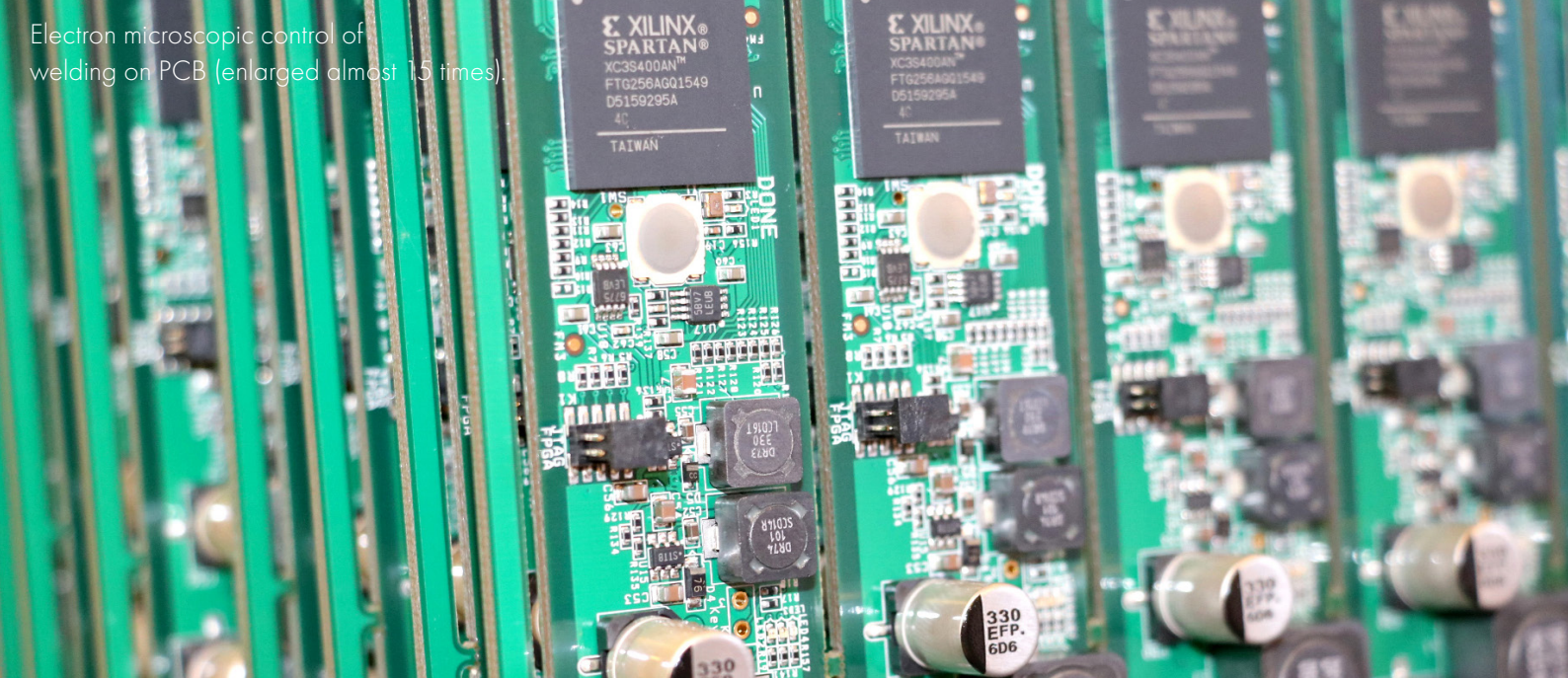




Fully controlled dry store for sensitive electronics

HP Elektronikmontage, Denmark



Located in Ballerup, Denmark, HP Elektronikmontage ApS Ballerup is a Danish electronics industry (EMS - Electronics Manufacturing Services) supplier. It specializes in the procurement and production of prototypes, and special productions of small to medium batches. HP Elektronikmontage ApS provide all kinds of Surface Mount Device (SMD) assembly for advanced box build tasks, from microelectronics to large medical process cabinets.

The company is responsible for proper storage and control of Electro Static Discharge (ESD), moisture sensitive components, and components with a limited shelf life. Production of PCBs often includes handling of Moisture Sensitivity Level (MSL) Class 3-6 components, which only tolerate ambient air natural moisture levels for a very limited time.

The components need to be vacuum sealed or stored in a dry cabinet to ensure proper functionality, even after they have been stored for a long time. They also maintain IPC and J001 certification, which is an important competitive parameter.

A conventional electric dry cabinet was used to protect the PCBs from exposure to excess humidity prior to the fully automated soldering process. Moisture removal is needed to prevent the circuit board from unnecessary expansion when material is subjected to the soldering process 260°C temperature.

Case study

Fully controlled climate conditions for storage of humidity sensitive electronics.

