

OVER **7 000 000** HUMAN  
DEATHS ARE ANNUALLY  
CAUSED BY AIR POLLUTION



PROPER ECOLOGICAL  
REGULATORY ACTIONS  
ARE IMPOSSIBLE WITHOUT  
RELIABLE AND ROBUST DATA  
ON THE POLLUTION FORM

**SOMOV Design Bureau** is a resident of the Skolkovo innovation center. Our company has got solid experience in creating high-tech products.

We develop and manufacture IIoT devices, including equipment for process flow control, security system elements and multi-sensor detectors for various parameters.

The air pollution problem is one of the global issue of modern age. We've started investigating this problem several years ago.

We firmly believe that reliable and robust data on the environment conditions is the starting point to regulate the anthropogenic adverse impact.

Therefore, nowadays we are prioritising this issue being confident our efforts can help reducing the frightening statistics of human deaths caused by diseases associated with air pollution.

By creating robust, efficient and easy-to-maintenace equipment we open up new opportunities for environmental programs aimed to improve the ecological situation and the quality of life.

# **Portable air quality monitoring system measuring the air compounds and criteria pollutant**

Designed to measure concentration of gases,  
particulate and meteorological parameters

CO	CO2	NO	NO2	O3	H2CO
HCL	H2S	SO2	NH3	CL2	CH4
VOC					

GRAVITON manifests a new approach to  
environmental monitoring. It stands out  
for such distinctive features as compact  
monoblock design, high measurement  
accuracy and low maintenance.



## — Monitoring system components

The monitoring system is composed of an automatic stations network and a cloud service enabling to store, analyze and display the received data.

The stations measure meteorological parameters and criteria pollutant concentration in the air 2 times per minute and transmit the received data to the cloud service



The station metal casing encloses a measuring module, a power supply, a microcontroller and a GSM / NBIoT modem. It supports connection up to 30 additional external measuring elements. The data exchange and accessory power supply is carried out via the 4-wire address line with a length of up to 1,000 m

Precise gases measurement

Precise measurement of the gases content cannot be carried out without temperature regulation during the air sampling

The measurement chamber module keeps precisely up all the necessary conditions

Parameters	Range	Tolerance
Temperature	30°C	± 0.1°C
Flow Rate	0,5 l / min	± 0,01 l / min

The air sampling is carried out in a special measurement chamber with the steady temperature and flow rate

Easy maintenance

The environmental monitoring systems maintenance is the main complicated issue in course of utilisation. Without expensive equipment and high-qualified personnel the work cannot be done properly.

The removable measurement chamber module solves this problem and reduces the costs.

Scheduled maintenance	Recurrence	Duration
Filter change	3 months	15 minutes
Adjustment	6 months	
Calibration	12 months	

The cartridge installation and dismounting can be carried out without costly specialists. It is sent to our service center for maintenance and calibration. After the scheduled maintenance, the cartridge is easy to be installed



Cost

External modules

Sample preparation

Calibration in situ  
/ remotely



**GRAVITON**

17 000 USD

-



aeroqual 

46 000 USD

-



 **airpointer**

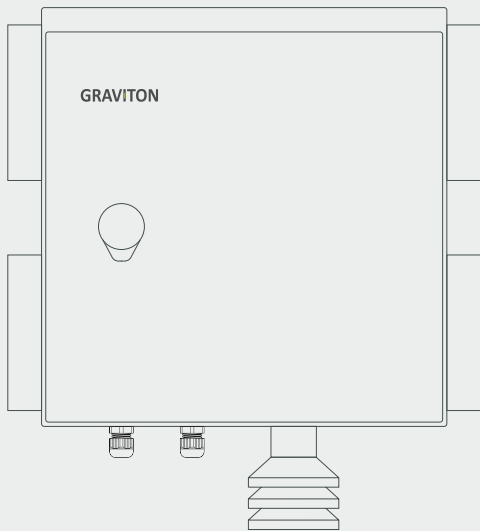
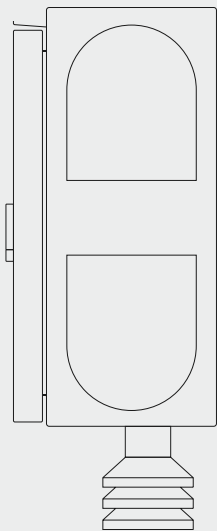
60 000 USD

-



— Technical Specifications

Thermal conditions	-40 + 55 °C
Power requirement	180 - 250 V / DC 14 V , 450 W
Overall dimension / Weight	390 x 350 x 155 мм / 18,5 kg.
PM 2.5; Pm10 Channel	0-100 mkg/m3 ( ± 10%)
Thermal Channel	-50 + 70 °C ( ± 2%)
Relative Humidity Channel	1-100 % ( ± 3%)
Luminosity Channel	0- 10 000 lux (± 5% )
Microacceleration Channel	1-16 m/c2 ( ± 10% )
Gases Channel (see chart) measurement accuracy	( ± 10%)
Communication interfaces	RS-485, Wi-Fi, 3G, Ethernet
Communication protocols	RS232, MQTT, Modbus



<b>CO</b> (Carbon Monoxide)	100 - 40 000 ppb
<b>Co2</b> (Carbon Dioxide)	400 - 5 000 ppm
<b>NO</b> (Nitrogen Oxide)	10 - 7 000 ppb
<b>No2</b> (Nitrogen Dioxide)	10 - 5 000 ppb
<b>O3</b> (Ozon)	10 - 40 000 ppb
<b>H2CO</b> (formaldehyde)	10 - 5 000 ppb
<b>HCL</b> (Hydrogen Chloride)	10 - 40 000 ppb
<b>H2S</b> (Hydrogen Sulfide)	10 - 40 000 ppb
<b>So2</b> (Sulfur Dioxide)	10 - 40 000 ppb
<b>Nh3</b> (Ammonia)	10 - 30 000 ppb
<b>Cl2</b> (Chlorine)	10 - 40 000 ppb
<b>Ch4</b> (Methane)	10 - 40 000 ppb
<b>VOC</b> (Volatile Organic)	100 - 50 000 ppb

Equipment Purchase

When purchasing equipment, it is necessary to take into account the ownership cost consisting of periodic maintenance, calibration and scheduled sensors replacement (at the end of the service life)

Nonrecurring Costs	Annual Costs
Станция 17 000 USD	Maintenance 700 USD
	Calibration 1 000 USD
	Materials 600 USD
	cloud service 450 USD

The prices are given for the basic configuration, comprising sensors for temperature, humidity, pressure, light, vibration, particulate matter, VOC, 1 spectroscopic and 4 electrochemical sensors

Equipment Rent

When renting equipment, the maintenance expenses and cloud service are included in the rental cost. Transportation and travel expenses are paid additionally

Rental Period	Cost
3 months	2 600 USD
6 months	4 600 USD
12 months	7 800 USD



# GRAVITON

Solutions for air quality  
and parameters monitoring

Supported by the Foundation for Assistance  
to Small Innovative Enterprises (FASIE)  
and the Megafon PJSC



SOMOW Design Bureau LLC  
+7 (343) 219-47-47  
m@somow.ru somow.ru



**Sk**  
Участник

**Sk**  
Resident