

Spectrum[®] Technologies, Inc.

"To Measure Is To Know"



Proudly
Celebrating

33

Years of Service

TURF SMART SOLUTIONS

2021 PRODUCT CATALOG

Spectrum[®] **Technologies, Inc.**

At Spectrum Technologies, we pride ourselves on helping our valued customers transform plant measurements into more profitable growing decisions. Since 1987, we have manufactured and distributed affordable, leading-edge plant measurement technology to agricultural, horticultural, environmental, and turf markets throughout the world, serving more than 14,000 customers in over 80 countries.

We proudly work alongside researchers, growers, golf course superintendents, and industry suppliers to provide a broad line of innovative devices and software for better environmental monitoring, nutrient management, soil moisture measurement, irrigation scheduling, and pest management.

Our products will positively impact the way you grow your turf; therefore, we stand behind every product with our 100% Satisfaction Guarantee. Our friendly and knowledgeable product support team is available to answer any questions you may have, whether you are a new customer or have worked with us for years.

Thank you for your support and commitment to innovation. We look forward to partnering with you to help you continue to grow.

Sincerely,



Mike Thurow
CEO & Founder
Spectrum Technologies, Inc.



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COMPANY OVERVIEW

Spectrum Technologies, Inc. manufactures affordable, leading-edge measurement information technology for agricultural, horticultural, environmental, and turf markets worldwide.

We develop soil, water, and nutrient measurement devices. Turf managers receive site-specific data throughout the season to better manage high disease and insect pressure areas. Spectrum's advanced measurement technology, combined with soil and water test results, helps turf managers fine-tune agronomic programs.

INDUSTRY FUTURE

With golfers and athletes demanding higher quality playing surfaces, budgets decreasing, and regulations increasing, the need for measurement and monitoring technology will grow.

PRODUCTS

WEATHER

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



INTEGRATED PEST MANAGEMENT (IPM) TOOLS

Insect and Disease Models, IPM Scopes



SOIL MOISTURE & QUALITY MEASUREMENT

Soil Moisture, Soil Compaction, and Water Quality Meters



NUTRIENT MANAGEMENT

NO₃⁻, K⁺, Ca⁺⁺, Chlorophyll, pH, EC and NDVI Meters



Award Winning Innovations

Since 1987, Spectrum Technologies has received 25 AE50 Awards from the American Society of Agricultural and Biological Engineers, which demonstrates our deep commitment to innovation and quality. Look for our award-winning products throughout our catalog.

Visit our website for a complete list of awards.

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*Award Winning Innovation





INTRODUCING THE **NEW** 3000 SERIES WIRELESS WEATHER STATIONS

Your Crops. Your Data. Better Decision\$.

The award-winning third generation of WatchDog Weather Stations offers integrated cellular modems that send essential data to the SpecConnect cloud. Use your PC or WatchDog Mobile app (free) to view current conditions on your smartphone. Station set-up is easy, and configuration is simple with the WatchDog app.

With the SpecConnect cloud, you can easily view reports for degree-days, chill hours, disease and insect pressure, monthly weather reports, soil moisture trends, and more. Frost/temp alerts are sent to your smartphone so you can respond quickly to frost events.

Now, you will have the real-time data you need to respond to changing weather conditions and make timely, smart decisions. To measure is to know.



3250 Wireless ET Weather Station

Determine how much water your turf needs. Use real-time evapotranspiration (ET) data to effectively irrigate for optimum quality.

Measure wind speed/direction, temperature, relative humidity, rainfall, solar radiation, plus one available sensor port.

3250MU WatchDog 3250 Wireless ET Station
LTE-M Modem

3250WF WatchDog 3250 Wireless ET Station
Wi-Fi Modem

3250HU WatchDog 3250 Wireless ET Station
3G/HSPA+ Modem

NEW

*3000 Series Weather Stations require a SpecConnect Pro subscription

3240 Wireless Weather Station

Monitor changing weather conditions for more effective decisions.

Measure wind speed/direction, temperature, relative humidity, rainfall, plus two available sensor ports.

3240MU WatchDog 3240 Wireless Weather Station LTE-M Modem

3240WF WatchDog 3240 Wireless Weather Station Wi-Fi Modem

3240HU WatchDog 3240 Wireless Weather Station 3G/HSPA+ Modem



3220 Wireless Rain Station

Monitor rainfall data for more effective irrigation scheduling. Monitor and note site-specific conditions for disease and insect pressure.

Measure temperature, relative humidity, rainfall, plus two available sensor ports.

3220MU WatchDog 3220 Wireless Rain Station LTE-M Modem

3220WF WatchDog 3220 Wireless Rain Station Wi-Fi Modem

3220HU WatchDog 3220 Wireless Rain Station 3G/HSPA+ Modem



3210 Wireless Temp/RH Station

Track temperature and humidity conditions in those microclimates where turf disease pressure occurs.

Measure temperature, relative humidity, plus two available sensor ports.

3210MU WatchDog 3210 Wireless Temp/RH Station LTE-M Modem

3210WF WatchDog 3210 Wireless Temp/RH Station Wi-Fi Modem

3210HU WatchDog 3210 Wireless Temp/RH Station 3G/HSPA+ Modem



	3210 Temp/RH Station	3220 Rain Station	3240 Weather Station	3250 ET Weather Station	Range	Accuracy
Air Temperature	✓	✓	✓	✓	-40° to 257°F (-40° to 125°C)	±0.54°F (-40° to 194°F)
Relative Humidity	✓	✓	✓	✓	0 to 100%	±2% @ 77°F (25°C)
Rainfall	Optional	✓	✓	✓	0.01" (0.254mm) resolution	±2% at <2" (5 cm)/hr
Wind Speed	Optional	✗	✓	✓	0, 1 to 200 mph (0, 1 to 322 km/h)	±2 mph (±3 km/h), ±5%
Wind Direction	Optional	✗	✓	✓	1-359°, 1° increments	±3°
Solar Radiation	Opt. (ext. port)	Opt. (ext. port)	Opt. (ext. port)	✓	0 to 1500 W/m ²	±5%
Available External Sensor Ports	2	2	2	1		



Retriever & Pups

Our Retriever & Pups+ Network sends real time data to your laptop, tablet or smartphone - anywhere you can access the internet. Trust the data and eliminate the guesswork! Each Retriever can support up to 12 Pups. Each Pup can support four different sensors and you can receive customized threshold alerts. Our sensors measure everything from soil moisture to light, wind, rain, humidity and more.

Expand your network by adding weather stations to bring data from every corner of your property directly to you.

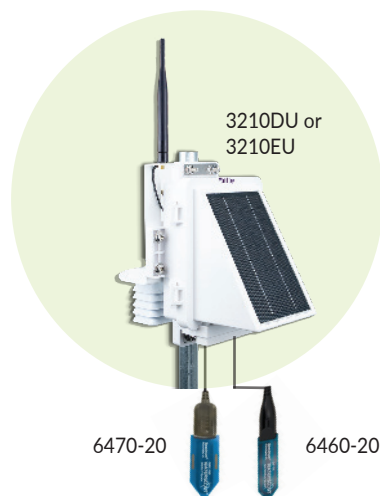
NEW 3000 Series Pup Stations

The 3000 Series Wireless Stations are available with wireless mesh radios to fully participate in Retriever and Pup networks. Setup is easy due to the modular design that includes the integral solar panel and rechargeable battery for reliable power. Customize your stations with additional sensors that meet your needs - see examples on the facing page.

See page 5 for sensor specifications and available ports for each model.

3250DU
3250EU
3240DU
3240EU
3220DU
3220EU
3210DU
3210EU

WatchDog Wireless ET Station Pup, 900Mhz
WatchDog Wireless ET Station Pup, 868Mhz
WatchDog Wireless Weather Station Pup, 900Mhz
WatchDog Wireless Weather Station Pup, 868Mhz
WatchDog Wireless Rain Station Pup, 900Mhz
WatchDog Wireless Rain Station Pup, 868Mhz
WatchDog Wireless Temp/RH Station Pup, 900Mhz
WatchDog Wireless Temp/RH Station Pup, 868Mhz



3210 Temp/RH Station Pup + Soil Moisture/EC/Temperature Sensor + Soil Moisture Sensor

Easily detect frost and be alerted to conditions of your turf. Monitor and note site-specific conditions for insect pressure. Remotely monitor soil moisture at two depths.



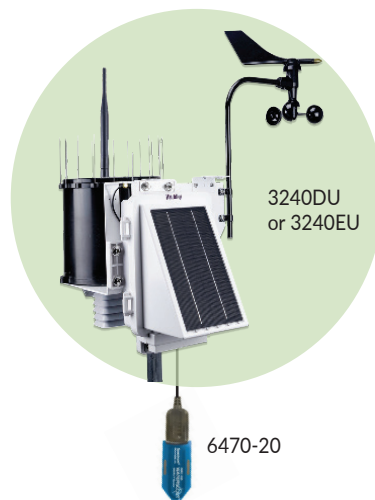
3250 ET Station Pup

Monitor evapotranspiration (ET) to effectively manage irrigation.



