

Press Release

ESPEC Launches New Rapid Thermal Cycle Chamber with 20K/min Ramp Rate

Available in the UK via Unitemp



ESPEC has launched a new thermal cycle chamber capable of delivering a controlled specimen temperature ramp rate of 20K/min, developed to meet the increasing demands of international standards for semiconductor and electronics reliability testing. The [TCC-151W-20](#), is available in the UK through exclusive distributor Unitemp.

As semiconductor devices continue to evolve to support applications such as generative AI, autonomous vehicles and high-density data centres, thermal stress testing under extreme conditions has become essential. The [TCC-151W-20](#) is specifically engineered to support these requirements, with a temperature range from -70°C to +180°C and precise specimen-based ramp control at both 15K/min and 20K/min. This allows compliance with key global testing protocols, including JEDEC JESD22-A104, IPC-9701, and the latest revision of IEC 60068-2-14 Nb, which now mandates faster, constant-rate thermal cycling for electronic and in-vehicle components.

The chamber incorporates a cascade refrigeration system that uses R-449A refrigerant, replacing the previously used R-404A. This change reduces the system's global warming potential (GWP) by 64 per cent, from 3920 to 1397, aligning with environmental regulations such as the UK's fluorocarbon management rules.

The internal test volume of the chamber is 160 litres, with internal dimensions measuring 800 mm wide by 500 mm high by 400 mm deep. The unit achieves the 20K/min ramp rate

using a 5 kg specimen (glass epoxy board) and a 4 kg jig, providing consistent and repeatable test conditions for high-reliability electronics.

The TCC-151W-20 offers manufacturers across sectors such as automotive, aerospace, and advanced computing a reliable solution for qualifying electronic components under aggressive thermal cycling conditions. Its introduction reflects the growing pressure on developers to meet ever-stricter qualification requirements while also reducing environmental impact.

In the UK, the TCC-151W-20 is available exclusively through Unitemp. For further details, technical specifications, or to arrange a consultation, contact Unitemp directly.

www.unitemp.co.uk

About ESPEC

ESPEC Corporation is a global leader in the design, manufacture, and support of environmental test chambers and advanced testing solutions. With a commitment to innovation and customer satisfaction, ESPEC delivers reliable and high-performance products for various industries worldwide.

About Unitemp

Unitemp is the exclusive UK distributor for ESPEC, offering a comprehensive range of environmental test chambers and solutions tailored to meet the diverse needs of its customers. With a focus on quality and customer service, Unitemp provides expert guidance and support throughout the testing process.

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