ARIONA®
Indoor Air Hygiene

AIRCAT

The ARIONA® AIRCAT is a portable stand-alone, ready to plug-in unit for air treatment, and purification, deodorization and disinfections. It is a practical solution for “sick building syndrome” and air treatment polluted with bacteria, germs, odours, dust and gases.

The ARIONA® AIRCAT is made from a top quality stainless steel, polished, designed as a tabletop, or self-standing unit suitable especially for small to medium sized rooms. An integral controller allows adjusting the purification intensity and an air volume. The air purifiers have easy to change dust filters and a service elapsed time counter.

The ARIONA® AIRCAT exploits a natural process of air purification by micro-oxidation. How does it work? Vitiated (stale or smelly) air in a room or extracted from it, passes through a dust filter into the unit. Neutral oxygen molecules in the air are electrically charged by the corona discharge effect generated by special ionisation tubes. The air is measurably enriched with positive and negative air-ions with a high energy potential. For treatment particularly strongly polluted air.

ARIONA AirCAT-S
Artikle no. 16.400

ARIONA AirCAT-2E
Artikle no. 16.402

ARIONA AirCAT-6E
Artikl no. 16.403

The preferred application areas:
offices, social areas, hotels, waiting rooms, changing rooms, hospitals wards, medical practices, old people and nursing homes, veterinary consulting-rooms and surgeries, sales areas, supermarkets, laboratories, smoking-rooms, private homes smells neutralization: wet walls, stoves and fires, cellar-smells, pet-smell and odour polluted rooms of all types.
The ARIONA® AIRCAT is also successfully used for smoke-smell removing after a fire.

Technische Daten	16.400	16.401	16.402
Max. room volume [m^3]	50-200	100-300	200-600
Max. air volume [m^3/h]	120	240	480
Power consumption [W]	60	70	95
Power supply [V], [Hz]	230 /50	230 /50	230 / 50
Ionisation tubes max.	2 Stk. Typ D	2 Stk. Typ E	6 Stk. Typ E
Dimension [mm]	L350, B350, H120	L420, B280, H150	L553, B345, H255
Weight [kg]	3.1	7.7	14.0

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Info file

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Ariona – fresh air every day

ARIONA®
Indoor Air Hygiene

Ionisation as a cleaning principle

Air and life quality

Air is life. Its quality determines our health and well-being. Clean air provides our organism with the necessary oxygen and animates body and spirit. We feel well, healthy and motivated. Unfortunately, clean air has become rare within our daily routine. Exhaust fumes of industries, heating and vehicles contaminate our cities and therefore also our organism. Allergies, chronic disease of the respiratory tract and indisposition are the consequence. More and more people are directly influenced thereby. We find recuperation and relaxation only in the nature. Not without good reasons we say: let's go out into the fresh air. The air lets us draw a deep breath. Because the fresh air in nature is being enriched with, so called, activated oxygen which cleans the air this air actively supports our health.

Ionisation within the nature

Responsible for these well-being effects is the ionisation. It is a very ancient, natural process which has enabled life on earth and will keep doing so. Ionisation is created by sun rays (UV-rays) or atmospheric discharges during thunder storms. Oxygen molecules are separated and again combined into oxygen ions and a small quantity of natural ozone. In that way created activated oxygen cleans and regenerates the used air and secures the high quality of the air.

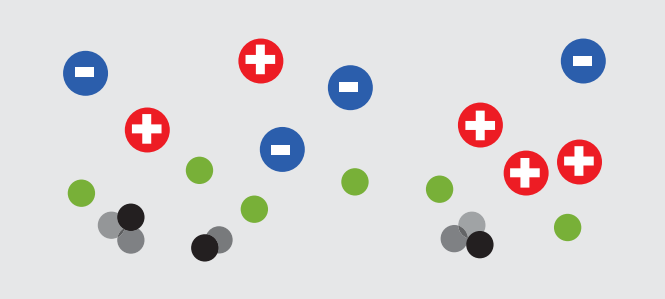
Ions and ozone

Within the nature exists a balance between ions and ozone. Ions are either charged positively or negatively, depending whether the oxygen atom is adding (-) or loosing (+) an electron. The proportion of positive and negative ions is being heavily influenced by the environment. Within nature the proportion is in balance. Depending on the location the quantity of ions can increase or decrease drastically. In the countryside there are more ions around than in town. The lowest concentration you will find in closed rooms. With the use of the ARIONA air cleaning system that shortage can be compensated and the indoor air will be enriched with ions, which affects positively the well-being.

Activated oxygen – a natural "cleaning service"

Activated oxygen regenerates not only the air but has some other very useful effects. It slows down the growth of undesired bacteria, virus and other germs which are distributed throughout the air. In addition, the activated oxygen can also eliminate volatile organic compounds (VOC) and therefore, bad smells linked to these compounds are reduced. The reduction is made by oxidation, which breaks off the organic gases (compounds of carbon and hydrogen combinations) and transforms them into carbon dioxides (CO_2) and water (H_2O). Also small particles are no problem for the activated oxygen. These particles agglomerate and are removed out of the air by sedimentation.

Oxygen activating



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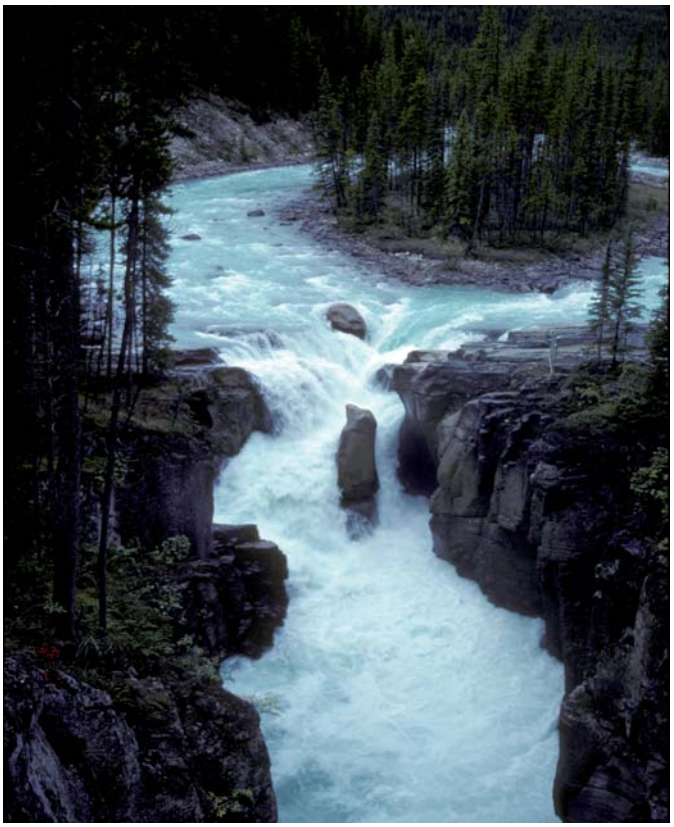
Air climate in closed rooms

Worthwhile when you think of it

A lot of people do care about the pollution of the outside air. But it is the indoor air quality which has to be improved urgently. According to analyses of leading environmental organisations the indoor air of living and working buildings is heavily strained with dust, allergens, bacteria and smells. Since we spend up to 90% of our time in indoor rooms, that strain is affecting our well-being negatively. The consequences are; headache, indisposition, allergies, chronic disease of the respiratory tract and reduction of the personal performance.

