



# Solutions & Services

A Customer Guide to Precision Environmental Control



# Climate. Customized. Environmental Control

STULZ is a privately owned, global manufacturer of highly efficient temperature and humidity management technology. STULZ engineers a full line of air conditioners, air handlers, ultrasonic humidifiers, desiccant dehumidifiers and custom solutions, specifically for industrial, commercial and secure mission-critical applications. STULZ is driven to provide innovative solutions with total cost of ownership (TCO) at the forefront of design and our partnerships, processes and services reflect this commitment.



## Globally Close to You

### **Global Leader**

STULZ has been at the forefront of innovation for 70 years.

Today, the global STULZ Group includes two major divisions, seven production plants, and hundreds of sales and service partners around the world. Wherever you are, we have a presence and an innovative solution designed to meet your specific needs.

### **Production Facilities:**

USA • Germany • Italy • Brazil • India • China

### **Made in the USA**

STULZ believes that every region of the world has specific mission critical cooling needs. This is why STULZ Air Technology Systems, Inc. (STULZ USA) is proud to research, design, manufacture, test and support our solutions in Frederick, MD.

To STULZ, this is what “Made in America” means.

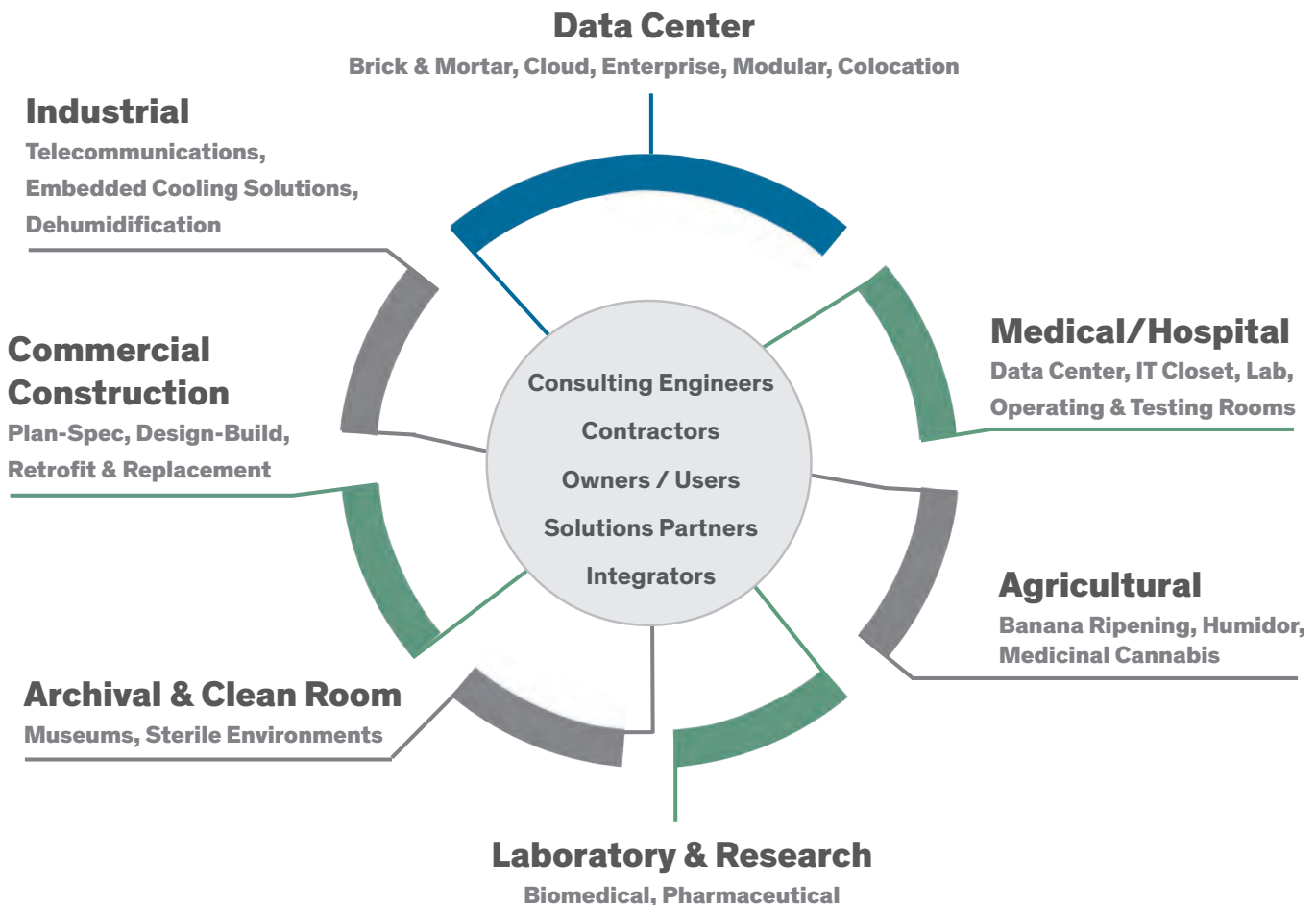
With the added benefit of being a worldwide leader, we are able to meet our global customers' needs throughout the world.



