

## Technical Data

### Measurement and Sample Preparation

Type of measurement:	Thermal combustion at 1200°C (TN <sub>b</sub> ) UV- Persulfate digestion (TP)
Measuring range:	0 - 30 mg/l (ppm) (TN <sub>b</sub> w/o catalyst) 0 - 200 mg/l (ppm) (TN <sub>b</sub> w/ catalyst) 0 - 20 mg/l (ppm) (TP) 2 - 200 mg/l (ppm) (TOC) Correlation for COD adjustable
Response time:	2-3 minutes (TOC, TN <sub>b</sub> ) (application dependent) 10-15 minutes (TP)
Measurement frequency:	1-3 minutes

### Operation and Data Output

Graphic-LCD-screen, high resolution, back-lit
Autostart-function
Self-explanatory software
USB-port
Industry-standard data interface

### Connections

Sample water, in:	Prene tube 3.2 x 1.6mm
Sample water, drain:	PVC tube 12 x 2mm
Electrical power:	~115 / 230V, 50 / 60 Hz
Analog output:	0/4 - 20 mA
Serial interface:	RS 232 for remote control
Malfunction alarm, life-zero	
Status output:	4 relais contacts (programmable)

### Dimensions and Weights

Cabinet:	steel IP 54
Option:	stainless steel, IP 65 ATEX Zone 1 and Zone 2
Dimensions:	1060 x 600 x 520 mm (H x W x D)
Weight:	approx. 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.

If you require more information about our online products for TOC, COD, BOD or toxicity measurement, please call us.

There's so much more !

The TOC Company

**LAR**  
PROCESS ANALYSERS AG

Neukoellnische Allee 134  
D-12057 Berlin  
Telephone : +49 (0) 30 278 958-23  
Fax : +49 (0) 30 278 958-703  
E-mail: [export@lar.com](mailto:export@lar.com)  
<http://www.lar.com>



The TOC Company

**LAR**  
PROCESS ANALYSERS AG

**USE**  
Soluções em Medição e Controle

Fast Solution  
for TOC, TN<sub>b</sub> and TP Measurement  
and COD

**QuickTOC<sub>NP</sub>**

Rapid Online TOC, TN<sub>b</sub> and TP  
Measurement at the Plant's  
Effluent

- Determines the TOC, TN<sub>b</sub> and TP within minutes
- COD by correlation
- Accurate, fast and precise
- Lowest maintenance

**•The Accurate Solution to Simultaneous Online TOC/ COD/ TN<sub>b</sub> and TP Measurement**

The **QuickTOCNP** is an online measuring system for the determination of total organic carbon (TOC) according to DIN EN 1484, ISO 8254 and EPA415.1, total nitrogen (TN<sub>b</sub>) according to DIN 38409 part 27, ENV 12260 and ISO-TR11905-2 and total phosphorus (TP) according to DIN EN ISO 6878:2004, DIN EN ISO 15681-1:2004 and DIN EN ISO 15681-2:2004. COD will be automatically calculated after correlation factor has been established.

The **QuickTOCNP** is suitable for almost every measurement at the effluent of industrial and municipal waste water treatment plants. Typical online applications are the combined effluent monitoring of TOC, TN<sub>b</sub>, TP and COD in one single analyzer. As a result the purchase and maintenance efforts will be reduced significantly compared to multiple analyzers operation.

**• Thermal Combustion Technology**

The **QuickTOCNP** has been engineered to work without the aid of expensive catalysts by using temperatures of more than 1200°C. Conventional thermal catalytic methods use temperatures between 680° to 1000°C.

**• UV/Persulfate Digestion Method for TP**

Simultaneously to the TN<sub>b</sub> measurement the untreated sample is mixed with the oxidation reagent (sodium persulfate) and then conveyed through the UV reactor.

**FEATURES AND BENEFITS**

- 4 Parameters in one Analyzer
- Highest Combustion Temperature (1200°C) of Any Online Thermal Analyzer
- Highest Reproducibility
- Lowest Maintenance Efforts
- Lowest Operational Costs
- Self-Explanatory Software
- COD result by correlation
- Photometric Molybdenum Blue Method for TP Measurement
- Measurement Frequency: 2 - 3 Minutes (TOC/COD/TN<sub>b</sub>); 1- 3 Minutes (TP)
- Response Time: 2 - 3 Minutes (TOC/COD/TN<sub>b</sub>); 5-10 Minutes (TP)
- Easiest Operation
- Catalyst-Free Technique up to 50 mg/l Tn<sub>b</sub>
- No Filtration Necessary at the Effluent



**• Measurement Principle**

**TOC/TN<sub>b</sub>/COD**

The analytical part for the TOC/TN<sub>b</sub>/COD measurement is a closed system and consists - apart from the well proved and very reliable combustion unit - of a low-maintenance and simple injection system, a robust NDIR detector, as well as an industry standard PC with appropriate control and evaluation software. This enables the **QuickTOCNP** to perform precise measurements in the low mg/l (ppm) range.

A small and well-defined sample is taken and injected into the carrier gas. The stream of carrier gas is continually directed through the high temperature combustion furnace, where all water contained within the stream is vaporised and all carbon and nitrogen compounds are safely converted to CO<sub>2</sub> and NO<sub>x</sub>. The carrier gas then transports the gases to an infrared detector (NDIR) and an Electro Chemical Cell by which the accrued amount of CO<sub>2</sub> and NO<sub>x</sub> are determined.

Various loop volumes are available, together with variable injection frequencies and different injection volumes, the **QuickTOCNP** can be adjusted to different industrial and municipal effluent conditions.

As an option, the **QuickTOCNP** can be additionally equipped to purify ambient air for use as carrier gas, in order to cut costs on bottled gas or instrument air, which then will not be needed.

**TP**

To measure the TP (total phosphorus) content of the sample stream the sample flows continuously into the TP part of the analyser. In the first step the sample is mixed with concentrated persulfate and sulphuric acid.

This mixture is then pumped into the reactor where it is exposed to ultra violet light. The UV radiation together with the concentrated persulfate completely oxidises the phosphorus compounds into phosphate (Po<sub>4</sub>)

**CATALYST-FREE**



**THERMAL OXIDATION**