

Technical Data

Measurement and Sample Preparation

Type of measurement :	thermal combustion
Measurement range :	0.1 - 200; 5 - 4000 mg/l 100 - 50,000 mg/l TOC
	automatic ranging
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 Q TOCairport-1 E 6 11

If you require more information about our products e. g. for on-line TOC, TN_b, 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

QuickTOC[®] airport

The perfect solution
for airports

- For surface water and de-icing waste water
- Measures the TOC in 1 - 3 minutes
- Accurate, fast, no filter

Precise and fast TOC Analysis especially for airport applications

Airports' operators are confronted with the challenging task of disposing of surface water, especially of de-icing waste water. There is an enormous amount of water when it rains because of the large sealed surfaces. To ensure a fluent operating procedure those water amounts have to be discharged in the fastest possible way.

During the summer months the water is usually treated with an oil extractor and discharged in the nearest discharge system or partially sprayed on green areas.

In the winter months airplanes, runways and landing strips are de-iced with the aid of glycol, acetates or formates (Figure 1 and 2). The contamination resulting from precipitation can become a huge problem for public waters or lead to complications in WWTP. The disposal of these waters needs to be controlled carefully. The TOC functions as a monitoring value.

On the one hand, the critical values for public discharge are very low. On the other hand, it must be possible to measure high concentrations securely, too. Therefore, a very fast and precise measurement technique is required in order to discharge most of the water in a discharge system in a cost-efficient way. Depending on the concentration/ load it can be discharged in a WWTP or storage basin.

The **QuickTOCairport** of LAR Process Analysers AG is an online measurement system for determination of total carbon (TC), total organic carbon (TOC) or the dissolved organic carbon (DOC), according to DIN EN 1484, ISO 8245 and EPA 415.1.

De-icing agents for the de-icing of airplanes are very adhesive, which means that they have a huge adhesive power. Due to that reason it is prohibited to filtrate the sample or to transport it through small tubings. Therefore, LAR AG has developed a measurement system with the collaboration of airport operators, which meets these high requirements.

There are already more than 100 measurement systems in use worldwide.



FEATURES AND BENEFITS
● Accurate measuring of TC, TOC and TIC
● Reliable thermal oxidation
● Highest combustion temperature (1,200°C)
● Fast response time of 3 minutes
● Catalyst- free technology
● Easy operation and software
● Very low maintenance and operation costs
● Up times higher than 95 %
● TN _x detection simultaneous (Option)
● Multi channel measuring (Option)



Fig. 1: De- icing of a plane (source: Flughafen Dresden GmbH)



Fig. 2: De- icing of a plane (source: Flughafen Dresden GmbH)

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 1200°C the **QuickTOCairport** obtains complete combustion of the organic and inorganic components in the sample by using atmospheric air only.

That means greater reproducibility from the **QuickTOCairport** and no maintenance costs because there is no need to replace expensive catalysts. At this high temperature all the inorganic carbon is converted to CO₂. This enables the true calculation of TOC from the difference between TC - TIC. It is important to note that the **QuickTOCairport** 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 CO₂ 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 CO₂ takes place in the NDIR analyser, which detects the CO₂ 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 **QuickTOCairport** to further processing of the measured values. The data transfer 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 - **QuickTOCairport** by LAR.

CATALYST-FREE



THERMAL OXIDATION