# Comprehensive Solutions

## Engineered for your Application

With a vast capacity range, extensive options, and modularity, STULZ is proud to offer the broadest product array and makes optimal air conditioning a reality for any mission critical project. Though our standard product offering exceeds the expectations and needs of most applications, what sets STULZ apart is our willingness to engineer beyond the standard product offerings, providing a solution that is purpose built for your specific industry needs.





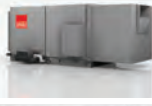










### The Data Center Experts

STULZ has over 45 years of specialized expertise in the precision cooling industry. Using this long history of innovation, along with bleeding edge design technology, STULZ provides our customers with unique solutions that offer exceptional value and quality.

### The Everything Experts

It's not just data centers that rely on STULZ' expertise. STULZ provides purpose built solutions for many different industries that require reliability, efficiency and precision.

# STULZ Product Portfolio

			Direct Expansion (DX)	Chilled Water (CW)	Air-Side Economizer	Water-Side Economizer	Controls & Monitoring	Multiple Color Options
Indoor Cooling	Perimeter		●	●	●	●	●	●
	Row		●	●	●	●	●	●
	Ceiling		●	●	●	●	●	
	Custom Air Handler		●	●	●	●	●	
Outdoor Cooling	Packaged Rooftop AHU		●	●	●		●	
	Indirect Evaporative Air Handler		●	●	●		●	
	Custom Air Handler		●	●	●	●	●	
	Modular		●	●	●		●	
Retrofit & Humidification	EC Fan Retrofit			●			●	
	Drop-in Replacement			●	●		●	●
	E <sup>2</sup> Controller Retrofit		●	●	●		●	
	Ultrasonic Humidification						●	
Dehumidification	Desiccant Dehumidification		●	●			●	●

# User Driven. Purpose Built.

## Collaborative & Flexible Design

### Our Smart Standard

No two data centers are alike, which is driving data center users and owners to seek STULZ' expertise, flexibility, customization and innovative design.

Many operators face technical and planning challenges when expanding their critical environment. They have to consider numerous parameters such as local climate, spatial and room considerations, environmental and noise protection, not to mention safety requirements. STULZ offers individual and modular system solutions, which can be adapted to suit virtually every project requirement and expansion phase. This flexibility enables each project to achieve the optimal balance between capital investment, operating costs and energy efficiency.

### Regulations Expertise

STULZ is committed to meeting or exceeding industry standards and regulations and is proud to have employees who are active participants on leading industry committees.

### Custom Industry Testing

STULZ USA houses a testing laboratory to facilitate customer and internal testing requirements. STULZ Mission Energy Lab is a recognized Intertek (ETL) SATELLITE laboratory for ASHRAE 127 testing.

### Listening & Delivering

- Standard Product
- Modified Standard
- Custom



CeilAir®



DRH



CyberRow



CyberOne



CyberMDC



CyberMod



CyberAir®



### Color Options

STULZ offers a full line of air conditioners and air handlers in black and white. Custom colors are available.

### Controls & Monitoring

STULZ *E<sup>2</sup>* Controller is the standard microprocessor controller across all STULZ products. The *E<sup>2</sup>* Controller provides precise monitoring and control of your mission critical environment.

- Multiple I/O capabilities for all major components to optimize control for energy savings
- Supports universal BMS interface for remote monitoring (address readable) and remote control (address writable)
- Capable of networking controllers in a workgroup (pLAN) to work as one (no BMS required)
- Pre-engineered controls for economizers and adiabatic cooling



STULZ *E<sup>2</sup>* Controller, Large Touch Screen Bezel



CyberPack



Custom AHU



CyberHandler

Partial product lineup. Units not to scale.

# Perimeter Cooling

## STULZ CyberAIR®

STULZ offers the broadest range of CW and DX precision cooling capacities, including the highest capacity CRAH on the market. This portfolio, along with extensive precision cooling experience, allows STULZ the flexibility to successfully meet the needs of any mission critical application.



		STULZ CyberAIR	
		CF (D/U) - D	CF (D/U) - C
		Dual Circuit DX Systems (CRAC)	Single & Dual Circuit CW Systems (CRAH)
Capacity	kW	20 - 105	60 - 750
	MBH	70 - 360	200 - 2,600
	Tons	6 - 30	15 - 200
Air Flow	CFM	900 - 15,000	4,800 - 60,000

STULZ perimeter cooling consists of direct expansion (DX) and chilled water (CW) systems. Both are available as down-flow and up-flow configurations.

