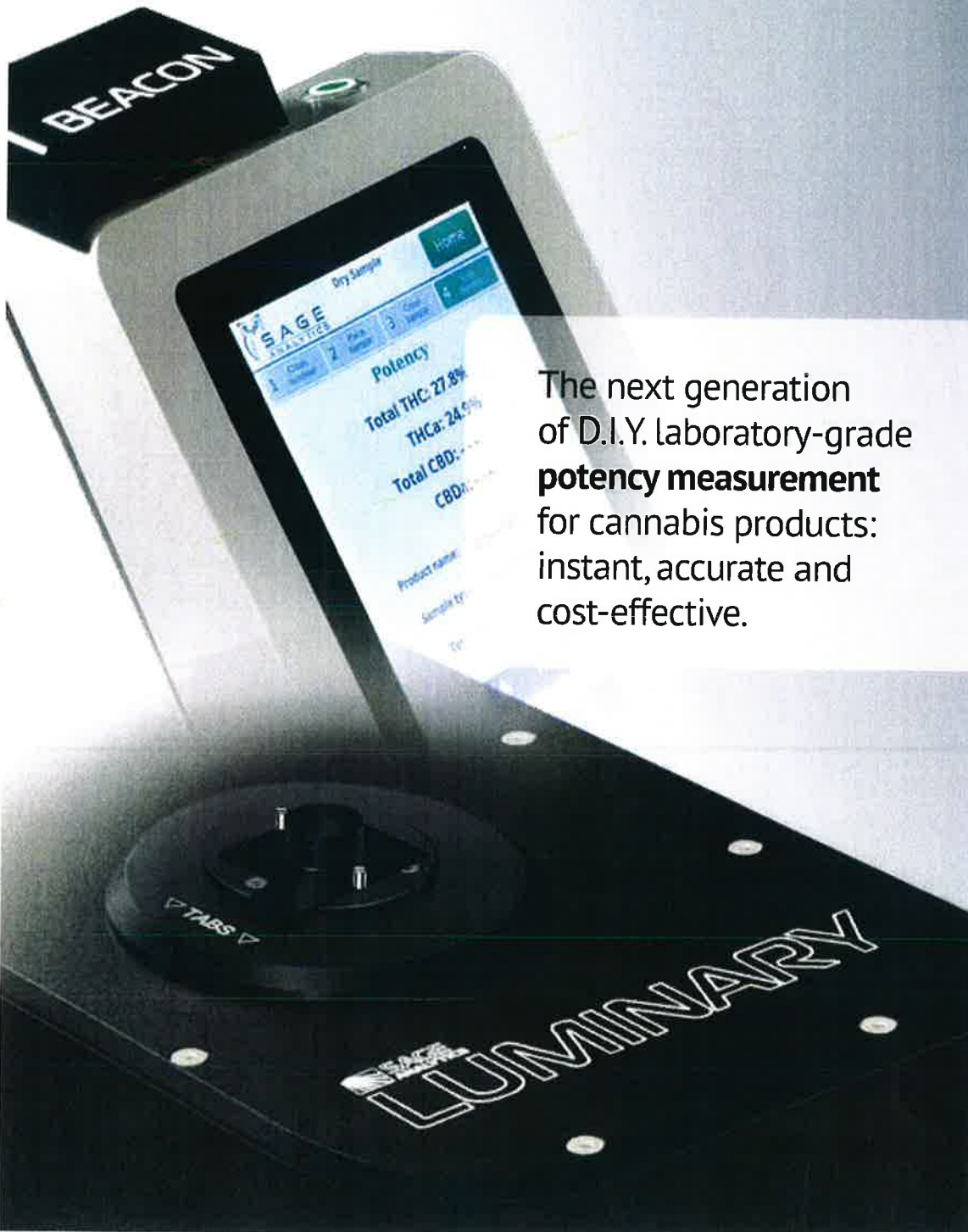


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H122



The next generation of D.I.Y. laboratory-grade **potency measurement** for cannabis products: instant, accurate and cost-effective.