Responsible for this is the shortage of the activated oxygen in indoor rooms, since the air is being electrically discharged by the building material and the air distribution system. It creates “passive” oxygen, which does not have the ability of recuperation like the ionised air.



Natural freshness within your rooms

The ARIONA air cleaning system copies the natural process of ionisation and supplies it in your rooms. The indoor air gets enriched with activated oxygen and receives therefore the pleasant quality, which you will find outdoor within untouched nature. In a gentle and natural way your indoor air gets purified of small dust, removed of germs and bacteria and also you eliminate smells.

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The ARIONA-System in the supply air treatment

The principle of function

The ionisation system of ARIONA is using activated oxygen as impact component, which by oxidation makes harmless different osmoses, virus and micro organism and split up carbon-hydrogen compounds (VOC). In order to copy this natural process, within the ARIONA system high tension sources with ionisation tubes are used.

If these tubes are connected to high tension, a corona discharge occurs just like the rustle noise of a high tension power line. This discharge splits part of the oxygen molecules O2 into two oxygen atom O+O. It creates nascent oxygen, which is in an atomic condition and therefore very reactive. Within a few thousandths of a second the atomic oxygen reacts with all oxydable compounds in close proximity. Also because of this chemical reaction the cell structures of micro organisms such as bacteria, osmoses and virus will be damaged. All surplus O-atoms and electrons are combined again into positive and negative charged oxygen ions and oxygen radicals O3 (Ozone).

In combination with other technical processes, ionisation systems reach a high cleaning performance and also are economically very interesting. These systems can be very easily installed in already existing systems, are less expensive and not as room consuming as other procedures. A decisive advantage of the purification with ionisation occurs out of the possibility of target oriented indoor air treatment. In future the client will be specifying the level of indoor air quality. It will be the job of the air conditioning specialist to fulfil the demand.

Improving well-being by activated oxygen

Indoor climate, treated by ARIONA, is pleasant and supports health. The recuperating force of the activating oxygen increases the performance of body and spirit. The impact of disinfection reduces the spreading of germs which reduces absenteeism and increases the efficiency. Also allergy sufferers feel more pain free within ARIONA purified air, as the air is to a large extent cleaned from allergy creating particles.

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The four impacts of the supply air treatment

Positive Ions O_2^+
negative Ions O_2^-
Oxygen radicals O
Ozone O_3

Dissociation to atomic oxygen and ionisation of oxygen molecules (Oxygen activation). Small ions are created as follows:

Nascent oxygen (O Radicals)

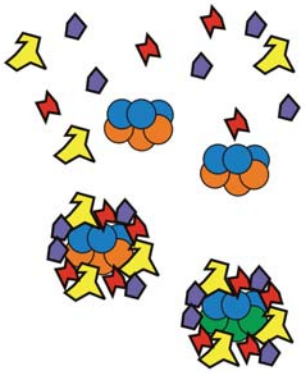
- positive Ions O_2^+
- negative Ions O_2^-
- Ozone O_3
- Ion clusters O_2^{+-}

Ion clusters O_2^{+-}

Formation of middle and grand ions

Particle sedimentation

Agglomeration of dust, bacteria, viruses and moulds. Formation of dust flakes, which sediment faster or get filtered easier.



Ion clusters O_2^{+-}

O Radicals

Smell neutralisation

Oxidation of osmoses (volatile organic compounds) by O Radicals and O_2^{+-} ions into non smelly oxidation products.

C-H-O products (VOC)

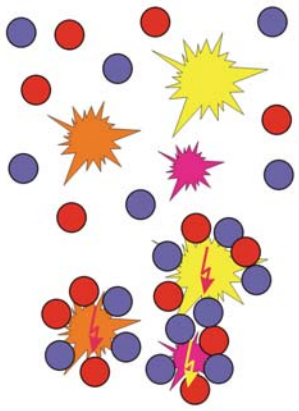
to $CO_2 + H_2O$

The process of the gas oxidation is irreversible.

O Radicals
Ozone O_3

Germ neutralisation

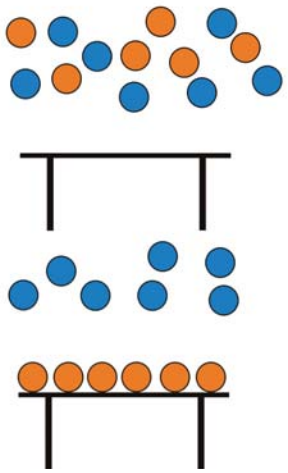
Damaging of cell structure of micro organisms by oxidation with radicals O and Ozone O_3.



positive Ions O_2^+
negative Ions O_2^-
Ion clusters O_2^{+-}

Declining of electro static charges

Creation of a natural bio climate, air conductivity and supplying of oxygen ions.



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Energy saving with ARIONA

By the application of the ARIONA air cleaning system energy saving can be achieved in two different ways.

The use of re-circulated air

Activated oxygen achieves such a high indoor air quality, that it is possible to decrease the outside air quantity intake to the minimum of given standards without influencing health. Because, ionised oxygen cleans actively each room, around the clock, gently and efficient.

This permits the use of re-circulated air within air conditioning systems with large air exchange rates. Sensors measuring the CO_2 concentration and the contamination of volatile organic compound (VOC). The building management system controls the proportion of fresh and re-circulated air. Result of which is energy saving up to 50% as outside air has less often to be chilled or heated.

You save running costs without loosing the indoor air quality.

Smaller air conditioning systems

Also for newly designed and energy optimised air conditioning systems, oxygen activation contains large benefits. The high level of indoor air quality permits to build small and cost efficient systems which run with small air exchange rates. The indoor air climate is emission free even if only the minimum of fresh air, according to the relevant standards, is supplied to the rooms.