- STULZ' state-of-the-art  $E^2$  Microprocessor with a range of BMS interface options
- DX systems provided with highly efficient and reliable low noise scroll compressors
- Single or multi-stage compressor arrangement including tandem configurations
- Micro Plate Heat Exchangers offer major improvements in heat transfer
- Optimized AWS/Free-cooling coils to match DX cooling capacities, increasing energy savings
- Dual 2-way CW Valves standard on CFD-510 and larger units (option for single 2-way CW Valve)
- Multiple EC Fan options
- All EC Fans mounted in the cabinet meet full performance without being dropped into raised floor
- Fewer units at higher capacity can significantly reduce capital and operating costs
- Refrigeration-based dehumidification system effectively removes excess moisture
- Dehumidification efficiently achieved through reduced air volume at maximum cooling
- Standard and seismic rated floor stands available

### Indoor



# STULZ Mini-Space

STULZ Mini-Space is designed for applications such as server closets and small server rooms, where minimal floor space is available.

- STULZ' state-of-the-art *E<sup>2</sup>* Microprocessor with a range of BMS interface options
- DX & CW
- 100% front service access
- Up-flow and down-flow air patterns
- Compact footprint

		STULZ Mini-Space (CCU/D)
Capacity	kW	3 - 12
	MBH	12 - 41
	Tons	1 - 3.5
Air Flow	CFM	1,200- 1,890



# STULZ CyberOne

STULZ CyberOne systems are easily tucked into a corner, between cabinets, or side-by-side.

- STULZ' state-of-the-art *E<sup>2</sup>* Microprocessor with a range of BMS interface options
- Optimized air distribution for raised floor configurations, to avoid hot spots
- 100% front service access
- Up-flow and down-flow air patterns
- R407c
- Specialized designs available for agricultural grow facilities

		STULZ CyberOne (COS)
Capacity	kW	7 - 35
	MBH	24 - 120
	Tons	2 - 10
Air Flow	CFM	1,000 - 4,800



# STULZ ModulAir

STULZ ModulAir combines two or more CyberOne single compressor systems to create a high capacity, multiple compressor system.

- STULZ' state-of-the-art *E<sup>2</sup>* Microprocessor with a range of BMS interface options
- Modular design permits ease of installation without the need for rigging, while still allowing for redundancy
- 100% front service access
- Up-flow and down-flow air patterns
- R407c

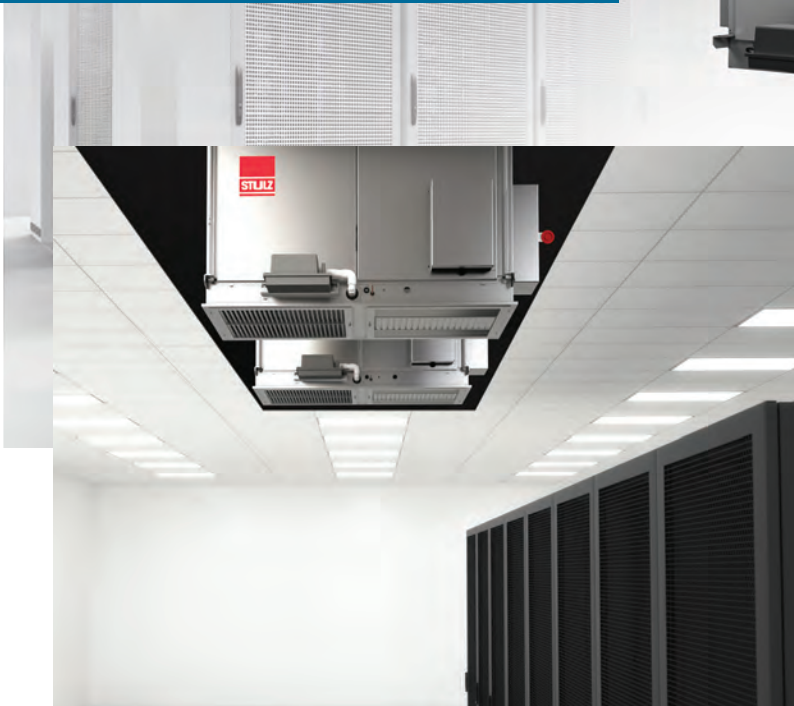
		STULZ ModulAir (MCS)
Capacity	kW	24 - 105
	MBH	84 - 360
	Tons	7 - 30
Air Flow	CFM	1,800 - 14,400



# Ceiling Cooling

## STULZ CeilAiR®

STULZ CeilAiR is the ultimate space saver, providing precise temperature and humidity control while freeing up valuable floor space for rack systems.



		STULZ CeilAiR (OHS)
		CW & DX
Capacity	kW	3.5 - 35
	MBH	12 - 120
	Tons	1 - 10
Air Flow	CFM	500 - 4,400

STULZ CeilAiR is the most complete line of ceiling mounted air conditioners in the industry and comes in both chilled water (CW) and direct expansion (DX) cooling configurations.

- DX systems with independently circuited, high efficiency, high reliability, and low noise scroll compressors
- High static blowers are available for ducted systems
- Condensate pumps can be factory or field installed (in some models)
- High efficiency EC Fan option on certain units
- Smaller capacity models easily mounted in standard ceiling
- Fully accessible in place through easily removable side access panels
- Spot cooler and ducted configurations
- Aluminum cabinet construction for no corrosion / low weight
- Multiple controller options available

### ■ Indoor

# Row Cooling

## STULZ CyberRow

STULZ CyberRow provides intelligent air flow control for more efficient rack cooling, with or without containment.



