



WE CURE AIR

POTOK TECHNOLOGY: WHAT IS IT?

Potok air decontamination technology is a patented method for destroying all microorganisms including bacteria, viruses, mold, and fungi in indoor air

The Smorodintsev Research Institute of Influenza (a Russian Ministry of Health federal institution) confirmed POTOK's effectiveness in the fight against SARS-CoV-2

POTOK equipment is used in:

- Food industry
- Healthcare
- Elderly care facilities
- Offices and commercial spaces
- Household
- Kindergatens and schools
- Sports centers
- Space industry
- Public transport

Automatic control over inactivation effectiveness ensure high reliability and safety of the device in all environmental conditions.











Why choose **POTOK** equipment?

NON-SELECTIVITY

kills 99.99% of all types of bacteria, mold, fungi, and viruses (including coronaviruses) detected in indoor air

02 RELIABILITY automatic inactivation control

O3 SAFETY 24/7 operation in presence of people

10 W per 1000 m³ of handled air

05 ENVIRONMENTAL FRIENDLINESS no chemicals are used for inactivation

06 ECONOMICAL BENEFIT no filters to change

OPERATIONAL IN ALL CONDITIONS
air temperature and moisture do not affect
the efficiency of the equipment

PURCHASE UP TO 24 MONTHLY INSTALLMENTS legal entities can lease the device, which is classified as an expense

99,99%

POTOK kills all types of microorganisms and viruses, including antibiotic- and chemical-resistant strains



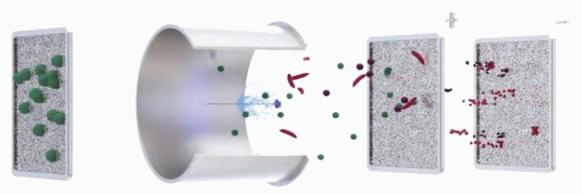






What sets **POTOK** equipment apart from other air purifiers?

POTOK technology is based on the physical destruction* of as much as 99.99% of microorganisms and viruses in indoor air without the use of hazardous chemicals. In the second phase, highly efficient electrostatic filtration of microbial residues ensures microbiological purity and safety of disinfected air.



^{*}The air is decontaminated by putting microbial cells and secondary and tertiary structures of viral proteins underexposed by constant critical electric fields

POTOK Inter research and production company

POTOK Inter Research and Production Company was founded in 1994 by E. V. Volodina and A. V. Nagolkin, Russian scientists who had invented the Potok air decontamination technology, are authors of academic papers and practical guidelines, and holders of many patents.



EFFICACY

Bioinactivation efficiency: minimum 99 %



FILTRATION

The efficiency of air filtering is the same as provided by high-performance filters (E11-H14).



PURPOSE

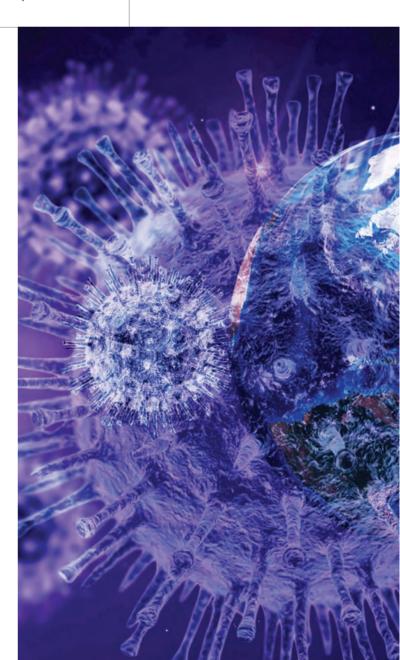
For rooms where microbiological purity of air must be maintained

