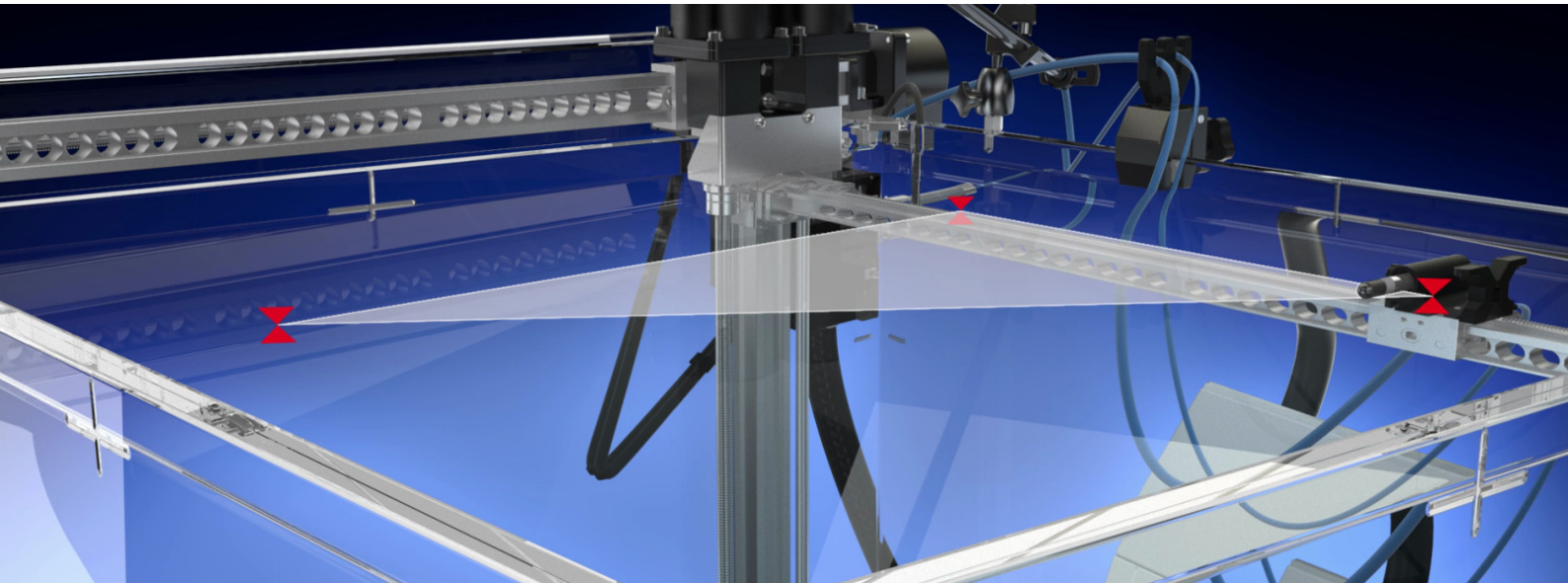


# BEAMSCAN™

## Explaining TRULEVEL



### What is TRULEVEL?

TRULEVEL is a mathematical auto leveling function incorporated in the BEAMSCAN™ water phantom, which uses a unique new patented method to align the scanning axes of the water phantom to the water surface. This new method, which was patented under Patent No. DE102011113611B3, is based on a three-point measurement and complex mathematical calculations. In contrast to auto leveling functions of similar water scanning systems, the TRULEVEL auto leveling function of the BEAMSCAN™ water phantom requires no physical realignment of the water tank.

### How does it work?

TRULEVEL is part of the BEAMSCAN™ Auto Setup which runs fully automatically, using the interactive BEAMSCAN™ Wizard on a mobile device or the BEAMSCAN™ software. Upon start, BEAMSCAN™ measures the water surface level at three points like similar water scanning systems, but then uses this measurement to calculate a “virtual” coordinate system with “virtual” scanning axes by means of a coordinate transformation. The “virtual” scanning axes are precisely aligned parallel and perpendicular to the water surface. They are controlled via the firmware of the BEAMSCAN™ system which transfers movements from the “virtual” coordinate system into the real coordinate system of the water tank. Unlike with other water scanning systems, the user does not need to shift the water tank or the scanning mechanism mechanically or electromechanically, e.g., by using a leveling platform.

The advantages of this new “virtual” leveling method are obvious: The BEAMSCAN™ water phantom can be setup much faster, easier and more precisely than any other system as it requires no interaction – TRULEVEL is a fully automatic leveling procedure.

#### Reference:

*Dr. Schüle Edmund, inventor; Physikalisch-Technische Werkstätten Dr. Pychlau GmbH, assignee. Wasserphantom und Messsystem. DE102011113611B3. Published 2012-10-04.*