Table 3: Convection parameters used in the Monte Carlo simulations. The convection probability represents the likelihood of heat packet removal via air cooling per time step. Calibrated against industrial heat sink performance data to achieve realistic temperatures.

Parameter	Value	Units	Description
Convection probability (P_conv)	0.004	per time step	Packet removal probability
Time step (Δt)	0.002	s	Simulation time increment
Simulation time	2.0	s	Total simulation duration
Grid spacing (Δx)	0.002	m	Spatial discretization
Heat sink size	25×25	mm	Physical dimensions
Ambient temperature	21	°C	Reference temperature
Target cooling regime	Medium forced air	—	2-4 m/s airflow
Calibration target	45-60	°C	Copper heat sink under load