

Uniflair IDAV – IUAV – IXAV

Highly efficient Air-Cooled
Direct Expansion
with Variable Speed Drive
Compressors
50 kw to 150 kW



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Schneider
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Schneider Electric: Your Partner in Sustainable Data Center Cooling

At Schneider Electric, we are committed to providing innovative and sustainable solutions that help organizations reduce their environmental impact and operational costs.

Our Uniflair Room Cooling units are designed with eco-efficiency in mind, utilizing advanced technologies to minimize energy consumption while maintaining peak performance.

Efficient, flexible, reliable, intelligent control

BOOSTED EFFICIENCY

Variable-speed drive (VSD) compressors have an intelligent drive system that adjusts the motor speed to match air demand, eliminating wasteful operation in an unloaded state. This innovative technology delivers substantial energy, and the energy saved can be as high as 50%



RELIABLE COOLING CONTINUITY

Our Uniflair Room Cooling units are designed to ensure continuous cooling and safe operation, even in the face of power disruptions. Our redundant power sources and advanced emergency strategies protect your critical applications, minimizing downtime and safeguarding your valuable assets.



FLEXIBLE AND ADAPTABLE

Available in upflow, downflow and underfloor versions Uniflair Room Cooling units suit for installations with or without raised floor.

Our product range extends from 50 to 150 kW, ensuring you have the optimal cooling solution for your specific requirements.



System Architecture: standard features

Air filters

- Standard high-efficiency EU4-pleated air filters housed in a dedicated plenum box (IDAV, IXAV models)
- Dirty filter differential pressure switch
- Low airflow differential pressure switch

Cooling coil

- Heat exchanger coils designed for high sensible heat ratio (SHR) and reduced pressure drops
- Made from copper tubes mechanically expanded on aluminum fins
- Hydrophilic coil coating

Electronically Commuted fans

- High-tech compound material impellers with optimized flow control
- High efficiency EC motors
- Low power consumption
- High part-load efficiency
- Fan speed regulation by Modbus signal

Electrical panel

- Three-phase power supply 400 V/3 Ph+N/50 Hz for all the units with a single or a double power supply
- Low voltage secondary circuit 24 Vac with isolation transformer
- Metal isolating screen for protection from live components
- General isolator with mechanical interlock
- Thermo magnetic circuit-breakers for protection
- Terminal board for no-voltage signal and control contacts

Brushless VSD scroll compressor

- Discharge temperature control
- High energy efficiency at partial load
- Low starting current
- No sliding contacts

New microprocessor controller

- 7-inch, touch-screen LCD display interface
- Integrated management of the EEV and refrigerating circuit parameters
- Integrated Unloading logic on VSD units
- Full management of the condenser status including single fan status
- Grouping logic integrated
- RS485 and TCP/IP card bus integrated targeting the main communication protocols
- Native communication with EcoStruxure
- USB and Service port integrated in the display interface

Frame

- Self-supporting frame in galvanized steel with panels
- External panels coated with RAL9003 epoxy-polyester paint
- Internal panels with captive screws
- Internally lined with heat and sound-proofing insulation
- Refrigeration circuit inspection with unit active
- Side panels with coil inspection opening



Main configurable options

Power supply

- Single power supply
- Double power supply with automatic commutation to provide redundancy and ensure a constant power supply

Construction options

- Downflow units (IDAV): top air return with bottom or front discharge (without additional floor stands)
- Upflow units (IUAV): front or bottom air return with top discharge
- Underfloor units (IXAV): top air return with bottom supply with multiple fan module configurations
- Standard, cleanable or low conductivity humidifier (cooling + humidification configuration)
- Condensate drain pump (cooling only and cooling + dehumidification configurations)
- Standard electrical heaters with extended fins, complete with double safety thermostat and manual resetting
- EU4 (standard) or EU5 air filters with or without motorized damper
- Power phase capacitors (not available for I*AV1511A models)
- Energy meter and CO₂ emission calculator
- Automatic Floor Pressurization System through Active Floor Control (AFC)

Additional accessories

- Suction from the top and front discharge plenums: they can be equipped with soundproofed insulation or with high efficiency air filters
- Back and top suction direct free-cooling plenum
- Floor stands (200mm height)
- Floor stands with motorized damper (500mm height)
- Motorized damper
- Adjustable baseframe (200 – 600 mm)
- Fire and smoke sensors
- Water leak detector
- Room air temperature / humidity sensor

Fan module configurations (only IXAV models)

- Fan module with bottom supply
- Fan module with rear supply
- Fan module with front supply
- Fan module with front and side supply
- Fan module with fully open supply



Air-cooled remote condensers (OCC)

- R410A refrigerant
- Vertical or horizontal installation
- Low-speed axial fans compliant with ERP2015
- Versions with electronically commutated (EC) motor to reduce the sound pressure level (optional)
- Fan speed regulator works exclusively via Modbus commands
- Coil protection treatment for aggressive ambient (optional)
- Low temperature versions to operate down to -40°C (optional)

Uniflair Room Cooling Direct Expansion 50-150 kW

Boosted Efficiency, latest generation of variable speed scroll compressors

Latest state of the art of variable speed scroll compressors.

The extended compressors operating envelope allows to increase the return air temperature according with latest Data Center trends.

