

SAMSUNG

DVM S2 | WindFree™

Digital variable multi

Compatible





Aerial view of a dense urban landscape with various buildings and streets. The image shows a mix of modern and older architecture, with a central area featuring large, modern buildings with glass facades. The surrounding areas are filled with smaller, older buildings and streets. The overall scene is a high-angle, top-down view of a city.

Air has the strength
to drive wind turbines.
And the softness
to caress our skin.

From high-capacity
cooling in a large hall
to helping us relax with
WindFree™ cooling,
Samsung harnesses the power
and the delicacy of nature
to deliver exceptional comfort
– for everyone.

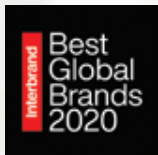
Meet true versatility.

The DVM S2. Built on revolution.



About Samsung | Our brand

The leading brand in the air conditioning industry



5th

The Best
Global Brands

Interbrand is a global brand consultancy and publisher of the highly influential annual Best Global Brands.



3rd

The 100 Largest
Global Market
Value Companies

The FutureBrand Index is a global brand perception study of the 'Global Top 100 Companies by market value' according to PricewaterhouseCoopers (PwC), a global accounting consulting firm.



8th

The World's
Most Valuable
Brands 2020

Every year, Forbes announces its top 100 global brands based on the profits and industry status of more than 200 companies worldwide.

Samsung is one of the world's leading companies, with an outstanding brand value.

According to the official report of Interbrand, Samsung entered the list of top 5 brands in 2020, and is the first non-US company in the world to be ranked in the top 5. Samsung's brand value is \$62.3 billion, which increased by 2% compared to last year, despite an uncertain business environment as the COVID-19 pandemic swept the world.

Samsung has been deploying various social contributions and campaigns in response to COVID-19, and expanding sustainable activities across all business areas and functions. We have also been continuously introducing innovative products, such as the Galaxy Z Flip smartphone, the Terrace TV, Bespoke, and the 360 Cassette and WindFree™ air conditioners. These are the key factors that have been driving the relentless progress of brand Samsung.

As well as entering the top 5 of "Best Global Brands" by Interbrand, Samsung was ranked 1st in the "World's Best Employers" and 8th in the "The World's Most Valuable Brands 2020", awarded by Forbes.

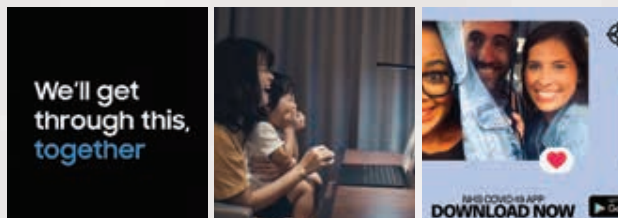
These achievements show that Samsung is truly one of the most valuable brands in the world, and is undoubtedly the leading brand in the air conditioning industry.



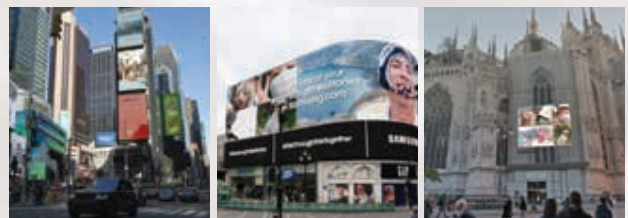
Helping each other, get better together

To help swiftly counteract the effects of the COVID-19 pandemic, Samsung has implemented various supporting activities, with donations for each country. We have also conducted various advertising campaigns designed to comfort and cheer-up people with happy and hopeful messages and proactive communications.

"Get through this together"



"Smile Stories Campaign"



Advertising at Time Square (New York, USA), Piccadilly Circus (London, UK), and The Duomo (Milano, Italy). Social channels at Facebook, Instagram, and YouTube.

Protecting the environment

As a global corporate entity, Samsung is acutely aware of the obligations and roles in sustainable operations. While strengthening our climate change response activities, we endeavour to comply with international environmental standards, as well as European and national laws and regulations, across our global business operations. We are actively taking steps to minimise the generation of harmful materials, utilise resources efficiently and recycle waste products for the benefit of the environment. We are also doing our best to minimise the environmental impact of our product development, production, distribution, sales and disposal processes, while extending the life cycle of our products.



WEEE: Electronic Waste

Samsung works within the WEEE (Waste of Electrical and Electronic Equipment) regulations, which form the Directive for extended producer responsibility. This Directive mandates the safe collection, treatment, recycling and environmentally-sound disposal of all electrical and electronic equipment. Working with collective recycling schemes in each EU member state, Samsung co-finances the take-back and recycling of electronic products.



Ecodesign

Samsung complies with the Ecodesign regulations, issued in March 2012. These require electric air conditioners (<12kW) and comfort fans (<125W) within the EU to display detailed, highly visible information regarding energy efficiency, plus information on Seasonal Coefficient of Performance (SCOP), Seasonal Energy Efficiency Ratio (SEER) and annual energy consumption (kW/h).



Packaging

Samsung works together with recycling schemes and governmental organizations to collect, separate and reuse all packaging materials at various points in the distribution chain. Many materials can be recycled into new products, which helps to save natural resources. Recycling packaging also helps to reuse valuable raw materials and to reduce the overall impact on the environment.

Climate actions



In line with the Paris Agreement signed in December 2015, Samsung has been taking action to tackle the issues of climate change. We identify related issues, analyse risks, establish and implement effective counter-strategies, develop energy-efficient products. We regularly discuss climate actions through committees and councils, are committed to sourcing renewable energy for 100% of our worksites and managing their Greenhouse Gas (GHG) emissions through the Global Environment, Health, and Safety System (G-EHS). In addition, we are working with suppliers, the Samsung Institute of Safety and Environment and related departments to reduce other indirect GHG emissions created by activities such as product transportation and business travel.

Operations



We are committed to reducing the environmental impact of our business operations. Our slogan of “Planet First” expresses our commitment to corporate social responsibility and sustainability management. We focus on 3R activities - Reduce, Reuse and Recycle – to use less and recycle more. In 2019, we recycled 95% of our waste. We also strive to minimise the amount of water used in the manufacturing process, while maximising waste water purification and its subsequent reuse. In 2019, 51% of our water was reused – a massive 68.55 million tonnes. In addition, we operate a management system to treat pollutants by appropriate processes and are engaged in a range of activities designed to help preserve biodiversity in the regions where we do business.

Circular economy



As natural resources run out, sustainability across all stages of the product life-cycle is becoming increasingly important, from materials purchasing, development, and manufacturing to logistics, use and disposal. We have established circular economy principles that close the loop and expand the reuse and recycling of our resources to minimise the social and environmental impacts. These include the increased use of sustainable materials, extending the product lifespan, and minimising the use of natural resources and raw materials. In order to turn these principles into reality, we have also developed a number of key mid-to long-term goals, such as 100% use of sustainably-sourced paper in packaging and the use of 5,00,000 tonnes of recycled plastic by 2030.

Product stewardship



We operate an Eco-conscious Product Policy through which we strive to enhance our product stewardship and minimise the environmental impacts throughout the entire product life cycle – from purchasing raw materials, to development, manufacturing, distribution, usage, and disposal. Right from the product design stage, we apply our Eco-Design Process to assess the level of resources and energy we use, as well as the harmfulness of the raw materials utilised in products. This enables us to plan and develop products that have greater energy efficiency, use fewer resources, and exclude hazardous substances and chemicals. For example, our air conditioners’ WindFree™ Cooling mode reduces energy use by up to 58% compared to the normal mode.

The pinnacle of efficiency, pushes back the boundaries

In line with Samsung's unwavering commitment to being an eco-responsible organisation, the DVM S2's radical new design incorporates a range of technologies that minimise its impact on the environment. As well as transferring heat much more efficiently, so it consumes much less energy, it also intelligently optimises its cooling performance to reduce any waste. In addition, its improved sub-cooling rate and Advanced Flash Injection significantly reduce the amount of refrigerant required, making it much more environmentally friendly and reducing harmful CO₂ emissions.



Maximised efficiency

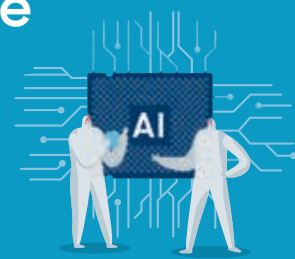
minimises
waste of
energy



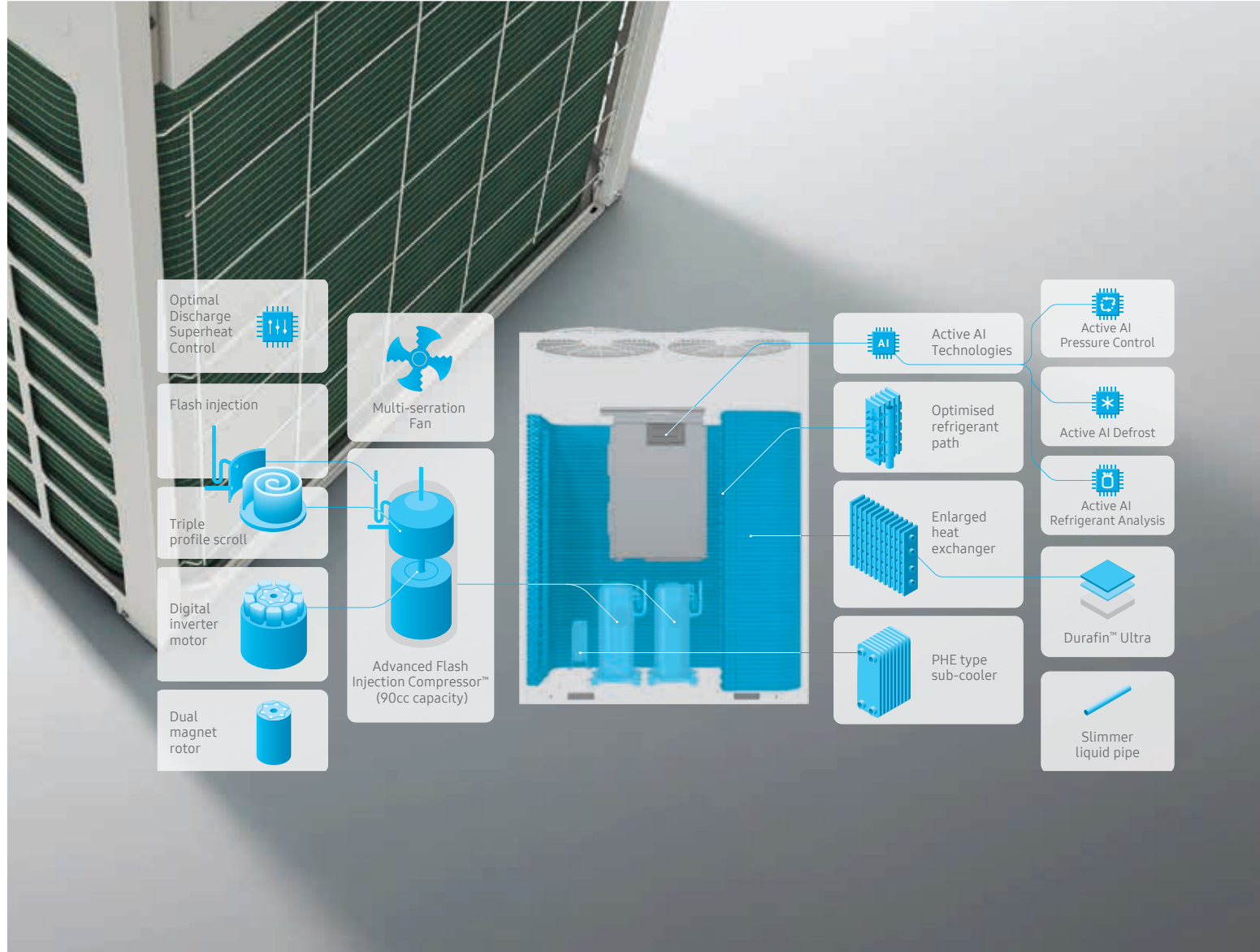
The DVM S2 has been redesigned to cut the cost of cooling with energy-efficient technologies. The enlarged Heat Exchanger has a much greater transfer area to exchange heat faster. An optimised refrigerant path also matches the air flow speed to improve the transfer of heat. An aerodynamic Multi-serration Fan generates more air flow while consuming less electricity as it minimises air turbulence. And a 7th generation insulated gate bipolar transistor (IGBT), which switches current and frequency to suit the system, reduces the loss of conducted electricity.

Artificial intelligence

controls
more
efficiently



The DVM S2 optimises its cooling performance automatically, based on a learning and optimising algorithm about the installation conditions and usage patterns. Active AI Pressure Control intelligently adjusts the refrigerant condensing pressure and evaporating pressure, so it cools faster and reduces energy usage. Active AI Defrost ensures it defrosts more precisely, so it increases the continuous heating time significantly. And Active AI Refrigerant Analysis proactively monitors and helps maintain the optimum level of refrigerant.



Less refrigerant

reduces environmental risks



The DVM S2 saves money and helps protect the environment with its efficient and flexible piping system. It is equipped with a high-performance sub-cooler that improves the sub-cooling rate of refrigerant. Its slimmer liquid pipe also means it requires 25% less refrigerant compared to a normal pipe, on average. So it reduces the costs of installation and maintenance and also provides added flexibility in designing the entire system. In addition, by using less refrigerant, it is much more environmentally friendly.

Image simulated, for representational purposes only.

Superior heating performance

replaces fossil fuel



The DVM S2 introduces a new era of eco-friendly performance and efficiency. It features Advanced Flash Injection technology with a new Triple Profile Wrap and Optimal Discharge Superheat (DSH) Control. The improved strength of its Flash Injection, which delivers superior heating in frozen conditions, means that the capacity is now much larger (90cc). So it is powerful enough to replace conventional heating methods that use fossil fuel. And its highly efficient Optimal DSH Control saves even more energy, which helps to reduce CO₂ emission.

Rebuilt on
all-new innovations.
The ultimate in efficiency
and reliability.