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The ARIONA-System in the exhaust air treatment

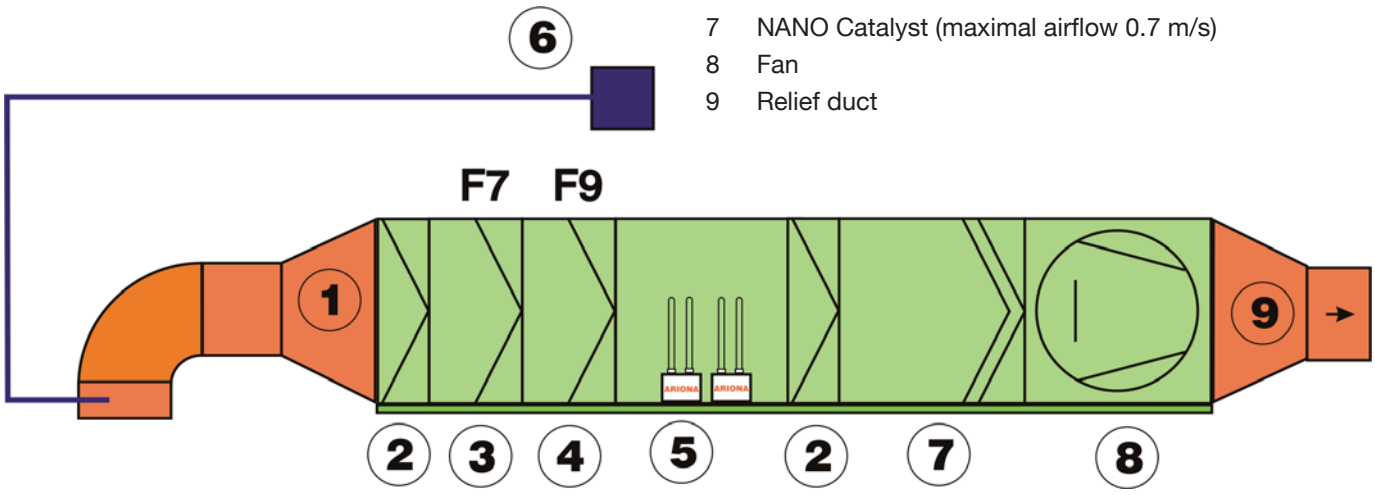
Environmental care in exhaust air treatment

More and more enterprises are requested to protect the environmental air against pollution by exhaust air. Even if satisfactory values are reached quite often contamination with strong odours remains. At that point, the ARIONA air purification system shows its benefits. With a relatively small effort it can be installed into your existing exhaust air treatment system and decreases gently the environment pollutant and smells in your exhaust air.

The principle of function

The exhaust air contaminated with pollutants floats from the rooms back into the return air duct which will be used at the same time as reaction chamber. Oxygen ions and ozone get injected as oxidation agents into the exhaust air and will initiate a chemical reaction. As an effect thereof, molecules of smell and pollutants will be cracked into environmental friendly CO_2 und H_2O. At the same moment greasy leftovers at the filters will be oxidised. In addition, the exhaust air handling unit contains a catalyst which is protected by pre filters from dust and greasy particles. Just in front of the catalyst an ioniser produces additional oxidation potential. In that way, oxidisable compounds and surplus ozone will be reduced. The air will be completely purified and released more or less without smell to the environment.

1 Contaminated return air from the room
2 Particle sedimentation filter (stainless steel)
3 F7 Filter (maximal air flow 1.2m/s)
4 F9 Filter (maximal air flow 1.2m/s)
5 Ion generator for additional oxidation potential
6 Ozoniser is injecting oxygen radicals and ozone to initiate the chemical reaction
7 NANO Catalyst (maximal airflow 0.7 m/s)
8 Fan
9 Relief duct



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ARIONA®
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Application possibilities

Flexible und simple

Breathe the power of nature everywhere. For Ariona presents the most suitable air hygiene system for every room. It can be used in many ways, is easy to fit, and cleans reliably and efficiently.

Gastronomy:

We eat with our sense of smell, too. Ariona brings appetising freshness to your dining rooms, so that your guests don‘t turn up their noses, but enjoy the ambience and look forward to coming again.
For that good feeling in restaurants, canteens, hotels, bars, and kitchens.

Wellness facilities:

Air purified by Ariona envigorates and relaxes. This strengthens the recuperative effect of your wellness offer, while providing a hygienic environment at the same time.
For more wellness in indoor swimming pools, fitness centres, sports halls, saunas.

Care:

In healthcare, hygiene and sterility is an absolute must. Ariona reduces bacteria and viruses in the air and on room surfaces, and cuts the risk of infection in your rooms.
For greater protection in hospitals, old people‘s homes, and nursing homes.

Work rooms:

A good working atmosphere begins with clean air. Ariona-treated air promotes the well-being of your employees, increases their motivation, and reduces absences caused by illness.
For more efficiency in open-plan offices, schools, printworks, sprayworks, and laboratories.

Entertainment:

Where the action is the air can get stuffy. Ariona frees entertainment locations from smoke, sweaty smells, and unpleasant odours. So that your guests stay cool and enjoy the fun.
For a refreshing time in discos, cinemas, amusement arcades, and clubs.

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Application possibilities

Use in waste gas technology:

Those who generate waste gases have to keep their emissions within limits. Ariona helps you to comply with regulations and keeps environmental pollution low.
For more environment-friendly air from sewage treatment plants, kitchens, and snackbars.

Public zones:

The bigger the room, the more you have to be able to breathe. Ariona brings a „fresh breeze“ to public areas and creates a natural atmosphere for the room.
For comfort in shopping centres, airports, seminar and recreation rooms.

The home:

Quality of life is also a question of room conditions. Ariona cleans the air gently and harmonises the bioclimate. So that you can breathe in natural freshness even when the windows are closed.
For comfort in flats, family houses, and mass accommodation.

Food industry:

Ariona purges the air of bacteria and other germs. Even those that are resistant to cold. So your foods will stay fresh and your customers satisfied.
Improves the preservability of food in cold-storage houses, food stores, and slaughterhouses.

