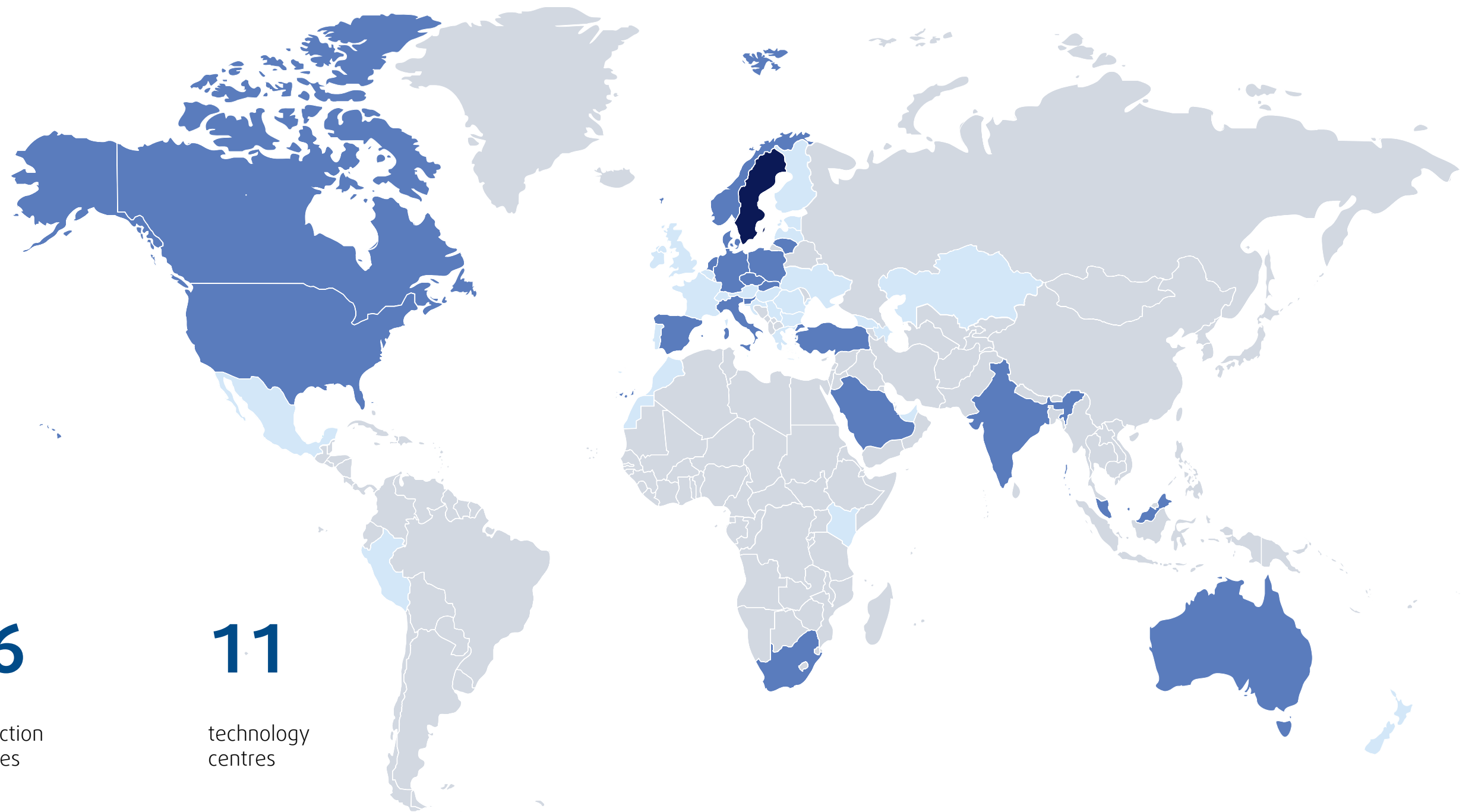




# Data Centre **Solutions**



**26**

production  
facilities

**11**

technology  
centres

**3**

distribution  
centres

**51**

countries with own  
sales organisation

**135**

exports to more  
than 135 countries

-  = Countries with production and sales companies
-  = Countries with sales companies
-  = Systemair's head office is located in Skövde, Sweden



# Efficient and Sustainable Air Based Data Centre Solutions: **From Concept to Completion**

Air remains essential in every data centre, either as the primary cooling method or as part of a hybrid strategy. Choosing the right air system ensures flexibility, predictable performance, lower pPUE and simpler cost-effective long-term operation.