True innovation is a rare thing – so the multiple new technologies in the Samsung DVM S2 outdoor air conditioning unit make it truly unique. It has been totally redesigned to deliver outstandingly consistent comfort in a wide range of locations, as well as exceptional energy efficiency. Its flexibility is equally

matched by its reliability, as it can operate effectively in diverse environmental conditions, including the most extreme temperatures. It also includes a host of new and intelligent management features that make its installation and maintenance much simpler and more cost-effective. Quite simply it redefines the art of comfort.



Cost saving



Enlarged heat exchanger



90cc chamber with triple profile scroll



Optimised refrigerant path



9 release valves



High-efficiency IGBT



Active AI Pressure Control

Flexibility



Wider operating temp. range



High elevation with long piping



Active frequency drive 10Hz



Optimised ref. distribution control



Compact design



Up to 110Pa external static pressure

Reliability



Dual heat sink



Kammtail motor bracket



Upgraded base design



Durafin™ Ultra



Robust frame



Galvanized iron steel plate (GI)

Convenience



Slimmer liquid pipe



Emergency operation



On-Device Inverter Check™



Center point indicator of weight



Active AI Refrigerant Analysis



Simplified cover with handle

Comfort



Advanced Flash Injection Compressor™



Active AI Pressure Control



Flash injection



Multi-serration fan



Optimised DSH control



Quiet operation



Triple profile scroll



Diffuser type discharge plenum



Active AI Defrost



Kammtail motor bracket



Rotational defrost operation



Enlarged heat exchanger

DVM S2 Key features

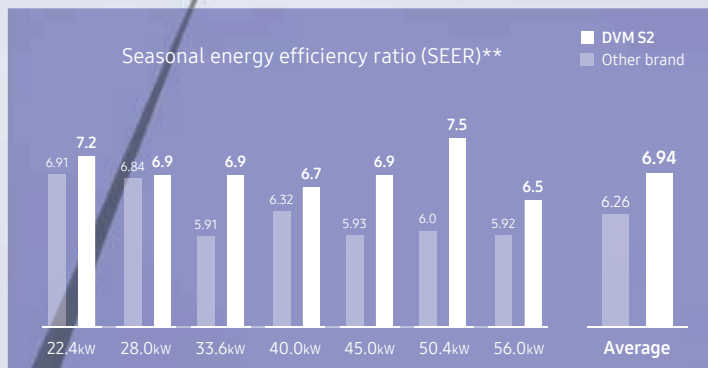
I Cost saving

Relentless innovation for the ultimate in energy efficiency

Air conditioning systems are a major consumer of energy, and account for about 30%* of the total energy used in a building. So, energy efficiency is usually the most important factor that consultants and designers consider when deciding which air conditioning system to purchase and install in a building.

The Samsung VRF systems already lead the industry in energy efficiency. And now the new DVM S2 outdoor unit is pushing the boundaries even further. It incorporates many new and unique technologies that deliver the next level of energy efficiency, along with a superior performance.

On average, the Samsung DVM S2 is proven to be around 11% more energy efficient across a range of capacities**.



* Varies by building, location, operating patterns and various other factors.

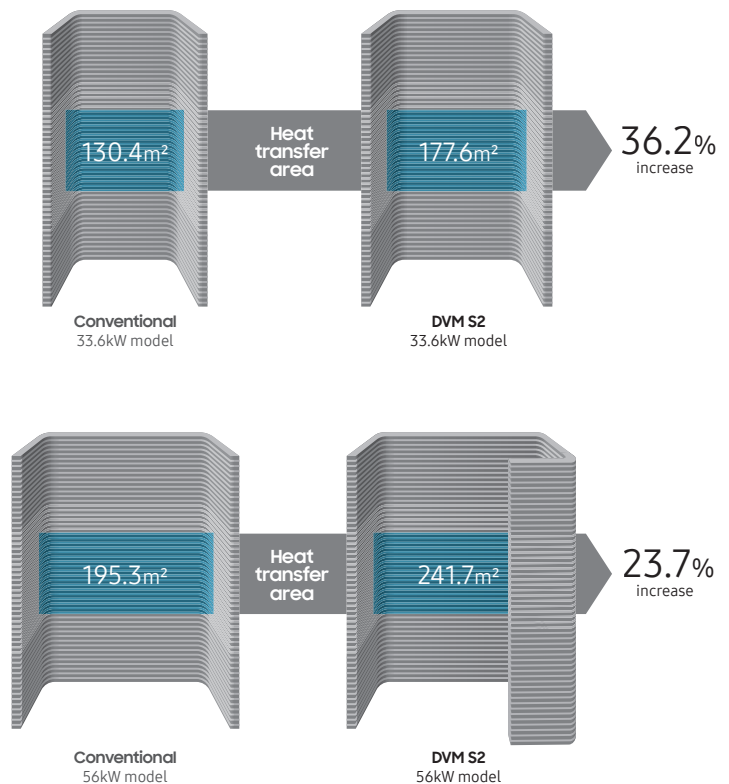
** Based on testing in accordance with the Eurovent testing rule, at the end of December 2020. Tested on 22.4~56kW models of the Samsung DVM S2 compared to the same capacities of another brand, using ducted type indoor units.



Transfers more energy with an enlarged contact area

Enlarged heat exchanger

The Samsung DVM S2 has an enlarged heat exchanger that is capable of transferring much more heat at once. Its heat transfer area is up to 36.2% larger* to quickly exchange heat. As a result, it consumes less energy to achieve the same cooling and heating performance.



* Based on Samsung's measurements, comparing 33.6kW models of a DVM S2 and a conventional outdoor unit.

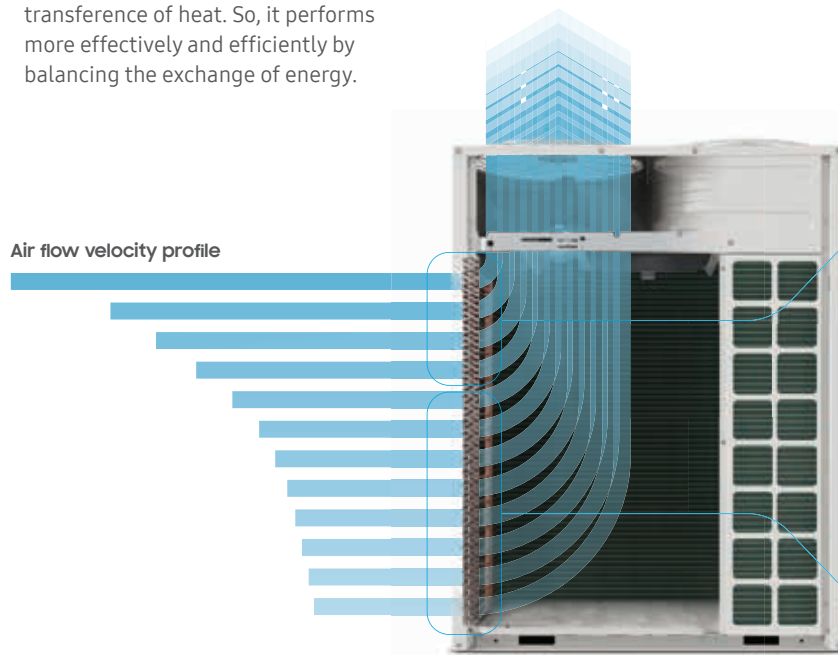
DVM S2 Key features

I Cost saving

Optimised refrigerant flow matches the air flow velocity

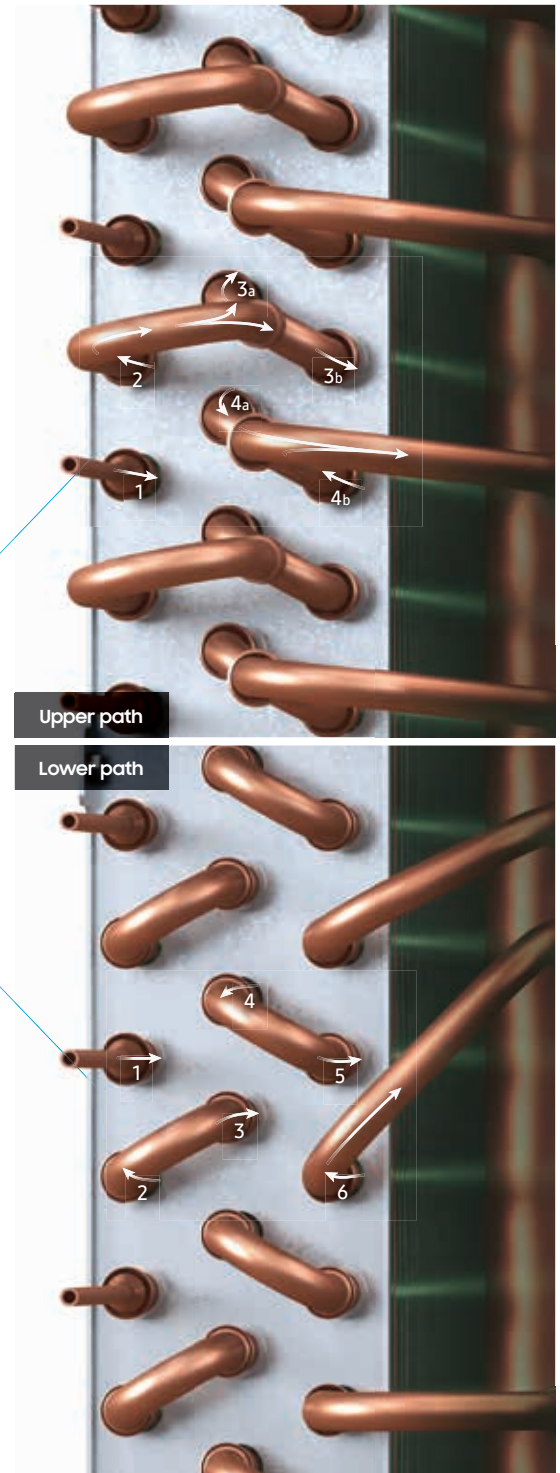
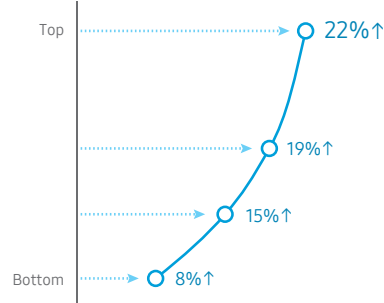
Optimised refrigerant path

The air flow speed inside the outdoor unit varies depending on how far it is from the top fan – the closer the faster and the farther the slower – which normally results in the uneven exchange of heat from top to bottom. The Samsung DVM S2 has an optimised refrigerant path* that ensures that the flow of the refrigerant matches the air flow speed, which optimises the transference of heat. So, it performs more effectively and efficiently by balancing the exchange of energy.



Rate of improvement in pressure loss reduction**

The refrigerant flow rate is adjusted by increasing the mass flow rate in order to increase the amount of heat exchanged in the upper part.



* The shape of the refrigerant path differs by model.

** Based on an internal module evaluation. Results may vary depending on the individual test or usage conditions.

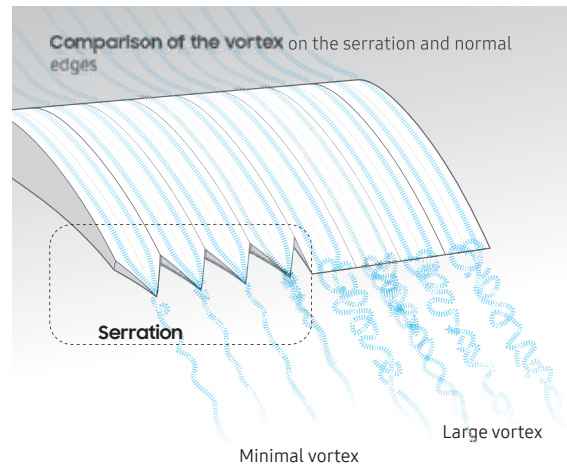
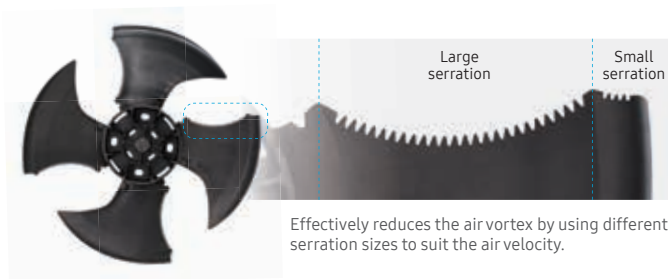
Image simulated, for representational purposes only.

Efficiently increases the air flow



Multi-serration fan*

The DVM S2 has a brand-new, aerodynamic Multi-serration fan* that creates more air flow while consuming less energy. Its multi-serration wing tip design, inspired by an eagle owl's wing, minimises the turbulence of the air vortex, which reduces the air resistance and ensures more stable fan movement.



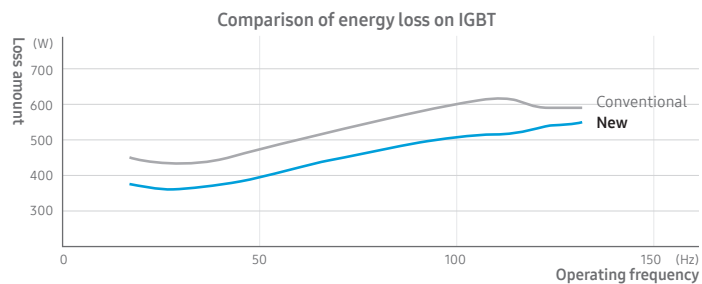
* Only available in certain models that have one fan. The shape of the fan may vary by model and region.

Reduces the loss of conducted electricity



High-efficiency IGBT (Insulated gate bipolar transistor)

An IGBT has a key role in inverter systems. It switches direct current (DC) to alternating current (AC) and maintains a frequency (Hz) that is suited to the system. So, the efficiency of an IGBT affects the efficiency of the whole air conditioning system. The Samsung DVM S2 uses the 7th generation of IGBT, which reduces the loss of conducted electricity by 20%*, while being 36% smaller in size. As a result, the Inverter Controller's energy efficiency is improved by up to 3.6%*, depending on the operating frequency (Hz).



* Based on internal testing of the DVM S2 33.6kW model compared to a conventional outdoor unit, combined with 6 GD2 5.6kW indoor units. Results may vary depending on the individual test or usage conditions.

