

Pi^π Technical Note 29

Benefits of UV Transmittance (UVT) Field Testing for Selling and Servicing UV Disinfection Systems

Pi's UV254Portable can be used to measure UV transmittance (UVT) in a number of situations, and are especially beneficial when working with smaller UV disinfection systems. This technical note outlines two situations in which Pi's UV254Portable meters are invaluable.

Servicing Small UV Disinfection Systems

An existing customer is experiencing a problem with a UV disinfection system. The system could be in alarm, or the customer could have received poor microbiological test results. In both of these cases, this indicates that the water is not receiving a high enough dose of UV light to disinfect the water. This may be due to a number of different factors:

- **UV Lamps** - reaching the end of their life and need to be replaced.
- **UVT** - too low and preventing proper UV dose to the water.*
- **Quartz/Sensor** - fouled by mineral build up and requires cleaning.
- **Warranty Issue** - will need to be taken up with the manufacturer.

**Note - UVT may change throughout the year.*

Using Pi's UV254Portable, the first thing to do when servicing a customer's UV disinfection system is to check the UVT of the water. This enables a service engineer to immediately determine if the UVT of the water is the source of the problem. Using the UV254Portable to determine this is a lot quicker and easier than dismantling the UV disinfection system.

If UVT is low, a solution could be the installation of an additional filter. If UVT is high, then UVT is not the problem and the service engineer can move on to servicing the system further.

Without using Pi's UV254Portable, a service engineer could spend hours dismantling a UV disinfection system without finding the source of the problem. This means that a water sample would have to be taken and sent to a lab where, after several days and a fee, they might discover a UVT problem. While this is happening, the service engineer and the customer still do not know the cause of the problem. The customer has also been without properly disinfected water during this time, before the service engineer even begins to solve the problem.

In this case, it is clear that a Pi UV254Portable can save a lot of time, stress and money.

Selling Small UV Disinfection Systems

A potential customer has inquired about employing your services to install a UV disinfection system. The salesperson arranges an appointment to discuss the installation, requirements and price estimate. During this appointment, the salesperson uses Pi's UV254Portable to test a sample of the water. Within a couple of minutes, the meter has provided the salesperson with the UVT of the customer's water.

Typically, small UV disinfection systems require a minimum of 75% UVT in order to operate properly and ensure safe drinking water. If the UVT reading is higher than the manufacturer's recommended minimum UVT, the salesperson can tell the potential customer that you would be able to install a UV disinfection system that will work well and that they can have confidence in.

If the UVT reading is lower than the manufacturer's recommended minimum UVT, the salesperson knows that additional equipment will need to be installed alongside the UV disinfection system for it to work properly. This may be as simple as installing a filter before the UV disinfection system. However it could be necessary to install a larger UV disinfection system, increasing the UV dose to the customer's water, in order to compensate for the low UVT. At this point, it would be useful to carry out further analysis of the water to investigate what is causing the low UVT values and proceed from there.

Knowing the UVT of the water before installing a UV disinfection system is essential to making educated decisions regarding the installation.

For more information, please see Pi's [Technical Note 28 on the 'Importance of Measuring UV Transmittance \(UVT\) for UV Disinfection'](#).