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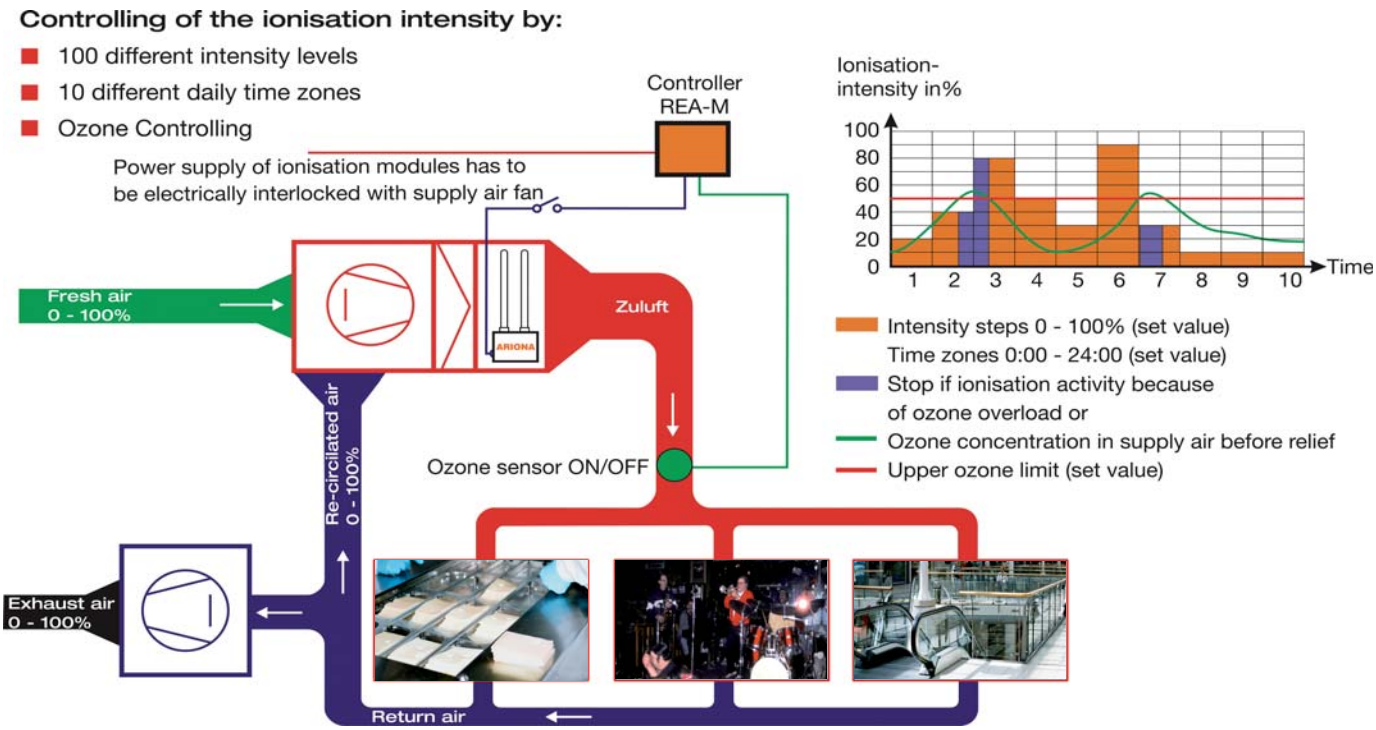
Manual control

Manual Control

The manual control unit is suitable for ionisation applications where daily recurring air contamination with regard to time and quantity occur. Such applications are exhaust air treatment and production plants within the food industry or semiconductor technology, but also animal farms. The manual control unit is able to handle 10 different time periods daily with individually settable purification intensities.

One manul control unit can control up to 30 IC10 modules. Additionally it is possible to observe the channel by an ozone sensor to protect the treated areas from any case of unexpected over reaction. The sensors guarantee the limitation of the ozone content regarding relevant standards.



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Automatic control

Ozone as control indicator

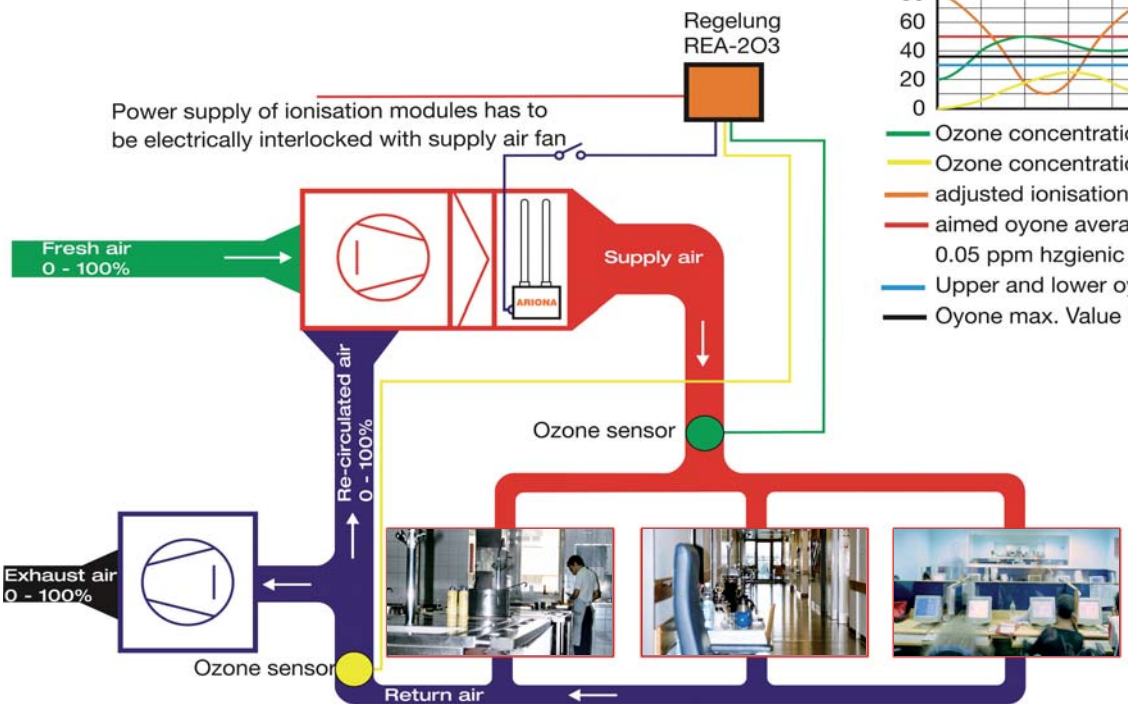
During oxygen activation oxygen ions and a small amount of ozone is always being generated. Ozone is in larger concentrations harmful, but a small quantity is essential for the natural purification process and can also be found in nature. As ozone is always proportionally created in comparison to oxygen ions it is possible to use the concentration of ozone for controlling purposes. The ozone sensor is on one side controlling the intensity of ionisation and on the other side it ensures to prevent the supply air from any high concentration of ozone.

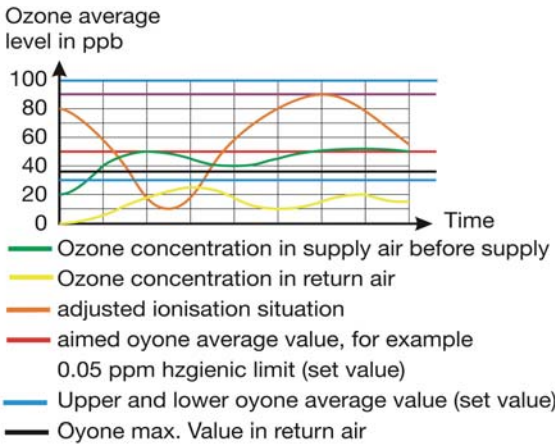
Automatic control

The automatic control unit is suitable especially for ionisation within comfort, hygiene and gastronomy applications. The characteristic of the automatic control unit is that the ionisation intensity is being adjusted according to the purification request of the treated area. Therefore, the controller can follow and react immediately to every situation change such as more persons in the rooms, fume, pollution from outside etc.