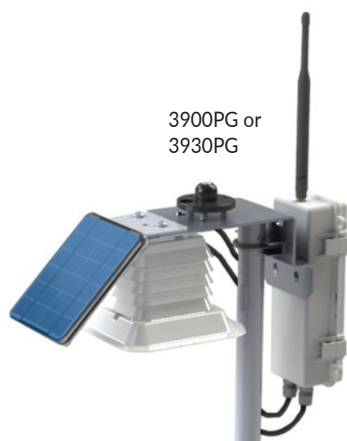
3220 Rain Station Pup + Leaf Wetness Sensor

Monitor rainfall for more effective irrigation scheduling and to adjust field activities. Monitor and note site-specific conditions for disease and insect pressures.



3240 Weather Station Pup + Soil Moisture/EC/Temperature Sensor

Monitor weather above and soil moisture below ground to effectively manage irrigation, plan spray applications, and schedule field activities.



Plant Growth Pup Station

Measure DLI (Daily Light Integral), light duration and intensity for consistently better turf quality. Track temperature and humidity in microclimates where shade exists.



STEP 1
CHOOSE YOUR PUPS

HOW MANY?

ARE YOU
CONNECTING TO
OTHER WEATHER
STATIONS?

DO YOU HAVE
OBSTACLES, LIKE
TREES OR
BUILDINGS, HIGH/
LOW SPOTS THAT
MIGHT INHIBIT
TRANSMISSION?

STEP 2
CHOOSE YOUR
SENSORS

WHAT ARE YOU
MEASURING?

WHAT INFLUENCES
YOUR CROP MOST?

WHAT ELSE DO YOU
WANT TO KNOW?

Pups

SET UP A NETWORK

Multiple Pups with a variety of sensors to choose from for unlimited measurement options within a single network. Set up in 5 easy steps.

WatchDog Sensor Pup

- Connect up to 4 external sensor inputs per Pup
- Transmits data to Retriever (directly or via other Pups)
- Includes 6 lithium AA batteries (solar-power option below)
- Single button operation: check battery status, signal strength, and join sensor network
- Tri-colored LEDs indicate battery level, signal strength, and data communication status

<u>900Mhz</u>	<u>868Mhz</u>	
3900	3930	WatchDog Sensor Pup

3000 Series Pup Stations

<u>900Mhz</u>	<u>868Mhz</u>	
3250DU	3250EU	WatchDog Wireless ET Station Pup
3240DU	3240EU	WatchDog Wireless Weather Station Pup
3220DU	3220EU	WatchDog Wireless Rain Station Pup
3210DU	3210EU	WatchDog Wireless Temp/RH Station Pup

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 lithium AA batteries (solar-power option below)

<u>900Mhz</u>	<u>868Mhz</u>	
3902	3932	WatchDog Repeater Pup

Additional Pup Information

- 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

Most Popular Sensors

Choose sensors for what you will measure. Choose up to 4 per Sensor Pup, and up to 2 for 3000 Series Pup Stations.

3613ARS	Temperature/RH Sensor with Aspirated Radiation Shield
3613THS	Temperature/RH Sensor with Passive Radiation Shield
6470-20	WaterScout SIMEC 300 Sensor with 20 ft (6.1 m) Cable
6460-20	WaterScout SM 100 Sensor with 20 ft (6.1 m) Cable
3667	External (Soil) Temperature Sensor with 6 ft (1.8 m) Cable
3666	Leaf Wetness Sensor
3670I	LightScout Silicon Pyranometer
3668I	LightScout Quantum Light Sensor

Optional Accessories

3999	Solar Power Package for Pups & Retrievers Includes 5W solar panel and 6V 4.5Ah rechargeable battery
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Barometric Pressure Sensor



WaterScout SMEC 300 Soil Moisture, EC, and Temperature Sensor



LightScout UV / Solar Radiation / PAR Light Sensors



Digital Temperature / Humidity Sensor with Passive Radiation Shield

WaterScout SM 100 Soil Moisture Sensor



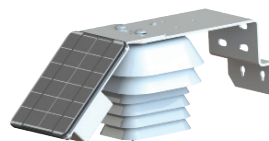
External (Soil) Temperature Sensor



Leaf Wetness Sensor



Digital Temperature / Humidity Sensor with Aspirated Radiation Shield





Retriever

GATHER THE DATA

WatchDog Retriever

STEP 3

CHOOSE YOUR RETRIEVER

- Receives all data from Pup network, each Retriever supports up to 12 Pups
- Includes USB Flash Drive and USB data cable
- Includes 6 lithium AA batteries. Can also be powered by DataScout modem, Direct-Connect cable, or Solar Power Package
- 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
- 900 MHz radios; 868 MHz also available for international use - contact for details

3910	WatchDog Retriever, 900 Mhz
3912	WatchDog Retriever, 868 Mhz



Optional Accessories

3999	Solar Power Package Includes 5W solar panel and 6V 4.5Ah rechargeable battery
3396TPS	Tripod Mount with Stakes
3925	Antenna Extension Cable - 10 ft (3 m) Includes Mounting Bracket and Hardware
3388USB	Replacement/additional USB Flash Drive
3927C75	PC Direct Connection Cable - 75 ft Connect your Retriever directly to your PC. Includes power and data cables, AC/DC power adapter, and DC plug adapter Has 9-pin serial connection on PC end, may require USB adapter (Item 366IU9)
3926	AC/DC Power Adapter

STEP 4

CHOOSE ADDITIONAL ACCESSORIES

TRIPOD?
BATTERY POWERED?
SOLAR POWER
PACKAGE?
FLASH DRIVE?
CABLE?
ADAPTER?

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 all data can be viewed online (SpecWare software not required)

3654P9	Spec 9 Pro Software
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STEP 5

CHOOSE YOUR
MODEM
TO SEND DATA
ONLINE

WI-FI OR CELLULAR?



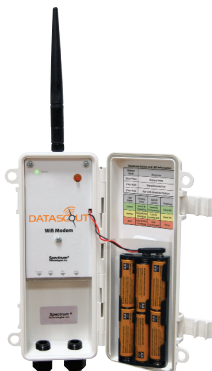
3928M DataScout cellular Modem
mounted with a WatchDog
Retriever

DATAScout Modems

- 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 (with non-rechargeable batteries) DataScout Modem and the Retriever can share the power from the solar power package.
- 2000 Series Full Weather Stations - Station must be running firmware version 7.6 or above
- WatchDog 2000 Series Mini Stations - Station must be running firmware version 4.1 or above



3928M DataScout
Cellular Modem

Cellular Modems

3928M LTE CAT-M Modem

GSM 3G HSPA+ Modem

3999 Solar Power Package

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

3926 AC/DC Power Adapter

Wi-Fi Modems

3920 Wi-Fi Modem - AC/DC Powered

Includes 3926 AC/DC Power Cord

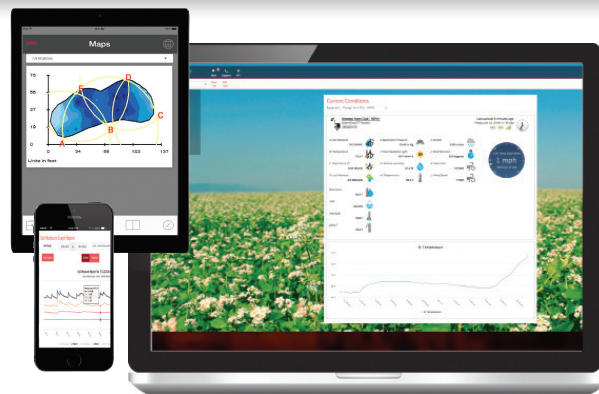
3920S WiFi Modem - Solar Powered

Includes solar panel and rechargeable battery pack



Use this powerful tool as a central point for viewing and evaluating real-time data instantaneously for better decisions. SpecConnect can help improve yield and quality, conserve resources, increase profits and decrease risk by viewing current weather conditions and factors.

- Configure your network from your computer, smartphone, or tablet
- Easy and simple to navigate
- 100% customizable dashboard
- Supports multiple user logins
- Send customized alerts via text message or email
- Download your data for offline analysis
- Create custom reports and charts for full analyses of your data
- Map view allows you to see all station locations and current conditions
- Optional plant disease and insect models



SpecConnect Reporting Features

- Daily/Hourly
- Multi Station/Sensor
- Equipment Inventory & Activity
- Rainfall and Soil Moisture (product specific)
- And More!

