

PRODUCT OVERVIEW

SERVOPRO DF-750 NanoTrace

HIGH PURITY



GAS	MEASURES	APPLICATION
MOISTURE	TRACE PPM ULTRA TRACE PPB ULTRA TRACE PPT	QUALITY

SENSING TECHNOLOGY

LASER MOISTURE



TUNABLE DIODE LASER (TDL) TRACE/ULTRA-TRACE MOISTURE MEASUREMENTS FOR QUALITY CONTROL IN SEMICONDUCTOR FABS

UNRIVALLED PERFORMANCE

- Uses industry-leading, high stability TDL trace sensing with zero drift
- Analysis resistant to gas cell contamination: DF-750 operates to specification with up to 90% signal loss
- Industry-leading 100ppt Lower Detection Limit
- Manufactured by Servomex - over 60 years' experience pioneering gas analysis with thousands of units used in the field

FLEXIBLE

- Broad detection range: 0-20ppm
- Storage and recall function: calibration, system error and measurement data facilitates archiving operational history
- Operable via front panel or digital communication options

EASY TO USE

- Simplified ongoing maintenance requirements through the use of non-depleting, low drift potential TDL sensing technology
- High reliability - repeatable baseline measurements are not affected by a loss in mirror reflectivity

LOW COST OF OWNERSHIP

- Robust sensor construction reduces maintenance requirements
- Absence of zero drift extends calibration intervals

BENCHMARK COMPLIANCE

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

KEY APPLICATIONS

- Bulk gas quality control checks for UHP electronic gases used in 300mm semiconductor fabs
- Leak detection checks for UHP electronic gases used in 300mm semiconductor fabs

Learn more about the DF-750 NanoTrace
Visit servomex.expert/pb-750



SERVOMEX.COM

SERVOMEX
a spectris company

PRODUCT OVERVIEW

SERVOPRO DF-750 NanoTrace

HIGH PURITY

HIGH STABILITY TDL TRACE/ULTRA-TRACE MEASUREMENTS

Ultra-trace qualification of UHP electronic gases is essential for semiconductor fabrication. You need a moisture analyzer that can deliver high stability measurements with sensitive and consistent performance. An accurate and low LDL is a must, as is the need to easily store and recall data/calibration records. Regardless of your application requirements, you'll want a moisture analyzer that can provide operational efficiencies. We don't believe you should have to compromise.

A NO COMPROMISE SOLUTION

The DF-750 is designed to meet the exceptional gas purity standards demanded by semiconductor manufacturers worldwide. Utilizing leading-edge TDL sensing technology, housed in a robust and resilient Herriot Cell, the DF-750 avoids moisture contact with optical sensing components. The result is an analyzer that delivers an ultra-sensitive, industry-leading 100ppt Lower Detection Limit, ideal for checking for minute levels of moisture in a wide range of UHP electronics-grade gases, including N₂, H₂, CO₂*, He, Ar and O₂. With data recorded and readily available through flexible storage and recall functions, the DF-750 is the complete solution for UHP gas monitoring in 300mm semiconductor fabs.

SIMPLE MAINTENANCE AND REDUCED ONGOING COSTS

The use of patented leading-edge TDL technology provides long-term stability and accuracy, while the use of this sensing principle also helps to reduce ongoing maintenance thanks to its non-depleting nature.

* LDL of moisture in CO₂ is 250ppt

USEFUL LINKS



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: Whilst every effort has been made to ensure accuracy, no responsibility can be accepted for errors and 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.

Servomex has a policy of constant product improvement and reserves the right to change specifications without notice. © Servomex Group Limited. 2021. A Spectris company. All rights reserved.

