V-CLASS CHILLERS

SMARDT

The V-Class Chiller

SMARDT CHILLER GROUP
GUANGZHOU MELBOURNE MONTREAL PLATTSBURGH SINGAPORE STUTTGART

CENTRIFUGAL COMPRESSOR

LEADING EDGE HEAT EXCHANGERS

REFRIGERANT R134a

OIL FREE EQUIPMENT

TURBOCOR VTT COMPRESSOR

HIGH EFFICIENCY

SMARDT CONTROLS

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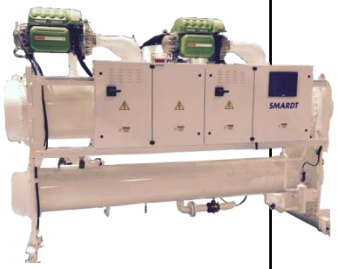
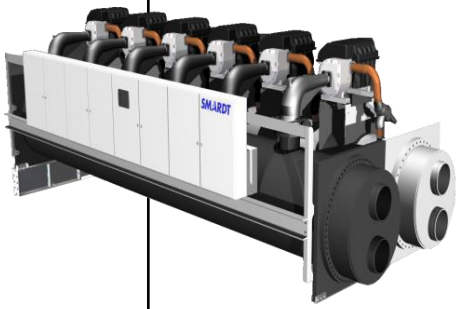
Water Cooled Chillers



G Class Water
1 to 6 Centrifugal TG
DTC Compressors
80 – 530 TRs

V Class Water
1 to 6 Centrifugal VTT
DTC Compressors
350 – 2400 TRs



T Class Water
1 to 8 Centrifugal TT
DTC Compressors
60 – 1200 TRs

100 *500* *1000* *1500* *2000* TRs

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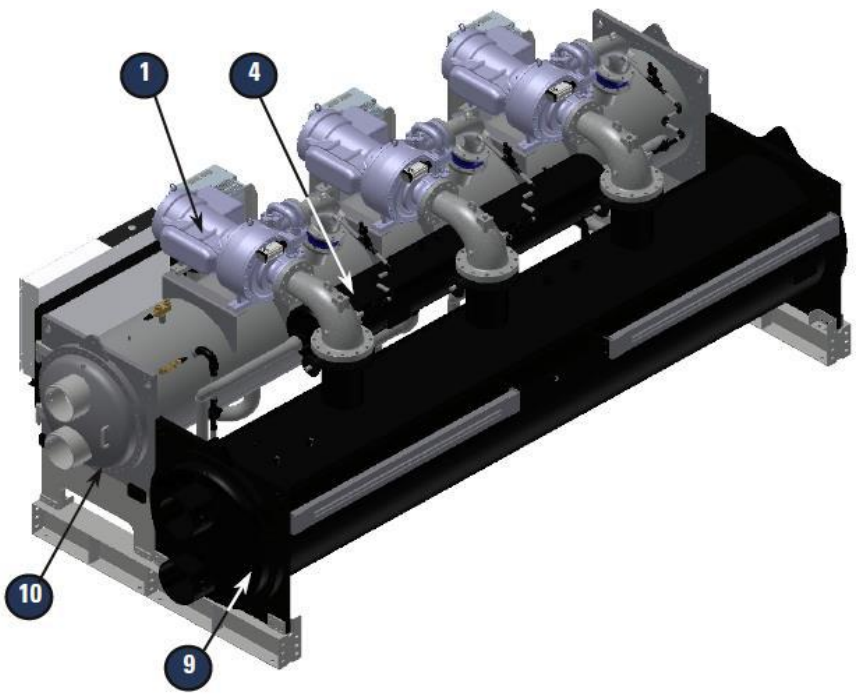
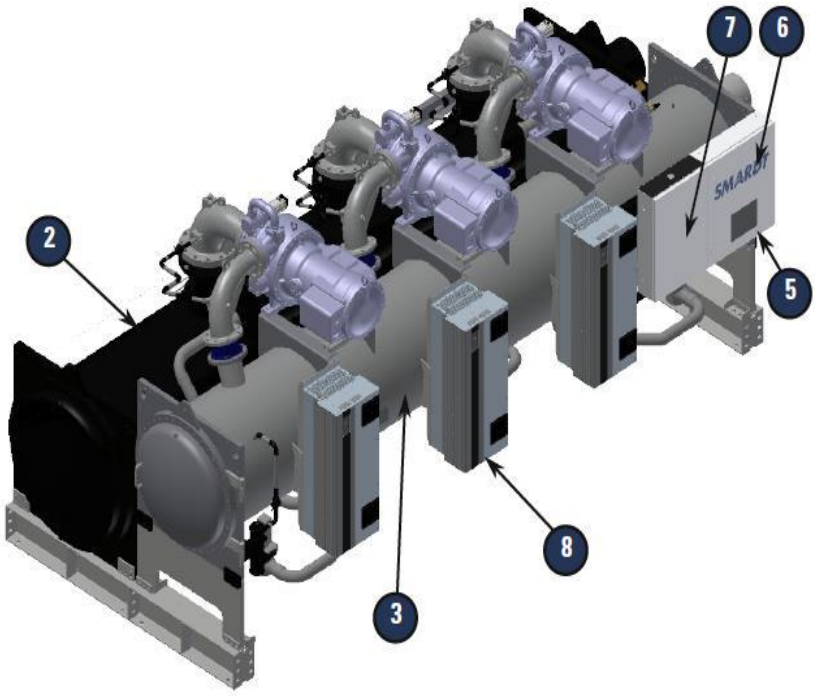
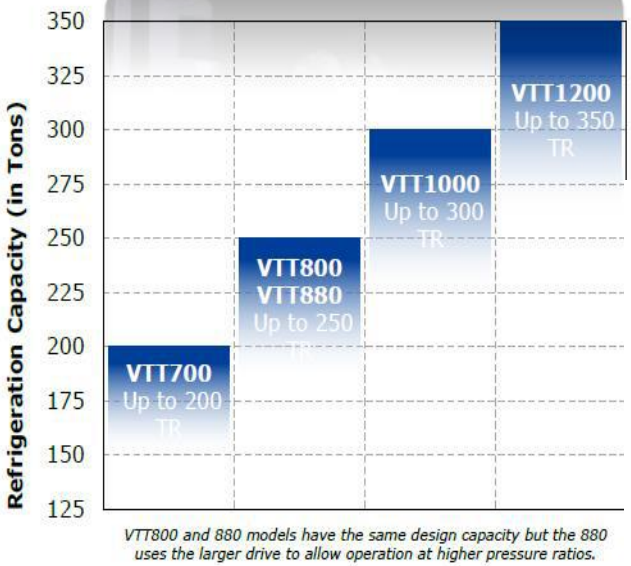
Main Components





1	Compressor
2	Evaporator
3	Condenser
4	Economizer
5	Chiller controller touch panel
6	Control cabinet
7	Power supply box
8	Compressor power module
9	Evaporator water box
10	Condenser water box

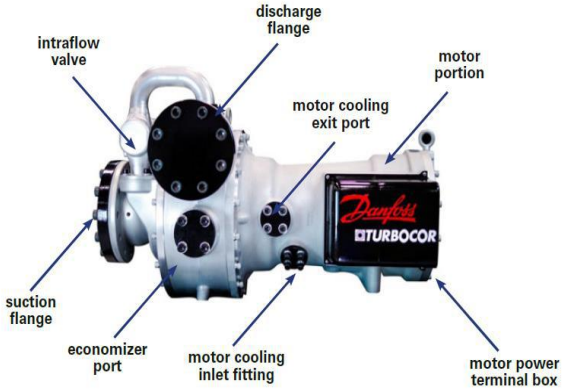
The Compressor

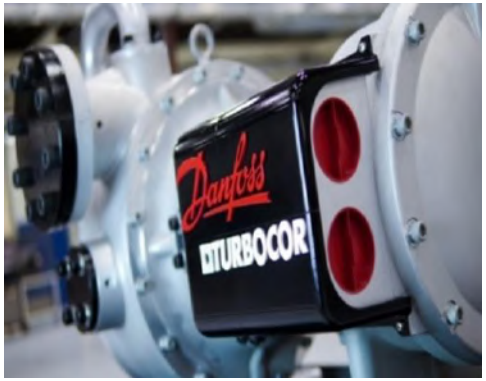


VTT800 and 880 models have the same design capacity but the 880 uses the larger drive to allow operation at higher pressure ratios.

VTT Model	Nominal Capacity		Max. Press. Ratio	Weight kg [lbs]	Dimensions - mm [in]		
	Tons	KW			Length	Width	Height
VTT 700	200	703	3.4	n/a	n/a	n/a	n/a
VTT 800	250	879	3.0	n/a	n/a	n/a	n/a
VTT 880	250	879	3.4	n/a	n/a	n/a	n/a
VTT 1000	300	1054	3.4	n/a	n/a	n/a	n/a
VTT 1200	350	1230	3.0	440 [960]	1093 [43]	668 [26.3]	751 [29.5]

Power Module	KW	Compressor Model	Weight kg [lbs]	Dimensions - mm [in]		
				Height	Width	Depth
D2-N232	232	VTT 880,1000 and 1200	125 [275]	1041 [41]	432 [17]	381 [15]
D1-N165	165	VTT 700 and VTT800	62 [135]	838 [33]	330 [13]	381 [15]





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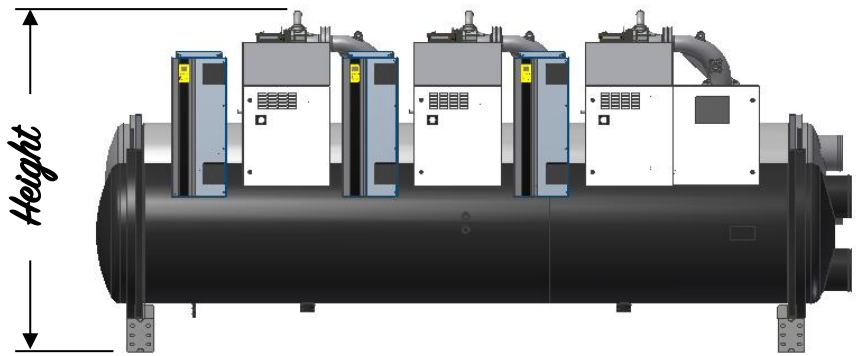
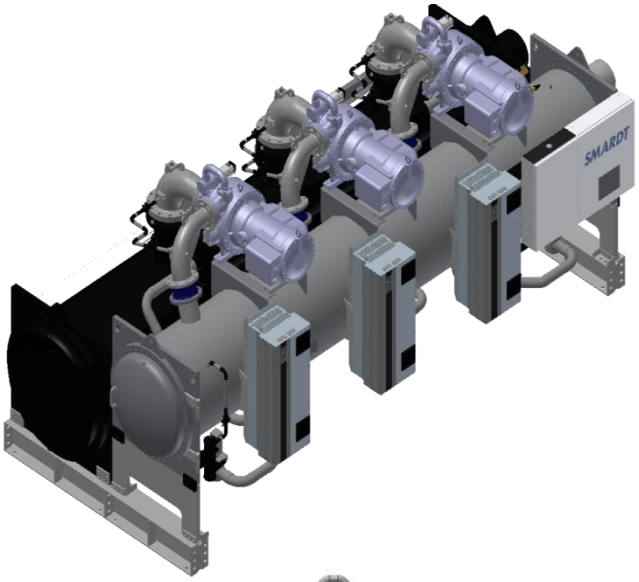
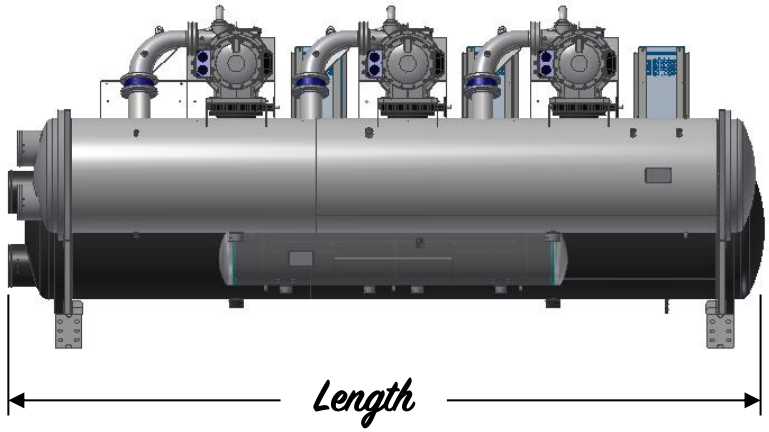
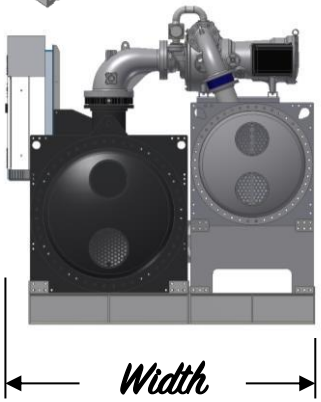
Dimensions