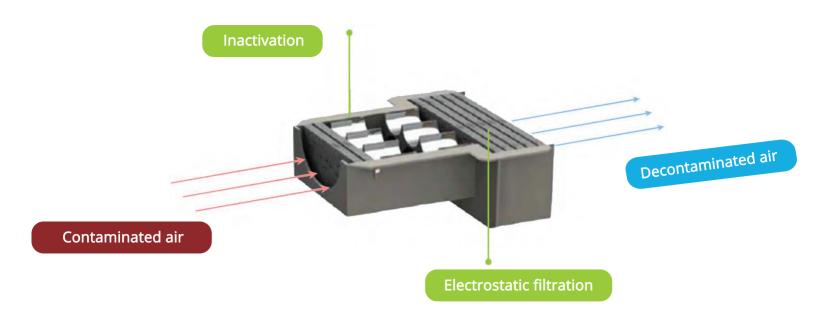
Theoretical research dedicated to the microbiological condition of the atmosphere suitable for safe long-term occupancy of manned spacecraft was implemented in the MIR space station. The equipment based on Potoktechnology was delivered to the space station to fight mold and other dangerous microorganisms. Today similar equipment is used in the International Space Station by Russian cosmonauts and NASA astronauts.

For more than 25 years the company has been engaging in research, developing, and producing equipment for healthcare facilities.

Potok air decontamination and fine filtering equipment are installed in operating rooms, intensive care units, emergency treatment rooms, delivery rooms, burn units, and other hospital rooms where air purity is essential.

The experience and wide array of equipment offered by the company permits finding the solution to any problem: from organizing "clean zones" with a unidirectional airflow to reducing local bacterial content of the air in the rooms of specific classes using standalone units.





The airflow passes through constant electric fields created by crosswise air-permeable electrodes consisting of high porosity conductive plates made of foamed metal. The electrodes are connected with a high-voltage power supply source to have alternating polarity. In twin-section charging chambers, the surface and intracellular and molecular structures are recharged many times, which inactivates (destroys) bacteria and viruses, and retains the destroyed biomass in the electrostatic precipitator. Porous dielectric plates placed between the electrodes are designed to precipitate the destroyed biomass, aerosols, and prevent ruptures that can be caused by humid and dust-laden airflow.

Physical processes influencing microbial destroying:

1) electroporation in high voltage electric field the irreversible process of making ruptures in the cell membrane through which the cytoplasm flows out, without the possibility of recovery







2) destroying by electrostatic forces positively charged parts of the membrane, proteins and nucleic acids (RNA, DNA) move towards the negative electrode and negatively charged parts towards the positive electrode. This leads to the breaking of intermolecular bonds in molecules

POTOK is a green technology that fully complies with the principles of sustainable development.

The technology was developed with the idea of being safe for human health and the environment (not to use or emit harmful substances). During its operation, POTOK equipment does not require the use of chemicals for inactivation or a special procedure for disposal.

POTOK equipment provide microbiological purity of air in rooms where it must be maintained

POTOK technology has proven itself in all areas where microbiological air safety is of crucial importance:

- has been providing astronauts with clean air since 1995
- successfully fights against nosocomial infections and antibiotic-resistant strains
- in the food industry increases the shelf life and quality of products and decreases product losses



For effective control of pathogens in healthcare centers, indoor air must be decontaminated by the inactivation of microorganisms POTOK units can be used for decontamination of air in any medical rooms, including cleanroom classes I, II, and III (Selected Microbiological Cleanliness Requirements for Hospital Rooms) (operating rooms, pre-surgical rooms, anesthetic rooms, central sterile supply department, wards, etc).

POTOK devices prevent the development of infections in hospitals and other health care facilities, including the development of MRSA (Methicillin-Resistant *Staphylococcus Aureus*) infections



POTOK Laminar air flow ceilings

Air decontamination units with an air distribution device (laminar flow ceilings) are designed to supply a unidirectional flow to the working zone with a velocity of 0.24 to 0.3 m/s (47.25–59.06 ft/min).

They are used to create a unidirectional airflow with the velocity of 0.24 to 0.3 m/s (47.25 to 59.06 ft/min) and provide H14 filtering;

Not only do they achieve high-performance filtering but kill a minimum of 99 % of microorganisms.

