



Puris Air

ESL SERVICES



Make 'reasonable adjustments'

Affordable Clean Air



- Indoor air quality (“IAQ”) and the provision of a healthy living environment has become an increasingly important issue across the world, be that in schools, hospitals, care homes or offices.
- The US EPA studies of human exposure to air pollutants indicate that indoor levels of pollutants may be up to five times higher than outdoor levels, which can have a major impact on people’s health, not least those suffering from asthma or in a vulnerable age category, or those sheltering due to a depleted immune system.
- In order for society to operate safely, in light of the 2020 Covid-19 pandemic and the impact of annual flu seasons, it is essential that a focus on the improvement of IAQ is central to any health planning initiatives.



The Problem

- Low indoor air quality in your premises can lead directly to many customers and staff becoming ill:
 - customers and staff with a depleted immune system or suffering from asthma, will be especially at risk;
 - attendance rates for staff will drop, which has a negative impact on productivity and costs;
- Ideally, all premises would have a constant supply of filtered air and sensors.
- However, purchasing the technology all at once requires a considerable outlay of capital that cannot always be afforded.
- So what is lacking?
 - identifying the most effective filtration system available to improve the air quality;
 - supported by a full maintenance service;
 - with linked access to air quality data;
 - all supplied by a company with strong Green credentials;
 - for an affordable monthly subscription.



Multi-Layered Filter

Pre-Filter, True HEPA Filter,
Activated Carbon Filter & Cold
Catalyst Filter



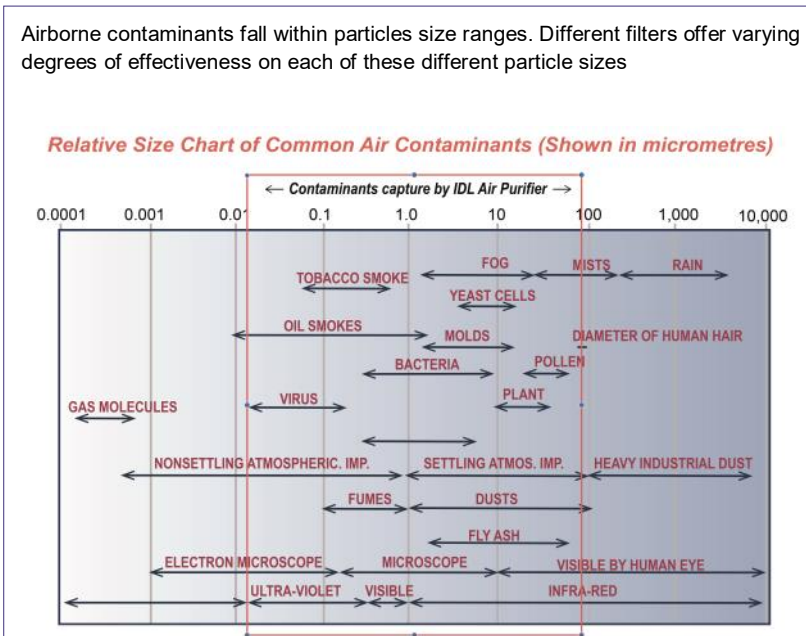
The Solution – the Best Technology

- Puris Air provides a solution that involves:
 - the continual filtration of indoor air;
 - using the most advanced filtration technology;
 - linked to sensors collecting air quality data;
 - which is accessible online by customers;
 - made available for a monthly subscription.
- There are no filter cartridges losing effectiveness as the filters begin to clog up.
- All devices are CE certified 
- No contaminated filter cartridges destined for landfill.
- It is the first company to offer filtered air for a monthly subscription fee, making it more widely accessible to customers.
- Tailored customer plans designed to provide comprehensive building coverage.
- The subscription service is provided over a minimum period of 36 months, with the option to extend.
- At the end of a plan term, old units are reconditioned for re-use.

PurisAir is a ground-breaking UK Company that has pioneered the complete removal of contagious viruses and particulates from our indoor environment using its patented electro-foil filtration process, to provide a supply of clean air to the population at an affordable price.

The technology, in development for over 5 years and verified by the Government’s Biosafety Investigation Unit at Porton Down (who awarded it an efficiency of 99.9992%), effectively removes all viruses (including Covid-19), bacteria and dust (nano particulates) from indoor spaces. It does so more effectively than any other filtration technology. Its cellular-connected filters and sensors send data to our cloud-based platform which can be accessed and managed by customers in real time.

The demand for clean air has been increasing steadily over the past few years, but significantly more since the outbreak of the Covid-19 pandemic. The filters eliminate as per the specification the following spectrum of particles.



- Puris Air is a British company based in Hastings that specializes in the manufacture and supply of a unique electro-foil filtration technology, and removes all viruses, bacteria and dust (nano particulates) from indoor spaces more effectively than any other filtration technology.
- Puris offers a constant supply of clean air to customers in return for an affordable monthly subscription, payable over a fixed term.
- The filtration technology has been tested and verified by the UK government's Biosafety Investigation Unit at Porton Down, Wiltshire, achieving a 99.9992% efficiency for particulates above 23nm. The report is available to view.



