

# Gas Sampling Applications

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## Gas Sampling Applications:

Lighthouse offers an opportunity to sample the contamination level in compressed gases. In the electronics industry as well as Pharma industry contamination control of compressed gas has been getting more important over the last few years. Besides that also in for example the food and beverage industry and many other industries sampling in compressed gas is often performed.

The ISO 8573-1 standard is the guideline for the measurement of particles as well as microbiological contamination in your compressed gases. There are two ways to measure the particles in a compressed gas:



### 1. **High Pressure Diffuser and Solair 3100** (0.3 - 10 $\mu\text{m}$ ) (Industry: Pharma, medical, food and beverages, etc.)

When measuring the particles of  $\geq 0.3 \mu\text{m}$  the High Pressure Diffuser in combination with the Solair 3100/5100 is the most effective set-up. You can connect this High Pressure Diffuser to compressed gas line from 2-10 bar. This is the way to sample high purity gaslines from 0.3  $\mu\text{m}$ .

**2. High Pressure Controller and Solair 1100LD (0.1  $\mu\text{m}$  - 5.0  $\mu\text{m}$ )  
(Industry: Electronics)**



In the electronics industry there is a requirement to sample smaller particle sizes down to 0.1  $\mu\text{m}$  in compressed gases. The most advanced set-up on the market right now is our High Pressure Controller in combination with Solair 1100 LD (0.1 - 5.0  $\mu\text{m}$ ) particle counter. You can connect the High Pressure Controller to gaslines with a pressure between 2-10 bar. This high purity gas sampling set-up makes it possible to sample 0.1  $\mu\text{m}$  particles at ISO-1 (8573-1).

A lot of customers in the electronics industry do have their own particle control limit which is set at 10 particles 0.1  $\mu\text{m}$  p/m<sup>3</sup> (ISO 8573 Class 0). The only way to sample these low particle levels is with this set-up, due to the extreme low zero count level of this whole test set-up.

**ISO8573\_1 Table:**

Class	Particles/m <sup>3</sup> / Mass Concentration			Water	Total Oil
	0.1<d≤0.5 (µm)	0.5<d≤1.0 (µm)	1.0<d≤5.0 (µm)	°C <del>ppm</del> / mg/m <sup>3</sup>	mg/m <sup>3</sup>
0	As specified by the equipment user or supplier and more stringent than class 1				
1	≤20,000	≤400	≤10	≤ -70	≤ 0.01
2	≤400,000	≤6,000	≤100	≤ -40	≤ 0.1
3	-	≤9,0000	≤1,000	≤ -20	≤ 1.0
4	-	-	≤10,000	≤ +3	≤ 5.0
5	-	-	≤100,000	≤ +7	> 5.0
6	0 - ≤5mg/m <sup>3</sup>			≤ +10	-
7	5 - ≤10mg/m <sup>3</sup>			≤0.5g/m <sup>3</sup>	-
8	-			0.5 ≤5g/m <sup>3</sup>	-
9	-			5 ≤10g/m <sup>3</sup>	-
X	>10mg/m <sup>3</sup>			>10g/m <sup>3</sup>	-

## Measuring micorbiological contamination in compressed gasses.

An easy way to sample the microbiological contamination in compressed gas is to use Lighthouse ActiveCount100 in conjunction with our gas sampler adapter. You can connect this device to gas lines with 2-10 bar pressure.

With the Gas sampling option implemented in the user interface of the ActiveCount100 it is indeed a plug and play set-up.

### ActiveCount100 with Gas Sampler Adapter:

