

NEW NOXMASTER



Air pollution causes over 40,000 deaths each year, with long-term exposure linked to cancer, heart and lung disease. The air inside urban homes regularly exceeds safe levels of nitrogen dioxide and particulates.

Do you have housing stock in an AQMA?

Every local authority in the UK is required by law to measure air pollution in their area, with the aim of meeting National Air Quality Objectives set out by DEFRA (Department for Environment, Food & Rural Affairs). Any place that fails to meet the objectives must be declared an Air Quality Management Area (AQMA). This area could be just one or two streets, or it could be much bigger.

For social housing providers, **the Noxmaster** means that tenants living within Air Quality Management Areas can live safely and comfortably in their homes, benefitting from clean, safe air during the average 16 hours each day that we spend at home.

AQMA are Air Quality Management Areas which are in a street or larger area that has failed to meet air pollution objective set by DEFRA. There are 725 in England, 43 in both Wales and Scotland and 42 in

Check your area here: <https://uk-air.defra.gov.uk/aqma/maps>



NITROGEN DIOXIDE LEVELS

can be as high inside the house as at the roadside in high pollution areas

Air pollution is **THE TOP ENVIRONMENTAL RISK TO HEALTH** in the UK



AN AIR QUALITY MANAGEMENT AREA (AQMA)

is a street or larger area that has **FAILED** to meet air pollution objectives set by DEFRA

37 of 43 AIR QUALITY ZONES

have not met EU nitrogen dioxide limits



£20 bn

estimated cost of air pollution, through heart and lung diseases, asthma, stroke and cancer

725
in England

42
in N.Ireland

43
in Scotland

43
in Wales

NOXMASTER

The Noxmaster is a whole-house ventilation system which combines a powerful carbon filter with the principles of Positive Input Ventilation (PIV).

Noxmaster removes up to 99.5% of Nitrogen Dioxide and other harmful pollutants generated by traffic emissions. The system delivers clean, filtered air into urban homes, improving air quality to within safe levels recommended by the World Health Organisation (WHO).

What is NO₂ (Nox)?

- ▶ NO₂ is a generic term from nitrogen oxides that are most relevant for air pollution. NO₂ is released into the atmosphere when fuels are burned (for example, petrol or diesel in a car engine). The Royal College of Physicians have evidence that high levels of NO₂ can cause 11,500 deaths each year from lung and heart disease.

What is Particulate Matter?

PM₁₀ & PM_{2.5} filtration

- ▶ **Particulate Matter** size classes are used as evaluation parameters by the WHO (World Health Organisation) and other authorities. These evaluation parameters are incorporated in Air Quality Management reports to ensure the correct filtration is selected based on the requirement within the reports.

PM₁₀

- ▶ PM₁₀ is the name for coarse dust particles that are 2.5 to 10 micrometres in diameter. The main source is road transport, namely vehicle breaks and tyre wear, and also during combustion of fuel, gas or coal. Tiny particles are inhaled causing major health problems.

PM_{2.5}

- ▶ PM_{2.5}, known as fine particulate matter, is a mixture of solid and liquid particles that are suspended in the air. They are 2.5 micrometers in diameter or smaller, and can only be seen with an electron microscope. Sources include power plants, motor vehicles and wood burning. Exposure to these particles can enter the lungs, causing cancer, stroke and lung and heart disease.



How it works

Noxmaster is the first time a retrofitable whole-house ventilation system has addressed air quality with carbon filtration.

The Noxmaster operates all year around by continuously drawing air through the filters in the unit and inputting it, at ceiling level, into the property.

Noxmaster removes up to 99.5% of Nitrogen Dioxide (NO₂) through two powerful carbon filters. The activated carbon is microporous and has a much larger surface area than its external dimensions suggest. A spoonful of activated carbon equates to the surface of a football field. Through a process known as 'adsorption', the pollutants are attracted and held on the surface of the carbon, trapping them before they enter the home. The carbon filters have a lifespan of five years and are recyclable.

The Noxmaster is fitted with a carbon cartridge and a PM10 filter as standard with the option of PM2.5 filtration in areas with high levels of Particulate Matter.

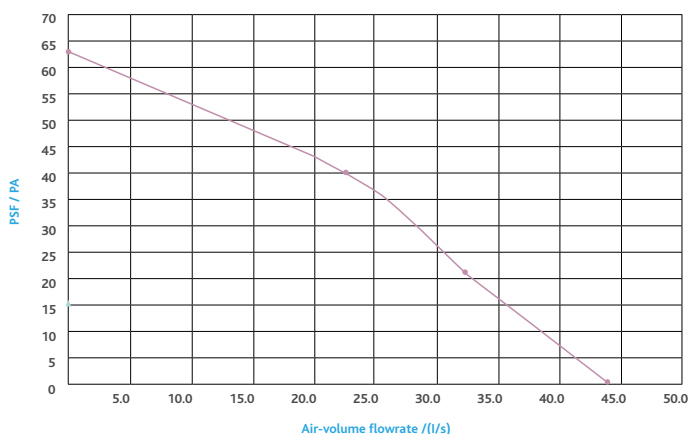
The unit has the optional extra to be thermostatically controlled to create comfort in the home based on outside air temperature. It has the ability to intelligently utilise the solar gain from the loft space during colder months and draw fresh, cooler air directly from outside during the warmer months.

