

AIR-SIDE HEAT LOAD

Air Emulator 60

GPU heat load air emulator, ACLB 60

A compact rack-level air heat load emulator, providing up to 60 kW of controlled resistive heat load in a server rack format. It runs alongside the LCLB 160 liquid cooled GPU emulator where both liquid and air heat loads need testing together, so commissioning teams can check room cooling, supply and return air temperatures, airflow behaviour and containment performance under controlled conditions.

60kW
Air heat load, 0 to 100% control

17,928
CMH maximum air flow

3 × 20kW
Step load increment

10-16°C
Design delta T

KEY FEATURES

- Up to 60 kW air heat load on 0 to 100% control
- Supply and return temperature measurement
- Controller networks up to 250 load banks
- Thyristor heater control
- Adjustable pressure drop to simulate GPU air resistance
- Full trending and recording of all results
- Robust steel enclosure, welded frame and heavy duty casters
- Runs in conjunction with the LCLB 160 liquid cooled units

APPLICATIONS

Initial commissioning
Simulate progressive load increases to verify cooling system performance and stability under controlled conditions.

Thermal testing
Run comprehensive heat load tests to find cooling system weaknesses before production deployment.

Performance validation
Verify cooling capacity meets design specification across load profiles and environmental conditions.

Ongoing certification
Maintain compliance with periodic testing and documentation of cooling system performance.

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TECHNICAL SPECIFICATION

Load bank capacity	60 kW
Step load increment	3 × 20 kW
Air inlet / outlet temperature	Min inlet 18 °C, max outlet 35 °C, designed to meet a 10 to 16 °C delta T
Max air capacity	60 kW
Air flow rate	Maximum 17,928 CMH for 60 kW
Power connection	UK / EU: 4 × 32A 3P+E
Dimensions (L × W × H)	1500 mm × 600 mm × 2325 mm
Airflow sensor	Air Flow Switch 604X
Temperature sensor	IFM
Control interface	RJ45 Ethernet over IP, web browser, network connection to each 60 kW load bank, simultaneous operation
Master / slave control	Master only in each 60 kW load bank; used with the LCLB 160 as master where required
Delta T range	10 to 16 °C

ELECTRICAL SPECIFICATION

Power supply	UK / EU: 400 VAC, 50 Hz, max 20 kW × 3
Supply current	UK / EU: 38.0 A per phase at 400 V × 3
Control signal	0 to 10 V load demand
Air flow protection	Air Flow Switch 604X, volt free contacts, 20 to 300 Pa
Overheat protection	OHC5, volt free contacts, max 16 A
Temperature sensor	Thermistor curve K, 4.7 kΩ at 25 °C
Switching device	SCR, for AC loads
EMC compliance	EN61326 / EN55011 / EN61000

MECHANICAL AND ENVIRONMENTAL

Cooling	Air heat load, forced airflow, maximum 17,928 CMH
Mounting	Server rack format, mobile on heavy duty casters
Housing material	Heavy gauge steel, charcoal powder coated finish
Dissipated heat	60 kW

PROTECTIONS

- Overcurrent: external fast-acting semiconductor fuse or MCB
- Overtemperature: 90 °C on heat sink
- Airflow: Air Flow Switch 604X, 20 to 300 Pa range

CONTROLS AND CONNECTIVITY

A user-friendly colour LCD controller with network connectivity and comprehensive monitoring, networking up to 250 load banks from a single interface.