENEW indicator tells you when it's time to replace your electrode -
  eliminates guesswork
• CAL alert tells you it's time to recalibrate to ensure accuracy
• Memory records and recalls 15 sequentially tagged readings, allowing
  detection of changes over time
• 1- or 2-point calibration: automatically recognizes buffer solutions
• Automatic temperature compensation
• Simultaneous display of pH and temperature
• Display indicates when the reading has stabilized
• Data Hold, auto power off, and low battery indication
• Water resistant design (IP57) floats in water and protects the meter in wet
  environments
• Includes protective sensor cap, rinse bottle, two CR2032 batteries, pH 4 & 7
  standard solutions, and soft case

2105	FieldScout® SoilStik pH Meter	$159.00
2106	Flat Sensor, Replacement	$59.00
2110	Refill Solutions - pH 4 and 7, 60 mL ea.	$34.00

SoilStik shown in use with Item 6510
Model HC Soil Sampler (available online)

Learn how to calibrate
and use the SoilStik pH
Meter Scan code & watch
our YouTube video

Flat end electrode works
in liquids, semi-solids,
and soils

SPECIFICATIONS FOR SOILSTIK pH METER

pH: 0.00 to 14.00 pH

Temperature: 23°F to 194°F (-5°C to 90°C)

Resolution: 0.01 pH, 0.1°

Accuracy: ±0.01 pH, ±1.8°F/±1°C

Dimensions: 1.4 x 6.8 x 1.6 in (35.6 x 172.7 x 40.6mm)

Weight: 3.8 oz (110 g)

pH 400 and 600 Meters

Fast, easy and accurate "direct" soil pH measurement.

Modern User Interface

• The FieldScout pH 400 & 600 Meters have a modern, intuitive, and user friendly interface that allows users to quickly access the meter's advanced features and settings
• Temperature and pH data remain visible, so monitoring does not stop when settings are changed or options are selected
• Large backlit 3.2" LCD color display ensures measurement values and menu options are easy to read

Rugged and Ergonomic Design

• Both the FieldScout pH 400 & 600 Meters are lightweight, and their compact design makes them highly suitable for field use and handheld applications.
• Dust and splash resistant – IP65 rating
• Meters are fitted with a rubber boot to help absorb shock
• The USB port is protected by a tightly sealed cover and the casing and battery door are fitted with rubber seals
• 1 year warranty on meter

ISFET (Ion Sensitive Field Effect Transistor) Probes

Glass Free and Durable Probe - 2 Options to Fit Your Needs
• Unlike glass electrodes, the FieldScout 400 and 600 pH Meters feature ISFET pH electrodes that will not shatter. Neither model requires wet storage
• Both come with a 6-month warranty
• Spectrum ISFET probes are made of high quality materials such as PEEK, ABS, and PVC
• Sample directly in plug trays, pots, containers, solutions, and soilless media

2107	FieldScout pH 400 Meter	$699.00
	Meter includes case, batteries, AC adapter, brush, and pH 4 & 7 standards	
	Excludes pH Probe - order separately	
2108	FieldScout pH 600 Meter	$995.00
	Meter includes case, batteries, AC adapter, brush, and pH 4 & 7 standards	
	Excludes pH Probe - order separately	
2127	FieldScout pH Meter Blunt Tip ISFET Probe	$419.00
2128	FieldScout pH Meter Pin Point Tip ISFET Probe	$524.00
2110	Refill Solutions - pH 4 and 7, 60 mL each	$34.00

Robust probe design makes it easy to go from sample to sample

pH 400

• Professional grade quality
• Intelligent calibration wizard simplifies the calibration process
• Supports 1-and 2-point calibration
• Powered by 3 rechargeable AA-batteries (AC adapter included)

pH 600

Includes all features of the FieldScout pH 400 Meter, plus...
• Internal storage of measured data points, up to 65,000 measurements
• Ability to query both momentary pH value and temperature
• Supports up to 5-point calibration

Pin Point Tip ISFET Probe

• Uses patented non-glass ISFET technology for the smallest pH measurement
• Sharp and to the point for pH measurement of materials that need to be penetrated
• Eliminates clogging from dirty samples or semi-solids

Blunt Tip ISFET Probe

• Uses patented non-glass ISFET technology for general purpose pH measurement
• Ideal for liquids, hydroponics, and soilless media

Direct Soil EC Meter

Instant and accurate direct EC and temperature measurements.