SpecConnect Compatible Items

- WatchDog® Retriever & Pups
- WatchDog® 3000 Series Weather Stations
- WatchDog® 2000 Series Weather Stations
- WatchDog® 2000 Series Mini Stations
- FieldScout® TDR 350/150
- FieldScout® TruFirm® Turf Firmness Meter
- Data file uploads supported for:
SC900, TDR300, SPAD, CM1000, TCM500

Current Conditions At Your Fingertips

Example WatchDog Station Pup Dashboard

Current Conditions

Equipment: WatchDog Station Pup



Last upload: 3 minutes ago
Monday, October 15, 2018 1:30 PM



A: 6in (WaterScout SM 100)
22.9 %VWC



F: Solar Radiation Light
679 W/m^2



J: Wind Direction
279 degrees



B: 12in (WaterScout SM 100)
14.1 %VWC



G: Relative Humidity
47.3 %



K: Wind Gust
16 mph



C: 18in (WaterScout SM 100)
28.9 %VWC



H: Temperature
45.0 F



L: Wind Speed
5 mph



D: Leaf Wetness
0.0 Wetness



I: Rainfall - 24-hour
0.24 inches



Dew Point
26.1 F



24 hours

VPD

0.54 kPa



Wet Bulb

36.9 F



Delta T

8.1 F



Heat Index

41.42 F



SpecConnect WATCHDOG SUBSCRIPTION FEATURES

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



Disease & Insect Forecast Model Packages 1-YEAR SUBSCRIPTIONS

Be 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-year subscriptions

3095TUP SpecConnect Turf Alert Package

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

- Web Portal connection requires a WatchDog Retriever & Pup network or any 3000 or 2000 Series Weather Station to collect and log data, and DataScout Modem to send data to the internet
- FieldScout subscriptions require a TDR or TruFirm Meter and the free FieldScout Mobile App

Pro WatchDog Subscriptions (includes one device)

3010US SpecConnect Pro 1-yr Subscription - Cellular, US/Canada
For WatchDog devices, includes cellular plan
3030 SpecConnect Pro 1-yr Subscription - WiFi
3000 SpecConnect Initial Set Up Fee

Additional Devices and Services

3045US Additional WatchDog Pup Device - Cellular (1-yr)
Needed per Pup or Pup Station, includes cellular plan
3046 Additional WatchDog Device - Low-Cellular (1-yr)
(15-60 minute, interval mean sensor values only)
3055 Additional WatchDog Device - WiFi (1-yr)
Needed per Pup or Station
3040 Additional Login (1-yr)
Limit of three users per subscription
3070 Alerts Function (1-yr) Up to 4 phone numbers and emails
Needed per Pup or station
3065 API Service (one-time charge)

Pro FieldScout Subscriptions (includes one device)

3035A SpecConnect FieldScout Pro (1-yr) 1-3 devices
3035B SpecConnect FieldScout Pro (1-yr) 4-7 devices
3035C SpecConnect FieldScout Pro (1-yr) 8 or more devices

Daily Report

- Track the key growing factors of temperature, humidity, and rainfall
- Generate formal reports for permanent records
- Flexible date selection for reports you need: week, month, or growing season

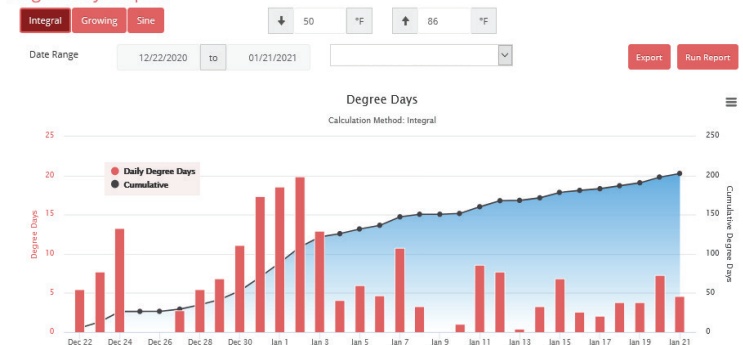
Daily Report

Date Range		12/22/2020	to	01/21/2021							Export	Run Report
Date	Temp High	Time @ Temp High	Temp Low	Time @ Temp Low	Temp Avg.	RH High	RH Low	RH Avg.	Daily Rainfall	Rainfall Cumulative		
2021-01-21	78.2	2:00:00 pm	47.8	12:05:00 am	57.66	88.4	43	74.54	0	0.88		
2021-01-20	74	2:50:00 pm	35.6	2:25:00 am	52.59	92.3	30.6	68.46	0	0.88		
2021-01-19	65.1	1:20:00 pm	31.7	5:15:00 am	45.43	91.4	43.1	73.55	0	0.88		
2021-01-18	66.3	2:35:00 pm	34	11:50:00 pm	48.2	89.8	27.7	63.49	0	0.88		
2021-01-17	61.3	1:25:00 pm	29.9	6:40:00 am	44.28	91.8	39.3	70.46	0	0.88		
2021-01-16	60.5	1:35:00 pm	33.1	11:55:00 pm	47.28	90.7	35.4	65.05	0.01	0.88		
2021-01-15	72.5	2:30:00 pm	36.6	4:15:00 am	53.54	91.3	48.2	78.86	0.08	0.87		
2021-01-14	64.8	3:20:00 pm	35.4	7:10:00 am	48.45	91.4	37	70.96	0	0.79		
2021-01-13	53.9	2:10:00 pm	45.3	7:05:00 am	48.22	85.3	64.8	78.43	0	0.79		
2021-01-12	62.8	10:30:00 am	49.2	11:50:00 pm	57.7	84.1	72.2	78.67	0	0.79		
2021-01-11	71	1:50:00 pm	41.6	2:10:00 am	56.75	91.4	62.8	81.82	0	0.79		

Degree Days Report

- Use degree days for pest management decisions, not the calendar
- Time the application of pesticide spray more effectively with degree day information

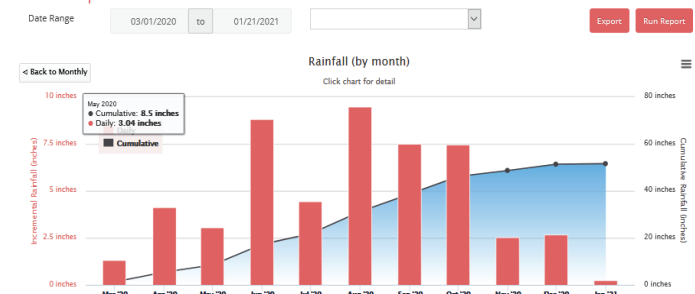
Degree Days Report



Rainfall Report

- Monitor rainfall throughout the growing season
- See the monthly rainfalls superimposed on the cumulative total in one place
- Click on Monthly bars to see daily rain events
- Then click on Daily bars to see more detail

Rainfall Report





INTRODUCING THE **NEW** 3000 SERIES DATA LOGGERS

Collect the measurements that matter to you!

The **NEW WatchDog® Data Loggers** are ideal for those who do not need to send data to the Internet. Data can still be transferred from the internal logger to a USB flash drive and processed with SpecWare*.

The 3000 Series Data Loggers offer all-in-one simple setup. With Bluetooth connectivity and the free WatchDog mobile app, receive weather notifications direct to your smartphone. Perfect for fields, orchards, vineyards, and golf courses.

SpecWare® Pro
Software*



3250 ET Station Data Recorder

Use real-time evapotranspiration (ET) data to effectively irrigate your turf for optimum quality.

Measure wind speed/direction, temperature, relative humidity, rainfall, and solar radiation, plus one additional sensor port.

3250DR WatchDog 3250 ET Station Data Recorder

NEW

*Requires SpecWare Pro software version 9.70 or later to process 3000 Series data.

3240 Weather Station Data Recorder

Monitor changing weather conditions for more effective decisions.

Measure wind speed/direction, temperature, relative humidity, and rainfall, plus two additional sensor ports.

3240DR WatchDog 3240 Weather Station Data Recorder



3220 Rain Station Data Recorder

Monitor rainfall data for more effective irrigation scheduling. Monitor and note site-specific conditions for disease and insect pressure.

Measure temperature, relative humidity, and rainfall, plus two additional sensor ports.

3220DR WatchDog 3220 Rain Station Data Recorder



3210 Temp/RH Station Data Recorder

Track temperature and humidity conditions in those microclimates where turf disease pressure occurs.

Measure temperature, and relative humidity, plus two additional sensor ports.

3210DR WatchDog 3210 Temp/RH Station Data Recorder



	3210 Temp/RH Data Recorder	3220 Rain Data Recorder	3240 Weather Data Recorder	3250 ET Data Recorder	Range	Accuracy
Air Temperature	✓	✓	✓	✓	-40° to 257°F (-40° to 125°C)	±0.54°F (-40° to 194°F)
Relative Humidity	✓	✓	✓	✓	0 to 100%	±2% @ 77°F (25°C)
Rainfall	Optional	✓	✓	✓	0.01" (0.254mm) resolution	±2% at <2" (5 cm)/hr
Wind Speed	Optional	✗	✓	✓	0, 1 to 200 mph (0, 1 to 322 km/h)	±2 mph (±3 km/h), ±5%
Wind Direction	Optional	✗	✓	✓	1-359°, 1° increments	±3°
Solar Radiation	Opt. (ext. port)	Opt. (ext. port)	Opt. (ext. port)	✓	0 to 1500 W/m ²	±5%
Available External Sensor Ports	2	2	2	1		

WatchDog® 2000 Series Mini Weather Stations



Monitor, record and analyze over a dozen environmental parameters directly from your field or golf course.