		STULZ CyberRow							
		CRS-090 (12")	CRS-180 (24")	CRS-042 (12")	CRS-084 (12")	CRS-090 (12")*	CRS-085 (24")		
		CW			DX			DX Mode	Free Cooling Mode
Capacity	kW	13 - 37	31 - 75	16	31	33	31	13 - 37	
	MBH	44 - 126	106 - 256	55	106	112	106	44 - 126	
	Tons	4 - 11	9 - 21	5	9	9.3	9	4 - 11	
Air Flow	CFM	2,900	5,800	1,500	2,900	2,900	2,900	2,900	

\* VFD Compressor

STULZ CyberRow provides innovative technology and high-quality components for minimal energy consumption. Maximum reliability is achieved through the complete system separation between the rack and A/C unit.

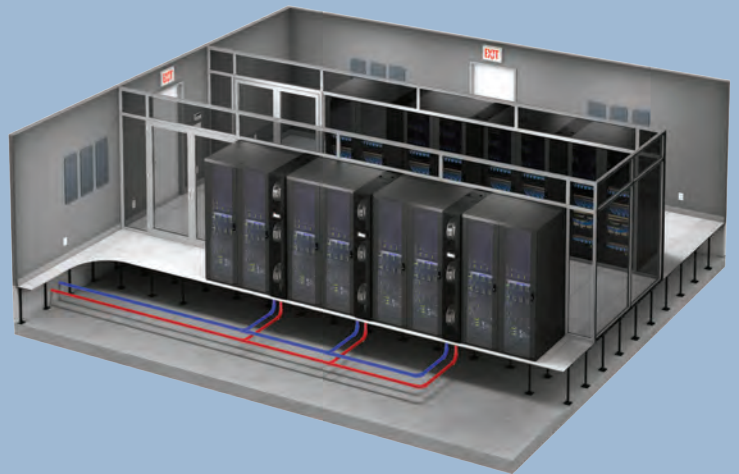
- STULZ' state-of-the-art *E<sup>2</sup>* Microprocessor with a range of BMS interface options
- Two rack sizes available: 12" and 24" (300mm and 600 mm)
- Used with racks from any manufacturer
- Chilled water and DX (Water, Air, Glycol)
- Two air flow options are available: front discharge and front diverted plenum discharge
- Targeted hot spot reduction

# Chip-to-Atmosphere™

STULZ and CoolIT Systems have partnered to deliver innovative cooling solutions to the data center industry. Chip-to-Atmosphere Cooling Solutions allow customers to capture dense heat loads at the source (inside the servers) and efficiently move it to the outside atmosphere.

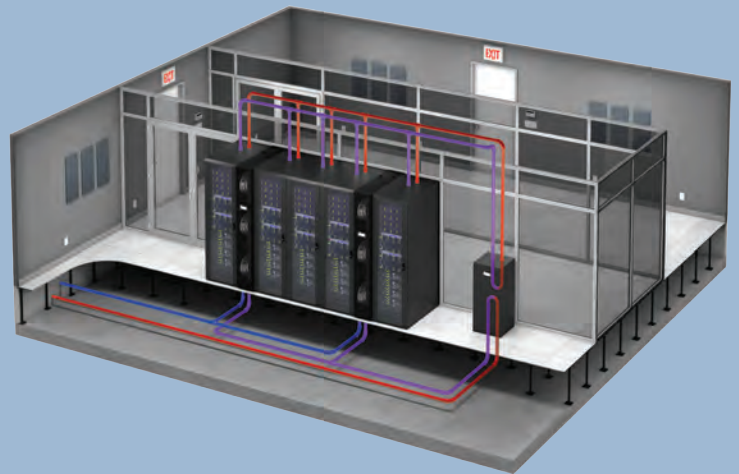
## Standard DC Precision Cooling

In a typical data center application, standard row mounted air conditioners provide 100% rack cooling efficiently and reliably. STULZ row cooling is ideal for low to medium density loads.



## Hybrid Chip-to-Atmosphere™

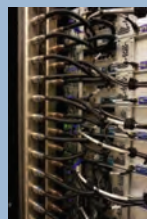
In hybrid configurations of typical air cooled servers and liquid cooled servers, the heat load requiring removal by room air conditioning is reduced significantly. This allows for more internal rack usage, while using less white space and fewer room air conditioners to efficiently cool higher density applications.



When integrated, CoolIT Systems' DCLC solution can capture **60 - 80%** of the servers' heat directly into liquid. To complement this, STULZ precision cooling products efficiently capture the balance of the lower density heat. A considerable benefit forms when the total heat energy from both systems is consolidated, transported outside and then dissipated or recaptured for reuse, to heat nearby buildings, for example.