- ► Filtering efficiency: H14
- ▶ Bioinactivation efficiency: minimum 99 %

For highly aseptic operating rooms

The cross-section area of vertical unidirectional airflow shall not be less than 9 m² (13,950 in²)

POTOK LAD8640

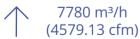
unit in a one-piece outer enclosure with an air distribution device



POTOK LAD4680

unit in a one-piece outer enclosure with an air distribution device





with a given airflow velocity of 0.24 m/s (47.25 ft/min) 8640 m³/h (5085.31 cfm)

with a given airflow velocity of 0.27 m/s (53.15 ft/min)

Dimensions	3200 x 3200 x 320 mm (125.98" x 125.98" x 12.60")
Weight	880 kg (1940.07 lb)
Electric power requirement	120 W



with a given airflow velocity of 0.24 m/s (47.25 ft/min)

1	4680 m ³ /h
	(2754.54 cfm)

with a given airflow velocity of 0.25 m/s (49.21 ft/min)

Dimensions	3200 x 1900 x 320 mm (125.98" x 74.80" x 12.60")
Weight	475 kg (1047.2 lb)
Electric power requirement	80 W

For minor surgery rooms and emergency treatment rooms

POTOK LAD4320

unit in a one-piece outer enclosure with an air distribution device



4030 m³/h (2371.97 cfm)

with a given airflow velocity of 0.24 m/s (47.25 ft/min)

4320 m³ (2542.66 cfm)

with a given airflow velocity of 0.26 m/s (51.18 ft/min)

Dimensions	2600 x 1900 x 320 mm (102.36" x 74.80" x 12.60")
Weight	440 kg (970.03 lb)
Electric power requirement	60 W

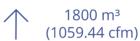
POTOK LAD1800

unit in a one-piece outer enclosure with an air distribution device



1730 m³/h (1018.24 cfm)

with a given airflow velocity of 0.24 m/s (47.25 ft/min)



with a given airflow velocity of 0.25 m/s (49.21 ft/min)

Dimensions	2495 x 1265 x 320 mm (98.23" x 49.80" x 12.60")
Weight	210 kg (469.97 lb)
Electric power requirement	20 W

For recovery rooms, emergency treatment rooms, intensive care rooms, and other rooms for immunocompromised patients

POTOK LAD2160

unit in a one-piece outer enclosure with an air distribution device



2020 m³/h (1188.93 cfm)

with a given airflow velocity of 0.24 m/s (47.25 ft/min) 2160 m³ (1271.33 cfm)

with a given airflow velocity of 0.26 m/s (51.18 ft/min)

Dimensions	1900 x 1300 x 320 mm (74.80" x 51.18" x 12.60")
Weight	220 kg (485.02 lb)
Electric power requirement	30 W

POTOK laminar air flow units

For any rooms requiring the greatest possible cross-sectional area of unidirectional decontaminated airflow.

Designed to supply controlled airflow through the entire cross-section of a clean zone with a steady velocity and approximately parallel streamlines.

- ► Filtering efficiency: H14
- ▶ Bioinactivation efficiency: minimum 99%
- ► The velocity of unidirectional airflow at the specified airflow rate: 0.24 to 0.3 m/s (47.25 to 59.06 ft/min)

POTOK LAD180

unit in a one-piece outer enclosure with an air distribution device





180 m³/h (150.94 cfm)

with a given airflow velocity of 0.25 m/s (49.21 ft/min)

Dimensions	615 x 602 x 320 mm (24.21" x 23.70" x 12.60")
Weight	31 kg (68.34 lb)
Electric power requirement	10 W

POTOK LAD360

unit in a one-piece outer enclosure with an air distribution device





360 m³/h (211.89 cfm)

with a given airflow velocity of 0.25 m/s (49.21 ft/min)

Dimensions	909 x 660 x 320 mm (35.79" x 25.98" x 12.60")
Weight	40 kg (88.2 lb)
Electric power requirement	10 W

