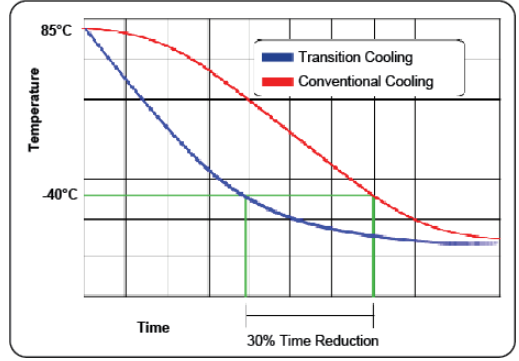


TRANSITION COOLING

Thermotron's line of SE-Series environmental test chambers can be equipped with an innovative and performance-enhancing feature called Transition Cooling. Transition Cooling boosts performance and reduces chamber energy consumption.

Single-stage refrigeration systems perform best in higher temperature ranges, while cascade refrigeration systems perform best in lower temperature ranges. Transition Cooling combines the benefits of both systems with a sophisticated control logic that enables the refrigeration system to switch from single-stage to cascade operation as temperatures fall.



This innovative feature increases ramp rates up to 30% while reducing power consumption, as shown in the graph above.

To illustrate the energy savings of Transition Cooling, Thermotron conducted several tests using SE-600 chambers to run thermal cycling tests from 85°C to -40°C in 75 minutes. Using the Transition Cooling feature, the high stage compressor was used to cool the chamber from 85°C to an optimal transition point, typically around 0°C.

At the optimal point, both compressors began working to efficiently take the chamber's temperature down to -40°C. A significant amount of energy was saved by utilizing only the high stage compressor for two-thirds of the cooling time. Below is a table with test data.

85°C to -40°C Thermal Cycling Test run at 1.67°C/minute for 75 minutes		
Model Type	Transition Cooling	Conventional Cooling
SE-600-6-6	14.9 kWh	20.6 kWh
SE-600-10-10	20.2 kWh	29.1 kWh

For more than 55 years, Thermotron has provided quality environmental test equipment. We've worked to establish a trusted reputation among our peers, and when people hear the name *Thermotron*, they have confidence in the testing of their own product. We've been building our name since 1962; now it's your turn.

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