No other system gives you this level of analysis and insight
(without even leaving the green)
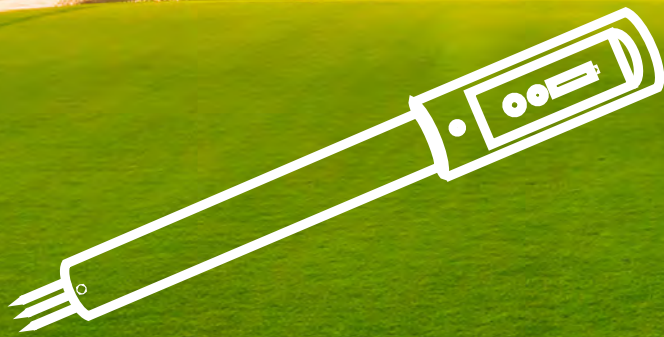
Pogo Pro

Only the POGO Pro simultaneously measures all of the most influential factors that govern turf performance with a patented sensor and science-based analysis. Because it has its own pro-quality GPS, measurements are recorded at the sub-meter level so the areas of stress are pinpointed precisely on your green.

Pogo Turf Pro App

The free POGO Turf Pro app turns your smartphone or tablet into a data acquisition and logging system that collects, displays and instantly analyzes data measured by the wirelessly-connected POGO.

The POGO system is a holistic approach to measuring the most influential factors that ultimately determine course quality and turf performance. Its patented technology is unparalleled in precision and accuracy while allowing for customization to suit your specific needs.

Pogo Turf Pro Cloud

POGO Turf Pro analyzes data captured by the app, then presents the results of multiple analyses of your data instantly, automatically and visually. Illustrated information visualizes trends and allows you to see problems forming before symptoms appear—so you can react before it becomes costly.

" *I have become a huge fan of the POGO. It is easily one of the best value for money investments I have ever made. For the first time in the history of this property we are getting hard data on what is actually happening down in the profile. This is helping us realize huge water savings over time and is informing big changes to our flushing schedules and gypsum/wetting agent applications, making them much more effective and cost efficient. The POGOs we purchased paid for themselves within a matter of weeks and are now a must have tool for all supers in my opinion.* "

Sean Kinsley
Golf Course Superintendent,
The Address Montgomerie
Dubai

Unmatched precision.
Better decisions.

Only the portable POGO Pro simultaneously measures all of the most influential factors that govern turf performance with a patented sensor and science-based analysis.

Integrated, professional-quality GPS receiver

Adds an extra dimension—precise location—geospaitial condition analysis, cup placements, sprinkler positions and patterns, area measurements, custom mapping and more.

Rechargeable battery

Provides a full day of intense use between charges.

Proven reliability and research-grade accuracy you can trust

A patented sensor depended on by the USDA, NOAA, leading irrigation companies, and many universities for over 20 years.

Precisely measures the <u>right</u> depth

The predominant moisture and salinity exchange within the rootzone of all types of turf systems occurs in the top 2.4"* (6cm). Measuring <u>only</u> this depth maximizes precision.

* Results of independent study available upon request.

Integrated Wireless

The best user interface for POGO is the one already in your pocket. POGO connects easily via an ad-hoc WiFi connection to any Apple or Android device—no cables.

No need for calibration, ever

Patented sensing technology results in consistent accuracy and precision in all turf and soil types with no maintenance.

Perpetual warranty

Low total cost of ownership, no downtime and consistent accuracy. The entire system, including the sensor tines, is covered under warranty for as long as you maintain your POGO Turf Pro Cloud plan.*

* Max. replacement is once per 2 years. Standard 2-year warranty without a Cloudv account.