- Professional-grade meter
- No need to prepare samples - simply sample through the profile
- Patented paired sensor tip provides maximum soil-sensor contact and higher accuracy
- Sample directly in plug trays, pots, containers, solutions, or ground soils
- 0 to 19.9 mS/cm (Accuracy ±1%, resolution 0.01 mS/cm)
- Automatic temperature compensation, long lasting, and waterproof
- Includes battery and EC calibration standard

8 in (20 cm) Probe Option

2265FS	FieldScout® Direct Soil EC Meter w/ 8 in Probe Includes Carrying Case and 2.76 Standard	$395.00
2265PROBE	FieldScout EC 8 in Probe (Replacement)	$255.00
2254	Conductivity Standard, 2.76 mS/cm, 250 mL	$21.00
2251	Conductivity Standard, 1.41 mS/cm, 250 mL	$21.00

24 in (60 cm) Probe Option

2265FSTP	FieldScout Direct Soil EC Meter w/ 24 in T-Handle Probe and Replaceable Tip	$485.00
2265FST24P	FieldScout T-Handle EC 24 in Probe w/ Replaceable Tip	$369.00
2266	Replaceable Tip For T-Handle EC Probe	$99.00
2254	Conductivity Standard, 2.76 mS/cm, 250 mL	$21.00
2251	Conductivity Standard, 1.41 mS/cm, 250 mL	$21.00
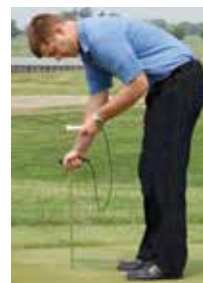
2265FS

2265FSTP
FieldScout Direct Soil EC Meter with 24 in (60 cm) T-Handle

Exclusive Paired Sensor

pH 450 Meter

pH measurements with built-in data logger.

- Intuitive, user-friendly icons-electrode status displays pH slope
- Memory for up to 500 data sets with USB and RS-232 output for transfer to a PC
- 500 hours battery life or optional universal power adapter
- Built-in stand with wall-mount option allows for easy benchtop measurement and storage
- IP67-rated waterproof housing, making it ideal for field testing and laboratory
- Large, backlit LCD lets you view the main measurement simultaneously with temperature
- Autocal feature permits one calibration point per measurement range
- Calibrate pH and ISE with up to six points from USA, NIST, DIN, and custom pH buffers
- Automatic temperature compensation (ATC) ensures measurement accuracy even in fluctuating temperatures
- Meter features include ready (stability) indicator, smart averaging, user selectable °C/°F units, hold function, calibration alarm, battery life-indicator, and electrode status
- Connects to any GPS receiver that has a serial output option
- Accuracy: (ph) ±1%, (temp) ±0.05°C (temp)
- Measurement ranges: (pH) -2.00 to 16.00, (Temp) -10 to 110°C (17 to 230°F)

2120WP	FieldScout pH 450 Meter Excludes pH Electrode - order separately	$695.00
2121WP	Combination pH/Temp Electrode	$145.00
2124FE	Flat End pH Electrode For measuring the exposed surface of soil cores	$147.00
2950CV5	GPS/DGPS Cable	$39.00
2110	Refill Solutions - pH 4 and 7, 60 mL ea.	$34.00

2220WP

Watch the Direct Soil EC Meter in action Scan code & watch our YouTube video

VISIT SPECMETERS.COM FOR MORE INFORMATION ON OUR LATEST MEASURING PRODUCTS!

