



Close-coupled cooling

Intelligently controlled high-performance
InRow cooling for the IT environment

APC™ by Schneider Electric close-coupled cooling products
provide a modular, scalable, and predictable solution to meet the
cooling needs of any IT environment.



apc.com

Life Is 

APC
by Schneider Electric

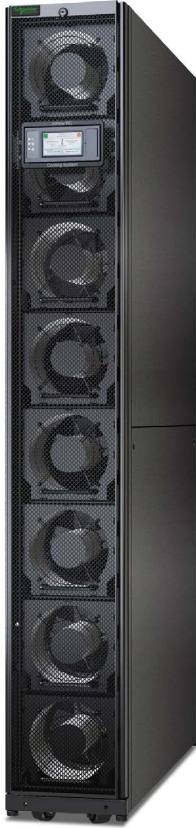


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InRow cooling

Up to 70 kW

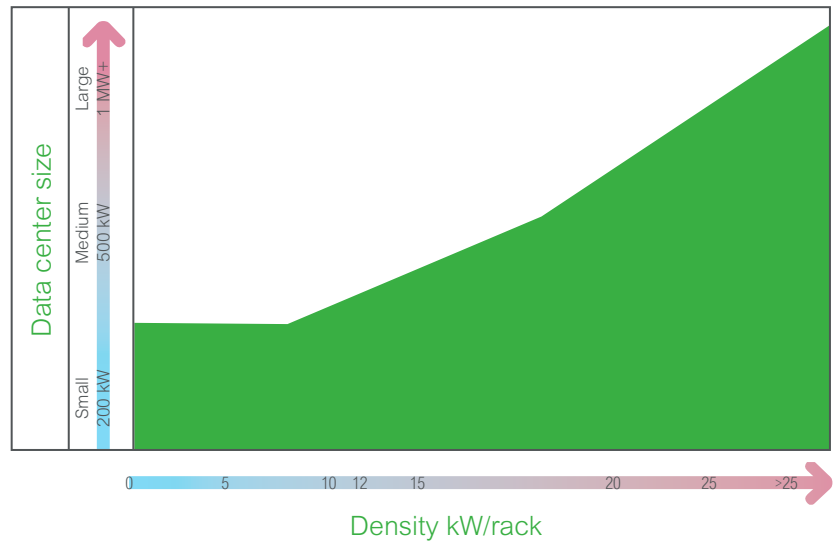


Close-coupled cooling for small to large data centers

The InRow™ cooling product design closely couples the cooling with the IT heat load. An unpredictable data center environment is common among IT managers. In today's data centers, traditional cooling approaches involve complex air distribution systems that tend to be unpredictable and leave many customers guessing where the cold air goes. With the InRow cooling products, Schneider Electric has taken the guesswork out of data center cooling. Placing the unit in the row of racks moves the source of cooling closer to the heat load. This minimizes air mixing and provides a predictable cooling architecture.

Close-coupled cooling for small to large data centers

- Scalability with **Infra²truxure**
- Predictability at the rack and row level
- High density zones in larger data centers



Total cost of ownership: InRow units are ideally suited for small and medium data centers as well as high density zones in data centers of any size.



Check out White Paper #130:
"Choosing Between Room, Row, and
Rack-based Cooling for Data Centers"

www.apc.com/wp?wp=130

Flexibility

Modular and tailored solutions for any application

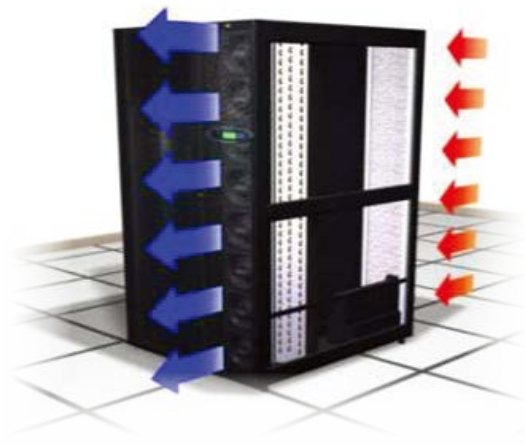
Availability

Continuous operation to safeguard the customer's business

Energy saving

Technological excellence for efficient performance

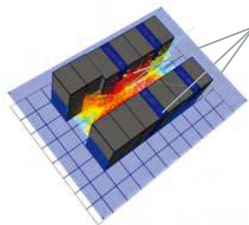
Close-coupled architecture



Predictable solution for the unpredictable environment

A close-coupled cooling architecture moves the cooling unit from a traditional perimeter placement to a location that is in the row or above the IT racks.

