PRODUCT OVERVIEW

SERVOPRO DF-760E NanoTrace ULTRA

ULTRA HIGH PURITY

ULTRA SERIES

GAS	MEASURES	APPLICATION
MOISTURE	ULTRA TRACE PPT	QUALITY
OXYGEN		

SENSING TECHNOLOGY

TUNABLE DIODE LASER

COULOMETRIC

NEW GEN-7 NanoTrace SERIES

KEY APPLICATIONS

- Ultra high purity bulk gas quality control checks for small line width semiconductor fabs
- Process line leak detection within semiconductor carts

FROM OUR GROUND-BREAKING ULTRA SERIES, A UNIQUE DUAL MEASUREMENT TRACE/ULTRA TRACE MOISTURE/OXYGEN ANALYZER FOR UHP BULK GAS ANALYSIS

UNRIVALLED PERFORMANCE

- Uses industry-leading, high stability Tunable Diode Laser Absorption Spectroscopy (TDLAS) sensing technology
- 55ppt LDL (H_2O) / 45ppt LDL (O_2)
- Servomex has 70 years' experience pioneering gas analysis with thousands of this product line in the field

FLEXIBLE

- Analysis resistant to gas cell contamination: DF-760E ULTRA operates to specification with up to 90% signal loss
- Storage and recall function: calibration, system error and measurement data facilitates archiving operational history
- Broad Detection Range: 0-20ppm – 0-2ppb min (H_2O)/ 0-20ppm – 0-1ppb min (O_2)

EASY TO USE

- Dual analysis capability provides 'one-box' solution for H_2O / O_2 trace contaminant measurements
- A single analyzer can be used for multiple background gases: N_2, H_2, He, Ar and O_2

LOW COST OF OWNERSHIP

- Resilient TDLAS and non-depleting Coulometric sensing requires minimal ongoing maintenance
- Negligible sensor drift greatly extends calibration intervals

BENCHMARK COMPLIANCE

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

For more information please contact us

Visit servomex.com/contact

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a spectris company

PRODUCT OVERVIEW

SERVOPRO DF-760E NanoTrace ULTRA

ULTRA HIGH PURITY

HIGH STABILITY TDLAS TRACE/ULTRA-TRACE MEASUREMENTS

Ultra-trace qualification of UHP electronic gases is essential for semiconductor fabrication. You need a moisture analyzer that can deliver highly accurate measurements sensitive to perturbations, but limits production-disrupting false positives. The lowest LDL is a must, and with our dynamic pressure Herriott Cell your LDL stays the same no matter what background gas you choose, so make sure to check the LDL for all the gases of our competition, as their LDL claims will not be consistent.

A NO COMPROMISE SOLUTION

The DF-760E ULTRA is designed to meet the exceptional gas purity standards demanded by semiconductor manufacturers worldwide. It utilizes leading-edge, non-depleting TDLAS and Coulometric sensing technologies, housed in a robust and resilient new electronics package. The result is an analyzer that delivers an ultra-sensitive, industry-leading 55ppt LDL (H_2O) / 45ppt LDL (O_2) LDLs, ideal for checking for minute levels of moisture and oxygen in a wide range of UHP electronics-grade gases, including N_2, H_2, He, Ar and O_2. Measurement data is recorded and readily available through flexible storage and recall functions, the DF-760E ULTRA is the complete solution for UHP gas monitoring in 300mm semiconductor fabs.

FIELD REPAIRABLE AND REDUCED ONGOING COSTS

The new DF-700 Series Gen VII was designed for manufacturability and repairability. The laser cell, hard drive, CPU, PCBs, display, filter and gas panel can now all be replaced in the field. We have SOPs and service videos to guide these repairs. So in the rare case a unit exhibits a component failure, the product can stay in your facility to be repaired by a competent technician of yours or ours.

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

USEFUL LINKS

SERVOMEX SERVICE NETWORK
servomex.com/service

SERVOMEX SYSTEMS INTEGRATED SOLUTIONS
servomex.com/systems

SERVOMEX EXPERT UNRIVALLED KNOWLEDGE AND VISION
servomex.com/expert-guidance

PBTDSDF760 Rev. 2 Date: 03/23

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.*

TECHNICAL DATA SHEET

SERVOPRO DF-760E NanoTrace ULTRA

SPECIFICATIONS

GASES MEASURED	H_2O and O_2	
TECHNOLOGY	Tunable Diode Laser Absorption Spectroscopy (TDLAS) and Coulometric	
PERFORMANCE		
Gas	H_2O	O_2
Background gases	N_2, O_2, H_2, He and Ar	N_2, H_2, He and Ar
Technology	Tunable laser diode (TDL)	Coulometric
Measurement range	0-20ppm - 0-2ppb minimum	0-20ppm - 0-1ppb minimum
Lower detection limit	55ppt	45ppt
Intrinsic error (accuracy) FS	±3% of reading / ±0.2ppb (whichever is greater)	±3% of reading / ±0.1ppb (whichever is greater)
Response time (T_{90})	<3 minutes at 1 l/min	<15 seconds at 1 l/min
Zero drift/month	Negligible	
Smallest recommended output range	0-2ppb minimum	0-1ppb minimum
Upset recovery time	<5 minutes to return to within 10ppb of previous stable reading	
SIGNAL OUTPUTS/INPUTS		
Analog output	4 output options available for both O_2 and H_2O Isolated 4-20mA dc and a choice of 0-1, 0-2, 0-5 or 0-10V dc (analog output freeze control during calibration)	
Analog output range	Output parameters H_2O scalable to any range between 0-2ppb to 0-20ppm O_2 scalable to any range between 0-1ppb to 0-20ppm	
Visual alarms	Various alarms available 4 moisture levels, temperature, system error, pressure range and hydrogen safety system (if applicable) 4 O_2 levels, temperature, low electrolyte, low flow, low bypass flow, service in progress	
Dual scale range	2 user selectable analog output ranges	
Relay contacts	4 non-latching, independently assignable relays per measurement. SPDT contacts rated for 1A at 30 VDC	
Serial communications	Factory configured RS232 or RS485 two-way serial communications	
SAMPLE CONDITIONS		
Sample flow	1 l/min H_2O and 500 ml/min O_2 (contact Servomex for other gases)	
Bypass flow	0.25 to 2.5 l/min	
Pressure	30 to 150psi, 2.07 to 10.34 Bar, 207 to 1,034 KPa	
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, no solvents, alcohols or aldehydes. Must be free of acidic components - contact Servomex for sample preconditioning options.	
Vent	Vent to atmosphere	