POTOK LAD540

unit in a one-piece outer enclosure with an air distribution device



POTOK LAD720

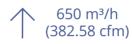
unit in a one-piece outer enclosure with an air distribution device





with a given airflow velocity of 0.25 m/s (49.21 ft/min)

Dimensions	1245 x 660 x 320 mm (49.02" x 25.98" x 12.60")
Weight	50 kg (110.23 lb)
Electric power requirement	10 W



with a given airflow velocity of 0.3 m/s (59.06 ft/min) 720 m³/h (423.78 cfm)

at maximum airflow rate

Dimensions	1245 x 660 x 320 mm (49.02" x 25.98" x 12.60")
Weight	54 kg (119.05 lb)
Electric power requirement	10 W

POTOK air distribution units

For any rooms where microbial purity of inlet air is required.

Designed to supply air

► Filtering efficiency: H14

▶ Bioinactivation efficiency: minimum 99%

POTOK LAD180L

unit in a one-piece outer enclosure with an air distribution device





180 m3/h (105.94 cfm) max

Dimensions	615 x 602 x 320 mm (24.21" x 23.70" x 12.60")
Weight	41 kg (90.39 lb)
Electric power requirement	10 W

POTOK LAD360L

unit in a one-piece outer enclosure with an air distribution device

Airflow rate





Dimensions	909 x 660 x 320 mm (35.79" x 25.98" x 12.60")
Weight	50 kg (110.23 lb)
Electric power requirement	10 W

POTOK LAD720L

unit in a one-piece outer enclosure with an air distribution device

Airflow rate





POTOK Induct mount units

Induct mount units are integrated into the ventilation system for decontamination and High Efficiency filtration of air.

Designed for decontamination and filtration of inlet air in rooms of class I and II; Used for decontamination and filtration of air extracted from the rooms of infectious diseases wards and TB wards

Induct mount units are built into the cut made in the air induct as close as practicable to the classified room (above the dropped ceiling, in utility rooms, etc.), and share the following common features:

Filtering efficiency: E11-H14

▶ Bioinactivation efficiency: minimum 99%

POTOK LAD540L

unit in a one-piece outer enclosure with an air distribution device

Airflow rate





Dimensions	1245 x 660 x 320 mm (49.02" x 25.98" x 12.60")
Weight	60 kg (132.28 lb)
Electric power requirement	10 W

Dimenzije	1245 x 660 x 320 mm (49,02" x 25,98" x 12,60")
Težina	65 kg (143.3 lb)
Electric power requirement	10 W

POTOK FED180

jedinica u jednodelnom spoljašnjem kućištu ili u kućištu od nerđajućeg čelika



Airflow rate



(

180 m³/h (105.94 cfm) max

Dimensions	570 x 429 x 279 mm (22.44" x 16.89" x 10.98")
Weight	15 kg (33.07 lb)
Electric power requirement	10 W

POTOK FED360

unit in a one-piece outer enclosure



Airflow rate

180 m³/h (105.94 cfm) min



360 m³/h (211.89 cfm) max

Dimensions	724 x 574 x 278 mm (28.50" x 22.60" x 10.95")
Weight	23 kg (50.71 lb)
Electric power requirement	10 W

POTOK FED720

unit in a one-piece outer enclosure

POTOK FED720S

unit in a one-piece stainless steel outer enclosure



POTOK FED540

unit in a one-piece outer enclosure

POTOK FED540S

unit in a one-piece stainless steel outer enclosure



Airflow rate

 $360 \text{ m}^3/\text{h}$ (211.89 cfm) min



540 m³/h (317.83 cfm)

max

Dimensions FED540: 1044 x 750 x 280 mm (41.10" x 29.53" x 11.02")

FED540S: 1065 x 750 x 285 mm

(41.93" x 29.53" x 11.22")

Weight 41 kg

(90.39 lb)

Electric 10 W

power

requirement

Airflow rate



540 m³/h (317.83 cfm) min



720 m³/h (423.78 cfm)

max

Dimensions FED720:

1347 x 798 x 280 mm (53.03" x 31.42" x 11.02")

