

DF SERIES

DF-760E NanoTrace

UNIQUE DUAL MEASUREMENT TRACE/ULTRA-TRACE MOISTURE/OXYGEN ANALYZER FOR QUALITY CONTROL OF UHP BULK GASES



DF-760E NanoTrace

A unique analyzer solution for the simultaneous monitoring of trace moisture and trace oxygen, the DF-760E is a compact integrated solution for monitoring UHP bulk gases used in the manufacture of integrated circuit boards. Combining the industry-leading properties of Servomex's non-depleting Coulometric E-Sensor and robust Tunable Diode Laser technology within a single compact unit, the DF-760E measures ultra-low levels contaminant levels of H₂ and O₂ within background gas blends of N₂, H₂, He, O₂ and Ar (H₂O in O₂ only).

In offering an exceptionally low, industry-leading Lower Detection Limit of 100ppt (H₂O)/45ppt (O₂), the DF-760E offers the fast speed of response, unsurpassed stability and immunity from trace acid damage which makes it ideal for quality checking and leak detection in semiconductor FAB applications.

This exceptional measurement performance is supported by a low-maintenance design, delivered through the resilient zero-drift sensing technologies which require no ongoing calibration.

FLEXIBLE

- Unique industry solution for ppt monitoring of moisture and O₂
- Operable via front panel or digital communication options
- Broad Detection Range: 0-20ppm – 0-2ppb min (H₂O) / 0-20ppm – 0-1ppb min. (O₂)

EASY TO USE

- Dual analysis capability provides 'one-box' solution to H₂O/O₂ trace contaminant measurements
- A single analyzer can be used for multiple background gases: N₂, H₂, He, Ar and O₂

LOW COST OF OWNERSHIP

- Resilient TDL and non-depleting Coulometric sensing requires minimal ongoing maintenance
- Zero sensor drift greatly extends calibration intervals
- Coulometric E-Sensor immune from acid damage

UNRIVALLED PERFORMANCE

- Stable, accurate sensing delivers industry-leading trace measurements
- 100ppt LDL (H₂O) / 45ppt LDL (O₂)
- Manufactured by Servomex - over 60 years' experience pioneering gas analysis thousands of units used in the field

BENCHMARK COMPLIANCE

- IEC 61010-1
- Overvoltage Category II, Pollution Degree 2
- EU EMC Directive
- EU Low Voltage Directive

Learn more about the DF-760E NanoTrace
VISIT SERVOMEX.COM



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PRODUCT OVERVIEW: DF-760E NanoTrace

HIGH STABILITY TDL TRACE ULTRA-TRACE MEASUREMENTS

When you work in the manufacture of integrated circuit boards, the quality control of electronics grade UHP gas is crucial. To measure O₂ and moisture as a trace contaminant, you'll want a highly sensitive measurement that measures down to the lowest levels. Measurement reliability with a fast speed of response and uncompromised stability are a must. And no matter your measurement requirements, you'll want a solution that delivers operational efficiencies. We don't believe you should have to compromise.

A NO COMPROMISE SOLUTION

The DF-760E is the only combination analysis solution for ultra-trace levels of moisture and oxygen, delivered through Servomex's leading-edge TDL and Coulometric E-Sensor technology. A low LDL – 100ppt (H₂O)/45ppt (O₂) - delivers the sensitivity demanded, and the ability to measure multiple gas streams for N₂, H₂, He, Ar and O₂ background gases with a single device provides considerable adaptability to suit your gas quality checking needs.

SIMPLE MAINTENANCE AND REDUCED ONGOING COSTS

By offering a dual analysis capability in a single, compact one-box solution, the DF-760E reduces the footprint, infrastructure and maintenance costs associated with using separate analyzers for O₂ and H₂O respectively. By offering a consistently reliable, fast speed of response with zero drift, the DF-760E helps extend maintenance and calibration intervals, while factory pre-calibration simplifies set up and installation. This ensures the DF-760E delivers an integrated, value-added solution for the semiconductor industry.

ALTERNATIVE PRODUCTS

The DF product range is designed to meet specific application needs for semiconductor manufacturers

DF-560E NanoTrace II



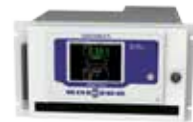
If you need an even more sensitive measurement for O₂, choose the DF-560E. Offering the lowest LDL in the industry – 45ppt – this device combines performance, reliability and low lifetime maintenance requirements.

DF-749 NanoTrace



Ideal for quality checking of UHP gases used in LCD and LED manufacture, DF-749 provides trace and ultra-trace moisture contaminant measurements in various background gases including nitrogen, hydrogen, helium, argon and oxygen.

DF-750 NanoTrace



When you need to measure moisture as a contaminant in UHP quality gases, the DF-750's trace and ultra-trace measurements are ideal in quality and leak detection applications. Optimized for bulk gas control in 300m semiconductor fabs.

