# Envirotronics®

# *S & SH Series*
# Standard Temperature and
# Temperature/Humidity Systems

# S and SH Series Chambers

## Standard Temperature and Temperature/Humidity Chambers.

**Temperature Range:**
**S & SH Models:**
-30˚C (-22˚F) to +177˚C (+350˚F), ± 0.3˚C at control sensor
**ST & SH-C Models:**
-68˚C (-90˚F) to +177˚C (+350˚F), ± 0.3˚C at control sensor
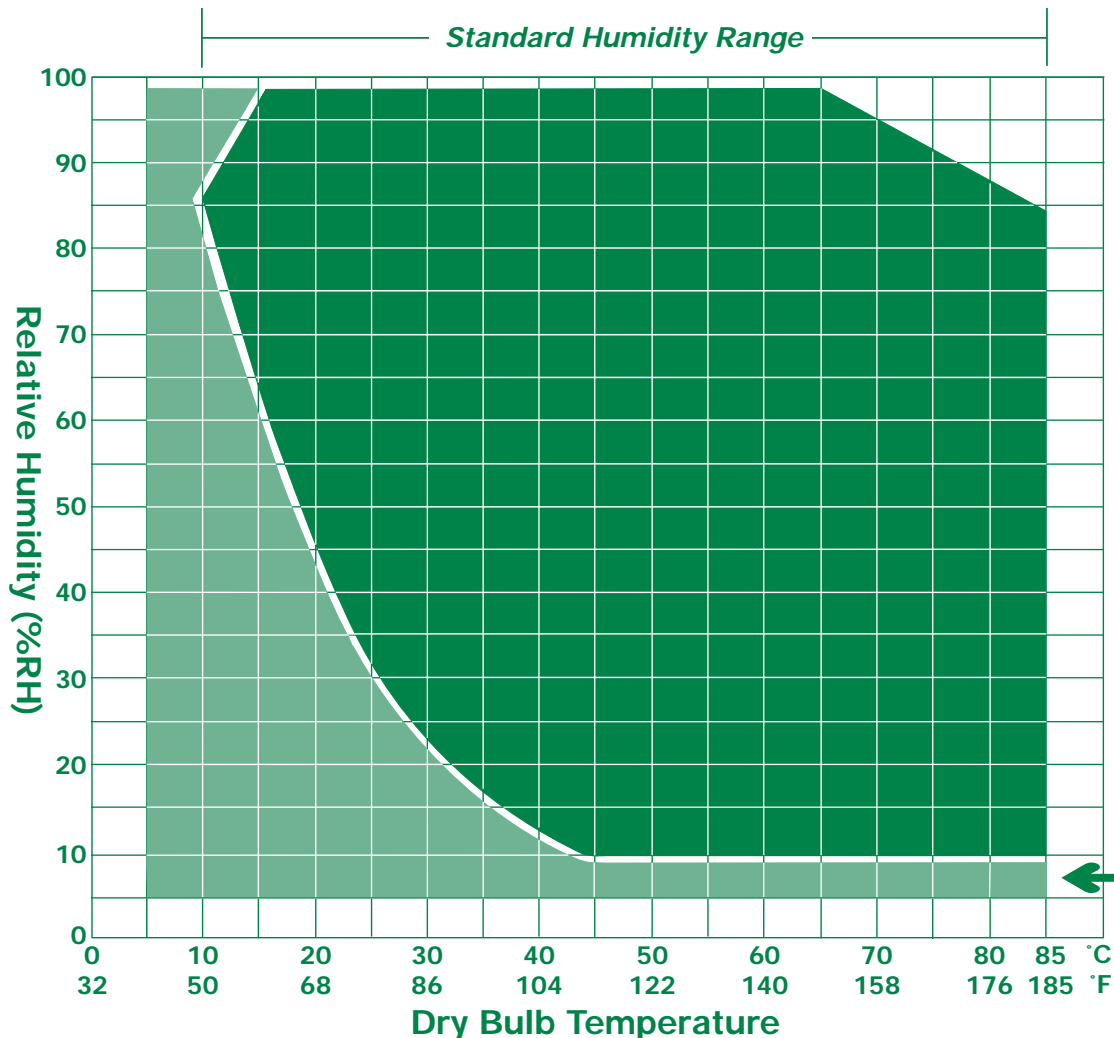
**Humidity Range:**
SH & SH-C Models:
10% to 98% RH, ± 2% as limited by a minimum 7˚C dewpoint and a maximum drybulb of +85˚C

The S and SH Series chambers provide high quality and reliability at a competitive price. Available in sizes ranging from 8 to 32 cubic feet (0.224 to 0.896 cubic meters), these chambers are constructed with a stainless steel interior and a durable epoxy-based, light grey finish with accenting trim. The silicone inner and outer gaskets ensure minimal heat loss, and as with all Envirotronics chambers, only HFC refrigerants are used.

