
TRANE
Water-Cooled Chillers With
High Speed Centrifugal Compressor
XSTREAM
EXCELLENT
Ingersoll Rand.

AN INNOVATIVE SOLUTION FOR…

- Sustainability
- Efficiency
- Versatility
- Reliability
- Cost of ownership

INNOVATIVE TECHNOLOGY TO SUPPORT OUR COMMITMENT

A DUAL REFRIGERANT OFFERING

XSTREAM EXCELLENT

R134a

0 ODP
No phase-out schedule

XSTREAM EXCELLENT

R1234ze

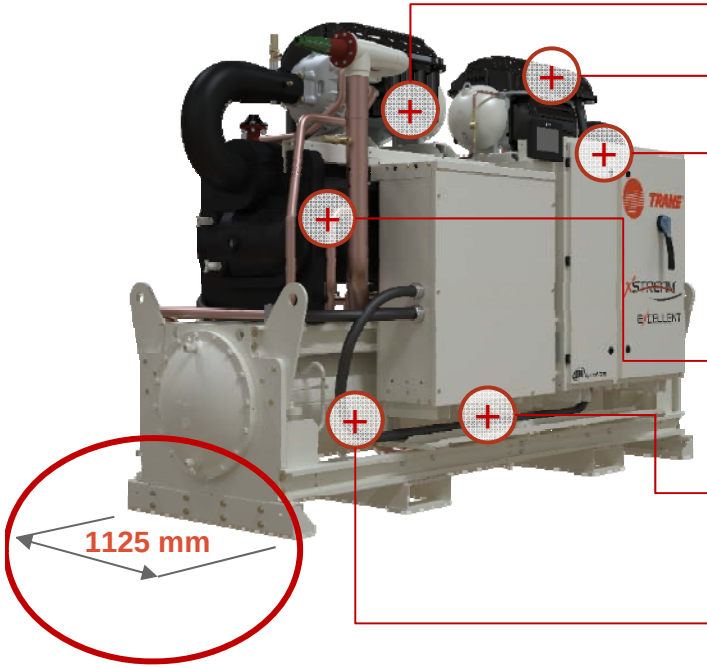
0 ODP
Near Zero GWP (<1)

EcoWise™

XStream™ Excellent chillers with near zero GWP refrigerants are part of the Ingersoll Rand EcoWise™ portfolio of products that are designed to lower their environmental impact with next-generation, low global warming potential (GWP) refrigerants and high-efficiency operation.

