

KD2 Pro FAQs.

Q: What is the KD2 Pro's (SH-1) expectation of accuracy for the Thermal Conductivity readings beyond the stated 2W/m.K? Accuracy below 3W/m.K?

A: The 2 W/m.K is somewhat arbitrary and likely quite conservative. We know that we begin to suffer significant accuracy loss somewhere between there and 8 W/m.K, but a lack of reliable standards makes it hard to quantify just how much. My feeling from measuring in high thermal conductivity soil samples with increasing water content is that at 3 W/m.K we're still within 10%. In fact, I'd extend that even to 4 W/m.K with the single needle sensors. So, if the customer only needs to go to 3 W/m.K, I would tell them to trust those numbers.

Q: Does the 10% expectation of accuracy for the SH-1 sit on top of the calibration accuracy of +/- 5% provided in the "Certificate of Quality Assurance" for actual in field reading undertaken?

A: About the 5% accuracy on the certificate, and if that adds to the potential 10% error bars on the sensor - the answer is no. We generally see much better than 5% accuracy on the sensor, and when measuring in the verification block. That accuracy should carry over to most measurements with the sensor. Any additional error from measuring samples that are out of the specified range will be independent of the accuracy seen on the verification block. As I said, the ranges we specify are pretty conservative, and the same is true for the accuracy. We tend to try to under-promise instead of over-promise.