## Standard Features
- Systems Plus™ controller/programmer
- ETL and c-ETL Listed
- Swivel Casters
- Stainless steel access port with plug
- Easily accessible service areas
- Multiple air circulation fans with solid stainless steel shafts, externally mounted motors
- Solid state heat and humidity switching
- Nichrome wire heating elements with fail safe fusible link
- Air-cooled refrigeration*
- Positive door latching system
- Interior Light
- 12" x 12" multipane viewing window
- Window wiper on humidity models
- Series 304 stainless steel interior. All seams continuously heliarc welded
- Stainless steel humidity generator
- Low water level humidity heater protection
- Completely insulated with non-settling fiberglass
- All silicone inner and outer door gaskets to insure minimal heat loss
- Trim-line design
- Solid state humidity sensor on humidity models
- No CFC refrigerants
- * Water-cooled refrigeration on SS models

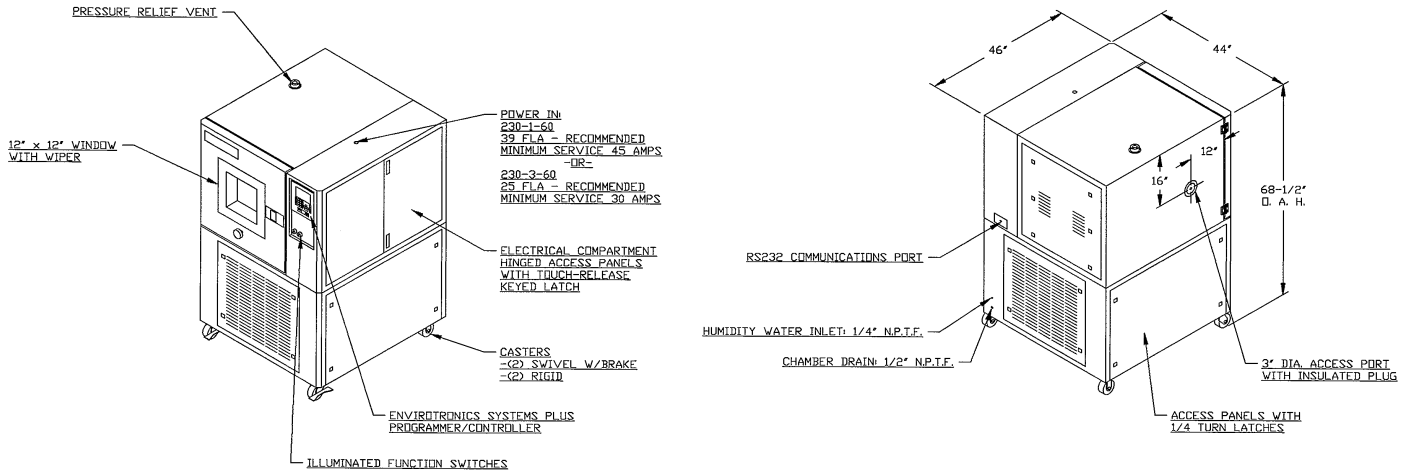## Relative Humidity vs. Dry Bulb Temperature 10% to 98%



Note: This graph represents standard temperature/humidity conditions which are limited by:
A) 45˚F (7˚C) dewpoint
B) 185˚F (85˚C) maximum dry bulb temperature

