

# Uniflair LE TDER-TUER

Energy-saving units with backward-curved fans

20-100kW



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

> Refrigerant R-410A

**Available Versions:**

- > Downflow (TDER)
- > Upflow (TUER)

# 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 precision of the cooling
- Increased energy efficiency of the cooling cycle

## Fans

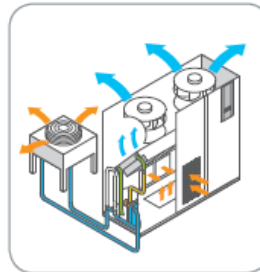
- High-efficiency backward-curved
- Directly-coupled asynchronous motor



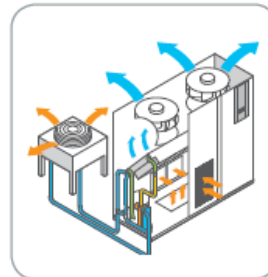
*Downflow unit with backward-curved fans*

## Indirect free cooling

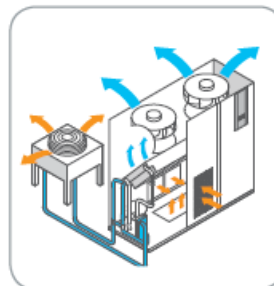
- Provides the required cooling capacity when the external temperature is lower than the internal ambient.
- Compressor power consumption is minimized while internal and external environments are kept separate.



*Mechanical cooling operation*



*Mixed cooling operation*



*Free-cooling operation*

# Main Technical Features

## Cooling coil

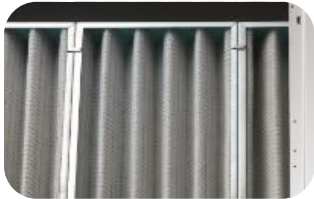
- Elevated SHR and reduced pressure drops in the air section
- Made from copper tubes mechanically expanded on aluminum fins
- Hydrophilic treatment
- Interlaced chilled water and direct expansion circuits to increase the efficiency in all running conditions

## Condenser

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

## 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
- Condensation control on refrigerant side with constant water flow

## 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

| TDER-TUER Model        |                                    | 0511A                                 | 0611A      | 0721A | 0722A | 0921A | 0922A | 1021A |      |
|------------------------|------------------------------------|---------------------------------------|------------|-------|-------|-------|-------|-------|------|
| Fan Type               |                                    | Backward-curved centrifugal motor fan |            |       |       |       |       |       |      |
| Power supply           |                                    | V/ph/Hz                               | 400/3/50Hz |       |       |       |       |       |      |
| Fans                   |                                    | Nr.                                   | 1          | 1     | 1     | 1     | 1     | 1     |      |
| Airflow                |                                    | m3/h                                  | 5827       | 5827  | 8541  | 8541  | 8541  | 8541  |      |
| N° of compressors      |                                    |                                       | 1          | 2     | 2     | 2     | 2     | 2     |      |
| Refrigerating Circuits |                                    |                                       | 1          | 1     | 1     | 2     | 1     | 2     |      |
| DX                     | Gross Total Cooling Cap.(1) (2)    | kW                                    | 19,2       | 23,8  | 27,0  | 28,5  | 30,4  | 32,1  | 34,6 |
|                        | Gross Sensible Cooling Cap.(1) (2) | kW                                    | 19,2       | 21,1  | 27,0  | 28,5  | 28,5  | 27,9  | 30,3 |
| CW                     | Gross Total Cooling Cap.(1) (3)    | kW                                    | 20,5       | 20,5  | 28,3  | 28,3  | 28,3  | 28,3  | 28,3 |
|                        | Gross Sensible Cooling Cap.(1) (3) | kW                                    | 20,4       | 20,4  | 28,2  | 28,2  | 28,2  | 28,2  | 28,2 |
| 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   |      |
| TDER -TUER Model       |                                    | 1022A                                 | 1121A      | 1122A | 1321A | 1322A | 1422A | 1622A |      |
| Fans                   |                                    | Nr.                                   | 1          | 1     | 2     | 2     | 2     | 2     |      |
| Airflow                |                                    | m3/h                                  | 8541       | 13277 | 13277 | 13277 | 13277 | 15906 |      |
| N° of compressors      |                                    |                                       | 2          | 2     | 2     | 2     | 2     | 2     |      |
| Refrigerating Circuits |                                    |                                       | 2          | 1     | 2     | 1     | 2     | 2     |      |
| DX                     | Gross Total Cooling Cap.(1) (2)    | kW                                    | 37,1       | 37,3  | 39,3  | 47,0  | 50,2  | 49,6  | 55,9 |
|                        | Gross Sensible Cooling Cap.(1) (2) | kW                                    | 30,3       | 37,3  | 39,3  | 42,3  | 41,5  | 49,6  | 55,9 |
| CW                     | Gross Total Cooling Cap.(1) (2)    | kW                                    | 28,3       | 41,9  | 41,9  | 41,9  | 41,9  | 54,0  | 54,0 |
|                        | Gross Sensible Cooling Cap.(1) (2) | kW                                    | 28,2       | 41,7  | 41,7  | 41,7  | 41,7  | 53,7  | 53,7 |
| DIMENSIONS             |                                    |                                       |            |       |       |       |       |       |      |
| Height                 |                                    | mm                                    | 1960       | 1960  | 1960  | 1960  | 1960  | 1960  |      |
| Length                 |                                    | mm                                    | 1010       | 1720  | 1720  | 1720  | 1720  | 2170  |      |
| Depth                  |                                    | mm                                    | 750        | 750   | 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

