Cannabis Potency Measurement at high concentrations (distillates and isolates)
December 2020

Version 4.90Win10Cannabis is available at www.srigc.com as of December 1 2020.
This version is pre-set for cannabis potency testing at both high and low concentrations.

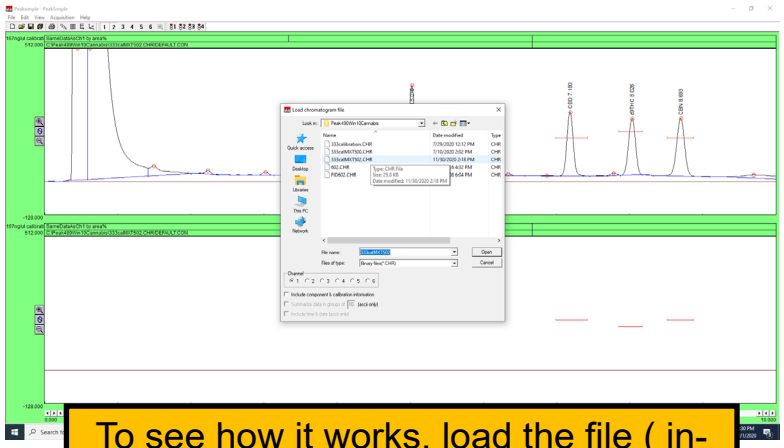
Channel 1 is setup to calibrate on the 333ng/ul internal standard mix as we have documented in other publications and on the you-tube videos..

Channel 2 is set up to calibrate on the same 333ng/ul standard, but using the normalized area percent calculation ignoring the internal standard peak.

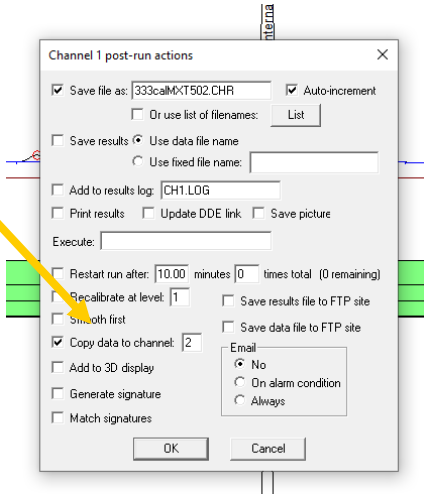
The Postrun screen for channel 1 is shown with Copy data to Channel 2 checked.

This automatically copies the real-time chromatogram in Channel 1 to Channel 2 at the conclusion of the run.

To follow this tutorial, manually load the same file onto both channel 1 and channel 2.



To see how it works, load the file (included in the download) named 333calMXT502.chr into both channel 1 and also channel 2



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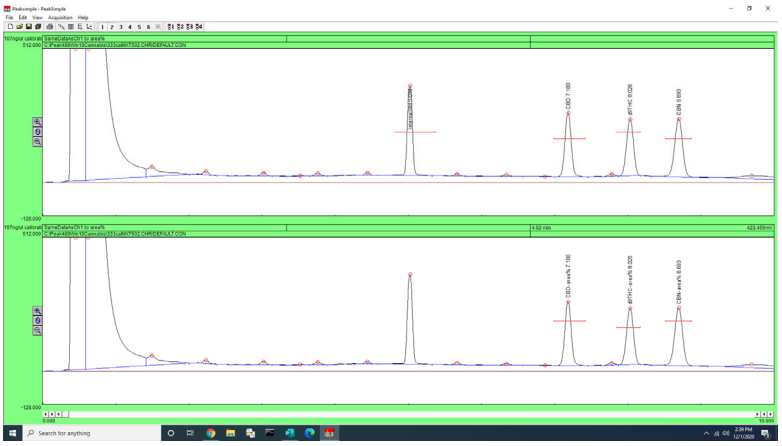
You can use the 333calMXT502.chr file which is included in the software download or you can use your own real-life calibration instead.

