WATER DISCHARGE MEASUREMENTS

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P2 WATER by clicking the pictogram

13.17 RBC flumes

RBC flumes are used to measure the quantity of water that, for instance, flows through an irrigation channel. By comparison to known flumes, such as the WSC- and the Parshall flume, the RBC flume is the most accurate.

The RBC flume has been specially designed for use in smaller water ways or earthen channels (irrigation channels, in- outlets, furrow, ditches, etc.).

The RBC flume is a simple and reliable instrument for the measurement of the quantity of irrigation water that flows towards a field.

The standard program contains flumes with various measuring ranges, varying from 0.1-8.7 l/sec to 2.0-145 l/sec. On special order larger measuring ranges are possible as well.

In order to obtain correct measurements it is essential that the flume is placed in such a way that the water can flow from the flume without obstruction.

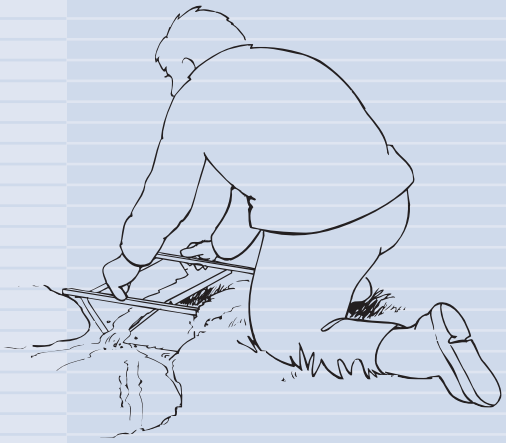
After the flume has been placed in a horizontal position the measuring can begin by reading the measure of water surge near the threshold. The measure of water surge can be read in the stilling well at the end of the flume. Using standard formulas the flow through quantity (the discharge) is calculated.

Instead of reading the stilling well it is possible to install a pressure transducer connected to a datalogger.

Advantages

- Due to the small weight and the limited dimensions the flumes can be easily used and transported.
  This is particularly advantageous in the event of multiple temporary measurements.
- The measuring range of the large flume can be substantial (also in shallow water).
- Easy to install.
- User friendly.
- Measuring results can be read easily.
- Information regarding discharge velocity available fast.

A small flume is placed in an irrigation channel.

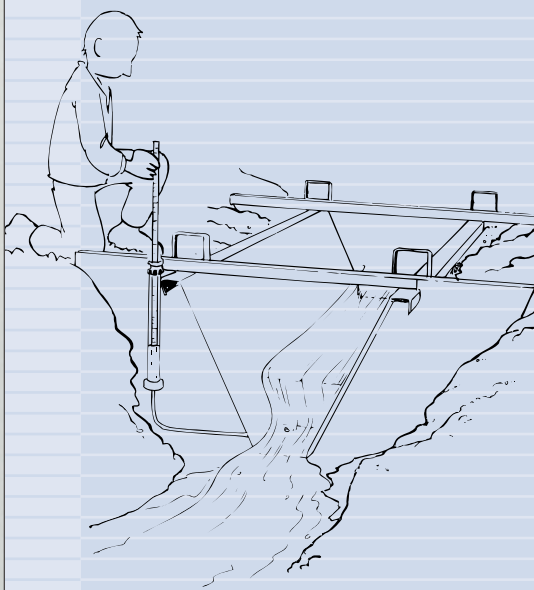


BENEFITS

13.17 Flumes

- Mobile: Light stainless steel construction
- Four standard sizes to cope all research needs
- Easy installation, only a water level needed
- Push in stream bed, wait to stabilize and read
- Can be combined with sensitive datalogger

Measuring the water level in the stilling well manually.



Small RBC flume for manual read-out

WATER DISCHARGE MEASUREMENTS

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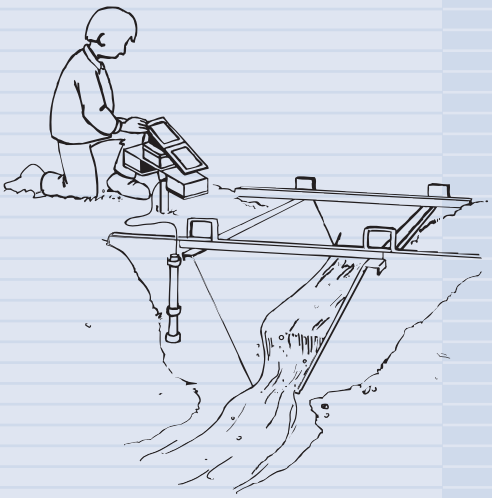
P2.25

Measuring the water level in the stilling well of a big flume with an accurate pressure transducer connected to a datalogger.



Automatic measurement

Instead of reading the stilling well it is possible to install a pressure transducer connected to a datalogger. This allows for automatic measuring (or activation), storage and reading.
In case of an automated flume, the sill-referenced water level is recorded using a very accurate pressure sensor connected to a datalogger.

Advantages

Advantages of automatic registration over a manual determination of the flow rate are:

- Maximum and minimum values are recorded in relation to time, from which the response rate of the discharge can be deduced.
- Average discharge rates as well as the cumulative discharge are accurately determined by continuous recording.
- Automatically recording flow rates is less time consuming and is very convenient in remote areas.
- High flow rates during rain periods can selectively be recorded.

The software enables you to configure and to read out the data directly. The data can be used in spread-sheet programs.

The user friendly, PC-software has the following functions:

- Program the datalogger clock.
- Read data stored in the datalogger.
- Set interval time and logging parameters.
- Show current data of the sensor.
- Automatic data storage in 2 different data formats.
- Selection of language.
- Password protected functions

The data can be processed on a PC.

Small RBC flume with pressure transducer, logger and solar panel