2000 Series Mini Stations

Monitor microclimates with up to 4 external sensor ports. You can customize your WatchDog network, using different sensors based on the data you want to collect and analyze for optimal system performance.

- Measure temperature, humidity, quantum light, and more (varies by model)
- Customize with 1-4 plug-in sensors
- Custom measurement intervals
- Reliable NEMA-4 type IP 66 enclosure and weatherproof connectors
- 12-month battery power (4 AA batteries included)

How do you access the data?

- 1. SpecConnect:** Wireless or Cellular Communication: Access real time data from your PC, tablet or smart phone
- 2. Direct Connect:** Download from the station to your PC. Requires SpecWare Basic or Pro
- 3. Data Shuttle:** Transport data from your station to your PC. Requires SpecWare Basic or Pro



Model 2475 Plant Growth Station

- Includes sensors for quantum (PAR) light, air temperature, dew point, 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



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

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

Model 2450 Temperature/RH Station

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

3684WD Model 2450
WatchDog® Weather Station



WATCHDOG® 2000 SERIES MINI WEATHER STATION FEATURES

Sensors	2475	2450	2425	2400	Specifications	Accuracy
Air Temperature	✓	✓	✓	OPT	-40° to 257°F (-40° to 125°C)	±0.54°F at -40° to 185°F(±0.3°C at -40° to 85°C)
Relative Humidity	✓	✓			0% to 100%	±2% at 32° to 176°F(0° to 80°C)
Dew Point	✓	✓			-99° to 140°F (-73° to 60°C)	±4°F (±2°C)
Quantum Light (PAR)	✓	OPT	OPT	OPT	0 to 2500 $\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$	±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)						

WatchDog® 1000 Series Micro Stations



1000 Series Micro Stations

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

- Internal sensors can include temperature and humidity (3663A radiation shield required)
- Up to 4 external sensor ports
- Up to 8 sensor values with the Model 1650 using up to two WaterScout SMEC 300 Soil Moisture/EC/Temperature Sensors
- LCD displays 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)
- Water-resistant case (radiation shield or enclosure recommended for outdoor use)
- 12-month battery life (CR2450, included)

How do you access the data?

1. **Direct Connect:** Download from the station to your PC. Requires SpecWare Basic or Pro
2. **Data Shuttle:** Transport data from your station to your PC. Requires SpecWare Basic or Pro



DESCRIPTION	INTERNAL SENSOR	EXTERNAL PORTS	MAX. NUMBER OF SMEC 300 SENSORS	PRICE
MODEL 1650 Item 3688WD1	TEMPERATURE RELATIVE HUMIDITY	4	2	\$475.00
MODEL 1525 Item 3687WD1	TEMPERATURE	4	2	\$395.00
MODEL 1450 Item 3684WD1	TEMPERATURE RELATIVE HUMIDITY	2	1	\$395.00
MODEL 1425 Item 3683WD1	TEMPERATURE	3	1	\$345.00
MODEL 1400 Item 3685WD1	NONE (EXTERNAL ONLY)	4	2	\$330.00
MODEL 1250 Item 3682WD1	TEMPERATURE RELATIVE HUMIDITY	NONE	0	\$325.00
MODEL 1225 Item 3681WD1	TEMPERATURE	1	0	\$275.00
MODEL 1200 Item 3680WD1	NONE (EXTERNAL ONLY)	2	1	\$255.00
MODEL 1120 Item 3554WD1	RAINFALL (SEE BELOW FOR DETAILS)	NONE	0	\$405.00
MODEL 1115 Item 3635WD1	REQUIRES EXTERNAL RAINFALL (SEE WEBSITE FOR DETAILS)	1	0	\$210.00

1120 Data-Logging Rain Gauge

- 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: $\pm 2\%$ at < 2 in (5 cm) per hour
- Requires SpecWare 9 Basic or Pro
- Includes Bird Guard to reduce maintenance

3554WD1

Data-Logging Rain Gauge

WatchDog® Sensors & Cables

Soil Sensors



6470-6



6460



3667

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: $\pm 3\%$; EC: 0 to 10 mS/cm, Accuracy: $\pm 2\%$. Requires WaterScout Calibration Device. Compatible with WatchDog 3000, 2000, and 1000 Series Stations and Pups.

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

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: $\pm 3\%$. Compatible with WatchDog 3000, 2000, and 1000 Series Stations and Pups.

6460	WaterScout SM 100 Sensor with 6 ft (1.8 m) Cable
6460-20	WaterScout SM 100 Sensor with 20 ft (6.1 m) Cable

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: $\pm 1^{\circ}\text{F}$ ($\pm 0.5^{\circ}\text{C}$). Compatible with WatchDog 3000, 2000, and 1000 Series Stations and Pups.

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

Light Sensors



3670I / 3668I / 3676I

LightScout® Silicon Pyranometer

Measure solar radiation between 300 and 1100 nanometers. 1000 Series Micro Stations Range: 0 to 1250 W/m^2 , Accuracy: $\pm 5\%$. All other Series & Pups Range: 0 to 1500 W/m^2 , Accuracy: $\pm 5\%$. Compatible with WatchDog 3000, 2000, and 1000 Series Stations and Pups.

3670I	LightScout Silicon Pyranometer
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LightScout® UV Light Sensor

Measure UV radiation between 250 and 400 nanometers. Range: 0 to $200 \mu\text{mol m}^{-2} \text{ s}^{-1}$, Accuracy: $\pm 5\%$. Compatible with WatchDog 3000, 2000, and 1000 Series Stations and Pups.

3676I	LightScout UV Light Sensor
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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 (48 cm) long and include mounting brackets. 1000 Series Micro Stations Range: 0 to $2500 \mu\text{mol m}^{-2} \text{ s}^{-1}$, Accuracy: $\pm 5\%$. All other Series & Pups Range: 0 to $3000 \mu\text{mol m}^{-2} \text{ s}^{-1}$, Accuracy: $\pm 5\%$. Compatible with WatchDog 3000, 2000, and 1000 Series Stations and Pups.

3668I	LightScout Quantum Light Sensor
3668I3	LightScout Quantum Light 3 Sensor Bar
3668I6	LightScout Quantum Light 6 Sensor Bar



3668I6

Digital Sensors (for Pups only)



3613ARS

3613THS

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: $\pm 0.54^{\circ}\text{F}$ from 50 to 131°F (0.3°C from 10 to 55°C), $\pm 2.5\%$ RH. Compatible with WatchDog Pups only. Operating temperature 14 to 140°F (-10 to 60°C)

3613ARS	Temperature/RH Sensor with Aspirated Radiation Shield
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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: $\pm 0.54^{\circ}\text{F}$ from 50 to 131°F (0.3°C from 10 to 55°C), $\pm 2.5\%$ RH. Compatible with WatchDog Pups only.

3613THS	Temperature/RH Sensor with Passive Radiation Shield
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Accessories



3396TPS



3396TP

Tripod Mount

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

3396TPS	Tripod Mount with Ground Stakes
3396TP	Tripod Mount without Ground Stakes

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
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Environmental Sensors



3667S



3665R



3666



3671

Temperature (Micro) Sensor

Measure surface temperature of leaves, buds, and other tiny mediums.

Range: -25 to 212°F (-32 to 100°C). Accuracy: $\pm 1^\circ\text{F}$ ($\pm 0.5^\circ\text{C}$). Compatible with WatchDog 3000, 2000, and 1000 Series Stations and Pups.

3667S

Temperature (Micro) Sensor

Tipping Bucket Rain Collector

Measure rainfall in 1/100 inch increments. Self-emptying and freeze resistant. Range: 0.01", 0.25 mm, Accuracy: $\pm 2\%$ at < 2 in (5 cm) per hour. Compatible with WatchDog 3210, 2800, 2400 Series, and 1000 Series Micro Stations.

3665R

Tipping Bucket Rain Collector

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 3000, 2000, and 1000 Series Stations and Pups.

3666

Leaf Wetness Sensor

Barometric Pressure Sensor

Measure atmospheric pressure. Standard Sensor: Range: 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 3000, 2000, and 1000 Series Stations and Pups.

3671

Barometric Pressure Sensor - Standard

3671M

Barometric Pressure Sensor - High Altitude

Cables & Adapters



3664



3673

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

General Input Cables

Connect non-WatchDog sensors to your WatchDog Station. (Item 3673) Range: 0 to 3v, Accuracy: $\pm 0.005\text{V}$.