When operating conditions must exceed these limits, you may select optional driers, dry air purges or high temperature/humidity accessories on selected models. (Please consult factory).
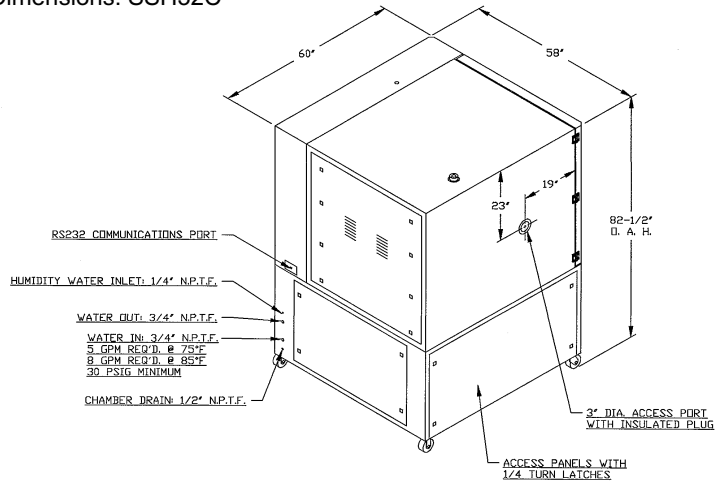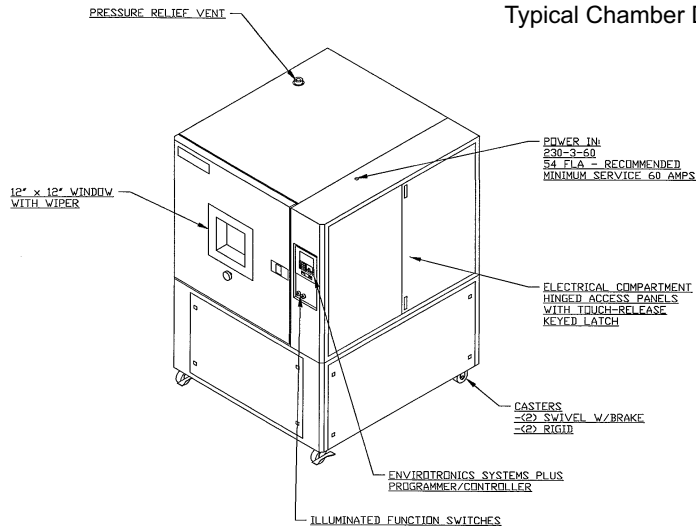
**Envirotronics**

**Typical Chamber Dimensions: ST8**

PRESSURE RELIEF VENT

12" x 12" WINDOW WITH WIPER

POWER IN:
230-1-60
39 FLA – RECOMMENDED MINIMUM SERVICE 45 AMPS
-OR-
230-3-60
25 FLA – RECOMMENDED MINIMUM SERVICE 30 AMPS

ELECTRICAL COMPARTMENT HINGED ACCESS PANELS WITH TOUCH-RELEASE KEYED LATCH

CASTERS
-(2) SWIVEL W/BRAKE
-(2) RIGID

ENVIROTRONICS SYSTEMS PLUS PROGRAMMER/CONTROLLER

ILLUMINATED FUNCTION SWITCHES

46"   44"

12"

16"

68-1/2" O. A. H.

RS232 COMMUNICATIONS PORT

HUMIDITY WATER INLET: 1/4" N.P.T.F.

CHAMBER DRAIN: 1/2" N.P.T.F.

