

Wilton Row Project



Compact single fan VRV IV S-series an 'unseen' solution in Belgravia

As part of the extensive refurbishment of a three-storey house in a quiet corner of London's Belgravia, an old multi-split air conditioning system – and its associated pipework – was targeted for replacement.

The owners of the Wilton Row property wanted modern technology and efficiency – coupled with a condensing unit that could effectively be 'unseen'.

Ceilite Air Conditioning of Stansted was invited to suggest a suitable solution. Tim Cheshire, applications engineer at Ceilite, says: "The contractors said there was one major consideration: the owners did not want a large outdoor unit. This was because the unit would have to be positioned on a small area of flat roof, behind a shallow pitched roof.

"We received the request just as Daikin UK was launching the VRV IV S-series – with the most compact VRV systems creating more

opportunities for out-of-sight solutions. We could see that the new 4hp single fan unit would be a perfect fit for the Wilton Row project, and the client was happy with our recommendation."

In addition to the outdoor unit, the house has four slim concealed ceiling units – with associated ductwork and grilles – installed behind bulkheads in the main bedroom, two dressing rooms and an upstairs study. Where space permits, there are separate air inlets for these units, but in some cases air returns via unused sections of the outlet grille.

New refrigerant pipework was installed to serve the indoor units, each of which has an individual wired controller.

Daikin's VRV IV S-series consists of a range of compact heat pumps developed primarily for residential and light commercial applications. The range includes single fan, single phase 4hp and 5hp units that make the latest VRV technology accessible where outdoor space is limited.

Year of installation

› 2015

Project requirements

- ☒ Air conditioning
- ☐ Air curtain
- ☐ Air purification
- ☐ Control
- ☐ Heating
- ☐ Hot water
- ☐ Refrigeration
- ☐ Ventilation

Installed systems

- › VRV S-series
- › Slim concealed ceiling unit



4/5hp single phase unit

With a height of just 823mm and a footprint of 940 x 460mm, the 4hp and 5hp units weigh 94kg – a relatively easy load for two-man handling in the most restricted locations. Their light weight reduces installation time and effort.

Designed for installation on balconies or behind parapet walls, the units typically have no visual impact and are quiet in operation – so they easily comply with building and planning regulations. As front blow units, they require no special ducting.



Example of VRV-S series behind a parapet

With the best seasonal efficiency in their class, the units are designed for low energy consumption – and costs.

The 4hp unit can be connected to up to eight indoor units. It has a cooling capacity of 12.1kW and a maximum heating capacity of 14.2kW. It clocks an impressive EER of 3.53 and COP of 3.81.

The 5hp unit, for up to 10 indoor units, gives 14.0kW of cooling and up to 16kW of heating, with EER of 3.29 and COP of 3.56.

Both units are charged with 3.7kg of R410A refrigerant (7.7 tonnes CO₂ equivalent).

Total system piping length for both units is 300 metres, so where space permits they can be installed out of sight and earshot.

The S-series also includes twin fan units, single phase 4hp to 6hp and three phase 4hp to 12hp, for larger applications where space is less of an issue. The largest of these supports a maximum of 26 connected units.

S-series units are compatible with all Daikin's VRV indoor units and can also contribute to total solutions including air handling units and air curtains.

The variable refrigerant temperature feature of VRV IV provides maximum customised comfort, efficiency and intelligent control tailored to the user's needs. If necessary, systems can be installed on a zone-by-zone basis, and multiple systems can be configured and controlled from a central location.

Daikin's S-series gives installers additional VRV IV solutions to offer in both newbuild and retrofit applications.

Tim Cheshire says:

"The Wilton Row installation certainly proves the worth of the S-series – in terms of both versatility of application and ease of installation."

Kit List

Code	Description	No of units
RXYSQ4TV1	VRV S-series condensing unit	1
FXDQ20A	Slim concealed ceiling unit	4