The ionisation module will be installed into the fresh air supply duct or into the re-circulation duct. The ozone sensor will be placed as close as possible to the first air outlet. This creates a reaction stretch between the ioniser and the ozone sensor. In this stretch volatile organic compounds (VOC) react with the oxygen ions and ozone and are getting cracked and transformed into CO2 und H2O. The ozone sensor at the end of this stretch has the job to measure the remaining ozone concentration and to continuously transfer the measured ozone value to the control unit. The control unit keeps now increasing or decreasing the ionisation intensity trying to match the desired ozone average value. The remaining ions and ozone continue the purification process in the duct work and the rooms to be treated.

Controller of the ionisation intensity





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System sizing

The following data shall be available for a correct system sizing:

- Air volume per hour
- Contamination rate of the to be treated zone (not challenged, challenged or high challenged)
- Air exchange rate per hour

Formula: Qty. of tubes = $\frac{\text{Air volume per hour * Situation factor * air exchange rate}}{\text{Air treatment quantity per tube}}$

Type	Length	Max. Power	Air treatment quantity per tube	Treatment in different zones Air volume per hour to be multiplied with suitable Situation factor		
	(mm)	(Watt)	(m^3/h)	**Not challenged zone** (Non smoking zone)	**Challenged zone** (slightly contaminated air: smell, fume of cigarettes, etc.)	**High challenged zone** (Casino, Restaurant / Bar, Air ports etc.)
C	200	3	260			
D	250	5	330			
E	370	7	490			
F	530	9	700	1	1.2	1.4

Air volume/h to be multiplied with the suitable system factor									
1	2	3	4	5	6	7	8	9	10
1.25	1.15	1.00	0.95	0.90	0.86	0.82	0.79	0.76	0.73

Request:	To maximize performance and economic, use the longest tube the duct will allow.
	The performance data for ARIONA® tubes are based on experience.
	Performance may vary depending on specific use of rooms and occupancy.
	By sizing of the modules the quantity of the calculated tubes has to round up or down to the next upper or lower module combination.

Example:	Not challenged zone, 1'500 m^3/h, 5 air exchange/h, very small duct: 1'500 * 1 * 0.90 / 260 = 5 C-tubes = 1Stk. DM-6C
	Challenged zone, 4'000 m3/h, 4 air exchange/h, small duct: 4'000 * 1.2 * 0.95 / 330 = 14 D-tubes = 1Stk. DM-6D + 1Stk. DM-10D
	Challenged zone, 10'000 m3/h, 2 air exchange/h, normal duct: 10'000 * 1.2 * 1.15 / 490 = 28 E-tubes = 3 Stk. DM-10E
	High challenged zone, 20'000 m3/h, 6 air exchange/h, large duct: 20'000 * 1.4 * 0.86 / 700 = 34 F-tubes = 3 Stk. DM-10F

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ARIONA®
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Case-Studies

GIA, Grapha-Informatik AG

Cafeteria / Smoking launch

More and more responsible persons of companies decide to declare all the offices to non smoking areas. In that way the cafeteria is being degraded to a smoking lounge. To change this unpleasant situation an efficient air ventilation system combined with a suitable air purification system has to be installed.

Application target:

- Improvement of the indoor air quality
- Increased wellbeing for clients and personnel
- Heavily reduced smell on suits and clothes
- Non smokers feel more comfortable

Air ventilation system:

Only outside air system:	-	1'800 m3/h
Air exchange rate:	-	ca. 9-times
Ionisation:	-	1 Module DM-10E
	-	1 automatic controller RJ-06e
	-	1 Ozone sensor in supply air

Project realisation:

October 2005

GIA

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Case-Studies

GRIEDER-BAR, Zürich

Grieder les Cafés:
Well hided, but since quite a time it is no longer a insider tip: The “Grieder-Bar” in the uppermost floor of the fashion store of Grieder has itself shaped up to a café and champagne meeting point of the society of Zurich. It is a must to keep the indoor air quality and therefore the wellbeing for the people as high as possible.

Application target:
- Improvement of the indoor air quality gets a better well-being for the clients
- Heavily reduction of smells from cooking and smoking
- Increased working climate for the personnel

Air ventilation system:

Only outside air system:	-	3’200 m3/h
Air exchange rate:	-	ca. 4-times
Ionisation:	-	2 Module DM-6E
	-	1 automatic controller RJ-06e
	-	1 Ozone sensor in supply air

Project realisation:
August 2005

BON GENIE
LES BOUTIQUES
GRIEDER

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Case-Studies

Intersport Glacier, SAAS FEE

Salesroom / ski and ski boots rental:
Winter sport is still very popular. But habits are changing. A lot of people today are taking the advantage of ski and ski boots rental to always enjoy skiing with the newest availble technology on the market. However, the ski boots rental has a serious smell and hygiene problem.

Application target

- Improvement of the indoor air quality means increased wellbeing for the clients
- Heavily reduction of smells from the ski boots
- Increased working climate for the personnel
- Germ transfer heavily limited
- Eliminate wax and polyethylene fumes

Air ventilation system:

Only outside air system:	- 2'000 m3/h
Air exchange rate:	- ca. 4-times
Ionisation:	- 1 Module DM-10E
	- 1automatic controller RJ-06e
	- 1 Ozone sensor in supply air

Project realisation:
October 2005

INTERSPORT®

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ARIONA®
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Case-Studies

Privat-Laboratory Viollier, Genf

Medical laboratory:
Medical laboratories have to be in accordance with the highest level of demand. Also the costs of the public health system are under pressure. It is of highest priority that the working conditions are always very good. Especially the vapour of the solvents in medical laboratories is a big problem. Therefore, the VOC reduction with the ionisation is very useful.

Application target:
- Improvement of the indoor air quality will bring an increased well-being for the employees
- Strongly reduced smell of solvents
- Smell transfer to other part of the building is highly reduced.

Air ventilation system:

Only outside air system:	- 18'000 m3/h
Air exchange rate:	- ca. 4-times
Ionisation:	- 4 Module DM-10F
	- 1automatic controller RJ-06e
	- 1 Ozone sensor in supply air

Projektrealisation:
May 2006

VIOLLIER

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Case-Studies

Shinhan Bank, Seoul South Korea

Bank hall / office rooms:
Big company groups such as banks etc. are putting much attention on their image. Customer care and well-being of the clients as well as the own personnel are very important elements of this assessment. To put the focus on improving the indoor air quality is a very significant step towards this target.

Application target
- Improvement of the indoor air quality gets better well-being for the clients
- Increased working climate for the personnel (reducton of VOC)
- Germ transfer heavily limited

Air ventilation system:

Air handling systems:	- 16 pcs.
Ionisation:	- 86 modules DM-8F
	- 5 modules DM-10F
	- 16 man. controller RJ-04e

Project realisation:
October 2005 - July 2006

SHINHAN BANK

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Case-Studies

DB-Travel centre main station Berlin

Main hall / office rooms:
Big company groups such as Banks etc. but also government owned companies like the railway are putting much attention on their image. Customer care and well-being of the clients as well as the own personnel are very important elements of this assessment. To put the focus on improving the indoor air quality is a very significant step towards this target.