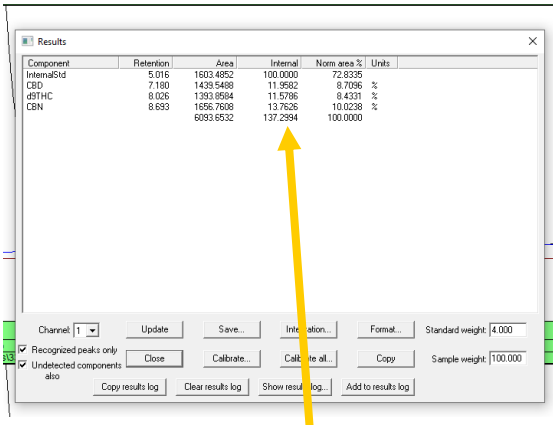
With the same data file loaded in each channel the screen will look like this.

The results for channel 1 will look like this because the calibration curve downloaded is only approximate and has a slope of 1.

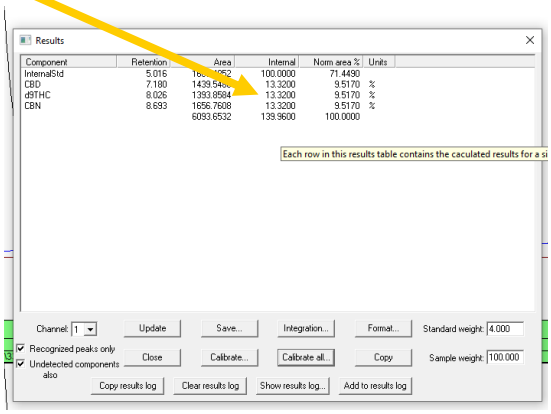
After you calibrate the CBD, d9THC and CBN, the results will look like this. All the results in the internal column will be 13.32%.

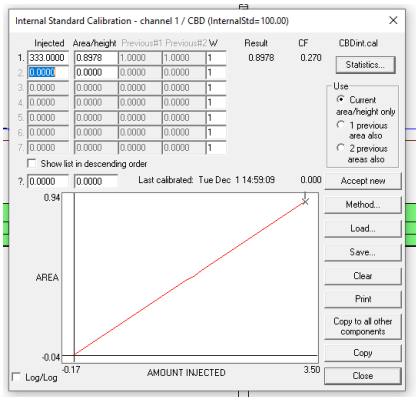
The new calibration curves will have a slope slightly different than 1.





The results in the internal column will not be exactly 13.32%.





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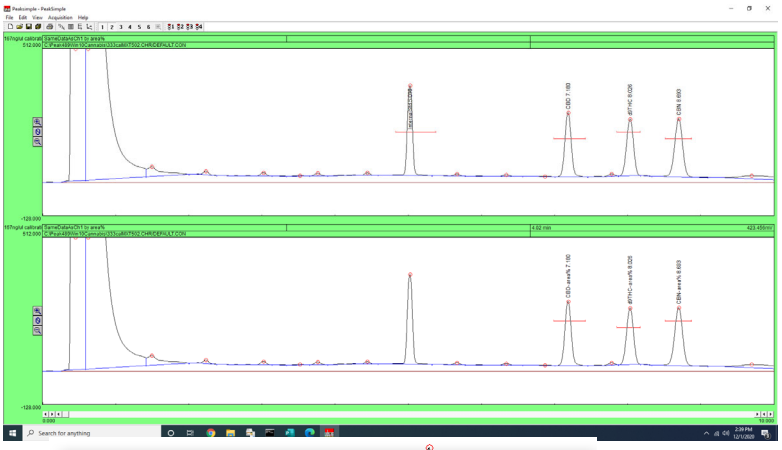
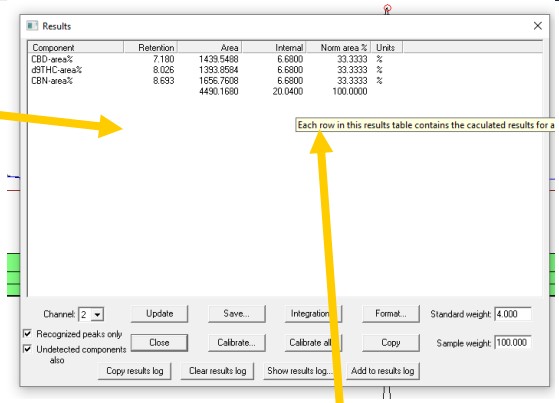
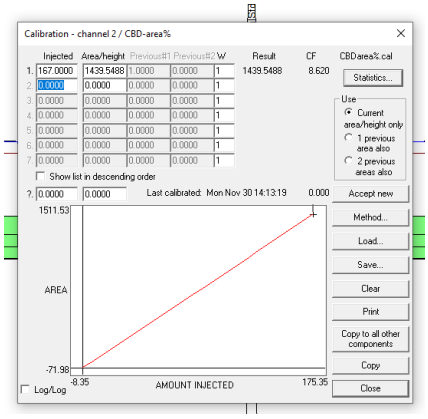