DVM S2 Key features

I Cost saving

Circulates more refrigerant while using less energy

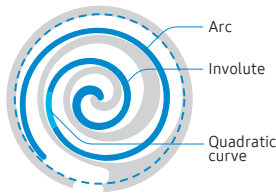


90cc chamber with new triple profile scroll

The Samsung 90cc inverter scroll compressor used in the Samsung DVM S2 has the world's largest capacity and circulates up to 17% more refrigerant*. Its new triple profile scroll combines arc, involute and quadratic curves and also has a thicker profile towards the middle to reinforce the strength of the center part. So, it creates a larger chamber and rotates reliably at high speed. By delivering a higher level of performance at a lower frequency, it consumes less electricity and improves overall energy efficiency, especially in a high frequency domain.



Algebraic scroll
Flash injection (80cc)
2015



Triple profile scroll
Advanced flash injection (90cc)
2021



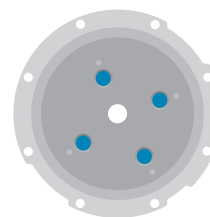
* Samsung circulates 14,400cc/sec refrigerant (= 90cc (displacement volume) x 160rps (revolutions per second)), while Company A circulates 12,480cc/sec (= 96cc x 130rps), Company B circulates 14,080cc/sec (= 88cc x 160rps) and Company C circulates 12,320cc/sec (= 88cc x 140rps).

Reduced losses at partial loads

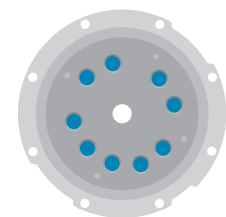


9 release valves

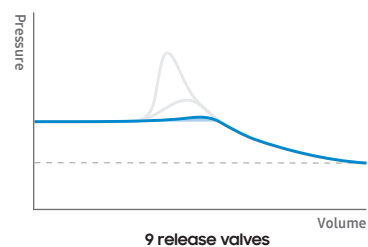
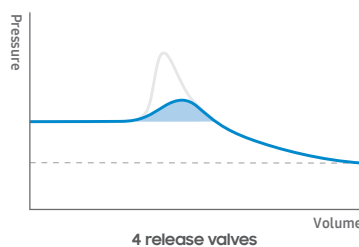
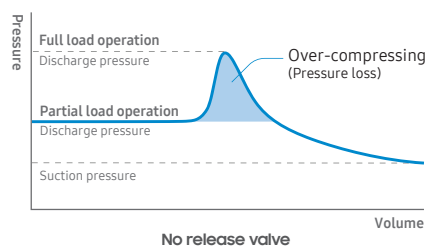
Compressors always draw in the maximum amount of refrigerant to generate the 100% pressure needed to operate at full load, as their chamber size is not variable. And, to compress more refrigerant, more electricity is required. So, it's crucial to release any excessive refrigerant pressure in order to save energy when there's only a small load that doesn't need a high discharge pressure. The new Samsung 90cc scroll compressor has 9 release valves, so it accurately and immediately releases refrigerant to prevent the over-compressing that wastes electricity.



Conventional scroll compressor (80cc)
4 release valves



New Samsung scroll compressor (90cc)
9 release valves



Automatically optimises to save energy



Active AI pressure control*

The optimal refrigerant condensing pressure is crucial to ensure a stable cooling and heating performance. A much higher pressure is to be maintained if the piping length is long or if there is a large difference in elevation. More than 90% of outdoor units are installed in a situation where the elevation is 30m or lower and the pipe length is 100m or shorter** (Figure 1). Using active AI pressure control*, the DVM S2 recognises both the piping length and the difference in elevation and learns the usage pattern and external temperature in real-time. It then automatically adjusts the refrigerant condensing pressure accordingly, by up to 32% (Figure 2). As a

result, it reduces the energy consumption by 15%*** when the condensing pressure is reduced by 12% (Figure 3).

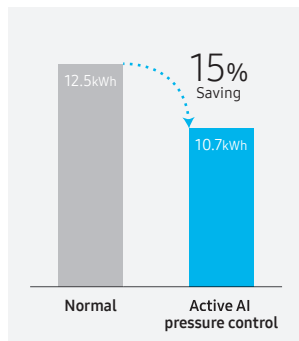


Figure 3. Cumulative energy consumption over 4 hours

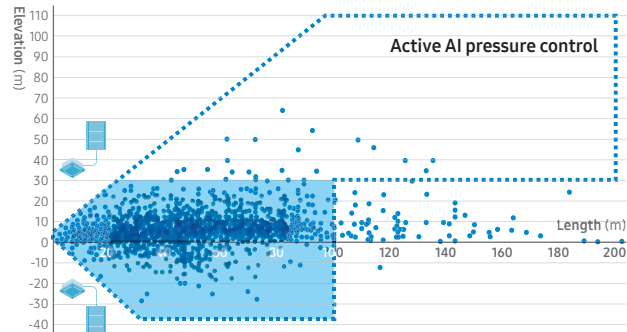


Figure 1. Installation sites by piping length and elevation*

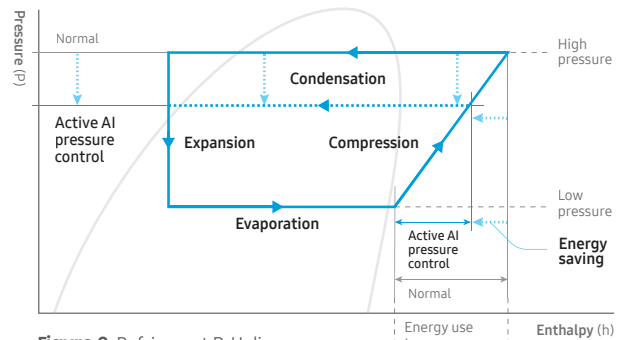


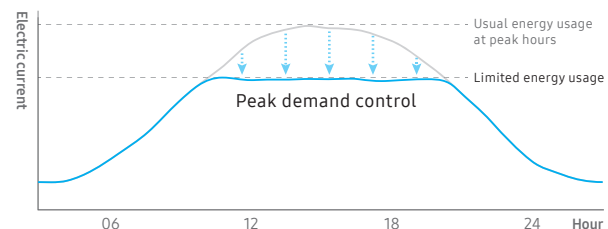
Figure 2. Refrigerant P-H diagram

Simply limits power consumption



Peak demand control

To help businesses manage their power consumption and related costs better, the DVM S2 offers power-demand control for peak hours and seasons. This is especially useful when the electricity supply is insufficient or when businesses want to block excessive and wasteful energy usage.



* Optionally available depending on the installation conditions. For detailed information, please refer to the installation manual.

** Based on internal analysis.

*** Based on internal testing with an AM080AXVGGH/EU outdoor unit connected to AM083NN4DBH1 and AM145NN4DBH1 indoor units with 25m of piping, using the cooling operation in Auto mode for 4 hours, with an external temperature of 30°C and a set temperature of 22°C. Results may vary depending on the actual installation and usage conditions, such as the piping length, elevation and external temperature.

DVM S2 Key features

I Reliability

Reliable performance in the toughest environments

Some environments present a real challenge to the effective operation of an air conditioning system. Extreme temperatures, persistently wet conditions and even earthquakes will not only impact the performance, but can also drastically shorten its working life.

The Samsung DVM S2 outdoor unit's robust design is capable of coping with the most challenging forces of nature. It continuously fine-tunes the flow of refrigerant using a new 90cc scroll compressor, and its unique dual heat sink that radiates heat effectively from the inverter circuit. So, it delivers an extremely reliable performance across a wide range of temperatures.

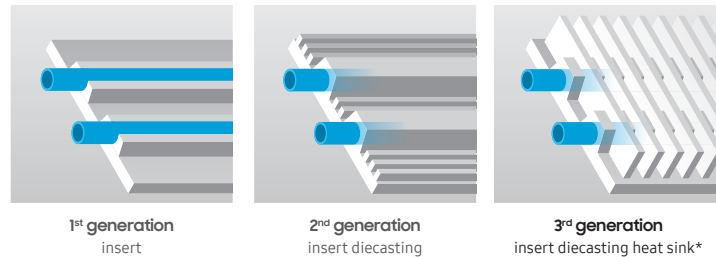
It is also built to withstand severe physical shocks, including sizeable earthquakes, and has significantly improved anti-corrosion capabilities to ensure maximum durability.



Ensures reliable inverter control

Dual heat sink

The inverter circuit of VRF systems generates a lot of heat, which affects the entire system performance. The Samsung DVM S2 has a Dual heat sink that uses both air and refrigerant. Its unique Insert diecasting heat sink design minimises the thermal loss between the pipe and heat sink by increasing their contact area by 33%. By radiating heat from the inverter circuit more effectively, it helps extend the maximum operating temperature from 48°C to 50°C, and delivers a reliable performance regardless of the external conditions.



* The shape of the heat sink may vary by model.

Designed to perform in freezing conditions

The Samsung DVM S2 is capable of delivering a high heating capacity at extremely low ambient temperatures in a reliable and energy-efficient way. Its base design helps drain condensed water fast, and a base heater melts any ice that forms inside.

Upgraded base design

During the heating operation in cold weather, the defrost cycle used to remove ice on a heat exchanger can cause water to condense on it. The DVM S2 has a patented base design with drainage holes that cover a 6.6 times larger area, so it drains condensed water much faster to prevent it from freezing inside the cabinet.

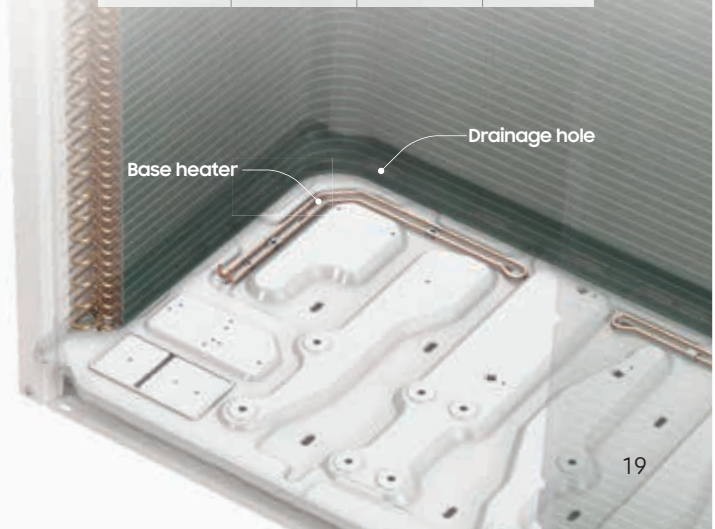
Base heater** (optional)

In areas of high humidity with extremely cold temperatures of -25°C or below, it is possible that ice can still build-up on a base, even if it drains water effectively. So, the DVM S2 has an option to include a base heater that can quickly melt ice on the base and ensure the reliability of its heating operation.

* The capacities are based on DVM S2 models.

** Optional. Available in the second half of 2021. Varies based on the base size of an outdoor unit, and may differ by line-up and region.

Model by capacity*	Total area of drainage holes		Difference
	Conventional	DVM S2	
28kW model	22cm ²	146cm ²	6.6x
56kW model	73cm ²	232cm ²	3.2x



DVM S2 Key features

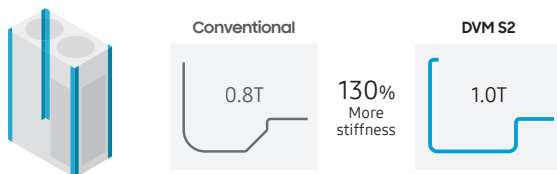
I Reliability

Less damage from physical shocks and swaying

The Samsung DVM S2 is equipped with new and innovative design features that significantly enhance its durability. So, it is proven to continue working effectively, without any problems in its main unit or piping, in an earthquake of up to magnitude 9.0*.

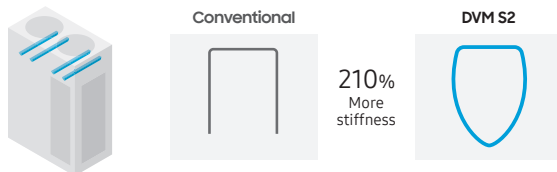
Robust frame

The corners of the cabinet's sides are reinforced. The thickness has been increased by 25%** and its shape has also been refined, so its stiffness has increased by 130%**. As a result, the DVM S2 provides incredible durability across its entire body without bending.



Kammtail motor bracket

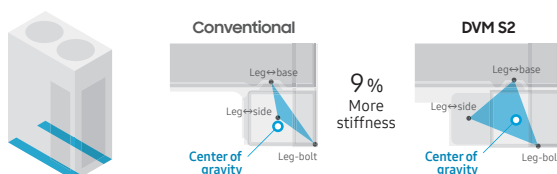
Instead of a traditional open-type squared bracket, the DVM S2 has a pipe-shaped Kammtail bracket that firmly supports the motor with 210% more stiffness**.



Improved structure of legs

The DVM S2 has a patented support design*** to improve stability. The shape of the legs was redesigned to disperse weight effectively, and its stiffness has been increased by 9%**.

So, they support the body more effectively and suppress any sway, even during an earthquake.



* Based on a test in accordance with ICC ES AC156 : 2010 (SDS=2.5g, z/h=1), conducted by SGS Korea Co., Ltd. Result report No.: SGS-R20-1599-KR00.

** Based on internal testing using Siemens NX nastran 1867 simulation.

*** Patent No.: P2020-0099857

Image simulated, for representational purposes only.

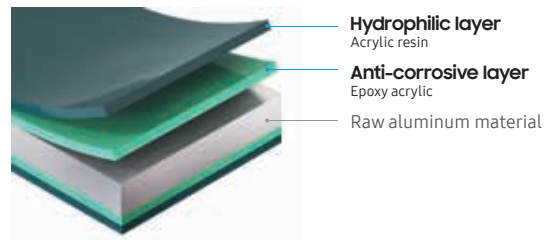
Lasting performance with enhanced resistance to corrosion

Corrosion-resistance is a crucial factor in outdoor units, as they need to withstand a range of climate conditions. The Samsung DVM S2 features improved anti-corrosion capabilities on the heat exchanger and chassis to ensure maximum durability in harsh environments.



Durafin™ ultra

The Samsung DVM S2 outdoor unit's Durafin™ Ultra has an anti-corrosive layer of epoxy acrylic and a hydrophilic layer of acrylic resin that disperses water and reinforces its corrosion-resistance. Its superb quality was proven using the Salt Spray Test (SST) over a period of 2,280 hours* with no leakage of refrigerant**.



