


**250.000**  
**m<sup>2</sup>**  
2.7 million ft<sup>2</sup>

**Aluminium**  
**surface**

This is the  
equivalent of 35  
football fields.



**10 million**  
**m<sup>3</sup>/h**  
5.8 million ft<sup>3</sup>/h

**Flow rate**

This is the  
equivalent of 4000  
hot air balloons.



**50**  
**MW**

**Energy Saving**


This is the  
equivalent of  
4000 km (2500 mi)  
of train travel.



**100**  
**t**

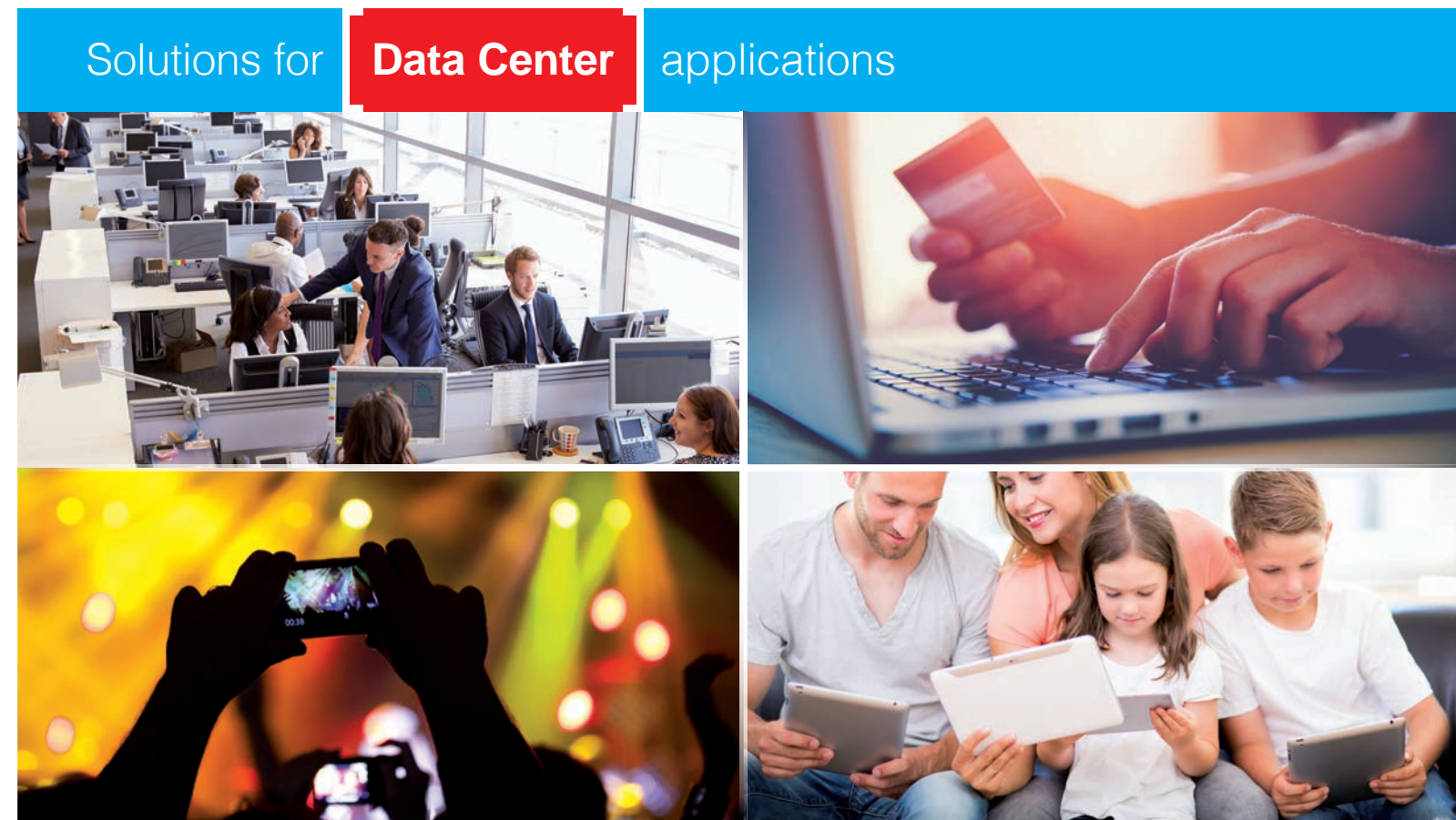
**Aluminium**  
**weight**

This is the  
equivalent of  
78 cars.