At Systemair, our products are designed with the needs of engineers and end users in mind: with the added advantage of quick delivery from our global production network.



## Systemair in Data Centres

Systemair delivers engineered air based solutions for data centres, built on decades of ventilation expertise and validated technical performance.

Operating across 51 countries with 26 production facilities and 13 technology centres, we combine global capability with short lead times and local support.

## Designed by Engineers for Engineers

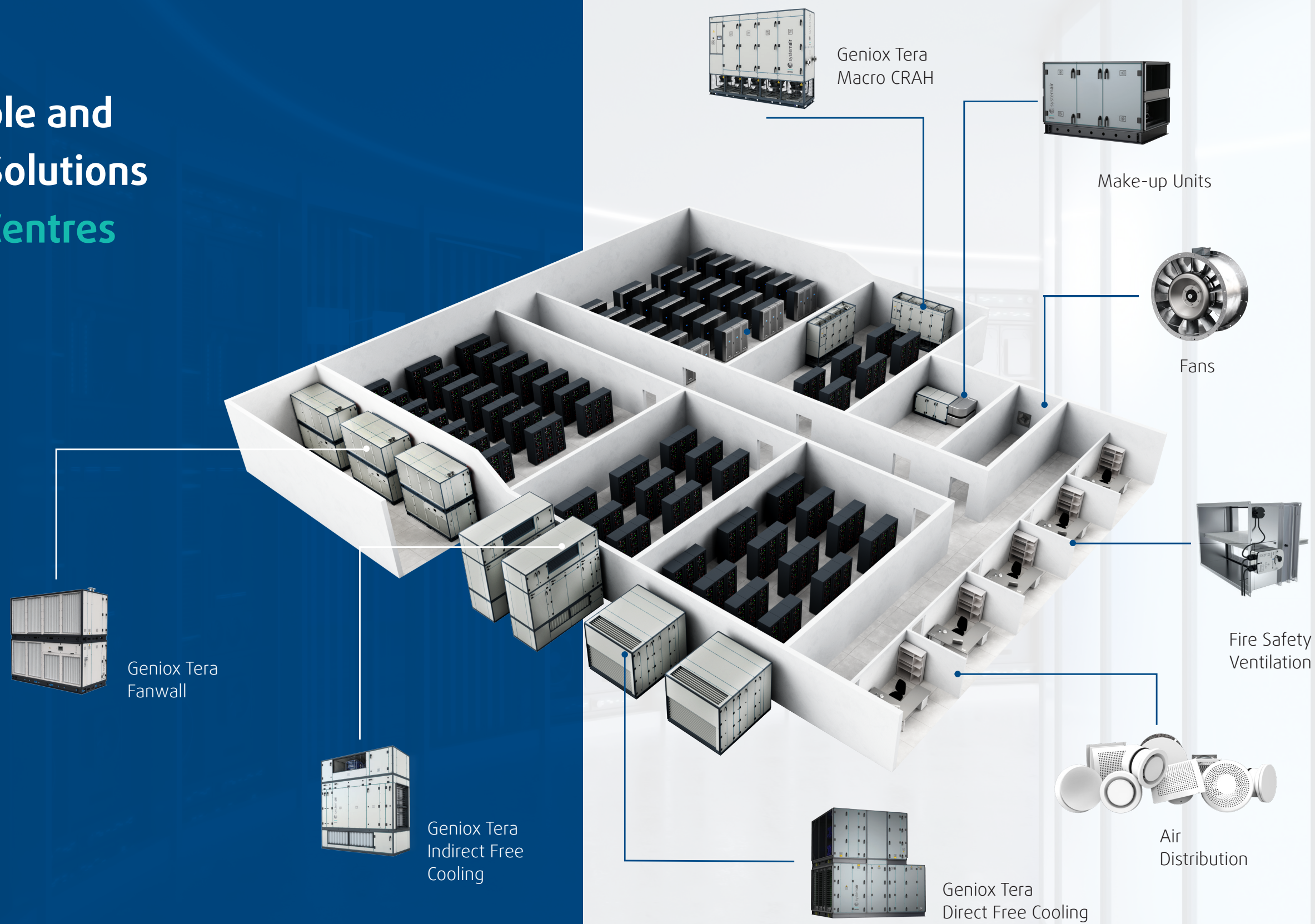
Systemair develops air-based solutions backed by over 250 R&D engineers across 13 technical centres. Every unit is designed for efficient airflow, low pressure drop and stable performance in demanding data centre conditions. All products undergo full-scale validation testing to guarantee reliable operation in real-world applications.

