Hardware Specifications of the Luminary Products
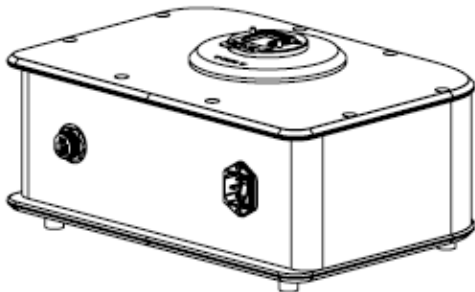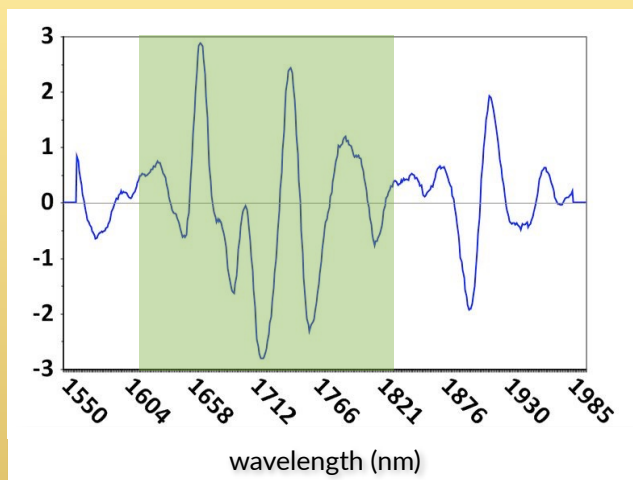

The Luminary™ Profiler
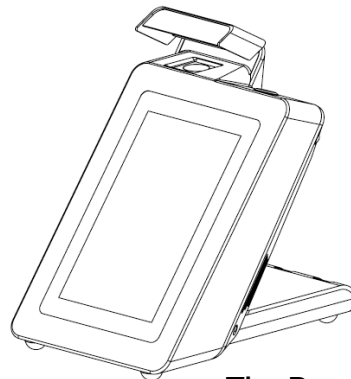
The Beacon™

	Profiler	Beacon
Dimensions (L x W x H)	230 x 340 x 160 mm	220 x 160 x 210 mm
Weight (lbs)	11.5	4.2
Power Consumption (W)	15	15
Input Voltage (VDC)	12	12
Lamp Type	Tungsten Halogen	Tungsten Halogen
Lamp Life (hrs)	2000	2000
User Interface	iPad Mini	On-Board Touchscreen
Environmental Rating	IP65	-
Cannabinoid Measurements	Total THC, THCA, Delta-9 THC, Total CBD, CBDA	Total THC, THCA, Delta-9 THC Total CBD, CBDA

Example of NIR Spectrum

wavelength (nm)

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

Specifications for the application of using the Luminary products for the analysis of cannabis potency

- Spectral Range: Luminary Profilers and Beacons utilize the 1550-2000 nm 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 THCA v. THC, and CBDA v. CBD standards was evaluated to add in determining unique peaks to acidic or neutral cannabinoids.

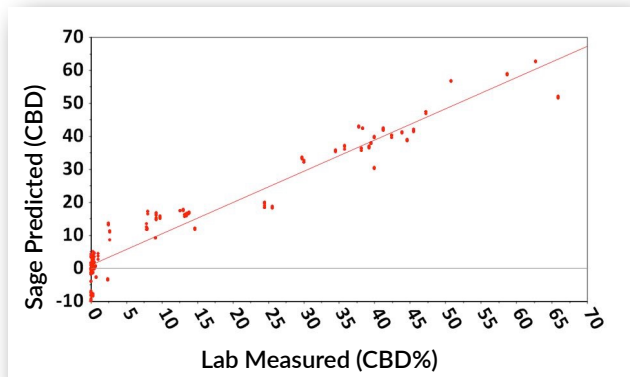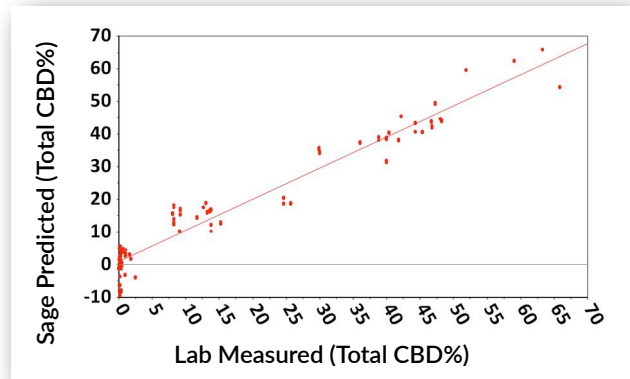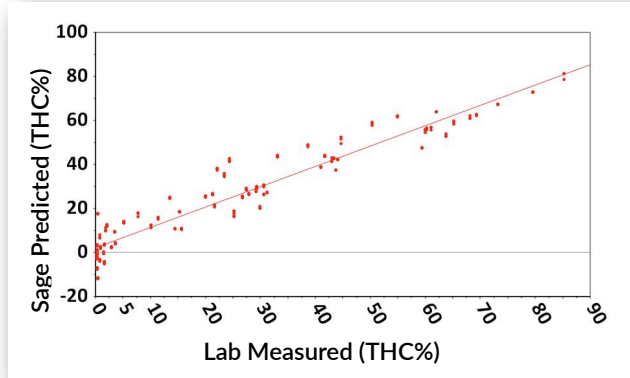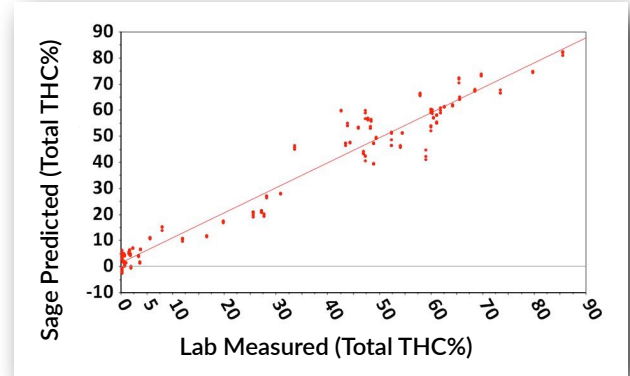- Number of Samples used to Develop Data Model:

