AES Group, Inc.

Sales ▪ Construction ▪ Service

SPECIFICATION

BASE MODEL NUMBER:	LCD0603-AES-SPL
SYSTEM CAPACITY:	76 SCFM @ 19”HGVAC
*38 SCFM @ 19”HGVAC Each Vacuum Pump	
HORSEPOWER:	10 HP Total (5 HP x 2)
RECEIVER SIZE/CONFIGURATION:	80 Gal - Horizontal
ELECTRICAL:	208/230/460V, 3PH, 60Hz.
	(MUST SPECIFY VOLTAGE WHEN ORDERING.)

GENERAL DESCRIPTION

The Powerex laboratory vacuum system is designed to create a suction system to remove unwanted fluids or gases from laboratory working areas. The laboratory vacuum system package is compliant with the NFPA 99 requirements for Category 3 laboratory systems and is operationally tested prior to shipment. The package shall include multiple oil-free rotary claw vacuum pumps and associated equipment, one ASME tank and one control panel. Each pump is factory piped to a common intake manifold. All components shall be completely pre-piped and pre-wired to single-point service connections. System shall be provided with intake and discharge flexible connectors. All interconnecting piping and wiring shall be completed and operationally tested prior to shipment. Vibration isolation pads are included with the system.

DETAILED PRODUCT DESCRIPTION:

OIL-FREE ROTARY CLAW VACUUM PUMP

The vacuum pumps shall be of the air-cooled oil-free rotary claw design. Each claw vacuum pump is equipped with a set of opposing rotors with frictionless operation, eliminating the need to service or replace wearing parts. Each oil-free rotary claw vacuum pump shall be equipped with:

- TEFC, standard efficiency electric motor with coupling
- Inlet filter
- Check valve
- Pump isolation valve

VACUUM RECEIVER

The system shall include an ASME rated air receiver rated for 200 PSIG and full vacuum. The tank shall be internally lined and come with a manual drain and sight gauge. Systems with Basic Controls are also equipped with a vacuum gauge.

PREMIUM NFPA CONTROL PANEL

The control system provides automatic lead/lag activation based on demand and automatic alternation of all pumps in order to equalize the amount of usage among the available pumps. The control panel shall include:

- A color touch screen panel which displays the operating status of the unit. The touch screen will display pump status, pump faults, pump run hours, system pressure, system alarms and service alert notifications for the pumps.
- Building automation communication gateway, with BacNet® protocol. Ethernet port for connection to BacNet® /IP server or direct connection to facility Ethernet for viewing of system operations and status via device IP-address.
- A PLC controller that includes logic programmed to appropriately manage start-stop, lead-lag and other pump operations.
- UL508A listed control panel in a NEMA 12 enclosure.

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VARIABLE FREQUENCY DRIVE (VFD): NOT Included

Variable Frequency Drive (VFD) control improves efficiency over a conventional “on/off” demand-based system by more closely matching the pump speed to the changing load requirements. The control system calculates the frequency to speed up or slow down the pump based on changes to the demand verses the set-point. Pump speeds matched to demand will result in lower amp draws, prolong motor life, prolong bearing life, prolong coupler life, and a reduction in energy cost.

DISCHARGE TEMPERATURE SWITCH

The system is supplied with a high discharge air temperature shutdown alarm with visual and audible indicators and dry contacts.

SYSTEM CONNECTIONS

The system is supplied with a remote intake connection and flexible connectors for both intake and discharge. All piping complies with current NFPA 99 requirements.

AUTO PURGE: (Electric): ADDER Included

The inclusion of auto purge allows for any gases trapped in the plex pumps, during operation, to be purged to atmosphere. While in Automatic purge mode any Plexes, in auto mode, will attempt to complete a purge cycle, after every use. Should a plex purge cycle be active and the plex be needed to meet system demand, the purge cycle will be abandoned. Returning the plex to normal operation, with the purge cycle restarting when the plex is no longer needed to meet system demand. Items provided with Auto purge included. Electric purge isolation valve and related piping based on pump style. A 3-position switch to select automatic purge, manual purge, or purge of modes.

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