Our Engineering Design Partner

- The unique technology was developed by Puris Air's engineering design partner in the UK, Interface Precision Engineering (www.theinterfacegroup.com), who are a stakeholder in Puris Air.
- Interface customers include CERN, NASA, Porsche, McLaren & the BBC (whose radio transmitters they build).



The Technology

Air Quality Meter (AQM)



Ceiling Filter Unit



Floor Standing Filter



Wall-Mounted Filter



Product Range

Models	Device	Dimensions	Capacity (m3 per min)
Floor Standing Filter, 1000 Series	PureAir 1100	400H x 445W x 135D	0.7
	PureAir 1200	445H x 569W x 58D	1.0
Wall Mounted Filter, 2000 Series	PureAir 2100	445h x 569W x 58D	1.0
	PureAir 2200	480H x 570W x 70D	2.3
	PureAir 2300	480H x 570W x 70D	3.0
	PureAir 2400	1080H x 580W x 94D	8.0
Ceiling Mounted, 3000 Series	PureAir 3100 (Tile Unit)	600L x 600W x 56D	3.5
	PureAir 3200 (Mounted)	600L x 600W x 56D	3.5
Air Quality Meter, AMP Series	PureAir AMP001 (WiFi)		N/A
	PureAir AMP002 (Cellular)		N/a

- Puris Air units are certified to capture 99.9992% of particulates as small as 23nm.
- The technology has been tested and validated by the UK Government's renowned Biosafety Investigation Unit at Porton Down, Wiltshire.
- Features include:
 - removing all harmful particulates, airborne pollutants and viruses from rooms and enclosed spaces;
 - simple to fit and can be ceiling or wall mounted, ceiling mounted, inserted into light fittings or even free standing;
 - uses minimal energy and has a long life-span;
 - cellular or Wi-Fi connected system, to transmit data to a cloud-based platform, which can be accessed in real time by customers.

Power requirement

Parameter	Rating	Unit	Remarks
Supply Voltage	90-240	V AC	
Power requirements	40	Watts	Maximum rating for all models

Environment

Parameter	Rating	Unit	Remarks
Sound level	33	dB (A)	Highest fan setting
Humidity	70%		Relative humidity

Filter mechanism

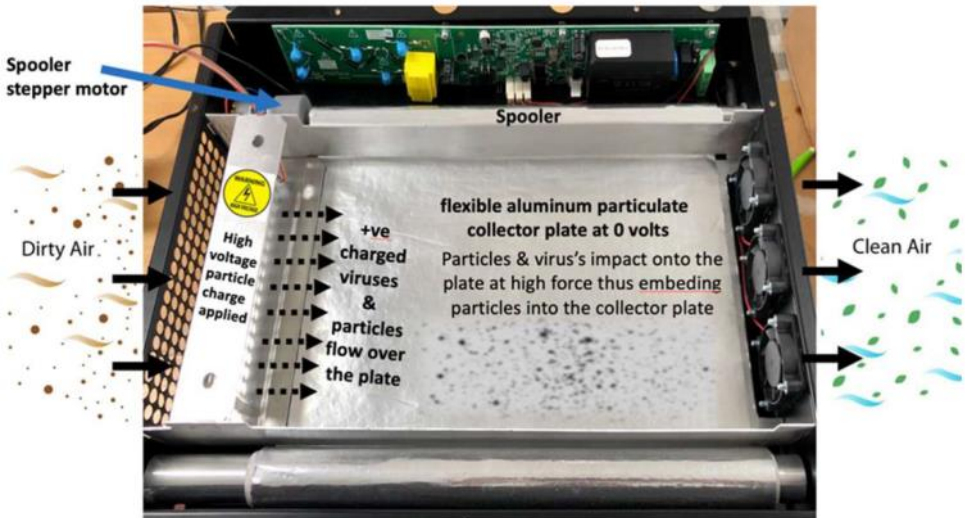
Parameter	Rating	Unit	Remarks
Corona wire	40	Kv	High tension
Collector plate	10%	Kv	High tension
Flexible filter plate	18	Microns	Aluminium non coated, double rolled

Filter specification test result

Parameter	Rating	Unit	Remarks
			Virus 23nm diameter at 40% humidity
23nm virus	99.9983	%	MS-2 Bacteriophage NCIMB 10108
			Tested at 6 litres min

How the Technology Works

- Each filter unit consists of a flat profile filter housing, with a decorative front panel.
- It includes multiple small silent running fans used in programmed combinations, and the active filter components.
- The filter connects to any nearby power source (units are 110v/250v, 50Hz/60Hz capable (lower voltage & DC versions also available).
- Fan speeds are chosen to achieve up to 3-4 air changes per hour.
- The power consumption is tiny, drawing contaminated air to the unit.
- Contaminated air passes a “corotron” wire imparting a very high charge to any particulates.
- As the air moves between the repulsion plate and the collector plate, the particulate is repelled by the “like charge” repulsion plate and attracted to the “neutrally charged” collector plate.
- The critical design feature of the technology is the use of rolled aluminum as the collector plate, which only needs to advance 30mm of roll per week. See spooler in diagram.