Total Length	5776 mm	Total Width	2680 mm	Total Height	2502 mm

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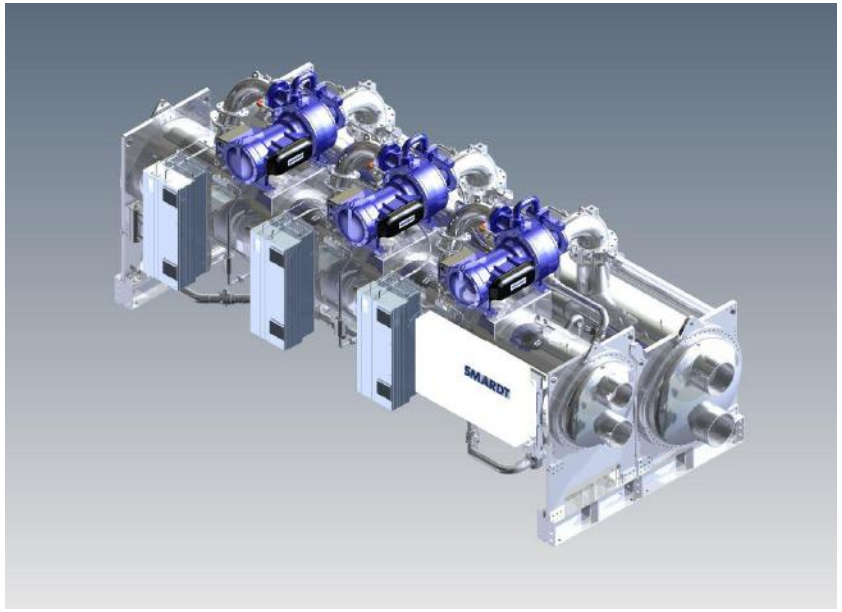
1 ENERGY CONSUMPTION COSTS



