

> ESS Series Environmental Stress Screening Chambers



ESS Series •

The Envirotronics ESS line of chambers are designed for environmental stress screening applications. ESS systems can be designed in reach-in or cart-based versions based on your requirements.

The ESS Series allows highly accelerated product temperature change rates through high air velocity product conditioning. Due to the wide variety of products being tested, Envirotronics has developed standard models that feature either horizontal or vertical air flow. Today's customer demands also dictate that different temperature ranges as well as change rate capabilities be offered. Envirotronics will equip your system with single-stage, cascade, twin-screw, LN2 boost, or LN2 cooled refrigeration systems. The Envirotronics Solutions Plus Touchscreen Controller/Programmer is standard on ESS models. By utilizing Quick Draw, we ensure that your product reaches set point as quickly as possible to reduce cycle times.

Envirotronics will manufacture an ESS chamber to meet your specific environmental stress screening needs.

Standard Features •

Refrigeration Package Features

- Water cooled systems, standard
- Copper tubing cooling coils with aluminum fins
- Solder-in-place components minimize leakage
- High temperature silphosed or silver soldered joints
- Stainless steel drip pans in both compressor and cascade compartments contain condensate
- HFC refrigerants

Electrical Features

- Nichrome wire heating elements
- Fail safe fusible link high heat limit protection
- Door interlocks to prevent test interruption



ESS Series

Pre-Engineered Environmental Stress Screening Chambers

Technical Data

Model Number	Workspace W X D X H	Overall Temp Range	Change ⁴ Rates	Within This Range
ESS15-2-30	45 x 12 x 30 in 1143 x 305 x 762 mm	-100/+350 °F -73/+177 °C	32 °F/min 18 °C/min	-22/+185 °F -30/+85 °C
ESS30-2-30	60 x 24 x 36 in 1524 x 610 x 914 mm	-100/+350 °F -73/+177 °C	13.5 °F/min 7.5 °C/min	-40/+257 °F -40/+125 °C
ESS63-1-30S	48 x 26 x 60 in 1219 x 660 x 1524 mm	-40/+257 °F -40/+125 °C	18 °F/min 10 °C/min	23/+122 °F -5/+50 °C
ESS63-2-30	48 x 26 x 60 in 1219 x 660 x 1524 mm	-100/+350 °F -73/+177 °C	18 °F/min 10 °C/min	-14/+149 °F -10/+65 °C
ESS82-1-40S	48 x 50 x 62 in 1219 x 1270 x 1575 mm	-40/+257 °F -40/+125 °C	36 °F/min 20 °C/min	-4/+176 °F -20/+80 °C
ESS96-1-40S	48 x 50 x 72 in 1219 x 1270 x 1829 mm	-40/+257 °F -40/+125 °C	18 °F/min 10 °C/min	-4/+140 °F -20/+60 °C
ESS113-1-15	52 x 55 x 66 in 1321 x 1397 x 1676 mm	-4/+350 °F -20/+177 °C	<9 °F/min <5 °C/min	-4/+176 °F -20/+80 °C
ESS113-1-40S	52 x 55 x 66 in 1321 x 1397 x 1676 mm	-40/+257 °F -40/+125 °C	18 °F/min 10 °C/min	-4/+176 °F -20/+80 °C
ESS118-1-40S	48 x 60 x 75 in 1219 x 1524 x 1905 mm	-40/+257 °F -40/+125 °C	18 °F/min 10 °C/min	-4/+176 °F -20/+80 °C
ESS118-1-40S-1-40S	48 x 60 x 75 in 1219 x 1524 x 1905 mm	-40/+257 °F -40/+125 °C	36 °F/min 20 °C/min	-4/+176 °F -20/+80 °C
ESS118-1-50S ³	48 x 60 x 75 in 1219 x 1524 x 1905 mm	-40/+257 °F -40/+125 °C	18 °F/min 10 °C/min	-4/+176 °F -20/+80 °C
ESS118-1-50S-1-50S ³	48 x 60 x 75 in 1219 x 1524 x 1905 mm	-40/+257 °F -40/+125 °C	36 °F/min 20 °C/min	-4/+176 °F -20/+80 °C
ESS134-1-40S	52 x 67 x 66 in 1321 x 1702 x 1676 mm	-40/+257 °F -40/+125 °C	>3.6 °F/min >2 °C/min	-4/+176 °F -20/+80 °C
ESS140-2-30	36 x 36 x 80 in 914 x 914 x 2032 mm	-100/+350 °F -73/+177 °C	18 °F/min 10 °C/min	+32/+122 °F 0/+50 °C
ESS155-1-40S-1-40S	52 x 67 x 75 in 1321 x 1524 x 1905	-40/+257 °F -40/+125 °C	27 °F/min 15 °C/min	-14/+140 °F -10/+60 °C

NOTE 1: All change rates are average air temperature, not product.