PATENT PENDING

Features and Benefits:

- ▶ Unique technology combining PIV and carbon filtration
- ▶ High filtration – removes up to 99.5% of harmful nitrogen dioxide (NO₂) and 75% of particulate matter (PM2.5)
- ▶ Significantly improves indoor air quality in homes for the occupants
- ▶ Allows occupants to keep windows closed for security and to discourage pollutants entering the home
- ▶ Thermostat is fully adjustable providing comfort for the occupants
- ▶ Aesthetically pleasing modern ceiling diffuser
- ▶ PIV principle prevents condensation and its associated issues
- ▶ Evidence by the BRE demonstrates the principle of PIV is a remedial measure in controlling Radon gas
- ▶ Low maintenance
- ▶ Commissioning can be carried out via the controls cited within the ceiling diffuser
- ▶ Time clock – optimises filtration when levels of pollution are evident.
- ▶ Energy-efficient and cost-effective solution

Noxmaster Performance Graph



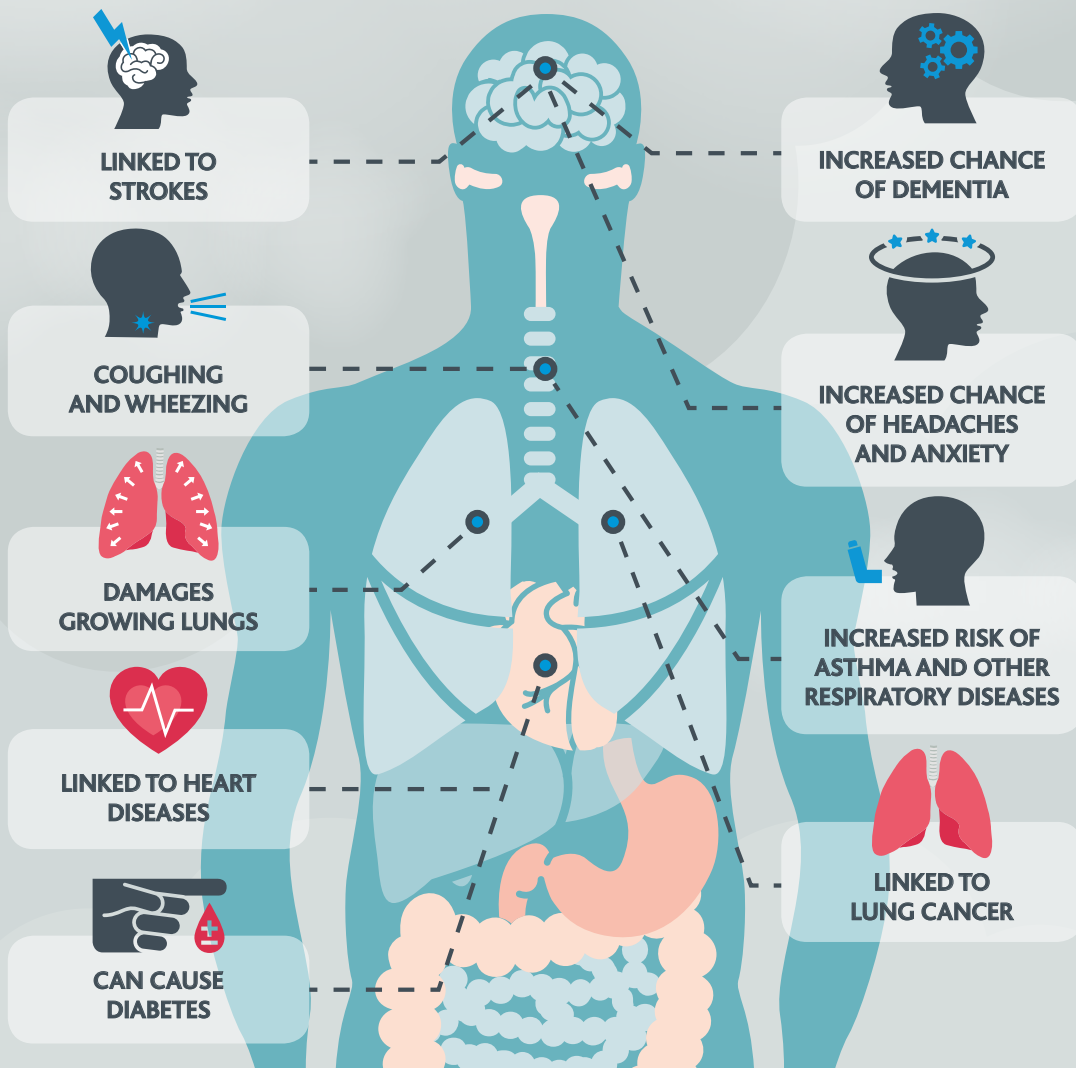
Do you know the effects air pollution has on your body?

INDOOR AIR
CAN BE UP TO
50 TIMES
MORE POLLUTED THAN
OUTDOOR AIR

PUBLIC HEALTH
ENGLAND

LONG-TERM
EXPOSURE TO
AIR POLLUTION
CAUSES AS MANY
DEATHS AS
ALCOHOL 

15 - 30%
OF ALL RESPIRATORY
DISEASES STEM
FROM LIVING NEAR A
BUSY ROAD



Reducing exposure to air pollution