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## PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

***HACH LANGE BÜHLER Automatic Wastewater Sampler Models  
4010 to 4013,  
4210 to 4213,  
4410 to 4413***

***HACH LANGE BÜHLER Automatic Wastewater Samplers installed  
in Model 4110 to 4123 Small Measuring Stations &  
Model 6010 Large Measuring Station***

manufactured by:

***HACH LANGE GmbH***

*Königsweg 10  
D-14163  
Berlin  
Germany*

has been assessed by Sira Certification Service  
and for the conditions stated on this certificate complies with:

**MCERTS Performance Standards for Continuous Water  
Monitoring Systems, Part 1, Version 1 (Feb 2003)**

Certification Range :

Lift height 0 to 7 metres

Project No: 674/00225  
Certificate No: Sira MC 060084/00  
Initial Certification: 18 October 2006  
This Certificate Issued: 18 October 2006  
Renewal Date: 17 October 2011

Technical Director

*MCERTS is operated on behalf of the Environment Agency by*

**Sira Certification Service**

12 Acorn Industrial Park, Crayford Road, Crayford  
Dartford, Kent, UK, DA1 4AL

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## Approved Site Application

The products with the refrigeration option are suitable for use on applications for compliance with the Urban Wastewater Treatment Regulations.

*Any potential user should ensure, in consultation with the manufacturer, that the water sampler is suitable for the process on which it will be installed.*

## Basis of Certification

This certification is based on the following Test Report(s) and on Sira's assessment and ongoing surveillance of the product and the manufacturing process:

WRc Report      Ref: UC4092 dated December 2002  
WRc Report      Ref: UC4092A dated June 2005

## Product Certified

The principal purpose for each model is as follows:

4010 standard pressure/vacuum automatic water sampler; 4410 self-emptying version; 4210 for high suspended solids content sampling; 4100 to 4123 measuring stations comprising stationary sampler with controllers for separate analytical measurements; 6010 measuring station comprising stationary sampler and with separate flow cell and analysers.

This certificate applies to all instruments fitted with software version 2.56 (with various suffixes) onwards. From serial number 1070010.

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## Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range:  $-10^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$

The following data was performed on BÜHLER 4010 Automatic Wastewater Sampler.

Test	Results	MCERTS specification
Sample Collection	Flow proportional and timed sampling available Certified for use with 25 litre composite or multiple bottle sample	Clause 4.1.1
Sample Volume <ul style="list-style-type: none"> <li>Max discrete sample</li> <li>Storage capacity</li> </ul>	Sample volume adjustable 350 ml stated  Composite 1 x 25L, 1 x 50L or discrete: 2 x 10L, 4 x 6.3L, 4 x 10L, 4 x 14L, 12 x 2.0L, 12 x 2.9L, 24x 1L available Sample bottle material: PE Plastic or Glass	Clause 4.1.2
Sampling head <ul style="list-style-type: none"> <li>Max sampling head</li> </ul>	8 metres *Certified for maximum of 7 metres	Clause 4.1.3
Sample interval <ul style="list-style-type: none"> <li>Time proportional sampling</li> <li>Flow proportional sampling</li> </ul>	1 min intervals is selectable 4-20mA and digital outputs are available Facility for flowmeter pulse input. Number of pulses per sample adjustable	Clause 4.1.4
Sample failure	Sample failures are recorded. Fault indicated on display	Clause 4.1.5
Sample line diameter	12 mm	Clause 4.1.6 >9 mm
Sample volume error	<div>Systematic Errors:</div> <div>-0.8% at 1m</div> <div>-0.8% at 3.5m</div> <div>-0.8% at 7m</div> <div>Overall: -0.8%</div> <div>Random Errors:</div> <div>2.6% at 1m</div> <div>3.1% at 3.5m</div> <div>2.6% at 7m</div> <div>Overall: 2.8%</div>	Clause 4.2.1 <5% <5% <5% <5%