(Item 3674) Range: 0 to 20.1 mA, Accuracy: $\pm 1\%$. Compatible with WatchDog 3000, 2000, and 1000 Series Stations and Pups.

3673

0-3V Input Cable

3674

4-20mA Input Cable

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

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 3661U9)

3660-75SP

75 ft (22.8 m) Direct Connect Cable

Includes surge protectors for both ends of the cable connection

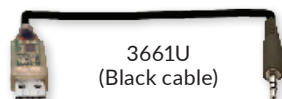
3660DP

75 ft (22.8 m) Powered Direct Connect Cable

Includes AC adapter; no surge protectors



3660-75SP



3661U
(Black cable)



3661U9
(White cable)

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

USB-to-9-Pin-Serial Adapter

Connect 9-pin Serial cables (such as Item 3660-75SP) directly to your computer's USB port

3661U9

USB-to-9-Pin-Serial Adapter

WatchDog® A-Series & B-Series Data Loggers



A-Series Data Loggers

The most affordable way to track environmental conditions for analysis.

- 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 AC power; international adapter included)

How do you access the data?

- LCD display confirms logger operation and displays last sensor readings
- Hook up A-Series Loggers to your computer with PC Connection cable (see below), requires SpecWare Basic or Pro
- Select measurement intervals from 1 to 120 minutes
- Direct connect requires SpecWare Basic or Pro plus A-Series PC Cable (see below)

Operating temperature range: -22 to 140°F (-30 to 60°C); A160: 32 to 122°F (0 to 50°C)
 Temperature range: -40 to 185°F (-40 to 85°C); A160: 14 to 140°F (-10 to 60°C)
 Accuracy: ±1.1°F (±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%
 CO₂ range: 0 to 9999 ppm, Accuracy: ±50 ppm ±5% of reading (0 to 2000 ppm), else unspecified



3611A



3612A



3617A

DESCRIPTION	INTERNAL SENSOR	INTERVALS	RADIATION SHIELD	PRICE
MODEL A160 3611A	AIR TEMPERATURE RH, CO ₂	5,333	INDOOR USE ONLY (NO SHIELD AVAILABLE)	\$369.00
MODEL A150 3612A	AIR TEMPERATURE RELATIVE HUMIDITY	5,333	OPTIONAL	\$179.00
MODEL A130 3610A	AIR TEMPERATURE EXTERNAL LEAF WETNESS	4,000	INCLUDED	\$340.00
MODEL A125 3617A	AIR TEMPERATURE EXTERNAL TEMPERATURE	4,000	RECOMMENDED	\$142.00
MODEL A110 3618A	AIR TEMPERATURE	8,000	OPTIONAL	\$78.00

3661A WatchDog® A-Series PC Connection Cable - USB Port
 (required to download data)

3663A Radiation Shield (needed for outdoor use)

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

How do you access the data?

- Snap the B-Series Data Loggers into the Docking Station and connect it to your PC to see data. Requires SpecWare Basic or Pro

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	\$231.00
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	\$145.00
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	\$78.00



Docking Station

3655K1 WatchDog® B-Series Docking Station - USB Port
 (required to download data)

WatchDog® Sprayer Station



Avoid Drift Complaints

Don't let misapplication of pesticides cost you. Let our sprayer station with ultrasonic anemometer help you put pesticides where they belong and nowhere else.

Pesticide drift is increasingly important to commercial applicators. Accurate data helps pesticide applicators make important decisions regarding weather conditions that affect safety, drift and proper application. With the WatchDog® Sprayer Station you can provide evidence of suitable conditions for pesticide application by logging your data. Mount the station directly on your equipment to monitor and log weather conditions on-the-go.

All-in-One Weather Station Measures:

- Wind Speed/Direction & Chill
- Air Temperature
- Barometric Pressure
- Humidity
- Dew Point
- Computes True Wind Speed

Additional Information

- Continuously log your weather parameters at a user-selectable rate or hit the snapshot button to capture current conditions at a specific moment
- 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
- Handles adverse conditions with a UV-stabilized, compact housing that is fully waterproof and resistant to chemicals

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: ±2°F (±1.1°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@12VDC

Choose Your Console:



WatchDog® Sprayer Station Console



Raven Viper 4, ViperPro or Envizio Pro (not available through Spectrum)



AGCO Accu Terminal (not available through Spectrum)

2.75 in (7 cm)



WatchDog® Sprayer Station

12.75 in (33 cm)

Sprayer Station

3349SSCH

WatchDog® Sprayer Station with Console

Buy as a Package & Save! See data on the display and/or download directly from console (requires SpecWare Mobile for WatchDog® Sprayer Station)

3349SSH

WatchDog® Sprayer Station

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
Integrates Raven & AGCO

3349CN

WatchDog® Sprayer Station Console

Includes console with built-in data logger, USB-to-3.5mm stereo cable, and software CD

3349H
3361U9

Replacement Humidity Sensor USB-to-9-Pin-Serial Adapter

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
- SpecWare 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)
- Only one activation per purchase

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

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

* 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)
- Only one activation per purchase

3654P9	SpecWare 9 Pro Software
3654P9X	SpecWare 9 Pro Extra User License
3654P9U	SpecWare 9 Pro Upgrade*
3661U	USB-to-3.5mm-Stereo-Plug Adapter

* Does not include USB adapter cable

Disease & Insect Forecast Model Packages

3356TU	SpecWare Turf Alert Package
Models Included:	Brown Patch (Schumann)
	Pythium (Nutter, Schein)
	Dollar Spot (Smith-Kerns, Hall, Mills/Rockwell)
	Insect Models

For more information, please visit our website.



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		
3000 Series Stations		✓
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.

Visit specmeters.com/
updates to ensure your
software version is
compatible with
our newest
WatchDog models.

Disease Models

- Monitor disease pressure based on field-tested and validated algorithms along with data collected by sensors on your field
- Validate the number of pesticide applications
- Models available for Turf diseases

Sclerotinia Dollar Spot

Select Report | Where and When | Options | Forecast | View Report | View Graph

Date	Temperature High	Mean	RH High	Rain Fall	Hall Model	Mills/Rothwell Model	Smith-Kerns Risk	Model
05/20	25.4	18.3	99.5	0.0			4.8	
05/21	25.2	19.0	98.9	0.0			12.2	Yellow
05/22	32.2	22.8	98.2	16.5		Infection	24.4	Red
05/23	25.1	19.7	97.7	11.7		Infection	29.1	Red
05/24	17.5	13.9	99.6	7.6		Infection	27.6	Red
05/25	16.6	11.3	100.0	24.4		Infection	31.8	Red
05/26	14.3	9.7	100.0	8.4		Infection	23.9	Red
05/27	29.1	11.8	85.6	0.0		Infection	17.0	Yellow
05/28	25.1	19.7	97.7	11.7		Infection	17.0	Yellow
05/29	17.5	13.9	99.6	7.6			17.0	Yellow
05/30	91.2	26.8	96.4	0.0			16.4	Yellow
05/31	32.2	22.6	99.3	22.4		Infection	25.3	Red
06/01	30.3	22.7	100.0	3.3	Infection	Infection	37.9	Red
06/02	65.9	21.6	99.5	42.2	Infection	Infection	41.0	Red
06/03	25.4	17.6	98.7	25.4		Infection	40.3	Red

Write Text File | Print | Copy to Clipboard | Exit

Degree Days Report

- Track turf growth stage through the growing season
- Use degree-days for pest management decisions, not the calendar
- Time the application of PGR's more effectively with degree day information

SpecWare Reports - Degree Days

Select Report | Where and When | Options | Forecast | View Report

Date	GDD	Cum	Sng-Sine	Cum	Integral	Cum
04/14	2.4	81.3	1.1	61.6	0.4	52.1
04/15	0.0	81.3	0.0	61.6	0.0	52.1
04/16	0.0	81.3	0.0	61.6	0.0	52.1
04/17	1.8	83.0	0.6	62.2	0.4	52.4
04/18	0.0	83.0	0.0	62.2	0.0	52.4
04/19	0.0	83.0	0.0	62.2	0.0	52.4
04/20	0.0	83.0	0.0	62.2	0.0	52.4
04/21	1.5	84.5	0.4	62.7	0.2	52.6
04/22	0.0	84.5	0.0	62.7	0.0	52.6
04/23	4.8	89.3	3.3	65.9	2.8	55.4
04/24	4.8	94.1	3.2	69.2	2.4	57.8
04/25	4.2	98.2	2.7	71.9	2.2	60.0
04/26	7.5	105.8	6.8	78.6	5.3	65.2
04/27	0.8	106.5	0.3	78.9	0.2	65.4
04/28	0.0	106.5	0.0	78.9	0.0	65.4

