1. **Product Name**
   Panelized walk-in temperature and humidity chamber.

2. **Model**
   EWPX499-6CAL

3. **Temperature Control System**
   Balanced temperature-humidity control system: BTHC.

4. **Performance**

   4.1. Temperature Performance
      4.1.1. Temperature Range
             -65°C to 85°C (-85°F to 185°F)
      4.1.2. Temperature Fluctuation
             ±1°C (±1.8°F) at control sensor after stabilization.
      4.1.3. Temperature Gradient
             ±2°C (±3.6°F), empty chamber after stabilization.

   4.2. Humidity Performance
      4.2.1. Humidity Range
             See chart below, with no live load.
      4.2.2. Humidity Fluctuation
             ±5% RH at control sensor after stabilization.
      4.2.3. Humidity Gradient
             ±5% RH, empty chamber after stabilization.

   4.3. Air Flow
   Approximate.

<table>
<thead>
<tr>
<th>ft³/min</th>
<th>m³/hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000</td>
<td>5097</td>
</tr>
</tbody>
</table>

5. **Dimensions**

   5.1. Exterior Chamber
   
<table>
<thead>
<tr>
<th>Model</th>
<th>Width</th>
<th>Depth</th>
<th>Height</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>EWPX499-6CAL</td>
<td>159.0</td>
<td>101</td>
<td>2565</td>
<td>4100</td>
</tr>
<tr>
<td></td>
<td>4039</td>
<td>265</td>
<td>2642</td>
<td>1864</td>
</tr>
</tbody>
</table>

   5.1.1. Remote Condenser
   See drawing 5AJ0011.

   5.2. Interior Room
   
<table>
<thead>
<tr>
<th>Model</th>
<th>Width</th>
<th>Depth</th>
<th>Height</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>EWPX499-6CAL</td>
<td>108.0</td>
<td>85</td>
<td>2159</td>
<td>499</td>
</tr>
<tr>
<td></td>
<td>2743</td>
<td>2159</td>
<td>2388</td>
<td>14.1</td>
</tr>
</tbody>
</table>

6. **Site requirements**

   6.1. Ambient Temperature
   Allowable Range of Operation: 5°C to 35°C (41°F to 95°F).
   Range of Assured Performance: 10°C to 25°C (50°F to 77°F).

   6.2. Installation Site Floor Surface
   Level and flat to within 1/8 in (3 mm) per 10 ft (3 m) span in all directions.

   6.3. Electrical Power
   460V², 3PH, 60HZ.

---

1 Includes height of electrical junction boxes.
6.3.1. Chamber Service 50A.
6.3.2. Remote Condenser Service 15A.
6.4. Humidity Water
6.4.1. Water Quality 0.2 μS/cm to 10 μS/cm conductivity.
Maximum 2 mg/L free chlorine & filtered to 5 micron or less.
6.4.2. Pressure 30-50 psig (205-345 kPa)
6.4.3. Flow

<table>
<thead>
<tr>
<th>Gal/hr</th>
<th>L/hr</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>38</td>
<td>½ in (½ in)</td>
</tr>
</tbody>
</table>

6.5. Drain
6.5.1. Plenum ¾ in NPT (3/4 in BSPT).
6.5.2. Chamber 2 x 1 in (25.4 mm) PVC stub + 3/8 in (10 mm) barb.

7. Construction
7.1. General Material
7.1.1. Exterior Galvanized Steel Panels.
7.1.2. Color
7.1.2.1. Chamber Stone white
7.1.2.2. Modular Air Plenum (MAP) Stone white
7.1.2.3. Console Slate blue.
7.1.2.4. Instrument Inset Dark gray.
7.1.3. Interior Stainless Steel (Series 304).
7.1.4. Insulation Urethane Foam.
7.1.5. Floor Stainless Steel (Series 304), 16 ga (1.5 mm), for 600 lb/ft² (2900 kg/m²) uniformly distributed floor load. Floor drains piped to exterior edge of floor.
Incandescent with switch near door.

7.2. Doors
7.2.1. Main Door
7.2.1.1. Size

<table>
<thead>
<tr>
<th>W</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>in</td>
<td>mm</td>
</tr>
<tr>
<td>60</td>
<td>1524</td>
</tr>
<tr>
<td>78</td>
<td>1981</td>
</tr>
</tbody>
</table>

7.2.1.2. Configuration Hinged, bi-parting.
7.2.1.3. Window Multi-pane heated, one in each door leaf.
7.2.1.3.1. Size (View)

<table>
<thead>
<tr>
<th>W</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>in</td>
<td>mm</td>
</tr>
<tr>
<td>13</td>
<td>330</td>
</tr>
<tr>
<td>23</td>
<td>584</td>
</tr>
</tbody>
</table>

7.3. Test Space
7.4. Plenum Area
7.5. Instrumentation Panel

7.6. Machinery Compartment
7.6.1. Side Rear/Top Remote condenser connection ports, humidity water inlet, condensate drain outlet.

7.6.2. Inside Steam generator, refrigeration unit for cooling, refrigeration gauges, service valves, pressure switch, and sight glass.