Application target
- Improvement of the indoor air quality gets better well-being for the clients
- Increased working climate for the personnel (reducton of VOC)
- Germ transfer heavily limited

Air ventilation system:
Air handling systems: - 3 pcs. (ca. 7'000 m^3/h)
Ionisation: - 3 modules DM-8F
- 3 auto. controller RJ-06e

Project realisation:
May 2006

Die Bahn DB

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Case-Studies

Pet Food Store

Sales store:
Large pet food distributors with lot of sales stores are getting confronted with the high smell level of their products. With respect to clients, personnel and neighbours the decision to reduce smell is therefore appropriate. It is not a big investment to meet all their environmental requirements. The effect is tremendous.

Application target
- Decreasement of smell level
- No smell transfer to other other stores
- Increased working climate for the personnel (reducton of VOC)
- confortable shopping condition for clients

Air ventilation system:
Air handling systems: - 1 pcs. (ca. 8‘000 m^3/h)
Ionisation: - 2 modules DM-10F
- 1 auto. controller REA-3O3

Project realisation:
August 2007

QUALIPET
Haustierbedarf & Pferdesport

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Case-Studies

TAKE AWAY Restaurant Tibits
Basel / Schwitzerland

We like to have a special treat in a restaurant within a comfortable ambience. Unfortunately, this image gets very often destroyed because of strong kitchen smell and / or cigarette smoke. Through the use of the ARIONA system the air quality will be appropriate also for very demanding clients.

Application target:

- Increasement of indoor air quality equals increased comfort (well being) of clients and personnel
- No disturbing kitchen and smoke smells within the restaurant (highly reduced smells on clothes)
- More appropriate for non smokers

Air ventilation system:

Air handling system: - 1 pcs (ca. 5‘000 m³/h)
Ionisation: - 1 Module DM-10F
- 1 Controller REA-3O3

Project realisation:

October 2007

tibits BY HILTL

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Case-Studies

Metro MTR Co.
Prince Edward Station, Hongkong

Security is very important within the public transportation system in Hong Kong. Daily, more than three million passengers are using the MTR. Preventively, any improving measures will be taken against any possible epidemics like SARS, chicken flu, etc.

Application target:

- Germs will be reduced drastically
- Change of contamination will be minimized
- improved trust of clients
- Smells will be reduced

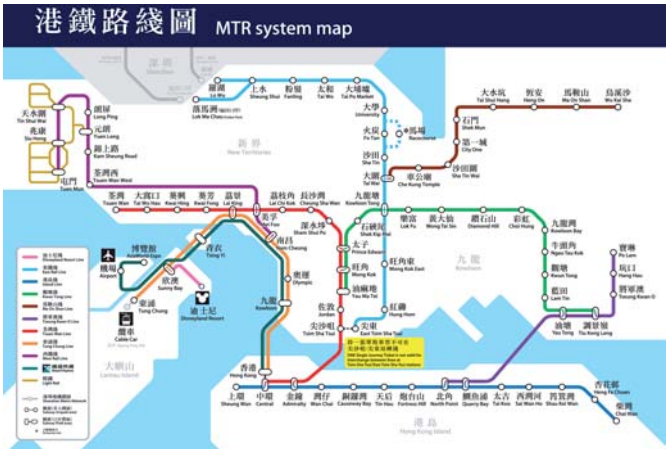
Air ventilation system:

Air handling system: - 6 pcs (ca. 300‘000 m³/h)
Ionisation: - 132 Modules STM3-1555V
- 24 Controllers REA-3O3

Project realisation:

November 2007 - June 2008

Up: Metro train
Middle/up: Prince Edward Station --> Platform
Middle/down: Ionisation modules --> wall mounting
Down: Metro map



MTR

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Case-Studies

Restaurant Moosmatt
Lucerne / Switzerland

We like to have a special treat in a restaurant within a comfortable ambience. Unfortunately, this image gets very often destroyed because of strong kitchen smell and / or cigarette smoke. Through the use of the ARIONA system the air quality will be appropriate also for very demanding clients.

Application target:

- Increasement of indoor air quality means increased comfort (well being) of clients and personnel
- No disturbing kitchen and smoke smells within the restaurant (highly reduced smells on clothes)
- More appropriate for non smokers

Air ventilation system:

Air handling unit: - 1 pcs (ca. 2'000 m^3/h)
Ionisation: - 1 Module IC6-3655
- 1 Controller REA-3O3

Project realisation:

Oktober 2008

Up: Rest. Moosmatt outside
Middle: Restaurant
Down: Ionisation module

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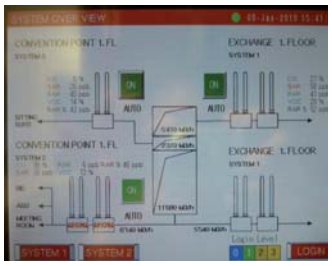
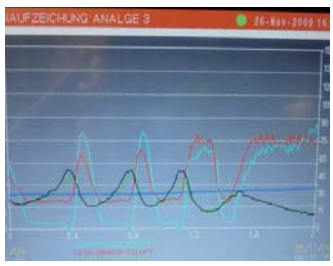
Case-Studies

Exchange market (Börse)
Zurich / Switzerland

After the change form the real stock market to the virtual exchange market SIX Group offers a Convention Point with several meeting halls and rooms. The top Managers of the important Banks in Zürich as well as other important companies benefit form this very comfortable ambient. Using the ARIONA system the air quality maintains appropriate also for very demanding clients





Application target:

- Increasement of indoor air quality means increased comfort inside of the meeting rooms and halls (better concentration of listeners)
- No disturbing kitchen smells within the convention Point (highly reduced smells on clothes)
- Decrease of germs (Security aspect)

Air ventilation system:

Air handling unit:	- 2 pcs (ca. 6‘000 m3/h)
	- 1 pcs (ca. 3’000 m3/h)
Ionisation:	- 7 Module IC10-6055
Controller:	- 1 REA-Master
	- 2 REA-collector (Bus knot)

Project realisation:

September 2009

Up: - SIX swiss exchange outside
Middle: - Convention point
- Meeting Hall “Exhchange”
Down: - Touch panel - Project overview
- Monitoring with remote control
- Ionisation module
- Ozone sensors, VOC sensor

SIX SWISS EXCHANGE

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Case-Studies

SIX Group
Zurich / Switzerland

Large companies are paying a lot of attention to there image. Pleasantness and well-being of there clients as well as there employees are important aspects of there assessment. Open-plan offices are very often strongly affected of unplesant Indoor Air Quality (IAQ). Wtih The targeted encreasment of the (IAQ) an essential step into the right direction will be achieved.
Using the ARIONA system the air quality maintains appropriate also for very demanding employees.