Galvanized iron steel plate (GI)

The Samsung DVM S2 uses galvanized iron steel plate as its external material, with a PE powder coating of up to 100μm thickness. This powerful combination is proven to improve corrosion-resistance by 43%, based on the Complex Cycle Test (CCT)***. So, it protects the cabinet from rusting and ensures it can endure harsh conditions.



* Based on testing by a third party lab in accordance with ASTM B117, an official test method. For more details, please contact Samsung's technical professionals.

** Based on testing by a third party lab, applying the actual pressure of refrigerant for 1 minute, after a Salt Spray Test (SST) of over 2,280 hours.

*** Based on internal testing using corrosion chambers, Q-FOG and CCT-1100. The Complex Cycle Test (CCT) includes cycles of spray (for 2 hours at 35°C), dry (for 4 hours at 60°C with 30% Relative Humidity) and damp (for 2 hours at 50°C with 95% Relative Humidity) conditions. As a result, the Galvanized Iron Steel Plate (GI) formed red rust after 240 hours, which is 43% slower than general Electro-Galvanized Steel Plate (EGI) which forms red rust after 168 hours.

DVM S2 Key features

I Comfort

Uncompromising innovation delivers the next level of comfort

The one purpose of air conditioning is to ensure people feel comfortable. Now the Samsung DVM S2 outdoor unit is taking comfort to the next level. It features the world's largest capacity*, combining an incredible 90cc compression chamber and a superfast 160rps (revolutions per second) motor. So, it can keep every room, in every corner of a building pleasantly cool or warm – in every season.

In addition, its Advanced Flash Injection Technology increases the flow of refrigerant in extremely cold conditions. It also intelligently manages the defrost operation, so it works more efficiently, and analyses users' behaviour to ensure it creates the optimal environment as quickly as possible.

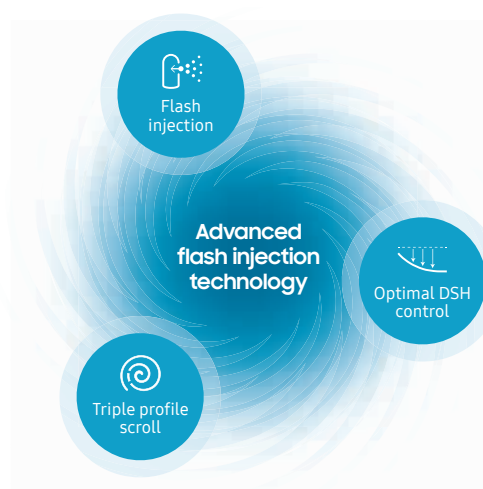
And, to minimise any disturbance, it features a radical new fan design, inspired by nature, and a noise control system for use at night.



Better heating performance with advanced flash injection technology

Advanced Flash Injection Compressor™

The compressor is the engine that makes a major contribution to the overall performance of an air conditioning system. Samsung has been developing core technologies to reinforce the power of its global-leading compressor. The result is the Samsung Advanced Flash Injection Compressor™, which includes a host of brand-new innovations created by Samsung and provides the world's largest capacity*. By combining flash injection technology with a strengthened triple profile wrap and optimal discharge superheat (DSH) control technology, the Samsung DVM S2 delivers a new level of comfort by maintaining pleasantly cool or warm conditions in every corner of a building all year round.



* Samsung circulates 14,400cc/sec refrigerant (= 90cc (displacement volume) x 160rps (revolutions per second)), while Company A circulates 12,480cc/sec (= 96cc x 130rps), Company B circulates 14,080cc/sec (= 88cc x 160rps) and Company C circulates 12,320cc/sec (= 88cc x 140rps).

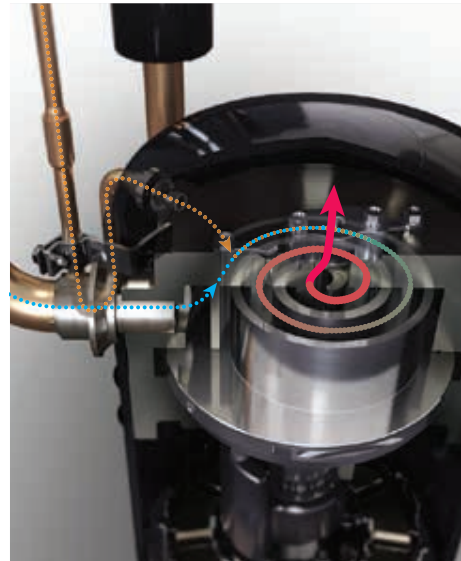
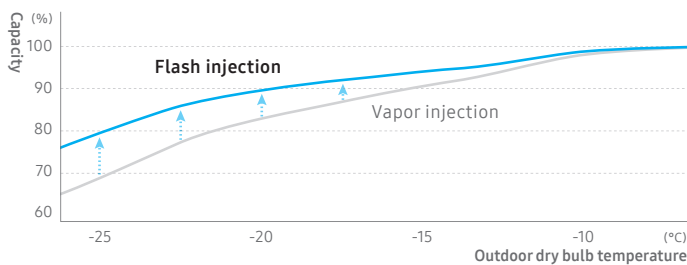
DVM S2 Key features

Comfort

Keeps on working well freezing temperatures

Flash injection

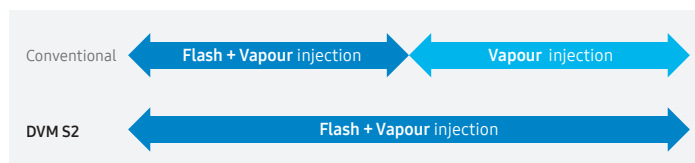
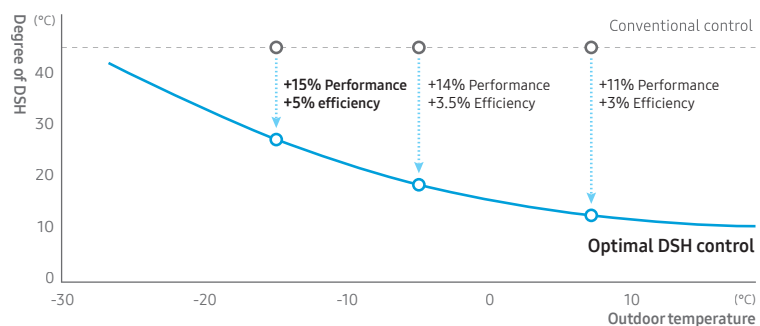
Stay comfortably warm when it's freezing outside. The performance of a general heat pump worsens in low temperatures as the refrigerant pressure decreases. The Samsung DVM S2 outdoor unit's flash injection technology increases the flow of refrigerant, so the compressor continues working reliably. It also performs well at even lower temperatures, providing non-stop comfort in the coldest conditions.



Optimally controls the degree of discharge superheat to improve both performance and efficiency

Optimal Discharge Superheat (DSH) control

The heating load and external temperature are the two most influential factors on an outdoor unit's heating performance. So, the Samsung DVM S2 automatically adjusts the degree of discharge superheat to reflect any changes in them and heat more efficiently and effectively. This new method of control improves the heating performance by up to 15% and increases operational efficiency by 5% at -15°C*.



* Based on internal testing. Results may vary depending on environmental factors and individual use.

Image simulated, for representational purposes only.

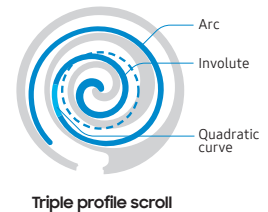
Super durability and speed create an unrivaled capacity

Triple profile scroll and dual magnet rotor

In order to compress flash type refrigerant and increase the total amount of compression, the compressor needs to have much better durability and rotary power. The DVM S2 has a triple profile scroll that combines arc, involute and quadratic curves to create a much larger chamber, and the strength of the centre part is significantly reinforced with a thicker profile towards the middle.

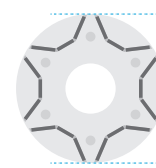
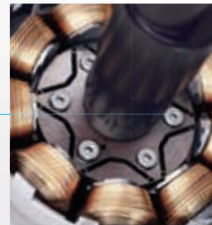


Conventional

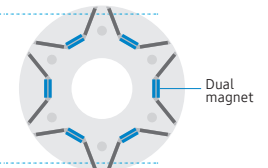


Triple profile scroll

And, its new motor also has a 11.4% enlarged rotor with many more magnets, which increases the rotary power by 10.8%*.



Conventional



Dual magnet rotor

As a result, it has an incredible 90cc compression chamber and operates at a superfast 160rps (revolutions per second), which combine to create the world's largest capacity**. So, it provides the exceptional reliability needed to keep rooms warm in severely cold weather.

* Based on internal testing, compared to a Samsung's conventional motor.

** Samsung circulates 14,400cc/sec refrigerant (= 90cc (displacement volume) x 160rps (revolutions per second)), while Company A circulates 12,480cc/sec (= 96cc x 130rps), Company B circulates 14,080cc/sec (= 88cc x 160rps) and Company C circulates 12,320cc/sec (= 88cc x 140rps).



Proven reliability of Samsung Advanced Flash Injection Compressor™

Samsung Advanced Flash Injection Compressor™ of the DVM S2 has been certified with a reliability mark (R-Mark), organised by the Korea reliability certification center, Korean reliability society.

[No. R-KORAS-2018-012] Inverter type (Variable speed) scroll compressor

Image simulated, for representational purposes only.



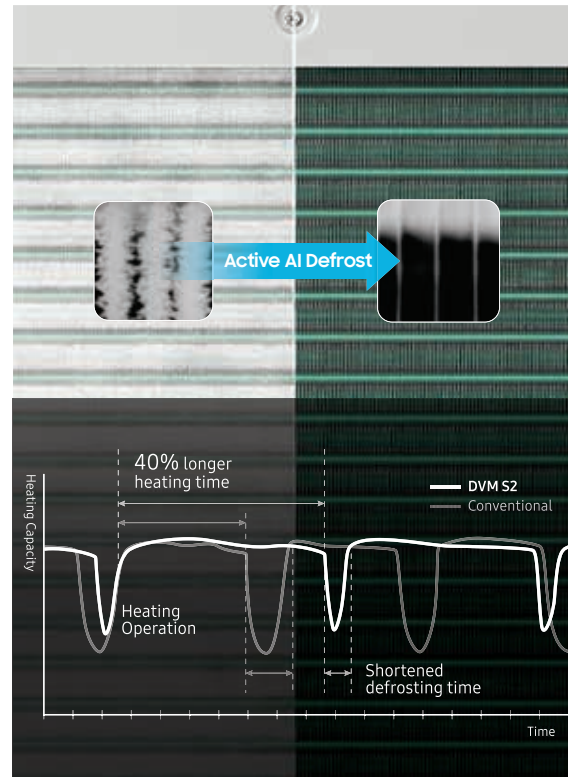
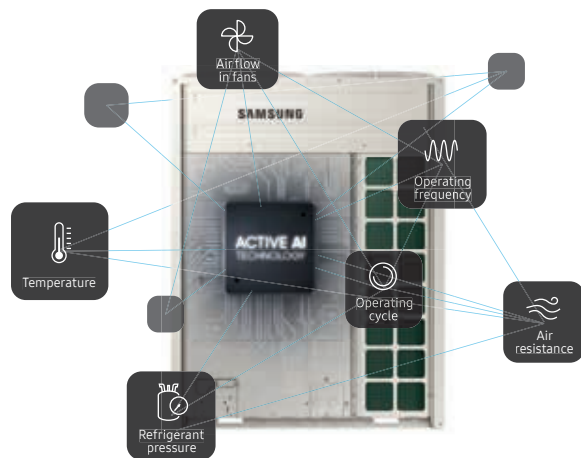
DVM S2 Key features

Comfort

Heats for longer with less defrosting

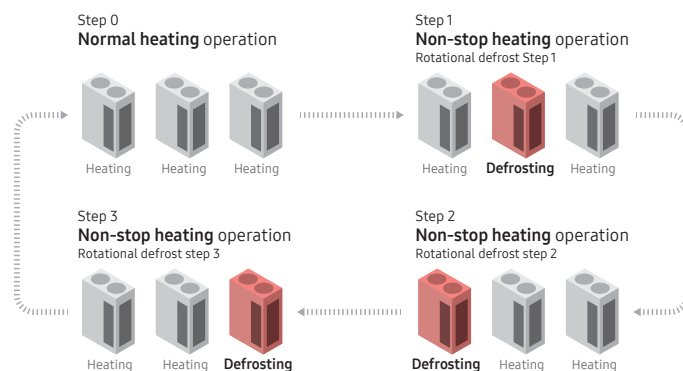
Active AI defrost

The heating operation generally causes ice to build up on outdoor units, which may interfere with the heat exchange process. To remove any ice, air conditioning systems normally pause the heating and run a defrost operation, so the indoor environment feels less comfortable. Samsung's Active AI defrost technology analyses various operating data, including the system's air resistance, operating frequency and cycle, so it defrosts more precisely. As a result, it reduces wasted energy and increases the continuous heating time by up to 40%*.



Rotational defrost operation**

The DVM S2 HR module's Rotational defrost operation ensures a continuous heating performance for reliable warmth and comfort. After initially running all of a building's outdoor units in heating mode, it automatically switches each unit over to defrosting mode in strict rotation. Because the heating mode runs for a longer period of time, users can enjoy a more pleasant, warm environment.



* Based on internal testing. Heating time at -10°C over a period of 6 hours: Samsung DVM S2 (AM240AXVAGH/EU) = 180 minutes vs. conventional outdoor unit = 110 minutes. Results may vary depending on environmental factors and individual use.