2 440-480V, ±5%.
8. Heater
8.1. Dry Heater
10 kw incoloy sheath heater.
8.2. Wet Heater
9 kw incoloy sheath heater.

9. Cooler/Dehumidifier

10. Refrigeration System
10.1. Compressor

<table>
<thead>
<tr>
<th>Qty</th>
<th>Hp</th>
<th>Kw</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>6</td>
<td>4</td>
<td>Hermetic scroll</td>
</tr>
</tbody>
</table>

10.2. Condenser
10.3. Expansion System
10.4. Refrigerants
Non-ozone depleting HFC, R-404a and R-508b.

11. Instrumentation
11.1. Model
Temperature/humidity programmer/controller……..Espec SCP-220.

12. Safety Devices
12.1. Electrical
Electrical disconnect for power.
Fuse for compressors.
Fuse for heaters.
Overload for circulator motor.
Specimen power supply control for product power interlock.
External alarm terminal for equipment.

12.2. Refrigeration
High/Low pressure switch for compressor.
Oil pressure switch for compressor.
Relief valve for refrigeration circuit.

12.3. Chamber
Thermal fuse for overheat protection.
Adjustable overheat for air to specimen and chamber.

13. Accessories
13.1. Cable Port Plug
For each port.

13.2. Maintenance Items
Fuse(s), light bulb, spare wet bulb wicks, mating plugs for specimen power and external alarm inlets.

13.3. Documentation
PDF format on CD-ROM.
Chamber operation manual.
Control operation manual.
Replacement parts list.

14. Included Features
14.1. Air Cooled Condenser
For remote outdoor location. Pressure controls and/or heated receiver as required for all-season operation.

14.1.1. Ambient Temperature at Condenser
14.1.1.1. Range of operation
-20 to 42°C (-4 to 108°F)
14.1.1.2. Range of assured performance
-20 to 32°C (-4 to 95°F)

14.1.2. Installation
14.1.2.1. Interconnect pipe
Includes 40 ft (12 m) of copper piping. Additional length can be provided at additional cost.

14.1.2.2. Mounting
Condenser must be mounted to a solid base. A concrete pad or structural steel base is recommended.

14.1.2.3. Installation Space (minimum)
6 ft (1.8 m) above the condenser and 4 ft (1.2 m) parallel to one long side for adequate air flow.
42 in (1.1 m) electrical enclosure service clearance (on end).

14.1.2.4. Facility modifications
The customer is responsible to provide all required building penetrations and to seal these penetrations after the piping is installed.

14.1.3. Construction
14.1.3.1. General Material
Galvanized housing
14.1.3.2. Exterior
PVC coated steel fan guards
14.1.3.4. Mounting
Holes provided in legs for permanent mounting.
14.1.3.5. Exterior Size
See drawing for size selected for the application.
14.1.4. Features
14.1.4.1. Fan Cycling Controls provided for each fan.
14.1.4.2. Sub-cooler circuit Integrated for better control during fluctuating loads.
14.1.4.3. Disconnect switch Provided on the electrical enclosure.

14.2. Battery Test Features

Following features are NOT intended to make chamber explosion proof or explosion resistant. Chamber does not include a reinforced door or reinforced liner. The user is responsible for containment of test specimen to ensure personnel safety.

14.2.1. Spark Resistant Interior (-SR)

14.2.1.1. Spark Resistant Fan Per AMCA Type B.

14.2.1.2. Temperature Limited Sheath Heaters Low watt density sheath heaters with sheath surface temperature absolute limit and sheath temperature control. Performance will vary based on sheath limit/control setpoints and additional sheath heater mass. Recommended limit and control setpoint examples:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Limit ((=\text{AIT} \times 80%))</th>
<th>Control ((=\text{Limit} - 10^\circ\text{C}))</th>
<th>Max Chamber Temp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methane</td>
<td>630°C</td>
<td>504°C</td>
<td>494°C Std</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>520°C</td>
<td>416°C</td>
<td>406°C Std</td>
</tr>
<tr>
<td>Propane</td>
<td>450°C</td>
<td>360°C</td>
<td>350°C Std</td>
</tr>
<tr>
<td>Gasoline</td>
<td>280°C</td>
<td>224°C</td>
<td>214°C &lt;164</td>
</tr>
<tr>
<td>Diesel Fuel #2</td>
<td>260°C</td>
<td>208°C</td>
<td>198°C &lt;148</td>
</tr>
<tr>
<td>Li-ion batt organic electrolyte</td>
<td>230°C</td>
<td>184°C</td>
<td>174°C</td>
</tr>
<tr>
<td>Auto Trans Fluid (typical)</td>
<td>195°C</td>
<td>156°C</td>
<td>146°C</td>
</tr>
</tbody>
</table>

14.2.1.3. Light Fixtures Isolated from chamber interior, or have "Div 2" hazardous location rating.
FREIGS:
1) PIPING: (1) - 1/2" AND (3) - 7/8"
2) 3-CIRCUIT
3) 460V/3PH/60HZ 15A SERVICE
4) WEIGHT = 450 LBS.