Write Text File | Print | Copy to Clipboard | Exit

Daily Report

- Track the key growing factors of temperature, humidity, and rainfall
- Generate formal reports for permanent records
- Flexible date selection for reports you need: week, month or growing season

SpecWare Reports - NOAA Month Report

Select Report | Where and When | Options | Forecast | View Report

Date	Temperature			Low	Time	Degree Days	Solar Rad	RH Mean	Rain- Fall	Wind	
	Mean	High	Time							Speed	Gust
04/14	43.4	54.8	12:20a	38.4	09:05p	0.4	191.0	74	0.00	12.9	29.0
04/15	41.0	45.9	02:05p	35.0	05:50a	0.0	99.3	77	0.46	17.2	39.0
04/16	39.4	44.0	08:05a	33.5	03:05p	0.0	39.7	95	0.11	5.6	20.0
04/17	41.8	53.5	03:50p	33.2	05:05a	0.4	299.6	68	0.00	6.0	24.0
04/18	35.1	42.6	12:05a	31.5	07:05a	0.0	129.5	92	0.49	7.9	18.0
04/19	34.4	37.0	07:50a	32.7	12:35a	0.0	22.5	95	0.68	13.6	38.0
04/20	36.4	42.5	01:50p	30.3	11:35p	0.0	84.7	91	0.14	4.9	16.0
04/21	39.8	53.0	02:50p	25.9	06:05a	0.2	253.1	71	0.05	3.8	20.0
04/22	40.6	43.1	11:50p	38.9	11:50a	0.0	27.9	98	0.38	8.7	26.0
04/23	50.4	59.5	12:35p	43.0	12:35a	2.8	255.9	81	0.01	6.9	29.0
04/24	50.1	59.6	03:05p	42.1	06:05a	2.4	237.1	70	0.00	3.6	13.0
04/25	50.1	58.3	03:20p	42.2	05:35a	2.2	130.5	70	0.06	6.7	24.0
04/26	55.4	65.1	02:20p	47.7	04:35a	5.3	135.0	87	0.50	14.5	38.0
04/27	47.5	51.5	04:05p	41.5	11:50p	0.2	75.0	86	0.16	2.3	11.0
04/28	41.3	43.0	06:20p	39.6	09:20a	0.0	109.0	86	0.04	6.2	20.0

Write Text File | Print | Copy to Clipboard | Exit

Sunlight Consistent plant quality starts with light.

Why measure light? Improve growth and quality of your turf.

Position the meters throughout your course or field to compare light levels and the effect those changes have on turf quality. You can also use multiple meters simultaneously to compare light levels and the impact on turf health, quality and aesthetics.



Quantum PAR/DLI Light Meter

Grow healthier, greener plants by measuring their precise light intake.

- Provides accurate PAR light readings from ANY light source:
 - Full sun to full shade indoors or outdoors
 - Artificial light sources (LED, High-Pressure Sodium, Metal Halide, Fluorescent, Halogen, etc.)
- Three modes of operation:
 - Instant Spot Measurement mode for PAR light readings
 - Scan mode for quickly averaging PAR over an area
 - DLI mode shows Daily Light Integral on the LCD (no computer needed)
- Integral mounting plate for: stand, stake, lanyard & hanger hole, and magnet mounts
- 1/4-20 threaded hole for mounting on camera tripods & stands
- Includes sensor cover & soft carrying case

3415A

LightScout® Quantum PAR/DLI Light Meter



GENERALIZED TURF RESPONSES TO DIFFERENT LIGHT LEVELS

Relative Light Level	DLI* - Daily Light Integral	Light Intensity** at Noon	Generalized Turf Quality
Low	2 to 10	100 to 400	Poor
Medium	10 to 20	400 to 800	Good
High	20 to 30	800 to 1,200	Excellent (cool season turf)
Very High	30 to 60	1,200 to 2,000	Excellent (warm season turf)

* Moles

** Micromoles ($\mu\text{mol}/\text{m}^2\cdot\text{s}$)

LIGHTSCOUT® DLI 100 Light Meter

Light is one of the most important factors in plant and turf quality. The best way to quantify light for growing plants is to measure photosynthetically active radiation (PAR) light between 400 and 700 - the range that promotes photosynthesis. The daily light integral (DLI) measures the total amount of PAR within a 24-hour period.

- Affordable & simple, one button operation
- Meter runs for 24 hours to calculate DLI
- Real-time intensity levels are shown in $\mu\text{mol}/\text{m}^2\cdot\text{s}^{-1}$ every 4 seconds daily
- Battery included
- Greenhouse & Turf models available

3405T3 LightScout® DLI 100 Meter - Turf (set of 3)

3405T LightScout DLI 100 Meter - Turf (1 unit)



For the best results place one meter in the sun, one in partial shade and one in full shade.

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
- Video software upgrade provides the ability to capture live videos and time lapse sequences of insect movement

2860	IPM Scope
2860V	Video Software Upgrade
2860HS	Plastic Horseshoe-3D images
2860MAC	Software for Mac Computers

Please visit 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

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
2852	Macroscope 45 with hard carrying case



Backed with proven time-domain measurement technology, the TDR 350 accurately measures soil moisture across a full range of soil conditions. An ergonomic design and built-in display provides quick and easy measurements for water management.

Soil moisture (Volumetric Water Content %), salts (electrical conductivity) and surface temperature, plus optional Infrared Temperature sensor

- Reliable portable meter for instant, accurate and actionable root zone moisture and soil EC readings average of rod length
- Irrigation scheduling, syringing practices, and soil flushes
- Track and trend data from day to day, month to month and season to season to optimize turf Health and Conditioning

- Backlit Display - Easy to see on early mornings and bright sunny days
- Improved Layout & Larger Digits - Clearly view readings, settings and icons
- Integrated Bluetooth & GPS - Greater accuracy with onboard components
- Internal Data Logger - Records approximately 50,000 measurements with GPS coordinates
- Optional TDR 300 Mode

- Manual – download the data with a USB flash drive, no special software or cable required
- Hands free – instantly view data on your smartphone or tablet via FieldScout Mobile App
- Cloud – SpecConnect FieldScout Pro subscription automatically uploads data to your personal web portal to view enhanced mapping and reporting features

FieldScout Equipment

TDR-300

Date Range
12/01/2016 to 05/30/2017

SpecMaps TDR 2 (5 Dec 2016 10:17:14)

Show Features:

☐ pin
 ☒ sprinkler
 ☐ valve

SpecMaps Test Course: SpecMap Test

SpecMaps Test Course: SpecMap

6435TS Infrared Temperature Sensor for TDR 350



INTRODUCING THE NEW **FIELDSCOUT** TDR 250 ECONOMY SOIL MOISTURE METER

IF YOU DON'T MEASURE IT, YOU CAN'T MANAGE IT EFFECTIVELY

NEW

The TDR 250 offers the same proven time-domain measurement technology as the other TDR meters, but with a 20% less investment. The TDR 250 is a simplified portable soil-moisture meter that captures measurements in the root zone.

What does it measure?

Soil moisture (Volumetric Water Content %)

Common Applications

- Reliable portable meter for instant, accurate and actionable root zone moisture readings
- Irrigation scheduling, syringing practices, and soil flushes
- Ideal for daily-fee/municipal golf courses and sports turf fields

Features

- Displays VWC% (with running average)
- Operates in TDR 300 mode or salinity-corrected (TDR 350) mode
- Soil measurements in less than a second
- Internal data logging up to 124,000 measurements
- USB port for a flash drive data download
- High-contrast display with backlight for easy viewing
- Interchangeable soil probes (varying options) - sold separately



SPECIFICATIONS FOR TDR 250 SOIL MOISTURE METER

VWC Range: 0% to saturation, Resolution: 0.1%, Accuracy: $\pm 3.0\%$ VWC

6250 TDR 250 Soil Moisture Meter
Rods required and sold separately. See page 29.
Note: Rods are required for TDRs to function
Carrying case sold separately.

6430CASE TDR 250/350 Carrying Case



TDR 150 Soil Moisture Meter

An affordable alternative to the TDR 350, the TDR 150 is a compact meter that allows you to obtain readings on-the-go. Ideal for measuring containers on benches, variable rod length options provide soil moisture measurements for your ideal root depth.

What does it measure?

Soil moisture, (Volumetric Water Content %), salts (electrical conductivity) and temperature (surface thermistor)

Features & Benefits

- Backlit Display – Easy to see on early mornings and bright sunny days
- Easy-to-read Layout & Large Digits – Clearly view readings, settings and icons
- Integrated Bluetooth & GPS – Greater accuracy with onboard components
- Internal Data Logger – Records approximately 50,000 measurements with GPS coordinates

How do you access the data?