ACCESS PANELS WITH 1/4 TURN LATCHES

3" DIA. ACCESS PORT WITH INSULATED PLUG

# Envirotronics Standard Temperature Chambers

| MODEL | S8 | ST8 | S16 | ST16 | S27 | ST27 | SST32 |
|---|---|---|---|---|---|---|---|
| **Temperature Range*** | | | | | | | |
| Lo °C | -30°C | -68°C | -30°C | -68°C | -30°C | -68°C | -68°C |
| Hi °C | +177°C | +177°C | +177°C | +177°C | +177°C | +177°C | +177°C |
| Lo °F | -22°F | -90°F | -22°F | -90°F | -22°F | -90°F | -90°F |
| Hi °F | +350°F | +350°F | +350°F | +350°F | +350°F | +350°F | +350°F |
| **Workspace Dimensions:** | | | | | | | |
| Width (inches) | 24 | 24 | 30 | 30 | 36 | 36 | 38 |
| Depth | 24 | 24 | 30 | 30 | 36 | 36 | 38 |
| Height | 24 | 24 | 30 | 30 | 36 | 36 | 38 |
| Width (millimeters) | 610 | 610 | 762 | 762 | 914 | 914 | 965 |
| Depth | 610 | 610 | 762 | 762 | 914 | 914 | 965 |
| Height | 610 | 610 | 762 | 762 | 914 | 914 | 965 |
| **Exterior Dimensions:** | | | | | | | |
| Width (inches) | 44 | 44 | 50 | 50 | 56 | 56 | 58 |
| Depth | 46 | 46 | 52 | 52 | 58 | 58 | 60 |
| Height | 67 | 67 | 73 | 73 | 79 | 79 | 81 |
| Width (millimeters) | 1118 | 1118 | 1270 | 1270 | 1422 | 1422 | 1473 |
| Depth | 1168 | 1168 | 1321 | 1321 | 1473 | 1473 | 1524 |
| Height | 1702 | 1702 | 1854 | 1854 | 2007 | 2007 | 2057 |
| **Cooling Performance (Minutes):** | | | | | | | |
| +25°C to -30°C | 30 | 12 | 32 | 12 | 35 | 17 | 8 |
| +25°C to -40°C | N/A | 15 | N/A | 15 | N/A | 20 | 12 |
| +25°C to -54°C | N/A | 20 | N/A | 22 | N/A | 25 | 25 |
| +25°C to -65°C | N/A | 40 | N/A | 45 | N/A | 50 | 35 |
| **Live Load Capacities (Watts):** | | | | | | | |
| -18°C | 1500 | 1500 | 1500 | 1500 | 1400 | 1400 | 2500 |
| -48°C | N/A | 1000 | N/A | 1000 | N/A | 1000 | 1500 |
| -54°C | N/A | 600 | N/A | 600 | N/A | 500 | 1000 |
| **Power Requirements/Breaker Sizes:** | | | | | | | |
| **Standard Power** | | | | | | | |
| 220-230/1/60 | 28/35 | 37/45 | 28/35 | 37/45 | 28/35 | 37/45 | N/A |
| 220-230/3/60 | 22/25 | 25/30 | 22/25 | 25/30 | 22/25 | 25/30 | 41/50 |
| **Transformer Installed** | | | | | | | |
| 208/1/60 | 31/40 | 41/50 | 31/40 | 41/50 | 31/40 | 41/50 | N/A |
| 208/3/60 | 25/30 | 28/35 | 25/30 | 28/35 | 25/30 | 28/35 | 50/60 |
| 220-230/1/50 | 27/35 | 37/45 | 27/35 | 37/45 | 27/35 | 37/45 | N/A |
| 220-230/3/50 | 20/25 | 30/35 | 20/25 | 30/35 | 20/25 | 30/35 | 41/50 |
| 380/3/50 5-Wire | 12/15 | 21/25 | 12/15 | 21/25 | 12/15 | 21/25 | N/A |
| **Wired Direct** | | | | | | | |
| 460/3/60 | 15/20 | 18/25 | 15/20 | 18/25 | 15/20 | 18/25 | 25/30 |
| 380/3/50 5-Wire | N/A | N/A | N/A | N/A | N/A | N/A | 22/30 |
| **Transformer Sent with Chamber** | | | | | | | |
| 460/3/60 | 11/15 | 13/15 | 11/15 | 13/15 | 11/15 | 13/15 | 21/25 |
| 575-600/3/60 | 9/15 | 10/15 | 9/15 | 10/15 | 9/15 | 10/15 | 17/20 |
| 380/3/50 | 14/20 | 18/20 | 14/20 | 18/20 | 14/20 | 18/20 | 25/30 |
| **Compressors:** | | | | | | | |
| (No.) Horsepower | (1) 1.5 hp | (2) 1.5 hp | (1) 1.5 hp | (2) 1.5 hp | (1) 1.5 hp | (2) 1.5 hp | (2) 3 hp |

Notes:  * ±0.3°C at Control Sensor.  Control tolerances are measured at 75°F and are standard deviations from mean.
Chamber performance data is based on laboratory conditions at 75°F.  Operation at different ambient temperatures may affect performance.
This data is for comparison only and specifications are subject to change without notice. (The addition of optional accessories may affect performance).
For extended low temperature low temperature operation, consult factory.

# SH Series

Typical Chamber Dimensions: SSH32C

PRESSURE RELIEF VENT

12" x 12" WINDOW WITH WIPER

POWER IN:
230-3-60
54 FLA - RECOMMENDED
MINIMUM SERVICE 60 AMPS

ELECTRICAL COMPARTMENT
HINGED ACCESS PANELS
WITH TOUCH-RELEASE
KEYED LATCH

CASTERS
-(2) SWIVEL W/BRAKE
-(2) RIGID

ENVIROTRONICS SYSTEMS PLUS
PROGRAMMER/CONTROLLER

ILLUMINATED FUNCTION SWITCHES

RS232 COMMUNICATIONS PORT
HUMIDITY WATER INLET: 1/4" N.P.T.F.
WATER OUT: 3/4" N.P.T.F.
WATER IN: 3/4" N.P.T.F.
5 GPM REQ'D. @ 75°F
8 GPM REQ'D. @ 85°F
30 PSIG MINIMUM
CHAMBER DRAIN: 1/2" N.P.T.F.

