

Low dewpoint dry room enables increased battery research capability

Sharp Laboratories of Europe carries out research into new ideas for Sharp's innovative technologies including mobile phones, laptops, televisions and battery solutions.

Part of this research includes developing next generation battery technologies using new materials.

In the past, Sharp Laboratories of Europe used gloves box isolators to create the climate conditions needed to work with batteries.

Some components of the batteries can be moisture senstive, working in a dry environment removes the variation in results caused by humidity in the atmosphere. "Working with battery cells of this nature is very delicate work" explains Katherine Smith, Research Supervisor at Sharp Laboratories of Europe.

When looking to scale up their research capability, Sharp Laboratories of Europe were referred to Munters by a colleague who had experience of working with the





company in the past. After visiting site and reviewing customer needs, Munters recommended a turnkey solution for the supply and installation of a dry room with temperature and humidity control.

This solution has enabled the increase in capacity with fewer limitations. Sharp's personnel also visited University of Warwick to see a proven Munters turnkey dry room solution in place.

Munters expert Project Team managed the project including the strip out and preparation of the old laboratory, the build of the dry room, installation of ductwork, and installation and commissioning of the system. The temperature within the dry



room is controlled using DX technology and the humidity is controlled using a Munters ML1350 dehumidifier.

The ML1350 is a desiccant dehumidifier that efficiently dehumidifies in low moisture applications. It is fitted with built in energy purge and low dewpoint discs complete with an integral thyristor controlled humidity controller.

This temperature and humidity control system has been designed to operate below -20°C dpt at temperature at 21°C. However, since installation, conditions of -30°C dp have consistently been achieved, much to the delight of the Sharp's team.

How it works

At the heart of the Munters dehumidifier is the desiccant wheel. The desiccant wheel rotates slowly between two air streams, allowing water vapour to be removed as it passes through the desiccant wheel. This dehumidified air is then delivered to the dry room.

The Energy Recovery Purge (ERP) system acts as an energy recovery system, collecting waste heat off the hottest section of the desiccant wheel. This reduces the energy used for the most energy efficient temperature and humidity control.

Inside the dry room a large visual display clearly shows dewpoint conditions and is visible from both inside and outside the room. The dry room has been built to accommodate two occupants.

Munters ran the project as a turnkey solution, offering support throughout the project. This not only gave the customer peace of mind but also allowed Munters Engineers to deliver the project on time, ensuring customer needs were met.

"Overall experience of working with Munters has been very positive. The project was completed on time, support throughout has been excellent and the system has run problem free since the day it was installed" says Katherine.

For more information on this and Munters' other applications visit:

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