Server Module



Manifold Module



Heat Exchange Module



Precision Air Conditioner



Heat Rejection System

**CoolIT**  
systems™



## Optimize Data Center Potential

Work with the STULZ-CoolIT technical teams during planning stages to strategize unique Chip-to-Atmosphere solutions that can be optimized for the highest efficiency while minimizing capital cost. Once installed, feel confident that the complete solution is supported by the STULZ worldwide service organization

for years of trouble-free operation. Chip-to-Atmosphere data center cooling solutions will enable customers to benefit from immediate OPEX results with minimal footprint, even in the most compute-heavy environments.



### Performance

Facilitate peak performance for higher powered or overclocked processors



### Density

Enable 100% utilization of rack and data center spaces



### Scalability

Meet fluctuating demands through the ability to modify data center capacity



### Efficiency

Benefit from a significant reduction in total data center energy consumed



### Modular

Customized module configurations to fit any unique application or environment



### Savings

Generate immediate and measurable OPEX benefits and reduce overall TCO

# Micro & Modular Data Center Solutions



## Micro Data Center

STULZ CyberMDC is a complete IT infrastructure system, housed in a self-contained enclosure.

Micro data centers are stand-alone solutions, incorporating all the key components in a specified enclosure. All integrated design aspects including the rack, cooling, cable management, UPS, power, monitoring, and fire protection systems are vendor neutral and are available as either standard or optional features of the STULZ CyberMDC.

- Optimal solution for small spaces and minimal servers
- Quick and cost effective solution
- Complies with safety requirements
- Protects against harmful environmental conditions
- Lockable hardware for high security
- 208 & 460 voltage
- Water & Air Cooled solutions available
- Remote monitoring
- Multi-rack solutions available
- Low to medium density for traditional setup
- High density solutions available with STULZ/Cool IT's Chip-to-Atmosphere™ cooling technology
- Worldwide sales and service network
- Meets global standards



## Modular Data Center

Technology Space Integration (TSI) is a member of the STULZ group of companies and is based in the U.K. TSI works directly with customers to create a data center design that improves efficiency, effectiveness and manageability, while minimizing the risk of business interruption.

A TSI modular data center is a high performance and cost effective solution built on-site using pre-finished, maintenance-free fireproof panels.

The modular data center panels, which form the walls and ceiling, are delivered to site ready for assembly and are designed to slide together to form a tight seal. This results in an energy efficient, secure and expandable solution which can be quickly constructed in areas where traditional builds would be prohibited.

TSI creates designs suitable for all data center applications, including housing of mission critical IT infrastructure as well as mechanical and electrical plants.

# Custom Indoor AHU

The STULZ Custom AHU is a purpose built solution that meets the unique requirements for indoor mounted environments. STULZ works closely with its customers to design the optimal unit for their specific needs, ensuring the right solution, every time.



## STULZ Custom AHU

Purpose built solution based on user requirements.

Custom air handling units are engineered to order solutions that meet today's cutting edge data center design requirements. By using proven STULZ technology, custom AHU's provide the efficiency and performance our customers demand.

- STULZ' state-of-the-art  $E^2$  Microprocessor with a range of BMS interface options
- 3rd party controls integration available
- Controller UPS available for keep-alive
- Robust, extruded aluminum construction with various panel thickness, including a thermal break option
- EC fan array with variable air flow
- Extensive range of capacities and cooling configurations
  - Direct Expansion
  - Chilled Water
  - Direct Adiabatic
  - Free Cooling: air-side and water-side economizer solutions
- Various voltages available in 50/60 Hz designs
- Dual power supply with Automatic Transfer Switch available
- Custom horizontal and vertical orientation to fit any space
- Flexibility to be mounted on pad, steel, curb, or floor stand structures with lifting points for rigging
- Filter options available in MERV7 to MERV14
- Ease of access for service and maintenance
- Meets global standards



## Horizontal AHU

The horizontal AHU, available with direct expansion (DX) and chilled water (CW) cooling, is designed specifically to meet customer requirements. A specialized fan wall array ensures uniform air flow while meeting low power consumption requirements. Counterbalanced fan inlet backdraft dampers minimize air recirculation.



## Modular Split AHU

The modular split AHU is available with DX and CW cooling. A vertical center split allows the modular AHU to fit in service elevators and maneuver within tight spaces. Its modular design allows easy reassembly and rewiring on-site using minimal labor (via frame and electrical connectors). The unit can also be deployed and/or operated as a half unit by only utilizing one side, therefore increasing redundancy.



## Horizontal Stackable Fan/Coil Unit

Stackable chilled water fan/coil unit reduces total footprint while maintaining unit serviceability. Designed to easily stack units securely. Electrical connectors are provided between stacked units to reduce on-site installation time and cost.



## Horizontal Split Sectional AHU

The horizontal split sectional AHU is available with DX and CW cooling. It is sized and split to fit in a standard freight shipping container for intermodal transportation. Unit can be easily reassembled and rewired on site using minimal labor (via frame and electrical connectors). Air discharge sound attenuators are provided for low sound applications.