KEY APPLICATIONS

- Bulk gas quality control checks for integrated circuit board fabs
- Leak detection checks



PRODUCT DATA: DF-760E NanoTrace

OPTIONS	DESCRIPTION	SPECIFICATION
Output	5 output options available for both O ₂ and moisture	Isolated 4-20mA DC and a choice of 0-1,0-2,0-5 and 0-10V DC (analog output freeze control during calibration)
Output range	Output parameters	Scalable to any range between 0-2ppb to 0-20ppm
Alarms	Various alarms available	4 moisture levels/4 O ₂ levels, temperature, electrolyte condition, moisture sensor diagnostics loss of flow, zero verification or calibration in process, analyzer offline and analog output freeze during calibration
Serial communications	2 options for two-way serial communications	Factory configured RS232 or RS485
Vacuum pump	Aspirator source for high capacity sample draw	Pump with 1/4" compression inlet and outlet fittings
Dual scale range	2 range options	User-selectable secondary analog output ranges for rescaling the output once the primary range is exceeded
Hydrogen purge	Enhances safety during gas purge procedures	Includes sample delivery interlock and case purge valves for instrument housing and NEMA 4 rated enclosure, Z purge protection system for optional external vacuum pump. Please note: limits available relays from 4 to 3
Mounting	1 option	19" rack mount NEMA 1 enclosure

ACCESSORIES

**ACCESSORIES AVAILABLE FOR SPECIFIC APPLICATIONS
– CONTACT YOUR LOCAL SERVOMEX BUSINESS CENTER**

MONITORING PERFORMANCE

	H ₂ O (purity)	O ₂
Gas		
Technology	Tunable Laser Diode (TDL)	Coulometric
Range	0-20ppm – 0-2ppb min.	0-20ppm – 0-1ppb min.
Accuracy (intrinsic error) FS	±3% of reading / ±0.2ppb (whichever is greater)	±3% of reading / ±0.1ppb (whichever is greater)
Zero drift/month	Negligible	Negligible
T ₉₀	<3 minutes at 1liter/min	<15 seconds

SAMPLE FOR MEASUREMENTS

Sample for measurement	Sample must be oil free, non-corrosive and non-condensing (must be free of acidic components – contact Servomex for sample preconditioning options)
Sample pressure	30 – 150psig (3.08 – 11.3 BarA)
Dew Point	5°C/9°F below minimum ambient
Particulates	Filtered to 2µm



PRODUCT DATA: DF-760E NanoTrace

DEVICE SPECIFICATION

Size:

- 483mm (19") Wide x 266mm (10.5") High x 608mm (23.9") Deep

Weight:

- 31.8kg (70lbs)

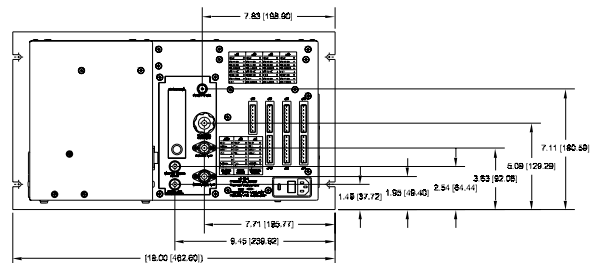
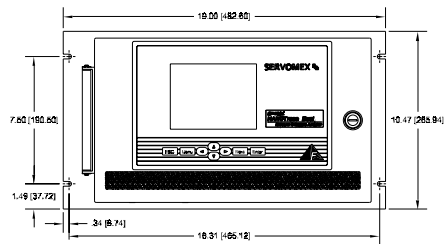
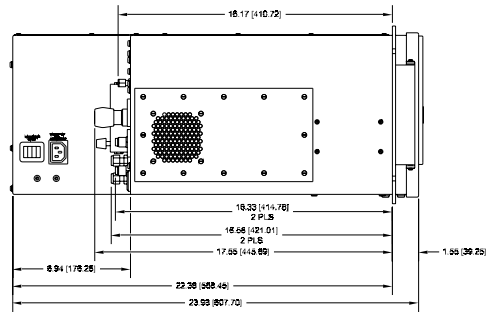
Operating Temperature:

- 10°C - 80°C/50°F - 176°F

Compliance:

- IEC 61010-1
- Overvoltage Category II, Pollution Degree 2
- EU EMC Directive
- EU Low Voltage Directive

DEVICE SCHEMATIC



PBD/760 Rev.1 Date: 06/15

These analyzers are not intended for any form of use on humans and are not medical devices as described in the Medical Devices Directive 93/42EEC.

Please note: This document was updated in August 2014. While every effort has been made to ensure accuracy, no responsibility can be accepted for errors or omissions. Data may change, as well as legislation, and you are strongly advised to obtain copies of the most recently issued regulations, standards and guidelines. This document is not intended to form the basis of a contract.

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