

Laboratory Air Oil-Free Scroll Compressor with Enclosure and Integrated Dryer (20-30 Hp)

SPECIFICATION

Enclosed Scroll Compressor

The laboratory air oil-free scroll compressor package is floor mounted and enclosed in a steel, sound-insulated canopy. The package is equipped with an integrated refrigerated dryer. The compressor is designed and supplied as a complete package with all necessary equipment, including but not limited to the following components:

- Inlet filter
- Three or Four air compressor elements
- Three or Four drive motors
- Aftercooler
- Refrigerated dryer
- Starter and regulation system
- Control system

All components are mounted within a common six-sided low sound enclosure with solid base frame.

The enclosed scroll package provides air quality that qualifies to be in the category "Class 0" in terms of oil content as defined by standard ISO 8573-1:2001 Part 1.

Compressor Unit

Compressor Module: The compressor package is made up of three or four compressor modules, each consisting of a compressor element belt driven by an electric motor, and a radial fan mounted on the drive shaft of the compressor element. Each module is equipped with a temperature sensor to monitor the element housing temperature.

- LES20 - Four 5 Hp Scroll compressor modules
- LES22 - Four 7.5 Hp Scroll compressor modules
- LES30 - Four 7.5 Hp Scroll compressor modules

Compression Element: Each compressor element consists of a fixed scroll housing and an orbiting scroll rotor. The element and housing are pressure die cast aluminum. The crankshaft and pulley are cast iron. The element is V-belt driven using belts with ZPZ profile. Bolts for adjusting belt tension are easily accessible via removable panels.

Drive Motor: Each compressor module is belt driven by a totally enclosed and air cooled IP55 Class F motor, complying with IE3 Premium efficiency standards for optimum performance and reliability. The motor bearings are greased for life and do not require special attention.

Starter: Each compressor is factory equipped with a direct on line starter. The starter is mounted and wired within the UL listed compressor control cubicle.

Cooling System: Each compressor element is equipped with a radial fan mounted as part of the element to generate cooling air across the element. The compressor package is fitted with an aluminum block aftercooler for cooling of the compressed air. The cooling system includes a fan, driven by an electric motor, to generate cooling air for the aftercooler.

Regulation System: The compressor regulation system keeps the net pressure between programmable limits by automatically starting and stopping the compressor modules.

Compressor Control: The compressor package has a microprocessor controller with advanced graphics, capable of controlling and monitoring the modules. The unique Variable Air Delivery control system automatically starts and stops the compressor modules to exactly match the air demand. The controller distributes the running time evenly among the compressor modules by selecting the module with the lowest hours and starting that one first and stopping the unit with the most run hours first when applicable. The controller prevents simultaneous stopping and starting of the individual modules.

The microprocessor allows for programming of two pressure bands for loading and unloading. Time based start/stop and changeover for net pressure is programmable. The compressor is equipped with auxiliary contacts for external indication of run status, automatic or manual run control, general warning and general shutdown conditions.

The control system has the capability to control and monitor the following functions:

- Delivery air pressure
- Element outlet temperature
- Compressor status
- Motor overload status
- Delivery air temperature
- Running hours
- Regulator hours
- Ambient temperature

Compressor Protection: The microprocessor provides service requirement indication, warning and shutdown indication and alarms. Additional protective functions include emergency stop, element outlet temperature, drive overload, service warnings, and ambient temperature warning and shutdown.

Inlet Air Filter

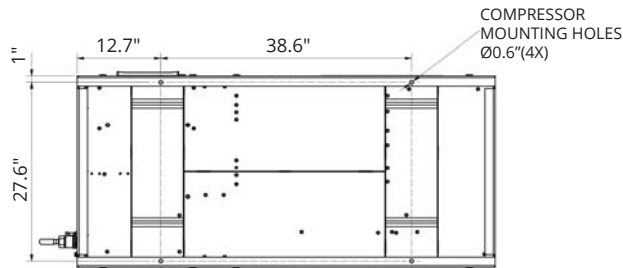
A paper cartridge type filter is provided. The filter has a rated efficiency of SAE fine. The filter removes 98% of all dust particles greater than 1 micron, 99.5% of particles greater than 2 microns and 99.9% of particles greater than 3 microns in size. The inlet filter is factory installed.