INNOVATIVE TECHNOLOGY TO SUPPORT OUR COMMITMENT

DESIGN AT A GLANCE



Oil-free magnetic bearings High speed centrifugal compressor

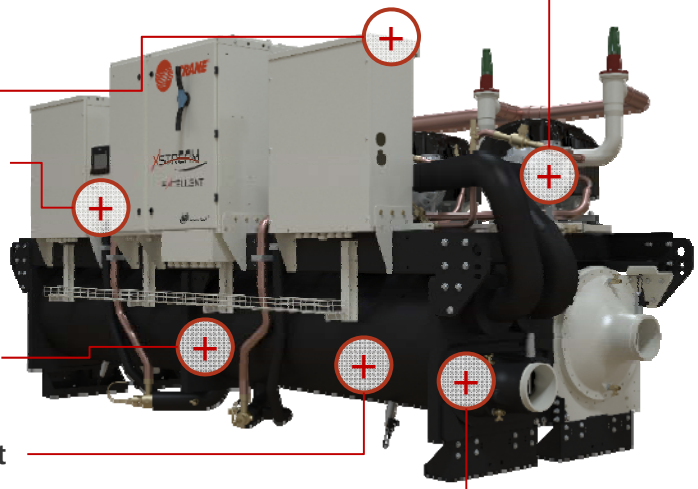
Economizer

Trane Adaptive Control™

Trane CHIL patented evaporator:
- *Double pass*
- *Counterflow single pass*

Very low refrigerant content

Dual refrigerant circuit Multi compressor

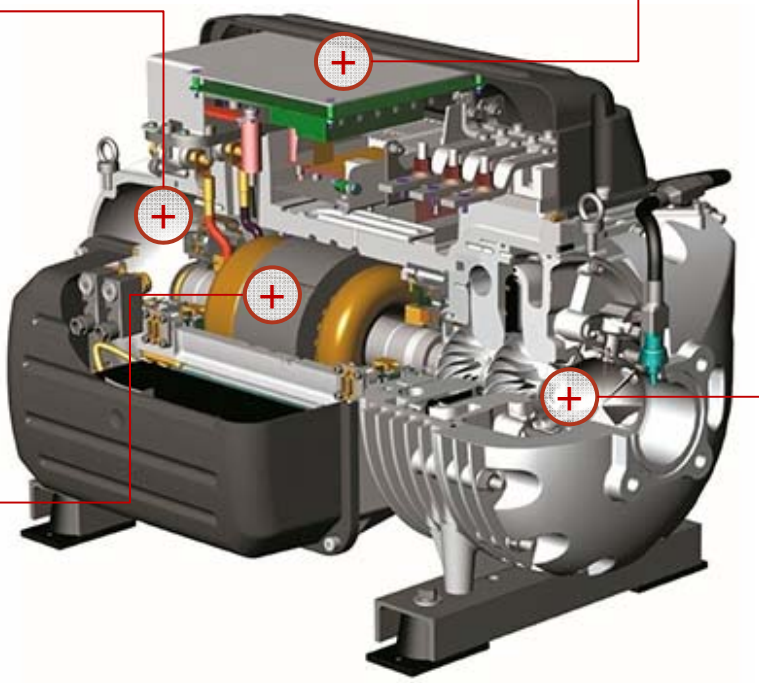


INNOVATIVE TECHNOLOGY TO SUPPORT OUR COMMITMENT

COMPRESSOR

Magnetic bearings