NOTE 2: 50HP systems are for 50 Hz operation only.

NOTE 3: This model is 380-3-50 power only.

NOTE 4: Change rates will vary based on product load, product configuration, temperature range, and water temperature.

NOTE 5: 30 Psig minimum



The tracks in the floor indicate that the interior pictured at left is a cart-based system. Also, the hole pattern in the side wall is characteristic of Envirotronics' high-velocity horizontal air flow system.

Air Flow Systems Features

- Externally mounted fan motors
- Jackshaft assemblies on all systems to provide maximum reliability and flexibility
- Aluminum backwards-inclined blower wheels
- Vertical or horizontal air flow systems
- High velocity air provides optimum air flow across your product





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Product Load	Refrigeration System	Airflow	Minimum Power	Water Requirements ⁵			Notes
				65°F	75°F	85°F	
84 lb 38 Kg	30 HP Cascade	Vertical	300 A	25 Gpm 95 Lpm	36 Gpm 121 Lpm	70 Gpm 227 Lpm	1
300 lb/900 Watts 136 Kg/900 Watts	30 HP Cascade	Vertical	300 A	25 Gpm 95 Lpm	36 Gpm 121 Lpm	70 Gpm 227 Lpm	1
1000 lb 454 Kg	30 HP Twin Screw	Horizontal	275 A	40 Gpm 152 Lpm	50 Gpm 190 Lpm	107 Gpm 406 Lpm	1
400 lb 182 Kg	30 HP Cascade	Horizontal	300 A	25 Gpm 95 Lpm	36 Gpm 121 Lpm	70 Gpm 227 Lpm	1
110 lb 50 Kg	40 HP Twin Screw	Horizontal	225 A	67 Gpm 254 Lpm	80 Gpm 303 Lpm	172 Gpm 652 Lpm	1
200 lb/5.3 Kw 91 Kg/5.3 Kw	40 HP Twin Screw	Horizontal	225 A	67 Gpm 254 Lpm	80 Gpm 303 Lpm	172 Gpm 652 Lpm	1
350 lb/1.8 Kw 159 Kg/1.8 Kw	15HP Single Stage	Horizontal	100 A	15 Gpm 57 Lpm	18 Gpm 68 Lpm	36 Gpm 121 Lpm	1
660 lb/3Kw 300 Kg/3 Kw	40 HP Twin Screw	Horizontal	225 A	67 Gpm 254 Lpm	80 Gpm 303 Lpm	172 Gpm 652 Lpm	1
660 lb/3Kw 300 Kg/3 Kw	40 HP Twin Screw	Horizontal	225 A	67 Gpm 254 Lpm	80 Gpm 303 Lpm	172 Gpm 652 Lpm	1
660 lb/3 Kw 300 Kg/3 Kw	Dual 40HP Twin Screw	Horizontal	400 A	134 Gpm 508 Lpm	160 Gpm 606 Lpm	344 Gpm 1304 Lpm	1
660 lb/3Kw 300 Kg/3 Kw	50 HP Twin Screw	Horizontal	225 A	134 Gpm 508 Lpm	80 Gpm 606 Lpm	172 Gpm 1304 Lpm	1, 2
660 lb/3 Kw 300 Kg/3 Kw	Dual 50HP Twin Screw	Horizontal	400 A	134 Gpm 508 Lpm	160 Gpm 606 Lpm	344 Gpm 1304 Lpm	1, 2
1700 lb 773 Kg	40 HP Twin Screw	Horizontal	225 A	67 Gpm 254 Lpm	80 Gpm 303 Lpm	172 Gpm 652 Lpm	1
700 lb/7.2 Kw 318 lb/7.2 Kw	30HP Cascade	Vertical	300 A	25 Gpm 95 Lpm	36 Gpm 121 Lpm	70 Gpm 227 Lpm	1
1200 lb/7.8 Kw 545 Kg/7.8 Kw	Dual 40HP Twin Screw	Horizontal	400 A	134 Gpm 508 Lpm	160 Gpm 606 Lpm	344 Gpm 1304 Lpm	1

Specifications subject to change without notice.

LN₂ Cooling Systems

- LN₂ cooling systems for rapid rate changes
- Closed loop or open loop systems
- 4-20 mA signal to control LN₂ usage via a pneumatic modulating valve
- Redundant solenoids and pressure relief valves standard
- Solenoid control models available

Instrumentation Systems

- Free standing consoles with 15 foot (4.57m) interconnect cables (additional lengths optional)
- Solutions Plus Touchscreen Controller/Programmer for accurate data logging
- Redundant Temp Sentry available as product fail safe protection

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