- Manual – download the data with a USB flash drive, no special software or cable required
- With optional GPS and Bluetooth upgrade
- Hands free – instantly view data on your smartphone or tablet via FieldScout Mobile App
- Cloud – SpecConnect FieldScout Pro subscription automatically uploads data to your personal web portal to view enhanced mapping and reporting features



6445 TDR 150 Soil Moisture Meter
Includes carrying case. Rods sold separately. See page 35.

6445TS Infrared Temperature Sensor-TDR 150

6445GBU Bluetooth and GPS Upgrade

SMARTIRRIGATION: Maximize Irrigation Audits with TDR

SPECIFICATIONS FOR TDR 150/350 SOIL MOISTURE METERS

VWC Range: 0% to saturation, Resolution: 0.1%, Accuracy: $\pm 3.0\%$ VWC

EC Range: 0 to 5 mS/cm, Resolution: 0.01 mS/cm, Accuracy: ± 0.1 mS/cm

Temperature Range: -22° to 140° F (-30° to 60° C), Resolution: 0.1°, Accuracy: $\pm 1.8^{\circ}$ F (1° C)

IR Temperature Range: 32° to 140° F (0° to 60° C), Resolution: 0.2°F (0.1°C), Accuracy: $\pm 0.2^{\circ}$ F (0.1°C)



TDR Rods

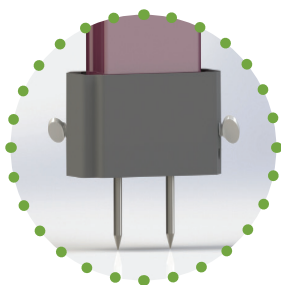
Multiple length options for varying root zones.

6428FS4	Two 1.5 inch (3.8 cm) Rods
6429FS4	Two 3 inch (7.6 cm) Rods
6431FS4	Two 4.8 inch (12 cm) Rods
6432FS4	Two 8 inch (20 cm) Rods
6430PH	Pilot Hole Maker for TDR Meters Includes two 3 inch (7.5 cm) rods



TDR Spacers

- For use in TDR 300 Mode
- Using 1.5" (3.9 cm) rods, easily measure 0.5" and 1" depths
- Easily attach and detach from any FieldScout TDR meters



6435SP Rod Spacer

Infrared Temperature Sensor

- Predict turf wilt with higher accuracy
- Easily correct a moisture deficit earlier and reduce heat stress
- Quickly and accurately measure surface temperatures
- Use IR temperature real-time - instantaneous readings
- Easy installation to our FieldScout TDR 350 and TDR 150

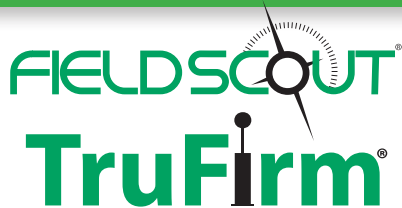
6435TS	Infrared Temperature Sensor for TDR 350
6445TS	Infrared Temperature Sensor for TDR 150



TDR Model Comparison

FEATURES	TDR 150	TDR 250	TDR 350
Measure Volumetric Water Content	✓	✓	✓
Displays EC + Surface Temperature	✓	N/A	✓
Interchangeable soil probes	✓	✓	✓
Backlit Display	✓	✓	✓
T-Handle	N/A	✓	Telescoping
Infrared Temperature Sensor	Optional	N/A	Optional
GPS/GNSS + Bluetooth	Optional	N/A	✓
Carrying Case	✓	Optional	✓
FieldScout Mobile/SpecConnect Capability	✓	N/A	✓

FieldScout® TruFirm® Turf Firmness Meter



Based on USGA technology, 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 turf management professionals to measure the relationship between the compaction of the soil and the moisture level to quantify safety and performance of playing conditions.

What does it measure?

Surface Firmness/Hardness (depth of impact in inches)

Common Applications

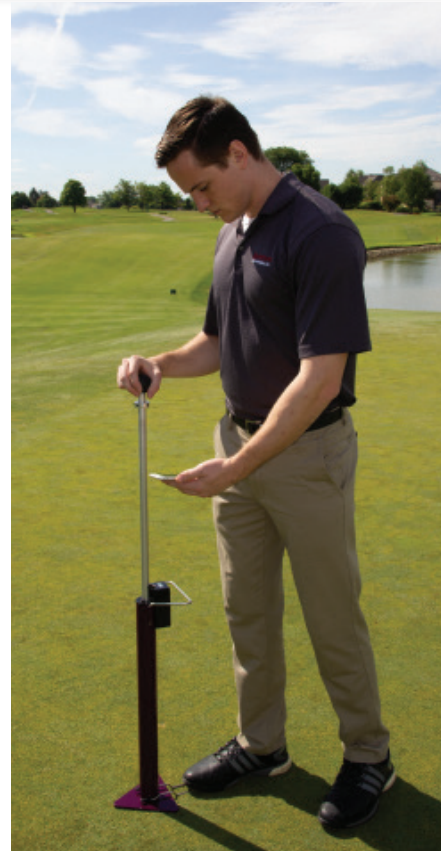
- All-in-one portable meter for evaluating impacts of cultural practices, play and environmental conditions on putting greens and other athletic surfaces
- Golf course greens, approaches, bunker sands and fairway landing areas for achievement of optimal surface performance and consistency
- Natural and artificial turf playing surfaces, infield dirt, turf and clay tennis courts, cricket pitches, bowling greens, racing tracks, etc.
- Track and trend data over time to better understand effects of turf inputs and optimize conditioning, playability and safety

Features & Benefits

- Built-in Display – immediate digital results on a conveniently located screen
- Easy to Use – simply raise and drop the hammer in one motion
- Objective Values – analyze & compare impact of environment and maintenance inputs on play
- Versatile Tool – perfect for golf courses and sports fields at schools, parks, etc.
- Self-Contained – one complete unit, no small pieces to keep track of or lose
- Very Affordable – designed to make measurement possible for every facility
- Bluetooth – wireless data collection with the FieldScout Mobile App and add satellite mapping with automatic cloud upload with SpecConnect FieldScout Pro

How do you access the data?

- Hands free – instantly view data on your smartphone or tablet via FieldScout Mobile App
- Cloud – SpecConnect FieldScout Pro subscription automatically uploads data to your personal web portal to view enhanced mapping and reporting features



SPECIFICATIONS FOR TRUFIRM

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)

Diameter of Hammer: 1.68 in (4.45 cm)

Height: 27 in (69 cm)

Weight: 4.3 lb (1.95 kg)

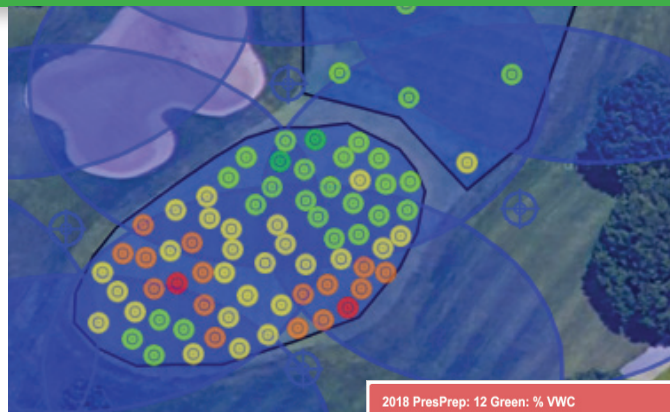
Measurement Units: Depth of travel (inches)

Power: 2 AA batteries (included)

6490S FieldScout® TruFirm® Turf Firmness Meter
with Bluetooth Low Energy



FieldScout® Mobile App



FieldScout® Mobile App

Data at your fingertips! We've made it easier for you to send data from the field to your smartphone.

Basic Features

Free Mobile App download from Apple App Store or Android Google Play.

Basic App capabilities include:

- Hands-free data collection
- Visualize in-field, real time readings on a smartphone or tablet
- Color coded to represent a scale of moisture, EC, surface temperature or turf firmness
- E-mail relevant information to communicate results to others

Pro Features

Collect data, evaluate trends, log and analyze multiple data points. Wireless data can be sent via Bluetooth to an IOS or Android device and saved to the Cloud. Pull together soil moisture and EC data from your TDR meter and firmness data from your TruFirm to fine-tune agronomic and cultural practices for specific greens or other surfaces.

FieldScout Pro Mode requires purchase of 1-year SpecConnect FieldScout subscription.