- Frictionless
- Oil free

Permanent Magnet Motor
- DC brushless
- High Speed
- Integrated cooling

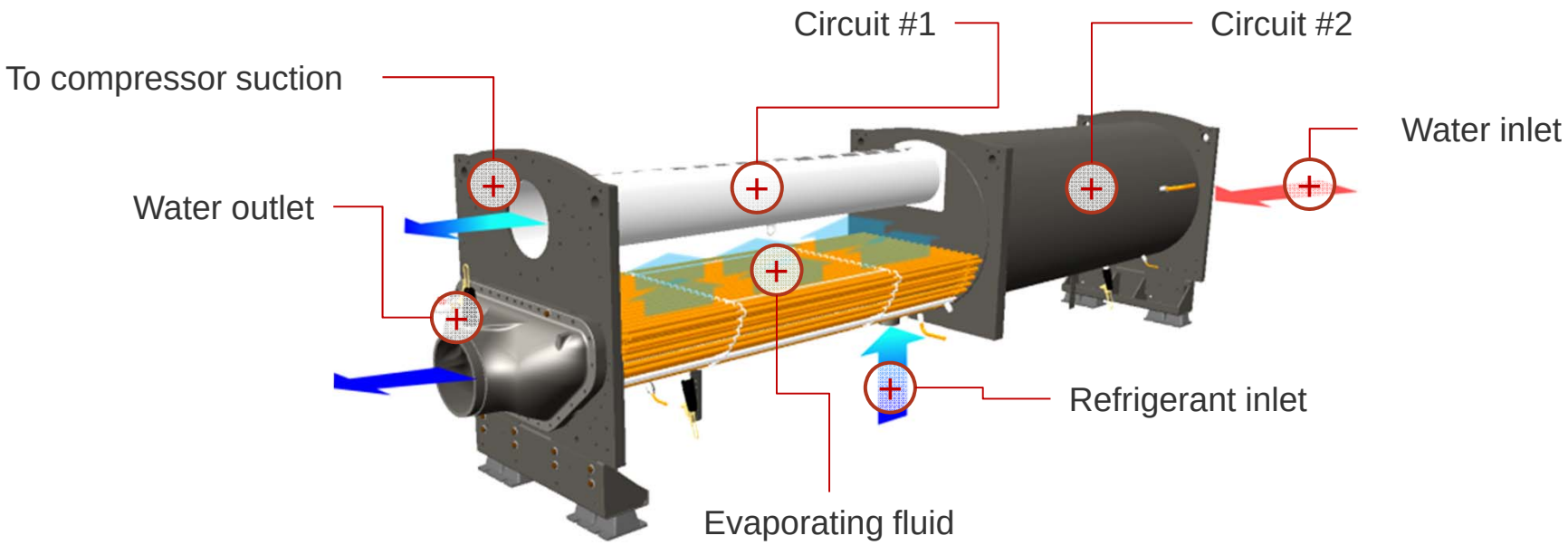


Integrated drive
- High part load
- Soft start

Two stage impellers
- Enhanced surge limit

INNOVATIVE TECHNOLOGY TO
SUPPORT OUR COMMITMENT

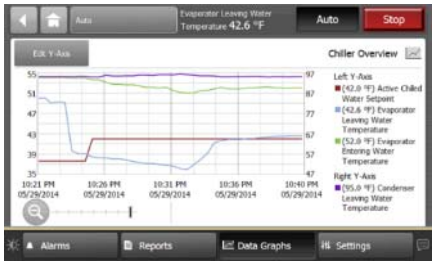
TRANE “CHIL” EVAPORATOR

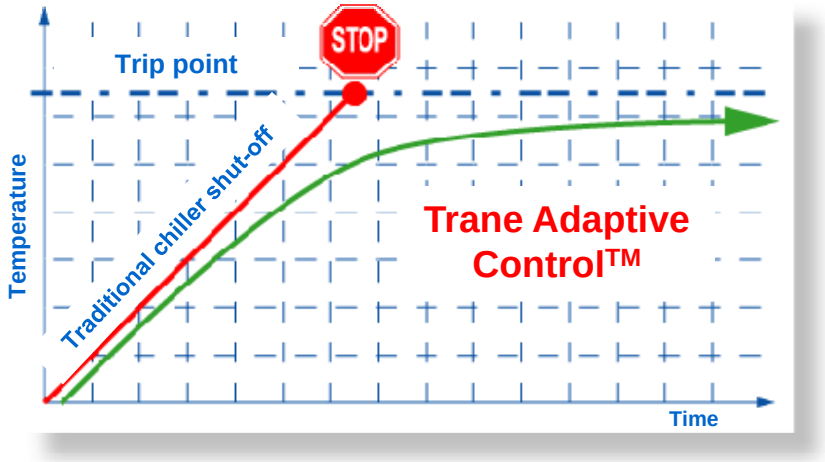


-30% less refrigerant in system than in traditional shell and tube heat exchangers

