



The Avtron Model 3220 are resistive, AC load banks designed for static or moveable, outdoor installation when up to 2150 kW of electrical load is required.

### LOAD BANK RATINGS

Standard capacity rating up to:

- 2150 kW

Standard load step resolution:

- 1 kW

Standard voltage ratings:

Voltage*	Hz	Max. Capacity
400	50	2150 kW
480	60	2150kW

\*NOTE: Other voltages are available. Please contact sales for further information.

### Airflow and Noise Level

Forced-air cooling is by two axial metal-bladed aerofoil fans, giving vertical discharge. Fan motor is rated at 50Hz (DOL), 2x 4.5kW at 3 phase and airflow is 15 m<sup>3</sup>/s (31,783 CFM).

Typical noise level is 76dBA at 50Hz. Measurements are taken 3 metres from the load bank and at 90° to the airflow direction. Noise readings are subject to a tolerance of ±3dBA.

### Load Control

The load contactors are actuated by the specified load control system. Options range from simple switches to the comprehensive SIGMA system. Please see separate data sheet and system layout diagram for further details.

### Construction

The frame of the load bank is constructed from 2mm 'Zintec' steel, folded and welded to form a monocoque construction.

Double skinned recessed doors allow easy access to the separate enclosures for control, switch gear and power connections.

The double skinned, vertical discharge duct with aluminised steel heat shield contains the resistive load elements and the two cooling fans below.

Stainless steel mesh screens on the main air galvanised grille or fans outlet provide protection against access to hazardous parts to IP1X.

All electrical enclosures are to IP54.

The whole assembly is mounted within a crash frame constructed from 3mm thick box section and formed sheet steel to provide an exceptionally solid and robust assembly.

The frame contains four lifting points and corner tie bars to connect the frame to the fork base. The overall effect provides a mini crash frame. The base has fixing points for permanent installation.

### Finish

High quality two-pack industrial acrylic paint system applied to an electro-plated zinc base and low-bake finish. Standard colour is grey (RAL7042). Other colours are available on request. Stainless steel construction is also available as an option.

### Warranty

The equipment is covered by a 12-month warranty as detailed in our Conditions of Trade.

# Model 3220 Specifications

## Resistor Elements

The 3220 load banks use replaceable, non-finned sheathed elements. The outer sheath is made from stainless steel to give good corrosion resistance. The heating element is an 80/20 nickel-chrome wire embedded in compacted magnesium oxide powder, giving good thermal and insulation properties.

The elements are very conservatively rated and there is no need for cooling fins to dissipate the heat into the airflow. This ensures that foreign matter or a loosely fitting fin cannot possibly cause hot spots and therefore ensures high reliability.

The elements are designed to operate continuously at up to 800°C (red/orange). The actual temperature is below 500°C (dull red). This gives a wide margin of safety and very long life.

Load tolerance is within 2½ % of total capacity.

Elements are continuously rated at the specific voltage. Short-term tests with fluctuations up to 10% above rated voltage are permissible. Tests at lower voltages, with a corresponding reduction in overall rating, may be carried out. Power is proportional to voltage squared.

## Safety Features

An emergency stop/disconnect switch gives full isolation of the fan and control supply.

A 110 Volt AC control circuit transformer provides isolation and operator safety.

Stop/start buttons ensure the load bank will not automatically restart. On static load banks provision is also made for the connection of remote stop/start buttons.

The fan motor is fully protected with fuses and a thermal overload.

Movable load banks are also fitted with phase rotation detection to automatically ensure correct airflow direction. Single phasing protection is provided by the overload.

Thermal detectors are fitted to protect against overheating in the resistive duct and switchgear enclosure.

Over voltage protection for the control and load circuit is provided by SIGMA load control if specified.