Built in thermal protection . The Intermediate Discharge Valve integrated (IDV) on the compressors reduce excessive compression of refrigerant under part-load conditions while maintaining the same cooling capacity The reduced effort of the motor and its electrical consumption ensure an increased seasonal efficiency while granting a longer life cycle of the compressor.

The latest generation of EC fan

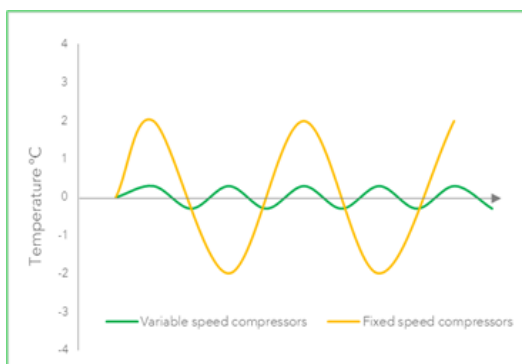
Ensure high performance with low energy consumption. Infinite variable speed control and continuous monitoring via ModBus-RTU are the base for combined airflow and capacity regulation. The integrated soft start and optimized impeller design combine high airflow with excellent efficiency and low noise. Compliant with current ErP Directive.

Redefined efficiency and energy-saving with Direct Free cooling operation to cool the IT Rooms more economically than conventional cooling systems only with compressors.

Free Cooling is automatically combined with the unit's operation to suit the outside temperature and cooling needs, ensuring maximum savings.

Optimized operation at any condition with electronic expansion valve

The electronic expansion valve (EEV) is integrated in the refrigerant circuit and fully managed by the microprocessor of the cooling unit to provide highly efficient electronic control of the flow of refrigerant and increase in the COP at low external temperatures



Precise discharge temperature control

Thanks to the capacity modulation given by the variable speed compressor, the air discharge temperature is precisely controlled avoiding fluctuations of the temperature due to heat load variation.



Uniflair Room Cooling Direct Expansion 50-150 kW

High Performance Compact Direct expansion Air Cooled Units designed to ensure the maximum flexibility for integration in your system.

Flexible and adaptable

The versatility in configurations make the Uniflair Room Cooling an excellent solution to suit different installation' requirements and site layout.

Available in upflow and downflow versions Uniflair Room Cooling units suit for installations with or without raised floor.

Perfectly adaptable to all kinds of installations even in case of long distances between indoor and outdoor units. The maximum equivalent piping length between unit and condenser can reach 100 m.



Uniflair Room Cooling units fit for extreme conditions - from 50°C down to -40°C outdoor temperature.

High performance delivering boosted in compact dimension cooling capacity and efficiency in a reduced footprint.

Extensive connectivity

Suitable for connection with most common building management systems (BMS):

- BMS on serial network (RS485): ModBus RTU, Metasys, Trend.
- BMS on TCP/IP (UTP) networks: SNMP, ModBus TCP/IP, BacNet/IP.

Compatibility with EcoStruxure™ IT Software

Reliable Cooling continuity

Reliable design to ensure the cooling continuity and safe operation.

Uniflair Room Cooling can manage power failures and quick restore of the normal operation thanks to the redundancy in power source and advanced emergency strategies.





Boosted efficiency to
eliminating wasteful
operation

Uniflair Room Cooling Direct Expansion IDAV-IUAV-IXAV

Technical Data

IDAV / IUAV models		1511A	1911A	1922A	2022A	2422A	2922A	3822A
Fan type	EC backward-curved centrifugal motor fan							
Power supply	V/ph/Hz	400 / 3ph / 50 Hz						
Fans	nr.	2	2	2	2	2	2	3
Air flow	m3/h	16800	16800	16800	17000	20000	26000	27000
Gross total cooling capacity ^{1,2}	kW	65,6	70,1	76,3	80,0	90	124,4	156,7
EER		4,0	4,7	4,1	4,4	4,2	4,5	4,1

1: Gross cooling capacities; fans must be deducted to obtain net cooling data.

2: Data refer to nominal conditions: Room at 35 °C – 30% RH, condensing temperature 45 °C.

Dimensions

IDAV / IUAV models		1511A	1911A	1922A	2022A	2422A	2922A	3822A
Height (IDAV)	mm	2150	2150	2150	2150	2150	2150	2150
Height (IUAV)	mm	1950	1950	1950	1950	1950	1950	1950
Length	mm	1777	1777	1777	2082	2082	2650	2650
Depth	mm	900	900	900	900	900	900	900

Technical Data

IXAV models		2322A	2622A	4022A
Fan type	EC backward-curved centrifugal motor fan			
Power supply	V/ph/Hz	400 / 3ph / 50 Hz		
Fans	nr.	2	2	3
Air flow	m3/h	18800	23400	30000
Gross total cooling capacity ^{1,2}	kW	107,2	122	167,1
EER		4,3	4,4	4,4

1: Gross cooling capacities; fans must be deducted to obtain net cooling data

2: Data refer to nominal conditions: Room at 35 °C – 30% RH, condensing temperature 45 °C.

Dimensions

IXAV models		2322A	2622A	4022A
Height (without fan module)	mm	2150	2150	2150
Fan module height	mm	565	565	565
Length	mm	1777	2082	2650
Depth	mm	900	900	900

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To learn more about Uniflair Cooling contact your Schneider Electric representative or visit se.com/cooling

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