

# SERVOTOUGH LaserCompact 2940

HIGH SPECIFICATION ANALYSIS OPTIMIZED FOR IN-SITU, SHORT DISTANCE MEASUREMENT  
IN HAZARDOUS AREA LOCATIONS



## SERVOTOUGH LaserCompact 2940

The LaserCompact is an adaptable analyzer optimized for measuring gases in-situ across short pathlengths. Capable of monitoring a wide range of gases including O<sub>2</sub>, HCl, HF, NH<sub>3</sub>, CO, CO<sub>2</sub>, H<sub>2</sub>O and H<sub>2</sub>S. This analyzer uses leading-edge Tunable Diode Laser (TDL) sensing technology, providing a fast speed of response, zero drift potential and minimized background gas interference. This makes it for diverse applications including chemical production, contaminant and moisture monitoring in petrochemical processing, non-contact analysis of corrosive, dusty, tarry or sooty gases across pipes and engine test stands.

Optimized for use in hot dirty or dangerous environments, the LaserCompact features a robust design and easy installation on measurement cells or DN50/ANSI flanges, 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 2/Division 2 hazard rated (gas/dust) locations
- Adapts to meet your specific needs with 12 common gas measurements
- Performs in high temperature/high particulate environments

### EASY TO USE

- Intuitive, engineer-friendly interaction and use
- Option of in-situ measurements without gas sampling
- Fast response time (typically 2 sec for in-situ applications)
- Simplified ongoing device care through non-depleting TDL technologies

### LOW COST OF OWNERSHIP

- Stable calibration with no zero drift minimizes maintenance costs
- Remote device interaction via optional Ethernet
- High grade laser reduces purge gas requirements
- Intelligent design extends periods between maintenance requirements
- Ultra-stability negates unplanned downtime
- SIL 1 certified

### UNRIVALLED PERFORMANCE

- Uses industry-leading TDL technologies and advanced algorithms for sensitive monitoring
- Manufactured by Servomex - over 60 years' experience innovating and pioneering gas analysis and thousands of units used in the field every year
- 0-2m path lengths

### BENCHMARK COMPLIANCE

- ATEX, IECEx and North American hazardous area approvals
- IECEx Zone 2 and Zone 21
- ATEX Cat 3 (Gases) and Cat 2 (Dusts)
- CSA Divisions and Zones (Gas and Dust)

Learn more about the SERVOTOUGH LaserCompact 2940  
VISIT [SERVOMEX.COM](http://SERVOMEX.COM)



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# PRODUCT OVERVIEW: LaserCompact 2940

## UNBEATABLE PERFORMANCE FOR IN-SITU MEASUREMENTS

When you need a short path measurement solution, you'll want a high powered, robust analyzer that can deliver the highest performance with complete reliability. A fast speed of response, immunity to cross-sensitive background gases and accurate measurements are also a must, but no matter what your application needs, a flexible, ultra-accurate gas analysis solution at the most affordable cost of ownership is essential.

## A NO COMPROMISE SOLUTION

The LaserCompact can address these needs with ease, thanks to its high performance TDL sensing technology, delivering a fast speed of response, zero drift potential and virtual immunity to cross-sensitive background gases. A robust, safety-enhanced design ensures that the LaserCompact can handle hot, dirty or dangerous environments that can pose problems for some extractive analyzers, measuring a wide range of gases including NH<sub>3</sub>, HCl, HF, H<sub>2</sub>S, O<sub>2</sub>, H<sub>2</sub>O (ppm), H<sub>2</sub>O (%), CO (%), CO<sub>2</sub> (%), CO (ppm), CO<sub>2</sub> (ppm), CH<sub>4</sub> and other hydrocarbons.

## UNBEATABLE VALUE OVER PRODUCT LIFE

The LaserCompact delivers a highly attractive cost-saving over product life. Installation on measurement cells or DN50/ANSI flanges is easy and the use of patented leading-edge TDL sensing technology allows this device to measure through very thin nozzles, reducing or even eliminating consumption of purge gas. Minimal ongoing maintenance requirements help to reduce costs further, making the LaserCompact an ideal monitoring solution provides considerable operational efficiencies.

