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**XCaliber**

Technical Specifications

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The **XCaliber** installation at the 'Duurzaamheidsfabriek' in Dordrecht (The Netherlands) offers its users from business and education an innovative facility for various applications, like:

- exploratory dynamic testing of new flow meters (liquids),
- testing equipment and concepts in closed flow loops and/or conditioned flow settings (open and closed),
- training and education in metrology, equipment and applications.

The flow loop of the **XCaliber** is made of stainless steel and features:

- frequency modulated **pump section** with expansion tank and heat exchanger, connected to a heat recovery installation in the 'Duurzaamheidsfabriek',
- **reference section** with flow control valve and three types of flow meters,
- 2 **MUT sections** ('meter under test') in parallel configuration,
- **DCS** (Digital Control System) with operator interface.

**XCaliber** furthermore provides 2 workbenches (with 6 vices each), 4 fully fitted tool carts, 4 table trolleys, 2 movable telescopic stairs and 6 tripods to support the MUT sections, mounted with the flow meters under test.

## General specifications

**Medium** : (tap) water - hardness 8.5 dH (average for Dordrecht)

**Pressure range** : 0 -15 barg (adjustable; 'standard' test-setting: approx. 3.5 barg)

**Temperature** : nonadjustable; stable and monitored during a calibration run

**Capacity** : single MUT --> 0 - 180 m<sup>3</sup>/hr (0 - 50 ltr/sec)  
system --> 0 - 280 m<sup>3</sup>/hr (0 - 78 ltr/sec)

**Protocols** : OIML (3 repeats, 5 set points: 120 -> 30 m<sup>3</sup>)  
non-OIML (5 repeats, 6 set points: 120 -> 12m<sup>3</sup>)  
custom (up to 10 repeats and 12 set points)

### Pumps

- 3 adjustable, parallel mounted 15 kW centrifugal pumps

### Reference flow meters

- Ultrasonic: **KROHNE UFM 3030**
- Coriolis: **Endress + Hauser Promass 84**
- Magn. inductive: **KROHNE OPTIFLUX 4300**

### Transmitters

- TT & PT at the beginning of ref.- section
- PT at the beginning of MUT sections

### MUT section (2x)

- 2 free mounting locations, max diameter: 90 cm
- **KROHNE OPTISONIC 6300** ultrasonic clamp-on flow meter for diagnostic purposes
- Fitting: 2x ANSI, 1x DIN 4" flanges
- 2 identical sockets:
  - data : 0-10V / 4-20 mA / pulse
  - active en passive transmitters
- power (220V, 16A)
- approx. 6 (DIN) – 8 (ANSI) meter installation length for the flow meters
- various tubes:
  - telescopic tube (adjustable up to 45 cm,)
  - 2x 250 cm ANSI-ANSI, 124 cm ANSI-ANSI, 49 cm ANSI-DIN, 98 cm ANSI-DIN