## 365 Performance centre

Our 365 Performance Centre enables full load testing up to 500 kW, Recreating real data hall conditions from  $-5^{\circ}\text{C}$  to  $+45^{\circ}\text{C}$ . Engineers can verify airflow, controls and performance with AMCA accredited testing and remote witness options. This facility positions Systemair as a Centre of Excellence for proven, data driven ventilation solutions.



# Sustainable and Reliable Solutions for Data Centres





# Geniox Tera Fanwall

High efficiency air based cooling for large data centres.

Systemair's Tera F units deliver scalable, energy efficient airflow with low pPUE. Engineered for minimal pressure drop, compact footprint and high reliability, ensure stable performance in demanding, high-density environments.



Low pPUE

Optional damper

Side by side installation

Wide range of communication protocols

Optional harmonic filter

Optional 2, 3-way, PICV, Energy valves.

ATS and UPS options

60mm panels

Space and cost saving top pipe connections

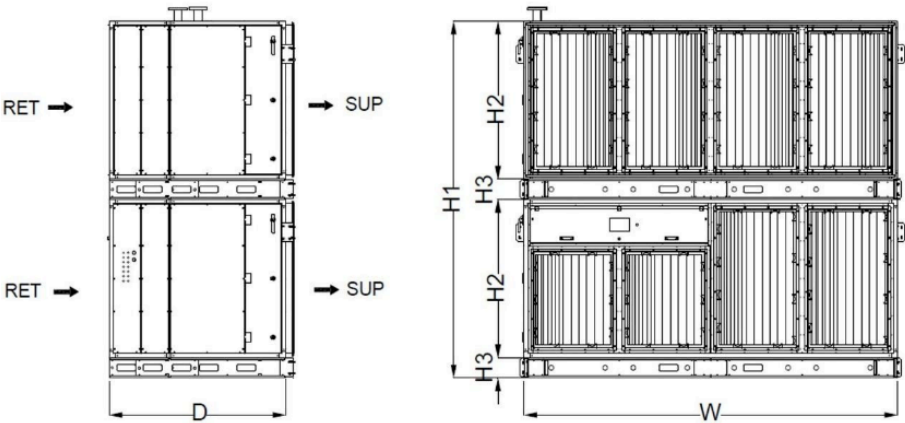
## Technical Parameters

| Size         | Nominal Airflow, m <sup>3</sup> /h* | Airflow range, m <sup>3</sup> /h | Water coil parameters °C** | Air Filter, class | Sensible cooling, kW | External Static Pressure, Pa* | Fan Motor Power, kW |
|--------------|-------------------------------------|----------------------------------|----------------------------|-------------------|----------------------|-------------------------------|---------------------|
| Tera F 24.15 | 67400                               | 30000-75000                      | 20/28*                     | Coarse 65% (G4)   | 275                  | 80                            | 11                  |
| Tera F 27.12 | 67400                               | 30000-75000                      |                            |                   | 275                  | 80                            | 9,35                |
| Tera F 33.15 | 94700                               | 60000-110000                     |                            |                   | 380                  | 80                            | 13,3                |
| Tera F 27.17 | 94700                               | 60000-110000                     |                            |                   | 380                  | 80                            | 15,96               |
| Tera F 39.17 | 122000                              | 80000-135000                     |                            |                   | 490                  | 80                            | 16,17               |
| Tera F 35.19 | 122000                              | 80000-135000                     |                            |                   | 490                  | 80                            | 15,68               |
| Tera F 44.17 | 150000                              | 80000-160000                     |                            |                   | 600                  | 80                            | 27                  |
| Tera F 40.19 | 150000                              | 80000-160000                     |                            |                   | 600                  | 80                            | 30,6                |

