

## GPU Heat Load Air Emulator 60

Air Heater Commissioning Load Bank Solution

Product Name: PowerLoad GPU Heat Load Air Emulator 60

Model Reference: ACLB 60



### OVERVIEW

The PowerLoad ACLB 60 is a compact rack level air heat load emulator for data centre commissioning and validation. It is designed for indoor use and provides up to 60 kW / 204,730 BTU/h of controlled resistive heat load to help simulate IT and GPU rack conditions before live equipment is installed.

The unit is used alongside the PowerLoad LCLB 160 liquid cooled GPU emulator where both liquid and air heat loads need to be tested together. It helps commissioning teams check room cooling performance, supply and return air temperatures, airflow behaviour, containment performance and overall site readiness under controlled conditions.

This datasheet sets out the key planning information for the ACLB 60, including load capacity, control interface, electrical requirements, airflow details, protections and physical dimensions.

### SYSTEM OVERVIEW AND SPECIFICATIONS

The PowerLoad Model ACLB 60 consists of up to 60 kW / 204,730 BTU/h resistive air heat load designed for indoor operation to simulate IT rack operation. The standard layout comprises a total of 60 kW of low delta T air heat load configured in a server rack format for maximum compatibility with existing data centre infrastructure. This unit works in conjunction with the PowerLoad Liquid Cooled GPU 160 kW units.

### KEY FEATURES

- Up to maximum 60 kW / 204,730 BTU/h air heat load on a 0 to 100% control.
- Adjustable pressure drop to simulate GPU air resistance.
- Supply and return temperature measurement.
- Full trending and recording of all results.
- Controller enables networking of up to 240 load banks.
- Robust steel enclosure with sturdy welded frame and heavy duty casters for durability.
- Thyristor heater control.

## ELECTRICAL SPECIFICATIONS

Parameter	Value / Range	Notes
Power Supply	UK / EU: 400 VAC, 50 Hz, max 20 kW x 3 USA: 480 VAC, 60 Hz, max 20 kW x 3	Input side. USA site supply to be confirmed.
Supply Current	UK / EU: 38.0 A per phase at 400 V x 3 USA: approx. 24.1 A per phase per 20 kW module at 480 V	USA value calculated at 480 V, 3 phase.
Control Signal	0 to 10 V	Load demand
Air Flow Protection	Air Flow Switch 604X	Volt free contacts, 20 to 300 Pa / 0.08 to 1.20 in. w.g.
Overheat Protection	OHC5	Volt free contacts, max 16 A
Temperature Sensor	Thermistor Curve K	4.7 k ohm at 25 °C / 77 °F
Switching Device	SCR	For AC loads
Leakage Current	≤ 10 mA, off state	Typical at 480 VAC
EMC Compliance	EN61326 / EN55011 / EN61000	EMC compliance
USA Electrical Version	480 VAC, 60 Hz, 3 phase. Connector format TBC.	Use UL listed components and final site connection type where required.

## MECHANICAL &amp; ENVIRONMENTAL

Parameter	Value
Cooling	Air heat load / forced airflow. Maximum air flow 17,928 CMH / 10,552 CFM.
Mounting	Server rack format, mobile on heavy duty casters.
Housing Material	Heavy gauge steel with charcoal powder coated finish.
Dissipated Heat	60 kW / 204,730 BTU/h

## TECHNICAL SPECIFICATIONS

Parameter	Value
Load Bank Capacity (kW / BTU/h)	60 kW / 204,730 BTU/h
Step Load Increment (kW)	3 x 20 kW
Air Inlet / Outlet Temperature (°C / °F)	Min inlet 18 °C / 64 °F. Maximum outlet 35 °C / 95 °F. Designed to meet 10 to 16 °C / 18 to 29 °F delta T.
Max Air Capacity (kW / BTU/h)	60 kW / 204,730 BTU/h
Air Flow Rate (CMH / CFM)	Maximum air flow 17,928 CMH / 10,552 CFM for 60 kW.
Allowable Pressure Drop	20 to 300 Pa / 0.08 to 1.20 in. w.g. via air flow switch protection.
Power Connection Type (Socket/Amps rating)	UK / EU: 4 x 32 A 3P+E. USA: 480 VAC, 60 Hz, 3P+G connector type TBC.
Dimensions of Load Bank (L x W x H)	1500 mm x 600 mm x 2325 mm / 59.1 in x 23.6 in x 91.5 in
Airflow Sensor Make / Model	Air Flow Switch 604X
Temperature Sensor Make / Model	IFM
Control Interface (Modbus/BACnet)	RJ45 Ethernet over IP web browser network connection to each 60 kW load bank, simultaneous operation.
Master / Slave Control Logic	Master only in each 60 kW load bank. Used in conjunction with the LCLB 160 as master where required.
Delta T Range	10 to 16 °C / 18 to 29 °F

## PROTECTIONS

- Overcurrent protection: external fast acting semiconductor fuse or MCB.
- Overtemperature protection: 90 °C / 194 °F on heat sink.
- Airflow protection: Air Flow Switch 604X with 20 to 300 Pa / 0.08 to 1.20 in. w.g. range.

## CONTROLS AND CONNECTIVITY

- Control System Interface: user friendly LCD colour controller with network connectivity and comprehensive monitoring capabilities.
- This unit is to be used in conjunction with the LCLB 160 as a master where required. The control system supports TCP/IP Modbus communication, utilising an Ethernet based wiring infrastructure for seamless connectivity with building management systems.
- The master control panel features power on/off functions, master load on/off management, and alarm indicators for low flow, overtemperature and overpressure conditions. An internal/external control power switch is provided, along with notification for remote mode and dual Ethernet connections. The integrated power meter displays AC 3 phase voltage and current, power (kW), frequency and power factor.

## ELECTRICAL INTEGRATION

- The unit is designed for UK / EU 400 VAC, 50 Hz operation and a USA version based on 480 VAC, 60 Hz operation. Final connector type, cable arrangement and site plug format are to be confirmed against project requirements.
- The power distribution system is designed to comply with relevant EU, UK and USA electrical codes and standards where applicable, including CE and UL requirements. All connections are clearly labelled and secured to prevent accidental disconnection during operation.

## AIRFLOW ARRANGEMENT

- Airflow Configuration: up to 17,928 CMH / 10,552 CFM maximum air flow for 60 kW operation.

The ACLB 60 provides a controlled air heat load to support data centre commissioning, room cooling checks and airflow validation. The unit is designed to help test supply and return air temperatures, low delta T air performance and containment behaviour before live IT equipment is installed.

## CONSTRUCTION AND FINISH

The PowerLoad ACLB 60 is constructed using heavy gauge steel with a charcoal colour powder coated finish. It is engineered for continuous indoor operation in data centre environments. The sturdy welded frame and heavy duty casters provide easy mobility without compromising durability or operational life. The high quality powder coated finish with stainless steel impact protection frame provides functional protection in industrial settings.



### Initial Commissioning

Easily simulate progressive load increases to verify cooling system performance and stability under controlled conditions.



### Thermal testing

Conduct comprehensive heat load tests to identify potential cooling system weaknesses before production deployment.



### Performance Validation

Verify cooling capacity meets design specifications across various load profiles and environmental conditions.



### Ongoing Certification

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

**A+RENT**

[a-rent.com](http://a-rent.com)

630.748.8900

[sales@a-rent.com](mailto:sales@a-rent.com)