Only POGO's patented sensor measures ALL 4 of the most influential variables governing turf performance.
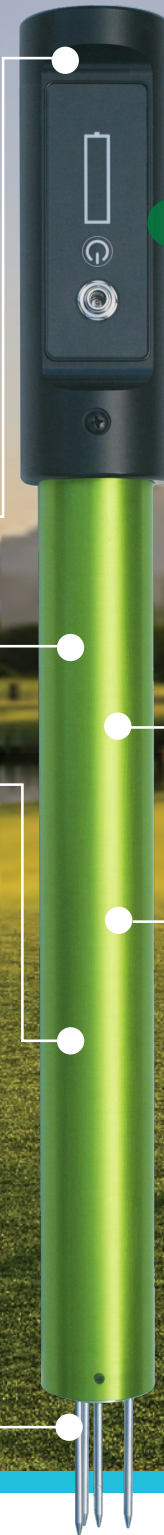
MOISTURE

SALINITY (EC)

CANOPY TEMPERATURE

POGO'S UNIQUE SALINITY INDEX

Turf remains virtually undisturbed

4 small-diameter, strong, marine-grade stainless steel probes (3.1 mm / ⅛ in.) diameter.

Continual accuracy **with no calibration, ever.**

Optimal turfgrass performance requires optimal, timely decisions.

The free POGO Turf Pro app turns your smartphone or tablet into a data acquisition and logging system that collects, **displays and logs turf conditions** measured by the wirelessly-connected POGO.

The app displays **real-time analytics and assessments** of turf/soil moisture, salinity and temperature. This allows for timely reaction to conditions that could lead to costly problems.

Critical alerts advise you of conditions measured that require immediate attention, while you are on the course.

Easily upload data to POGO Turf Pro Cloud and unleash unprecedented insight and analysis.

Each new moisture, salinity (EC), temperature and salinity index measurement is color-coded and indicated on a bar meter to display where your conditions are in relation to your customized target range.

Running average for the zone with comparision to the last reading.

Tap to acquire a new measurement.

Data and configurations are shared with all other users, allowing a property to be split between multiple people, yet ensuring standardized measurement.

Turf conditions

GPS coordinates

Key course setup variables

The View of Your Course is Better From the Cloud

Rather than just presenting raw data for you to interpret, POGO Turf Pro Cloud analyzes your data and presents it **visually**. See variations of moisture, salinity, temperature, ball speed, firmness and more across every zone of your course(s), and understand the effects of their interaction. This makes it quick and easy for you, and everyone else on staff to perform Best Management Practices (BMP's) by applying precisely **what**, **when and where** it's needed.

Visual Insight sees problems like black layer forming before you do.

Trends are visualized, allowing you to see problems forming before symptoms appear so you can react before it becomes costly.

This is just one practical application of many.

Visual Insight

Every measurement captured with POGO contains moisture, EC, salinity concentration and temperature PLUS the precise location from the integrated pro-quality GPS. This allows POGO Turf Pro Cloud to plot the data spatially on a real satellite map of your course.

Colors are assigned to different ranges (which you can define). Data is automatically interpreted between locations where measurements were taken, so you'll see turf conditions for the entire green, from just a small number of quick samples.

You'll get an enormous amount of insight at a glance, from just minutes a day during your morning rounds.

- hot spot identification for site-specific hand watering
- nutritional stress identification
- traffic influences on the turf conditions
- changing rootzone conditions
- cloud-based, not desktop-based, so there's nothing to install or maintain, and it can be accessed anywhere from any computer or mobile device

" *Having managed both cool and warm season turf, I understand the changing dynamics in irrigation and nutrient applications. When the best decision is not made, it can be costly. Using POGO removes any guesswork—I know exactly what's going on when it comes to managing moisture, salts and fertilizer. POGO is my most valuable resource in my daily operations.* "

Dario Pascua
Golf Course Superintendent,
Park Ridge Golf Course,
Lake Worth, FL

Reports

It takes only minutes a day to gather data from your entire course, and each measurement you take includes all of the most influential factors that govern turf performance, plus precise location. This rich set of data can then be put to work to provide further insight into every factor that contributes to turf performance.