FED720S: 1370 x 798 x 285 mm

(53.94" x 31.42" x 11.22")

Weight 53 kg (116.85 lb)

10 W

Electric power

requirement

POTOK FED900

unit in a one-piece outer enclosure



Airflow rate

720 m³/h (423.78 cfm) min



900 m³/h (529.72 cfm) max

Dimensions	1636 x 810 x 280 mm (64,41" x 31,89" x 11,02")
Weight	65 kg (143,3 lb)
Electric power requirement	10 W

POTOK FED1000

unit in a one-piece outer enclosure

POTOK FED1000S

unit in a one-piece stainless steel outer enclosure



Airflow rate



720 m³/h (423.78 cfm) min



1000 m³/h (588.58 cfm)

max

Dimensions FED1000: 1636 x 810 x 280 mm

(64.41" x 31.89" x 11.02")

FED1000S: 1665 x 810 x 285 mm

(65.55" x 31.89" x 11.22")

Weight 65 kg (143.3 lb)

10 W Electric

power

requirement

POTOK FED1800

unit in a one-piece outer enclosure



Airflow rate



900 m³/h (529.72 cfm) min



1800 m³/h (1059.44 cfm)

max

Dimensions	1830 x 1400 x 320 mm (72.05" x 55.12" x 12.60")
Weight	140 kg (308.65 lb)
Electric power requirement	20 W

POTOK FED2000S

unit in a one-piece stainless steel outer enclosure



Airflow rate





Dimensions	1220 x 650 x 600 mm (48.03" x 25.59" x 23.62")
Weight	100 kg (220.46 lb)
Electric power requirement	20 W

POTOK FED2800S

unit in a one-piece stainless steel outer enclosure



Airflow rate





max

Dimensions	1700 x 650 x 800 mm (66.93" x 25.59" x 31.50")
Weight	168 kg (220.46 lb)
Electric power requirement	30 W

POTOK FED3600

unit in a one-piece outer enclosure



Airflow rate

1800 m³/h (1059.44 cfm) min



3600 m³/h (2118.88 cfm)

max

Dimensions	1830 x 1400 x 610 mm (72.05" x 55.12" x 24.02")
Weight	280 kg (618.30 lb)
Electric power requirement	40 W

POTOK FED4000S

unit in a one-piece stainless steel outer enclosure



Airflow rate



2800 m³/h (1648.02 cfm) min \uparrow

4000 m³/h (2354.31 cfm)

max

Dimensions	2350 x 650 x 820 mm (92.52" x 25.59" x 32.28")
Weight	200 kg (220.46 lb)
Electric power requirement	40 W

POTOK FED6000S

unit in a one-piece stainless steel outer enclosure



Airflow rate



4000 m³/h (2354.31cfm)



6000 m³/h (3531.47cfm)

max

Dimensions	2350 x 965 x 820 mm (92.52" x 37.99" x 32.28")
Weight	250 kg (220.46 lb)
Electric power requirement	60 W



POTOK standalone units

The units are designed for decontamination and fine filtration of air in rooms of all cleanroom classes including especially clean rooms and infectious environments.

A standalone units does not need a connection to the existing ventilation and air conditioning systems and allows a local "clean" zone to be created in any room. The appliance can be used either as a standalone unit to create local sterile zones or in conjunction with other sanitary and hygienic measures taken when preparing the room for use.

- ▶ Bioinactivation efficiency: minimum 99%
- ▶ No accumulation of live microorganisms inside the unit
- Continuous safe operation in presence of personnel
- No consumables are required
- Low power requirement

POTOK SAP900

standalone unit



Airflow rate

Noise level

do 900 m³/h (529.72 cfm) max 50 dBa

Dimensions	715 x 525 x 1715 mm (28.15" x 20.67" x 67.52")
Weight	107 kg (235.90 lb)
Electric power requirement	250 W