# Indirect Evaporative AHU

## STULZ *IeCE* - Indirect Evaporative

STULZ *IeCE* is a purpose built AHU designed to meet the demands of modern IT loads while maximizing the use of highly efficient free cooling and indirect evaporative technologies. STULZ *IeCE* can operate in any combination of dry, wet, or mechanical trim cooling modes based on external environmental conditions.



### STULZ *IeCE*

#### Indirect Evaporative Cooling Equipment

Purpose built solutions ranging up to 60,000 cfm (102,000 m<sup>3</sup>/hr) per unit.

Using an air-to-air heat exchanger, STULZ *IeCE* keeps the conditioned space free from outside contaminants while achieving potential savings of up to 75% over traditional mechanical cooling methods.

- STULZ state-of-the-art *E*<sup>2</sup> Microprocessor with a range of BMS interface options
- EC fan array with variable air flow
- DX & CW trim or 100% back-up cooling options
  - Environmentally friendly R410A refrigerant
- Variety of installation configurations - including roof and at-grade
- Three modes of operation: Dry Mode, Wet Mode, DX/CW Assist Mode
- Tremendous energy savings vs standard DX or CW only
- Lower OPEX
- Various voltages available in 50/60 Hz designs
- Dual power supply with Automatic Transfer Switch available
- Filter options available in MERV7 to MERV14
- Ease of access for service and maintenance
- Meets global standards

### Outdoor

# Custom Outdoor AHU

## STULZ CyberHandler

STULZ CyberHandler is specifically designed to free up space in the data center, allowing more room for IT equipment. Utilizing proven precision technology from STULZ, CyberHandler satisfies the exacting requirements of outdoor, rooftop or at grade mounted mission critical applications.



		STULZ CyberHandler (ASM)	
		DX or CW	
Capacity	kW (MBH)	120 - 460 (420 - 1,560)	
	Tons	35 - 130	
Air Flow	m3/hr	20,400 - 93,500	
	CFM	12,000 - 55,000	

STULZ CyberHandler combines decades of experience building rugged outdoor air handling equipment and data center cooling design expertise to create a unit ideally suited for harsh outdoor conditions, while providing mission critical design elements.

- STULZ state-of-the-art  $E^2$  Microprocessor with a range of BMS interface options
- EC fan array with variable air flow
- Direct free cooling options including direct adiabatic
- Environmentally friendly R4 10A refrigerant
- Modular design
- Variety of installation configurations, including roof and at-grade
- No maintenance work inside the data center (safe, clean, time-saving and secure)
- Large capacity range
- Coil bypass design reduces air pressure drop under low load conditions
- Powder coated aluminum panels with a variety of insulation options
- Various voltages available in 50/60 Hz designs
- Dual power supply with Automatic Transfer Switch available
- Filter options available in MERV7 to MERV14
- Ease of access for service and maintenance
- Meets global standards

# Packaged Rooftop

## STULZ CyberPack

STULZ CyberPack provides a self-contained, DX air-cooled rooftop system, designed specifically for continuous operation in mission critical environments.



		STULZ CyberPack
Capacity	kW (MBH)	40 - 105 (140 - 360)
	Tons	12 - 30
Air Flow	m <sup>3</sup> /hr	9,000 - 20,400
	CFM	5,300 - 12,000

Capacity data based on 80.0°F (26.7°C) db / 67.0°F (19.4°C) wb – For Reference Only – Built designs are driven by customer specification.

STULZ CyberPack was designed specifically for data centers, with solid construction, proven cooling technology and flexible controls.

- STULZ state-of-the-art  $E^2$  Microprocessor with a range of BMS interface options
- 100% Air-Side Economizer option to achieve lower OPEX
- Robust aluminum cabinet construction for long term operation
- Highly efficient scroll compressor technology with multi-circuit and staged configurations
- Environmentally friendly R410A refrigerant
- -30°F to 115°F (-34°C to 46°C) ambient operation
- EC fans offer considerable energy cost savings and maintenance free operation
- Condenser fan speed control via system controller without the use of VFD's
- Functional operations: cooling, dehumidification and filtration
- Various voltages available in 50/60 Hz designs
- Filter options available in MERV7 to MERV14
- Meets global standards

# Heat Rejection

STULZ offers a wide range of heat rejection options for Direct Expansion (DX) precision cooling.

## MicroChannel Condenser

- Direct-driven high performance axial fans
- AC and EC Fan motor
- Integrated control box with main disconnect and motor protection
- Various fan speed control options based on refrigerant pressure
- Low ambient temperature control options



## Glycol System Remote Drycooler & Pump Packages

- Direct-driven high performance axial fans
- AC and EC Fan motor
- Integrated control box with main disconnect and motor protection
- Free cooling drycoolers are available for the entire product line
- Single and dual pump package with redundant pumps



# Desiccant Dehumidification

STULZ' rugged dehumidifiers solve critical humidity control problems in the most demanding applications. In addition, portable dehumidifiers solve water damage and mold remediation issues.

