

# SERVOTOUGH LaserSP 2930

**HIGH PERFORMANCE TUNABLE DIODE LASER (TDL) EMISSIONS/PROCESS ANALYSIS OPTIMIZED FOR CROSS-STACK ANALYSIS IN HAZARDOUS LOCATIONS**



## SERVOTOUGH LaserSP 2930

Utilizing the latest developments in Tunable Diode Laser (TDL) Technology, the LaserSP is a versatile cross-stack monitor capable of making fast and accurate gas measurements in hazardous environments.

Able to detect a variety of gases including O<sub>2</sub>, HCl, HF, NH<sub>3</sub>, CO, CO<sub>2</sub>, H<sub>2</sub>O, H<sub>2</sub>S, HCN, NO, N<sub>2</sub>O, CH<sub>4</sub> and other hydrocarbons, the LaserSP offers a fast response and highly stable performance, making it ideal for a wide range of emissions, process and combustion control applications. With no moving parts and consumables, Servomex's advanced TDL technology has minimal sample conditioning requirements, greatly reducing operational and maintenance costs.

Optimized for use in hot dirty or dangerous environments, the LaserSP features a robust design and easy installation. Allowing safe operation in situations where the process stream itself is flammable and has been classified as a Hazardous Area. This device also requires minimal ongoing maintenance, helping to reduce operational costs considerably over product life.

### FLEXIBLE

- Designed for Zone 1 and Zone 2 hazard rated (gas/dust) locations
- Performs in high temperature/high particulate environments
- Ideal for diverse monitoring needs with 21 gas/gas blends analyzed
- Diverse mounting: ideal for ducts, stacks and reactor installation

### EASY TO USE

- Intuitive, engineer-friendly use that minimizes training requirements
- Simplified, engineer-optimized ongoing maintenance through non-depleting TDL technologies
- Flexible, user-defined settings

### LOW COST OF OWNERSHIP

- ATEX/IEC zone 2 and CID2 without hazardous area purge
- Remote device interaction via optional Ethernet or modem connection
- Non-consumable TDL sensing reduces maintenance costs and downtime
- SIL 1 certified

### UNRIVALLED PERFORMANCE

- Uses industry-leading TDL technologies and advanced algorithms for reliable and repeatable analysis
- Manufactured by Servomex - over 60 years' experience innovating and pioneering gas analysis and thousands of units used in the field every year
- 2-20m path lengths

### BENCHMARK COMPLIANCE

- Designed for gas/dust hazard rated locations (Zone 2/Division 2)
- Also ideal for effective safe area use

Learn more about the SERVOTOUGH LaserSP 2930  
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# PRODUCT OVERVIEW: LaserSP 2930

## UNBEATABLE PERFORMANCE IN THE MOST CHALLENGING LOCATIONS

When you work in applications that require close in-situ gas monitoring, in particular in industries where process or emissions measurements are required in hazardous locations, you need the highest performing devices to maximize process uptime and deliver uncompromised repeatability. The nature of your industry means that many diverse gas/gas blends need to be analyzed and often in harder-to-reach locations like ducts, cross stacks and reactors. The need for flexible, ultra-accurate gas analysis at the most affordable cost of ownership is a must.

## A NO COMPROMISE SOLUTION

A single analytical solution for diverse on-site monitoring requirements, the LaserSP utilizes the latest signal processing to ensure a fast and accurate measurement. A sturdy, hazardous area optimized design ensures LaserSP can handle the most challenging of locations including high temperatures and particulate-rich environments.

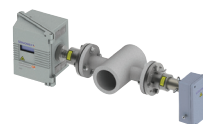
## UNBEATABLE VALUE OVER PRODUCT LIFE

The ability to reduce ongoing costs and get the most value from gas analysis is essential to your business; and you won't be disappointed by LaserSP. Non-depleting TDL optical analytical technology extends maintenance periods and reduces costs, while extensive communication options enable efficient remote operation. With an intelligent design that permits flexible mounting options, the LaserSP can be customized to your exact application requirements.

## ALTERNATIVE PRODUCTS

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

### LaserCompact 2940



When you need to monitor across pipework, short distance extractive applications or short sample cell applications, choose LaserCompact. This device can even measure through very thin nozzles.

### SpectraExact 2500



When you want even more flexibility, choose SpectraExact. This device delivers single, dual or triple component gas analysis that suits virtually any process/combustion/emissions monitoring need in hazardous rated locations.

### LaserExact 2950



The LaserExact uses the same industry leading TDL technology as the LaserSP 2930 but in an extractive TDL trace analysis format. Choose this device for ppb or low ppm measurement requirements.