OIL LESS compressor

DUAL STAGE, centrifugal

High EFFICIENCY chiller

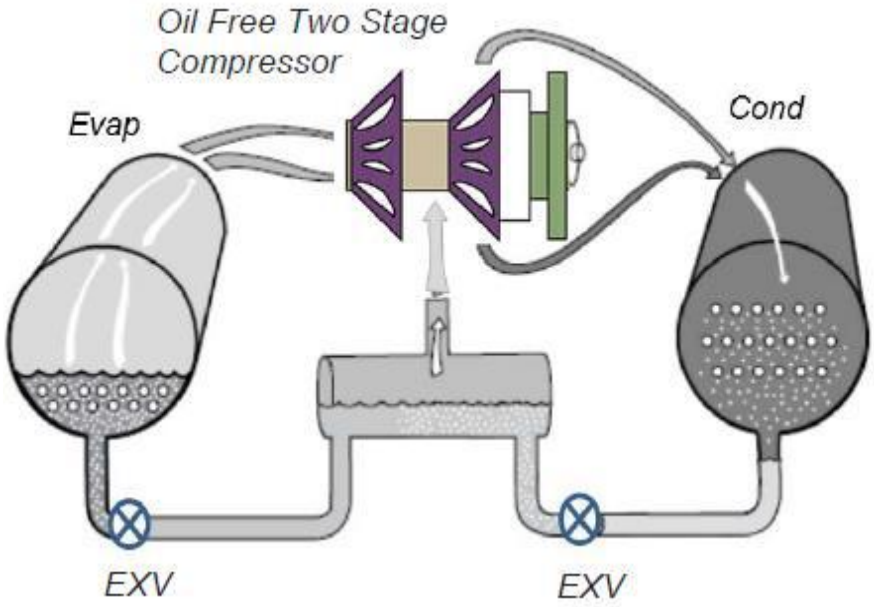
Full load: 0.55 kW/ton
COP 6.4

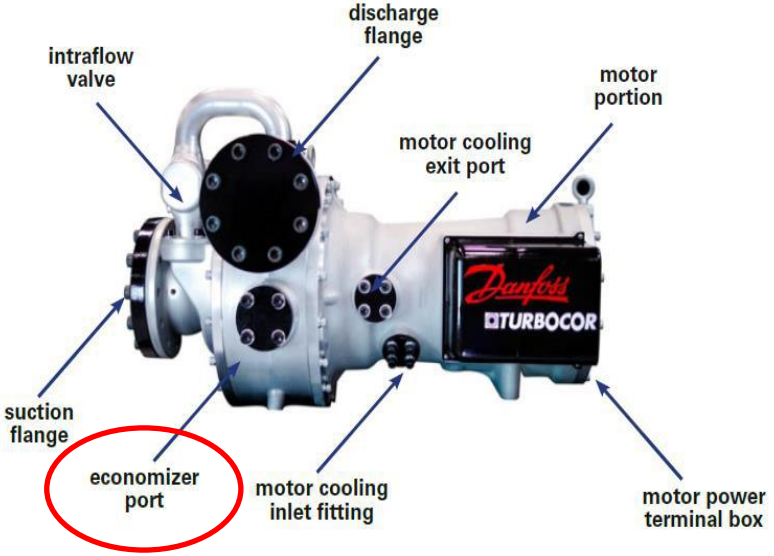
IPLV: 0.35 kW/ton
COP 10.06

1 ENERGY CONSUMPTION COSTS

ECONOMIZER mode

- FLASH TANK type
- *Up to* 8% INCREASE *in* EFFICIENCY





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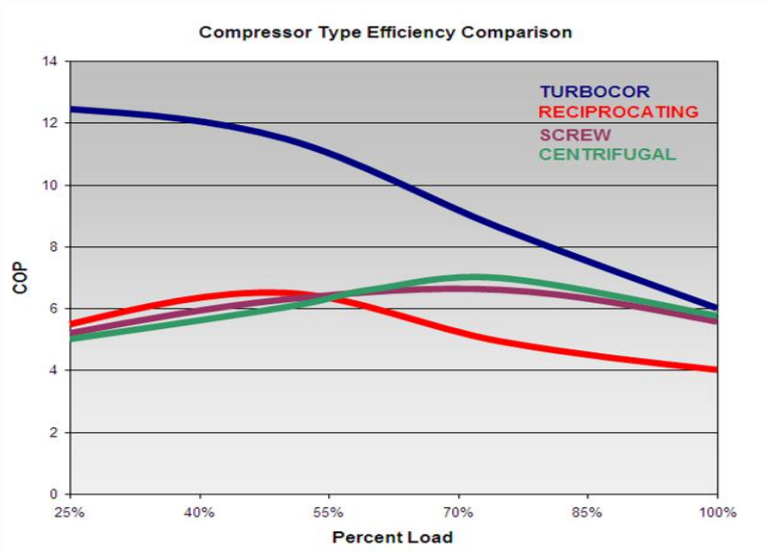

- ENHANCED **EFFICIENCY** *above* 70% LOAD
- RUN *the* REDUNDANT CHILLERS
- Chilled Water System **EFFICIENCY** IMPROVES
- *Design* the system to operate at HIGHER chilled water temperatures

