

# Uniflair LE TDEV-TUEV

Energy-saving units with backward-curved fans  
equipped with EC motor

20-100kW



**Perimeter cooling for  
medium/large data center**

> Refrigerant R-410A

> EC Fans

**Available Versions:**

> Downflow (TDEV)

> Upflow (TUEV)

# Main Technical Features

## Microprocessor control

- 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, Lonworks, Trend, Metasys, TCP/IP, SNMP, and StruxureWare™ platform.

## Electronic Expansion Valve

- Controlled by the microprocessor and a dedicated software
- Increased cooling precision
- Increased energy efficiency of the cooling cycle

## Condenser

- Internal brazed water-cooled condenser
- Made from AISI 304 stainless steel

## Fans

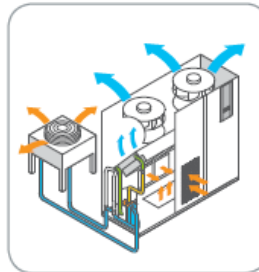
- Electronically Commuted
- Fan speed adjustment via microprocessor control
- High partial load efficiency



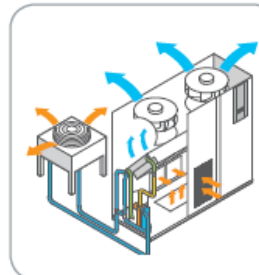
*Backward-curved blades fan with EC motor*

## Indirect free cooling

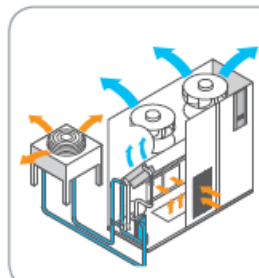
- Provides the required cooling capacity when the external temperature is lower than the internal ambient
- Compressor power consumption is minimized while internal and external environments are kept separate



*Mechanical cooling operation*



*Mixed cooling operation*



*Free-cooling operation*

# Main Technical Features

## Cooling coil

- Elevated SHR and reduced pressure drops in the air section
- Made from copper tubes mechanically expanded on aluminum fins
- Hydrophilic treatment
- Interlaced chilled water and direct expansion circuits to increase the efficiency in all running conditions

## Air filters

- EU4-pleated air filters housed in a metal frame
- Dirty filter differential pressure switch
- Low airflow differential pressure switch



*Metal frame air filter*

## Frame

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

## Electrical panel

- Situated in a compartment separated from the air flow
- Complying with 2006/95/EC directive and related standard

## Directives compliance

- 2006/42/EC, 2004/108/EC, 2006/95/EC, 97/23/EC, 842/2006/EC F-GAS regulation

## Compressors

- 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

## 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)
- Hot gas and hot water reheating

## External Accessories

- Remote, semi-graphic user terminal
- RS485 serial adaptor to communicate with external BMS
- LON FTT10 serial adaptor to communicate with external BMS managed with LON protocol
- TCP/IP serial adaptor to communicate with external BMS managed with SNMP protocol
- AFPS (Automatic Floor Pressurization System) that permits to adapt its availability as a kit with installation instructions
- Motorized damper
- Condensate drain pump
- Suction from the top or front discharge plenums
- Adjustable floor stands

# Technical Data/1

| TDEV –TUEV Model       |                                    |  | 0511A      | 0611A | 0721A | 0722A | 0921A | 0922A | 1021A |
|------------------------|------------------------------------|--|------------|-------|-------|-------|-------|-------|-------|
| Fan Type               |                                    | EC Backward-curved centrifugal motor fan |            |       |       |       |       |       |       |
| Power supply           |                                    | V/ph/Hz                                  | 400/3/50Hz |       |       |       |       |       |       |
| Fans                   |                                    | Nr.                                      | 1          | 1     | 1     | 1     | 1     | 1     | 1     |
| Airflow                |                                    | m3/h                                     | 5700       | 5700  | 8600  | 8600  | 8600  | 8600  | 8600  |
| N° of compressors      |                                    |  | 1          | 1     | 2     | 2     | 2     | 2     | 2     |
| Refrigerating Circuits |                                    |  | 1          | 1     | 1     | 2     | 1     | 2     | 1     |
| DX                     | Gross Total Cooling Cap.(1) (2)    | kW                                       | 19,1       | 23,7  | 27,0  | 28,4  | 30,4  | 32,2  | 34,6  |
|                        | Gross Sensible Cooling Cap.(1) (2) | kW                                       | 19,1       | 20,8  | 27,0  | 28,4  | 28,7  | 28,0  | 30,5  |
| CW                     | Gross Total Cooling Cap.(1) (3)    | kW                                       | 20,2       | 20,2  | 28,5  | 28,5  | 28,5  | 28,5  | 28,5  |
|                        | Gross Sensible Cooling Cap.(1) (3) | kW                                       | 20,1       | 20,1  | 28,3  | 28,3  | 28,3  | 28,3  | 28,3  |
| <b>DIMENSIONS</b>      |                                    |  |            |       |       |       |       |       |       |
| Height                 |                                    | mm                                       | 1960       | 1960  | 1960  | 1960  | 1960  | 1960  | 1960  |
| Length                 |                                    | mm                                       | 1010       | 1010  | 1310  | 1310  | 1310  | 1310  | 1310  |
| Depth                  |                                    | mm                                       | 750        | 750   | 865   | 865   | 865   | 865   | 865   |
| TDEV –TUEV Model       |                                    |  | 1021A      | 1121A | 1122A | 1321A | 1322A | 1422A | 1622A |
| Fans                   |                                    | Nr.                                      | 1          | 1     | 2     | 2     | 2     | 2     | 2     |
| Airflow                |                                    | m3/h                                     | 8600       | 12320 | 12320 | 12320 | 12320 | 16000 | 16000 |
| N° of compressors      |                                    |  | 2          | 2     | 2     | 2     | 2     | 2     | 2     |
| Refrigerating Circuits |                                    |  | 2          | 1     | 2     | 1     | 2     | 2     | 2     |
| DX                     | Gross Total Cooling Cap.(1) (2)    | kW                                       | 37,1       | 36,9  | 39,2  | 46,6  | 49,7  | 49,7  | 55,9  |
|                        | Gross Sensible Cooling Cap.(1) (2) | kW                                       | 30,4       | 36,9  | 37,4  | 40,3  | 39,9  | 49,7  | 55,9  |
| CW                     | Gross Total Cooling Cap.(1) (2)    | kW                                       | 28,5       | 40,1  | 40,1  | 40,1  | 40,1  | 54,1  | 54,1  |
|                        | Gross Sensible Cooling Cap.(1) (2) | kW                                       | 28,3       | 39,9  | 39,9  | 39,9  | 39,9  | 53,9  | 53,9  |
| <b>DIMENSIONS</b>      |                                    |  |            |       |       |       |       |       |       |
| Height                 |                                    | mm                                       | 1960       | 1960  | 1960  | 1960  | 1960  | 1960  | 1960  |
| Length                 |                                    | mm                                       | 1010       | 1720  | 1720  | 1720  | 1720  | 2170  | 2170  |
| Depth                  |                                    | mm                                       | 750        | 750   | 865   | 865   | 865   | 865   | 865   |