Advantages:

- Fully controlled and stable humidity of 5% RH
- Safe storage of MSL class 3-6 components prevents damage
- Great flexibility to adapt to customer needs
- Increased capacity compared to electrical dry cabinet
- Simple construction of dry store with small lock ensured minimal disruption during installation



Munters had the solution

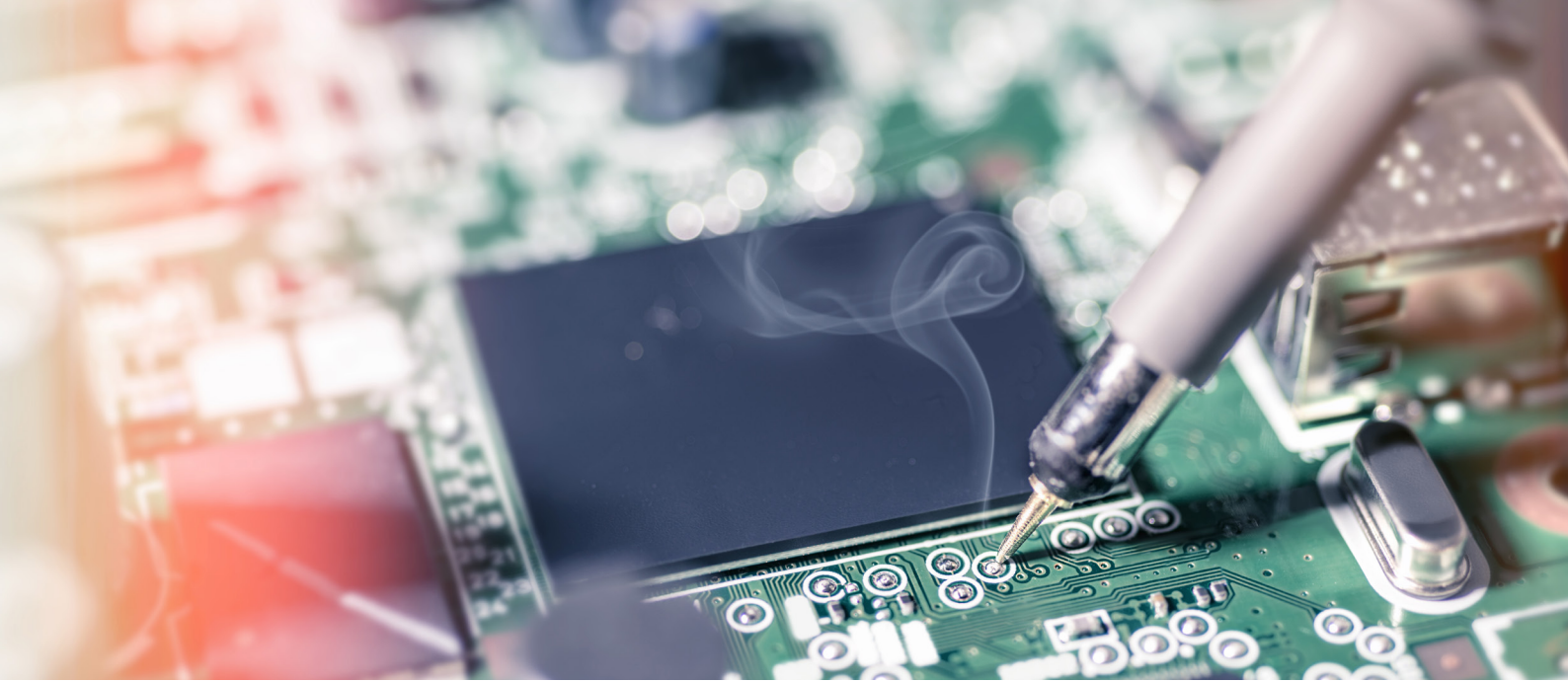
General Manager Michael Ravn explained that HP Elektronikmontage ApS needed additional drying capacity. However, adding yet another electrical drying cabinet didn't offer them the flexibility they needed.

Michael Ravn contacted Munters since he had worked with them in the past and was familiar with Munters' dehumidification solutions for electronics industry applications.

Based on HP Elektronikmontage ApS's requirements, Munters recommended a ML180 desiccant dehumidifier with a specially-designed rotor system to deliver constant 5% relative humidity in a dedicated 12m³ dry storage room.

The dehumidifier operates with a 180 m³/h rated air flow, and is now placed in an adjacent room, with the dry air delivered via a duct system to the dry store, where the sensitive electronics are stored on shelves.

The wet exhaust air from the dehumidifier is led outside, and the reactivation process air is taken from the room where the ML180 is located. The dehumidifier is controlled using a built-in, electronic high-precision humidistat, which measures both relative humidity (% RH) and temperature.



Great satisfaction and better overview

The new dry store is operating to Michael Ravn's satisfaction: "This new dry store has provided us with a much better overview of our stored products, and component handling has become so much easier when compared to using the dry cabinet. Additionally, component vacuum sealing has been made redundant. The investment has been roughly identical to purchasing a dry cabinet, but in return we have achieved ten times more capacity. Humidity conditions in the dry store are completely stable and fully controlled. Our own data loggers prove that even after a period of service and cleaning with an open door, the relative humidity is reduced from 30% RH to 5% RH in just 20 minutes. We are very impressed with the Munters solution! "

Prepared for future extensions

The new installation has been designed to provide sufficient capacity to handle a possible future extension of the dry store by up to 3-4 times its current size, meaning greater flexibility for the customer.

- The space has been designed as a room within a room, with plaster walls and wet room paint. This design is much more simple and cost less when compared to traditional solutions that use doors and profiles made for cold stores.
- The dehumidification solution combined with the high density of the room means that the dehumidifier is only in operation for very short periods of the day, keeping running costs at a very low.

Would you like to find out if Munters has a solution for your company too? If so, please visit our website, www.munters.com

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