\* Based on nominal air conditions: 37 °C / 25 °C

\*\*20/30 water coil available as option

## Dimensions



| Size         | Width (W), mm | Depth (D), mm* | Height (H1), mm | Module Height (H2), mm | Frame (H3), mm | Frame (H4), mm |
|--------------|---------------|----------------|-----------------|------------------------|----------------|----------------|
| Tera F 24.15 | 2482          | 1582           | 3600            | 1582                   | 218            | 218            |
| Tera F 27.14 | 2782          | 1582           | 3082            | 1432                   | 218            | -              |
| Tera F 34.15 | 3482          | 1582           | 3600            | 1582                   | 218            | 218            |
| Tera F 27.17 | 2782          | 1582           | 4000            | 1782                   | 218            | 218            |
| Tera F 39.17 | 3982          | 1582           | 4000            | 1782                   | 218            | 218            |
| Tera F 35.19 | 3582          | 1582           | 4400            | 1982                   | 218            | 218            |
| Tera F 44.17 | 4482          | 1582           | 4000            | 1782                   | 218            | 218            |
| Tera F 40.19 | 4082          | 1582           | 4400            | 1982                   | 218            | 218            |



# Geniox Tera Macro CRAH

High capacity close control units for modern data centres. Patented filter and fan mounting enables fast, simple maintenance. Engineered for precise capacity control and stable operation in high heat-load data centres.

Compact footprint

Frontal and bottom air supply configurations

Optional damper

Wide range of communication protocols

Optional harmonic filter

Optional 2, 3-way, PICV, Energyvalves.

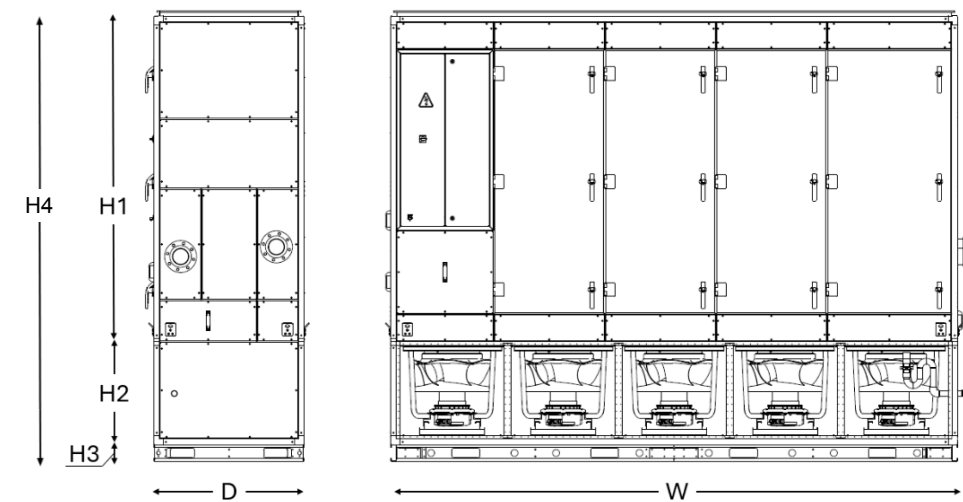
ATS / UPS option



## Technical Parameters

| Size       | Airflow range, m³/h | Water coil parameters °C** | Air Filter, class | Sensible cooling, kW | External Static Pressure, Pa* | Fan Motor Power, kW |
|------------|---------------------|----------------------------|-------------------|----------------------|-------------------------------|---------------------|
| Tera C 170 | 42000               | 20/28*                     | Coarse 65% (G4)   | 170                  | 50                            | 7.6                 |
| Tera C 230 | 57000               |                            |                   | 230                  | 50                            | 11.2                |
| Tera C 300 | 75000               |                            |                   | 300                  | 50                            | 16.3                |

