



*Supercool*

# Barrel Hall Cooling

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Climate Wizard



# Barrel Hall Requirements

- Temperature conditions  
15°C to 18°C
- Relative Humidity conditions  
65% RH to 80% RH
- Promotes stable wine maturation
  - Improved quality
  - Stable conditions ensure repeatable outcome
- Reduces “angels share”
  - Improved yield
  - Reduces top up labour

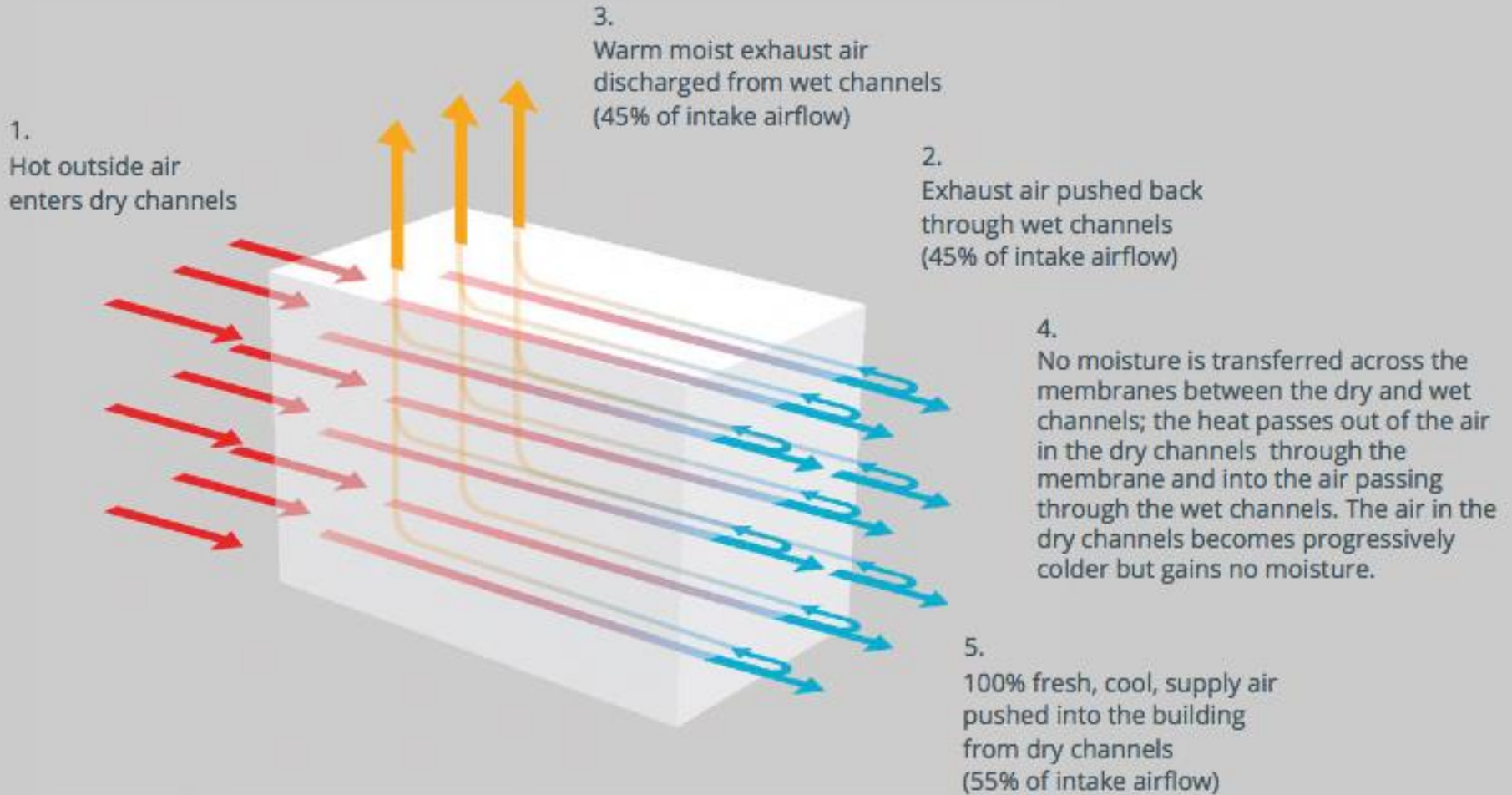
# Traditional Solution

- Purpose built refrigeration system
  - Typically use existing glycol plant if processing on site
  - “Off the shelf” air conditioning units typically not suitable due to low temp requirements
- Ceiling mounted fan coil units
- Humidifier
- Expensive and power hungry

# Climate Wizard Supercool

- Indirect evaporative cooling
- Direct evaporative stage added
- Solution to maintaining a controlled level of temperature and humidity
- Very low operating costs
- No mechanical compressors or harmful refrigerants
- 100% fresh outside air