Waterproof EC Meter

Economic meter for measuring salinity.
• Measures four parameters; conductivity, TDS, salinity, and temperature
• 6 units of measurement: µS/cm, mS/cm, ppm, ppt, mg/L, and g/L
• Internal memory stores up to 15 labeled readings for easy recall
• Adjustable conductivity-to-TDS ratio factor (0.4 to 1.0)
• Accuracy: ±2%
• Automatic temperature compensation
• Measurement ranges:
   – Conductivity: 0.00 to 199 µS/cm, 200 to 1,999 µS/cm, or 2.00 to 19.99 mS/cm
   – TDS: 0 to 99.9 mg/L, 100 to 999 mg/L, or 1.00 to 9.99 g/L
   – Salinity (fixed ratio of 0.5): 0 to 99.9 ppm, 100 to 999 ppm, or 1.00 to 9.99 ppt
   – Temperature: 32 to 194ºF (0.0 to 90.0ºC)
• Includes conductivity cell, protective sensor cap, sample cup with cap, four SR44W button batteries, and 48 in (1.2 m) neckstrap
• Calibration standard sold separately

2246	Waterproof EC Meter	$119.00
2246SENSOR	Replacement Sensor	$49.00
2251	Conductivity Standard, 1.41 mS/cm, 250 mL	$21.00

Economy pH/EC Meter

Affordable way to monitor pH and EC levels in any liquid.
• Combination pH and electrical conductivity (EC) probe
• 150-hour battery life
• Automatic temperature compensation
• 0.68 TDS ratio calculation
• Accuracy: ±0.2 pH and 2% EC scale
• Range: 0 - 6 mS/cm
• Includes handheld meter, probe, calibration solutions, and carrying case

2182A	Economy pH/EC Meter	$279.00
2183A	Replacement pH/EC Probe	$109.00
2110	Refill Solutions - pH 4 and 7, 60 mL ea.	$34.00
2251	Conductivity Standard, 1.41 mS/cm, 250 mL	$21.00

EC450

FIELDSCOUT® EC 450 Meter

EC measurements with built-in data logger.

• Intuitive, user-friendly icons—electrode status displays cell constant
• USB and RS-232 output for transfer to a PC
• 500 hours battery life or optional universal power adapter
• Built-in stand with wall-mount option allows for easy benchtop measurement and storage
• IP67-rated waterproof housing, making it ideal for field testing and laboratory
• Large, backlit LCD lets you view the main measurement simultaneously with temperature
• Autocal feature permits one calibration point per measurement range
• Automatic temperature compensation (ATC) ensures measurement accuracy even in fluctuating temperatures.
• Meter features include ready (stability) indicator, smart averaging, user selectable °C/°F units, hold function, calibration alarm, battery life-indicator, and electrode status
• Connects to any GPS receiver that has a serial output option*
• Accuracy: (conductivity) ±1%, (temp) ±0.5°C (0.9°C), (salinity) ±1%
• Measurement ranges: (Conductivity) 0 to 200 mS/cm, (Temp) -10 to 110°C (17 to 230°F), (Salinity) 0 to 50 ppt

2220WP	EC450 Meter	$890.00
Soil EC Probe sold separately		
2251	Conductivity Standard, 1.41 mS/cm, 250 mL	$21.00
2950CV5	GPS/DGPS Cable	$39.00
Soil EC Probe Options		
2220FS	8 in (20 cm) FieldScout EC Probe	$249.00
2225FSP	24 in (60 cm) FieldScout T-Handle EC Probe w/ Replaceable Tip	$339.00
2266	Replaceable Tip For T-Handle EC Probe	$99.00

*GPS interface requires 2 cables. The GPS/DGPS cable 2950CV5 is available from Spectrum.
A PC serial interface cable supplied by the manufacturer of the GPS receiver is also required.