Comparison with Traditional Filter Products

HEPA (high-efficiency particulate air) Filter Units

- Normally have a series of filter cartridges, which include:
 - An outer filter cartridge to collect larger particulates;
 - A finer filter cartridge to collect smaller dust size particles;
 - A carbon filter to eliminate odours; and
 - A HEPA filter to catch bacteria and viruses with a 99% effectiveness for particulates, normally no smaller than 90nm.
- The filter cartridges become increasingly clogged over time, reducing their effectiveness, and require replacing every 6-12 months.
- There is a financial cost to replacing cartridges, plus
- inconvenience.
- Environmental cost to dispose of cartridges, especially if hazardous waste has been captured.
- Durability depends on a variety of issues including air change rates and the volume of air filtered over time.
- Not currently available as part of a package offering access to air quality data, or a monthly subscription service.

Puris Air Electro-foil Filter

- Unique patented technology
- Charged particulates are captured on a foil collector plate.
- No filter cartridges to replace or dispose of.
- Devices recovered at the end of a subscription term will be refurbished for future use.
- Tested and verified by the prestigious UK Government Biosafety Investigation Unit at Porton Down.
- Certified to capture particulates smaller than HEPA filters in commercial production (the SARS-CoV-2 virus particle size is in the range 60 to 140 nm and can be free-floating in the air.
- No ongoing maintenance required.
- More expensive than some HEPA filters to purchase outright, but without recurring filter replacement costs or drop off in performance due to clogging.
- Made available with an Air Quality Meter to capture data.
- Made affordable as a 3-year to 5-year subscription service.

Data Collection & Access

- Puris believes that the collection of air quality data, and making that data available to customers, is a valuable extension of the clean air subscription service we are offering to customers.
- The air quality is measured by an Air Quality Meter (“AQM”), that will be cellular connected (current connection is Wi-Fi), to our cloud-based platform.
- Customers will be able to access historic data and reports by logging into the platform remotely.
- We will be designing an app for real time data access in early 2021.



Green Credentials

- Puris will collect all used filtration devices and sensors at the end of a subscription term to recondition the units for future use.
- It will also offer a trade-in option to retail customers wishing to upgrade their device after a period of time.
- The outer casing of the devices will be refurbished for re-use with new fans, circuit boards and aluminium collector plates.
- The old aluminium collector plate will be melted down in accordance with WEEE waste protocols.
- The bulk of the disused elements of the old device will be re-cycled.
- The savings in device manufacturing costs for reconditioned units are expected to amount to 50%.



- Puris Air's production partner in the UK is Plexus (www.plexus.com) who have production facilities in Livingston and Kelso, and are a leader in the electronics manufacturing sector.
- Capabilities:
 - Rapid prototyping
 - Environmental stress screening
 - Complex circuit board assembly
 - Assembly of Class I, II and III medical devices
 - Customized Supply Chain Solutions
 - Class II and III IPC-A-6100 / J-STF-001 workmanship
 - Puris Air's main telecoms partner for data transmission is Telefonica, but it can be a local carrier if required.
- Locations:
 - UK, EU, North America, Far East

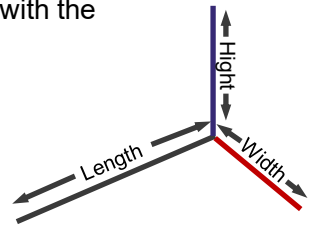


Our Sales Partner




- ESL Services have been providing DDA – Equality Act – Disability Access Audits (www.esl-services.co.uk) for over 17 years now, from our base in Livingston, Central Scotland.
- During the Covid-19 Lockdown ESL Services looked at ways to help their Customers. ESL Services looked at different ways they could help with PPE and Sanitiser Stations etc.
- ESL Services were then introduced to PurisAir and became a Sales Partner with Puris Air as they had a very unique Product which fitted very well into ESL Services' Portfolio of Products.
- PurisAir is exceptional in helping get rid of all Pathogens in Offices, Hospital Theatres, Vet Surgeries, Drs Surgeries, Dentists, Hotels, Nursing Homes and Individual Homes would be an understatement.


How to order

- Contact us for a free non obligatory quote to provide you with the best equipment to suit your premises , please contact us with the following information:
 - The length, width and height of each room
 - How many times you would like the air to be filtered per hour.
 - How many people use the room.
- Finance is available subject to status.



Our Contacts

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