

## Technical Data

### Measurement and Sample Preparation

Type of measurement :	thermal combustion
Measurement range :	0.1 - 200, 5 - 4,000 mg/l 100 - 50,000 mg/l TOC
Response time :	3 minutes
Sample preparation :	maintenance-free particle separator, optional continuous homogenisation of the sample

### Operation and Data Output

Graphic-LCD-screen, high resolution, back-lit
Autostart-function
Self-explanatory software including maintenance checklists and support
Industry-standard data interface

### Connections

Waste water, drain :	tube 30 mm ID or threaded 32 mm OD or as specified
Electrical power :	230 / 115 V~, 50 / 60 Hz
Analog output :	0/4 - 20 mA
Serial interface:	RS 232 for remote control Malfunction alarm, life-zero
Status output :	4 relay contacts
Remote control :	via TCP/ IP protocol (internet)

### Dimensions and Weight

Cabinet :	steel IP 54 (Nema 13)
Optional :	NEMA 4X (Class I Div 2) IP 65, ATEX zone 1 and zone 2
Dimensions :	1,020 x 700 x 520 mm (H x W x D) (40.2 x 27.6 x 20.5 inches HxWxD)
Weight :	115 kg (254 lb)

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 302

If you require more information about our products e. g. for On-line TN<sub>b</sub>, TP, COD, BOD, Ammonium or toxicity measurement, please call us.

**We are happy to advise you!**

**The TOC Company**

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**The TOC Company**

**LAR**  
PROCESS ANALYSERS AG

**The Total Solution for  
On-line TOC Measurement**

**QuickTOC®**

Continuous Short-Time  
TOC Measuring System

- Measures the real TOC in minutes
- For waste water treatment and process control
- Accurate, fast, no filter

• **The accurate solution for online TOC measurement**

The **QuickTOC** is an on-line measuring system for the determination of total carbon (TC), total organic carbon (TOC), total inorganic carbon (TIC) and dissolved organic carbon (DOC) according to DIN EN 1484, ISO 8245 and EPA 415.1.

The **QuickTOC** is suitable for almost every TOC measurement in sewage treatment and industrial waste water application. Typical on-line applications are plant effluent monitoring, waste water treatment (influent and effluent water) and detection of organic spills and product loss (e. g. in chemical, petro-chemical and food processing plants).

• **High temperature combustion**

The current state of the art engineering for thermal catalytic oxidation uses temperatures between 680° and 1,000°C. The **QuickTOC** has been engineered to work without the aid of expensive catalysts by using temperatures of more than 1,200°C. Therefore, difficult to combust compounds are oxidised effectively and rapidly, regardless of their composition.

• **Fast and precise measuring results**

The **QuickTOC** is designed to operate in a batch mode. The TOC is analysed in 3 minutes. This guarantees the determination of fast and transient peaks throughout the day.

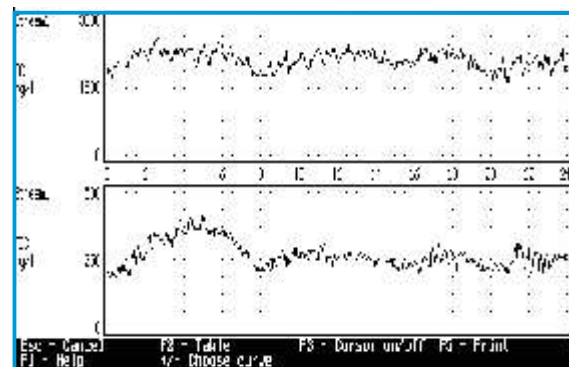


Figure 1: Daily survey measured with QuickTOC of the effluent from a chemical plant

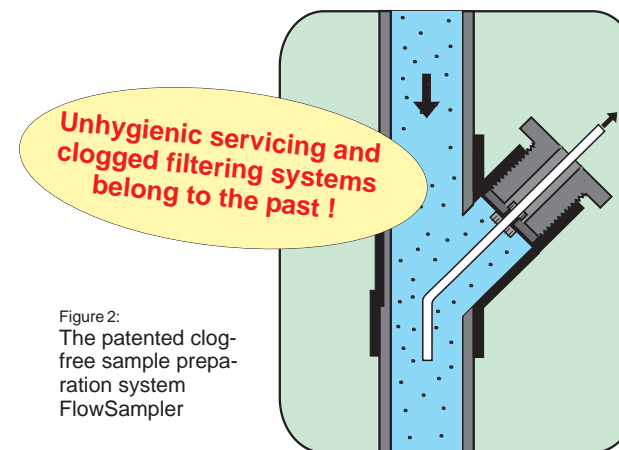
• **Representative sample preparation**

The sample is taken using the patented and maintenance-free sampling system **FlowSampler**. It works filtration-free and takes the sample in the centre of the sample stream against the direction of the main flow (see figure 2).

Even solid particles are sampled by the **FlowSampler** and reduced in size by a homogeniser. The sample is then pumped by the homogeniser through a flow through sample cell.

In the sample cell the sample is continuously stirred to keep it in a homogenised, representative state.

• **Maintenance-free sampling system FlowSampler**



• **Accurate measurement of TC, TOC und TIC**

• **Oxidation with the highest possible temperature**

• **Fast response time of 3 minutes**

• **Multi channel measurement (Option)**

• **Easy operation and software**



• **Reliable thermal oxidation**

• **Works without the aid of an expensive catalyst**

• **Up times higher than 95%**

• **Service time of less than 1 hour per week**

• **Very low maintenance and operation costs**

CATALYST-FREE



THERMAL OXIDATION

• **Reliable and well-proven operating principle with reduced costs**

The sample injection volume is controlled by a xy syringe sampling system. The sample aliquot is then injected into one of two injection ports of the two reactors.

By using a temperature of more than 1,200°C the **QuickTOC** obtains complete combustion of the organic and inorganic components in the sample by using atmospheric air only.

That means greater reproducibility from the **QuickTOC** and no maintenance costs because there is no need to replace expensive catalysts. At this high temperature all the inorganic carbon is converted to CO<sub>2</sub>. This enables the true calculation of TOC from the difference between TC - TIC. It is important to note that the **QuickTOC** avoids the loss of the VOC's.

The measurement of the inorganic compounds is performed in an additional reaction vessel, in which a continuous stream of acidified water is injected with the sample and the evolved CO<sub>2</sub> is stripped by the carrier gas. The combustion gases from the two reactors flow through a 2 stage gas-cooler which is maintained at 4°C, to an absorption column before flowing into the IR detector.

The detection of CO<sub>2</sub> takes place in the NDIR analyser, which detects the CO<sub>2</sub> in form of a peak. The area of the peak is calculated by the built in microprocessor.

The software supports every available function from controlling the **QuickTOC** to further processing of the measured values. The data transfer is done through a USB stick or through parallel interfaces to a monitoring station.

All these features result in an easy to operate analyser with low maintenance requirements, high reproducibility and fast measuring results for many years - **QuickTOC** by LAR.