## Dimensions



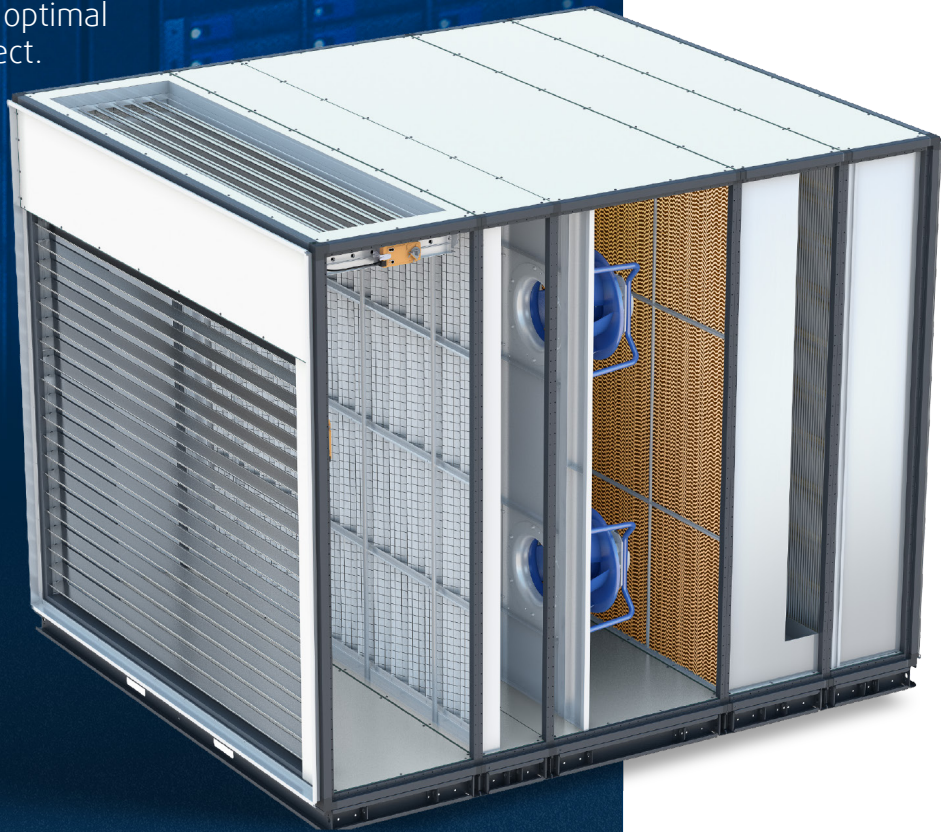
| Size       | Width (W), mm | Depth (D), mm* | Height (H1), mm | Module Height (H2), mm | Frame (H3), mm | Frame (H4), mm |
|------------|---------------|----------------|-----------------|------------------------|----------------|----------------|
| Tera C 170 | 2682          | 1082           | 2341            | 741                    | 118            | 3200           |
| Tera C 230 | 3282          | 1082           | 2341            | 741                    | 118            | 3200           |
| Tera C 300 | 4082          | 1082           | 2341            | 741                    | 118            | 3200           |



# Geniox Tera Direct Flow

High efficiency direct air cooling for large data centres.

In suitable climates, direct free cooling offers the most cost-efficient hyperscale data-centre air cooling. Systemair's Geniox Tera D units feature a minimal footprint, low pPUE, and a modular design that ensures optimal configurations for every project.



Ultra low pPUE

Flexible modular design

Scalable capacity for growing loads

Optional Arctic 4-stage damper

Optional heat recovery

Optional humidity control

## Technical Parameters

| Size         | Nominal Airflow, m³/h* | Airflow range, m³/h | Sensible cooling, kW | Filter       | Water coil parameters °C** | Nominal External Static Pressure, Pa* | Power consumption, kW |
|--------------|------------------------|---------------------|----------------------|--------------|----------------------------|---------------------------------------|-----------------------|
| Tera D GX 35 | 46000                  | 15000-68000         | 185                  | ePM1 60%(F7) | 20/28                      | 150                                   | 11,89                 |
| Tera D GX 38 | 62000                  | 20000-82000         | 250                  |              |                            |                                       | 18,39                 |
| Tera D GX 41 | 74500                  | 25000-95000         | 300                  |              |                            |                                       | 22,49                 |
| Tera D GX 44 | 81100                  | 30000-100000        | 375                  |              |                            |                                       | 33,18                 |