INNOVATIVE TECHNOLOGY TO SUPPORT OUR COMMITMENT

CONTROLS





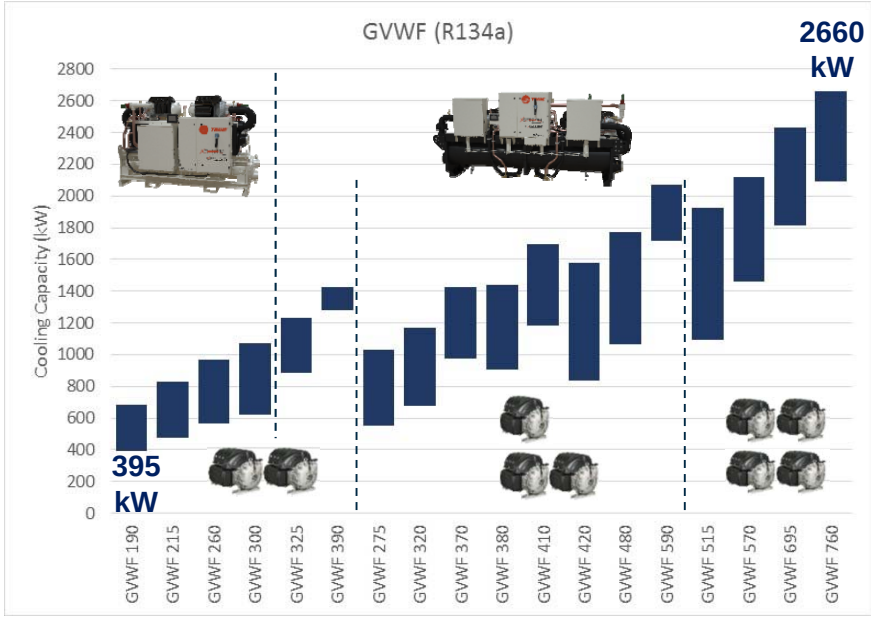
Operational effectiveness

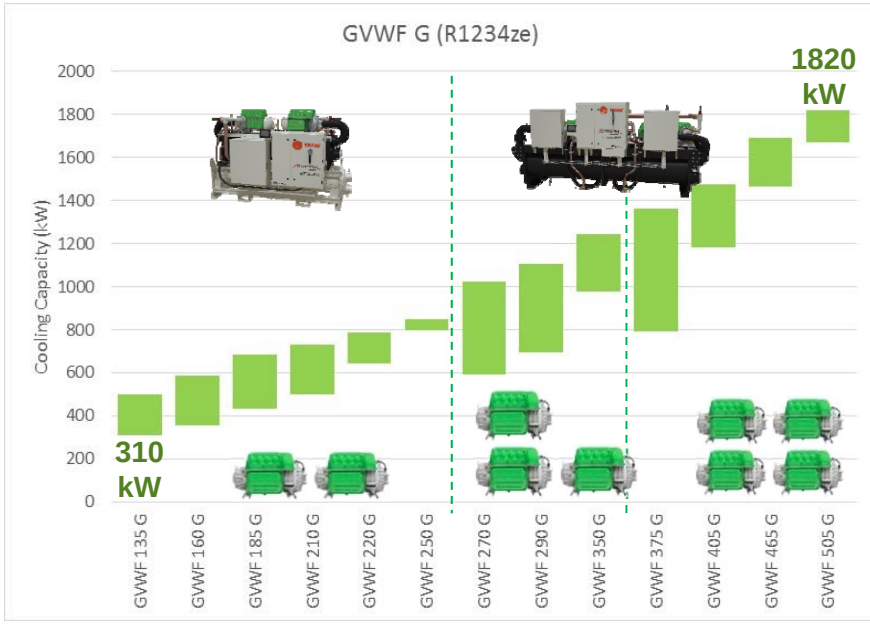
- Industry-leading control algorithms for maximizing both performance and reliability
- Adaptive Control™ to avoid nuisance trips
- Rapid Restart capabilities for maximum uptime
- Data trending
- Active and historic alarm logs
- Standard and custom reports

Intuitive & user friendly interface

- Tracer™ UC800 with TD7 AdaptiView™
- Easy-to-read 7-inch color touch-screen display
- Open-protocol - BACnet®, Modbus or LonTalk
- Trane Intelligent Services (TIS) capable for 24/7 online performance management of your system