OPERATING ENVIRONMENT	
Temperature	Operating: +10°C to +40°C (+50°F to +105°F) Storage: Less than +50°C (122°F)
Warm up time	5 minutes
Relative humidity	0 to 95% RH non-condensing
Operating altitude range	0-2,000m above sea level

PHYSICAL	
Size	483mm (19”) Wide x 266mm (10.5”) High x 631mm (24.84”) Deep
Weight	33.2kg (73lbs)
Aspirator vacuum source	Aspirator with 1/4” compression inlet and outlet fittings
Mounting	19” rack mount NEMA 1 enclosure
Sensor storage conditions	We recommend that the analyzer be operated as intended within 6 months of delivery

UTILITIES	
Supply voltage	110V ac at 5A or 230V ac 50/60 Hz @ 2.5A
Standard aspirator gas supply (gauge)	N_2 or CDA at 80psig (+/- 3psig), 15 l/min with a back-pressure on outlet stream of <2psig
Pneumatic gas (gauge)	N_2 or CDA 60 to 100psi, 4.14 to 6.89 Bar, 413.7 to 689.5 KPa

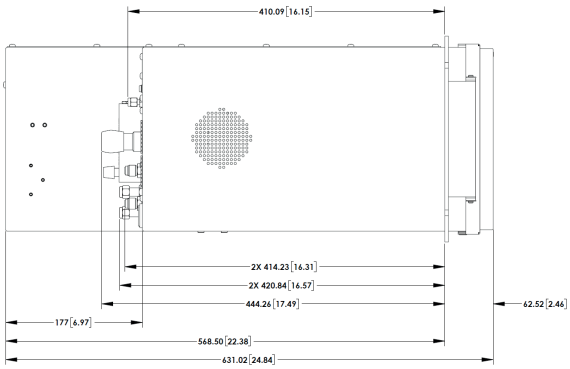
COMPLIANCE

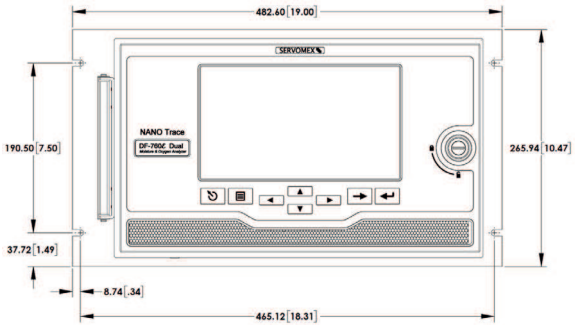
EC DIRECTIVES	This product complies with the EU EMC Directive, the EU Low Voltage Directive, Overvoltage Category II, Pollution Degree 2 and all other applicable directives. This is a class 1 laser product.
ELECTRICAL SAFETY	Electrical safety to IEC 61010-1

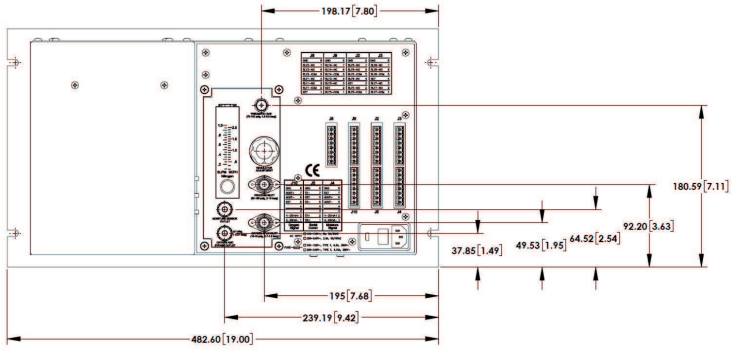
SAMPLE WETTED MATERIALS

ANALYZER FITTED WITH	Stainless steel G10 Epoxy Polypropylene PCTFE

DIMENSIONAL DRAWINGS







Dimensions shown in millimetres [inches]

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OPTIONS

CONFIGRUATION OPTIONS		
Power input	110 VAC input power 220 VAC input power	☐ ☐
Hydrogen safety system	Not required System with pump purge System without pump purge	☐ ☐ ☐
Vacuum source	Aspirator (standard) Pump	☐ ☐
Key lock	Not required Required	☐ ☐
Communication	Not required RS232 communication RS485 communication	☐ ☐ ☐
Special analog output	Analyzer supplied with isolated 4-20mA and a choice of 0-1 VDC 0-5 VDC 0-10 VDC	 ☐ ☐ ☐
Power cord	Not required USA Europe UK	☐ ☐ ☐ ☐
Electrolyte type	Gold	☐
Electrolyte shipment method	None required, has own stock From factory (add line item) Other SMX plnt (add line item)	☐ ☐ ☐

Please tick the box for required options

WE'RE READY TO HELP

WHATEVER YOUR GAS ANALYSIS REQUIREMENTS, WHEREVER YOU ARE

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