

DF SERIES

DF-745 NanoTrace

TUNABLE DIODE LASER (TDL) TRACE/ULTRA-TRACE MOISTURE MEASUREMENTS FOR ULTRA HIGH PURITY ELECTRONIC GAS CHECKS



DF-745 NanoTrace

The DF-745 provides trace and ultra-trace moisture contaminant measurements for LED/LCD manufacturing processes. Able to monitor multiple background gases, the DF-745 delivers exceptional performance operational flexibility in a compact unit. With an intelligent and robust hardware/software design, this analyzer can be moved easily from port to port, virtually eliminating dry down times often associated with these applications.

Offering a Lower Detection Limit (LDL) of 1ppb, the DF-745 uses industry-leading Tunable Diode Laser (TDL) sensing technology. This sensor delivers ultra-reliable baseline measurements and a fast speed of response; with a robust Herriot cell preventing loss in mirror reflectivity, moisture contact with optical components is minimized, ensuring an accurate measurement. Added to its flexibility and accuracy is affordability; zero drift extends calibration intervals while minimal ongoing maintenance provides a low cost of lifetime ownership.

FLEXIBLE

- Trace level Tunable Diode Laser (TDL) sensing provides high stability measurements
- Broad detection range: 0ppb – 20ppm
- Operable via front panel or digital communication options

EASY TO USE

- Simplified ongoing maintenance requirements with no consumables required
- High reliability; repeatable baseline measurements are not affected by a loss in mirror reflectivity
- Compact with a low weight; moves easily from port to port and ideal for other mobile applications

LOW COST OF OWNERSHIP

- Maintenance periods can be extended by the use of patented ultra-stable TDL sensing technology
- Zero drift reduces calibration requirements

UNRIVALLED PERFORMANCE

- Uses industry-leading, high stability TDL sensing technology
- Analysis immune from gas cell concentration: DF-745 operates to specification with up to 90% signal loss
- LDL reference 1ppb
- Manufactured by Servomex - over 60 years' experience innovating and pioneering gas analysis and thousands of units used in the field every year

BENCHMARK COMPLIANCE

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

Learn more about the DF-745 NanoTrace
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PRODUCT OVERVIEW: DF-745 NanoTrace

FLEXIBLE TDL TRACE AND ULTRA-TRACE MEASUREMENTS

Modern LCD and LED manufacturing processes require an ultra-trace quality measurement for moisture contaminants in high purity electronics grade gases. In such a specific application, users need analysis capable of delivering high-accuracy and ultra-low detection limits in multiple background gases. No matter how specific the application requirement, you'll want a device that actively reduces ongoing costs to deliver a long and cost-effective lifetime of ownership. We don't believe you should have to compromise.

A NO COMPROMISE SOLUTION

Utilizing advanced Servomex Tunable Diode Laser (TDL) sensing technology, housed in a robust Herriot cell, the DF-745 delivers a fast, accurate trace moisture measurement with a low detection limit of 1ppb. The measurement stability of TDL means the DF-745 exhibits zero drift and recovers fast from upset prone applications. Application flexibility is optimized through a compact size that keeps port to port mobility simple.

SIMPLE MAINTENANCE AND REDUCED ONGOING COSTS

Proven sensing technology and advanced functionality delivers DF-745 users a low lifetime cost-of-ownership. Factory pre-calibration helps facilitate quick and easy installation; the use of the high stability, TDL sensor - with zero drift potential - extends calibration intervals and minimizes ongoing maintenance needs, enabling considerable savings over a long product lifetime.

ALTERNATIVE PRODUCTS

The DF product range features a number of options designed to meet your application needs.

DF-745 SGMax



A flexible and easy-to-use solution for specialty gas blending applications, the SGMax provides trace moisture measurements for a wide variety of single gas and multigas blend mixtures.

DF-750 NanoTrace



Designed to measure moisture as a contaminant in UHP quality gases, the DF-750's trace and ultra-trace measurements are optimized for bulk gas control in 300m semiconductor fabs.

DF-760E NanoTrace



The DF-760E combines TDL and Coulometric sensing to create a unique integrated ultra-trace measurement for moisture and oxygen - ideal for PCB bulk gas quality checks and leak detection.

KEY APPLICATIONS

- Bulk gas quality control checks for ultra high purity electrograde gas production in LED plant applications
- Leak detection in LED and LCD plant applications



PRODUCT DATA: DF-745 NanoTrace

OPTIONS	DESCRIPTION	SPECIFICATION
Output	5 output options available	Isolated 4-20mA DC and a choice of 0-1,0-2,0-5 and 0-10V DC
Output range	Output parameters	Scalable to any range between 0-2ppb to 0-20ppm (745 LDL = 1ppb 740 LDL - 10ppb)
Alarms	5 alarms available	4 moisture levels, temperature, moisture sensor diagnostics, analyzer offline and expanded range
Serial communications	2 options for two-way serial communications	Factory configured RS232 or RS485
Vacuum pump	For high capacity sample draw	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 enclosure, and 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	
Gas	H ₂ O (purity)
Technology	Tunable Laser Diode (TDL)
Range	0-2ppb – 0-20ppm
Accuracy (intrinsic error) F5	±3% of reading / ±1ppb (whichever is greater)
Zero drift/month	Negligible
T ₉₀ in minutes	<3 at 1liter/min

SAMPLE FOR MEASUREMENTS	
Sample for measurement	Sample must be free of acidic components. Please contact Servomex for sample pre-conditioning 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-745 NanoTrace

DEVICE SPECIFICATION

Size:

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

Weight:

- 31.8kg (70lbs)

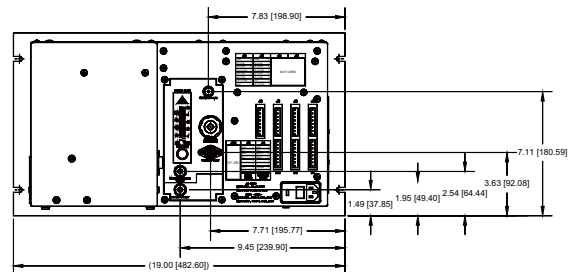
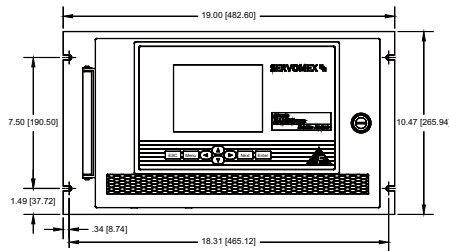
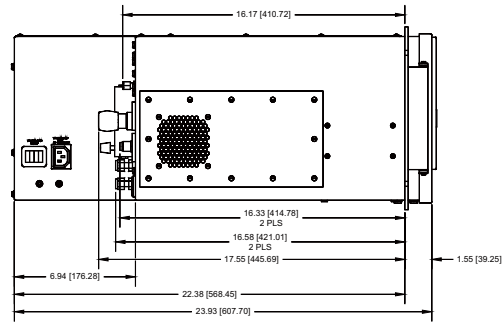
Operating Temperature:

- 10°C - 40°C/50°F - 104°F

Compliance:

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

DEVICE SCHEMATIC



PBD/745 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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