**Radiator Duct Mounted Load Bank With Automatic Load Leveling Control Specification**

**2.13 Load Bank**

A. Provide a UL Listed, “In-Line” Radiator/Duct Mounted Resistive Load Bank. The load bank shall be suitable for installation in the following ambient conditions:

Seismic Rating: Zone 4

Ambient Temperature: -20⁰F to +120⁰F

Altitude: 5,000 feet above sea level

B. The Load Bank will be sized at 50% maximum of the GenSet KW rating.

C. The load bank will be rated for a continuous duty cycle at \_\_\_\_\_ KW at \_\_\_\_ Volts AC, 3-phase, 60 Hertz. The Load Step Resolution shall be approximately 20 percent of the total load bank capacity.

D. The load bank is to be mounted “In-Line” with the Engine radiator Cooling Fan. The Engine fan delivers the required airflow volume (CFM) for cooling the resistor load elements.

E. The load bank enclosure is an open resistor frame of galvanized steel construction. The steel frame provides a 2 ½” mounting flange for direct mounting/coupling to the engine radiator or exhaust duct.

F. All power connections including main-input load bus and customer interface connections are made within the enclosed relay/connection compartment. Bottom access through a removable gland plate provides a “safe and sealed” ease of installation of all conduit entry cable. Load connections are made directly to the main input load bus bars. A standard NEMA 4-hole pattern shall be provided for customer load cables connections. All copper bus bars are plated for superior oxidation resistance. Relay/connection compartment is heated and thermostatically controlled to limit any harmful effects of condensation.

G. The load bank control circuits will be operated at 120 VAC AC, 1-phase. The control power will be derived from a control transformer. The Control Transformer will be primary and secondary fuse protected.

H. Resistor load element provide the necessary KW load rating for each load step. Resistors are fully supported across their entire length within the air stream by stainless steel support rods which are insulated with heavy-duty, high temperature ceramic insulators. The change in resistance is minimized by maintaining conservative resistor designs.

I. Branch circuit fuse protection provides short-circuit protection of all load steps. Fuses are fast-acting, current-limiting type with an interrupting rating of 200K A.I.C.

J. The load bank will include safety circuits which will disable the load bank if an over-temperature condition occurs. Load cannot be reapplied until the fault condition is corrected.

K. Load Bank Control Panel will be installed locally on the load bank. The control panel will include; Main Power On/Off switch, Master Load On/Off switch, and Individual Load Step switches KW On/Off). Illuminated indicators provide Power On, Blower On, Over-Temperature and Load Dump. An Emergency-Stop (E-STOP) push button is provided to disable control power voltage to all operator control circuits and load application circuits.

L. Automatic Load Leveling Control will add/subtract load bank load in response to dynamic power fluctuations of the connected building load. It utilizes the load bank as a supplemental load for maintaining a minimum load on the power source. A customer supplied “transfer of control” contact closure initiates the load bank and time delay load application circuit. A separately supplied current transformer provides the necessary feedback signal for sensing the building load.

M. Automatic Load Dump circuit provides user interface provisions to the generator controls, automatic transfer switch or building management system, to disconnect and disable all load steps from a normally closed (NC) set of auxiliary contacts. In the event of an actual power failure, all load bank load is removed from the source under test.

N. Remote Indication and Alarm contact closure [form-c-type, normally open and normally closed] provides user interface to building management system for indication, detection and alarm of Over-Temperature and Load Dump.

O. The load bank will be manufactured by Load Banks Direct or approved equal.