60"  58"

23"  19"  82-1/2" O. A. H.

3" DIA. ACCESS PORT
WITH INSULATED PLUG

ACCESS PANELS WITH
1/4 TURN LATCHES

## Envirotronics Standard Temperature/Humidity Chambers

| MODEL | SH8 | SH8C | SH16 | SH16C | SH27 | SH27C | SSH32C |
|---|---|---|---|---|---|---|---|
| **Temperature Range:*** | | | | | | | |
| Lo ˚C | -30°C | -68°C | -30°C | -68°C | -30°C | -68°C | -68°C |
| Hi ˚C | +177°C | +177°C | +177°C | +177°C | +177°C | +177°C | +177°C |
| Lo ˚F | -22°F | -90°F | -22°F | -90°F | -22°F | -90°F | -90°F |
| Hi ˚F | +350°F | +350°F | +350°F | +350°F | +350°F | +350°F | +350°F |
| **Humidity Range:*** | | | | | | | |
| *All Models : 10% to 98%, ±2% as limited by a minimum 7˚C dewpoint and a maximum drybulb of +85˚C* | | | | | | | |
| **Workspace Dimensions:** | | | | | | | |
| Width (inches) | 24 | 24 | 30 | 30 | 36 | 36 | 38 |
| Depth | 24 | 24 | 30 | 30 | 36 | 36 | 38 |
| Height | 24 | 24 | 30 | 30 | 36 | 36 | 38 |
| Width (millimeters) | 610 | 610 | 762 | 762 | 914 | 914 | 965 |
| Depth | 610 | 610 | 762 | 762 | 914 | 914 | 965 |
| Height | 610 | 610 | 762 | 762 | 914 | 914 | 965 |
| **Exterior Dimensions:** | | | | | | | |
| Width (inches) | 44 | 44 | 50 | 50 | 56 | 56 | 58 |
| Depth | 46 | 46 | 52 | 52 | 58 | 58 | 60 |
| Height | 69 | 69 | 75 | 75 | 81 | 81 | 83 |
| Width (millimeters) | 1118 | 1118 | 1270 | 1270 | 1422 | 1422 | 1473 |
| Depth | 1168 | 1168 | 1321 | 1321 | 1473 | 1473 | 1524 |
| Height | 1753 | 1753 | 1905 | 1905 | 2057 | 2057 | 2108 |
| **Cooling Performance (Minutes):** | | | | | | | |
| +25˚C to -30˚C | 30 | 12 | 32 | 12 | 35 | 17 | 8 |
| +25˚C to -40˚C | N/A | 15 | N/A | 15 | N/A | 20 | 12 |
| +25˚C to -54˚C | N/A | 20 | N/A | 22 | N/A | 25 | 25 |
| +25˚C to -65˚C | N/A | 40 | N/A | 45 | N/A | 50 | 35 |
| **Live Load Capacities (Watts):** | | | | | | | |
| -18˚C | 1500 | 1500 | 1500 | 1400 | 1400 | 1400 | 2500 |
| -48˚C | N/A | 1000 | N/A | 1000 | N/A | 1000 | 1500 |
| -54˚C | N/A | 600 | N/A | 500 | N/A | 500 | 1000 |
| **Power Requirements/Breaker Sizes:** | | | | | | | |
| **Standard Power** | | | | | | | |
| 220-230/1/60 | 39/45 | 47/60 | 39/45 | 47/60 | 39/45 | 47/60 | N/A |
| 220-230/3/60 | 25/30 | 34/40 | 25/30 | 34/40 | 25/30 | 34/40 | 54/60 |
| **Transformer Installed** | | | | | | | |
| 208/1/60 | 43/50 | 52/60 | 43/50 | 52/60 | 43/50 | 52/60 | N/A |
| 208/3/60 | 28/35 | 38/45 | 28/35 | 38/45 | 28/35 | 38/45 | 58/70 |
| 220-230/1/50 | 40/45 | 50/60 | 40/45 | 50/60 | 40/45 | 50/60 | N/A |
| 220-230/3/50 | 27/35 | 35/40 | 27/35 | 35/40 | 27/35 | 35/40 | 54/60 |
| 380/3/50 5-Wire | 17/20 | 21/25 | 17/20 | 21/25 | 17/20 | 21/25 | N/A |
| **Wired Direct** | | | | | | | |
| 460/3/60 | 17/20 | 21/25 | 17/20 | 21/25 | 17/20 | 21/25 | 32/40 |
| 380/3/50 5-Wire | N/A | N/A | N/A | N/A | N/A | N/A | 32/40 |
| **Transformer Sent with Chamber** | | | | | | | |
| 460/3/60 | 13/15 | 17/20 | 13/15 | 17/20 | 13/15 | 17/20 | 27/35 |
| 575-600/3/60 | 10/15 | 14/20 | 10/15 | 14/20 | 10/15 | 14/20 | 22/25 |
| 380/3/50 | 16/20 | 20/25 | 16/20 | 20/25 | 16/20 | 20/25 | 33/40 |
| **Compressors:** | | | | | | | |
| (No.) Horsepower | (1) 1.5 hp | (2) 1.5 hp | (1) 1.5 hp | (2) 1.5 hp | (1) 1.5 hp | (2) 1.5 hp | (2) 3 hp |