## Dimensions

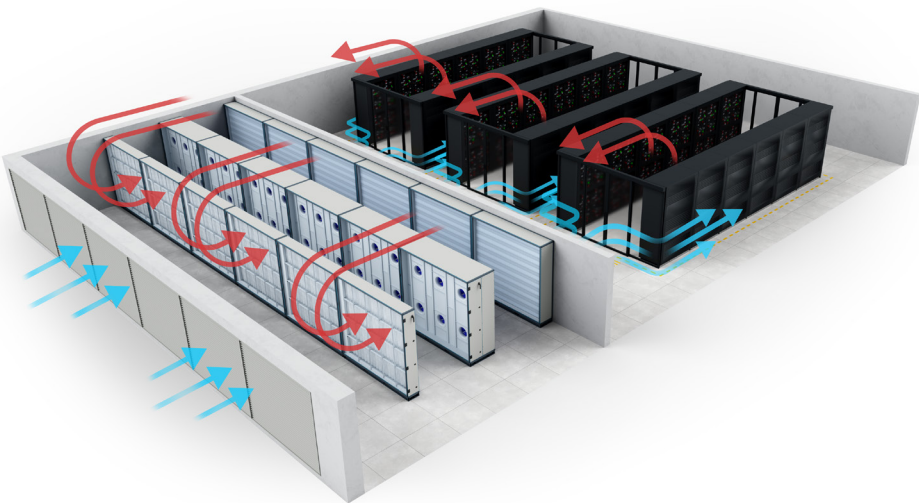
| Size         | Width (W), mm | Length (L), mm | Height supply only (H1), mm | Height supply and extract (H2), mm |
|--------------|---------------|----------------|-----------------------------|------------------------------------|
| Tera D GX 35 | 3482          | 4528           | 2000                        | 4002                               |
| Tera D GX 38 | 3482          | 4628           | 2300                        | 4602                               |
| Tera D GX 41 | 4082          | 4528           | 2300                        | 4602                               |
| Tera D GX 44 | 4082          | 4728           | 2600                        | 5202                               |

\* The dimensions shown above are indicative and based on the following configuration: mixing chamber, bag supply air filters, fan, cooling coil, extract fan, and control system.

\*\* Final unit dimensions depend on the project-specific configuration and will be provided with the detailed selection.

## Modular Solutions for Any Requirement

Fan array modules up to 400 kW can be combined with mixing chambers, filter walls or humidifiers to match exact project needs.





# Geniox

## Tera Indirect Free Cooling

Geniox Tera indirect free-cooling units use outdoor air and water’s natural evaporation effect to cool data centres. Optimized design cuts power and water use, while a high-performance heat exchanger boosts dry free-cooling time and keeps WUE low.



### Technical Parameters

| Tera I                                           |      | 100              | 200   | IFC 300 |
|--------------------------------------------------|------|------------------|-------|---------|
| Nominal cooling capacity                         | kW   | 100              | 200   | 300     |
| Nominal Primary air Flow                         | m³/h | 25000            | 50000 | 75000   |
| Nominal Secondary air Flow                       | m³/h | 25000            | 50000 | 75000   |
| Nominal plate heat exchanger efficiency Dry mode | %    | 65,5             | 63,7  | 60,9    |
| Nominal plate heat exchanger efficiency Wet mode | %    | 74,8             | 73,3  | 66,9    |
| Irrigation system water pump power consumption   | kW   | 1,85             | 3,75  | 3,75    |
| Irrigation system max. Water consumption         | l/h  | 204              | 403   | 556     |
| Max Cooling coil cooling capacity                | kW   | 108              | 219   | 332     |
| Operating voltage                                |      | 3/N/PE/400V 50Hz |       |         |
| Max Electircal input power DRY configuration     | kW   | 19,66            | 32,65 | 58,5    |
| Max Electircal input power, WET configuration    | kW   | 20,76            | 35,65 | 61,5    |
| Max Current                                      | A    | 70               | 120   | 150     |

### Dimensions (for standard perimeter unit configuration with irrigation system)

|        |    |      |      |      |
|--------|----|------|------|------|
| Width  | mm | 1682 | 3182 | 3382 |
| Length | mm | 5382 | 5582 | 5782 |
| Height | mm | 4782 | 5182 | 5582 |
| Weight | kg | 4062 | 7346 | 8399 |