The InRow unit targets the heat that is generated by the IT equipment by pulling the hot air directly from the hot aisle where the heat is generated. The unit removes the heat and supplies cool air into the cold aisle/ environment, which is the source of cool air for the IT equipment.



Cooling units

Close coupling keeps the hot air in the hot aisle



InRow cooling with EcoAisle containment maximizes efficiency and predictability

Flexible, reliable, standardized solutions

- Modular unit design allows a pod/zone expansion as IT needs change and grow
- Greenfield/brownfield environments
- Raised/slab floor
- Room neutral
- Non-conventional IT spaces/office space
- Worldwide availability



InRow cooling products are designed by combining cutting-edge technology with extensive tests for energy efficiency and continuous availability.

Energy savings, complete reliability, and total flexibility guarantee TCO reduction.



Initial deployment



Expansion



Final deployment

25 kW

per rack when combined with thermal containment system

+80%

of additional capacity* by capturing the heat at the source

*29.4 °C (85 °F) vs. 22.2 °C (72 °F) return air temperature

Active response controls

Increase availability by actively responding to thermal changes

- Built into the microprocessor controller
- Provides visibility into the unit's operation, health, and capacity

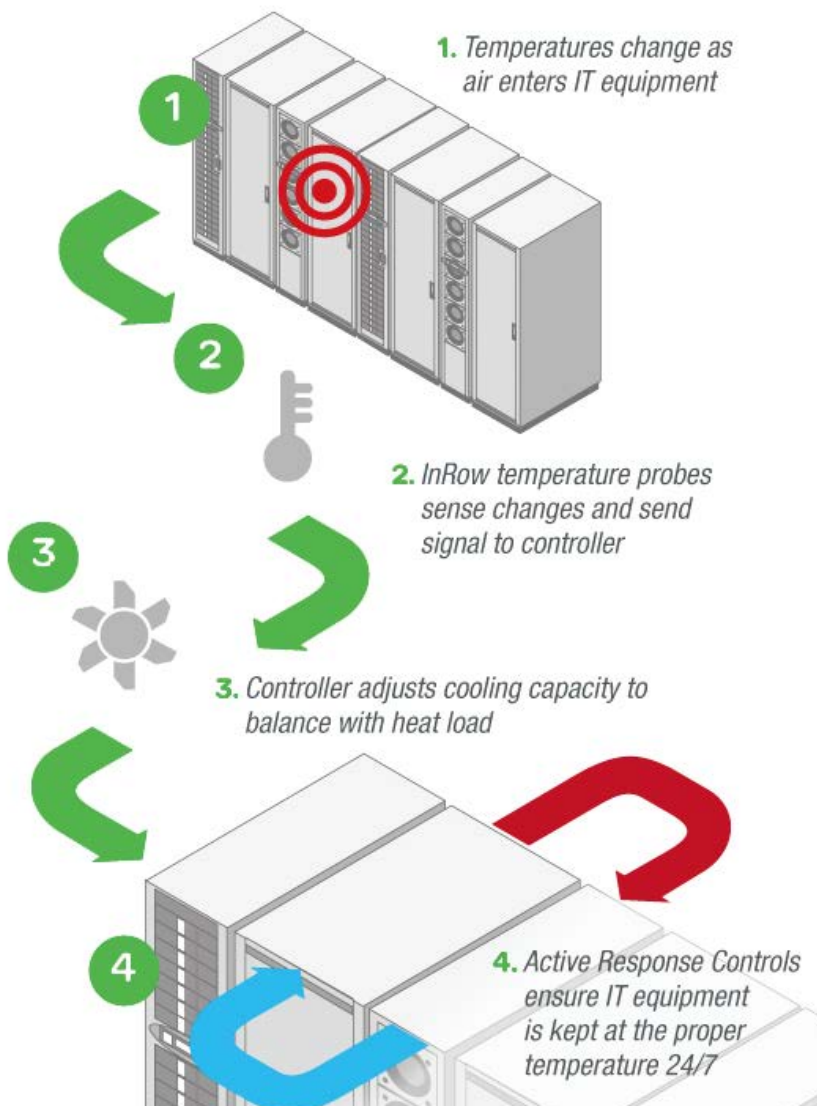
40%

energy savings when paired with active flow controller

100%

predictable redundancy per pod/cluster*

* Each cluster is designed for N+1 redundancy



InRow chilled water

Up to 70 kW



Standard features

Water side economization

- Allows maximum capacity at elevated water temperatures

Dual power inputs

- Offers redundancy and protection

Top/bottom piping and power connection

- Flexibility of installation
- Field configurable

Variable speed fans

- Reduce energy consumption during off-peak hours

Intelligent control

- Network manageability, real-time capacity monitoring, predictive failure notification, and rack inlet temp control