POTOK SAP1000S

standalone unit



Airflow rate

Noise level



do 1000 m³/h (588.58 cfm)

max 50 dBa

Dimensions	860 x 630 x 1715 mm (33.86" x 24.80" x 67.52")
Weight	107 kg (235.90 lb)
Electric power requirement	250 W

POTOK SAP120

standalone unit



Airflow rate

Noise level



do 120 m³/h (70.63 cfm)

max 50 dBa

 Dimensions
 250 x 250 x 400 mm (9.84" x 9.84" x 15.75")

 Weight
 10 kg (22.05 lb)

 Electric power requirement
 10 W

POTOK SAP150

standalone unit



Airflow rate

Noise level

 \uparrow

do 150 m³/h (88.29 cfm) max 50 dBa

Dimensions 608 x 350 x 366 mm (23.94" x 13.78" x 14.41")

Weight 17 kg (37.48 lb)

Electric 10 W power requirement

POTOK SAP130

standalone unit



Airflow rate

Noise level



do 130 m³/h (76.52 cfm)

max 50 dBa

Dimensions	590 x 424 x 392 mm (23.23" x 16.69" x 15.43")
Weight	14 kg (30.87 lb)
Electric power requirement	10 W

POTOK SAP600

standalone unit



Airflow rate

Noise level



do 600 m³/h (353.15 cfm)

max 50 dBa

Dimensions	700 x 700 x 350 mm (27.56" x 27.56" x 13.78")
Weight	45 kg (99.21 lb)
Electric power requirement	100 W



CUSTOM DESIGN

The company's equipment described in the catalog is available in standard design version and intended for use in rooms that conform to all requirements and instructions given in statutory and regulating documents.

Depending on the requirements and service environment we can offer:

- different warranty and post-warranty i spare parts support;
- flexible maintenance plans with reimbursement of all or part of the costs;
- special terms of supply of repair kits not only for remedial repairs of parts and assemblies but also for full system upgrades

Standard design version

- Equipment is manufactured of high-quality low-carbon steel.
- Powdered polyester enamel, mat RAL9002 color, coat thickness: 120–150 µm
- Electric components provide the complete required functionality of equipment (neither expandability with additional sensors, nor connection to control panels with advanced control and monitoring functions, centralized control systems, and building supervisory control systems is possible).
- The design without specific requirements for corrosion resistance, fireproofing, and immunity to interference

For severe service conditions, and where additional requirements exist, the equipment can be built in different design versions and configurations, either to fit the operating ranges and characteristics listed below or based on a completely tailored solution.

► Enclosure material:

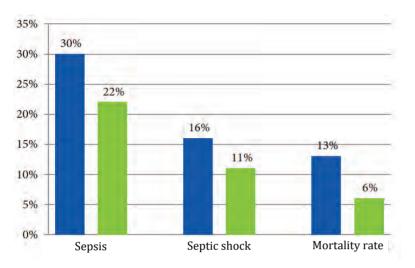
- high-quality low-carbon steel;
- high-alloy steel 08X18H10T, and other corrosionresistant heat-resistant and heat-treated alloys, 1.0–2.0 mm thick.
- Powdered polyester enamel, of any RAL color, coat thickness: 300–400 μm.
- ► High requirements for corrosion resistance, UL94 V0/V1 class fireproofing, and high resistance to other external effects.
- In ventilation inducts supplying air to equipment, additional coarse and fine filtering elements can be installed.
- ➤ The capacity of water supply systems can be increased by introducing additional air recirculation devices, including such with preliminary decontamination and coarse filtering.

- Equipment can be supplied complete with a customized or special package.
- ► Electronic components that can interface with:
 - control and monitoring sensors (pressure, temperature, humidity, and dust level);
 - external control and monitoring devices (including devices of other manufacturers);
 - smart building control systems;
 - smart remote facility monitoring and control systems.
- ► Electronic components in interferenceresistant and lowenergy design versions, and in design versions conforming to application-specific requirements (including the systems onboard spacecraft, and life support systems of high-security facilities).

