

Technical Data

Measurement

total carbon (TC) or alternatively total organic carbon (TOC/ DOC) with stripping of inorganic carbon

Method

photochemical oxidation with NDIR detection of CO₂

Measuring Ranges

0 - 1 ppm
 1 - 50 ppm
 10 - 100 ppm
 50 - 500 ppm
 100 - 1,000 ppm

Connections

waste water, drain:	tube 30 mm ID
electrical power:	230 / 115 V~, 50 / 60 Hz
analog output:	0/4 - 20 mA
serial interface:	(RS 232) for remote control
status output:	4 relays contacts Malfunction alarm, life-zero
remote control:	via TCP/ IP protocol (internet)

Dimensions and Weight

cabinet:	steel IP 54
option:	stainless steel, IP 65, zone 1 and 2
dimensions:	746 x 600 x 420 mm (H x B x T) (~29.4 x 23.6 x 16.5 inches)
weight:	70 kg (154 lb)

Operation and Data Output

graphic LCD-screen, back-lit
 autostart-function

Self-explanatory software with integrated help system, incl. maintenance check list

The information and the illustrations in this brochure on appearance, service, measure, weight, consumption, maintenance times and so forth, are not binding and only an approximate description. It does not assure guaranteed qualities. This product description corresponds to the state of printing. Deviations in design, tint, as well as changes of the scope of delivery remain reserved. Version 301

If you require more information about our products, e. g. for online TN_b, TP, COD, BOD, ammonium, respiration or toxicity measurement, please call us.

The TOC Company



Neukoellnische Allee 134
 D-12057 Berlin
 Telefon : +49 (0) 30 278 958-23
 Telefax : +49 (0) 30 278 958-703
 e-mail: export@lar.com
 http://www.lar.com



The Reliable Solution for
 On-line TOC/DOC Measurement

QuickTOC[®] uv

Continuous TOC / DOC
 Measuring System for

- Ultra Pure Water
- Drinking Water
- Surface Water
- Waste Water

Precise, continuous TOC/DOC Analysis down to 1 ppb (µg/l) for ultra pure and clean water applications

The **QuickTOCuv** from LAR Process Analysers AG is an on-line measuring system for the determination of total carbon (TC), total organic carbon (TOC) or dissolved organic carbon (DOC) according to US-EPA Standard Method 5310C.

Utilizing the popular UV-Persulfate method the **QuickTOCuv** from LAR Process Analysers AG provides highly accurate TOC measurement in the low ppb range down to 1 ppb for pure water, drinking water and surface water.

Due to new legal regulations and extensive controls against the increasing environmental pollution TOC analysers are used today in the municipal area for ground-, drinking-, surface- and waste water monitoring and in industries to control process water streams.

A typical application is the continuous monitoring of critical phases of industrial processes to ensure the safety of production processes and to guarantee the quality of the produced goods.

End users are mainly from the (petro-)chemical and pharmaceutical industries as well as food-, beverage and electronic industries. TOC/DOC measurement is commonly used there to detect contaminations in cleaned but also in untreated waste water.

UV-Persulfate Technology

The **QuickTOCuv** was developed to perform exact TOC/DOC measurements with the approved UV-Persulfate method.

Total Carbon (TC), Dissolved Carbon (DC)

The measurement of Total Carbon in a water flow can be performed very easily with the TOC-Analyser from LAR AG.

FEATURES AND BENEFITS
● Continuous TOC/DOC Detection in Water
● US- EPA 415-2 compliant
● Control via Industrial PC
● State- of- the- Art System Diagnostics
● Dual Channel Measurement (Option)
● Auto Calibration
● Ambient Air Conditioning (Option) (Carrier Gas Supply for Analyser)
● Humidity Sensor (Option) (NDIR-Detector Protection)
● Pressure Sensor (Option) (System Pressure Control)

The untreated sample is mixed with the carrier gas (air) and the oxidation reagent (Sodium Persulfate) and then conveyed through the UV Reactor. The CO₂ is measured in a NDIR-Detector (Non Dispersive Infrared Detector) and shown as TC content in ppm C or mg/l C.

TOC/DOC determination

For the TOC/DOC determination the so-called TOC direct method or more precisely the NPOC (Non Purgeable Organic Carbon) method is used.



QuickTOCuv



Mode of Operation

TOC - Direct Method

To measure the NPOC content the sample stream analysis is performed in a multi-step process. The sample flows continuously into the analyser. In the first step the sample is acidified with sulfuric acid to reach a pH-value of < pH 2 and purged with gas to remove the inorganic carbon. During this stage the potentially existing purgeable carbon (POC) is also removed. From this point the sample consists only of nonpurgeable organic carbon (NPOC).

In the subsequent stage the inorganic carbon free sample is pumped into the reactor where it is exposed to the ultra-violet light. The UV radiation together with the concentrated persulfate, which is also pumped into the reactor, completely oxidises the organic carbon compounds (NPOC) into CO₂.

Upon leaving the reactor, the CO₂ gas stream passes through the gas liquid separation device before entering an enhanced non-dispersive infrared detector (NDIR), which measures the CO₂ concentration.

An 'on board' computer will calculate the data from the NDIR detector into concentration in mg/l or ppm. The advanced gas and liquid calibration capabilities assure accurate results.

The **QuickTOCuv** from LAR Process Analysers AG offers greatest flexibility.

UV-Persulfate TOC-Procedure