| TDER Model             |                                    | 1822A                                 | 2222A(4)   | 2242A(4) | 2522A(4) | 2542A(4) | 2842A(4) |
|------------------------|------------------------------------|---------------------------------------|------------|----------|----------|----------|----------|
| Fan Type               |                                    | Backward-curved centrifugal motor fan |            |          |          |          |          |
| Power supply           |                                    | V/ph/Hz                               | 400/3/50Hz |          |          |          |          |
| Fans                   |                                    | Nr.                                   | 2          | 3        | 3        | 3        | 3        |
| Airflow                |                                    | m3/h                                  | 15906      | 21809    | 21809    | 21809    | 21809    |
| 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       | 78,4     | 83,6     | 86,2     | 87,9     |
|                        | Gross Sensible Cooling Cap.(1) (2) | kW                                    | 55,8       | 72,0     | 78,3     | 75,0     | 75,5     |
| CW                     | Gross Total Cooling Cap.(1) (3)    | kW                                    | 54,0       | 97,6     | 97,6     | 97,6     | 97,6     |
|                        | Gross Sensible Cooling Cap.(1) (3) | kW                                    | 53,7       | 96,7     | 96,7     | 96,7     | 96,7     |
| <b>Dimensions</b>      |                                    |                                       |            |          |          |          |          |
| Height                 |                                    | mm                                    | 1960       | 2150     | 2150     | 2150     | 2150     |
| Length                 |                                    | mm                                    | 2170       | 2580     | 2580     | 2580     | 2580     |
| Depth                  |                                    | mm                                    | 750        | 750      | 865      | 865      | 865      |
| TUER Model             |                                    |                                       | 2222A      | 2242A    | 2522A    | 2542A    | 2842A    |
| Fans                   |                                    | Nr.                                   | 3          | 3        | 3        | 3        | 3        |
| Airflow                |                                    | m3/h                                  | 22160      | 22160    | 23194    | 23194    | 23194    |
| N° of compressors      |                                    |                                       | 2          | 4        | 2        | 4        | 4        |
| Refrigerating Circuits |                                    |                                       | 2          | 2        | 2        | 2        | 2        |
| DX                     | Gross Total Cooling Cap.(1) (2)    | kW                                    | 78,5       | 83,8     | 86,8     | 88,7     | 96,8     |
|                        | Gross Sensible Cooling Cap.(1) (2) | kW                                    | 72,7       | 79,2     | 77,8     | 78,3     | 80,4     |
| CW                     | Gross Total Cooling Cap.(1) (2)    | kW                                    | 98,8       | 98,8     | 102,3    | 102,3    | 102,3    |
|                        | Gross Sensible Cooling Cap.(1) (2) | kW                                    | 97,9       | 97,9     | 101,3    | 101,3    | 101,3    |
| <b>DIMENSIONS</b>      |                                    |                                       |            |          |          |          |          |
| Height                 |                                    | mm                                    | 1960       | 1960     | 1960     | 1960     | 1960     |
| Length                 |                                    | mm                                    | 2580       | 2580     | 2580     | 2580     | 2580     |
| Depth                  |                                    | mm                                    | 750        | 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

4. Data refers to Downflow unit.