See Notes on previous page

Envirotronics®

## Systems Plus™
## Programmer / Controller

Standard in all Envirotronics standard and custom chambers, the Systems Plus™ Programmer/Controller incorporates numerous timesaving features without sacrificing ease-of-use and precise control.

### Fuzzy Logic

Fuzzy logic control eliminates costly and time-consuming operator set up of traditional PID control parameters.

### User-Friendly Programming Sequence

Our user-friendly programming sequence requires minimal time for actual system programming.  The built-in floppy disk drive allows you to save program information and data for quick retrieval.

### On-Board Diagnostics and Maintenance Logs

The on-board diagnostics features can save costly troubleshooting time.  Our alarm screen pinpoints a tripped safety switch.  Additionally, you can keep track of actual run times on active components by utilizing the on-board maintenance logs. This allows you to structure a maintenance program based on past history and may help to reduce or eliminate unforeseen repairs.

### Simplified Procedures

We have incorporated simplified calibration and upgrading features into the Systems Plus™.  These reduce the amount of time you need to spend calibrating your equipment or upgrading the system.

### Data Logging

The data logging feature can eliminate the need for a circular chart recorder, reducing initial expenditures while providing more accurate test documentation.

### Built-in User Manual

Two integral timesharing features of Systems Plus™ are the built-in user manual and the "help" screen.  These components reduce training time and provide user assistance at every step within programing, calibration, and setup modes.

### Security

Password protection is provided to prevent unauthorized entry. This eliminates costly program reentry due to accidental erasure or tampering.

# *Remote Program Editor*

The Remote Program Editor software allows you the freedom to write and edit profiles at the comfort of your PC workstation. The point-and-click, Microsoft Windows-based software is easy to use and eliminates the need to stand at the controller while editing programs.  Envirotronics' Remote Program Editor Software is available for download, free of charge, from our website, www.envirotronics.com/sysplus.html

# *Optional Features*

## Optional Features For All Models

• Additional Ports
• LN2 Boost
• Quiet Package
• Interior Shelves
• Temp Sentry
• Water Cooled Option
• DR450T Single Channel Honeywell Chart Recorder

## Optional Features For Humidity Models

• DR450T Dual Channel Honeywell Chart Recorder
• Water Demineralizer w/light
• Replacement Cartridge for Demineralizer
• 5 Gallon Reservoir
• 5 CFM Dry Air Purge
• Water Recirculation System

*People don't form relationships with equipment - they form relationships with people.  When you purchase a system from Envirotronics, you purchase much more than an excellent piece of equipment; you purchase the combined expertise, commitment to excellence, and dedication to quality customer service of the people of Envirotronics. We are there for you when you need us with parts, preventive maintenance, calibrations, emergency service, equipment relocation, equipment modification, new equipment, and more.*

*Remember, **"If it is important to you , we will find you a solution."** We are committed to your success.*

*Whether your relationship with us is through our home office, or through one of our many sales and service locations worldwide, the people of Envirotronics will strive to help you succeed.  It is the strength of our commitment to your success that will take us out of the realm of being your single source supplier to becoming your single source partner.*

*Welcome to the partnership!*

***-Your Envirotronics Team***

# Envirotronics ®

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ACCREDITED
CALIBRATION
FACILITY
Certificate No. 1276-01

Quality System
Registered to
**ISO 9001**