Uniflair TDAV-TUAV

Direct Expansion air-cooled units with backward-curved fans equipped with EC motor
20-100 kW

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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.

System Architecture

Main features

Air filters

- Standard high efficiency EU4-pleated air filters housed in a metal frame
- 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

Fixed speed scroll compressor

- Possibility to select units with two tandem compressors for each circuit (models with the **21 or **42 suffix)
- Better efficiency and regulation capacity at partial loads

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
- Regulate airflow based on actual thermal load
- Easy serviceability with quick removal kit

Structure and cabinet

- Self-supporting frame in galvanized steel with panels
- External panels coated with RAL9003 epoxy-polyester paint
- Internally lined with heat and sound-proofing insulation

Advanced controller

- Local or remote user terminal
- Integrated management of the Electronic Expansion Valve and refrigerating circuit parameters
- Integrated LAN card for group connection• Rotation and active stand-by management
- Remote on/off
- Modbus protocol interface
- Other external communication protocols: Bacnet, Trend, Metasys, TCP/IP, SNMP, and ecoStruxure platform.

Air cooled direct expansion

- Heat is extracted from the room and transferred to the outside air using air-cooled refrigerant heat exchangers (condensers)
- The room unit and external condenser form an autonomous sealed circuit
- A wide range of configurations available

System Architecture

Main configurable options

Construction options

- Immersed electrode humidifier (D/U versions)
- Low surface temperature electrical heaters with extended fans, complete with double safety thermostat and manual resetting (T/H versions)
- Total front access is available for unit maintenance.
- The electrical panel is situated in a compartment separated from the airflow
- Microprocessor control system includes:
  - Integrated management of the EEV and refrigerating circuit parameters
  - Local user terminal with external accessibility
  - Integrated LAN card for local network connection of a group of CRACs
  - Rotation and active stand-by management
  - Free contact for general and two for addressable alarms
  - Remote on/off switch
  - Advanced microprocessor control system is available with local or remote user terminal

Additional accessories

The units can be supplied with the following external accessories:

- Remote, semi-graphic user terminal
- RS485 serial adapter to communicate with external BMS
- TCP/IP serial adapter to communicate with external BMS managed with SNMP protocol
- AFPS that can be adapted as a kit with installation instructions
- Motorized damper
- Condensate drain pump
- Suction from the top or front discharge plenums
- Adjustable floor stand

Regulations

Uniflair Room Cooling comply with:

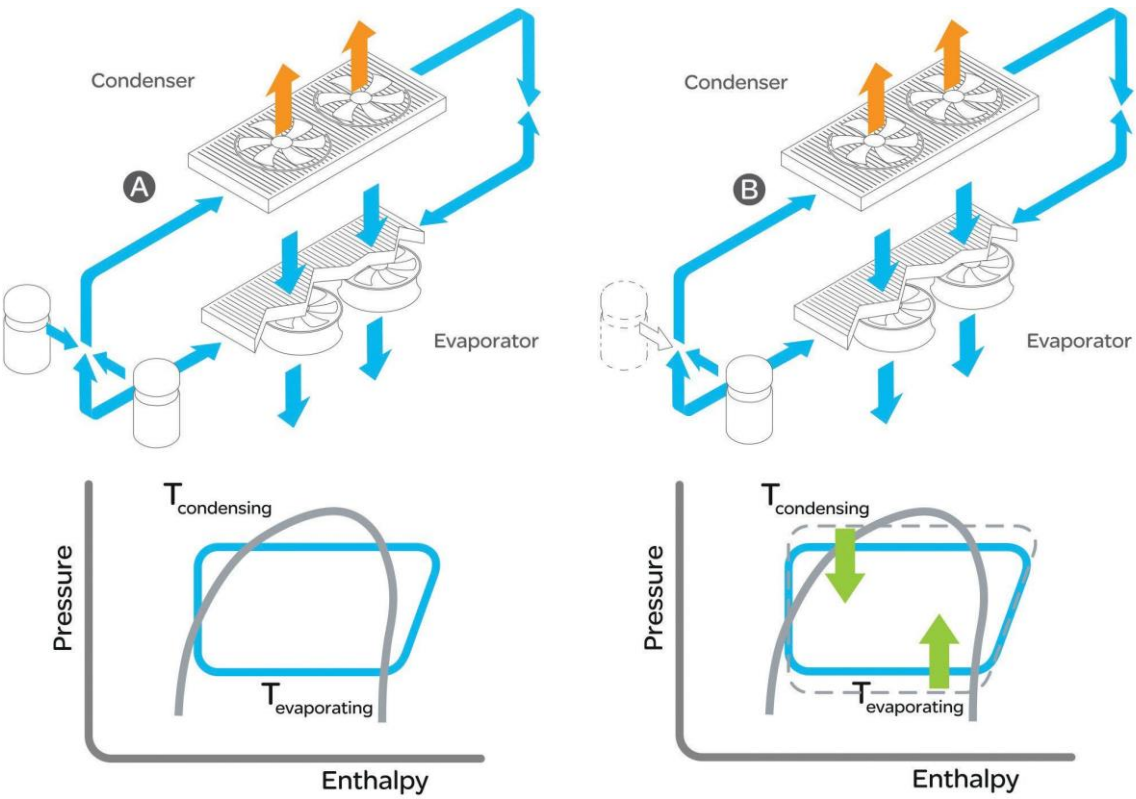
- Machinery Directive 2006/42/EC (MD)
- Ecodesign and Energy Labelling 2009/125/EC
- Electromagnetic compatibility Directive 2014/30/EU (EMC)
- Pressure equipment Directive 2014/68/EU (PED)
- Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS)