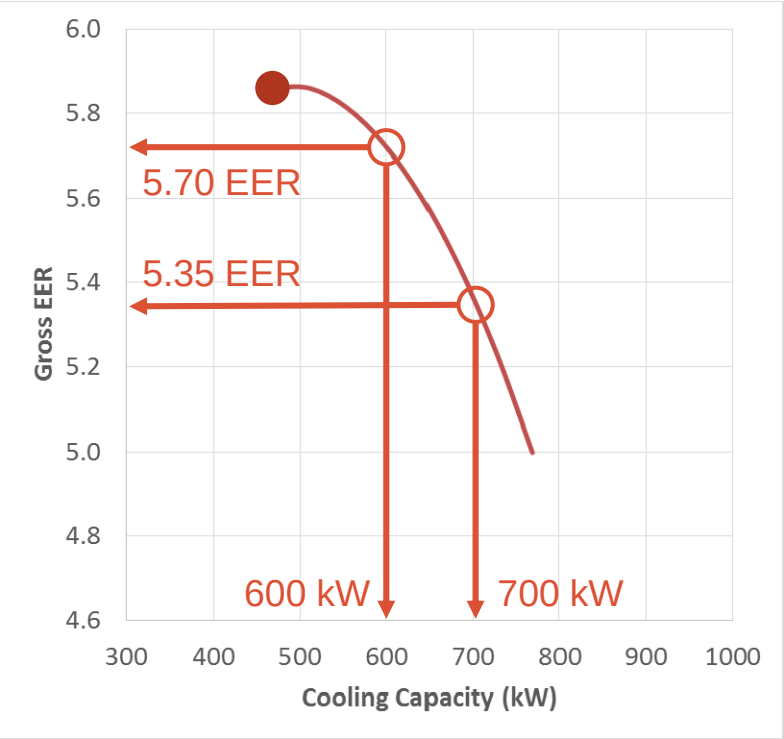
CAPACITY COVERAGE





Up to 9.6 ESEER

MAKING THE SMARTEST CHOICE



Performance curve at 7/12°C entering /leaving evaporator and 30/35°C entering /leaving condenser

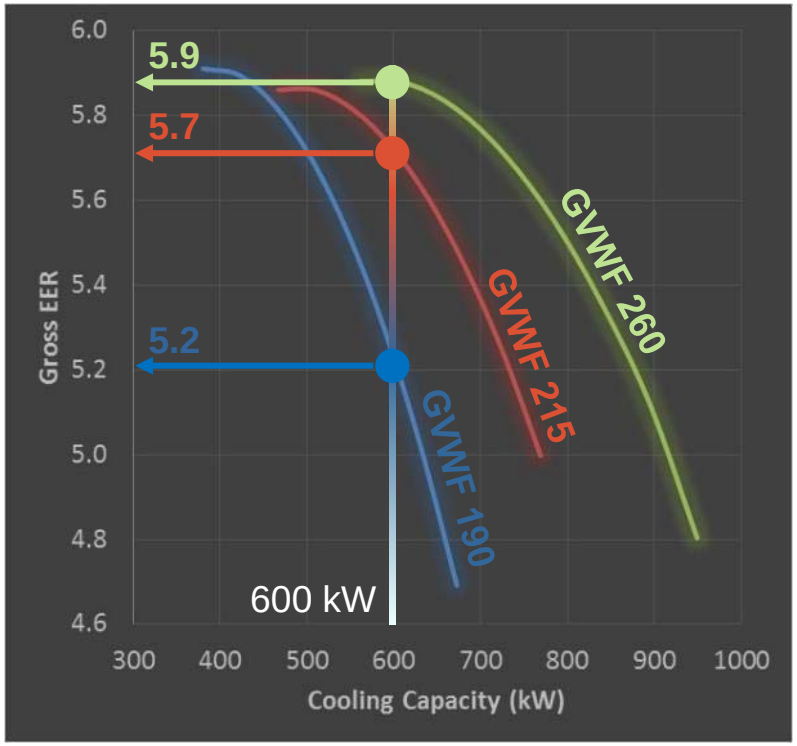
Typical unit performance curve

- Capacity and efficiency evolve along a curve
  - From an optimum efficiency point,
  - To a maximum capacity point.

- Various capacity/efficiency combinations

From best efficiency to best capacity to optimize €uro/kW cost

MAKING THE SMARTEST CHOICE



Performance curve at 7/12°C entering /leaving evaporator and 30/35°C entering /leaving condenser

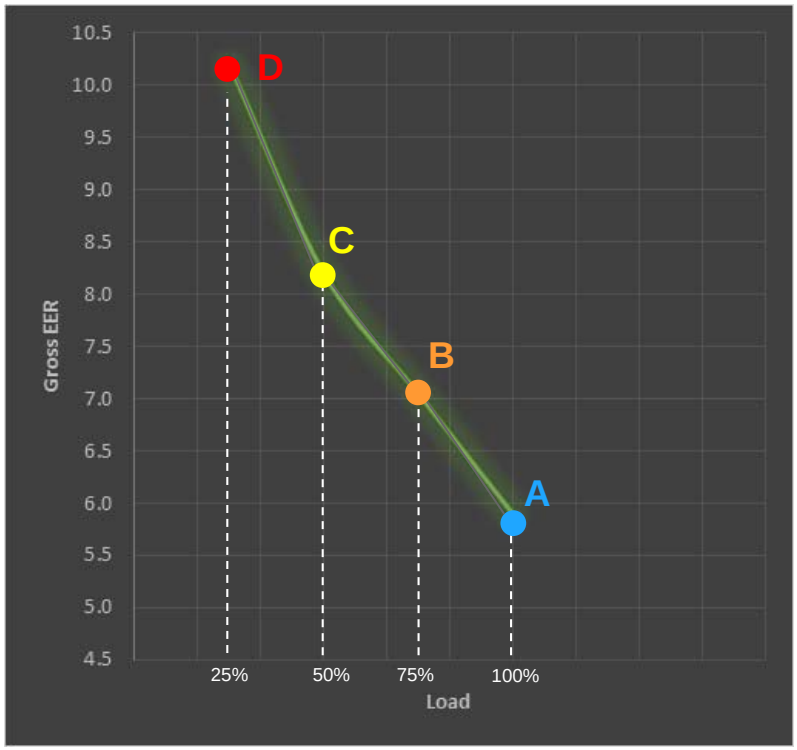
“You have got a choice”