# Counter-flow heat exchanger



A closer look at what happens inside

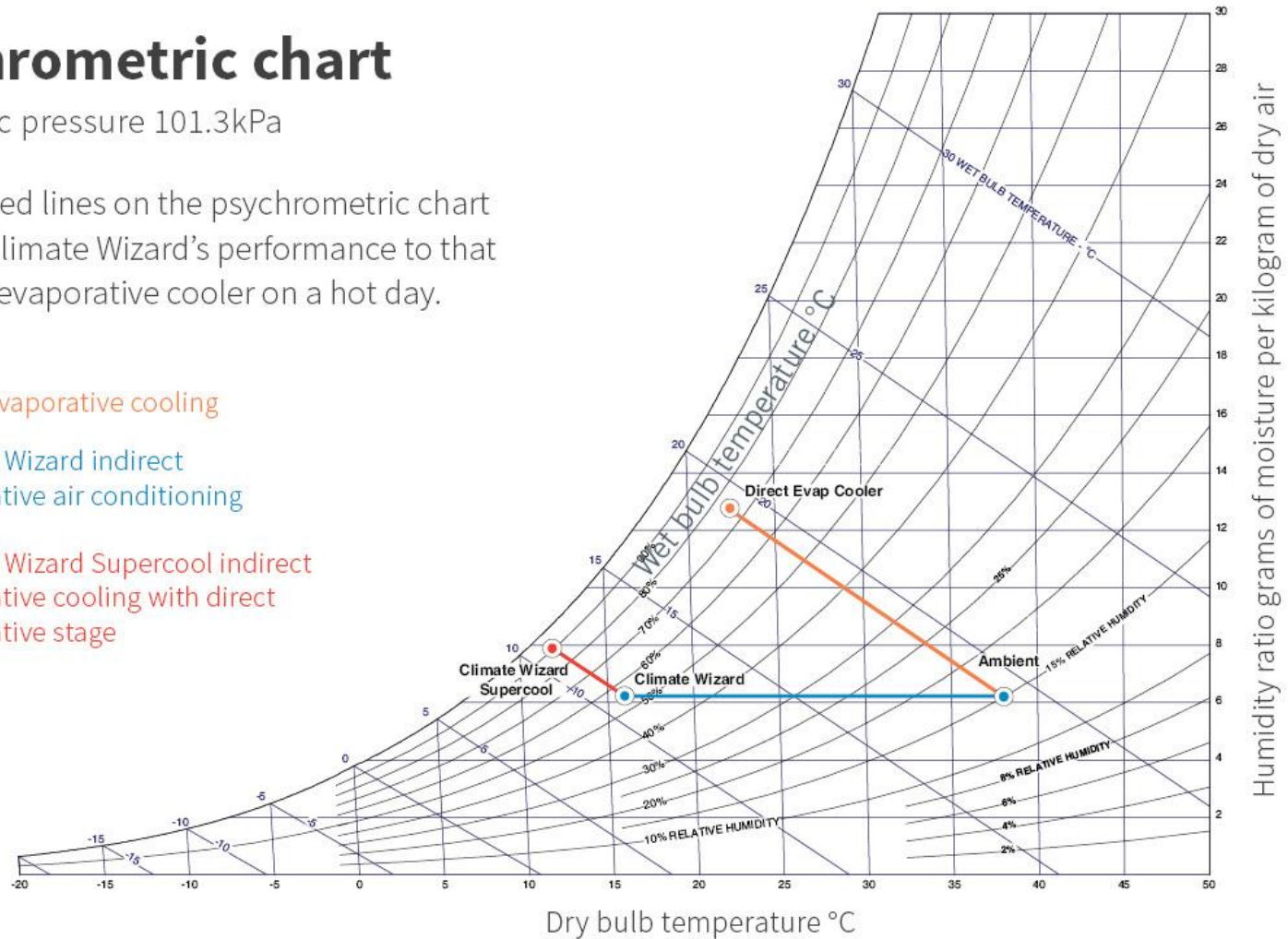
# Proven by international research and in the field

## Psychrometric chart

Barometric pressure 101.3kPa

The coloured lines on the psychrometric chart compare Climate Wizard's performance to that of a direct evaporative cooler on a hot day.

