



# TrilliumSeries™ Fluid Cooler

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# The TrilliumSeries™ Fluid Cooler

The TrilliumSeries™ Fluid Cooler features a Dry-Coil Adiabatic™ Design coupled with proprietary logic and customised Ecoflex controls. These features save water and prevent the need for any water treatment by minimising the risk of Legionella. In addition they also boost thermal performance compared to standard dry-coil products.

**Because of this the TrilliumSeries™ Fluid Cooler is ideal for small to medium HVAC and industrial applications or where limited water or space is available.**

## > The TrilliumSeries™ Fluid Cooler

### ▶ BOOSTS THERMAL PERFORMANCE

- Up to 40% improved capacity compared to dry cooling
- TrilliumSeries™ coolers consume less energy and achieve lower process temperatures

### ▶ REDUCES WATER CONSUMPTION

- Water is used only when the ambient temperature requires it (Up to 70% savings)
- Water from the unit can be used for irrigation
- Water monitoring package minimizes water use

### ▶ NEEDS MINIMAL MAINTENANCE

- Takes same time as air cooled
- No water treatment required
- On-Demand Adiabatic™ Pre-Cooler Media can be replaced in ½ hour

### ▶ TOP HYGIENE CONTROL

- Minimising the risk of Legionella
- No chemical water treatment required
- Removing the issues of compliancy (RMPs and regular audits)



# Benefits



## > Ownership Benefits

In a variety of climate conditions, the TrilliumSeries™ Fluid Cooler provides the lowest total cost of ownership compared to air cooled units.

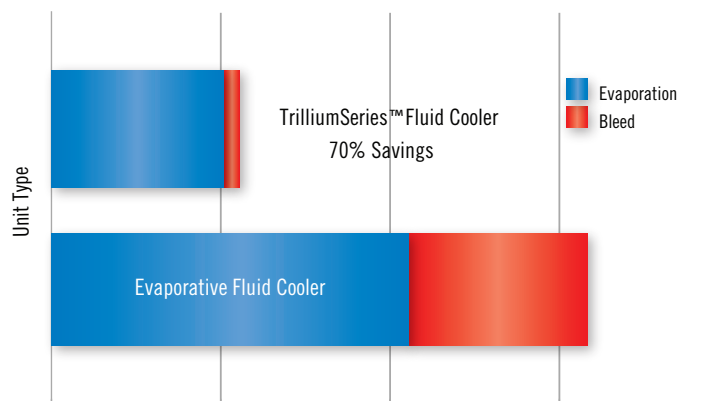
### ▶ INSTALLATION ADVANTAGES

- Compact and lighter in weight compared to standard air cooled
- Single point electrical connection
- Direct drive VSEC motors and Whisper Quiet Fans are standard
- No water treatment required

### ▶ ECONOMIC ADVANTAGES

- Boosts thermal performance up to 40% compared to standard air cooled
- Up to 70% water savings compared to evaporative equipment.
- Savings due to no water treatment.

**Average Annual Water Use Compared to Evaporative Fluid Coolers**



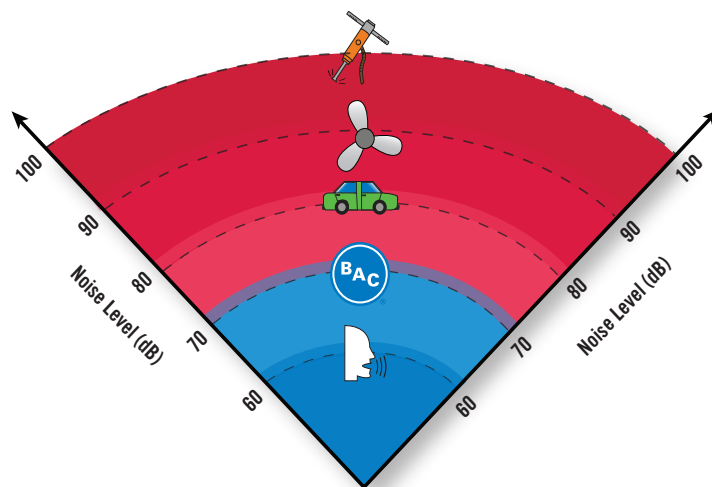
## > Optional Built-in Energy Tracking / Alarms