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Test	Results	MCERTS specification
Sample line velocity	2.2 m/s at 1m sampling head 1.5 m/s at 2m sampling head 1.4 m/s at 3m sampling head 1.2 m/s at 4m sampling head 1.2 m/s at 5m sampling head 1.1 m/s at 6m sampling head 1.0 m/s at 7m sampling head	Clause 4.2.2 >0.5 m/s >0.5 m/s >0.5 m/s >0.5 m/s >0.5 m/s >0.5 m/s >0.5 m/s
Sample integrity	No statistically significant difference was found in analysis for BOD, COD, suspended solids, total N and total P	Clause 4.2.3
Sample timing	5 sec	Clause 4.2.4 < ±10 sec/24h
Ambient temperature • Sampler with sample temperature control (maintain sample between 0°C to 5°C)	During sample period:      24hrs after sample period: 4.40°C at -10°C              3.90°C at -10°C 4.90°C at 15°C                4.05°C at 15°C 4.60°C at 40°C                3.85°C at 40°C	Clause 4.3.1b

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## **Description:**

The 4010 is a fixed site water sampler in stainless steel double-walled housing (SS304 is standard, SS316 or EPOXY coated SS optional) with thermostatic control for sample extraction according to the vacuum principle. The sample has consistent separation between control unit and sample unit of the sample into two compartments with 2 lockable doors. The thermostatic control is self-contained and provides automatic cooling and heating of the sample compartment to +4°C, and is independent of the programmable controller, with protection against overheating. The refrigeration is provided by a cooling compressor mounted above the sample compartment to avoid corrosion.

The microprocessor control is a battery-backed real time clock and is operated by a numeric keyboard. Programming for time display options are sampling with time-related, volume-related, flow-related with a digital or analogue input or event-related. The sampler uses a motor driven valve system instead of magnetic valve for pressure/vacuum control. The pinch valve is motor driven instead of pneumatic. The sampler has various sampling bottle options (1 x 25L PE, 1 x 50L PE, 2 x 10L PE, 4 x 6,3L PE, 4 x 10L PE, 4 x 14L PE, 12 x 2,9L PE, 12 x 2,0L Glass, 24 x 1,0L PE, 24 x 0,9L Glass).

The choice of sampling vessel is dependent upon application time, volume proportional and event based sampling is standard, flow proportional (variable volume/constant time) or flow through vessel is optional. Connectivity: data exchange (e.g. sample temperature history download) is available via a cable (RS 232), and has an optional GSM modem for wireless communications (for data up and download, online programming, alarms via SMS or fax).

## **Differences of Models 4011 to 4013 compared to BUHLER 4010**

<b>BUHLER 4011</b>	Identical to 4010 plus a large window in the upper door, counterweight, 1 relay.
<b>BUHLER 4012</b>	Identical to 4011 plus 4 relays in total, internal light which comes on when the door is opened, RS232 optional remote transmission.
<b>BUHLER 4013</b>	Identical to 4012 plus mains switch and over voltage protection.

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## Differences of Series compared to BUHLER 4010

<b>BUHLER 4110</b>	Combination of BUHLER 4010 with optionally up to two sc100 Controller for additional connection of HACH LANGE online probes.
<b>BUHLER 4210</b>	As 4010 requires water supply for rinsing, for use with samples with higher suspended solids concentration, direct distribution of samples without distribution plate, bottle options vary to BUHLER 4010. See contact the manufacturer for details.
<b>BUHLER 4410</b>	As 4010 permanent installed self-emptying bottle with additional water rinsing for monitoring application instead of exchangeable bottle try, direct distribution of samples without distribution plate, bottle options vary to BUHLER 4010. See contact the manufacturer for details.
<b>BUHLER 6010</b>	Combination of BUHLER 4010 with optional sc1000 Controller for additional connection of HACH LANGE online probes, analyzer and Network connectivity. Probes are integrated into sampler

## General Notes

1. This certificate is based upon the equipment tested. The Manufacturer is responsible for ensuring that on-going production complies with the standard(s) and performance criteria defined in this Certificate. The Manufacturer is required to maintain an approved quality management system controlling the manufacture of the certified product. Both the product and the quality management system shall be subject to regular surveillance according to 'Regulations Applicable to the Holders of Sira Certificates'. The design of the product certified is defined in the Sira Design Schedule for certificate No. Sira MC 060084/00.
2. If certified product is found not to comply, Sira Certification Service should be notified immediately at the address shown on this certificate.
3. The Certification Marks that can be applied to the product or used in publicity material are defined in 'Regulations Applicable to the Holders of Sira Certificates'.
4. This document remains the property of Sira and shall be returned when requested by the company.

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