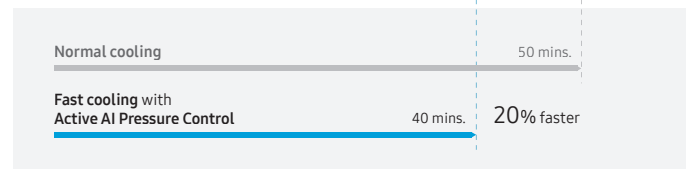
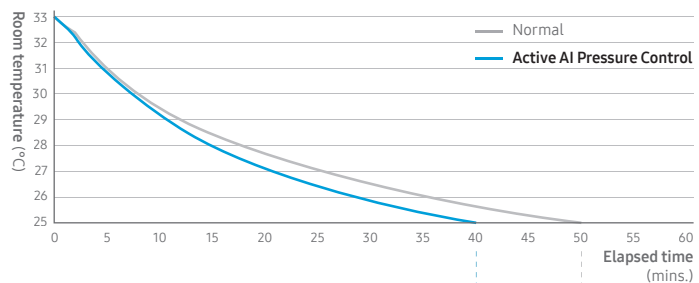
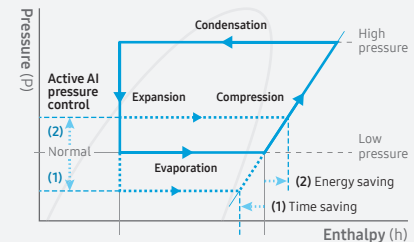
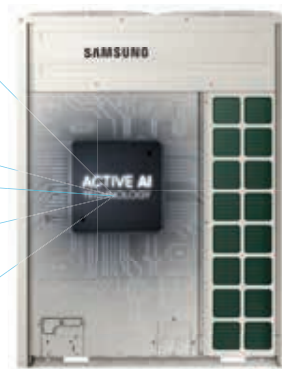
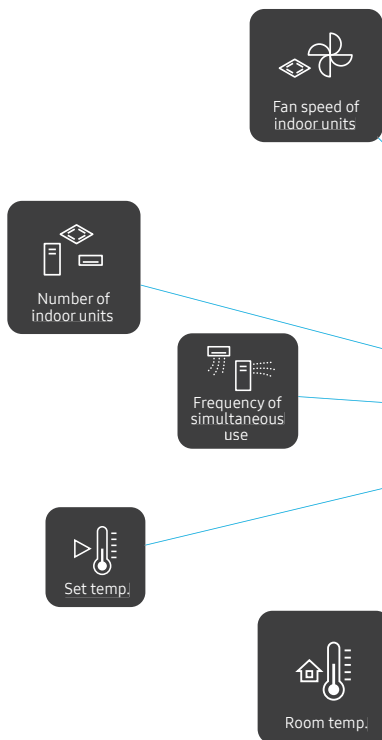
** Available only on the DVM S2 HR (Heat Recovery) models.

Optimal cooling by learning usage patterns

Active AI pressure control

By learning usage patterns from recent cooling operations and the surrounding conditions, the DVM S2 proactively creates the optimal cooling environment to suit users' general requirements.

For example: (1) If a user frequently lowers the room temperature when turning on the air conditioner, the Active AI Pressure Control recognises this pattern. So, when the air conditioner is turned on again, it automatically lowers the pressure of the inflow refrigerant by up to 33% and cools up to 20% faster*. (2) However, if there's no need for fast cooling, it saves energy by adjusting the refrigerant pressure to be higher than normal.



* Based on internal testing of the cooling operation, with the temperature set at 22°C and using Auto mode for 4 hours, at a room temperature of 33°C and an external temperature of 35°C. The tested model was an AM080AXVGGH/EU connected to AM083NN4DBH1 and AM145NN4DBH1 indoor units with 25m of piping. The elapsed times were measured when the room temperature reached 25°C.

DVM S2 Key features

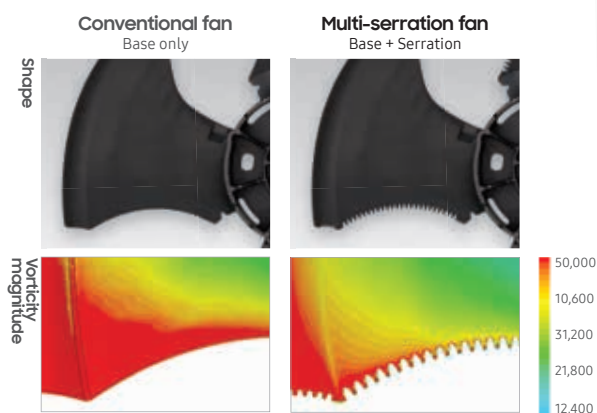
Comfort

Reduces fan noise by minimising the air vortex



Multi-serration fan*

Eagle owls fly silently at night. Inspired by their wings, a new multi-serration fan* has two types of serration on its wing tip. It has a large serration on the inner part and a small serration on the outer part, which are designed to suit the different wind speeds around them. This combination minimises the air vortex around the wing tip and significantly reduces the noise generated by the movement of the fan.



Comparison of vorticity based on the design of the edge**.

* Only available on models of 33.6kW or less. The shape of the fan may vary by model and region.

** Based on internal testing and simulation using a CAE software, Simcenter STAR-CCM+ (v.13.06).

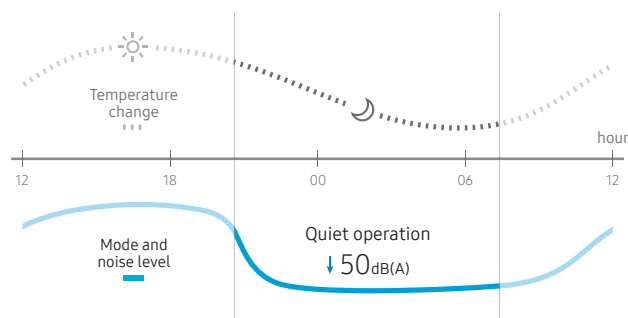


Works quietly and efficiently at night



Quiet operation

A noise control system lowers the level of noise to below 50dB(A)*, which is as quiet as a normal conversation. It has a timer and can be set to operate for up to 12 hours.



* Based on internal testing. Results may vary depending on environmental factors and individual use.

Image simulated, for representational purposes only.

Optimises the air flow - less friction, less noise

Along with a multi-serration fan, the Samsung DVM S2 has various new technologies that optimise the air flow inside the unit. So, the air moves smoothly and quickly with less of a vortex or turbulence that creates noise*.



Diffuser type discharge plenum

The edgeless, curved design of the discharge plenum enables the fan to pull air steadily from inside and gently diffuse it outside without creating a vortex*.



Conventional



Samsung DVM S2



Kammtail motor bracket

Instead of a traditional squared bracket, it has a streamlined Kammtail bracket that minimises noise.



Conventional

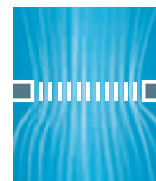


Samsung DVM S2

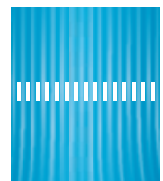


Enlarged heat exchanger

As the heat transfer area has been increased**, the wind speed and friction have been reduced accordingly, while still delivering the same level of performance*.



Conventional



Samsung DVM S2

* Based on internal testing and simulation using a fluid dynamics software, Ansys CFX. Results may vary depending on the actual usage conditions.

** 36.2% increase in a 28kW model and 23.7% increase in a 56kW model.

DVM S2 Key features

■ Flexibility

More flexibility with fewer limits to meet your every need

The location of an air conditioning system can have a significant impact on its performance. So, the DVM S2 outdoor unit is designed to give you maximum flexibility, as it will operate effectively in a wide range of locations and climates.

Its compact design ensures that you can select the optimum installation location, including inside a building. In fact, its long piping, optimised refrigerant distribution and high external static pressure make it the ideal choice for use in high-rise buildings.

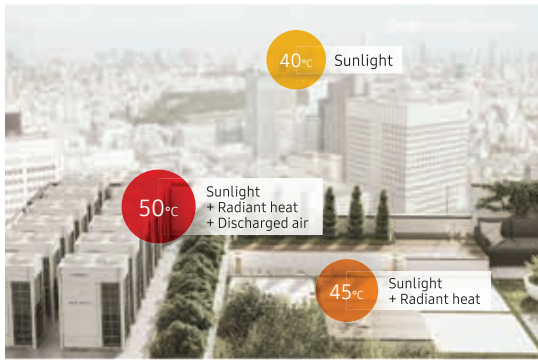
Even the harshest weather conditions are no problem. It can cool in heat of up to 53°C and provide warmth in freezing cold conditions of -25°C, while also optimising its performance to minimise energy use and deliver a consistently comfortable environment.

Top-class performance in extreme conditions

Wider operating temperature range

 No matter how extreme the temperature, the high-performance DVM S2 can handle the conditions. Operating across a wide temperature spectrum, it can cool in heat of up to 53°C and provide warmth in freezing cold conditions of -25°C to ensure a constant and comfortable environment.

When it's installed on the rooftop of a building, the actual temperature around the outdoor units may become much higher due to the effects of direct sunlight, the radiant heat of the rooftop and the discharged air of other outdoor units. So, delivery of a stable performance in hot environments, is vital.



* When the 'Expand Operational Temperature Range' option is applied, the lower limit of the cooling operation range can be expanded from -5°C to -15°C. Only available on HR models and under certain conditions.

** If the indoor temperature is lower than 15°C, it can work in heating mode but it cannot operate continuously due to a protection control.

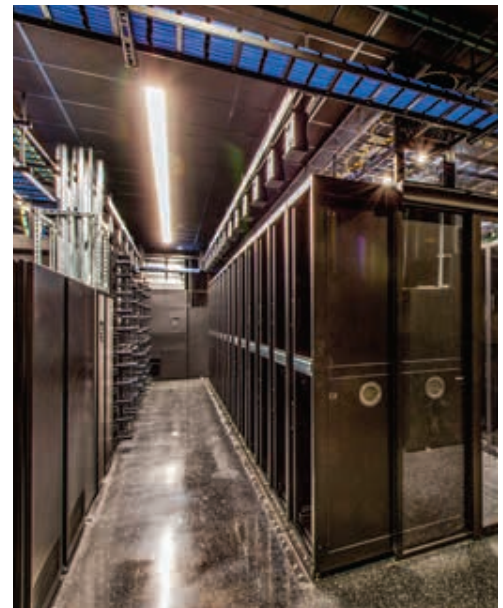
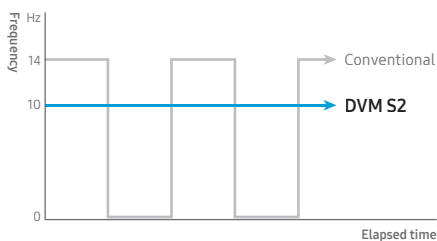
Ideal for continuous cooling even in cold weather

Active frequency drive 10Hz

The need for air conditioning tends to rise not only in summer but also in spring and autumn. In particular, in rooms that require a constant temperature, like a server room, air conditioners are installed to ensure a stable cooling operation.

In cool weather, air conditioners can quickly reach the desired temperature, but then repeatedly turn themselves off and on to maintain the temperature. Not only does this consume much more electricity than continuous cooling, it also reduces the lifespan of the products and causes discomfort for any occupants due to the fluctuation in temperature. The Active Frequency Drive of the Samsung DVM S2 enables the compressor to operate at the lowest revolution of 10Hz, which

prevents the operation from frequently turning on and off, so it maintains the indoor temperature more precisely to ensure continuous comfort.



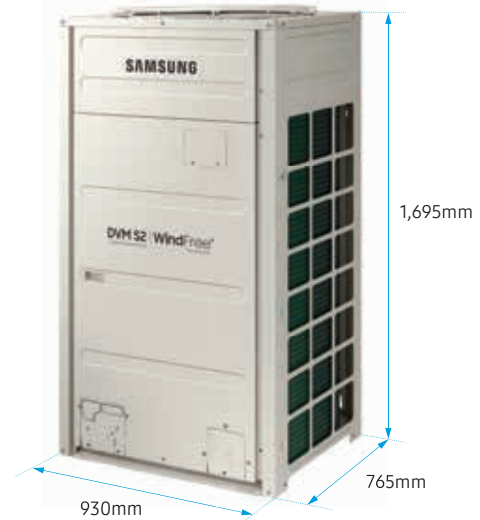
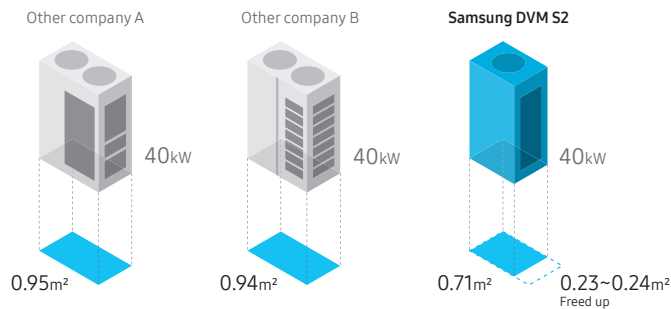
DVM S2 Key features

I Flexibility

Smaller footprint, saving valuable space and costs

Compact design

The Samsung DVM S2 has a small footprint, so it creates up to 33% more space*, which can be used for other purposes, without compromising on performance. As it is possible to install outdoor units inside buildings, especially high-rise buildings, its compact size means that you can maximise the area that is available to sell or lease, which directly increases revenue.

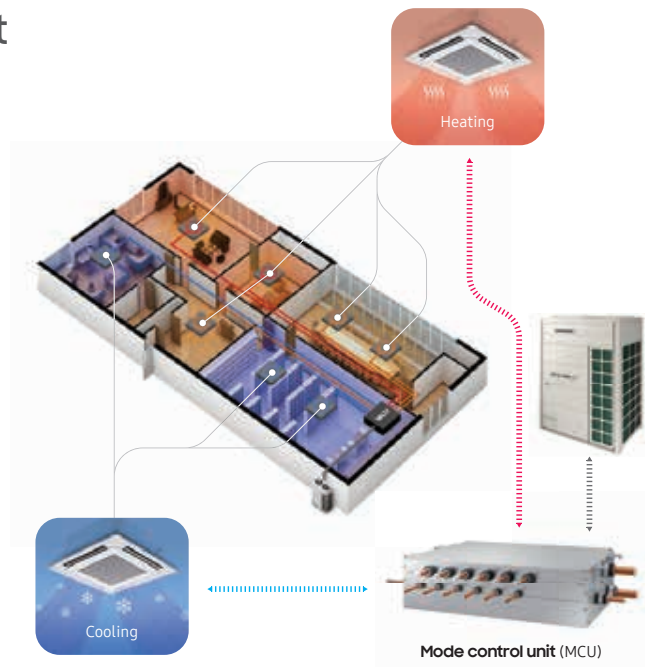


* Based on the AM140AXVAGH/EU, compared to the same capacity models of other companies.