TECHNICAL DATA SHEET

SERVOPRO DF-750 NanoTrace



SPECIFICATIONS

GAS MEASURED	H ₂ O (purity)
TECHNOLOGY	Tunable Laser Diode (TDL)
PERFORMANCE	
Measurement range	0-20ppm - 0-2ppb minimum
Lower detection limit	100ppt
Intrinsic error (accuracy) FS	±3% of reading / ±0.2ppb (whichever is greater)
Response time (T ₉₀)	<3 minutes at 1l/min
Zero drift/month	Negligible
Span drift/month	Negligible
Smallest recommended output range	0-2ppb
Upset recovery time	<5 minutes to return to within 10ppb of previous stable reading
SIGNAL OUTPUTS/INPUTS	
Analog output	5 output options available Isolated 4-20mA dc and a choice of 0-1, 0-2, 0-5 or 0-10V dc
Analog output range	Output parameters Scalable to any range between 0-2ppb to 0-20ppm (LDL 100ppt)
Audible/visual alarms	5 alarms available 4 moisture levels, temperature, moisture sensor diagnostics, analyzer offline and expanded range
Dual scale range	2 user selectable secondary analog output ranges for rescaling the output once the primary range is exceeded
Relay contacts	Up to 4 non-latching independently assignable to alarms or indicators. SPDT contacts rated for 1A at 30V dc
Serial communications	Factory configured RS232 or RS485 two-way serial communications
Gas scale factor	Background gas compensation for gases other than N ₂
SAMPLE CONDITIONS	
Sample flow	1 to 4l/min
Bypass flow	0.25 to 2.5l/min
Pressure	30 - 150psig (2.06 - 10.3 BarG)
Dew point	+5°C (+9°F) below minimum ambient
Temperature	+10°C to +80°C (+50°F to +176°F)
Particulates	Filtered to 2µm
Condition	Sample must be oil free, non-corrosive, non-condensing (must be free of acidic components - contact Servomex for sample preconditioning options).
Vent	Vent to atmosphere. Vent pressure range is -2psig to 2psig (0.88 to 1.14 BarA)
OPERATING ENVIRONMENT	
Temperature	Operating: +10°C to +40°C (+50°F to +105°F) Storage: Less than +50°C, shielded from direct sunlight
Warm up time	5 minutes
Relative humidity	0 to 95% RH non-condensing
Operating altitude range	2,000m above sea level

The performance specification has been written and verified in accordance with the international standard IEC 61207-1:1994 "Expression of performance of gas analyzers"



SERVOMEX.COM

SERVOMEX 
a spectris company

PHYSICAL	
Size	483mm (19") Wide x 266mm (10.5") High x 608mm (23.9") Deep
Weight	<31.8kg (70lbs)
Aspirator vacuum source	Aspirator with 1/4" compression inlet and outlet fittings
Mounting	19" rack mount NEMA 1 enclosure
UTILITIES	
Supply voltage	110V ac or 230V ac 50/60 Hz @ 2.5A
Zero gas	Optional - recommended if operating near LDL
Span gas	Not required
Aspirator gas supply	Nitrogen or air at 80psig (± 3 psig) 15l/min with a backpressure on outlet stream of <2psig with 1/4" compression inlet and outlet fittings
Gas delivery system	Pneumatically actuated springless diaphragm valves, orbital butt welded assembly with zero dead volume for sensor isolation and zero verification high capacity moisture dryer provides moisture-free zero gas heated and temperature controlled sample delivery system integral pressure regulator with minimal wetted area. Includes on-board span cal system

