Evaporator and Condenser Pressure Drops

To determinate the evaporator or condenser pressure drop for different versions or at different working conditions, please refer to the following formula:

$$PD_2\ (kPa) = PD_1\ (kPa) \times \left(\frac{Q_2\ (l/s)}{Q_1\ (l/s)} \right)^{1.8}$$

where:

PD_2 Pressure drop to be determinate (kPa)
PD_1 Pressure drop at nominal condition (kPa)
Q_2 water flow at new working condition (l/s)
Q_1 water flow at nominal condition (l/s)

How to use the formula: Example (evaporator)

The unit EWWQ380B-SS has been selected for working at the following conditions:
- evaporator water in/out: 11/6°C
- condenser water in/out: 30/35°C
The cooling capacity at these working conditions is: 369 kW
The evaporator water flow at these working conditions is: 17.6 l/s

The unit EWWQ380B-SS at nominal working conditions has the following data:
- evaporator water in/out: 12/7°C
- condenser water in/out: 30/35°C
The cooling capacity at these working conditions is: 380 kW
The evaporator water flow at these working conditions is: 18.2 l/s
The evaporator pressure drop at these working conditions is: 47 kPa

The pressure drop at the selected working condition will be:

$$PD_2\ (kPa) = \mathbf{47}\ (kPa) \times \left(\frac{\mathbf{17.6}\ (l/s)}{\mathbf{18.2}\ (l/s)} \right)^{1.8}$$

$$PD_2\ (kPa) = \mathbf{44}\ (kPa)$$

NOTE - Important

If the calculated evaporator water pressure drop is below 10 kPa or above 100 kPa please contact the factory for dedicated evaporator.