### Dimensions (for standard roof unit configuration with irrigation system)

|        |    |      |      |      |
|--------|----|------|------|------|
| Width  | mm | 1682 | 3182 | 3382 |
| Length | mm | 5182 | 5382 | 5582 |
| Height | mm | 4182 | 4582 | 4882 |
| Weight | kg | 3619 | 5959 | 7567 |

### External control box dimensions

|        |    |      |
|--------|----|------|
| Width  | mm | 1550 |
| Length | mm | 400  |
| Height | mm | 850  |

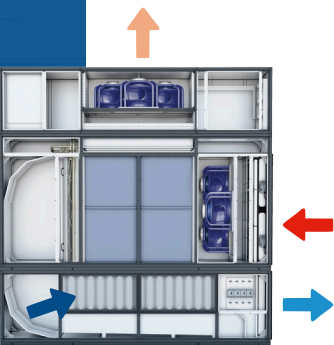
All air volume flows are based of standard density 1.2 kg/m³

\* RAT: 36°C 24%Rh OAT: 24°C 40%Rh conditions for the nominal performance calculation.



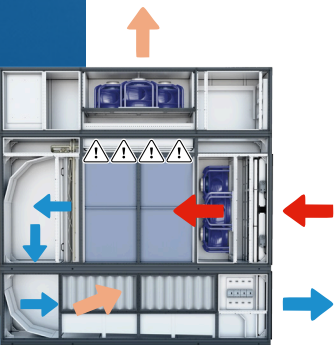
**Mode 1. Dry Free-cooling**

Warm air from data centre room is supplied to plate heat exchanger. Cold outdoor air passes through the heat exchanger in cross flow air path, without mixing with indoor air. Indoor air heat is rejected by the outdoor air. In order to maintain needed capacity, outdoor airflow varies depending on outdoor air parameters: if the temperature goes down then airflow is reduced.



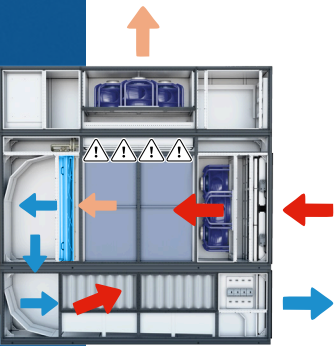
**Mode 2. Wet Free-cooling**

When outdoor air temperature increases, the adiabatic cooling mode starts: outdoor air passes through the water sprayed surface of the plate heat exchanger where it is cooled due to adiabatic process. Indoor air is cooled down. In order to maintain minimal power consumption outdoor airflow is also reduced according to the cooling demand in this mode.



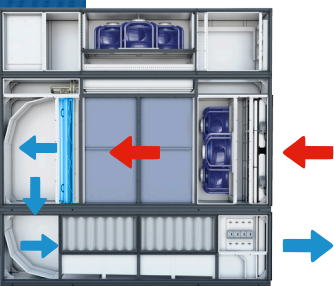
**Mode 3. Additional Mechanical Cooling**

During periods of very high outdoor air temperature mechanical support mode starts. The variable speed controlled refrigeration system is working in conjunction with the adiabatic evaporative cooling.



**Mode 4. Heat Recovery (ERE)**

ERE mode utilizes the heat from the process air for heating of other systems. When ERE is activated, outdoor air intake and exhaust dampers are closed. All the heat from the process air is transferred to the cooling coil which is connected to the external heat pump or to another system.



**Annual free-cooling use in Europe**

- Percentage of hours of free-cooling
- Free-cooling electrical power saving per year (kWh)
- Expected Mechanical pPUE







Scan to  
**watch the  
video**



# 365

## Performance Centre

### FAT Test Facility

Accurate and stable performance of cooling units is essential for every data centre project. The Systemair 365 Performance Centre provides full scale validation under real operating conditions, allowing customers to see their units perform exactly as they will on site. Thanks to the wide testing range, we can simulate high heat loads, airflow conditions and extreme outdoor climates with precision.

Remote witness testing offers flexibility by allowing engineers to join and verify results from anywhere, supporting reduced travel, faster approvals and lower emissions.