The results for channel 2 will look like this



The calibration curves for channel 2 are calculated using the external standard method. In this case the amount injected on column is really 167ng for each peak even though for channel 1 calibration we enter an amount of 333. This is because the 3way dilution of the 1000ng/ul standards purchased from Restek/ Lipomed or other sources is diluted 3 ways then diluted again with the “dirty solvent”. So the actual weight of each cannabinoid is 167ng/ul.

The results in the internal column will be 6.68 and 33.3% in the normalized column



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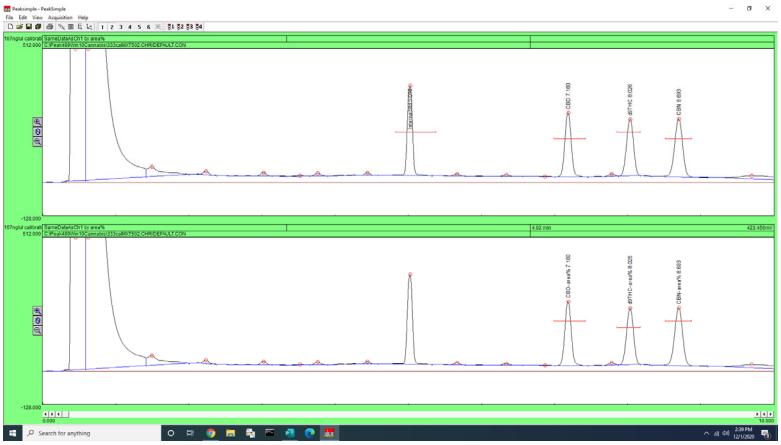
If you print the two chromatograms side by side you can compare the answers from the two different calculation methods.

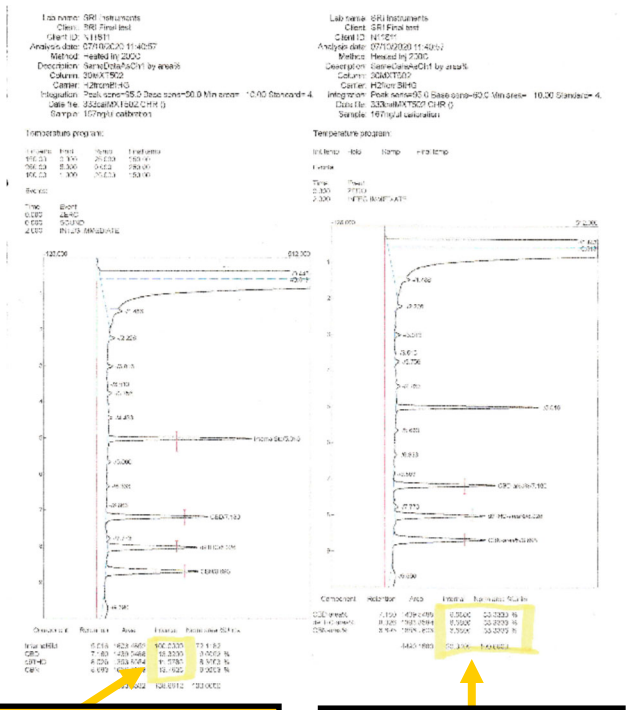
The Internal Standard method is preferred for samples like biomass which have more constituents that are not measured, like chlorophyl, terpenes etc.

The “normalized area percent” method is better for samples like distillates and isolates where the constituents are just a few and are known to add up to 100%.

With the normalized area % method the peaks have to total up to exactly 100% and it makes the exact weight of the sample less important, so the error contributed by the balance is eliminated.

The system also calculates the “external standard” result which can be informative, but does depend on both an accurate sample weight and on a consistent injection volume.





The results in the internal column will be 13.32%

The results in the external column will be 6.68 and 33.3% in the normalized column