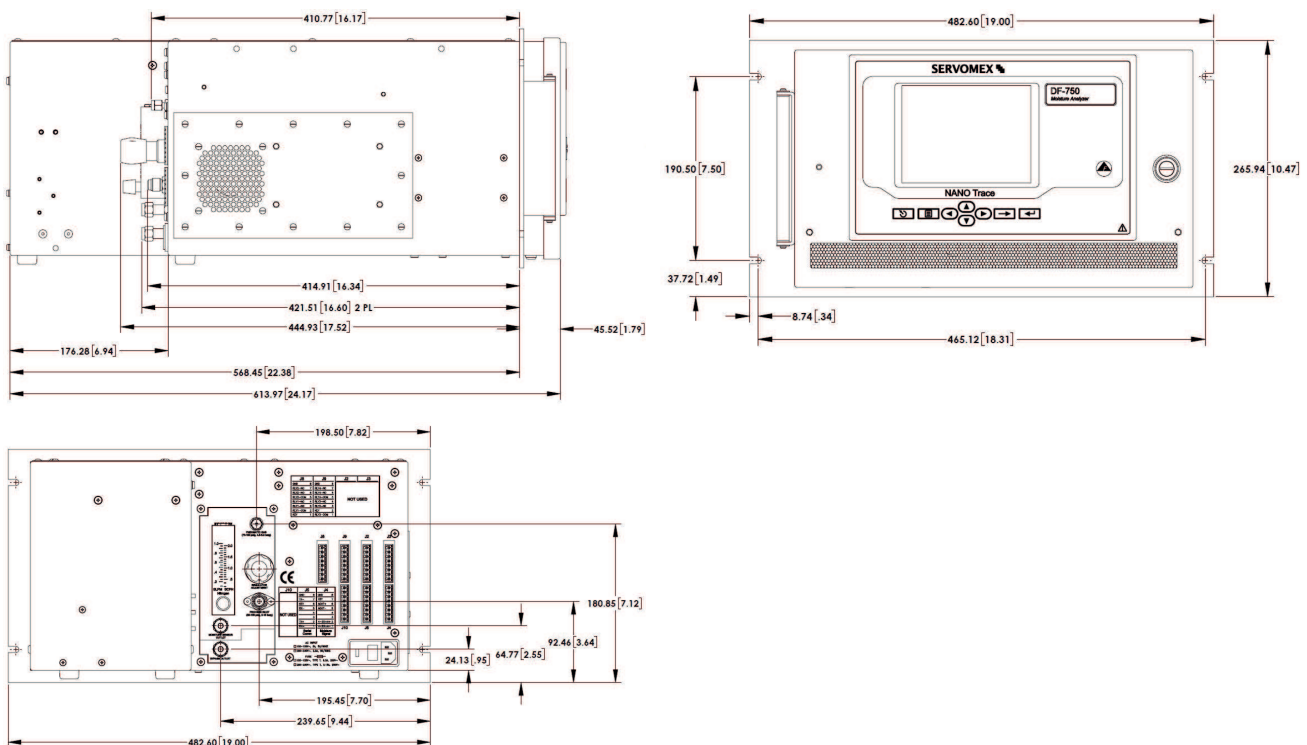
COMPLIANCE

EC DIRECTIVES	This product complies with the EU EMC Directive, the EU Low Voltage Directive, Overvoltage Category II, Pollution Degree 2 and all other applicable directives.
ELECTRICAL SAFETY	Electrical safety to IEC 61010-1

SAMPLE WETTED MATERIALS

ANALYZER FITTED WITH	Stainless steel G10 Epoxy Polypropylene Sapphire
----------------------	---

DIMENSIONAL DRAWINGS



Dimensions shown in millimetres [inches]



OPTIONS

DESCRIPTION	
Pump vacuum source	Pump with 1/4" compression inlet and outlet fittings
Hydrogen safety system purge	Optional safety system for use with hydrogen includes sample delivery interlock and case purge valves for instrument housing, and enclosure and purge protection system for optional external vacuum pump. Hydrogen safety system can be ordered with or without the enclosure and purge protection system for the optional vacuum pump (NOTE: hydrogen safety system limits available relays from 4 to 3)
CONFIGURATION OPTIONS	
Power input	110 VAC input power <input type="checkbox"/>
	220 VAC input power <input type="checkbox"/>
Hydrogen safety system	Not required <input type="checkbox"/>
	System with pump purge <input type="checkbox"/>
	System without pump purge <input type="checkbox"/>
Vacuum source	Aspirator (standard) <input type="checkbox"/>
	Pump <input type="checkbox"/>
Key lock	Not required <input type="checkbox"/>
	Required <input type="checkbox"/>
Communication	Not required <input type="checkbox"/>
	RS232 communication <input type="checkbox"/>
	RS485 communication <input type="checkbox"/>
Special analog output	Analyzer supplied with isolated 4-20mA and a choice of <input type="checkbox"/>
	0-1 VDC <input type="checkbox"/>
	0-2 VDC <input type="checkbox"/>
	0-5 VDC <input type="checkbox"/>
	0-10 VDC <input type="checkbox"/>
Power cord	Not required <input type="checkbox"/>
	USA <input type="checkbox"/>
	Europe <input type="checkbox"/>
	UK <input type="checkbox"/>

Please tick the box for required options



> WE'RE READY TO HELP

WHATEVER YOUR GAS ANALYSIS REQUIREMENTS, WHEREVER YOU ARE

PBTDSDF750 Rev. 1 Date: 03/21

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: *Whilst every effort has been made to ensure accuracy, no responsibility can be accepted for errors and 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.*

Servomex has a policy of constant product improvement and reserves the right to change specifications without notice. © Servomex Group Limited. 2021. A Spectris company. All rights reserved.