### Designed for:

- Real server rack simulation above 500 kW
- AMCA accredited testing from 10,000 m<sup>3</sup>/h up to 100,000 m<sup>3</sup>/h
- Temperature range from -5 °C to +45 °C
- Full seasonal and environmental test conditions
- Controls and alarm behaviour verification
- Measurement techniques in accordance with ASHRAE I43-2015



# Makeup Air Handling Units

Systemair MAH data centre units are specially designed to meet several important requirements:

- Maintaining proper pressurisation of the data hall
- Maintaining the minimal ventilation rate
- Controlling the humidity level

Maintains data hall pressurisation

Powerful design tools

Reversible heat pump solution

Wide range of filtration option

60mm panels

Intelligent controls with wide communication options



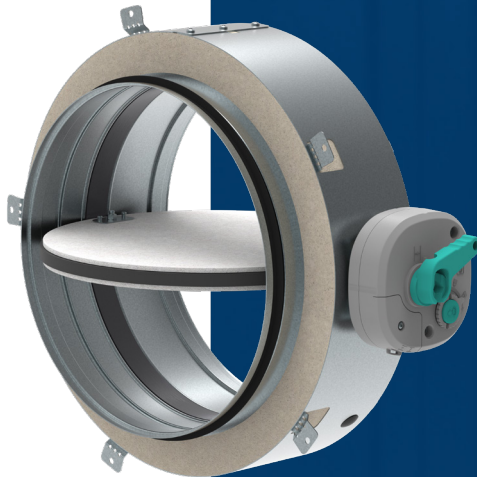
60mm panels

Reversible heat pump option

# Fire Safety Ventilation

## Fire Safety Solutions

- High efficiency EC fans for smoke extraction
- Certified fire and smoke dampers
- Stairwell pressurisation
- Solutions designed for continuous operation
- Compliance with local and regional latest fire safety regulations
- Tested performance in advanced European laboratories



**FAT** Test Available



# Air Distribution Products

Efficient data centre operation depends on accurate and controlled air distribution. Systemair air distribution products are designed to deliver air exactly where it is needed, supporting stable temperatures and efficient airflow management.

## Air Distribution Range

- Grilles for walls, ceilings and floors
- Floor diffusers for data halls
- Balancing dampers for airflow regulation
- Variable airflow dampers
- Pressure relief dampers

## Designed for:

- Precise airflow control for uniform temperature distribution
- Reduced risk of hot spots in high density areas
- Wide range of products for floors, walls and ceilings
- Easy integration with Systemair ventilation and cooling systems
- Tested performance in advanced European laboratories

**FAT Test**  
Available



# Fans for Data Centre Applications

## Fan Range

- EC plug fans for high efficiency operation
- Axial fans for smoke extraction and ventilation
- Centrifugal fans for ducted applications
- ATEX fans for special risk areas
- Ex-stock and fast delivery times

## Designed for:

- High efficiency EC technology for reduced energy consumption
- Stable airflow under continuous 24/7 operation
- Wide range of fan types and sizes for different applications
- Low sound levels and optimised aerodynamic design
- Seamless integration with Systemair data centre systems

**FAT Test**  
Available





## Systemair Service By Your Side.

Our dedicated data centre specialists combine engineering expertise with hands-on service support, guiding you confidently from concept design through to commissioning and beyond.

### Service and Support

- ◆ Assembly on site
- ▮ Commissioning levels L1 – L5
- ⚙️ Planned maintenance
- 🔧 Repair and spare parts
- 📞 Systemair service teams operate across multiple regions to provide reliable uptime throughout the lifetime of the units.

### Contact

Systemair Data Centre Solutions Team  
Email: [datacentre@systemair.com](mailto:datacentre@systemair.com)

## Continuous Support

We stay with you at every stage of your data centre journey, providing the expertise, training and partnership you need to build, operate and evolve with confidence.



### Concept Development

We support each project with engineering consultancy, selection guidance and optimisation to define the most efficient solution for the site.



### Academy and Training

We provide technical training, partner sessions and dedicated academies to ensure teams are fully equipped to operate and maintain the systems.



### Expertise

Dedicated specialists with deep data centre knowledge.



### Global Coverage

Local teams backed by global resources and experience.



### Fast Response

Quick and reliable support whenever and wherever you need it.



### Reliable Partnership

Long-term support focused on your uptime and success.