Application target:

- Increasement of indoor air quality means increased comfort inside of the open-plan office (better concentration of employees)
- No disturbing smells
- Decrease of germs (Security aspect)

Air ventilation system:

Air handling unit: - 4 pcs (each 22‘000 m3/h)
Ionisation: - 24 Modules IC10-6055
Controller: - 2 REA-Master
- 2 REA-collector (Bus knot)

Project realisation:

September 2009
March 2010

Up: - SIX Group (Telekurs) Office building
Middle: - Open-plan offices
Down: - Touch panel - Project overview
- Monitoring with remote control
- Ionisation module
- Controller REA-Master

SIX TELEKURS

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Indoor Air Hygiene

list of references

Project	Application		Put in operation
Gas Cool, Egypt	Hospital Operation theatre	2x 4‘250 m³/h 3‘220 m³/h 2x 4‘570 m³/h	November 2011
Schurter, Luzern	Assembly rooms	2‘300 m³/h	September 2011
British & American Tabacco, Zug	Smokers lounch	650 m³/h	August 2011
G‘ART, Luzern	Presentation rooms Side rooms	8‘300 m³/h 1‘500 m³/h	August 2011
Takrai, Luzern	Kitchen exhaust air	1‘500 m³/h	Januar 2011
SLKK	Smokers lounch	270 m³/h	November 2010
mediX Toujour	Permanence	1‘200 m³/h	September 2010
Viollier, Basel	Labor	3x600 m³/h	August 2010
Le Privé, Basel	Night Club	2‘500 m³/h	August 2010
Synagoge Minjan, Zurich	Prayer room	3‘400 m³/h	Juli 2010
Cinema Plaza, Basel	Cinema Ground floor first floor	8‘000 m³/h 7‘000 m³/h	Juli 2010
x-tra Hotel, Zurich	Raucherlauch Podium Aquarium Restauant / Bar	6‘000 m³/h 3‘240 m³/h 3‘350 m³/h	April 2010
Club Zukunft, Zurich	Restaurant / Bar Dancing	5‘000 m³/h 8‘000 m³/h	April 2010
SIX Group, Zurich	Office building B, Sector Est Sector West	23‘000 m³/h 23‘000 m³/h	March 2010
SIX Group, Zurich	Office building A ,Sector Est Sector West	22‘000 m³/h 22‘000 m³/h	December 2009
Restaurant Wight Sheep	Bar	2‘000 m³/h	December 2009
Börse Selnau (Exchange market)	Conference Room (Exchange) Convention Point Convention Point Lounch	11‘000 m³/h 7‘500 m³/h 3‘500 m³/h	October 2009
Bijuterie Mezger, Basel	Sales Store	2‘000 m³/h	September 2009
Mittelland Molkerei AG, Suhr (Emmi)	Cloath changing room	3‘500 m³/h	August 2009
Cargo Kulturbar, Basel	Bar	3‘500 m³/h	Mai 2009
Yukatan, Engelberg	Restaurant Bar	4‘000 m³/h 4‘000 m³/h	April 2009
Kanchi, Luzern	Restaurant Indisch	3‘000 m³/h	April 2009
St. Magdalena, Luzern	Restaurant Bar	1‘500 m³/h 2‘000 m³/h	April 2009

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Project	Application		Put in operation
Paul Scherrer Institut, Villigen	Kontrollraum (sehr sensibel)	2‘000 m³/h	März 2009
Hotel Rössli, Dagmersellen	Restaurant/Hotel	3‘000 m³/h	March 2009
Lotus Garden, Sarnen	Thai Restaurant	2‘500 m³/h	March 2009
Max, Lucerne	Restaurant / Bar	3‘000 m³/h	February 2009
Aspara, Lucerne	Restaurant / Take Away	1‘500 m³/h	January 2009
Forum Sport, Basel	Fitness Center	5‘500 m³/h	December 2008
Takrai, Lucerne	Restaurant / Take Away	1‘500 m³/h	December 2008
Burestübli, Kriens	Restaurant	4‘500 m³/h	November 2008
Moosmatt, Lucerne	Restaurant	2‘500 m³/h	October 2008
Betty Bossy, Basel	Kitchen show studio	2‘500 m³/h	September 2008
Qualipet, Schattdorf	Kleintiernarung und Zubehör	3‘000 m³/h	September 2008
Man Invest, Pfäffikon	Restaurant	5‘100 m³/h	Juni 2008
Hotel Sonne, Küsnacht	Exhaust kitchen air	2‘500 m³/h	Febr. 2008
MTR Corporation, Hongkong	Subway station	300‘000 m³/h	Dec./Jan. 2007/08
Kultkino Basel	Cinema	6‘000 m³/h 2‘000 m³/h	December 2007
Grieder, Zürich	Spedition / Dekoration	2‘000 m³/h	December 2007
Banco del Gottardo, Lugano	Smokers lounge	2‘400 m³/h	October 2007
Johnson Controls AG, Basel	Meeting room	1‘200 m³/h	October 2007
Tibits, Basel	Restaurant	5‘000 m³/h	October 2007
Roche, Basel	Smokers lounge	1‘200 m³/h	September 2007
Bachmann, Binningen	Private home	300 m³/h	August 2007
Qualipet, Sursee	Pet food store	8‘000 m³/h	August 2007
Japat AG Flugterminal (Novartis)	Office/meeting rooms	6‘000 m³/h	August 2007
Grieder, Zürich	Smokers lounge	1‘200 m³/h	März 2007
Shinhan Bank, Seoul, Südkorea	Bank building	400‘000 m³/h	Juli 2006
HB Berlin	Diff. Stors in train station	30‘900 m³/h	Mai 2006
Le Crobag, HB Berlin, DE	Backery/Restaurant	960 m³/h	Mai 2006
Zanetti Eis, HB Berlin, DE	Restaurant	1‘760 m³/h	Mai 2006
DB travel help, HB Berlin,DE	Public area	3‘500 m³/h 2‘700 m³/h 1‘000 m³/h	Mai 2006
Lustenberger & Dürst	Food industrie	5‘400 m³/h	August 2006

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Project	Application		Put in operation
Viollier, Genf	Labor	18‘000 m³/h	Juli 2006
Viollier, Allschwil	Office, meeting rooms	1‘500 m³/h	Oktober 2005
Intersport Glacier, Saas Fee	Sprot store/Ski boots rental	2‘000 m³/h	Oktober 2005
Grieder-Bar, Zürich	Bar / Restaurant	3‘200 m³/h	August 2005
GIA, Grapha Informatik AG, Oftringen	Cafeteria / smokers lounge	1‘800 m³/h	Oktober 2005
Viollier, Binningen	Private house	3‘400 m³/h	Februar 2005
Café Klus, Zürich	Restaurant	3‘400 m³/h	August 2004
St. Albanstübli	Restaurant	2‘000 m³/h Zuluft 1‘800 m³/h Abluft	September 2003