Pro Mobile App capabilities include:

- Hands-free data collection
- Google Maps dynamic satellite image shows readings data overlaid on your property on mobile device and web portal
- Freeform Mode plots a point for each reading, and stores its data independently
- Automatic wireless upload to SpecConnect for further analysis from your personal web portal
- SpecConnect provides complete data overview at once, overlaid on a satellite map
- Color Gradient Mapping of data points within custom selected areas or groupings
- Map locations of sprinkler heads, pin locations and more

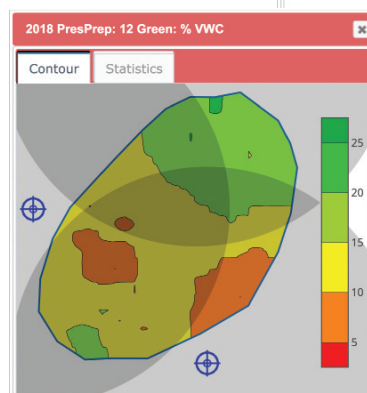
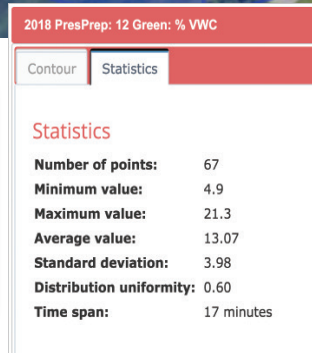
FieldScout® Mobile Compatible Items

- TDR 350 Soil Moisture Meter
- TruFirm Turf Firmness Meter
- TDR 150 Soil Moisture Meter (with optional GPS/Bluetooth upgrade)
- TDR 300 Soil Moisture Meter (with optional Bluetooth device)

FieldScout Mobile App

FREE

- 3035A SpecConnect FieldScout Pro Subscription (1-yr) 1-3 Devices
- 3035B SpecConnect FieldScout Pro Subscription (1-yr) 4-7 Devices
- 3035C SpecConnect FieldScout Pro Subscription (1-yr) 8+ Devices
- 6453BT FieldScout Bluetooth Device for TDR 300



FIELDSCOUT MOBILE APP BASIC vs. PRO

	Basic	Pro
Basic Grid Map	✓	✓
Change Number of Grid 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		✓
Irrigation/Soil Moisture Audit		✓



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 meter warranty

ISFET (Ion Sensitive Field Effect Transistor) Probes

Glass Free and Durable Probe - 2 Options
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**
Meter includes case, batteries, AC adapter, brush, and pH 4 & 7 standards
(Does not include pH Probe - order separately below)
- 2108 FieldScout pH 600 Meter**
Meter includes case, batteries, AC adapter, brush, and pH 4 & 7 standards
(Does not include pH Probe - order separately below)
- 2127 FieldScout pH Meter Blunt Tip ISFET Probe**
2128 FieldScout pH Meter Pin Point Tip ISFET Probe
2110 Refill Solutions - pH 4 and 7, 60 mL each



Pin Point Tip ISFET Probe

- Non-glass ISFET technology for the smallest pH measurements

Blunt Tip ISFET Probe

- Non-glass ISFET technology for general purpose pH measurement



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

LAQUAtwin



pH Conductivity (EC)

Measurement Principle:	Glass electrode method	2 AC bipolar
Sample Volume Required:	0.1 mL to 2.0 mL	0.12 mL to 2.0 mL
Measurement Range:	0 to 14 pH	0 to 199.9 mS/cm
Calibration:	pH 4 and pH 7	1.41 mS/cm
Reproducibility:	± 0.1 pH	± 2%
Display:	4-digit digital LCD display with Backlight (New)	
Power:	CR2032 coin batteries (x2)	
Battery Life:	400 hours continuous operation with Backlight Off (New)	
Operating Range:	40°F (5°C) to 105°F (40°C), 85% relative humidity	

* High and low calibration points can be changed (customer must provide custom solutions)

LAQUA Twin Handheld pH Meter

Ideal for testing irrigation water, leachate, pesticides, or soil slurry.

2103ALP

LAQUA Twin pH meter

Includes case, batteries, and pH 4 & 7 standards

2110

Refill Solutions - pH 4 and 7, 60 mL ea.

2143L

LAQUA Twin pH Replacement Sensor

2135L

Sampling Sheets - 100 pieces

LAQUA Twin Handheld EC Meter

Ideal for testing water quality.

2205LP

LAQUA Twin EC Meter

Includes case, batteries, and calibration standards

2210L

Conductivity Standard, 1.41 mS/cm

2242L

(6 - 14 mL bottles)

Replacement Sensor



Direct Soil EC Meter

Instant and accurate direct EC and temperature measurements.

- Professional-grade meter - Patented
- 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 $\pm 1\%$, resolution 0.01 mS/cm)
- Automatic temperature compensation, long lasting, and waterproof
- Includes battery and EC calibration standard

8 in (20 cm) Probe Option

2266FS	FieldScout® Direct Soil EC Meter w/ 8 in Probe Includes Carrying Case and 2.76 Standard
2266PROBE	FieldScout EC 8 in Probe (Replacement)
2251	Conductivity Standard, 1.41 mS/cm, 250 mL

24 in (60 cm) Probe Option

2266FSTP	FieldScout Direct Soil EC Meter w/ 24 in T-Handle Probe and Replaceable Tip Includes Carrying Case and 2.76 Standard
2266FST24P	FieldScout T-Handle EC 24 in Probe w/ Replaceable Tip
2266	Replaceable Tip For T-Handle EC Probe
2251	Conductivity Standard, 1.41 mS/cm, 250 mL

See website for replacement probes for previous models 2265FS and 2265FSTP.



NEW



2266FS



Exclusive Patented Paired Sensor



2266FSTP

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

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 GPS/DGPS)
- Configure and download meter with FieldScout[®] software (included)**
- Includes hard carrying case and batteries

2953
2950CV5

FieldScout CM 1000 NDVI Meter
GPS/DGPS Cable

FIELDSCOUT[®] TCM 500 NDVI Turf Color Meter



- 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 vs. 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*
- Internal data logger and RS-232 port; records 3,250 measurements (1,350 with added GPS/DGPS)
- Configure and download meter with FieldScout[®] software (included)**
- Includes hard carrying case, batteries, and TCM 500 T-Handle (item 2975H)

2975NDVI

FieldScout TCM 500 NDVI Turf Color Meter
Includes TCM 500 T-Handle

2975H
2950CV5

FieldScout TCM 500 Replacement T-Handle
GPS/DGPS Cable

SPECIFICATIONS FOR TCM 500

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: \pm 5% of measurement

Turf Color Index:

Grass Index=7.20
N=10 Avg=7.44

NDVI:

NDVI = .784
N=10 Avg = .788

TCM 500 LCD Display



* 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. Georeferenced data can be uploaded to SpecConnect for mapping.



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)**
- Upload your data to SpecConnect for maps of compaction by depth, or depth to hard pan layer
- 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
2950CV5	GPS/DGPS Cable
7250	GPS Unit Mounting Bracket
6110FST	Replacement Depth Target
6106	1/2 in Replacement Tip (Fine soils)
6107	3/4 in Replacement Tip (Coarse soils)



FieldScout SC 900

SPECIFICATIONS FOR FIELDSCOUT SC 900

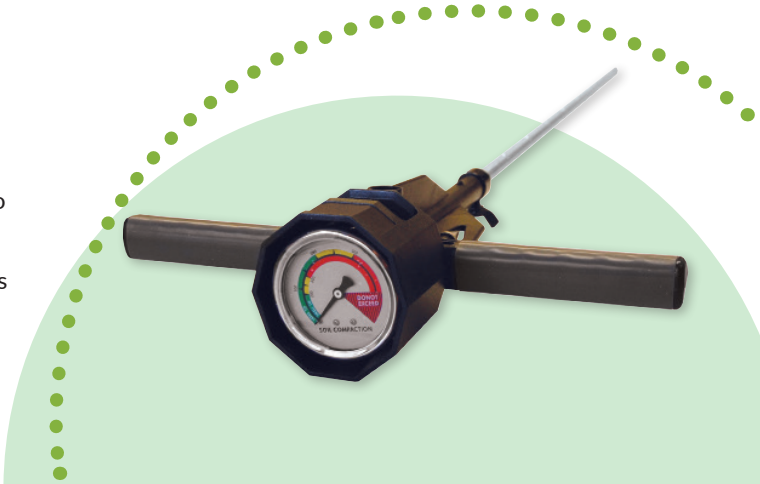
Measurement Units:	Cone Index (PSI or kPa)
Resolution:	1 in (2.5 cm), 5 PSI (35 kPa)
Accuracy:	±0.5 in (1.25 cm) Depth, ±15 PSI (103 kPa) Pressure
Range:	0 to 18 in (0 to 45 cm), 0 to 1,000 PSI (0 to 7,000 kPa)
Battery/Life:	4 AAA alkaline batteries; approximately 12-month life
Data Logger Capacity:	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
6121	1/2 in Replacement Tip (Fine Soils)
6122	3/4 in Replacement Tip (Coarse Soils)



Spectrum **Technologies, Inc.**

"To Measure Is To Know"

3600 Thayer Court
Aurora, Illinois 60504

Toll Free: 800-248-8873
Phone: 815-436-4440
Fax: 815-436-4460

info@specmeters.com
www.specmeters.com

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INTRODUCING THE **NEW** TDR 250 ECONOMY SOIL MOISTURE METER

SAME RENOWNED
MEASUREMENT ACCURACY
FOR **20% LESS**

See page 27!



CONNECT WITH US!