- ▶ Optional alarms for the fans, pumps and valves
- ▶ Optional energy monitoring maintains efficient operation over the life of the product



## > On-Demand Adiabatic™ Pre-Cooler

- ▶ Water is used ONLY when the ambient temperature requires it
  - Water spray saturates and cleans the On-Demand Adiabatic™ Pre-Cooler media of any dust and debris
- ▶ No water treatment is required
- ▶ Free draining prevents stagnant water
  - Water from the drain and overflow can be used for irrigation or other non-potable uses
- ▶ CONTROLS OPTIONS
  - **WATER QUALITY SENSOR (OPTION)** - Flushes the sump based on a factory preset conductivity level to minimize water use.
  - **WATER MONITORING (OPTION)** - This option monitors the amount of purged water and maintains efficient operation over the life of the product.



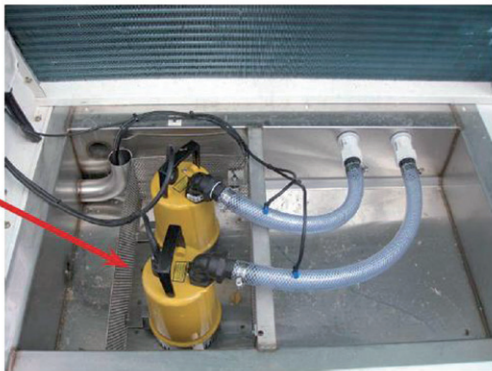
Sound Levels

## > Low Sound

- ▶ Whisper Quiet Fans are standard
- ▶ Direct drive VSEC fan motors vary the fan speed eliminating sudden starts and stops

# Benefits

Recirculating  
Pumps



## > Easy Maintenance

- ▶ Requires the same time to maintain as air cooled fluid cooler
- ▶ Water treatment is not required
  - Water is turned on only when ambient temperature requires it
  - Water spray saturates and cleans the On-Demand Adiabatic™ Pre-Cooler media of any dust and debris
- ▶ On-Demand Adiabatic™ Pre-Cooler media acts as a filter to prevent debris from reaching the coil
  - Can be removed without tools for easy coil inspection
- ▶ The EcoFlex Controls maintain a clean sump
- ▶ Pump and strainer are easily accessible from the access hatch

## > Peace of Mind

- ▶ All units are equipped with state of the art EcoFlex controls, On-Demand Adiabatic™ Pre-Cooler, and daily automatic sump clean out
- ▶ Critical components are stocked and ship within 24-hours
- ▶ Durable materials of construction extend the life of the unit
- ▶ Sump and drain pans drain freely
- ▶ Ability to switch fans from automatic to manual fan override in case of control signal loss

Dump Valve  
and Activator



Water Makeup  
Solenoid



# Modes of Operation



## > Dry Mode

When the ambient air is below the set point, the unit runs as a dry cooler to save water and energy. The ambient air cools the fluid in the coils which is then returned to the system.

## > On-Demand Adiabatic™ Pre-Cooler Mode

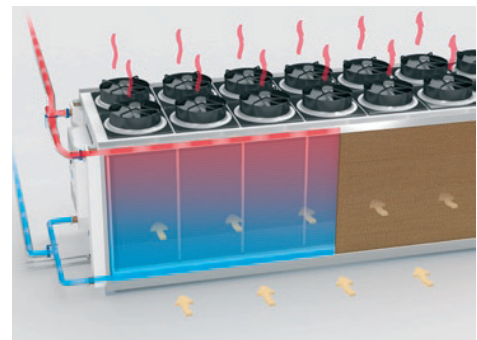
When the unit is in On-Demand Adiabatic™ Pre-Cooler mode, water is evenly sprayed over the highly efficient media. The air is humidified as it passes through the media, cooling temperatures down to 1-2°C above wet-bulb temperature. Such substantial depression of the dry bulb temperature results in a major increase in dry cooling capacity.

