



# PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

**Efcon® omy SL10C Refrigerated Automatic Vacuum Sampler**

manufactured by:

**AVM b.v**

Nieuwe weg 3B  
4126 RN  
Hei-en Boeicop  
Netherlands

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

**MCERTS Performance Standards and Test Procedures for Automatic Wastewater  
Sampling Equipment, Version 2.1 dated November 2009**

Certification Range:

Lift Height 0 to 6 m

Project No:	674/0323A
Certificate No:	Sira MC100169/01
Initial Certification:	19 July 2010
This Certificate Issued	13 February 2012
Renewal Date:	18 July 2015

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  
Tel: 01322 520500 Fax: 01322 520501

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## Approved Site Application

The product is suitable for use on industrial applications and for use on applications for compliance with the Urban Wastewater Treatment Regulations (UWWTR).

Any potential user should ensure that, in consultation with the manufacturer, the water monitoring system 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 Test Report: UC8010 dated January 2010

## Product Certified

The measuring system consists of the following parts:

- Efcon® Vacuum Sampler with integrated heater & cooler
- Vacuum sampler up to 6m
- PVC suction hose (internal diameter of 13mm)
- Patented thermoplastic fiber enclosure
- SIEMENS Micro solution controller & standardised electronics
- Coated cool unit with SS 316 evaporator
- 50 Watt heater cable
- Multi bottle, 2x25L, 4x13.5L, 12x2L, 24x1L, 2x10L self cleaning

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### Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range: -10°C to +40°C

Test	Results	MCERTS specification										
Sample Collection	Option for both timed and flow proportional sampling.	Clause 3.1.3										
Sample interval <ul style="list-style-type: none"> <li>Time proportional sampling</li> <li>Flow proportional sampling</li> </ul>	Interval value of between 5 minutes and 1 hours, with increments of 1 minute Option of either current or pulse input	Clause 3.1.4 & 3.1.5										
Sample failure	Warning given on display both while programme is running and when complete.	Clause 3.1.6 & 3.1.7										
Sample line diameter	Sample line 13mm internal diameter	Clause 3.1.8 >9mm										
Sample volume	Sample volume adjustable	Clause 3.1.9										
Maximum volume of a discrete sample that can be set Total storage capacity both by numbers and volumes of individual bottles and in a composite container	250ml  24 x 1 litre PE or glass 12 x 2 litre PE or glass 2 x 10 litre PE 4 x 13.5 litre PE or glass 2 x 25 litre PE or glass  2 to 50 litre without distributor (composite).	Clause 3.2.1										
Maximum sampling head	6m	Clause 3.2.2										
Sampling volume error a) Time Proportional	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">U*</td> <td style="text-align: center;">X*</td> </tr> <tr> <td>1m 1.18%</td> <td>1m -0.82%</td> </tr> <tr> <td>3.5m 0.94%</td> <td>3.5m -0.64%</td> </tr> <tr> <td>6m 0.92%</td> <td>6m -0.73%</td> </tr> <tr> <td style="text-align: center;"><b>Average 1.01%</b></td> <td style="text-align: center;"><b>Average -0.73 %</b></td> </tr> </table>	U*	X*	1m 1.18%	1m -0.82%	3.5m 0.94%	3.5m -0.64%	6m 0.92%	6m -0.73%	<b>Average 1.01%</b>	<b>Average -0.73 %</b>	Clause 6.2.1  <5%
U*	X*											
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Test	Results	MCERTS specification										
Sampling volume error b) CVVT	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">U*</td> <td style="text-align: center;">X*</td> </tr> <tr> <td>1m 1.16%</td> <td>1m -0.67%</td> </tr> <tr> <td>3.5m 3.23%</td> <td>3.5m -0.07%</td> </tr> <tr> <td>6m 1.19%</td> <td>6m -0.73%</td> </tr> <tr> <td style="text-align: center;"><b>Average 1.86%</b></td> <td style="text-align: center;"><b>Average -0.44%</b></td> </tr> </table>	U*	X*	1m 1.16%	1m -0.67%	3.5m 3.23%	3.5m -0.07%	6m 1.19%	6m -0.73%	<b>Average 1.86%</b>	<b>Average -0.44%</b>	Clause 6.2.1  <5%
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<b>Average 1.86%</b>	<b>Average -0.44%</b>											
Sample line velocity	1.07 m/s at 2m sampling head 0.80m/s at 3m sampling head 0.59m/s at 4m sampling head 0.63m/s at 5m sampling head 0.51m/s at 6m sampling head	Clause 6.2.2  >0.5 m/s										
Sample integrity	No statistical difference found between the sampler and the reference analysis for total nitrogen, total phosphorous, suspended solids, BOD and COD.	Clause 6.2.3 Annex B3 (4.1.3)										
Sample timing	3 sec/24h	Clause 6.2.4 < ±10 sec/24h										
Sample Temperature Control a) Volume	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">U*</td> <td style="text-align: center;">X*</td> </tr> <tr> <td>-10 °C 1.21%</td> <td>-10 °C 0.57%</td> </tr> <tr> <td>+40 °C 0.93%</td> <td>+40 °C 0.12%</td> </tr> </table>	U*	X*	-10 °C 1.21%	-10 °C 0.57%	+40 °C 0.93%	+40 °C 0.12%	±5%				
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Sample Temperature Control b) Temperature	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">During 24 hrs sampling:</td> <td style="text-align: center;">24 hrs post sampling</td> </tr> <tr> <td>4.0°C at -10°C</td> <td>0.6°C at -10°C</td> </tr> <tr> <td>3.1°C at 20°C</td> <td>2.4°C at 20°C</td> </tr> <tr> <td>4.9°C at 40°C</td> <td>3.7°C at 40°C</td> </tr> </table>	During 24 hrs sampling:	24 hrs post sampling	4.0°C at -10°C	0.6°C at -10°C	3.1°C at 20°C	2.4°C at 20°C	4.9°C at 40°C	3.7°C at 40°C	Clause 6.2.5b Maintain sample between 0°C to +5°C Annex B4 (4.1.5)		
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3.1°C at 20°C	2.4°C at 20°C											
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\*Please note; U = expanded uncertainty/systematic error,  
X = mean error/ random error.