  Flower=399; Concentrates=557

Example of Lab v. Luminary Potency Comparison

FLOWER
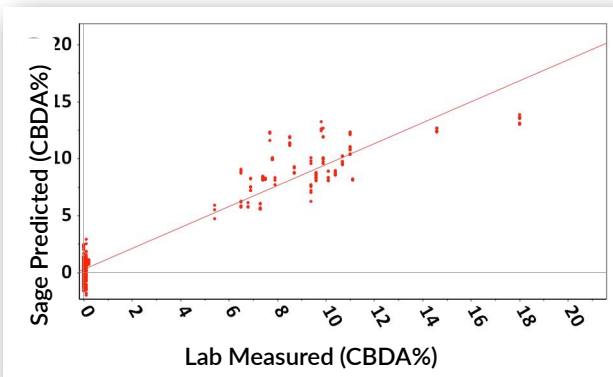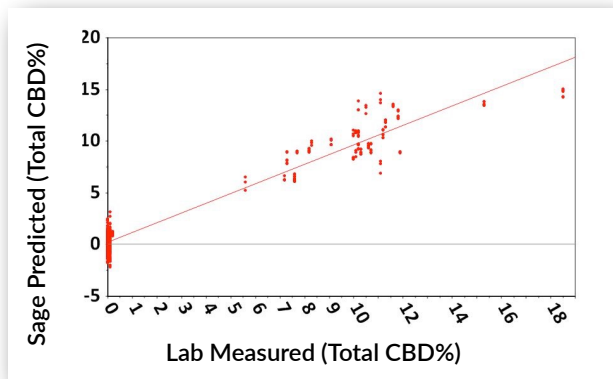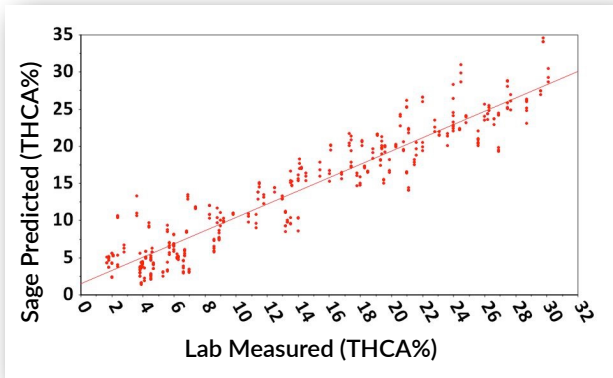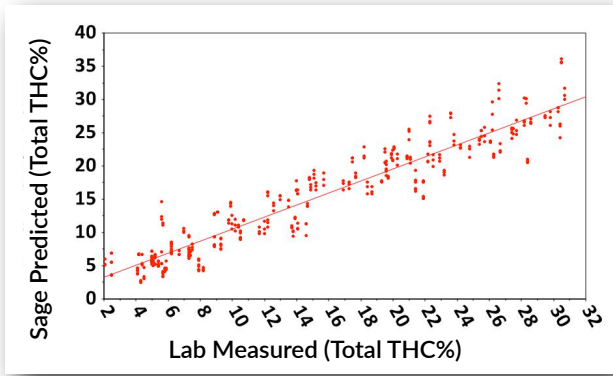
CONCENTRATES

FLOWER		
Model	R^2	RMSE%*
Total THC	0.90	3
THCA	0.89	3
Total CBD	0.94	1
CBDA	0.92	1

CONCENTRATES		
Model	R^2	RMSE%*
Total THC	0.95	6
THCA	0.91	8
THC	0.91	7
Total CBD	0.95	4
CBD	0.92	6

*The root mean standard error (RMSE) is one of the main metrics used to evaluate the robustness of a data model. This value depicts the error in the data model. The measured potency values are directly proportional to the RMSE, as the higher the potency value, the higher the RMSE. For example, compare the RMSE values for flower v. concentrate models; the RMSE's of the flower models are lower than those for concentrates. Now look at the range covered by each data model. The range is naturally much larger for concentrates, and the error associated with these higher potency samples increases the RMSE's for the concentrate models.

To hone in on a more useful RMSE for a specific range of samples, we partitioned our data models into smaller ranges, and determined empirically, that our relative standard deviation (RSD), was approximately +/-10% of the measured value

Example Metrics: Standard Error in the Luminary Predictions: +/- 10% RSD; this simply means that the error is ~10% of the potency value (20 +/- 2%, 40 +/- 4%, etc.). Although this number is rather ubiquitously given out by labs, we broke up regions of our plots into smaller ranges to get a better picture of what the error was in these specific regions.

Please consult the *Third Party Validation Comparison Sheet* to gauge how Sage instrumentation measures up to a diverse consortium of labs.