- Direct evaporative cooling
- Climate Wizard indirect evaporative air conditioning
- Climate Wizard Supercool indirect evaporative cooling with direct evaporative stage



# Performance summary

- Dramatically reduces energy consumption and cooling costs compared to equivalent refrigerated systems
- Delivers ultra low supply air temperatures
- Maintains desired humidity levels
- Easy installation
- Factory installed BMS interface
- Optional BACnet interface

# Barossa Valley Estate

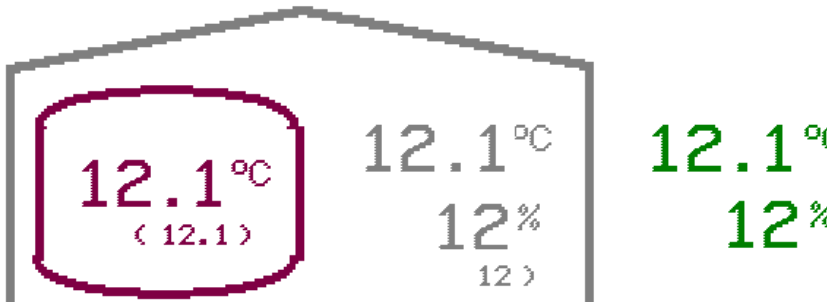

- 68m x 27m barrel hall with capacity for 5040 barrels
- 2 x CW-80S
- Achieving hall conditions of 15°C to 18°C and 60% to 80% RH





# Barossa Valley Estate

- Smart Winery Controller
- Thermal storage management
- Dew point management



12.1°C  
( 12.1 )

12.1°C  
12%  
12

12.1°C  
12%

Coolers off, ambient conditions  
not suitable for cooling

MENU

Off

Control Strategy: Smart Control

Manual Control

Target Temperature:

14 15 16 17 18 19 20

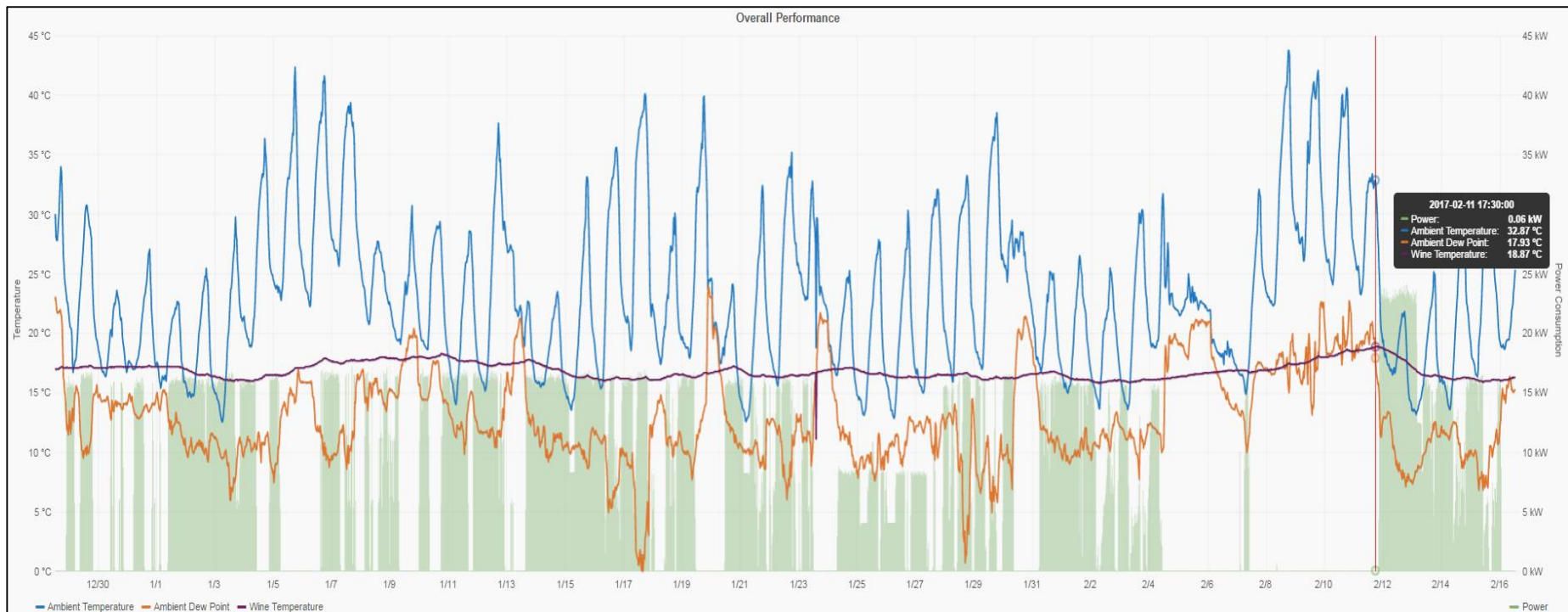
Target Humidity:

50 55 60 65 70 75 80 85 90

HOME

# Barossa Valley Estate

- Achieving wine temperature set point, even at 40°C ambient
- Humidity within target range
- Reduced 'angels share' increases yield
- Improved and repeatable wine quality = happy wine maker



# Barossa Valley Estate

- Energy Savings January – March 2018
- DX + Humidifier – 40,104 kWh
- Climate Wizard – 18,956 kWh
- Saving of **21,148 kWh** or 52%



[climatewizard.com](http://climatewizard.com)