Green = Nitrogen   >

Chlorophyll Meters

Research supports the correlation between SPAD measurements and the nitrogen in your leaf. Support and defend the health of your plants.

SPAD 502 Plus Chlorophyll Meter

Quantifies the health of your crops.

- Instantly measures chlorophyll content or "greenness" of your plants on a scale of -9.9 to 199
- Non-invasive, non-destructive measurement
- Trend graph stores and displays up to 30 measurements
- Water resistant design (IPX4)
- Compare in-field SPAD readings to university guidelines
- Research shows a strong correlation between SPAD measurements and leaf N content
- Available with or without a built-in data logger
- Includes hard carrying case and batteries

Data-Logging Model (2900PDL)

- Connects to any GPS receiver that has a serial output option*
- Equipped with internal data logger and RS-232 port
- Records 4,096 measurements (1,488 with added GPS/DGPS option)
- Configure and download meter with FieldScout® software (included)**
- Compatible with SpecMaps™ online web-mapping application, create 2-dimensional maps of your data (see website for details)

* GPS interface requires two cables. The GPS/DGPS cable (item 2950CV5) is available from Spectrum. A PC serial interface cable supplied by the manufacturer of the GPS receiver is also required.

** PC cable connects to a computer USB port. See our website for other cable connection options.

2900PDL	**Minolta SPAD 502DL Plus Chlorophyll Meter with RS-232 Data Port and Built-In Data Logger (includes software and USB pc cable)**	**$2,695.00**
2900P	**Minolta SPAD 502 Plus Chlorophyll Meter Basic version, no Data Logger**	**$2,295.00**
2950CV5	**GPS/DGPS Cable**	**$39.00**
2900CASE	**Hard Carrying Case**	**$30.00**

SPECIFICATIONS FOR SPAD 502 PLUS

Optical Density Difference at two wavelengths: 650 nm and 940 nm

Measurement Area: 2 mm x 3 mm (Approximately 3/32 in x 1/8 in)

Light Source: 2 LEDs

Receptor: Silicon Photodiode

Power Source: 2 AA alkaline batteries (1.5V)

Repeatability: Within ±0.3 SPAD unit

SPAD Value: Index of relative chlorophyll content; -9.9 to 199

2900P

Non-invasive measurement with readings in less than 2 seconds

FIELDSCOUT® CM 1000 Chlorophyll Meter

"Point-and-shoot" technology to instantly measure relative chlorophyll content.

- Detects stress earlier than visual monitoring
- Technology based on an exclusive patent license from NASA
- Laser guides outline the edges of the measured sample area
- Calculates and displays a running average for multiple readings
- Connects to any GPS receiver that has a serial output option*
- Equipped with internal data logger and RS-232 port
- Records 3,250 measurements (1,350 with added GPS/DGPS option)
- Configure and download meter with FieldScout® software (not included)**
- Compatible with SpecMaps™ online web-mapping application, create 2-dimensional maps of your data (see website for details)
- Includes hard carrying case and batteries

* GPS interface requires two cables. The GPS/DGPS cable (item 2950CV5) is available from Spectrum. A PC serial interface cable supplied by the manufacturer of the GPS receiver is also required.

** PC cable connects to a computer USB port. See our website for other cable connection options.

2950	**FieldScout CM 1000 Chlorophyll Meter**	**$2,850.00**
2950S	**Software To Activate Data Logger** (includes PC cable)	**$249.00**
2950CV5	**GPS/DGPS Cable**	**$39.00**

2950

FIELDSCOUT® CM 1000 NDVI Meter

"Point-and-shoot" technology to instantly measure red (660 nm) and near infrared (840 nm) spectral bands.