Tandem operation

Main features

In many applications the room load can vary enormously during the course of a single day or from season to season. This will cause wide variations in the amount of cooling required at any given moment. In these circumstances it is very important to use precision air conditioning units that are highly energy efficient at part load.
Uniflair Room Cooling models (with suffix **21) are equipped with two compressors operating in parallel on the same circuit in order to offer two stages of cooling on a single circuit of refrigeration.

As the evaporator coil surface area (designed for the capacity of two compressors) is fixed, one single compressor in operation (Fig. B) benefits from the availability of a “double sized” evaporator coil. This maximization of the cooling effect leads to increases in part load efficiencies and a rise in the part load coefficient of performance (COP).



Uniflair Air Cooled Room Cooling TDAV

Technical Data[1]

TDAV models		0511A	0611A	0721A	0722A	0921A	0922A
Fan type		EC backward-curved centrifugal motor fan					
Power supply	V/ph/Hz	400 V / 3ph / 50 Hz					
Fans	nr.	1	1	1	1	1	1
Air flow	m3/h	5700	5700	8600	8600	8600	8600
N° of compressors	nr.	1	1	2	2	2	2
Refrigerating circuits	nr.	1	1	1	2	1	2
Gross total cooling capacity	kW	20,3	24,9	25,6	25,8	34,5	34,3
Gross sensible cooling capacity	kW	19,7	21,9	25,4	25,5	29,6	28,4
Dimensions							
Height	mm	1960	1960	1960	1960	1960	1960
Length	mm	1010	1010	1310	1310	1310	1310
Depth	mm	750	750	865	865	865	865

TDAV models		1021A	1022A	1121A	1122A	1321A	1322A
Fan type		EC backward-curved centrifugal motor fan					
Power supply	V/ph/Hz	400 V / 3ph / 50 Hz					
Fans	nr.	2	2	1	2	2	2
Air flow	m3/h	8600	8600	12320	12320	12320	12320
N° of compressors	nr.	2	2	2	2	2	2
Refrigerating circuits	nr.	1	2	1	2	1	2
Gross total cooling capacity	kW	37,6	37,4	37,7	38	48,1	47,7
Gross sensible cooling capacity	kW	30,1	29,2	36,6	36,5	39,5	38,1
Dimensions							
Height	mm	1960	1960	1960	1960	1960	1960
Length	mm	1310	1310	1720	1720	1720	1720
Depth	mm	865	865	865	865	865	865

1: Data refer to nominal conditions: Room at 24°C – 50% RH, condensing temperature 45°C, ESP 20 Pa

Uniflair Air Cooled Room Cooling TDAV

Technical Data[1]

TDAV models		1422A	1622A	1822A	2222A*	2242A*	2522A*
Fan type		EC backward-curved centrifugal motor fan					
Power supply	V/ph/Hz	400 V / 3ph / 50 Hz					
Fans	nr.	2	2	2	3	3	3
Air flow	m3/h	16500	16500	16500	21500	21500	21500
N° of compressors	nr.	2	2	2	2	4	2
Refrigerating circuits	nr.	2	2	2	2	2	2
Gross total cooling capacity	kW	51,7	57,4	64,0	75,1	82,8	86,7
Gross sensible cooling capacity	kW	51,1	56,8	57,8	75,1	81,8	83,1
Dimensions							
Height	mm	1960	1960	1960	1960	2175	2175
Length	mm	2171	2171	2171	2580	2580	2580
Depth	mm	865	865	865	750	865	865