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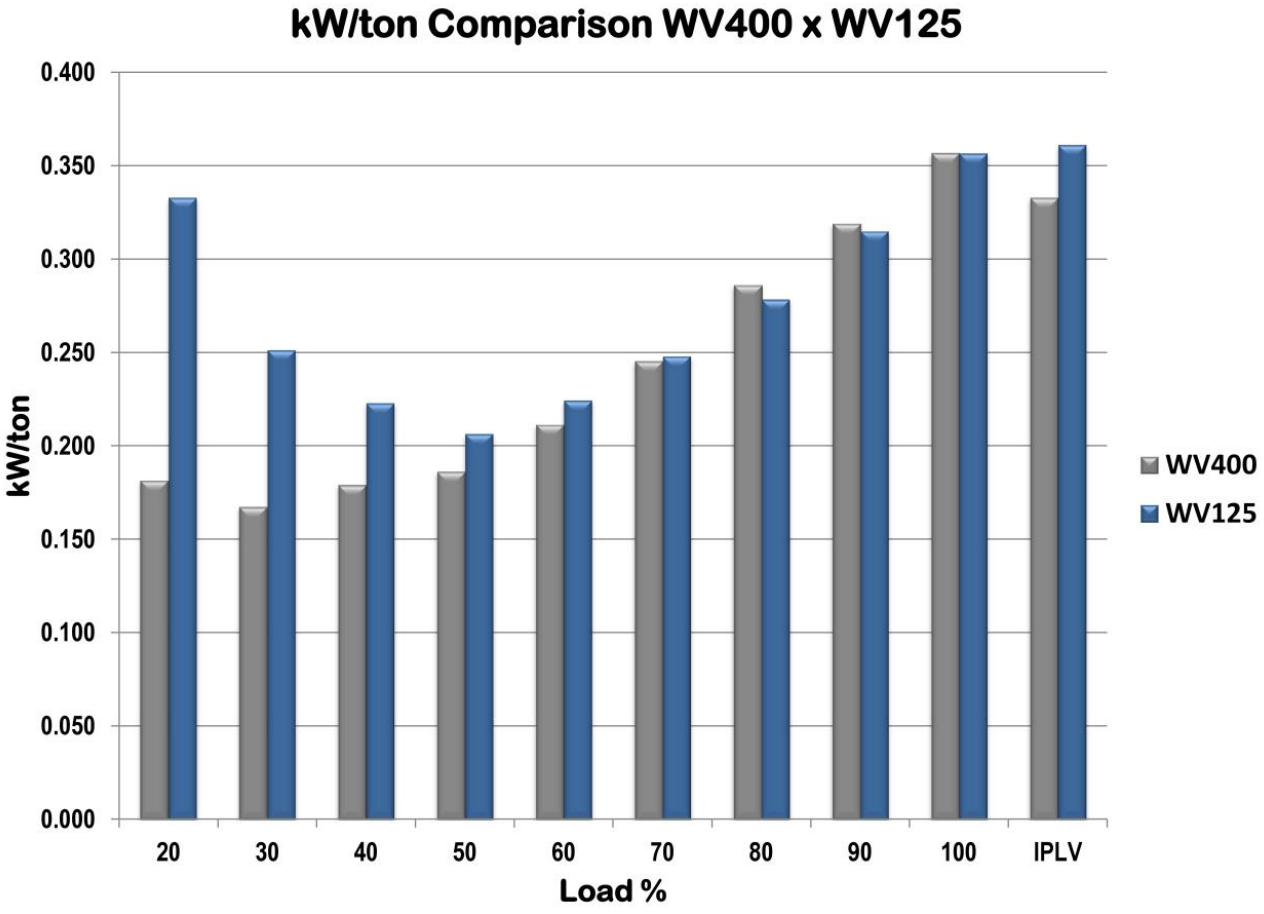

LChW

17◦C [62.6◦F]

ECW (100%)

31◦C [87.8◦F]

Water Flow

Constant

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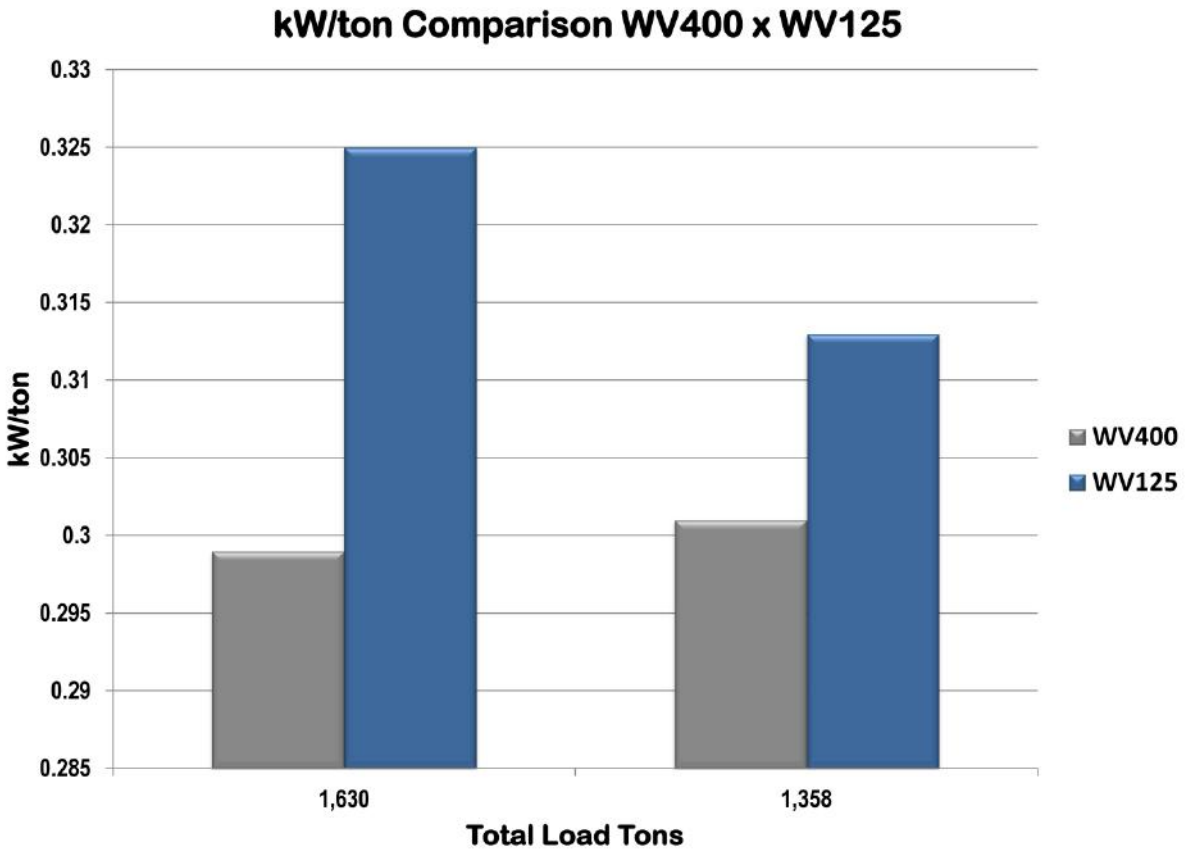