Applications:

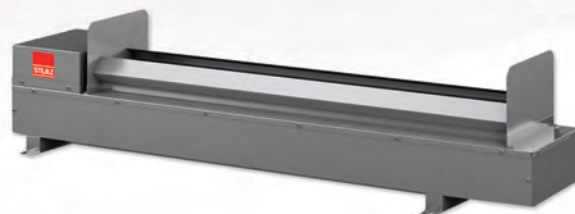
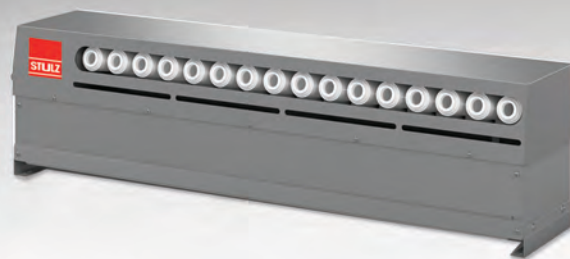
- Industrial Duty
- Light Duty
- Portable



# Ultrasonic Humidification

## STULZ Ultrasonic

Direct Room (DRH) and Ducted (DAH) Humidifiers provide a clean, efficient, and precise humidity control solution. STULZ Ultrasonic humidifiers provide 93% energy savings over steam humidifiers and are the ideal solution for mission critical applications.



STULZ Ultrasonic		
	DRH - Direct Room Humidifier	DAH - Ducted Air Humidifier
	Wall or Shelf Mounted Unit	Duct and Air Handling Mounted Module
lbs/hr	4 - 18	5 - 40
kg/hr	2 - 8	2 - 18

STULZ Ultrasonic provides precise static electricity and product quality control at a minimal operating cost.

- STULZ *E*<sup>2</sup> Microprocessor Controller allows integrated control operation of up to 16 humidifiers per zone
- 90% smaller droplet than nozzles
- Adiabatic humidification process requires less than 7% of the energy required to boil water into steam
- Improves efficiency of high sensible heat applications
- Mixed bed deionization water treatment systems by Culligan
- 100% of the demineralized water in the humidifier is utilized and does not require a flush cycle
- Low operational expense equates to very short ROI
- STULZ Ultra-Series proportional controls are engineered for single or multiple humidifier systems
- Meets California's Title 24 requirements

### ■ Humidification

## STULZ DRH

STULZ Direct Room Humidifiers are designed for stand-alone room applications. DRHs are typically mounted on a perimeter wall serving mission critical applications, or in any environment where precise humidity control is required.

- Mounts below the ceiling in a conditioned space
- Integral blower
- On wall or column with factory furnished mounts
- Absorption distance determined by RH of room
- Suspended from above in open space



## STULZ DAH

STULZ Ducted Humidifiers are designed for use with central station air handling units (AHU) and can be located conveniently in the airstream ductwork or rack mounted within the AHU itself.

- Mounts in moving air stream of AHU or ductwork
- Air velocity design similar to heating/cooling coils
- Absorption distance determined by RH and temperature of the airstream
- Multiple humidifiers assembled on factory rack system
- Factory accessories for optimized airflow and mist control



## STULZ Water Treatment

by *Culligan*

Mixed Bed Deionization (DI) provides high purity water quality specified for STULZ Ultrasonic Humidification Systems

- Assures third party certification of industry standards and complete end-to-end solutions from a single source
- STULZ Demi-Cabinet enclosures for unitary Reverse Osmosis (RO) and/or DI applied to small capacity and light commercial humidifier applications
- Culligan High Purity RO plant pre-conditioner for large capacity humidifier applications
- CHP-250 to 8000 GPD RO/DI packages include pre-filtration, storage, repressurization, UV sterilization, monitoring and start-up

Customers may use their preferred water treatment provider.

# Retrofit & Replacement

## STULZ CyberMod EC Fan Retrofit

Easy-to-install, variable speed EC Fan Retrofit Kits replace belt driven DWDI blowers for clean, efficient upgrade to legacy mission critical air handler.

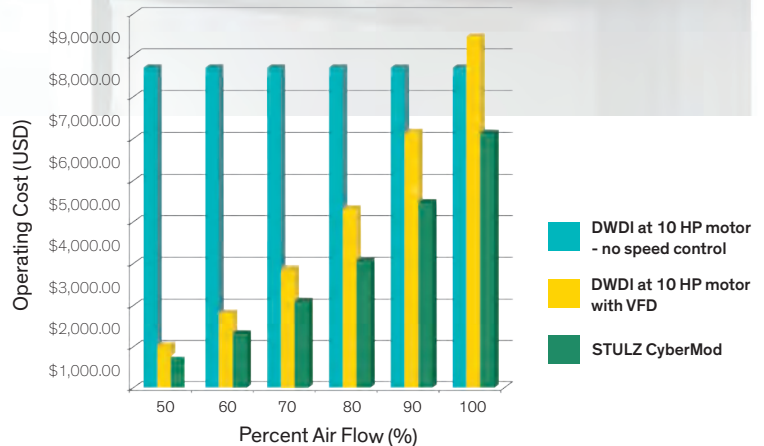


### STULZ Energy Analysis

Operating Cost Per Year (per unit basis)

Based on actual test data

**20% - 60%**  
Energy Savings



EC Fan Retrofit Kits significantly reduce data center operating costs and often qualify for utility rebates. With a fast ROI of about 2 - 4 years, EC Fan Retrofit is an ideal solution for many applications.

