



PUE, CFD, kW/ft², DCiE.

WE'LL HELP YOU GAIN THE UPPER HAND

DATA CENTRES

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ou have to show results. The data center industry is focused on delivering numbers, and on top of the basic statistics for uptime and cost efficiency, you have to serve up shorter construction timelines for new facilities.

You also want to control and reduce operating costs. Industry reports show that as much as 45% of the energy costs of a data center are driven by the cooling systems. With integrated cooling solutions that are designed for part-load conditions, Armstrong can help you reduce your power requirements.

Electrical consumption in a typical data center

IT EQUIPMENT	30%
UPS	18%
CRAC	9%
PDU	5%
HUMIDIFIER	3%
GENERATOR	1%
LIGHTING	1%

33%
CHILLER

The chiller is where the biggest energy savings are possible

*Source: Alcatel Lucent Whitepaper "Keeping Cool in the Data Center"

DESIGN ENVELOPE

Armstrong takes the stress out of growth and delivery

Armstrong offers data center owners highly efficient, modular cooling solutions delivered to a tight shipping schedule. Because we've standardized

our offering, Armstrong Design Envelope solutions can be configured, sourced, assembled and shipped quickly. With shorter project timelines, your facilities can be tailored to meet market conditions, and you'll have an earlier transition to positive cash flow.

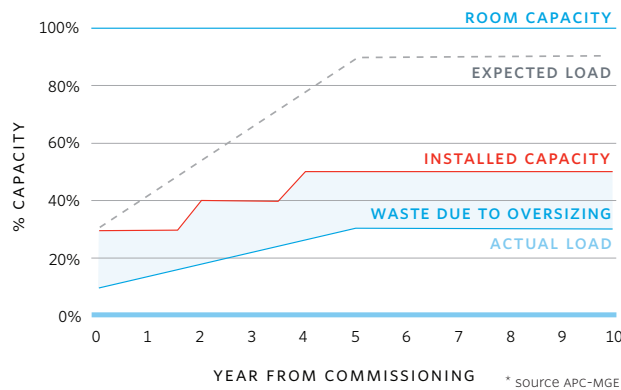
Modular solutions

The modular approach to data center cooling supported by Armstrong's Design Envelope Integrated Plant Packages aggregates assembly activities, moves them off your site, and takes them off your critical path.

Factory tested

Armstrong solutions are fully tested at the factory, so you can count on savings in your construction schedule through reduced commissioning time and on-site support calls.

Quick turn around.
Positive cash flow.



Data center component

Traditional new or aging chiller plant

Remote ON/OFF BMS control of pumps

Base-mounted pumps with separately mounted drives

CRAC unit economizer

Armstrong solutions available

Pre-fabricated all variable speed chiller plant with all variable speed plant automation

Integrated Pumping System (IPS) control

Design Envelope ivs Vertical In-Line and dualArm pumps

Chiller plant water-side economizer (heat exchanger that allows tower water to cool the chilled water directly)

Additional benefits

Armstrong Integrated Plant Package and demand-based controls enable maximum efficiency of variable speed chillers

- Automatically ensures required pumping capacity to match load
- Secondary loop control ensures pump station responds to system while using minimum speed and HP
- Reduction of inrush (soft start)
- Savings in maintenance, space, installation, piping and friction
- Up to 70% energy savings
- No remote sensors

The Armstrong PFX s96x allows temperature approaches as low as one degree Fahrenheit for quickest return on investment and dramatic energy savings for water side economizer applications.

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