## ALTERNATIVE PRODUCTS

The SERVOTOUGH product range features alternative TDL laser products, optimized for specific application needs.

### LaserSP 2930



If you require a flexible TDL solution for diverse process and emissions monitoring over longer paths, we recommend the LaserSP. With the ability to monitor more than twenty gases or gas blends, the LaserSP is ideal for diverse emissions and process monitoring in hazard rated locations.

### LaserExact 2950



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

### SpectraExact 2500



When you need a high performance photometric analytical solution for the most demanding, hazardous area applications, choose the SpectraExact.

## KEY APPLICATIONS

- Chemical reactor – inert gas control
- Moisture in solvents – Cl<sub>2</sub>, HCl
- Moisture in VCM
- Natural gas contaminants – H<sub>2</sub>O, CO<sub>2</sub>, H<sub>2</sub>S
- Petrochemical industry - moisture in H<sub>2</sub> recycle gas
- Contaminants in high purity bulk gases
- Metallurgical industry – non-contact analysis of corrosive, dusty, tarry or sooty gases



Zirconia



Gas Filter Correlation



Calorimetry



Thermal Conductivity



Paramagnetic



Infra-Red



Tunable Diode Laser



Flame Ionisation Detector

# PRODUCT DATA: LaserCompact 2940

GAS MEASURED	DETECTION LIMIT	MIN. MEASURING RANGE	MAX. SAMPLE PRESSURE	MAX. SAMPLE TEMPERATURE/°C
NH <sub>3</sub>	0.15ppm (0.11mg/m <sup>3</sup> )	0 - 15ppm	2 bar abs.	600
HCl	0.05ppm (0.08mg/m <sup>3</sup> )	0 - 5ppm	2 bar abs.	600
HF	0.015ppm (0.013mg/m <sup>3</sup> )	0 - 1.5ppm	2 bar abs.	400
H <sub>2</sub> S	3ppm (4.5mg/m <sup>3</sup> )	0 - 300ppm	2 bar abs.	300
O <sub>2</sub>	100ppm	0 - 1%	20 bar abs.	600
H <sub>2</sub> O (ppm)	0.1ppm (0.08mg/m <sup>3</sup> )	0 - 10ppm	2 bar abs.	400
H <sub>2</sub> O (%)	50ppm (40mg/m <sup>3</sup> )	0 - 5000ppm	2 bar abs.	600
CO (%)	30ppm (38mg/m <sup>3</sup> )	0 - 3000ppm	2 bar abs.	600
CO <sub>2</sub> (%)	30ppm (59mg/m <sup>3</sup> )	0 - 3000ppm	2 bar abs.	600
CO (ppm)	0.3ppm (0.4mg/m <sup>3</sup> )	0 - 30ppm	2 bar abs.	600
CO <sub>2</sub> (ppm)	0.2ppm (0.4mg/m <sup>3</sup> )	0 - 20ppm	2 bar abs.	300
CH <sub>4</sub>	0.2ppm (0.14mg/m <sup>3</sup> )	0 - 20ppm	3 bar abs.	300

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, Ethernet and Modbus (read only)
Power supply	Mains 24V DC	Voltage: 100-240V AC / 50/60 Hz, 50VA. 24V DC, 900mA – 1,000mA

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

# PRODUCT DATA: LaserCompact 2940

## DEVICE SPECIFICATION

### Size:

- Transmitter: 263mm (10.3") Width x 284mm (10.2") High x 198mm (6.5")  
Receiver: 255mm (10.4") x 127mm (5.0") x 90mm (3.5")

### Weight:

- Transmitter Unit: 12kg (26.5lbs)  
Receiver Unit: 4.4kg (9.7lbs)

### 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 11.2393527X

## DEVICE SCHEMATIC

PBLaserCompact Rev.0 Date: 08/14

*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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