1. Gross Cooling capacities; fans must be deduced to obtain net cooling data.
2. Data refers to nominal conditions : room at 24°C° -50% RH, water temperatures 30-35°C, and ESP = 20Pa.
3. Data refers to nominal conditions: room at 24°C-50% RH,water temperature 7/12°C; glycol 0%, and ESP = 20Pa.

# Technical Data/2

| TDEV Model             |                                    | 1822A                                    | 2222A(4)   | 2242A(4) | 2522A(4) | 2542A(4) | 2842A(4) |
|------------------------|------------------------------------|--|------------|----------|----------|----------|----------|
| Fan Type               |                                    | EC Backward-curved centrifugal motor fan |            |          |          |          |          |
| Power supply           |                                    | V/ph/Hz                                  | 400/3/50Hz |          |          |          |          |
| Fans                   |                                    | Nr.                                      | 2          | 3        | 3        | 3        | 3        |
| Airflow                |                                    | m3/h                                     | 16000      | 21500    | 21500    | 21500    | 21500    |
| N° of compressors      |                                    |  | 2          | 2        | 4        | 2        | 4        |
| Refrigerating Circuits |                                    |  | 2          | 2        | 2        | 2        | 2        |
| DX                     | Gross Total Cooling Cap.(1) (2)    | kW                                       | 60,5       | 78,2     | 83,5     | 86,1     | 87,7     |
|                        | Gross Sensible Cooling Cap.(1) (2) | kW                                       | 56,0       | 71,3     | 77,6     | 74,4     | 74,9     |
| CW                     | Gross Total Cooling Cap.(1) (3)    | kW                                       | 54,1       | 96,6     | 96,6     | 96,6     | 96,6     |
|                        | Gross Sensible Cooling Cap.(1) (3) | kW                                       | 53,9       | 95,7     | 95,7     | 95,7     | 95,7     |
| <b>Dimensions</b>      |                                    |  |            |          |          |          |          |
| Height                 |                                    | mm                                       | 1960       | 1960     | 1960     | 1960     | 1960     |
| Length                 |                                    | mm                                       | 1010       | 1010     | 1310     | 1310     | 1310     |
| Depth                  |                                    | mm                                       | 750        | 750      | 865      | 865      | 865      |
| TUEV Model             |                                    |  | 2222A      | 2242A    | 2522A    | 2542A    | 2842A    |
| Fans                   |                                    | Nr.                                      | 3          | 3        | 3        | 3        | 3        |
| Airflow                |                                    | m3/h                                     | 22000      | 22000    | 22000    | 22500    | 22500    |
| N° of compressors      |                                    |  | 2          | 4        | 2        | 4        | 4        |
| Refrigerating Circuits |                                    |  | 2          | 2        | 2        | 2        | 2        |
| DX                     | Gross Total Cooling Cap.(1) (2)    | kW                                       | 78,4       | 83,7     | 86,3     | 88,3     | 96,4     |
|                        | Gross Sensible Cooling Cap.(1) (2) | kW                                       | 72,4       | 78,8     | 75,4     | 76,9     | 79,0     |
| CW                     | Gross Total Cooling Cap.(1) (3)    | kW                                       | 98,3       | 98,3     | 98,3     | 100,0    | 100,0    |
|                        | Gross Sensible Cooling Cap.(1) (3) | kW                                       | 97,4       | 97,4     | 97,4     | 99,0     | 99,0     |
| <b>DIMENSIONS</b>      |                                    |  |            |          |          |          |          |
| Height                 |                                    | mm                                       | 1960       | 1960     | 1960     | 1960     |          |
| Length                 |                                    | mm                                       | 2580       | 2580     | 2580     | 2580     |          |
| Depth                  |                                    | mm                                       | 750        | 865      | 865      | 865      |          |

1. Gross Cooling capacities; fans must be deduced to obtain net cooling data.
2. Data refers to nominal conditions : room at 24°C° -50% RH, water temperatures 30-35°C, and ESP = 20Pa.
3. Data refers to nominal conditions: room at 24°C-50% RH,water temperature 7/12°C; glycol 0%, and ESP = 20Pa.
4. Data refers to Downflow unit.