Project	Application		Inbetriebnahme

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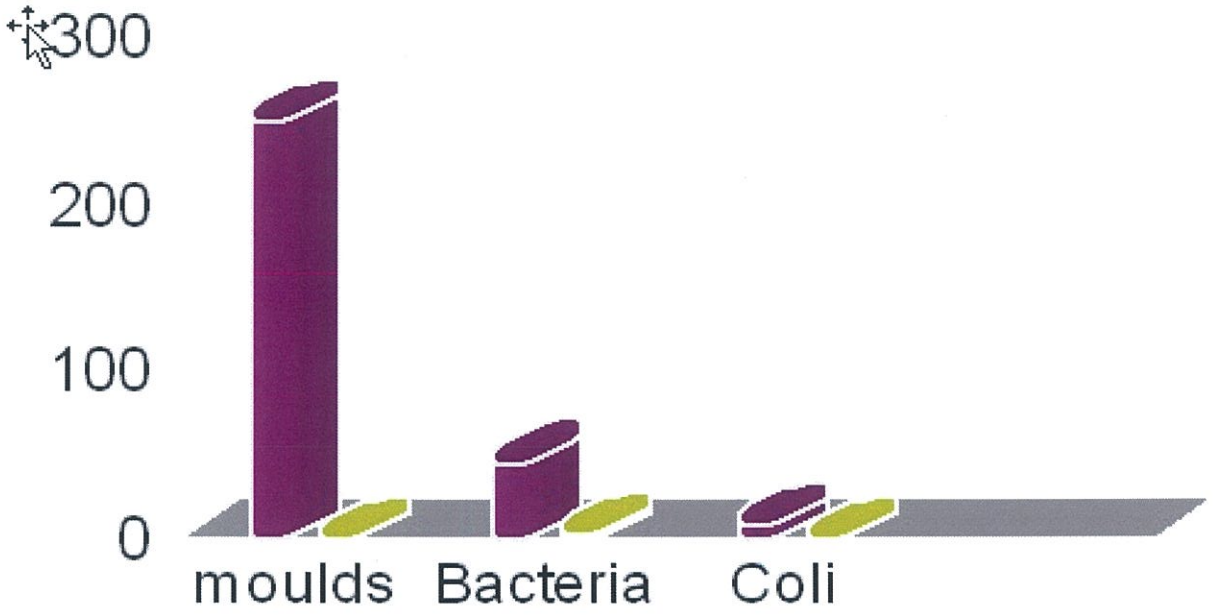
Measuring results

→ **Reduction of bacteria, virus & germs**



	moulds	Bacteria	Coli	
withour Ariona	250	46	9	Cfu/m3
with Ariona	0	3	0	Cfu/m3

ARIONA®
Indoor Air Hygiene

Passive type module STM

The ARIONA® air cleaning and disinfection appliances allow practice orientated solutions for specific air treatment such as cleaning, disinfection, regeneration etc.
With the energy of the corona effect nascent oxygen atoms bipolar oxygen ions and oxygen radicals (ozone) are generated. Such conditions of oxygen are omnipresent within our nature. Mainly responsible for this is the UV-radiation which charges the air electro-statically and split oxygen molecules in small quantity.

The Passive Sterilizer is ceiling or wall mounted. It is made from stainless steel. All the STM Models are ready-to-plug-in. According to a particular application a built-in or remote intensity controllers can control them.

ARIONA STM3-1555
Article N° 16.307

ARIONA STM4-2055
Article N° 16.308

ARIONA STM5-2555
Article N°16.309

ARIONA STM3-1555V
Article N°16.310

ARIONA STM4-2055V
Article N° 16.311

ARIONA STM5-2555V
Article N° 16.312

The preferred application areas:

It is used in microbiological laboratories, dry storage rooms, in sales rooms, dress rooms, etc. The stainless steel models are suitable for rooms with high humidity and with an aggressive environment, such as: cold rooms for meat, sausage, fish, cheese and vegetables, portioning and packing rooms, rubbish dumping areas, animal breeding rooms for medical purposes, veterinarian medicine, cadaver-proces-

Technical data	16.307	16.308	16.309	16.310	16.311	16.312
Max. wet cold room size [m^3]	120	160	200	135	180	225
Max. dry room size [m^3]	450	600	750	500	675	850
Power consumption [VA]	14	16	20	32	33	35
Weight [kg]	7.00	7.23	7.46	7.60	7.83	8.06
Dimension [mm][L*W*H]	770*210*140					
Power supply [V], [Hz]	220/230 50/60					
Installation	ceiling or wall mounted type (incl. wall mounting track)					
Housing	stainless steel housing					

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In-Duct Module IC

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With the energy of the corona effect nascent oxygen atoms bipolar oxygen ions and oxygen radicals (ozone) are generated. Such conditions of oxygen are omnipresent within our nature. Mainly responsible for this is the UV-radiation which charges the air electro statically and split oxygen molecules in small quantity. The following four main effects will be achieved:

1. Creation of a natural bio climate with a natural electrical conductivity of the air and supply of oxygen ions.
2. Transformation of the air overlaid smells (volatile organic compounds, VOC) by oxidation.
3. Growth-retarding and killing of micro organisms as bacteria, virus, fungus and other germs.
4. Agglomeration of small particles into larger particles, which will sediment faster by its weight and enables filtration

ARIONA IC2-525
Artikle No. 16.200

ARIONA IC6-1825
Artikle No. 16.201

ARIONA IC6-2740
Artikle No. 16.202

ARIONA IC6-3655
Artikle No. 16.203

ARIONA IC10-2020
Artikle No. 16.204

ARIONA IC10-3025
Artikle No. 16.205

ARIONA IC10-4540
Artikle No. 16.206

ARIONA IC10-6055
Artikle No. 16.207

The preferred application areas:

Therefore, for the air treatment of the supply and re-circulated air in production plants, restaurants, offices, conference halls, shopping centres, airports, cinemas, and concert halls etc., i.e. for any application, the parameters can be adjusted. Einstellungen angepasst werden.

Technical data	16.200	16.201	16.202	16.203	16.204	16.205	16.206	19.207
Max. room size [m^3]	80	450	650	900	500	750	1100	1500
Requested duct size [mm]	250	300	400	600	250	300	400	600
Power consumption [W]	10	19	23	35	37	39	42	60
Weight [kg]	3.5	4.8	5.0	5.4	7.8	8.0	8.4	9.0
Dimension [mm]	L 230, B 160, H 120		L 330, B 250, H 120		L 430, B 240, H 120			
Power supply [V], [Hz]	220/230 / 50/60							
Installation	In air duct or direct into air handling unit (AHU)							
Housing	V2A stainless steal, polished							

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