- Detects stress earlier than visual monitoring
- Computes Normalized Difference Vegetative Index (NDVI)
- Laser guides outline the edges of the measured sample area
- Calculates and displays a running average for multiple readings
- Connects to any GPS receiver that has a serial output option*
- Equipped with internal data logger and RS-232 port
- Records 3,250 measurements (1,350 with added GPS/DGPS option)
- Configure and download meter with FieldScout® software (included)**
- Compatible with SpecMaps™ online web-mapping application, create 2-dimensional maps of your data (see website for details)
- Includes hard carrying case and batteries

* GPS interface requires two cables. The GPS/DGPS cable (item 2950CV5) is available from Spectrum. A PC serial interface cable supplied by the manufacturer of the GPS receiver is also required.

** PC cable connects to a computer USB port. See our website for other cable connection options.

2953	**FieldScout CM 1000 NDVI Meter**	**$2,950.00**
2950CV5	**GPS/DGPS Cable**	**$39.00**

2953

FIELDSCOUT® TCM 500 NDVI Turf Color Meter

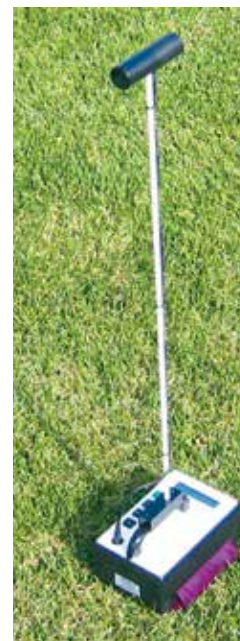Helps diagnose plant health based on color.

- Measures reflected light from approximately a 3 inch (7.6 cm) diameter section of turfgrass
- Uses an internal light source to negate the effect of sunny versus cloudy conditions
- Measures reflectance in the red (660 nm) and near infrared (850 nm) spectral bands
- Displays result as NDVI, percent reflectance, or as a user-adjustable grass index from 1 to 9
- Connects to any GPS receiver that has a serial output option*
- Equipped with internal data logger and RS-232 port
- Records 3,250 measurements (1,350 with added GPS/DGPS option)
- Configure and download meter with FieldScout® software (included)**
- Compatible with SpecMaps™ online web-mapping application, create 2-dimensional maps of your data (see website for details)
- Includes hard carrying case, batteries, and TCM 500 T-Handle (item 2975H)

* GPS interface requires two cables. The GPS/DGPS cable (item 2950CV5) is available from Spectrum. A PC serial interface cable supplied by the manufacturer of the GPS receiver is also required.

** PC cable connects to a computer USB port. See our website for other cable connection options.

2975NDVI	FieldScout TCM 500 NDVI Turf Color Meter Includes TCM 500 T-Handle	$889.00
2975H	FieldScout TCM 500 Replacement T-Handle	$119.00
2950CV5	GPS/DGPS Cable	$39.00

Displays Turf Color Index and NDVI on the LCD

SPECIFICATIONS FOR TCM 500

Measurement Sample: Turf grass canopy

Measurement System: Reflectance of red (660 nm) and NIR (850 nm) light

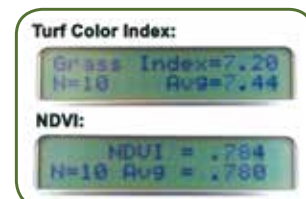Measurement Area: Approx. 3.0 in (7.6 cm)

Measurement Units: Percent reflectance (0.0 to 99.9) of Red and NIR

NDVI (0.000 to 1.000)

Grass Index (1.00 to 9.00)

Power Source: 1 9 V alkaline battery (included); approx. 3,000 measurements
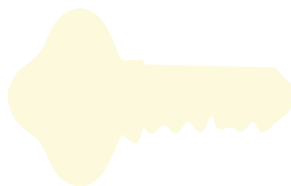
Repeatability: ± 5% of measurement

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Spectrum® Technologies, Inc.

3600 Thayer Court
Aurora, Illinois 60504

Toll Free: (800) 248-8873
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E-mail: info@specmeters.com
www.specmeters.com

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ARE YOU LISTENING?