Independently cool and heat multiple spaces

Simultaneous cooling and heating*

With a Mode Control Unit (MCU)**, the DVM S2 allows users to independently cool and heat different spaces at the same time. So, instead of just heating or cooling everywhere, you can simultaneously heat some rooms or areas of a building, while cooling others. It ensures that you can optimise people's comfort wherever they are, while also avoiding any unnecessary energy usage.



* Only available on the DVM S2 HR (Heat recovery) models.

** Optional.

Image simulated, for representational purposes only.

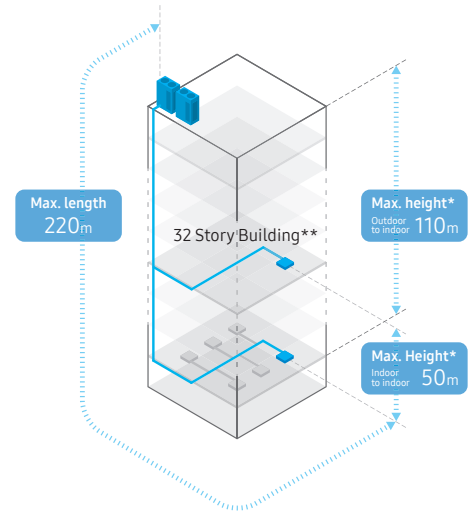
Install in the optimum location, regardless of distance and height

High elevation with long piping

Enjoy more choices when selecting the optimum installation location. The DVM S2's long piping length provides the flexibility for the outdoor unit to be installed almost anywhere, regardless of its height or distance from the building. It has a maximum length that is equivalent to 220 metres (721 feet) between the outdoor and indoor units. It can also work efficiently and reliably at an elevation of up to 110 metres (360 feet)*, which is the equivalent of 32 stories**.

Optimised refrigerant distribution control

The DVM S2 compensates for the long piping distance between the outdoor and indoor units by providing balanced refrigerant distribution. All the individual indoor units deliver capacity connection control and automatic refrigerant balancing to ensure a consistent performance in each unit.



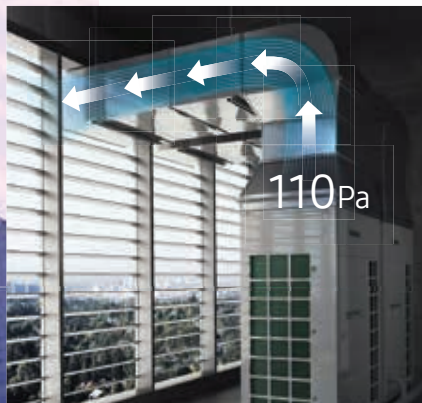
* When the piping height is over 50m, a PDM (Pressure Drop Modulation) Kit may be required depending on the conditions at the installation location.

** Based on the assumption that the height of a story is 3.5m. May vary depending on the location of indoor units.

More flexibility to install between floors in a high-rise building

Up to 110pa external static pressure

High-rise buildings are usually designed to have outdoor units installed inside them using ductwork, because the height difference to the rooftop is too big. The DVM S2 has up to 110Pa external static pressure*, which ensures that it can discharge air effectively through a much longer duct. So, it gives you an even greater choice when selecting an installation location inside the building.



* May vary by model and depending on the actual condition of the ductwork and installation location. For more detailed information, please contact Samsung's technical professionals.

Image simulated, for representational purposes only.

DVM S2 Key features

I Convenience

Effortlessly install and maintain, saving time, cost and worry

Installing and managing an air conditioning system can be extremely complex and time-consuming. So, Samsung's DVM S2 outdoor unit includes a range of innovative technologies that make it easier and more cost-effective to move, operate and maintain in a wide range of locations.

Its modular design minimises the number of parts, while its improved sub-cooling rate means it uses less refrigerant and slimmer piping. It is also easy to check errors through a small opening in the display window.

And, for complete peace of mind, it includes a range of powerful self-management and automatic recovery technologies.

Greater design flexibility and lower costs

Slimmer liquid pipe (optional diameter reduction)*

The Samsung DVM S2 is equipped with a high-performance sub-cooler to improve the sub-cooling rate of refrigerant. It requires 28% less refrigerant on average** as it uses a slimmer liquid pipe*. So, it provides added flexibility in designing the entire system, while saving costs on the installation and maintenance of refrigerant and piping materials.

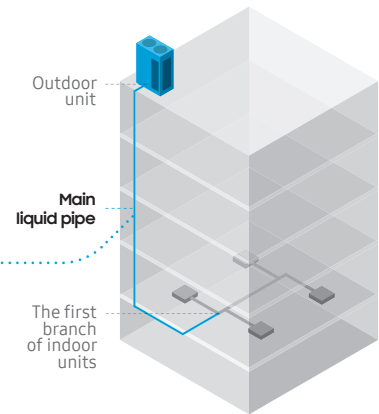
Pipe diameter (mm)		Refrigerant to supplement (g)		Refrigerant reduction ratio	
Normal	Slimmer	Normal	Slimmer		Average
9.52	N/A	60	N/A	-	-
12.71	9.52	125	80	36%	28%
15.88	12.71	180	130	28%	
19.05	15.88	270	195	28%	
22.22	19.05	350	280	20%	



Normal pipe



Slimmer pipe



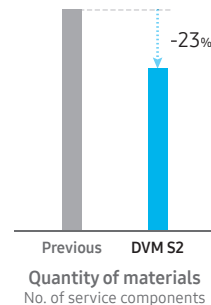
* Optional. A slimmer pipe can be used for the main liquid pipe, between an outdoor unit and the first branch of indoor units. The diameter of the slimmer pipe will vary depending on the diameter of the pipe that is normally used, which is defined in the table above. Not available on the 22.4kW and 28kW models. It may not be available in certain installation conditions, and is not compatible with the AI functions of outdoor units. Please contact Samsung's technical professionals regarding its availability and for more detailed information.

** When a slimmer pipe, instead of a normal pipe, is used for the main liquid pipe on the same capacity of air conditioning system, the amount of refrigerant to be charged can be reduced by 28% on average.

Less parts. Less effort and cost for servicing.

Quality-based modular design (QMD)

The Samsung DVM S2 consists of optimised modular components, which have fewer parts. In particular, based on its Quality-based modular design (QMD), the DVM S2 is built with high-quality modules that have been preselected and preconfigured. So, it delivers both superior performance and reliability, while also significantly reducing the number of parts that need servicing.



This modular design simplifies the entire process of maintenance and service, as less time and effort is required to check and fix any issues. And, from the viewpoint of warehousing, it also saves space as there is no need to store a lot of parts.

DVM S2 Key features

Convenience

Simply and quickly check errors without extra tools

On-Device inverter check™

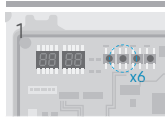
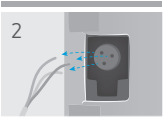
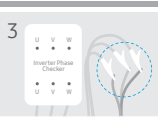
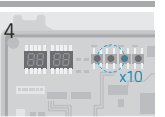
The DVM S2 has an Inverter PBA (Printed Board Assembly) with a one-touch button to simply check errors on the device. Without having to remove the entire front cover, it's easy to access this button through a small opening in the display window. So, it reduces the service time and effort as it eliminates the need for extra tools and simplifies the service process.



Examples of messages

	OK No error on PBA.
	NG Errors on PBA.
	CHECK Need to check manually.

Conventional process using an external inverter checker - 5 steps

- 
Press the button on the PCB to dissipate voltage.
- 
Remove wires (U, V and W) from the compressor.
- 
Connect them to an external Inverter Checker.
- 
Press the button on the PCB to check the error.
- 
Find the result on the external Inverter Checker.

New process using on-device inverter check™ - 1 step

Remotely monitor and solve issues

S-converter

With the S-converter, you can access the system using a PC or laptop* whenever and wherever you like. Its self-diagnosis function automatically monitors its performance and displays an error code if it detects anything abnormal. So, you can then check and address the issue promptly.

* Windows operating system. A smartphone or tablet PC can also be used in certain regions.



Simply restore data for repair and recovery

Automatic data backup

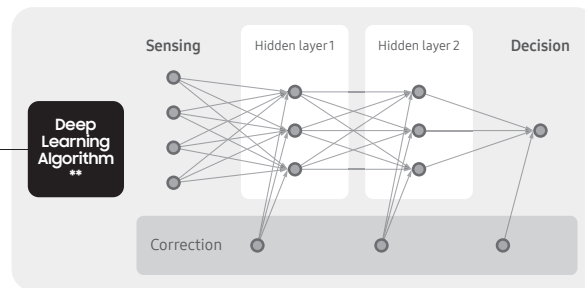
If a malfunction occurs, the DVM S2 automatically backs up the last 30 minutes of operational data to make the repair and recovery process easier.

Maintains the optimal amount of refrigerant to ensure the best performance



Active AI refrigerant analysis

Shortage of refrigerant hinders the outdoor unit's cooling and heating performance as well as its energy efficiency. And, if refrigerant leaks out, due to any error in installation, operation or maintenance, it also impacts global warming and may even cause the system to stop working. Using Deep Learning technology*, the Active AI refrigerant analysis of the DVM S2 collects and analyses various operational data in real time, and proactively alerts you with an error message if the amount of refrigerant is too low. So, an installer or a service engineer can maintain the optimal level of refrigerant.



* A Machine Learning technology that uses an Artificial Neural Network (ANN) to learn like a human using various data.

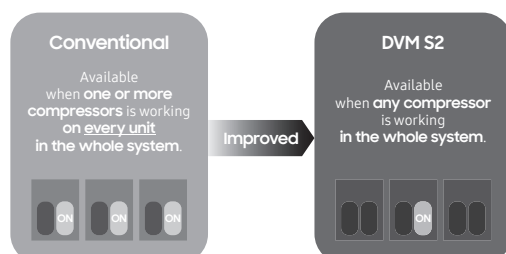
** Based on a research thesis, "A novel hybrid deep neural network model to predict the refrigerant charge amount of heat pumps".

Keeps you comfortable, even if there's a malfunction



Emergency operation

When the air conditioning system consists of multiple Samsung DVM S2 outdoor units, its refrigerant regulating control technology ensures that you can continue working using only one compressor in an emergency. So, if every unit except one is not working or getting serviced and any compressor on the remaining one is working properly, it will keep cooling or heating for up to 8 hours. It ensures that you can maintain a comfortable indoor environment until the whole system is functioning properly again.



Example cases of malfunction	Emergency operation	
	Conventional	DVM S2
When there are 2 or more units in a system, and one of the two compressors on a unit is not working.	Yes	Yes
When there are 2 or more units in a system, and one of the two compressors on each unit is not working.	Yes	Yes
When there are 2 or more units in a system, and all of the compressors on a unit are not working.	Not available	Yes
When there are 2 or more units in a system, and a compressor on a low capacity unit is not working.	Not available	Yes
When there are 2 or more units in a system, and a compressor on a low capacity unit and one of the two compressors on another unit is not working.	Not available	Yes
When there is 1 unit in a system, and one of the two compressors on it is not working.	Not available	Yes

DVM S2 Key features

I Convenience

Conveniently and safely handle with less effort

The Samsung DVM S2 has various convenient features that help installers and service providers to lift and move, and disassemble and assemble it with added safety and less effort.

Centre point indicator of weight

VRF outdoor units usually weigh a lot and can sometimes be over 300kg. It is obviously very difficult and dangerous to handle such heavy machines, so the Samsung DVM S2 has a removable indicator to show its centre of weight. It makes it much safer to lift and move with a crane or a forklift as it helps to prevent the unit from becoming unbalanced and tilting or toppling over.



A sticker type indicator shows the centre of weight. After moving, it can be simply removed.



Image simulated, for representational purposes only.

Simplified cover with handle

The front cover of conventional outdoor units consists of multiple pieces, which means it can require a lot of work to open them fully. The Samsung DVM S2's front cover is a single piece, so it's simple to open and access every part inside the outdoor unit, which reduces the time and effort for servicing.



Conventional
4 pieces with no handle



DVM S2
1 piece with a handle



In addition, the cover has a handle that provides added safety and convenience when handling.



Image simulated, for representational purposes only.

Business with Samsung | Engineering

Always optimising your air conditioning systems

CAE (Computer Aided Engineering)

Samsung provides professional CAE support, with various analysis and evaluation services in the building design and information modeling phases. Using the workstations and super computers of the Samsung Advanced Institute of Technology, multiple projects can be simulated simultaneously. It ensures that the building has an optimised air conditioning system that works effectively and efficiently and provides a comfortable indoor environment.

How to request



1. Prepare

Prepare drawing data in advance that shows the installation conditions:

- An installation location and the layout of outdoor units
- A machine room and its louvre structure, if the outdoor units are installed in the machine room
- The building exterior and the layout of surrounding buildings
- The layout of indoor units



2. Request

Contact a Samsung technical expert in your area. And, request engineering support in providing prepared drawing data

Samsung CAE support includes:

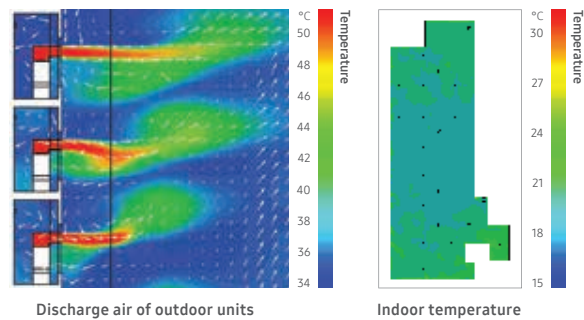
- Outdoor unit machine room temperature simulation
- Indoor unit room temperature simulation
- Air flow distribution simulation
- Specialised simulation of theatre, residential, airport and machinery room noise.



