CPI Passive Cooling®, The Simply Efficient™ Choice

CPI Passive Cooling® Solutions offer innovative airflow control techniques that allow you to manage the flow of air throughout your data center without the need for added CRAC units, in-row air conditioners or risky liquid cooling solutions. From small applications with heat loads of 2 kW per cabinet to large data centers with high heat densities beyond 20+ kW, CPI Passive Cooling Solutions offer smart proven technology that can work for you.

The passive cooling technology found with CPI's F-Series TeraFrame® Cabinet with the Vertical Exhaust Duct System allows you to reduce data center operating costs, maximize existing cooling unit efficiency and minimize environmental impact, making it the Simply Efficient™ choice.

The F-Series TeraFrame® Cabinet with the Vertical Exhaust Duct System:

• Isolates hot exhaust air from the room and eliminates hot spots
• Blocks by-pass airflow around equipment which reduces wasted cooling capacity
• Eliminates dependence on perforated floor tiles by creating a consistent air temperature throughout the room
• Guides hot air out of the cabinet without fans, additional power or maintenance requirements
• Allows higher set points on air conditioners and creates higher temperature return air for better air conditioner efficiency
• Permits chilled water temperatures to be increased which provides a means for more economizer days
• Reduces energy costs up to 40% over the standard open air return methods, and up to 90% with certain types of economizers when "free cooling"
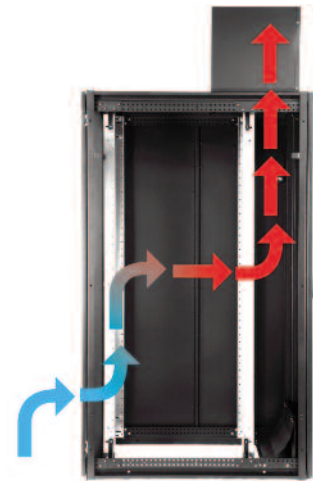
The F-Series TeraFrame isolates hot exhaust air and guides it out of the cabinet without fans.

The following table shows how the F-Series TeraFrame Cabinet with Vertical Exhaust Duct System can provide the Simply Efficient choice.

Temperature Type	Hot Aisle/Cold Aisle Layout with Open Air Return		F-Series TeraFrame™ Cabinet with Vertical Exhaust Duct System			Results
	Most Data Centers	TIA-942 Best Practices	CRAC with Economizer	KyotoCooling	Evaporative Air Economizer	
Room Air	60°-85°F (16°-29°C)	68°-77°F (20°-25°C)	77°F (25°C)	77°F (25°C)	77°F (25°C)	No hot spots
Supply Air	52°-55°F (11°-13°C)	52°-55°F (11°-13°C)	77°F (25°C)	77°F (25°C)	77°F (25°C)	Higher CRAC set points
Chilled Water	42°F (6°C)	42°F (6°C)	65°F (18°C)	N/A	65°F (18°C)	Lower energy costs
Outdoor Air	37°F (3°C)	37°F (3°C)	60°F (16°C)	72°F (22°C)	77°F (25°C)	More "free cooling" hours

Room Air Temperature is the temperature at equipment air intakes. Supply Air temperature is the temperature at the CRAC/CRAH supply outlet. Chilled Water temperature is the water temperature required to produce the required Supply Air Temperature. Outdoor Air Temperature is the outdoor air temperature required to use economizers to chill water for "free cooling" hours. The Evaporative Air Economizer temperature is wet bulb temperature; all other temperatures are dry bulb temperatures.

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