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## Description:

Efcon® omy model SL10C is a refrigerated automatic vacuum sampling system constructed in a lockable Thermoplastic fiber reinforced (patent pending) enclosure. The compact (600x600x1100 mm & 55 Kg) enclosure is designed for an ambient temperature of -40°C to +80°C (please note, the sampler is certified over the ambient temperature range -10°C to +40°C).

The sample storage temperature is according to ISO 5667-3 between 2-5°C at an ambient temperature of -25°C to + 40 °C. The thermoplastic enclosure has a PU foam thickness of 40 to 60 mm, warranty of 5 years and life expectancy of 25 years.

The standard unit has a window to view the electronic display and a standard main switch. The ±240 Watt cool-unit has a foamed SS316 evaporator and a coated condenser part with R134A filling. Cool capacity tuning is done with IP 55 fans.

The cabinet is built in 3 sections;

- Cooled area with sample storage and electronics in safe max 24 VDC.
- An air tight electronic area to avoid electronics life time reduction by aggressive ambient conditions.
- Easily accessible aggregate section with compressor and fan.

Electronics and compressor are situated above the sample compartment to reduce corrosion problems and heat effects on the sample storage area. Sample collection is done by a bi-directional air pump and a bi-directional tube pincher. Wetted parts are minimum 12 mm in diameter (according ISO 5667-2 Annex A) and are removable without special tools for easy cleaning.

Efcon® omy model SL10C uses a simple SIEMENS process controller. A sample can be taken on time, pulse or batch base and the sampling performance is according to ISO 5667-10 and NEN 6600-1. Efcon® omy is the trademark of AVM b.v. and is manufactured in the Netherlands.

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## 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 MC100169/01
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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