Air filter

- Removes airborne particles and protects cooling coil

Casters and leveling feet

- Easily adjustable leveling from top down

Integrated baying brackets

- 24 in. or 600 mm spacing options
- Bays with other APC rack and power products

Field configurable two-way or three-way chilled water flow operation

Remote temperature probe to control rack inlet temperature

Factory-installed condensate pump (except models with optional dew point control)

Dew point control pump

Technical data

Model	300 mm (12 in.) wide		600 mm (24 in.) wide
Capacity	Up to 40 kW	Up to 60 kW	Up to 70 kW
Input voltage	100 – 240 V, 1 ph, 50/60 Hz	208 – 230 V, 1 ph, 50/60 Hz	200 V – 240 V, 3 ph, 50/60 Hz 380 V – 415 V, 3 ph, 50/60 Hz 460 V – 480 V, 3 ph, 60 Hz
Fans	Variable speed EC propeller fans (hot swappable)		Variable speed EC plug fans
Condensate management	Dual-float condensate pump	Dew point control (optional)	Dual-float condensate pump
Options	Cable water detector		Electric reheat humidification cable water detector
Controls	4.3 in. touch-screen display with active response controls		
Communications	Network transport layer security protocols: SNMP, Telnet, HTTP, HTTPS, Modbus TCP/IP, FTP Serial Protocols: RS-232 Console, RS-485 Modbus RTU remote monitoring		
Dimensions			
Height	1991 mm (78.4 in.)		1991 mm (78.4 in.)
Length	300 mm (11.8 in.)		600 mm (23.6 in.)
Depth	1095 mm (43.1 in.)		1070 mm (42.1 in.)