## A SIMPLIFIED SOLUTION for real-time potency profiling

Sage Analytics offers cannabis potency measurement systems that revolutionize the current state of potency profiling of Total THC, THC-A, Total CBD, and CBD-A in both flowers and concentrates. These next-generation potency profilers employ optical spectroscopy (the science of light and how it interacts with matter), to provide instantaneous, real-time, accurate measurements, along with field portability, convenience and affordability to the entire cannabis ecosystem.

**FAST**  


Measurements and results in seconds for real-time potency profiling.

**ACCURATE**  


Direct, non-intrusive, laboratory-grade analysis at the molecular level. Greater awareness enhances consumer safety.

**AFFORDABLE**  


Significantly increases throughput, reduces overhead and costs a fraction per test versus conventional methods.

**ECO-FRIENDLY**  


No toxic solvents or hazardous waste generation for a greener industry.

**EASY-TO-USE**  


Simple system operation and user interface lowers the skill requirement for testing personnel.

**SCIENCE**  


Spectroscopy-based technology for real-time, accurate, repeatable, reliable results.

## A Changing Industry

The cannabis industry is changing rapidly. More than half of all states are getting closer to legalizing marijuana for adult use, while half of all states have already legalized use of high CBD strains for medical purposes.

With this widespread legalization and market growth, the variations of potencies in cannabis strains have increased tremendously. Consumers are increasingly aware of the different properties and effects of THC and CBD, and are seeking more exact information about the products they purchase.

At the same time, the cannabis industry is faced with growing industry regulations and requirements of manufacturers to appropriately package and label products with exact potency measurements and ensure that all products are tested with high accuracy and reliability and that consumer safety and awareness is a top priority. Sage Analytics has developed a new potency profiling solution designed specifically to meet this challenge.

## Current Testing Methods

The current analytical methods employed across the supply chain for evaluating THC and CBD potency cannot provide cost-effective, real-time data. This lack of inexpensive, yet accurate, repeatable and instant potency results makes it exceedingly challenging to market cannabis strains and products with reliable potency labeling.

The current industry standards for testing, Gas Chromatography (GC) and High Performance Liquid Chromatography (HPLC), cost the entire cannabis supply chain unnecessary time, money and resources. The third party testing methods can take days for sample transport, handling and preparation, and data collection, and require highly skilled and properly trained lab personnel to perform the analysis.

In addition to frustrating delays and mounting costs, the samples are extracted using toxic solvents like methanol and chloroform to obtain the cannabinoids, and are then combusted or mixed with other solutions that generate considerable quantities of waste that must be properly remediated. In addition to their ecologically unfriendly nature, these experimental characteristics and limitations result in higher overall costs and inconvenience.



# The BEACON



A stylish, desktop unit with an integrated touchscreen makes the Beacon perfect for anyone with limited space. Lightweight, portable and user-friendly, the Beacon offers real-time, laboratory grade potency data available to anyone within the cannabis ecosystem in a matter of seconds, at a fraction of the cost.

## Beacon

<b>Cannabinoid Measurements</b>	Total potential THC, THC-A, Delta 9 THC Total potential CBD and CBD-A	
<b>Dimensions (L x W x H)</b>	220 x 160 x 210 mm	
<b>Weight (lbs)</b>	4.2	
<b>Power Consumption (W)</b>	15	
<b>Input Voltage (VDC)</b>	12	
<b>Wavelength Ranges</b>	NIR (1550–1985nm)	
<b>Lamp Type</b>	Tungsten Halogen	
<b>Lamp Life (Hrs)</b>	2000	
<b>User Interface</b>	On-Board Touchscreen	
<b>Communications</b>	Ethernet, WiFi, USB	
<b>Construction Materials</b>	Powdercoated Aluminum Window is sapphire	

# The LUMINARY™ PROFILER



An easy-to use, portable benchtop device made specifically for commercial environments, such as labs, extract processors and grow houses. The rugged housing was designed to be impact resistant and power washed for easy clean-up.