Trend reports

Plot data for any combination of zones, turf parameters and date range to help identify trends and know how and when to adjust your irrigation, fertilization and cultural practice applications. Even trend ball speed, firmness and other spec conditions using POGO's spec features.
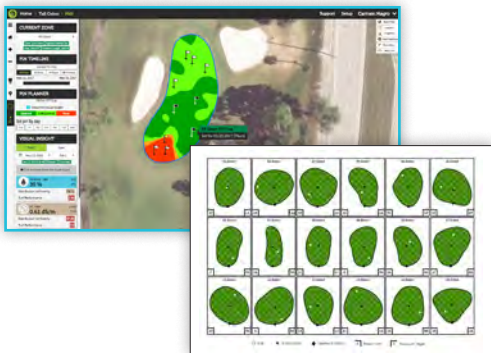
Pin planning

Record pin positions daily and use this information to correlate with turf conditions measured with POGO to help explain the stress patterns you're seeing, and plan where future pin positions should go. Set these future positions with the Pin Planner tool, so your selected positions will be shown on the automatically generated pin sheets. They can be printed or are accessible in real time by the Pro shop, members, and staff using a public URL.

Distribution uniformity

Get a course-wide audit every day in minutes per zone without needing to do a traditional, time-consuming DU analysis. Distribution uniformity (DU) of moisture and EC for each zone is calculated instantly—a true representation turf conditions (what's actually penetrating the turf, not just what lands on the surface).


Turf performance indicator (TPI) report

Insight into multiple conditions on the same scale, giving you a unique turf performance score for your conditions. In addition, it identifies what may be causing the score and even provides suggestions to fix it.

Mobile Reports

Reports formatted for mobile browsers and containing the key information that has reports that you select, are delivered to your smartphone with every upload of new data from the app to Pogo Turf Pro Cloud. Reports like zone trends, visual insight, critical alerts or turf performance reports give you insight otherwise only possible using consultants, reports and research.

Analyze your course's conditions while you are on the course, so you can make the very best decisions fast... and decisively.
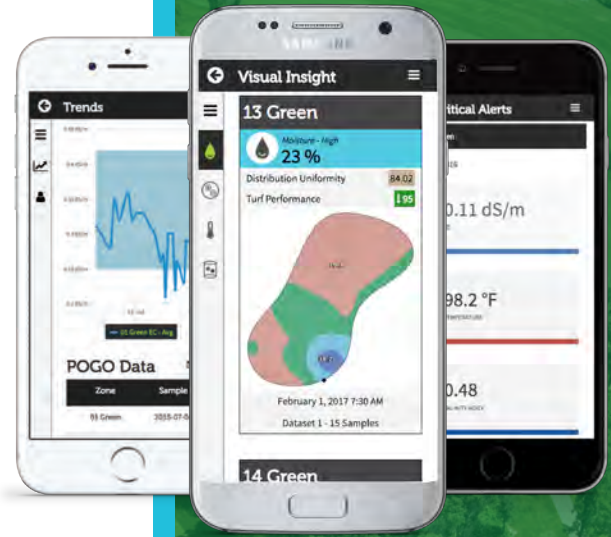
Mapping

Use POGO's precise integrated GPS to map just about anything on your property. Create your own irrigation as-built images, log IPM problem areas, map individual irrigation and drainage components.