The cooler air passes over the coil and cools the fluid inside which is then returned to the system. In the sump there is an industrial duty pump that recirculates the water. Part of the distributed water is evaporated, while the excess water assists in rinsing the On-Demand Adiabatic™ Pre-Cooler media. The EcoFlex Controls determine when the water is purged from the sump.

### ▶ ON-DEMAND ADIABATIC™ PRE-COOLER OPERATION MODES

There are three different ways to optimize unit operation.

- **Standard Logic (Default):** The controller will start the Pre-Cooler Mode at a preset outside air temperature to increase the unit's capacity and efficiency.
- **Water Saver Logic:** The controller will optimize the unit's dry efficiency and only use water when the conditions require the extra cooling capacity. Pre-Cooler Mode will be initiated only when the outside air temperature is above the switch point and the fans are running at 90% or above for over 60 seconds. This mode will recheck conditions every two hours.
- **Energy Saver Logic:** The controller will optimize its sequence so that the least amount of energy is consumed to meet the present load of the unit. Pre-Cooler Mode will be initiated at 5.5 degrees below the switch point and if the fan speed is above 35%.

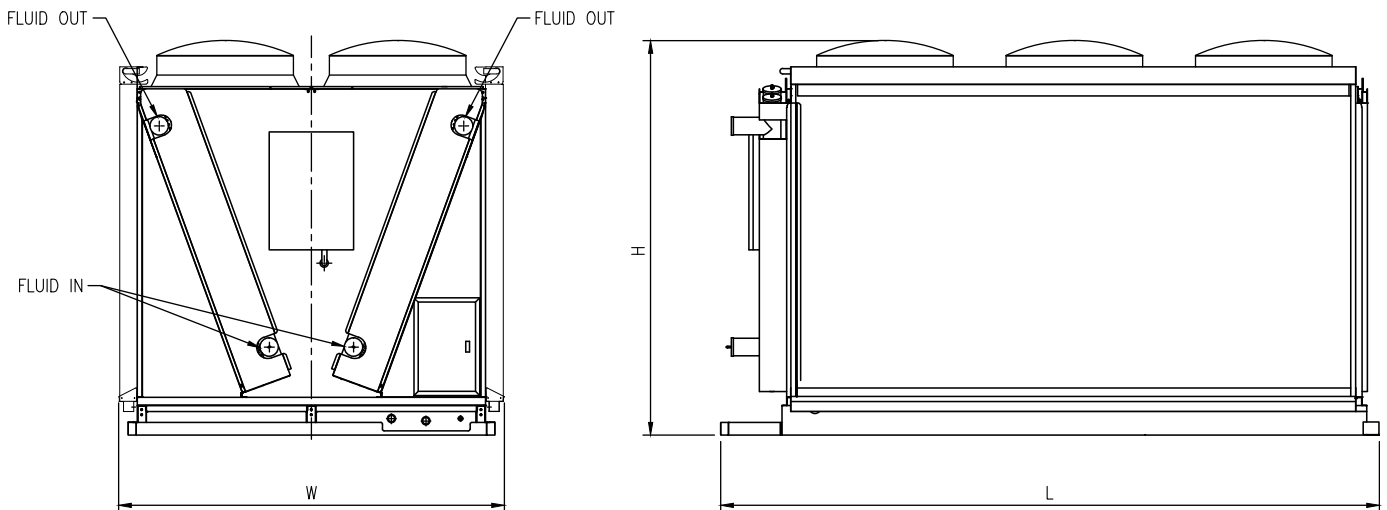


Dry Mode



Wet Mode

# Engineering Data



Model	Capacity (kW) <sup>[1]</sup>	Motor kW	Pump kW	Airflow (m³/s)	Unit Length (L)	Width (W)	Height (H)	Shipping Weight (kg)	Operating Weight (kg)
TVFC-384	172	3 x 3.1	0.18	18.1	4000	1167	2545	1400	1900
TVFC-684	345	6 x 3.1	0.18	36.3	4000	2334	2545	2000	2500
TVFC-882	442	8 x 3.1	0.36	47.8	4900	2500	2750	2857	3486
TVFC-884	467	8 x 3.1	0.36	47.8	4900	2500	2750	2857	3486
