

# Fes Chill

Evaporative Condenser Pre-Cooling Unit



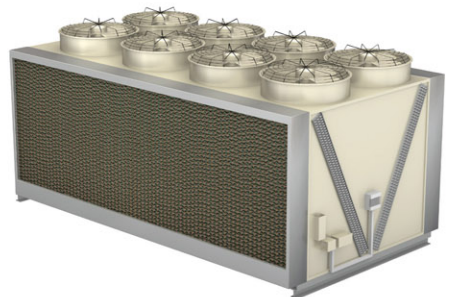
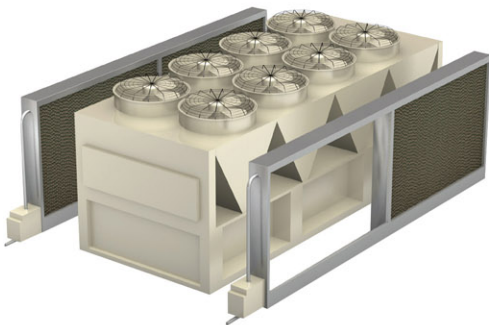
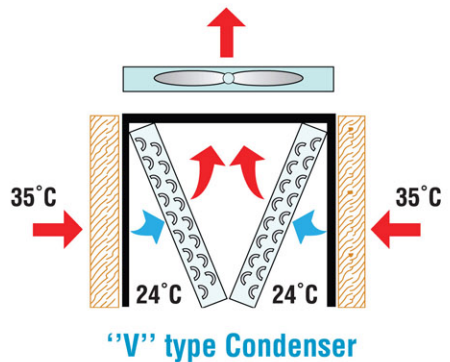
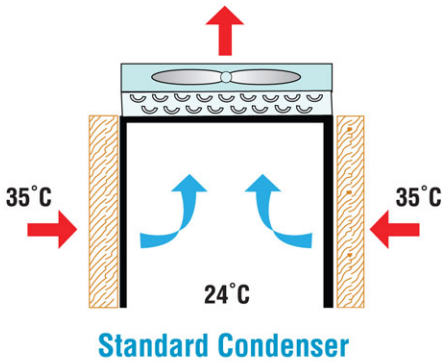
**35% energy savings**  
**Power up your chillers**

**FORM**

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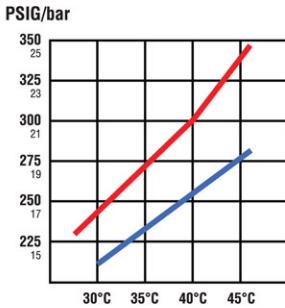
## How does it work ?

FESChill units cool the condenser air inlet of the air cooled chillers with very low cost. Easily installed evaporative cooling pads can be installed to all types of condensers. The cooling pads are kept wet with simple water circulation. The existing fans of the condenser pull the air through the pads and then thru the condensers. The wet pads cool the air to wet bulb temperature, which becomes cooler before entering the condenser. With the cooler air entering the condenser, it works much more effectively enabling the cooling performance to increase and the energy consumption of the chiller to decrease. The overall working performance ( EER or COP ) of the system increases, while the system and condenser life-time increases and the break-down risks decreases.

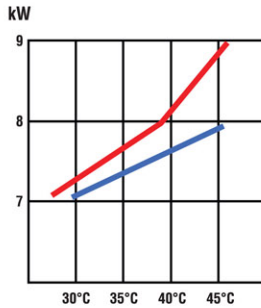


# Why prefer FesChill ?

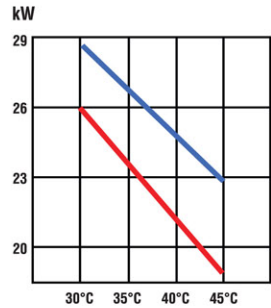
## Decreased Freon gas working pressure



## Decreased energy consumption



## Increased cooling capacity



— Classic condenser — condenser with pre-cooler pad

The cooler air inlet decreases the system working pressure, which creates increased cooling capacity and decreased energy usage.

	Classic Condenser	Condenser With Pre-Cooler Pad	
<b>Condenser Air Inlet</b>	<b>36°C</b>	<b>25°C</b>	
<b>Energy Consumed</b>	<b>64 kW</b>	<b>52 kW</b>	<b>%19</b>
<b>Cooling Capacity</b>	<b>162 kW</b>	<b>179 kW</b>	<b>%11</b>
<b>EER - COP</b>	<b>2.53</b>	<b>3.44</b>	<b>%36</b>



The savings are illustrated at the above table for Air cooled condensers with and without FESChill unit. As a result of 11c decrease in inlet air, the energy consumed by the Chiller is decreased by 19 % and the cooling capacity is increased by 11 %. This allows the EER or COP of the chiller to increase by 36 %. On average every 1.8c decrease of air inlet temperature achieved by the pre-cooling pads, increases the condenser effectiveness by 2 %.

# Advantages of **FesChill**

- Air cooled condenser does not get wet
- Air cooled condenser surface is kept clean, there is no scale formation
- The manufacturer warranty of condenser is not effected
- Optimum water usage
- System works continuously, does not work with on-off periods
- System does not generate temperature fluctuations
- The evaporation effectiveness is high (up to 96 %)
- Operates with minimum energy
- The system works with low pressure water
- Electric consumption is minimum (0.5 kw pump)
- No electrical and complicated devices other than small circulation pump
- Prevents pressure loss of condenser by keeping it clean
- Most economical efficiency increase methodology
- Easy to apply and problem free operation
- Simple and low cost automation system
- Very low maintenance cost
- Increases the life-time of the air cooled chiller



**Increased cooling capacity**  
and  
**Decreased energy usage**



## Air Cooling Sample Table

		Relative Humidity of Outside Air									
		%15	%20	%25	%30	%35	%40	%45	%50	%55	%60
External Air Temperature	30°	17.0°	18.0°	18.9°	19.9°	20.8°	21.6°	22.5°	23.3°	24.1°	24.8°
	35°	20.2°	21.4°	22.6°	23.7°	24.7°	25.7°	26.6°	27.5°	28.4°	29.3°
	40°	23.5°	24.9°	26.2°	27.5°	28.7°	29.8°	30.8°	31.9°	32.8°	33.8°
	45°	26.7°	28.4°	29.9°	31.3°	32.6°	33.9°	35.1°	36.2°	37.2°	38.3°
	50°	30.0°	31.8°	33.6°	35.1°	36.6°	38.0°	39.3°	40.5°	41.7°	42.8°

Calculation with 85 % cooling pad effectiveness ratio