LChW

17◦C [62.6◦F]

ECW

31◦C [87.8◦F]

Water Flow

Constant

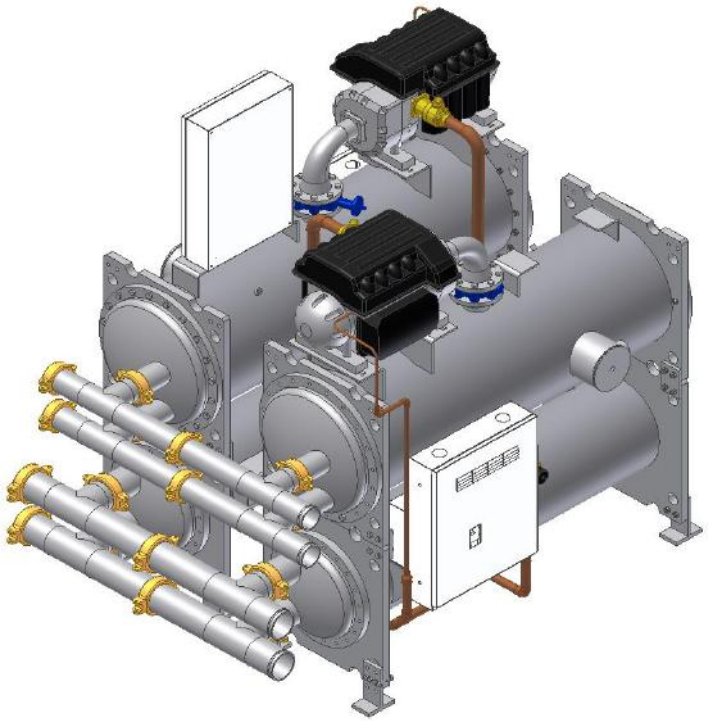
2 SYSTEM DOWNTIME

- ROBUST compressor
- FAST RESTART *option*
- Built in redundancy *reduces* DOWNTIME
- CONTINUOUS OPERATION *during* Maintenance
- Chilled Water Systems *Can Be* ENGINEERED *To Be* EXTREMELY RELIABLE