TVFC-1082	561	10 x 3.1	0.36	59.7	5800	2500	2750	3075	3900
TVFC-1084	584	10 x 3.1	0.36	59.7	5800	2500	2750	3075	3900
TVFC-1282	679	12 x 3.1	0.36	71.7	6700	2500	2750	4286	5229
TVFC-1284	702	12 x 3.1	0.36	71.7	6700	2500	2750	4286	5229
TVFC-1482	796	14 x 3.1	0.36	83.6	7600	2500	2750	5250	6350
TVFC-1484	819	14 x 3.1	0.36	83.6	7600	2500	2750	5250	6350

## NOTES:

1. Capacity is based on cooling water from 35°C to 29°C with dry bulb of 35°C and wet bulb of 21°C.

**Do not use for construction.** Refer to factory certified dimensions. This catalogue includes data current at the time of publication, which should be reconfirmed at the time of purchase.

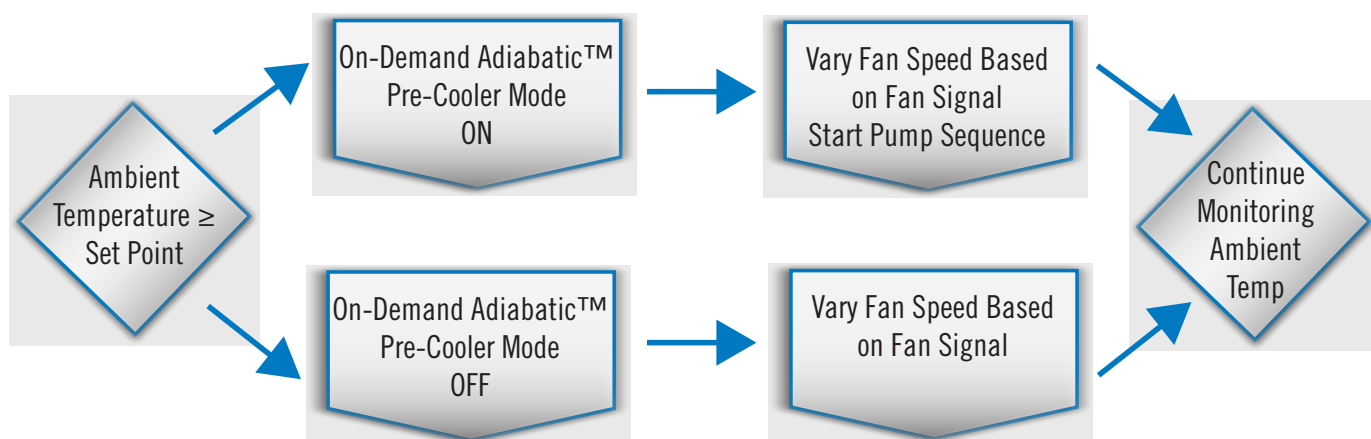
Up-to-date information can be found at [www.BaltimoreAircoil.com.au](http://www.BaltimoreAircoil.com.au)

# EcoFlex Controls



The TrilliumSeries™ Fluid Cooler is furnished standard with state of the art EcoFlex Controls that provide efficient year round performance. Each unit is shipped with custom controls logic that reduces energy consumption and optimizes water usage. The system is pre-programmed and ready to operate upon arrival from the factory.

## Controls Logic



## > EcoFlex Controls Logic Features

- ▶ **ENERGY MONITORING** – Measures the energy use of the TrilliumSeries™ Fluid Cooler and verifies efficient operation over the life of the equipment.
- ▶ **WATER MONITORING** – Measures the water use and maintains efficient operation of the unit.
- ▶ **ALARMS** – Signals provided for fans, pumps, or valves.
- ▶ **COMMUNICATIONS CARDS** – Allows for seamless integration over Modbus and BACnet to monitor all system components in a single location.



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