Extend the life, efficiency, and reliability of existing systems, including models from Liebert, Data Aire, Compu-Aire, Airflow, and ATS.

- Can be installed in or under existing CRAHs
- No changes required to the primary electric or piping
- Built-in fan redundancy
- Quiet operation (low vibration, no inverter whine)
- Provides superior air distribution
- Low maintenance (no belts to adjust, no belt dust, no greasing)
- 2 and 3 fan configurations available
- EC Fans operate at lower speeds, lower energy, even airflow
- EC Fans produce less motor heat, therefore providing higher net cooling capacity



# STULZ CRAH Replacement

STULZ Replacement CRAHs are high capacity, direct drop-in, chilled water units with modern EC Fans. They replace inefficient legacy units with belt-driven fans and provide instant energy savings and improved performance. Increase cooling capacity and achieve significant energy savings without redesigning your data center.

STULZ Replacement CRAHs provide energy saving advantages of up to 40%\*, simply by replacing the CRAH. Additional energy savings of 50%\* and beyond can be achieved using advanced controls.

- STULZ' state-of-the-art **E<sup>2</sup>** Microprocessor with a range of BMS interface options
- No modification to existing piping mains, primary electric, or floorstand
- Increased flow rates at maximum fan speed
- EC Fans produce less motor heat, therefore providing higher net cooling capacity
- EC Fans operate at lower speeds, lower energy, even air flow
- EC Fans provide optimized under-floor pressure and balanced air flow
- Fast ROI; qualifies for utility rebates
- Lowers maintenance costs



Applies to:

- Liebert FH 422C
- Liebert FH 529C
- Liebert FH 600C
- Liebert FH 740C

\*Savings estimate is derived from actual performance test results of (1) STULZ CCD-1805 CWE-LR vs. (1) Liebert model FH740C, at 16,500 cfm, against 0.3" of external static pressure. Results may vary.

# STULZ **E<sup>2</sup>** Controller Retrofit

Retrofit kits and authorized installation services are available for legacy STULZ chilled water units with C6000 controllers, and select competitor units. **E<sup>2</sup>** Controllers can be quickly retrofitted and are an excellent way to unify disparate controller platforms and gain tighter control by adding dew point control and under-floor static pressure capabilities. The **E<sup>2</sup>** Controller improves BMS communications by eliminating outdated and unnecessary gateways, while increasing read/write capability.

- Multiple I/O capabilities for all major components to optimize control for energy savings
- Supports universal BMS interface for remote monitoring (address readable) and remote control (address writable)
- Capable of networking controllers in a workgroup (pLAN) to work as one (no BMS required)
- Pre-engineered controls for economizers and adiabatic cooling



# Product Support Services

## Comprehensive Service Solutions

As a global engineering and manufacturing company, The STULZ Group has a robust product support presence throughout the world.

In North America, STULZ USA designs, manufactures, and supports customers throughout the life cycle of their equipment, all from our North American headquarters in Frederick, MD. With 24 hour technical support, warranty inspection and start-up, training, and replacement parts, STULZ is more than ready to support your cooling and humidification needs.



# Technical Support

## 24/7/365

**(888) 529-1266**

Reach a qualified technician or product support professional in the USA or Canada.



### **Field Service: Warranty & Start-Up**

Factory Authorized Warranty Inspection/Start-up guarantees an industry leading Two Year Parts Warranty and 90 Day Labor Warranty with a Warranty Inspection/Start-up. Factory authorized technicians ensure that STULZ equipment has been installed per factory guidelines and identify any deficiencies prior to warranty validation. This essential service assures customers that their investment is installed and performing optimally from the very start.



### **24/7 Technical Support**

We make sure you have a central point of contact for immediate technical support, 24/7/365.

**PSN**

### **Product Support Network**

The STULZ Product Support Network (PSN) is a comprehensive network of factory technicians and certified service partners throughout North America. All technicians and partners are pre-qualified by STULZ. This allows STULZ to assist our customers quickly in emergency situations.



### **Preventative Maintenance**

Multiple options for Factory Authorized Preventative Maintenance contracts are available. In addition to maintaining optimal equipment performance, an authorized STULZ PM contract guarantees response by factory authorized technicians when emergency repairs are necessary.



### **Factory Authorized Training**

STULZ is pleased to offer product training courses for experienced HVAC technicians and end users. Training courses are held in the Product Support Training Center in Frederick, Maryland, as well as regionally across North America.



### **Spare Parts**

STULZ maintains inventory of replacement parts, recommended spares and engineered replacement parts.



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### Close to you around the world

STULZ has multiple manufacturing sites in Europe, North America and Asia, as well as hundreds of subsidiaries and partners around the world.

For further information, please visit our website at [www.stulz-usa.com](http://www.stulz-usa.com)



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