Various engineering softwares for Samsung CAE support

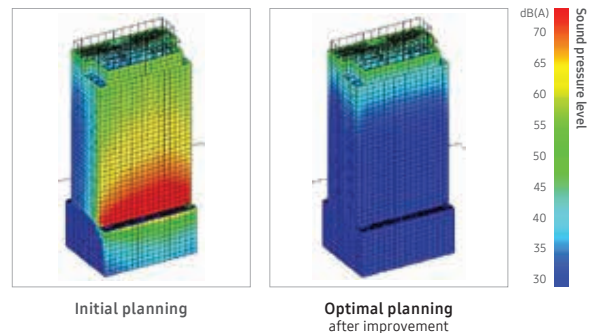
CFD (Computational Fluid Dynamic)

The installation location and surrounding conditions significantly impact the performance of an air conditioning system. In particular, these days the structure of buildings has become more complex and often includes a machine room to hide outdoor units, so they are not visible on the outside. As a result, it is much more important to determine in advance if the preferred location will have any impact on the performance of the system. Samsung supports CFD simulation and analysis to assess the performance of the Samsung air conditioning system before deciding on its installation location, and also provides a guidance report if it is necessary to change it.



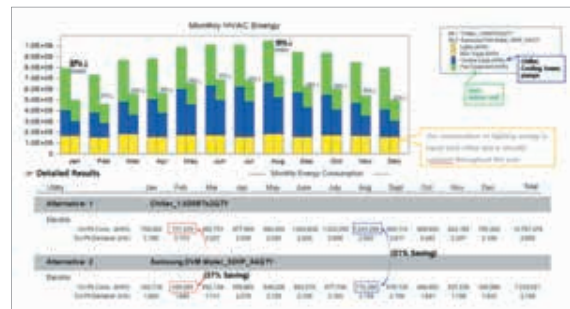
Noise analysis

To ensure a more comfortable indoor environment, noise mitigation is now an important factor. So, it's essential to anticipate possible noises during the building planning stage – before they really happen. Samsung provides noise effect evaluation, based on the location of indoor and outdoor units, by modeling the actual building design and data about the air conditioning system. After the evaluation, Samsung will suggest the best choice of installation location, and also provide a guidance report if necessary.



Energy simulation

In general buildings, the HVAC (Heating, Ventilating and Air Conditioning) products usually consume around 30% of the total energy used in the building. Samsung helps conduct energy simulations to analyse the economical efficiency of the installed HVAC systems by evaluating the operation cost of each product category. This enables developers and consultants to propose the optimal HVAC solution to their clients.



Combination table (Heat pump)

Capacity (HP)	System model						
	Code	No of modules	8HP	10HP	12HP	14HP	16HP
8HP	AM080AXVANH/TL	1	1				
10HP	AM100AXVANH/TL	1		1			
12HP	AM120AXVANH/TL	1			1		
14HP	AM140AXVANH/TL	1				1	
16HP	AM160AXVANH/TL	1					1
18HP	AM180AXVANH/TL	1					
20HP	AM200AXVANH/TL	1					
22HP	AM220AXVANH/TL	1					
24HP	AM240AXVANH/TL	1					
26HP	AM260AXVANH/TL	1					
28HP	AM280AXVANH/TL	1					
30HP	AM300AXVANH/TL	1					
32HP	AM320AXVANH/TL	1					
34HP	AM340AXVANH/TL	1					
36HP	AM360AXVANH/TL	2		1			
38HP	AM380AXVANH/TL	2			1		
40HP	AM400AXVANH/TL	2				1	
42HP	AM420AXVANH/TL	2					
44HP	AM440AXVANH/TL	2					
46HP	AM460AXVANH/TL	2					
48HP	AM480AXVANH/TL	2					
50HP	AM500AXVANH/TL	2					
52HP	AM520AXVANH/TL	2					
54HP	AM540AXVANH/TL	2					
56HP	AM560AXVANH/TL	2					
58HP	AM580AXVANH/TL	2					
60HP	AM600AXVANH/TL	2					
62HP	AM620AXVANH/TL	2					
64HP	AM640AXVANH/TL	2					
66HP	AM660AXVANH/TL	2					
68HP	AM680AXVANH/TL	2					
70HP	AM700AXVANH/TL	3					
72HP	AM720AXVANH/TL	3					
74HP	AM740AXVANH/TL	3					
76HP	AM760AXVANH/TL	3					
78HP	AM780AXVANH/TL	3					
80HP	AM800AXVANH/TL	3					
82HP	AM820AXVANH/TL	3					
84HP	AM840AXVANH/TL	3					
86HP	AM860AXVANH/TL	3					
88HP	AM880AXVANH/TL	3					
90HP	AM900AXVANH/TL	3					
92HP	AM920AXVANH/TL	3					
94HP	AM940AXVANH/TL	3					
96HP	AM960AXVANH/TL	3					
98HP	AM980AXVANH/TL	3					

Capacity of single unit HP								
18HP	20HP	22HP	24HP	26HP	28HP	30HP	32HP	34HP
1								
	1							
		1						
			1					
				1				
					1			
						1		
							1	
								1
				1				
				1				
				1				
	1	1						
		2						
		1	1					
		1		1				
			1	1				
				2				
				1	1			
		1						1
				1			1	
				1				1
					1			1
							2	
							1	1
								2
1				2				
		1	1	1				
			2	1				
			1	2				
				3				
				2	1			
				1	2			
					3			
				2				1
				1	1			1
		1						2
				1			1	1
				1				2
					1			2
							2	1

DVM S2 Heat pump specification

Attribute/Model code		AM080AXVANH/TL	AM100AXVANH/TL	AM120AXVANH/TL
Power supply (outdoor unit) [Ø, #, V, Hz]		3,4,380~415,50/60	3,4,380~415,50/60	3,4,380~415,50/60
System	Mode	Heat pump	Heat pump	Heat pump
		8	10	12
Capacity	Cooling 1) [kw]	22.4	28.0	33.6
	Cooling 1) [BTU/h]	76384.0	95480.0	114576.0
	Heating 1) [kw]	25.2	31.5	37.8
	Heating 1) [BTU/h]	85932.0	107415.0	128898.0
Power input (nominal)	Cooling 1) [kw]	4.84	6.29	8.77
	Heating 1) [kw]	4.8	6.3	8.9
Current input (nominal)	Cooling 1) [A]	7.6	9.9	13.8
	Heating 1) [A]	7.5	9.9	14.1
Energy efficiency	EER (nominal cooling)	4.63	4.45	3.83
	COP (nominal heating)	5.25	5.00	4.25
Compressor	Type	Inverter scroll	Inverter scroll	Inverter scroll
Fan	External static pressure [Pa]	80	80	110
Piping connections	Liquid pipe, [Φ, mm]	9.52	9.52	12.7
	Gas pipe [Φ, mm]	19.05	22.22	28.58
	Installation max length [m]	220	220	220
	Installation max height [m]	110	110	110
Field wiring	Transmission cable [mm]	0.75	0.75	0.75
Refrigerant	Type	R410A	R410A	R410A
	Factory charging [kg]	5.5	5.5	6.2
Sound	Sound pressure [db(a)] 2)	56	57	61
External dimensions (outdoor unit)	Net weight [kg]	171	183	187.2
	Shipping weight [kg]	185	197	201.2
	Net dimensions (WXHxD) [mm]	930 x 1,695 x 765	930 x 1,695 x 765	930 x 1,695 x 765
	Net dimensions (WXHxD) [cm]	93 x 169.5 x 76.5	93 x 169.5 x 76.5	93 x 169.5 x 76.5
	Shipping dimensions (WXHxD) [mm]	998 x 1,887 x 829	998 x 1,887 x 829	998 x 1,887 x 829
	Shipping dimensions (WXHxD) [cm]	99.8 x 188.7 x 82.9	99.8 x 188.7 x 82.9	99.8 x 188.7 x 82.9
Operating temp. range	Cooling [°C]	-5 ~ 53	-5 ~ 53	-5 ~ 53
	Heating [°C]	-25 ~ 24	-25 ~ 24	-25 ~ 24

- Specification may be subject to change without prior notice.
- 1) Performances are based on the following test conditions.
 - Cooling: Indoor temperature 27°CDB, 19°CWB, Outdoor temperature 35°CDB, 24°CWB
 - Heating: Indoor temperature 20°CDB, 15°CWB, Outdoor temperature 7°CDB, 6°CWB
 - Equivalent refrigerant pipe length 5m, Level differences 0m
 - 2) Sound pressure level is obtained in an anechoic room.
 - Sound pressure level is a relative value, depending on the distance and acoustic environment.
 - Sound pressure level may differ depending on operation condition.
 - dBA = A-weighted sound pressure level
 - Reference acoustic pressure 0 dB = 20uPa

AM140AXVANH/TL	AM160AXVANH/TL	AM180AXVANH/TL	AM200AXVANH/TL	AM220AXVANH/TL	AM240AXVANH/TL
3,4,380~415,50/60	3,4,380~415,50/60	3,4,380~415,50/60	3,4,380~415,50/60	3,4,380~415,50/60	3,4,380~415,50/60
Heat pump	Heat pump	Heat pump	Heat pump	Heat pump	Heat pump
14	16	18	20	22	24
40.0	45.0	50.4	56.0	61.6	67.2
136400.0	153450.0	171864.0	190960.0	210056.0	229152.0
45.0	50.4	56.7	63.0	69.3	75.6
153450.0	171864.0	193347.0	214830.0	236313.0	257796.0
10.68	11.5	13.94	12.18	16.2	16.8
11.08	11.58	13.5	13.55	15.06	16.61
16.8	18	21.7	19.6	26.2	26.4
16.9	18.2	21.2	21.3	23.7	26.1
3.75	3.91	3.62	4.60	3.80	4.00
4.06	4.35	4.20	4.65	4.60	4.55
Inverter scroll	Inverter scroll	Inverter scroll	Inverter scroll	Inverter scroll	Inverter scroll
80	110	110	110	110	80
12.7	12.7	15.88	15.88	15.88	15.88
28.58	28.58	28.58	28.58	28.58	34.92
220	220	220	220	220	220
110	110	110	110	110	110
0.75	0.75	0.75	0.75	0.75	0.75
R410A	R410A	R410A	R410A	R410A	R410A
7	8	8	10.5	10.5	14
63	61	61	61	64	65
199.9	234	234	259.1	292.1	317
213.9	251	251	276.1	309.1	334
930 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765
93 x 169.5 x 76.5	129.5 x 169.5 x 76.5	129.5 x 169.5 x 76.5	129.5 x 169.5 x 76.5	129.5 x 169.5 x 76.5	129.5 x 169.5 x 76.5
998 x 1,887 x 829	1,363 x 1,887 x 829	1,363 x 1,887 x 829	1,363 x 1,887 x 829	1,363 x 1,887 x 829	1,363 x 1,887 x 829
99.8 x 188.7 x 82.9	136.3 x 188.7 x 82.9	136.3 x 188.7 x 82.9	136.3 x 188.7 x 82.9	136.3 x 188.7 x 82.9	136.3 x 188.7 x 82.9
-5 ~ 53	-5 ~ 53	-5 ~ 53	-5 ~ 53	-5 ~ 53	-5 ~ 53
-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24

DVM S2 Heat pump specification

Attribute/Model code		AM260AXVANH/TL	AM280AXVANH/TL
Power supply (outdoor unit) [Ø, #, V, Hz]		3,4,380~415,50/60	3,4,380~415,50/60
System	Mode	Heat pump	Heat pump
		26	28
Capacity	Cooling 1) [kw]	72.8	78.6
	Cooling 1) [BTU/h]	248248.0	268026.0
	Heating 1) [kw]	78.4	78.4
	Heating 1) [BTU/h]	267344.0	267344.0
Power input (nominal)	Cooling 1) [kw]	18.86	23.93
	Heating 1) [kw]	17.19	17.61
Current input (nominal)	Cooling 1) [A]	30	38
	Heating 1) [A]	27	27.7
Energy efficiency	EER (nominal cooling)	3.86	3.28
	COP (nominal heating)	4.56	4.45
Compressor	Type	Inverter scroll	Inverter scroll
Fan	External static pressure [Pa]	80	80
Piping connections	Liquid pipe, [Φ, mm]	19.05	19.05
	Gas pipe [Φ, mm]	34.92	34.92
	Installation max length [m]	220	220
	Installation max height [m]	110	110
Field wiring	Transmission cable [mm]	0.75	0.75
Refrigerant	Type	R410A	R410A
	Factory charging [kg]	14	14
Sound	Sound pressure [DB(a)] 2)	65	65
External dimensions (outdoor unit)	Net weight [kg]	317	317
	Shipping weight [kg]	334	334
	Net dimensions (WXHxD) [mm]	1,295 x 1,695 x 765	1,295 x 1,695 x 765
	Net dimensions (WXHxD) [cm]	129.5 x 169.5 x 76.5	129.5 x 169.5 x 76.5
	Shipping dimensions (WXHxD) [mm]	1,363 x 1,887 x 829	1,363 x 1,887 x 829
	Shipping dimensions (WXHxD) [cm]	136.3 x 188.7 x 82.9	136.3 x 188.7 x 82.9
Operating temp. range	Cooling [°C]	-5 ~ 53	-5 ~ 53
	Heating [°C]	-25 ~ 24	-25 ~ 24

- Specification may be subject to change without prior notice.
- 1) Performances are based on the following test conditions.
 - Cooling: Indoor temperature 27°CDB, 19°CWB, Outdoor temperature 35°CDB, 24°CWB
 - Heating: Indoor temperature 20°CDB, 15°CWB, Outdoor temperature 7°CDB, 6°CWB
 - Equivalent refrigerant pipe length 5m, Level differences 0m
 - 2) Sound pressure level is obtained in an anechoic room.
 - Sound pressure level is a relative value, depending on the distance and acoustic environment.
 - Sound pressure level may differ depending on operation condition.
 - dBA = A-weighted sound pressure level
 - Reference acoustic pressure 0 dB = 20uPa

