

Reco-Air Overview

Reco-Air manufacture bespoke air handling units primarily designed to clean and recirculate air from conventional kitchen extraction canopy internally to the kitchen space.

In recirculation mode, only electric equipment can be used. However, Reco-Air units can be used for gas and solid fuel cooking if there is a route to external discharge, as the products of combustion from fossil fuels are dangerous to health and prohibit their recirculation.

Reco-Air is approved by City of Westminster Council (EHO & Planning Department) as a proven alternative to traditional High Level extraction, ideal for commercial applications where a route to atmosphere does not exist or emissions will result in nuisance to neighbours.

The Reco-Air technical team worked with City of Westminster EHO Department and gained full approval in 2016, with subsequent update of CoW extraction guidelines reflecting Reco-Air patented recirculation specification.

BESA (Building Engineering Services Association) DW172 (2018) revision introduced a dedicated section on recirculation, again incorporating Reco-Air's specification and confirming Reco-Air fully satisfies compliance with the approved industry standards & guidelines.

Reco-Air is also accredited with UL710b (Underwriters Laboratory) confirming Reco-Air meets advanced fire safety requirements and approval for use with high risk cooking in high risk environments, such as airports, shopping malls and travel hubs.

Class E Planning introduced in September 2020 enables Reco-Air to simply and easily support a commercial kitchen in previously unfeasible locations with no planning required, as the Reco-Air system is contained entirely within the premises.

Reco-Air is also ideal for expanding menu offers at kiosks or mall locations to include hot food. Reco-Air units are easily retrofitted and can be removed and relocated at lease end.

The Reco-Air system has three primary filters to remove large grease particulate, fine/small grease particulate, smoke and moisture. The vitiated air extracted is taken via a standard canopy, through short standard ducts complying with DW172, inclusive of proprietary approved cleaning access doors, spaced at regular intervals. It is a low-pressure system and unit 'break out' noise, duct and canopy noise are minimal. Normal conversation standing next to the units is not impacted.

An inverter fan inside the Reco-Air unit draws captured air through the filters and pushes clean air back to the front canopy or into the kitchen space via a series of activated carbon canisters, contained within the discharge section of the unit to remove odour.

The Reco-Air fan assembly remains in clean air ensuring prolonged life. The electronic smart control system continually monitors pressure status of the three primary filters & regulates speed of fan, through a 0-10V signal, ensuring the pre-set, required airflow is maintained as pressure across each filter stage increases during natural filter life.

Reco-Air's smart controls software is commissioned to activate visual and audible alarms when any one of the filter stages reaches between 85 and 90 % capacity, indicating the need to implement filter replacement. This efficient process ensures the operator enjoys maximum filter life every time and never change out a filter before it is necessary.

Reco-Air units have built-in fail-safe controls as standard and will not operate if a filter is removed or not replaced correctly. The dirty set point allows 120 hours of operation to change the required filter, although the option for PPM planned maintenance package is available changing filters at set dates in advance of alarm.

For each project, a SEFR (Specific Extract Flow Rate) calculation is produced on the catering equipment contained beneath canopy and based on the canopy type, this determines airflow requirement and recommendation of most suitable Reco-Air model.



There are currently 9 standard Reco-Air model sizes, 3 build configurations and many bespoke options. Most models offer single sided access and flat pack installation option for when delivery access is limited.

Passive Activated Carbon supports odour removal within the unit of between 80 & 90% of odours in a single pass, based on a minimum dwell time of 0.2 seconds. With bespoke engineering an increase to dwell time is achieved for more sensitive locations or for high odour menus requiring an increased level of odour suppression.

As recirculation is returning 'treated air' back to the working space, the operator is first to notice any drop in odour suppression performance and can instigate a service visit to replace carbons, if the routine maintenance programme has not already facilitated this. Our recommendation is for carbon replacement annually although canisters can be tested to identify if this frequency is adequate.

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As a general indication, Filters F1 & F2 typically have 3 months life and F3 around 6 months, but this is influenced by menu, cooking style, cookline equipment, trading hours etc.

Reco-Air units are available in floor mounted vertical build configuration; with top duct connections. A horizontal ceiling void configuration; with end duct connections and double stack configuration; with side duct connections. We also offer an external grade exterior finish for siting units in service yards if layout and space dictates.

When levelled to floor or hung from soffit the presence of vibration is negligible. The inverter fan assemblies used are very different to older indirect drive extraction fans historically used in ductwork. This fan is perfectly balanced and with no vibration concerns.

Reco-Air units are used in conjunction with standard ducts and extract canopies. Reco-Air can offer the full kitchen ventilation solution through our approved installation partners or work with your preferred building services designer, consultant or contractor to design the system and install the Reco-Air unit.

Within the design, one feature we recommend to improve draw at the canopy to assist with containment of odours and pull cooler air towards the canopy from other parts of the space, is to bleed a small proportion of the clean return air to another area, typically 15-20%. This helps maintain a negative air pressure at the canopy and dilutes both odour and temperature, before entering the recirculation system.

DW172 (2018) Section 25 Recirculation confirms the need for a fixed number of air changes as noted for conventional systems separately. It recommends fresh air for kitchen occupancy of 10 l/s per person. A small fresh air supply is, therefore, required, but the need for large volumes of tempered / treated fresh air supply make-up are removed, together with the need for an additional AHU, heater battery & associated plant.

Reco-Air offers four patented control platforms. UL certified; for the US market and global travel hub clients. HP controls supporting the High Performance models designed for use with high temperature and high grease cooking.

Premium Controls; with real time filter monitoring and remote access facilities and Standard Controls; these require the user to respond to visual and audible panel alarms to instigate maintenance visits. All control panels interface with fire alarm system to shut down the unit in the event of a fire. Connection to BMS and cookline circuit is also available to ensure energy efficiency and that the Reco-Air unit needs to be on to enable cooking.

The intelligent control platform provides complete peace of mind ensuring that filters are changed as and when required to maintain air quality compliance, independently tested and accredited as 1,000 times cleaner than normal atmospheric air.

To find out how Reco-Air can be your commercial advantage, please contact us on 0333 305 2978 or by email at mail@reco-air.com