Options/accessories



Flexible piping



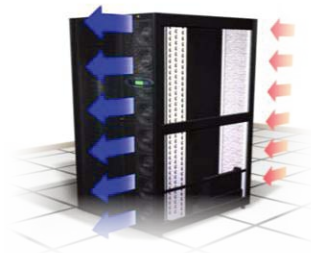
Active flow controller



Height adapters



Aquaflair™ chillers



Rack air containment



EcoAisle containment

Chilled water distribution unit

Up to 12 InRow RC (ACRC301S) cooling units



Standard features

Top/bottom piping connection

- Flexibility of installation
- Field configurable

Isolation and balancing valve

- Allows isolation and coolant flow adjustments for installation and service

Casters and leveling feet

- Easily adjustable leveling from top down

Insulated piping headers

- Prevents condensation in the unit

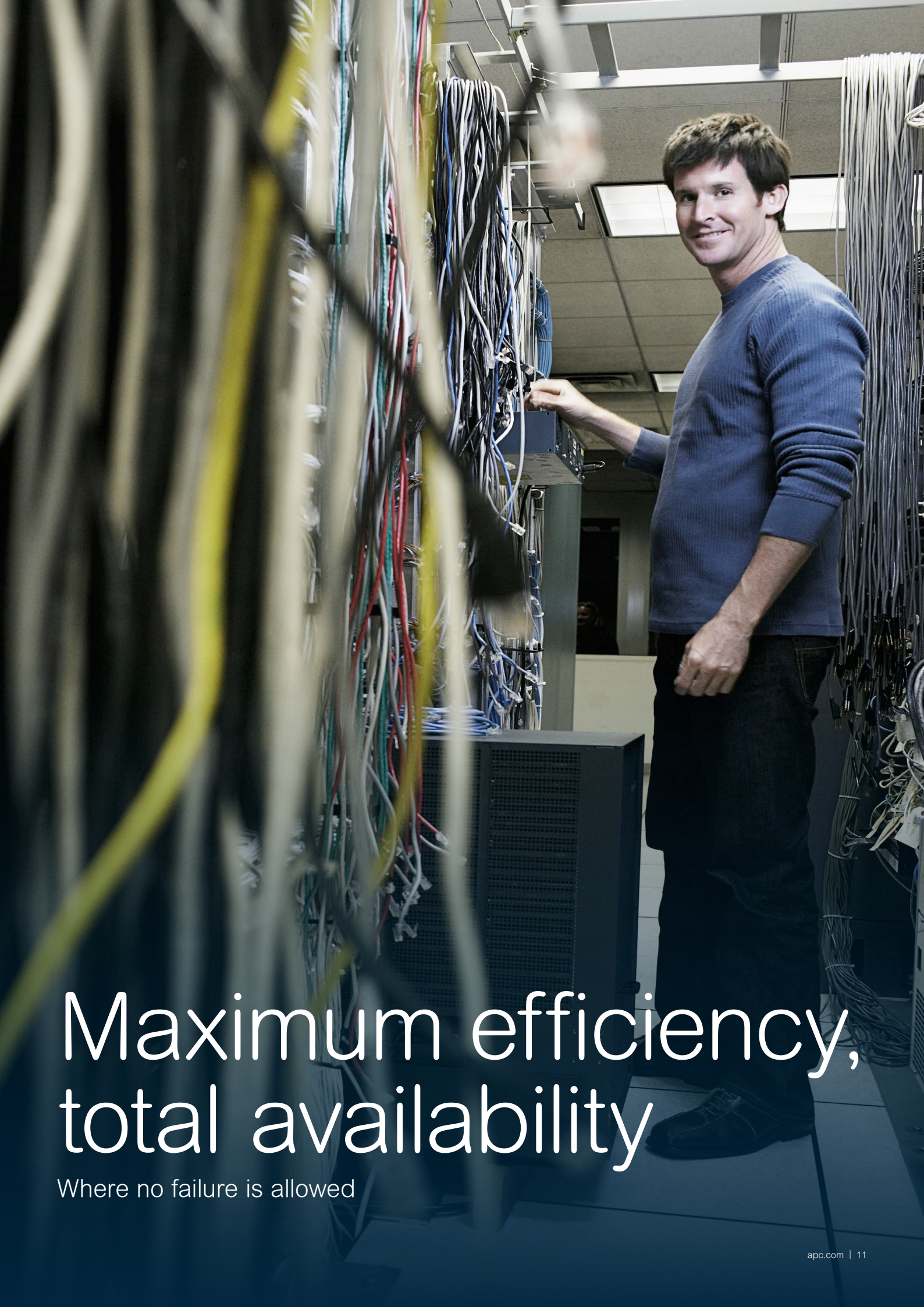
Technical data

Model	ACFD12
Capacity	Up to 10.1 lps (160 GPM)
Dimensions	
Height	1991 mm (78.4 in.)
Length	1070 mm (42.1 in.)
Depth	750 mm (29.5 in.)

Options/accessories



Flexible piping



Maximum efficiency, total availability

Where no failure is allowed

InRow direct expansion

Up to 42 kW



Standard features

Variable capacity control

- Allows for low load handling capabilities

Top/bottom piping and power connection

- Flexibility of installation
- Field configurable

Variable speed fans

- Reduce energy consumption during off-peak hours

Intelligent control

- Network manageability, real-time capacity monitoring, predictive failure notification, and rack inlet temp control

Air filter

- Removes airborne particles and protects cooling coil

Casters and leveling feet

- Easily adjustable leveling from top down

Integrated baying brackets

- 24 in. or 600 mm spacing options
- Bays with other Schneider Electric rack and power products

Lead/lag functionality

Remote temperature probe to control rack inlet temperature

Factory-installed condensate pump

Technical data

Model	300 mm (12 in.) wide	600 mm (24 in.) wide
Capacity	Up to 10 kW	Up to 42kW
Input voltage	208 – 230 V, 1 ph, 60 Hz 220 – 240 V, 1 ph, 50 Hz	200 V – 240 V, 3 ph, 50/60 Hz 380 V – 415 V, 3 ph, 50/60 Hz 460 V – 480 V, 3 ph, 60 Hz
Heat rejection	Air-cooled Fluid-cooled Self-contained	Air-cooled
Fans	Variable speed EC propeller fans (hot swappable)	Variable speed EC plug fans
Condensate management	Dual-float condensate pump	Dual-float condensate pump
Options	Cable water detector	Electric reheat humidification cable water detector
Controls	Four-line alphanumeric display with active response controls	4.3 in. touch-screen display with active response controls
Communications	Network transport layer security protocols: SNMP, Telnet, HTTP, HTTPS, Modbus TCP/IP, FTP Serial Protocols: RS-232 Console, RS-485 Modbus RTU remote monitoring	
Dimensions		
Height	1991 mm (78.4 in.)	1991 mm (78.4 in.)
Length	300 mm (11.8 in.)	600 mm (23.6 in.)
Depth	1095 mm (43.1 in.)	1070 mm (42.1 in.)

