

The Standard for condensation-insulated drip trays



The condensation-insulated tray of the process unit cooler GBK

The series of Güntner GBK process unit coolers is available with the condensation-free drip tray in all the standard versions. The advantage is that the tray prevents undesirable formation of droplets without extra insulation. A useful side effect of the design is the greater ease of cleaning the drip tray.

Every refrigeration expert knows the problem. With rising air temperature, the absolute air humidity also rises. If the evaporation temperature is above or just below 0 °C, no ice forms on the fins, but condensation runs off through the drip tray and its outlet. High absolute and relative humidities, however, lead to condensation forming on components that are only slightly cooler than the surrounding air. This unpleasant phenomenon can normally be observed at the drip trays of the air coolers: At the moment when the condensation drips from the fins, it has almost the same surface temperature as the fins, and is thus significantly colder than the surrounding air. The cold condensa-

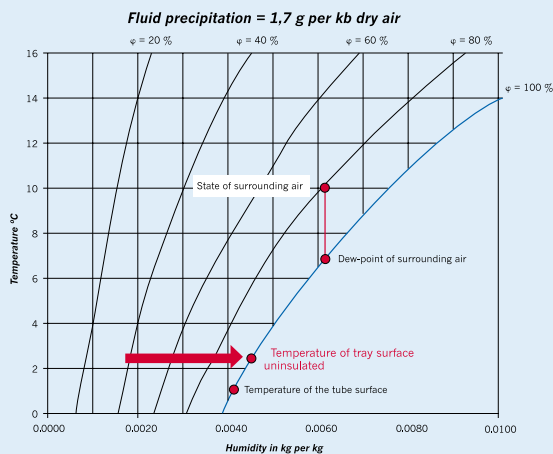
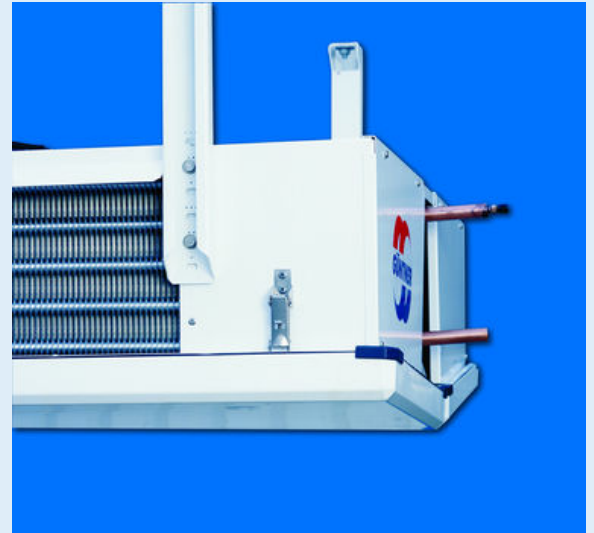
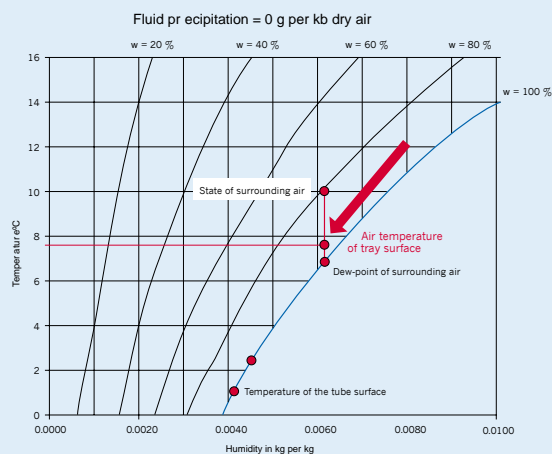
tion drips into the tray and cools it down, so that the dew-point of the air is higher than the outside of the tray. The result is that droplets form on the outside of the drip tray, too.

Cost-effective functional principle

To avoid the formation and collection of condensed water, double-insulated drip trays are often installed, with the outside of the tray separated from the cold inside by some 20 millimeters of insulation. However, these trays are comparatively elaborate to produce, and therefore expensive. They were actually originally intended for quite a different purpose – to reduce the radiation of warmth during defrosting at extremely low temperatures.

The condensation-free drip trays from Güntner are designed so that condensation droplets do not form even without insulation. The principle is that the outer metal sheeting of the tray takes on the temperature of the surrounding air, so that it is hardly possible for it to drop below the dew-point. Only interventions like the opening of the refrigeration-chamber door can

lead to localised collection of condensed water – which will also occur on the walls and ceiling of the refrigeration room. In the series of GBK process unit cooler, Güntner uses the condensation-free drip tray in all standard units.



Comparison of condensation in an h,x diagram

Less cleaning effort

In developing the tray design with its slanted outlet, the Güntner developers took care to make cleaning the tray quick and easy. The consistent avoidance of 90-degree bends prevents dirt from collecting in the corners in the first place. The double 45-degree bends at the edges and the corresponding corners are easy to clean.