TDAV models		2542A*	2842A*	3342A*
Fan type		EC backward-curved centrifugal motor fan		
Power supply	V/ph/Hz	400 V / 3ph / 50 Hz		
Fans	nr.	3	3	3
Air flow	m3/h	21500	21500	21500
N° of compressors	nr.	4	4	4
Refrigerating circuits	nr.	2	2	2
Gross total cooling capacity	kW	87,9	94,8	104,8
Gross sensible cooling capacity	kW	83,3	87,8	89,8
Dimensions				
Height	mm	2175	2175	2175
Length	mm	2580	2580	2580
Depth	mm	865	865	865

1: Data refer to nominal conditions: Room at 24°C – 50% RH, condensing temperature 45°C, ESP 20 Pa

**Units manufactured only in Zhuhai (China) plant*

Uniflair Air Cooled Room Cooling TUAV

Technical Data[1]

TUAV models		0511A	0611A	0721A	0722A	0921A	0922A
Fan type		EC backward-curved centrifugal motor fan					
Power supply	V/ph/Hz	400 V / 3ph / 50 Hz					
Fans	nr.	1	1	1	1	1	1
Air flow	m3/h	5700	5700	8600	8600	8600	8600
N° of compressors	nr.	1	1	2	2	2	2
Refrigerating circuits	nr.	1	1	1	2	1	2
Gross total cooling capacity	kW	20,3	24,9	25,6	25,8	34,5	34,3
Gross sensible cooling capacity	kW	19,7	21,9	25,4	25,5	29,6	28,4
Dimensions							
Height	mm	1960	1960	1960	1960	1960	1960
Length	mm	1010	1010	1310	1310	1310	1310
Depth	mm	750	750	865	865	865	865

TUAV models		1021A	1022A	1121A	1122A	1321A	1322A
Fan type		EC backward-curved centrifugal motor fan					
Power supply	V/ph/Hz	400 V / 3ph / 50 Hz					
Fans	nr.	1	1	1	2	2	2
Air flow	m3/h	8600	8600	12320	12320	12320	12320
N° of compressors	nr.	2	2	2	2	2	2
Refrigerating circuits	nr.	1	2	1	2	1	2
Gross total cooling capacity	kW	37,6	37,4	37,7	38	48,1	47,7
Gross sensible cooling capacity	kW	30,1	29,2	36,6	36,5	39,5	38,1
Dimensions							
Height	mm	1960	1960	1960	1960	1960	1960
Length	mm	1310	1310	1720	1720	1720	1720
Depth	mm	865	865	865	865	865	865

1: Data refer to nominal conditions: Room at 24°C – 50% RH, condensing temperature 45°C, ESP 20 Pa

Uniflair Air Cooled Room Cooling TUAV

Technical Data[1]

TUAV models		1422A	1622A	1822A	2222A	2242A	2522A
Fan type		EC backward-curved centrifugal motor fan					
Power supply	V/ph/Hz	400 V / 3ph / 50 Hz					
Fans	nr.	2	2	2	3	3	3
Air flow	m3/h	16000	16000	16000	22000	22000	22500
N° of compressors	nr.	2	2	2	2	4	2
Refrigerating circuits	nr.	2	2	2	2	2	2
Gross total cooling capacity	kW	51,5	57,6	63,8	75,4	82,7	86,5
Gross sensible cooling capacity	kW	50,8	55,8	56,6	75,4	81,8	85,6
Dimensions							
Height	mm	1960	1960	1960	1960	1960	1960
Length	mm	2171	2171	2171	2580	2580	2580
Depth	mm	865	865	865	750	865	865

TUAV models		2542A	2842A	3342A
Fan type		EC backward-curved centrifugal motor fan		
Power supply	V/ph/Hz	400 V / 3ph / 50 Hz		
Fans	nr.	3	3	3
Air flow	m3/h	22500	23000	23000
N° of compressors	nr.	4	4	4
Refrigerating circuits	nr.	2	2	2
Gross total cooling capacity	kW	88,4	95,7	105,7
Gross sensible cooling capacity	kW	86,1	92,1	93,9
Dimensions				
Height	mm	1960	1960	1960
Length	mm	2580	2580	2580
Depth	mm	865	865	865

1: Data refer to nominal conditions:
Room at 24°C – 50% RH, condensing temperature 45°C, ESP 20 Pa

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

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