



Laboratory Air Systems

Product Selection Guide



- Enclosed systems packaged in sound enclosure cabinet to minimize noise and system footprint
- Enclosed Air systems customized specifically for Laboratory Applications
- Packages that leverage proven Oil-less Scroll Pump Technology
- Easy to use product guide with control panel options and product specification charts to help you find just the right system

THE LATEST INNOVATION FROM POWEREX LABORATORY AIR SYSTEMS

- Extremely reliable because of proven oil-less scroll technology
- Great for applications in the research field—from simpler applications like a high school chemistry lab to more complicated applications in biomedical research and everything in-between
- Multiplex systems have built in redundancy capabilities
- Systems built under same standards as all our medical air and vacuum life support systems
- HMI and PBMI controls available

Knowing the type of research, application and what process gases are being used are key in determining the best configuration for your laboratory application. Our sales team can help you select one of our standard systems or work with our engineers to design a custom system to fit your needs.



Laboratory Air System Design

- Includes:
 - Multiple compressors
 - ASME receiver
 - Control panel (HMI or PBMI)
 - Air purification system
 - Dew point monitor
 - All interconnecting piping and wiring
 - Vibration isolation pads and flex connectors
- Built in redundancy in multiplex systems
- Enclosed systems packaged in sound enclosure cabinet to minimize noise and system footprint
- Manufactured in ISO 9001 UL certified facilities

Control Panel Options: HMI or PBMI

Powerex offers two different control panel options for our Laboratory Air Systems—HMI controls as our standard and optional PBMI controls.

Standard HMI Control Panel:

- PLC controller and HMI (Human Machine Interface) touch screen displays the operating status of the unit
- UL508A listed and labeled, NEMA 4/12 enclosure
- Visual and audible alarms for:
 - System overload trip
 - High temperature conditions
 - Service intervals
- Panel door includes:
 - Audible and visual alarms
 - HOA switch for each pump
 - 3-position dryer switch
- Dryer maintenance notifications at service intervals
- Integrated dew point monitor
 - Dew point readings displayed on touch screen
 - Audible and visual high dew point alarms



Optional PBMI Control Panel:

- All features of the standard HMI control panel
- Building automation gateway with BacNet® protocol
- Email notifications for alarms and service alerts

Powerex Building Management Integrator (PBMI)



Oil-Less Scroll Technology



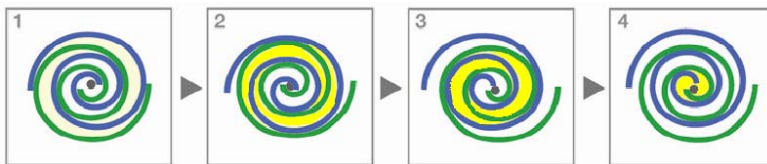
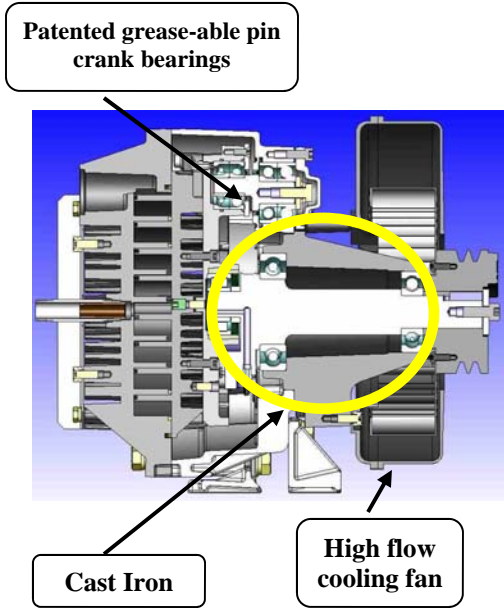
Powerex introduced the first dry scroll to the US oil-less compressor market in 1989. Our technology and expertise in clean, dry air systems is unmatched. Powerex manufactures compressors, air receivers, control panels, air dryers, dew point monitors, and more, to provide a total system approach to your air compressor needs. All facilities are ISO9001 registered so you can be assured of the highest quality. The enclosed scroll compressors feature compact footprints, energy efficient operation, low maintenance, and environmentally friendly design, all in one complete package.

TECHNOLOGY AND INNOVATION

The best ideas seem so simple. The rotary design has few moving parts making it reliable and easier to maintain. The self lubricating tip seals, and absence of a gearbox means the pump is truly 100% oil free.

As the leaders in scroll pump technology, our latest design incorporates several innovative features:

- Main bearings are housed in durable cast iron instead of aluminum which prevents fretting and premature failure of the bearing race. This pump can be operated at 100% duty with confidence.
- A patented bearing re-grease feature also allows maintenance from the front side of the pump.
- The patented tip seal design yields the highest flow rates and longevity of any other dry scroll compressor.
- The improved efficiency and cooling results in lower operating temperatures.
- Extremely low vibration



COMPRESSION PRINCIPLE

As the orbiting scroll orbits from No. 1 to No. 4 position, a crescent-shaped cavity is gradually reduced, compressing the air and exhausting it through the final discharge point at the center.

Laboratory Enclosed Scroll Multiplex Systems (With HMI or PBMI Controls)

Model	SCFM @ 100 PSIG*	HP	Tank (Gal.)
Simplex Systems			
LSE1003	15.2	10 (1)	80
LSE1504	30.4	15 (1)	120
LSE2005	45.6	20 (1)	200
LSE3005	60.8	30 (1)	200
LSE4005	91.2	40 (1)	200
Duplex Systems			
LSED3006	121.6	30 (2)	240
LSED4006	182.4	40 (2)	240

Available Options:

- Powerex Building Management Integrator (PBMI) controls
- Premium Warranty
- CO Monitor
- Remote intake
- Moisture separators

*NOTE: SCFM values for Enclosed Scroll Systems are shown with one pump in reserve per compressor column

Desiccant Air Dryer Package

- Includes:
 - Redundant set of desiccant dryers, filters, regulators and safety relief valves
 - Dew point monitor
 - Air receiver
- The dryer removes moisture and contaminants from the compressed air
- Email notifications for dryer, dew point and service alerts on systems with HMI or PBMI controls



Desiccant Air Dryers

Dew Point Monitor

- Auto calibration
- Polymer sensor technology
- Visual and audible alarms
- Dew point purge control
- Integrated on systems with HMI or PBMI controls



Air Receiver

The system shall include an ASME air receiver rated for 200 PSI MAWP. The tank shall be equipped with:

- A pressure gauge and a safety relief valve
- By-pass valves to allow tank isolation without system shutdown
- A sight gauge
- An automatic electronic tank drain with manual override

The receiver shall be internally lined with an FDA approved material for corrosion resistance.



Accessories and Options

- Powerex Building Management Integrator (PBMI) controls
- Premium warranty
- Non-fused disconnect box
- Medical system packaging
- Receiver sizes 20– 600 Gallon
- Seismic spring mounts
- Sterile filters
- Activated carbon filters
- Moisture separator

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