Options/accessories



Heat rejection



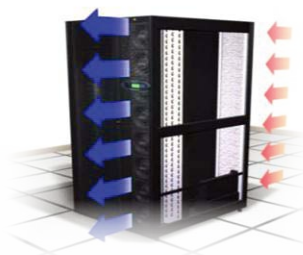
Active flow controller



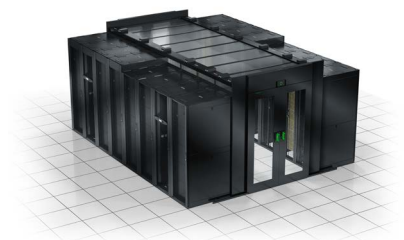
Height adapters



Data and power troughs



Rack air containment



EcoAisle containment

Data center infrastructure management

Good design and quality construction alone do not ensure a highly available and efficient data center. Data centers require ongoing monitoring and management to ensure the facility lives up to its design intent. StruxureWare™ for Data Centers is a software management suite designed to collect and manage data about a data center's assets, resource use, and operational status throughout the life cycle of the facility. This information is then distributed, integrated, and applied in ways that help managers optimize the data center's performance and meet IT, business, and service-oriented goals. From IT assets to racks, rows, rooms, and buildings, StruxureWare for Data Centers delivers the right information to the right users at the right time.

Control level

Experts, on-site or remotely, can control process performance and ensure business continuity in real time while tracking energy consumption in a highly critical and secure environment.

Operations level

Functional managers can optimize operations, energy, and assets through smart analytical tools, often spanning multiple sites.

Enterprise level

C-level executives can drive their sustainability strategy efficiently, choosing the best scenario that meets their business objective to conserve enterprisewide resources.

StruxureWare for Data Centers allows for flexibility when requirements and implementation strategies change over time. StruxureWare software applications and suites simplify integration time, improve reliability, enhance visibility to energy information, and streamline operational efficiency.



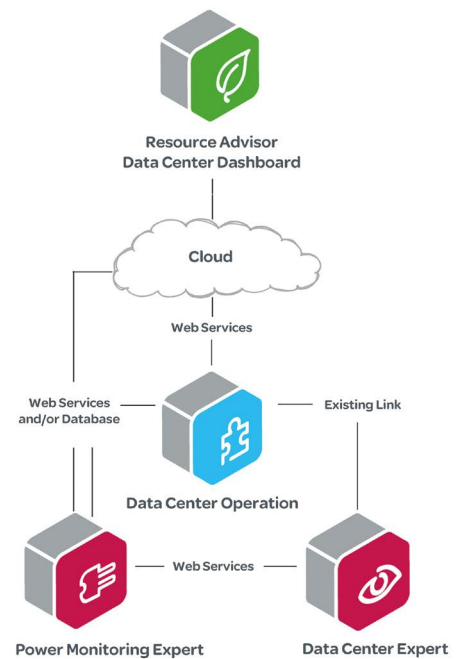
Visit www.apc.com/software to learn more about StruxureWare for Data Centers!

Technological solutions are constantly evolving and improving our experience and expertise in cooling.

100%

state-of-the-art technology

Many years of experience, combined with innovative technology, has enabled our designers to make the technological and operational choices necessary to reach technical excellence in our products and make them ideal in cutting-edge applications.







Online resources

Product showcase videos

Cooling capabilities

For the data center and beyond
visit <http://tv.schneider-electric.com>

InRow pumped refrigerant cooling system

Visit <http://tv.schneider-electric.com>

Market solutions

Visit <http://tv.schneider-electric.com>

Schneider Electric interactive cooling application

Visit www.apc.com/products/category.cfm?id=9#

Additional resources

White Paper #130:

“Choosing Between Room, Row, and Rack-based Cooling for Data Centers”
Visit www.apc.com/wp?an=130

White Paper #135:

“Impact of Hot and Cold Aisle Containment on Data Center Temperature and Efficiency”
Visit www.apc.com/wp?an=135

White Paper #153:

“Implementing Hot and Cold Air Containment in Existing Data Centers”
Visit www.apc.com/wp?an=153

InRow chilled water

Visit www.apc.com/products/family/index.cfm?id=339

InRow pumped refrigerant

Visit www.apc.com/products/family/index.cfm?id=415

InRow direct expansion

Visit www.apc.com/products/family/index.cfm?id=379

To learn more about Schneider Electric cooling solutions visit www.schneider-electric.com

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