**RECUPERATOR S.P.A.**  
CERTIFIED QUALITY  
MANAGEMENT SYSTEM  
UNI EN ISO 9001:2015  
CERTIFIED BY CERTIQUALITY



**Recuperator S.p.A.**  
via Valfurva, 13  
20027 Rescaldina  
Milano, Italy

tel. +39 0331 185 31  
fax +39 0331 185 3000  
recuperator@recuperator.eu  
www.recuperator.eu



**RECUPERATOR THE HEAT EXCHANGER**



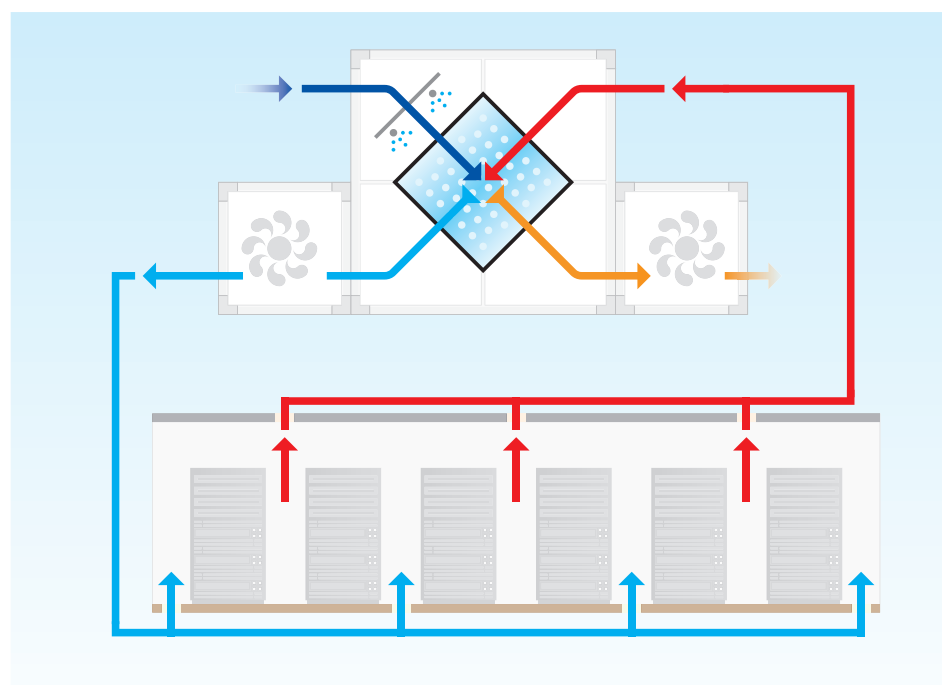
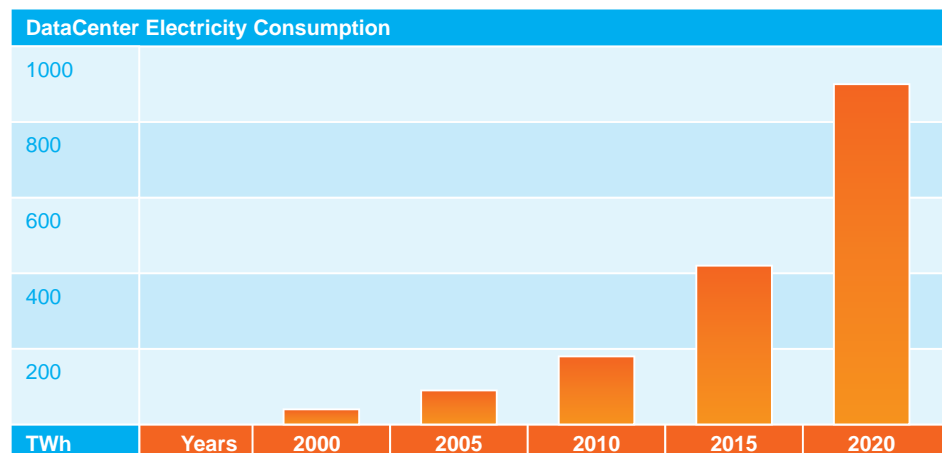
# B-Blue PLATE HEAT EXCHANGER THE SOLUTION



Data centers are quickly increasing in number and size, so much so that in one year the total electricity used for cooling the Data Centre Equipment can reach approximately 0.5% of the worlds electricity consumption.