Layer any feature or mapped condition or object that you wish.
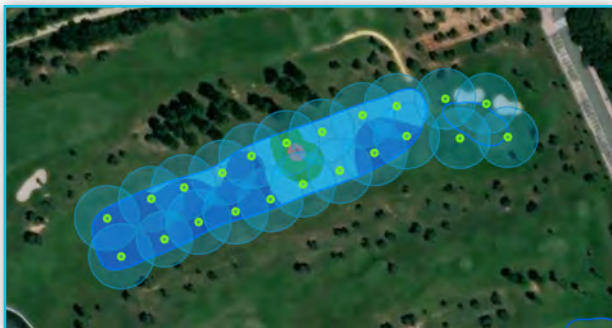
Layer sprinkler patterns over Visual Insight to correlate how sprinkler patterns and traffic flow are contributing to the conditions you measure and see.
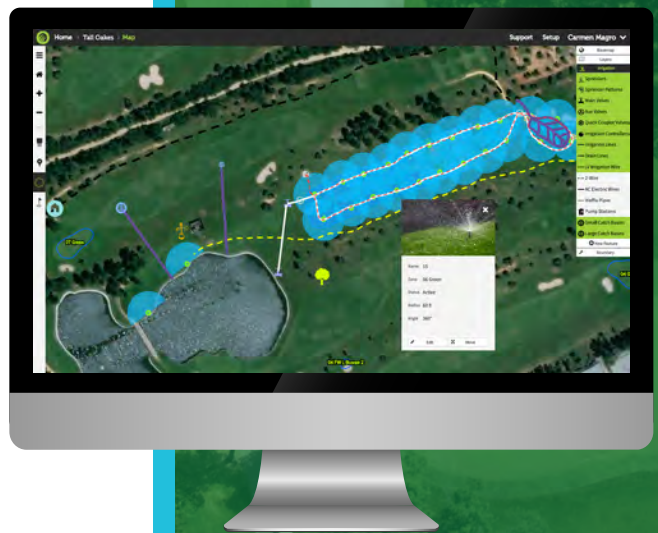
POGO has allowed us to track our VWC% on a daily basis, and given us the ability to apply exactly what's required on every individual green. We also have a definite indicator as to what our EC levels are, and where. We're able to forecast, plan and prepare so much better and our greens have never been more consistent. I highly recommend it— it's easy to use, gives us great data and makes it easy to understand what the data really means, giving us what we need to make the right decisions.

Craig Haldane
Director of Golf Course Maintenance, Dubai Golf

SAMPLE, LOG, ANALYZE & MAP.

In minutes a day, view the life pulse of your entire property.

POGO's unique all-in-one design replaces multiple pieces of equipment and software, analysis tools and manual reports. It provides massive efficiency gains and requires minimal training. POGO is the most cost-effective way of gaining this level of course insight.

SAMPLE.

- Easy: insert POGO into the turf and tap "Sample" on your smartphone/tablet, then move to the next location.
- Captures moisture, salinity (EC), canopy temp and salinity index with its integrated sensor precisely positioned in the most influential component of the turf system.

LOG.

- Captured data is stored in the app.
- Using integrated GPS, log: sprinkler locations, cup placement, ball speed, slope and boundary (and more) of the green or any zone.
- Record notes and capture photos. Eliminate paper records and share easily. Retrieve at any time.
- The simple-to-use, all-in-one system replaces multiple pieces of equipment and manual processes, providing unparalleled efficiency.

ANALYZE.

- Instant analysis is performed while taking samples, providing the power of decision making in the palm of your hand. More thorough analysis is automatically performed on all data once uploaded to the cloud.
- Real-time, clear and accurate irrigation, nutritional and uniformity assessments provide complete under-standing of turf and soil conditions, water and fertilizer management optimization and causes of stress.
- Actionable conclusions to maximize turfgrass health using scientific insight, with minimal effort.

MAP.

- Our unique Visual Insight provides detailed analysis of the data you capture automatically, so you never need to wade through numbers or charts.
- Map sprinkler patterns and uniformity assessments.
- Assess area measurements precisely.
- Map features unique to your property...easily.
- Practice more efficient water, nutrient, turf enhancement, and IPM applications by knowing impacts on turfgrass performance at all times. Eliminate guessing and make decisions based on precise conditions.
- Predict and avoid future problems.

Maximize turf performance, minimize water and nutrient requirements.