AM300AXVANH/TL	AM320AXVANH/TL	AM340AXVANH/TL
3,4,380~415,50/60	3,4,380~415,50/60	3,4,380~415,50/60
Heat pump	Heat pump	Heat pump
30	32	34
84.0	89.6	95.2
286440.0	305536.0	324632.0
94.5	95.2	95.2
322245.0	324632.0	324632.0
22.7	27.57	31.73
20.54	21.15	21.63
35.5	43.4	49.9
32.3	33.3	34
3.70	3.25	3.00
4.60	4.50	4.40
Inverter scroll	Inverter scroll	Inverter scroll
80	80	80
19.05	19.05	19.05
34.92	34.92	34.92
220	220	220
110	110	110
0.75	0.75	0.75
R410A	R410A	R410A
15.5	15.5	15.5
65	65	66
390	390	390
416.2	416.2	416.2
1,860 x 1,695 x 765	1,860 x 1,695 x 765	1,860 x 1,695 x 765
186 x 169.5 x 76.5	186 x 169.5 x 76.5	186 x 169.5 x 76.5
1,928 x 1,887 x 829	1,928 x 1,887 x 829	1,928 x 1,887 x 829
192.8 x 188.7 x 82.9	192.8 x 188.7 x 82.9	192.8 x 188.7 x 82.9
-5 ~ 53	-5 ~ 53	-5 ~ 53
-25 ~ 24	-25 ~ 24	-25 ~ 24

Combination table (Cooling only)

Capacity (HP)	System model						
	Code	No. of modules	8HP	10HP	12HP	14HP	16HP
8HP	AM080AXVANC/TL	1	1				
10HP	AM100AXVANC/TL	1		1			
12HP	AM120AXVANC/TL	1			1		
14HP	AM140AXVANC/TL	1				1	
16HP	AM160AXVANC/TL	1					1
18HP	AM180AXVANC/TL	1					
20HP	AM200AXVANC/TL	1					
22HP	AM220AXVANC/TL	1					
24HP	AM240AXVANC/TL	1					
26HP	AM260AXVANC/TL	1					
28HP	AM280AXVANC/TL	1					
30HP	AM300AXVANC/TL	1					
32HP	AM320AXVANC/TL	1					
34HP	AM340AXVANC/TL	1					
36HP	AM360AXVANC/TL	2				1	
38HP	AM380AXVANC/TL	2			1		
40HP	AM400AXVANC/TL	2					
42HP	AM420AXVANC/TL	2					
44HP	AM440AXVANC/TL	2					
46HP	AM460AXVANC/TL	2					
48HP	AM480AXVANC/TL	2					
50HP	AM500AXVANC/TL	2					
52HP	AM520AXVANC/TL	2					
54HP	AM540AXVANC/TL	2					
56HP	AM560AXVANC/TL	2					
58HP	AM580AXVANC/TL	2					
60HP	AM600AXVANC/TL	2					
62HP	AM620AXVANC/TL	2					
64HP	AM640AXVANC/TL	2					
66HP	AM660AXVANC/TL	2					
68HP	AM680AXVANC/TL	2					
70HP	AM700AXVANC/TL	3					
72HP	AM720AXVANC/TL	3					
74HP	AM740AXVANC/TL	3					
76HP	AM760AXVANC/TL	3					
78HP	AM780AXVANC/TL	3					
80HP	AM800AXVANC/TL	3					
82HP	AM820AXVANC/TL	3					
84HP	AM840AXVANC/TL	3					
86HP	AM860AXVANC/TL	3					
88HP	AM880AXVANC/TL	3					
90HP	AM900AXVANC/TL	3					
92HP	AM920AXVANC/TL	3					
94HP	AM940AXVANC/TL	3					
96HP	AM960AXVANC/TL	3					
98HP	AM980AXVANC/TL	3					

Capacity of single unit HP								
18HP	20HP	22HP	24HP	26HP	28HP	30HP	32HP	34HP
1								
	1							
		1						
			1					
				1				
					1			
						1		
							1	
								1
		1						
				1				
	2							
	1	1						
		2						
		1	1					
		1		1				
			1	1				
		1				1		
			1			1		
				1		1		
					1	1		
						2		
						1	1	
							2	
							1	1
								2
		2		1				
		1	1	1				
		2				1		
		1	1			1		
		1		1		1		
			1	1		1		
		1				2		
			1			2		
				1		2		
					1	2		
						3		
						2	1	
						2		1
						1	1	1
						1		2

DVM S2 Cooling only specification

Attribute/ Model code		AM080AXVANC/TL	AM100AXVANC/TL	AM120AXVANC/TL
Power supply (Outdoor unit) [Ø, #, V, Hz]		3,4,380~415,50/60	3,4,380~415,50/60	3,4,380~415,50/60
System	Mode	Cooling only	Cooling only	Cooling only
		8	10	12
Capacity	Cooling 1) [KW]	22.4	28.0	33.6
	Cooling 1) [Btu/h]	76384.0	95480.0	114576.0
	Heating 1) [KW]	NA	NA	NA
	Heating 1) [Btu/h]	NA	NA	NA
Power input (nominal)	Cooling 1) [KW]	4.84	6.29	8.77
	Heating 1) [KW]	NA	NA	NA
Current input (nominal)	Cooling 1) [A]	7.6	9.9	13.8
	Heating 1) [A]	NA	NA	NA
Energy efficiency	EER (nominal cooling)	4.63	4.45	3.83
	COP (nominal heating)	NA	NA	NA
Compressor	Type	Inverter scroll	Inverter scroll	Inverter scroll
Fan	External static pressure [Pa]	110	110	80
Piping connections	Liquid pipe, [Φ, mm]	9.52	9.52	12.7
	Gas pipe [Φ, mm]	19.05	22.22	28.58
	Installation max length [m]	220	220	220
	Installation max length [m]	110	110	110
Field wiring	Transmission cable [mm]	0.75	0.75	0.75
Refrigerant	Type	R410A	R410A	R410A
	Factory charging [kg]	5.5	5.5	6.2
Sound	Sound pressure [dB(A)] 2)	55	56	60
External dimensions (outdoor unit)	Net weight [kg]	171	183	187
	Shipping weight [kg]	185	197	201
	Net dimensions (WxHxD) [mm]	930 x 1,695 x 765	930 x 1,695 x 765	930 x 1,695 x 765
	Net dimensions (WxHxD) [cm]	93 x 169.5 x 76.5	93 x 169.5 x 76.5	93 x 169.5 x 76.5
	Shipping dimensions (WxHxD) [mm]	998 x 1,887 x 829	998 x 1,887 x 829	998 x 1,887 x 829
	Shipping dimensions (WxHxD) [cm]	99.8 x 188.7 x 82.9	99.8 x 188.7 x 82.9	99.8 x 188.7 x 82.9
Operating temp. range	Cooling [°C]	-5 ~ 53	-5 ~ 53	-5 ~ 53
	Heating [°C]	NA	NA	NA

- Specification may be subject to change without prior notice.

1) Performances are based on the following test conditions.

- Cooling: Indoor temperature 27°CDB, 19°CWB, Outdoor temperature 35°CDB, 24°CWB
- Equivalent refrigerant pipe length 5m, Level differences 0m

2) Sound pressure level is obtained in an anechoic room.

- Sound pressure level is a relative value, depending on the distance and acoustic environment.
- Sound pressure level may differ depending on operation condition.
- dBA = A-weighted sound pressure level
- Reference acoustic pressure 0 dB = 20uPa

AM140AXVANC/TL	AM160AXVANC/TL	AM180AXVANC/TL	AM200AXVANC/TL	AM220AXVANC/TL	AM240AXVANC/TL
3,4,380~415,50/60	3,4,380~415,50/60	3,4,380~415,50/60	3,4,380~415,50/60	3,4,380~415,50/60	3,4,380~415,50/60
Cooling only	Cooling only	Cooling only	Cooling only	Cooling only	Cooling only
14	16	18	20	22	24
40.0	45.0	50.4	56.0	61.6	67.2
136400.0	153450.0	171864.0	190960.0	210056.0	229152.0
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
10.68	11.5	13.94	12.18	16.2	16.8
NA	NA	NA	NA	NA	NA
16.8	18	21.7	19.6	26.2	26.4
NA	NA	NA	NA	NA	NA
3.75	3.91	3.62	4.60	3.80	4.00
NA	NA	NA	NA	NA	NA
Inverter scroll	Inverter scroll	Inverter scroll	Inverter scroll	Inverter scroll	Inverter scroll
80	110	110	110	110	80
12.7	12.7	15.88	15.88	15.88	15.88
28.58	28.58	28.58	28.58	28.58	34.92
220	220	220	220	220	220
110	110	110	110	110	110
0.75	0.75	0.75	0.75	0.75	0.75
R410A	R410A	R410A	R410A	R410A	R410A
7	8	8	10.5	10.5	11
63	59	59	61	64	65
200	234	234	259	292	317
214	251	251	276	309	334
930 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765
93 x 169.5 x 76.5	129.5 x 169.5 x 76.5	129.5 x 169.5 x 76.5	129.5 x 169.5 x 76.5	129.5 x 169.5 x 76.5	129.5 x 169.5 x 76.5
998 x 1,887 x 829	1,363 x 1,887 x 829	1,363 x 1,887 x 829	1,363 x 1,887 x 829	1,363 x 1,887 x 829	1,363 x 1,887 x 829
99.8 x 188.7 x 82.9	136.3 x 188.7 x 82.9	136.3 x 188.7 x 82.9	136.3 x 188.7 x 82.9	136.3 x 188.7 x 82.9	136.3 x 188.7 x 82.9
-5 ~ 53	-5 ~ 53	-5 ~ 53	-5 ~ 53	-5 ~ 53	-5 ~ 53
NA	NA	NA	NA	NA	NA

DVM S2 Cooling only specification

Attribute/ Model code		AM260AXVANC/TL	AM280AXVANC/TL
Power supply (Outdoor unit) [Ø, #, V, Hz]		3,4,380~415,50/60	3,4,380~415,50/60
System	Mode	Cooling only	Cooling only
		26	28
Capacity	Cooling 1) [KW]	72.8	78.6
	Cooling 1) [Btu/h]	248248.0	268026.0
	Heating 1) [KW]	NA	NA
	Heating 1) [Btu/h]	NA	NA
Power input (nominal)	Cooling 1) [KW]	18.86	23.93
	Heating 1) [KW]	NA	NA
Current input (nominal)	Cooling 1) [A]	30	38
	Heating 1) [A]	NA	NA
Energy efficiency	EER (nominal cooling)	3.86	3.28
	COP (nominal heating)	NA	NA
Compressor	Type	Inverter scroll	Inverter scroll
Fan	External static pressure [Pa]	80	80
Piping connections	Liquid pipe, [Φ, mm]	19.05	19.05
	Gas pipe [Φ, mm]	34.92	34.92
	Installation max length [m]	220	220
	Installation max length [m]	110	110
Field wiring	Transmission cable [mm]	0.75	0.75
Refrigerant	Type	R410A	R410A
	Factory charging [kg]	11	11
Sound	Sound pressure [dB(A)] 2)	65	65
External dimensions (outdoor unit)	Net weight [kg]	317	317
	Shipping weight [kg]	334	334
	Net dimensions (WxHxD) [mm]	1,295 x 1,695 x 765	1,295 x 1,695 x 765
	Net dimensions (WxHxD) [cm]	129.5 x 169.5 x 76.5	129.5 x 169.5 x 76.5
	Shipping dimensions (WxHxD) [mm]	1,363 x 1,887 x 829	1,363 x 1,887 x 829
	Shipping dimensions (WxHxD) [cm]	136.3 x 188.7 x 82.9	136.3 x 188.7 x 82.9
Operating temp. range	Cooling [°C]	-5 ~ 53	-5 ~ 53
	Heating [°C]	NA	NA

- Specification may be subject to change without prior notice.
- 1) Performances are based on the following test conditions.
 - Cooling: Indoor temperature 27°CDB, 19°CWB, Outdoor temperature 35°CDB, 24°CWB
 - Equivalent refrigerant pipe length 5m, Level differences 0m
 - 2) Sound pressure level is obtained in an anechoic room.
 - Sound pressure level is a relative value, depending on the distance and acoustic environment.
 - Sound pressure level may differ depending on operation condition.
 - dBA = A-weighted sound pressure level
 - Reference acoustic pressure 0 dB = 20uPa

AM300AXVANC/TL	AM320AXVANC/TL	AM340AXVANC/TL
3,4,380~415,50/60	3,4,380~415,50/60	3,4,380~415,50/60
Cooling only	Cooling only	Cooling only
30	32	34
84.0	89.6	95.2
286440.0	305536.0	324632.0
NA	NA	NA
NA	NA	NA
26.84	27.57	31.73
NA	NA	NA
42.1	43.4	49.9
NA	NA	NA
3.13	3.25	3.00
NA	NA	NA
Inverter scroll	Inverter scroll	Inverter scroll
80	80	80
19.05	19.05	19.05
34.92	34.92	34.92
220	220	220
110	110	110
0.75	0.75	0.75
R410A	R410A	R410A
11	12.5	12.5
65	65	66
317	390	390
334	416	416
1,295 x 1,695 x 765	1,860 x 1,695 x 765	1,860 x 1,695 x 765
129.5 x 169.5 x 76.5	186 x 169.5 x 76.5	186 x 169.5 x 76.5
1,363 x 1,887 x 829	1,928 x 1,887 x 829	1,928 x 1,887 x 829
136.3 x 188.7 x 82.9	192.8 x 188.7 x 82.9	192.8 x 188.7 x 82.9
-5 ~ 53	-5 ~ 53	-5 ~ 53
NA	NA	NA

Indoor units line-up

Products		360 cassette	WindFree™ 1way cassette Also available in non-WindFree™	WindFree™ 4way cassette Also available in non-WindFree™	WindFree™ mini 4way cassette Also available in non-WindFree™	2way cassette	Premium plus WindFree™ Also available in non WindFree™	
Capacity								
TR	kW							
0.6	2.2		●		●		●	
0.7	2.6		●					
0.8	2.8		●		●		●	
0.83	3.0		●					
1.0	3.6		●		●		●	
1.2	4.2		●					
1.3	4.5			●			●	
1.6	5.6	●	●	●	●	●	●	
1.7	6.0	●		●	●			
2.0	7.1	● ●	●	● ●		●	●	
2.3	8.2						●	
2.6	9.0	●		● ●				
2.8	10.0	●		●				
3.2	11.2	●		●				
3.6	12.8	●		●				
4.0	14.0	●		●				
4.6	16.0							
4.8	17.0			●				
5.0	18.0							
6.4	22.4							
8.0	28.0							
	16.0							
	25.0							
	31.5							
	50.4							

● Available in chilled water FCU (fan coil unit)

● Available in DX coil

	MSP duct	HSP duct	Slim duct	Floor standing	Ceiling	DVM hydro
						
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