



## FORM VERY LARGE MEDIUM VOLTAGE SYSTEMS WITH SINGLE-POINT CONTROL

Form systems from 2.5MW to 50.0MW, 0.8 power factor (3.125MVA – 62.5MVA); 1-20 trailers.

Integrated trailer design Rental Load Bank System consisting of:

- Simplex Load Cube 0.8PF Load Bank
- Multi-voltage oil filled rental duty transformer
- Power cables as required
- Network control cables as required
- Heavy duty semi-trailer

Each trailer rated:

- 3.125 MVA, 0.8 power factor
- 2.5MW, resistive load
- 1.875MVAR inductive load
- 5.0KW, 3.75KVAR load step resolution

Re-connectable primary voltages:

- kV: 2.4, 4.16, 6.9, 7.2, 7.6, 8.0, 8.3, 12.0, 12.47, 13.2, 13.8, 14.4

Networked Ethernet control of multiple modules to a single operator interface.

Rental options:

- 15kV power cable
- 15kV main breakers/disconnects
- Cat-5 or fiber-optic communications cable
- Ethernet network switches
- Testing automation software
- Data acquisition and recording

Technical services available:

- Setup assistance
- Start-up service
- Operator oversight
- 24/7 service availability
- Site planning



Actual confined space intallation. See page 4.

## LOAD CUBE R

### 2500KW Load Bank System

### Variable Power Factor

#### Overview

- Rental Duty Portable Load Bank
- 3125kva, 0.8 Power Factor
- 2500kw Resistive
- 1875kvar Inductive
- Adjustable Power Factor
- Configurable for 480v, 600v, 690v
- Digital Load Control
- Capable of Parallel Operation and Control to Form Large Systems

#### Description

The Simplex Load Cube is an ultra-large capacity, fully portable, resistive/reactive Load Bank System intended for field use in testing, maintenance and performance proving of large generating systems. The Load Cube is rated 2500kw, 1875kvar and is configurable at the Rental Center for operation at 480v, 600v, or 690v. The Load Cube is typically used to test large diesel generators, turbines, paralleled generators and shipboard generators.

With a purpose-built design consisting of rugged, all-welded, tubular steel frame, heavy gauge steel sides, guarded hinged doors, power-operated ventilation louvers, the Load Cube is far superior to designs which use refurbished and modified ISO shipping containers. Four-sided access allows ready service of all components and facilitates the ultra-compact design.

Compact and easily transportable, the Load Cube is ideal for rental use. With a footprint of only 8 x 10 feet and a height of less than 9 feet, the Load Cube is easily transportable by drop-deck flat bed trailer. Lifting eyes and forklift channels simplify site movement.

The Load Cube utilizes digital load control for direct access of load values, block transitions, and user programmable automation. A selection of digital power meters and data acquisition software is available.




The Simplex Load Cube represents the ultimate technology in large generator load testing performance.

<b>CAPACITY:</b>	3125 kva, 0.8 power factor; 2500kw, resistive; 1875 kvar, inductive
<b>VOLTAGE:</b>	Rental Center Configurable: 480v, 600v, 690v, 3-phase, 60 Hertz
<b>FREQUENCY:</b>	60 Hertz, 50 Hertz at reduced voltage
<b>LOAD STEPS:</b>	Digital load control, 10 kw, 7.5 kvar resolution. Circuits of 10–20–20–50–100–100–200–250–250–500–1000 kw 7.5–15–15–37.5–75–75–150–187.5–187.5–375–750 kvar
<b>DUTY CYCLE:</b>	Continuous
<b>AMBIENT TEMP.:</b>	125°F
<b>EXHAUST RISE:</b>	220°F
<b>AIRFLOW:</b>	Approx 60,000 cfm divided between two cooling fans
<b>CONTROL POWER:</b>	Internal, derived from power source under load. Rental Center Configurable: 480v, 600v, 690v, 3-phase, 60 Hertz. Control circuits at 120v via internal isolation transformer. Fan motor load: 2 x 10hp, 13A. Control power load: 3.0 kva, 6.25A.

**PORTABLE  
MULTI-VOLTAGE  
3500 KVA  
TRANSFORMER**  
Substation Type  
Transformer  
3500 kVA,  
Tapped Primary:  
Tapped Secondary

- kVA: 3500, 65°C Rise, 5.75% impedance, 85°C
- Insulating Liquid: Mineral Oil, "Non-PCB.", 780 GAL
- Three Phase, Class-Onan, 60Hertz
- BIL - H.V./L.V 95kV / 30kV
- Conductor MAT: H.V./L.V - AL/AL
- Primary Voltages: 2400v, 4160v, 6928v, 7200v, 7620v, 7970v, 8320v, 12,000v, 12,470v, 13,200v, 13,800v, 14,400v
- Secondary Voltages: 600Y/346v, 480Y/277v

High Voltage →  ← 480Y/277 x 600Y/346



3500 kVA substation transformer
4 each high voltage bushings in full length enclosure with 4-hole spades
7 each low voltage bushings in full length enclosure with 6-hole spades
Aluminum windings
Mineral oil filled
Pressure relief valve
Filler plug with Schrader valve
Oil level gauge, temperature gauge with dual contacts and pressure vacuum gauge
1" drain valve with sampler
Externally operated no load tap changer
Externally operated no load dual voltage switch
Externally operated no load delta-wye switch
Forklift pockets
Gas sample valve
NEMA 4 control box
2" drain valve with oil sampler
3" square tubing protective cage
Diagrammatic corrosion resistant nameplate
Furnished with Standard ANSI accessories



**Actual Layout of Recent Project at Large Medical Center**

Six (6) trailers, 15.0MW, 0.8 P.F., 13.8KV

Load Banks positioned in confined space. Pairs of Load Banks jumped together then connected to circuit breakers in switchgear. All six (6) trailers networked together to a single operator interface touchscreen. Simplex provided services: setup assistance, start-up and operator oversight.