- For one given capacity:
  - Several possible units,
  - For different efficiencies
- Example at 600 kW:
  - **GVWF 190: 5.2 EER**
  - **GVWF 215: 5.7 EER**
  - **GVWF 260: 5.9 EER**

Alternatives to offer the best value for money

HIGH PAR LOAD EFFICIENCY

ESEER



High part load efficiencies are achieved thanks to:

- Multi compressor design
- Compressor speed variation

Example with a 2 compressor unit

ESEER point	A	B	C	D
Load	100%	75%	50%	25%
Conditions	Evp: 12 / 7 ºC Cds: 30 / 35 ºC	Evp: * / 7 ºC Cds: 26 / * ºC	Evp: * / 7 ºC Cds: 22 / * ºC	Evp: * / 7 ºC Cds: 18 / * ºC
Gross EER	5.90	7.05	8.20	10.20
Gross ESEER		**8.21**		

*: at A condition Flow

VERSATILITY

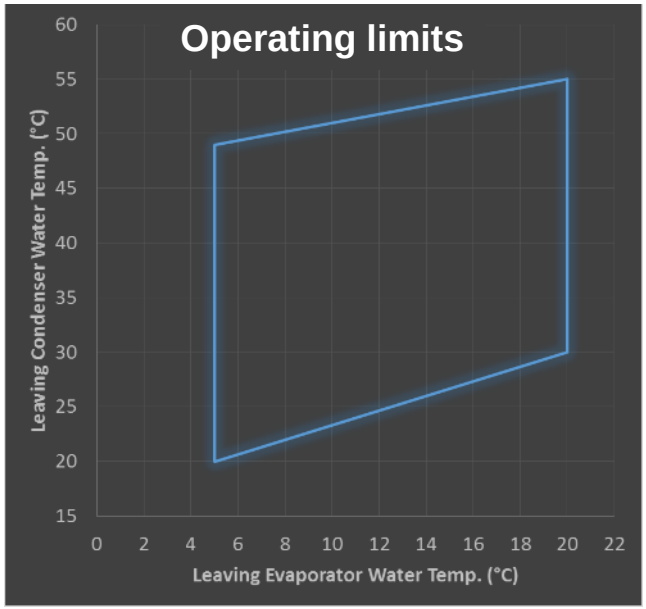
WIDE OPERATING RANGE

Office Buildings

Data Centers

Hospitality industry

Healthcare



Pharmaceutical Industry

Plastic Industry

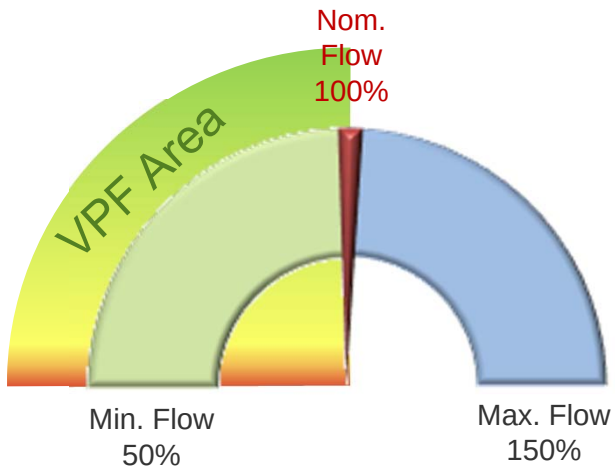
Automative Industry

District Cooling

VARIABLE FLOW COMPATIBILITY

Evaporator

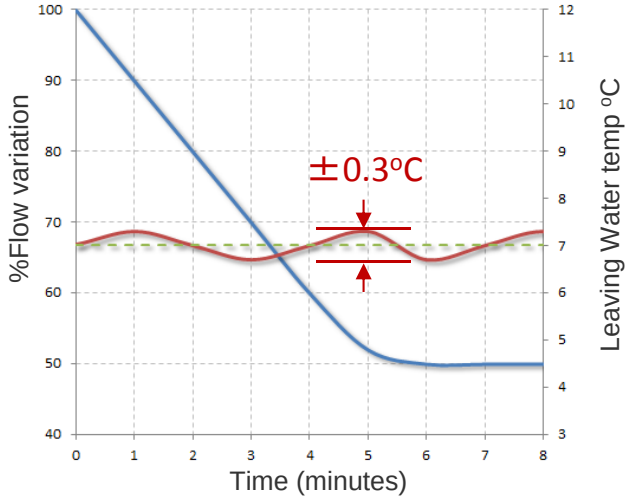
- Designed to afford VPF



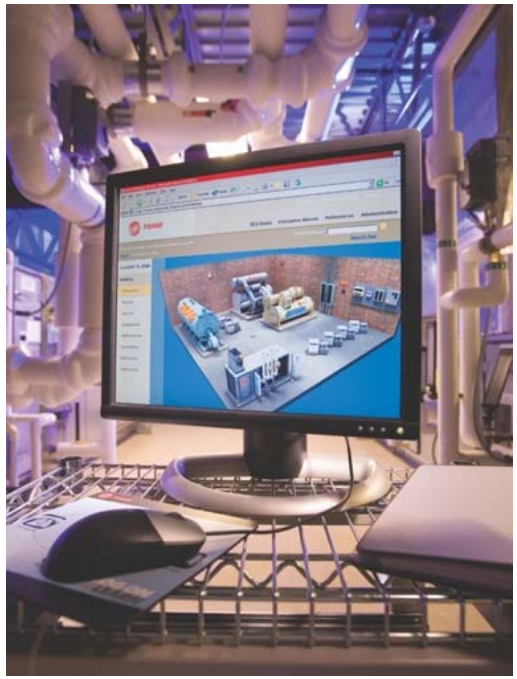
20% Flow reduction = 50% energy savings on pumps

SmartFlow Control

- Algorithm designed to handle variations of 10% per minute
- Maintains water temperature within ±0.3ºC