3 CARBON FOOTPRINT

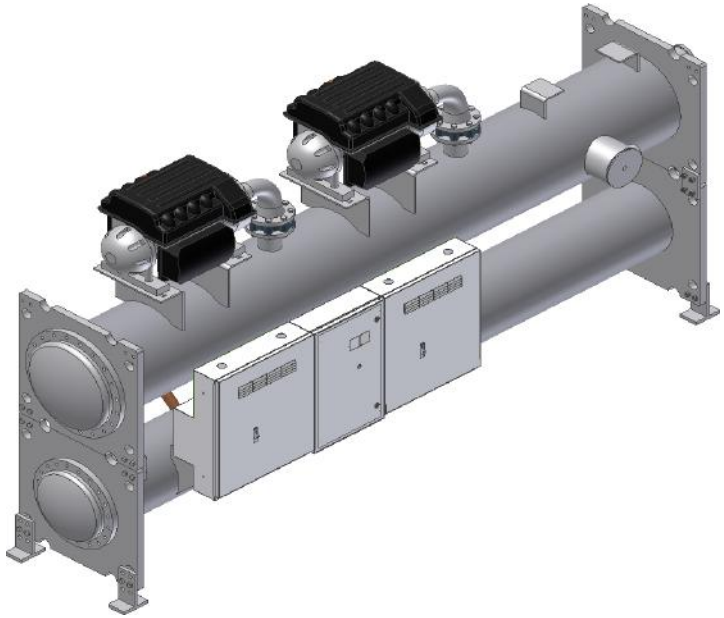
- HFC Refrigerant
- HIGH EFFICIENCY chiller
- *Extremely* LOW VIBRATION (no leaks)
- ADVANCED CONTROLS
  - POWER monitored
  - BETTER BALANCE *in* power distribution *and* usage

4 INITIAL COSTS



- *Lowest* LIFE CYCLE COST in its class
- SIMPLE REPLACEMENT *for* 4,160 V chillers
- SMALLER footprint
- UNIT READY *from* factory

4 INITIAL COSTS



REDUCED COSTS *with* water piping

- Chilled water piping loops are EASILY RUN very LONG DISTANCES and CAN SERVICE MANY IT ENVIRONMENTS (or the whole building) from one chiller plant
- LESS PIPING compared to more chillers
- LESS PUMPS, VALVES (more EFFICIENT)

Chilled water CRAH COST LESS, *contain* **FEWER PARTS,** *and have greater* **HEAT REMOVAL CAPACITY** *than* **CRAC units with the same footprint**

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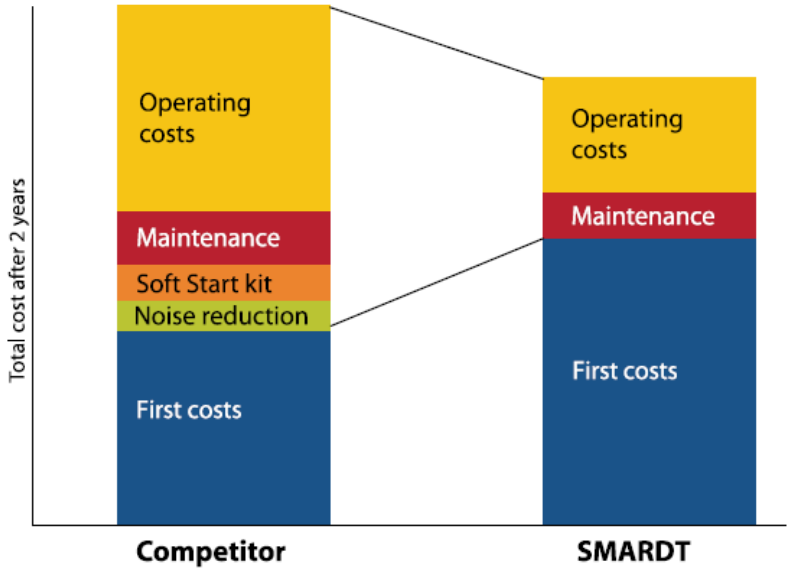
5 NOISE

SMALLEST NOISE LEVEL *for* its capacity

Also HELPS *to* REDUCE INITIAL COSTS



6 CONTROLS

- Proprietary CONTROL
- *Simple* BAS INTEGRATION
- USER *friendly*
- *Integrated* VARIABLE SPEED Chilled Water Plants
- CPECS *optimizes* TOTAL INTEGRATED ENERGY EFFICIENCY

CPECS

KILTECH
Overview
Detail
Trends Main
Trends - Chlrs
Trends - CHW
Trends - Energy
Information
Saved CO2 245609.7lbs
Saved kWh 196017.3
Chiller#1
Demand: 0%
Chiller#2
Demand: 0%
Chiller#3
Demand: 27%

To save money on
ENERGY COSTS

Minimize
SYSTEM DOWNTIME

Reduce the Company's
CARBON FOOTPRINT

To save money on
INITIAL COSTS

NOISE
Reduction

Integrated
CONTROLS