Selected results

Burdenko Main Military Clinical Hospital

200 patients in intensive care units

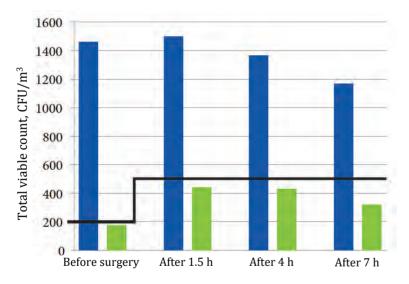


POTOK TECHNOLOGY:

- decreased the risk of sepsis development
 x1.4 times
- decreased the risk of septic shock development due to infectious complications and multiorgan failure x1,5 times
- decreased mortality rate x2,2 times
- Without POTOK equipment
- With POTOK equipment

Botkin Hospital i City Clinical Hospital No.1

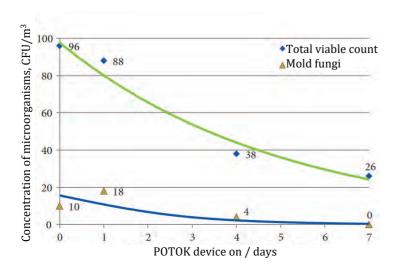
1300 surgeries (implantation of large joints endoprosthesis)



LEVEL OF POSTOPERATIVE SEPTIC COMPLICATIONS (WOUND INFECTION):

- before installing POTOK devices 3.5 4%
- using POTOK devices 0.15%
- world average 1%
- Without POTOK equipment
- With POTOK equipment
- critical rate of air contamination

Children's Cancer and Hematology Hospital Named After N.N.Blokhin



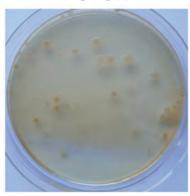
POTOK technology

- decreased total viable count (from 96 to 26 CFU/m³) x3.7 times
- decreased concentration of mold fungi (from 10 to 0 CFU/m³) up to 0

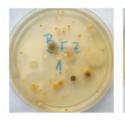
Vegetables without **POTOK**



Vegetables with **POTOK**



Opened Petri dishes without POTOK







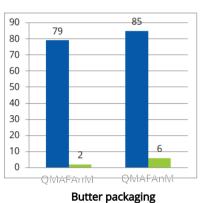
Opened Petri dishes with POTOK

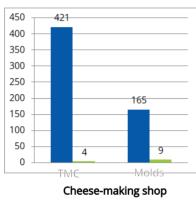




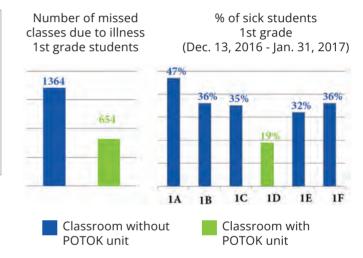


Effect of POTOK in dairy industry





Case study - elementary school in Russia



With POTOK unit

Without POTOK unit

All-Russian Scientific Research Institute of Poultry Processing Industry

madatiy						
	Microbiological data					
	QMAFAnM, CFU/m ³		Mold, CFU/m ³			
Air sampling site	Background	After one hour of	Background	After one hour of		
		unit operation		unit operation		
Smoked chicken	120	60	3400	1300		
packing table	120	00	5400	1300		
Sausage packing	180	<10	1200	820		
line	100	\10	1200	020		
Smoked chicken	140	80	1800	420		
labeling	140	00	1000	420		
Sausage labeling	40	20	1400	240		
Finished	120	60	900	360		
products	120	00	900	300		

POTOK technology cure air all over the world







POTOK is the only technology used for air decontamination in International Space Station







The equipment manufactured by Potok Inter is installed in more than 3,500 healthcare facilities, including surgery centers, perinatal clinics, infectious diseases wards, cancer centers, medical laboratories, etc.















Breathe healthy air with POTOK technology

General representative for Serbia, Bosnia and Herzegovina, Montenegro, North Macedonia

Centrorejting d.o.o Branka Radičevića 7g 11250 Železnik-Belgrade Republic of Serbia