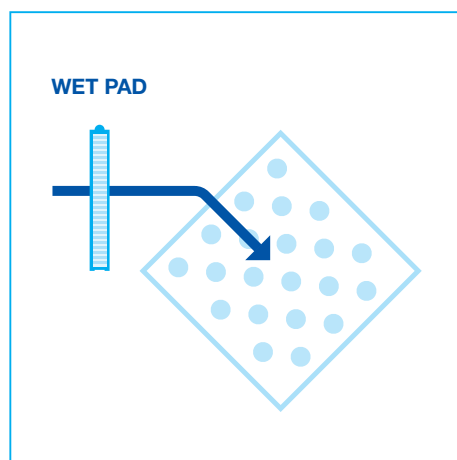
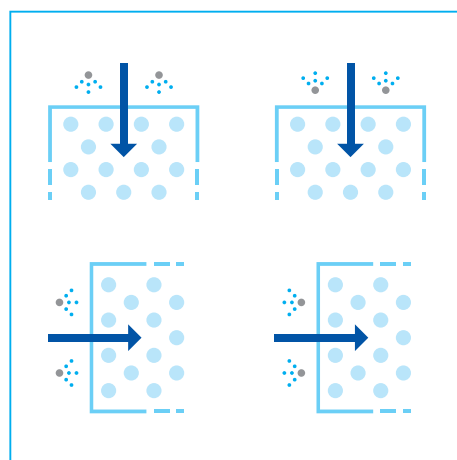
Many research programs are focused on the reduction of the primary electrical energy used for Data Centre cooling, for example, research into indirect and adiabatic evaporative cooling which is the most promising cooling technology. In fact, nowadays, the indoor data center temperature has increased, in which also increases the free cooling working hours.

**B-Blue** is the heart of this system, the air-to-air plate heat exchanger designed for indirect and adiabatic evaporative cooling application in the Data Centre environment.



In this application the system is arranged in recirculation mode: the primary air is extracted from the data center, cooled down through the plate heat exchanger in adiabatic mode and finally it is supplied back to the facility.

In the adiabatic cooling approach, the outside air could be cooled down, when needed, through the traditional wet pad installed upstream of the recuperator or spraying water directly to the surface of the heat exchanger with different configurations.



Technical characteristics:
Crossflow, wide range of sizes
More than 70.000 m <sup>3</sup> /h (41000 CFM)
More than 73% efficiency
Low pressure drop
With or without by-pass and damper
Minimal mantainance

Main Options:
AC › Coated Aluminium
TV › Coated Casing
SC › Super Tightness

Warranty  
5 Years

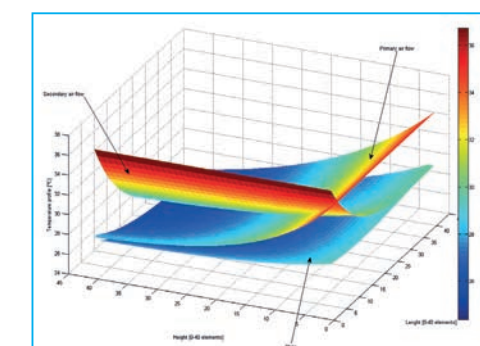
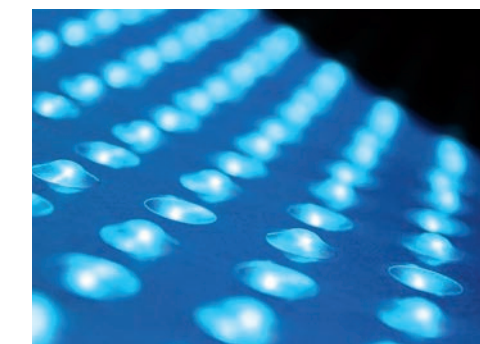
The tightness of **B-Blue** by Recuperator is very high, thus avoiding the contamination of the primary air. This special plate heat exchanger is strongly recommended as opposed to other heat recovery components that cannot guarantee the low leakage level needed.

**B-Blue** is manufactured from aluminum which gives several advantages: A) it can resist ice formation due to its elastic properties, B) it is antibacterial and antifungal, C) it can be washed with high water pressure without damage and high reliability over time.

Water	Cost	Maintenance	Heat exchanger
Mains	Cheapest	It is better to use bigger nozzle and to check and clean very often the rack.	Aluminum plate could be used. Side plate with epoxy protection.
Softened	Average price	With softened water some dust can settle on the plate. Maintenance should be made often.	Protection on the aluminum plate it is needed as epoxy protection on the side plate.
Deionized	Higher price. Could be 5 times higher than the mains water	Lowest maintenance	Deionized water is acid. Aluminum protection it is needed to avoid the fretting.

In the adiabatic process different water types can be used: natural mains water, softened or demineralized.

Thanks to its special **B-Blue** coating, it can resist most aggressive water for years. This unique coating has the function to protect while also increasing the system performance.



**B-Blue** has all the features needed for data center application. The special fin has been developed to increase the distribution of the water on its surface during the adiabatic process.

The distribution and the shape of the turbulent geometry allow the water to be distributed over the entire plate. The blue color of the recuperator is due to the color of the special coating that has the ability to enhance the wettability of the plate. It has been tested and developed in the university laboratories to increase the water film formation and to enhance the retention of the water on the surface, which gives added advantages: the gain in the cooling capacity and the reduction in water consumption.