## Luminary™ Profiler

<b>Cannabinoid Measurements</b>	Total potential THC, THC-A, Delta 9 THC Total potential CBD and CBD-A	
<b>Dimensions (L x W x H)</b>	230 x 340 x 160 mm	
<b>Weight (lbs)</b>	11.5	
<b>Power Consumption (W)</b>	15	
<b>Input Voltage (VDC)</b>	12	
<b>Wavelength Ranges</b>	NIR (1550–1985nm)	
<b>Lamp Type</b>	Tungsten Halogen	
<b>Lamp Life (Hrs)</b>	2000	
<b>User Interface</b>	iPad Mini	
<b>Communications</b>	Ethernet, WiFi, USB	
<b>Construction Materials</b>	Top/Bottom Plates-Anodized Aluminum Center Section-Cast Urethane Window is Sapphire	

# The Science

Unlike traditional systems, the Beacon and Luminary Profiler use spectroscopy – the science of how light interacts with matter – to instantly measure the potency of cannabis products at the molecular level.

The use of light as an analytical tool affords a number of distinct advantages over alternative methods, such as GC or HPLC. Because light is non-intrusive to the process, spectroscopy-based measurements require no toxic chemicals for sample prep or analysis, leaving the sample intact for future use.

## Features & Benefits of the Beacon and Luminary Profiler

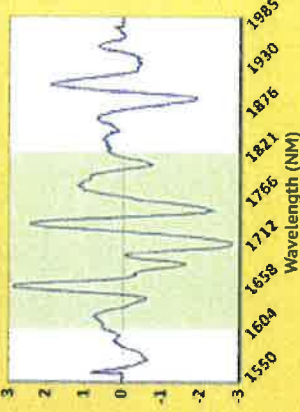
- Instant, accurate and affordable measurements of Total THC, THC-A, Total CBD and CBD-A
- Gather, process and interpret data in seconds
- Quickly & accurately measure the potency of flowers and concentrates
- Portable, easy-to-use, touchscreen interface that doesn't require a trained technician, lowering overall costs
- Simply uses light; no need to heat, burn, or destroy samples
- A greener method for the industry; no toxic solvents used or hazardous waste generated
- Compact, lightweight, desktop design that requires little space
- Built in USB/Ethernet port for remote software updates
- Ability to print out a CannaMetric™ Profile label with potency information for products intended to consume or for resale
- Disposable sample holders (for concentrates) for easy clean up between product testing
- Ability to record and archive data for better quality control

The Beacon and Luminary Profiler are built upon advancements in spectroscopic technology that have been used at 20 of the top 25 pharmaceutical and biotech manufacturers. Spectroscopy based measurements save time, money, and resources, limiting potential variations that can arise from extensive sample handling and processing in chromatography methods. Ultimately, this means fast, repeatable and accurate data collection every time.

## Specifications for the application of Sage Analytics products for the analysis of cannabis potency

- Spectral Range: Luminary Profiler and Beacon utilize the 1550-1985 nanometer window of the near-infrared fraction of the electromagnetic spectrum. This range was experimentally determined to be of the most value for the analysis of cannabinoids using analytical THC and CBD standards. Additionally, the measurement of THC-A v. THC, and CBD-A v. CBD standards was evaluated to aid in determining unique peaks to acidic or neutral cannabinoids.
- Number of Samples used to Develop Data Model: Flower=599 / Concentrates=557

### Example of NIR Spectrum



The green shaded area depicts the main range for cannabinoids in NIR



# Product Labeling

The CannaMetric™ Profile displays results on the Beacon and Luminary Profiler's touchscreen interface and can be configured to print labels for application onto cannabis containers. The CannaMetric™ Profile displays and prints the weight percentages of Total THC, THC-A, Total CBD and CBD-A contained in the tested sample.

The CannaMetric™ Profile has been designed to provide accurate, affordable and real-time potency information to the entire cannabis ecosystem. Our unique system makes it possible for everyone, including growers, dispensary operators, extract processors, and labs to quickly and easily verify the potency of most cannabis products. Currently, customers can not get instant feedback about

the potency of product they are considering, to assist them in their purchasing decisions. Much like knowing alcohol proof or the correct dosage of prescription medication, the CannaMetric™ Profile, now gives cannabis customers the same type of "dosage" information.



Strain Name  
Test Date  
Accurate Potency Measurements

