

Power Analyzer versus a typical Oscilloscope/Scope Meter for THD measurements.

The Scope meter is convenient device for electrical installation work but it's accuracy fits the description of 'Meter' compared to 'analyzer'.

I'll keep this simple because they are more different than people may initially realise:

Scope Meter

Nominal accuracy: 60Hz to 20kHz (Higher frequency accuracy not defined in brochure) = **2.5% + 15 Counts**

Note: **3 or 4 digit display** so 15 counts can be a big error component
Common mode rejection <400Hz is >60dB
THD is an FFT computation

Power Analyzer/PPA15xx

Nominal accuracy **60Hz = 0.1% to 20kHz = 0.3%**

Note: **5 or 6 Digit display**

Note: Defined accuracy to 1MHz

Common mode rejection - **150dB @ 50Hz to 130dB @ 100kHz**

THD is a DFT computation with either series or difference computation.

Higher accuracy and common mode rejection of the PPA means that all measurements will be more accurate. Some people imagine they don't need this..... until they do 😊

However, for THD, the different computational process we use is significant, because the DFT method with series formula gives the PPA considerably better noise rejection and therefore more reliable THD values related to true harmonic components, not noise.