

# FRONTIER

BY LACO TECHNOLOGIES



## THERMAL VACUUM TESTING SYSTEMS

FRONTIER TVAC and Bake-Out Systems put you in control with affordable and easy-to-configure systems that replicate the extreme temperature and vacuum environments for your specific application.



# FRONTIER TVAC SYSTEMS

# FRONTIER BAKE-OUT SYSTEMS

## FST CUBE & CYLINDRICAL TVAC SYSTEMS

# STANDARD

## FSB CUBE & CYLINDRICAL BAKE-OUT SYSTEMS



### STANDARD CONFIGURATION OPTIONS

FST & FSB Models

#### Standard chamber sizes include:

|                 |                 |
|-----------------|-----------------|
| Cube:           | Cylindrical:    |
| 20" x 20" x 20" | 18" DIA x 24" L |
| 24" x 24" x 24" | 24" DIA x 30" L |
| 30" x 30" x 30" | 30" DIA x 36" L |
| 36" x 36" x 36" | 36" DIA x 40" L |

#### Standard features include:

- Turbo pump with gate valve
- Dry roughing pump
- Viewport with LED Lighting
- ISO-17025 Calibrated Vacuum Gauges
- Spare ports
- Configured to your requirements
- Meets NASA launch standards
- Vacuum: ATM to 10<sup>-7</sup> Torr
- High vacuum bake-out
- Fully integrated & tested
- Electrical & T/C feedthroughs
- Proprietary platen & shroud technology
- Thermal cycling options:
  - LN2 & electrical heat: -150°C to 200°C
  - Recirculation chiller: -70°C to 150°C



## FCT TVAC SYSTEMS

# CUSTOM

## FCB BAKE-OUT SYSTEMS



### CUSTOM CONFIGURATION OPTIONS

FCT Models

FCB Models

Cube chamber sizes of 40", 48", or 60"  
 Cylindrical chamber sizes of 48", 60", or 72" diameter, any length

- Pullout platens
- Custom shrouds
- Double door
- Custom feedthroughs
- Optional cryo-pumps
- Optional controls
- Internal shelf heating
- External Wall Heating
- Cooling circuits for fast cool down
- High vacuum performance down to 10<sup>-6</sup> torr
- Optional RGA heads



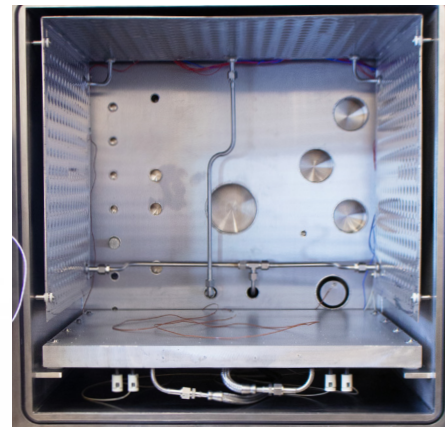
## FST & FSB CUBE SYSTEM DIMENSIONS (inches)

|  | FST/FSB - 2020 | FST/FSB - 2424 | FST/FSB - 3030 | FST/FSB - 3636 |
|--|----------------|----------------|----------------|----------------|
| CHAMBER DIMS (INSIDE)                      | 20 X 20 X 20   | 24 X 24 X 24   | 30 X 30 X 30   | 36 X 36 X 36   |
| PLATEN SIZE (L X W)                        | 19 X 19        | 23 X 23        | 29 X 29        | 35 X 35        |
| DEVICE UNDER TEST (DUT) VOLUME (L X W X H) | 19 X 19 X 16   | 23 X 23 X 20   | 29 X 29 X 26   | 35 X 35 X 32   |

## FST & FSB CYLINDRICAL SYSTEM DIMENSIONS (inches)

|  | FST/FSB - 1824 | FST/FSB - 2430 | FST/FSB - 3036 | FST/FSB - 3640 |
|--|----------------|----------------|----------------|----------------|
| CHAMBER DIMS (INSIDE)                      | 17.5 X 24      | 23.4 X 30      | 29.5 X 36      | 35.5 X 40      |
| PLATEN SIZE (L X W)                        | 22 X 14        | 28 X 20        | 35 X 24        | 40 X 24        |
| DEVICE UNDER TEST (DUT) VOLUME (L X W X H) | 22 X 14 X 19   | 28 X 20 X 11   | 35 X 24 X 14   | 40 X 24 X 22   |

## PORTS, FEEDTHROUGHS, PLATENS, AND SHROUDS



### TVAC & BAKE-OUT ACCESSORIES



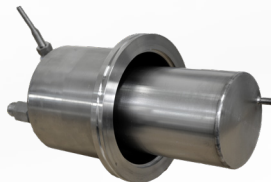
REFRIGERANT COLD FINGER



CELLULAR REMOTE SUPPORT



SPARE PORTS & FEEDTHROUGHS



LN2 COLD FINGER

### HVC-3500 CONTROLLER



- Included with all standard Frontier systems
- 20 customizable recipes
- Full system integration
- Automated vacuum & temperature control
- Data logging
- Remote access