Compressor Enclosure

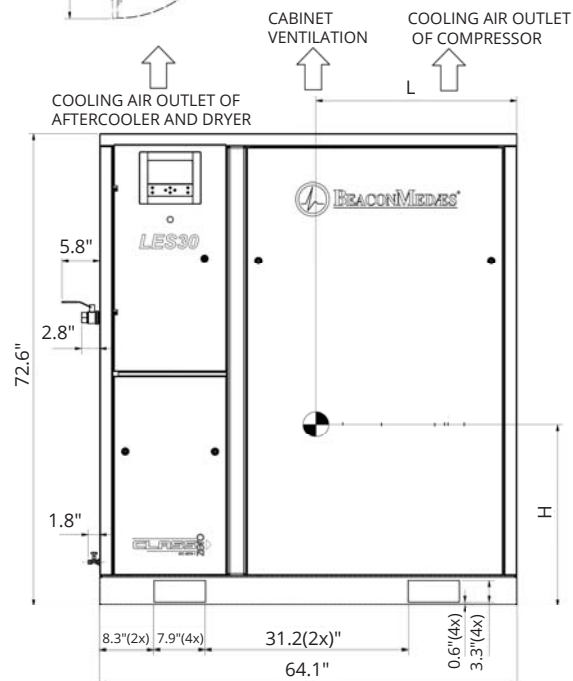
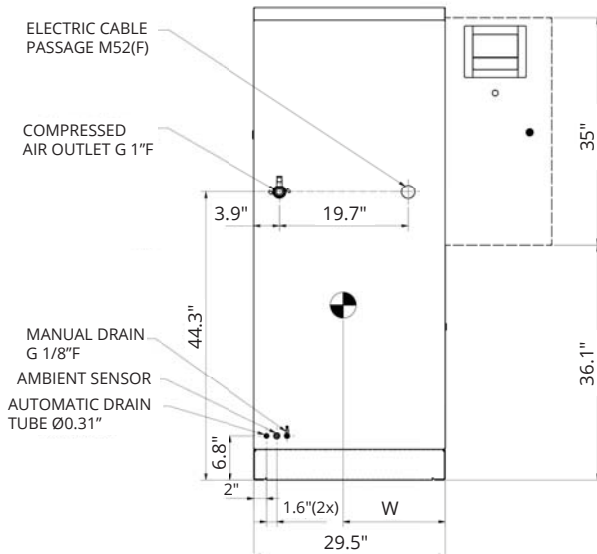
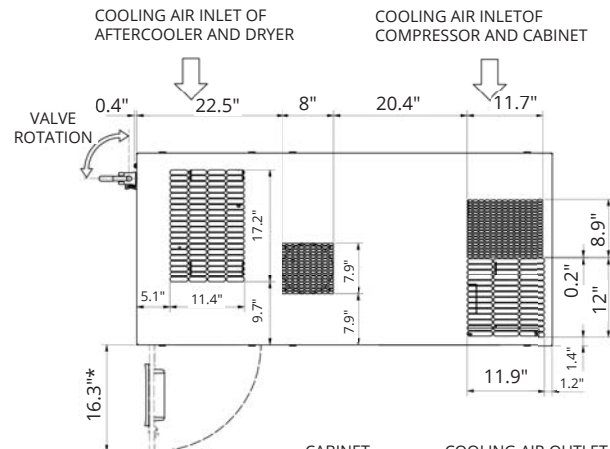
The compressor module is enclosed in a steel, sound-insulated canopy with removable panels to provide access for maintenance. The sound insulating material is a flame retardant polyurethane.

Integrated Dryer

The compressor is fitted with an integrated refrigerated dryer. The dryer is integrated inside the canopy and controlled by the compressor's primary controller. The dryer uses R134A refrigerant. The refrigerant compressor is a hermetic piston type design. The dryer includes an air-to-air heat exchanger to pre-cool the incoming compressed air and reheat the exiting compressed air. The condenser has aluminum fins and copper tubes. The condensate is automatically drained by an electronic condensate drain.



Center of Gravity			
Model No.	L	W	H
LES20-xxx-RD	32.7"	12.1"	27.9"
LES22-xxx-RD	33.1"	12.2"	25.9"
LES30-xxx-RD	31.9"	12"	30.7"



Scroll Compressor Package Specifications

System Model No.	HP	Max. Working Pressure	Capacity FAD ¹ (cfm)	Noise Level ²	Package FLA			Dimensions LxWxH (inch)	Weight (Lbs.)
					208V	230V	460V		
LES20-115-RD	20	112	55.1	63	83.2	75.2	37.6	64.1x29.5x72.6	1345
LES20-145-RD	20	141	47.9	63	84.1	76.1	38.0	64.1x29.5x72.6	1345
LES22-115-RD	22	112	64.9	64	93.3	84.3	42.2	64.1x29.5x72.6	1329
LES22-145-RD	22	141	49.8	64	88.5	80.0	40.0	64.1x29.5x72.6	1329
LES30-115-RD	30	112	86.0	65	120.7	109.1	54.6	64.1x29.5x72.6	1581
LES30-145-RD	30	141	62.9	65	117.3	106.1	53.0	64.1x29.5x72.6	1581

- Notes:**
1. Unit performance measured according to ISO 1217, Annex C, latest edition. Reference conditions: Absolute inlet pressure 14.5 psig; intake air temperature 68° F.
 2. Noise level measured at a distance of 1m according to Pneuop/CAGI PN8NTC2 test code.