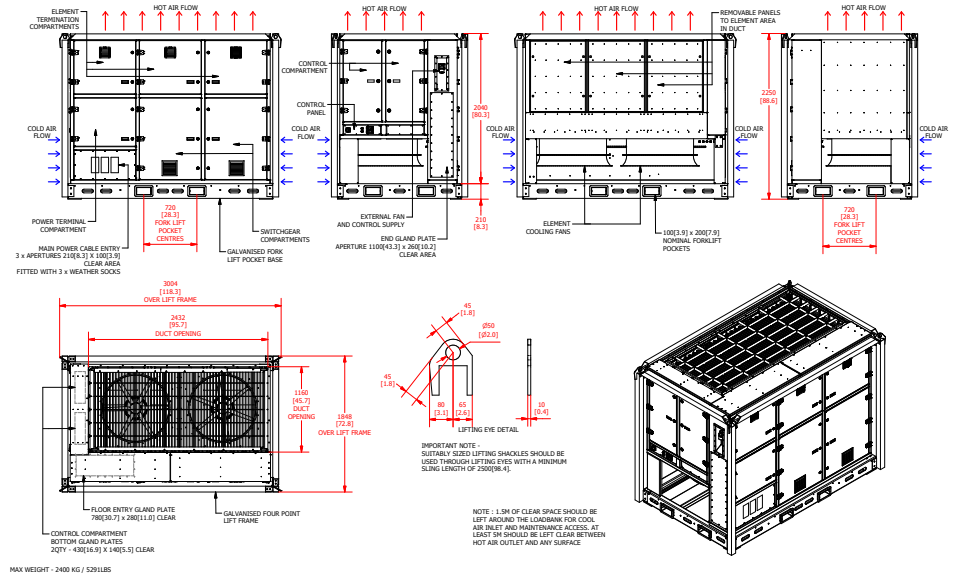
Each element group and its associated contactor are protected by an HRC fuse. This is very important when testing large capacity power supplies, due to the possible high fault currents.

The load contactors are interlocked with the fan controls to ensure load can be applied only when the fan is running.

Internal access is restricted by key operated door catches. Polycarbonate screens behind the doors prevent accidental contact with live parts.

## Ambient Temperature and Humidity

Standard load banks are rated at 35°C, when protected from solar radiation. Load banks



MAX WEIGHT - 2400 KG / 5291LBS

IMPORTANT NOTE: SUITABLY SIZED LIFTING SHACKLES SHOULD BE USED THROUGH LIFTING EYES WITH A MINIMUM SLING LENGTH OF 3200(8.4).

NOTE: 1.0M OF CLEAR SPACE SHOULD BE LEFT AROUND THE LOADBANK FOR COOL AIR INLET AND MAINTENANCE ACCESS. AT LEAST 0.5M SHOULD BE LEFT CLEAR BETWEEN HOT AIR OUTLET AND ANY SURFACE.

All dimensions are in millimeters. Specifications subject to change without notice.

rated at 50°C are also available. Average air temperature rise is 113°C.

Ambient humidity may be up to 90% RH, non-condensing.

## Mounting

The load bank is mounted on a hot-dip galvanised forklift pocket base.

## Power Terminals & Cable Entry

Power terminals are located behind a dedicated door. A neutral terminal is fitted for instrumentation purposes only.

Static load banks have three removable, blank non-ferrous gland plates, with the following clear opening dimensions.

Front 780 x 350mm, Bottom 750 x 250mm and End 1100 x 260mm.

Moveable load banks have a cable sock fitted to the front gland plate.

## Auxiliary Supply

The fan and control circuit may be powered from an external auxiliary supply or from the supply on test, provided it is of the correct voltage and frequency. Lower voltages and other frequencies must be tested using the external supply.

On static load banks, connection is by internal terminals.

On movable load banks, an IEC 60309-2 plug and socket with a three-position switch enables quick and easy connection.

## Optional Accessories

- Anti-Condensation Heater
- Dual 50/60Hz Fan & Control Circuit
- Special Paint Finish
- Power Isolation\*

Please see system layout diagram for further details.

## Documentation – Operator Handbook

A comprehensive illustrated operator’s manual is supplied. Sections cover safety, installation, commissioning, operation, calibration, maintenance and fault finding.

## Testing and Standards

Functional operation and load tests are completed on all load banks, before despatch, in line with our ISO 9001:2008 procedures.

Avtron load banks comply with international standards and are CE marked to confirm compliance with both the EMC and Low Voltage Directives.

## Weight and Dimensions

Measurements: mm/in. and kg/lbs.

Model	3220
Length	2958/116.45
Width across airflow	1868/73.54
Height on forklift base	2250/88.58
Approximate weight	2390/5269

## Additional Information

An extensive range of resistive, inductive, capacitive or combined load banks of varying capacities are also available. For further information on this model or any other 3000 SERIES load bank, please contact a member of our sales team.

\* Power air circuit breakers complying to IEC standard allow the load bank to be fully isolated from the supply on test. The circuit breakers provide short circuit, overload and earth fault protection. A shunt trip facility is also fitted to allow tripping from a remote location. Dual UL/IEC stand-ard circuit breakers are also available.