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(54) **APPARATUSES, SYSTEMS AND METHODS FOR PROVIDING SCALABLE THERMAL CYCLERS AND ISOLATING THERMOELECTRIC DEVICES**

(57) In one aspect, a thermal cycler system including a sample block and a thermoelectric device is disclosed. In various embodiments, the sample block has a first surface configured to receive a plurality of reaction vessels and an opposing second surface. In various embodiments the thermoelectric device is operably coupled to the second surface of the sample block. In various embodiments a thermal control unit is provided. In various embodiments the thermal control unit includes a compu-

ter processing unit. In various embodiments the thermal control unit includes an electrical current source. In various embodiments the thermal control unit also includes an electrical interface portion configured to connect the thermoelectric device with the electrical current source by way of an electrical cable. In various embodiments the thermal control unit is oriented in a different plane than the sample block and thermoelectric cooler.

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