OPTIMAL TURF PERFORMANCE
For minimal effort

- **OPTIMIZE** turf health and conditioning, root growth and soil conditions, irrigation distribution and performance
- **MINIMIZE** water and fertilizer consumption
- **KNOW** the effects of your nutritional and chemical applications. Adjust their timing more effectively
- **IMPROVE** playing conditions and stress tolerance

- **INCREASE** effectiveness of maintenance practices:
  - Validate aerification practices (air/water improvements)
  - Build degree days and POGO performance indicators accurately and specific to your property
  - Optimize nutritional and salinity management practices

SCIENTIFIC ANALYSIS
Done for you

- **UNDERSTAND** reasons for turf decline: Moisture, nutrients, stress, or the combined impact of moisture, salinity and temperature. Know if a 'dry' spot is hydrophobic or if the discolored condition is the result of elevated salinity or other measured condition

- **MAXIMIZE** nutrient release longevity
- **PREDICT** future stress: Analyze trends to identify negative conditions before symptoms develop
- **MEASURE** the most influential factors for turf performance, above and below ground to make the very best decisions in turfgrass management

MAXIMIZE EFFICIENCY
Do more in less time

- **AUTOMATE** paperwork and manual notes:
  - Log timestamp and GPS location with every turf sample taken automatically
  - Capture sprinkler and cup positions
  - Record notes and attach photos to each sample and share with users, who are all synced through the cloud
  - Correlate POGO lab analysis reports (turf/soil, water, tissue)

- **ELIMINATE** spreadsheets and manual analysis: let the POGO system do the number crunching with advanced algorithms—just use the map-based Visual Insight to understand, predict and optimize your turfgrass. Make your best decisions with confidence

> *I'd highly recommend purchasing POGO. You're going to see savings of money and time, as far as watering and chemicals and fertilizer because you'll be treating your grounds more selectively—based on what it tells you, instead of just applying it across the board.*

Kurt Beatty, Green Brook Country Club, North Caldwell, New Jersey

POGO Lab Analytics

Indepenedent, USDA-certified soil, water, tissue and microbiological analysis pinpoints the physical and chemical variables in your turf system, helping you understand their influences on conditions measured by POGO. This helps you pinpoint the warnings and optimal ranges you set, so you are always measuring against "perfect".

POGO Weather

Know how the environmental influences on your property impact your turf's performance. Unique combined analysis from the weather station and POGO readings give you very site-specific assessment of the true overall stress on your turf.

Specifications

PHYSICAL

Weight	3.6 lbs (1.45 kg)
Length	24.625" (62.55 cm)
Sensor tines	4
Sensor tine length	2.26" (5.74 cm)
Sensor tine diameter	0.125" (3.175 mm)
Sample volume	3.6 cubic inches (59 cm^3)
Sensor technology	Coaxial Impedance Dielectric Reflectometry

POWER

Battery type	Nickel metal hydride (NiMH) rechargeable
Recharge time from depleted	2 hours
Standby time	3+ days
Battery duration (heavy use)	1+ days

ADDITIONAL ON-BOARD ELECTRONICS

GPS Accuracy	Sub-meter
WiFi protocol	802.11n

MEASUREMENTS

Moisture - range	From completely dry to fully saturated
Moisture - accuracy	+/- 0.01 wfv for most turf/soil systems, no more than +/- 0.03 wfv for very fine textured soils
Electroconductivity (EC in dS/m) - range	0.1 to 15.0 dS/m (mmhos/cm)
Electroconductivity (EC in dS/m) - accuracy	+/- 2.0% or 0.05 dS/m
Canopy temperature - range	-10.0 °C to +55.0 °C
Canopy temperature - accuracy	+/- 0.1 °C
Other	Salinity concentration (ratio of EC to moisture), latitude, longitude

WARRANTY

Integrated sensor and all non-sensor components	2 years

24/7 SUPPORT: support.pogoturfpro.com

C E

POGO

Superior insight | Better decisions | Healthier turf

www.pogoturfpro.com

info@pogoturfpro.com

DESIGNED AND MANUFACTURED BY:

STEVENS

DISTRIBUTED BY:

12067 NE Glenn Widing Dr.   **1 800 452 5272**
Suite 106 | Portland, OR   **1 503 445 8000**
97220 USA