## KEY APPLICATIONS

- Emission control systems for CEMS
- Combustion control systems for process heaters and crackers
- Slip Ammonia control in deNOx plants
- Process O<sub>2</sub> safety systems in chemical plants
- Trace measurements
- Moisture and H<sub>2</sub>S in natural gas



# PRODUCT DATA: LaserSP 2930

GAS MEASURED	DETECTION LIMIT *	MIN. MEASURING RANGE	MAX. SAMPLE PRESSURE	MAX. SAMPLE TEMPERATURE/°C
NH <sub>3</sub>	0.11mg/m <sub>3</sub> (0.15ppm)	0 - 15ppm	2 bar abs.	600
HCl	0.08mg/m <sub>3</sub> (0.05ppm)	0 - 5ppm	2 bar abs.	600
HF	0.013mg/m <sub>3</sub> (0.015ppm)	0 - 1.5ppm	2 bar abs.	400
H <sub>2</sub> S	4.5mg/m <sub>3</sub> (3ppm)	0 - 300ppm	2 bar abs.	300
O <sub>2</sub>	0.01%	0 - 1%	20 bar abs.	1500
H <sub>2</sub> O (ppm)	0.08mg/m <sub>3</sub> (0.1ppm)	0 - 10ppm	2 bar abs.	400
H <sub>2</sub> O (%)	40mg/m <sub>3</sub> (50ppm)	0 - 5000ppm	2 bar abs.	1500
CO (%)	38mg/m <sub>3</sub> (30ppm)	0 - 3000ppm	2 bar abs.	1500
CO <sub>2</sub> (%)	59mg/m <sub>3</sub> (30ppm)	0 - 3000ppm	2 bar abs.	1200
CO (ppm)	0.4mg/m <sub>3</sub> (0.3ppm)	0 - 30ppm	2 bar abs.	1500
CO <sub>2</sub> (ppm)	0.4mg/m <sub>3</sub> (0.2ppm)	0 - 20ppm	2 bar abs.	300
HCN	0.36mg/m <sub>3</sub> (0.3ppm)	0 - 30ppm	2 bar abs.	300
CH <sub>4</sub>	0.14mg/m <sub>3</sub> (0.2ppm)	0 - 20ppm	3 bar abs.	300
C <sub>2</sub> H <sub>2</sub>	0.12mg/m <sub>3</sub> (0.1ppm)	0 - 10ppm	2 bar abs.	200
C <sub>3</sub> H <sub>6</sub>	0.01%	0 - 1%	3 bar abs.	200
CH <sub>3</sub> I	9mg/m <sub>3</sub> (3ppm)	0-300ppm	2 bar abs.	200
NH <sub>3</sub> + H <sub>2</sub> O	0.15mg/m <sub>3</sub> (0.2ppm NH <sub>3</sub> ) / 0.05% H <sub>2</sub> O	0 - 20ppm / 0 - 5%	1.5 bar abs.	500
HCl + H <sub>2</sub> O	0.16mg/m <sub>3</sub> (0.1ppm HCl) / 0.1% H <sub>2</sub> O	0 - 10ppm / 0 - 5%	1.5 bar abs.	400
HF + H <sub>2</sub> O	0.018mg/m <sub>3</sub> (0.02ppm HF) / 0.01% H <sub>2</sub> O	0- 2ppm / 0 - 1%	1.5 bar abs.	400
CO + CO <sub>2</sub>	0.01% (both)	0 - 1% /0-1%	1.5 bar abs.	300
O <sub>2</sub> + Temp	0.05%/10°C	0-5%	1.5 bar abs.	1500

\* Detection limit is application dependent. Please consult Servomex

OPTIONS	DESCRIPTION	SPECIFICATION
Analog output	1 x configurable isolated 4-20mA/measurement as standard	Current loop 500Ω max. Optional second current loop for transmission reading
Alarms and relays	3 x relay options: high gas, warning relay, fault relay	Normally closed contact, 1A at 30V DC/AC.
Digital outputs	Various flexible options	Optional 10 or 10/100 Base, T Ethernet and Modbus (read only)
Power supply	Mains / 24V DC	Voltage: 100-240V AC / 50/60 Hz, 50VA max. 20-30V DC, 25W max.

# PRODUCT DATA: LaserSP 2930

## DEVICE SPECIFICATION

### Size:

- Transmitter: 263mm (10.3") Width x 284mm (10.2") High x 198mm (6.5") Deep  
Receiver: 127mm (5") Width x 255mm (10") High x 90mm (3.5") Deep

### Weight:

- Transmitter: 13.15kg (29.8lbs)  
Receiver: 4.9kg (10.8lbs)

### Operating temperature:

- -20°C to + 55°C (Std)  
-20°C to + 65°C (High temp)

### Certifications:

- ATEX Cat 3 (Gases) and Cat 2 (Dusts)  
Certificate Baseefa10ATEX0100X
- IECEx Zone 2 and Zone 21  
Certificate IECEx BAS 10.0038X
- CSA Divisions and Zones  
(Gas and Dust)  
Certificate CSA II.2393527X

## DEVICE SCHEMATIC

PBLaserSPRev.1 Date: 03/15

*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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