- Ability to deliver a signal to control variable speed pump



COMMUNICATION



- Compatible with all Trane Building Management Systems and chiller plant controls
- Communication interfaces
  - BACnet™ IP
  - BACnet™ MSTP
  - ModBus™ RTU
  - LonTalk™ (LCI-C)

TESTING

Extended testing

- Operation in extreme operating conditions leading to World Class reliability
  - Ambient Air: from -25°C to 55°C
  - Leaving Water: from -12°C to 65°C
- Pressure vessels resistance
- Electro-Magnetic compatibility (CE compliance)
- Finite element analysis for structure and components design resistance and robustness
- Acoustics and vibrations testing

QUALITY STANDARDS

CE compliance

- Pressure Equipment Directive (PED) 97/23/CE
- Machinery Directive (MD) 2006/42/CE
- Low Voltage Directive (LV) 2006/95/CE
- Electromagnetic Compatibility Directive (EMC) 2004/108/CE
- Electrical Machinery Safety Standard EN 60204-1
- Electromagnetic Emission and Immunity Standard EN 61800-3 category C3

Quality Insurance processes

- ISO9001
- ISO14001

3rd Party certifications

- Eurovent for units up to 1500 kW
- AHRI for units above 700 kW

Guaranteed performance of the investment

YOUR EXPECTATIONS IN ONE PRODUCT

- Sustainability
- Efficiency
- Versatility
- Reliability
- Cost of ownership

A UNIQUE PORTFOLIO FOR YOUR NEEDS