

# CO<sub>2</sub> Incubators

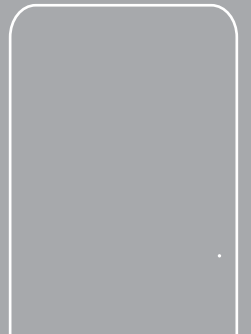
The Complete Line



We culture more than trust.

Sensor Warranty  
**7**  
year

Constant thinking.



## Constant Thinking

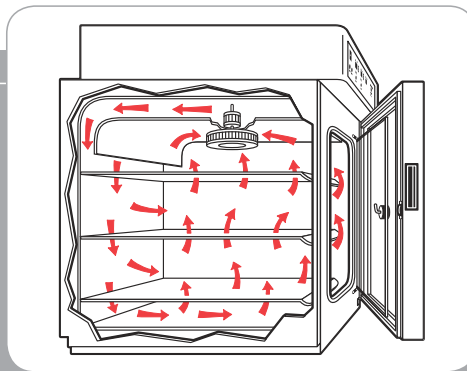
We are always thinking. Always trying to find new ways to give you top-of-the-line products. We have a history of firsts in the industry. But we don't focus on past accomplishments. We are focused on, and building for, the future. That's how we keep temperature and pressure constant. That's how our products endure heavy use. And that's how we plan to stay—forever supplying products of constant thinking.



Look for this icon to signify HEPA technology



coved corners  
(on select models)



HEPA filtration



quick clean shelf system

## Contamination Control

Contamination control is a direct result of our cabinet design. Beginning with the first successful in-vitro fertilization in the USA in 1970, we have designed contamination control features into our incubators. The chamber atmosphere is purified with Sheldon Manufacturing's High Efficiency Particulate Air (HEPA) Filtration System. Our patented HEPA filter is housed in copper to prevent trapped particulates from reproducing. Even chamber cleanup is a breeze with our Quick Clean Shelf System, the removable gasket and the coved corner chamber.



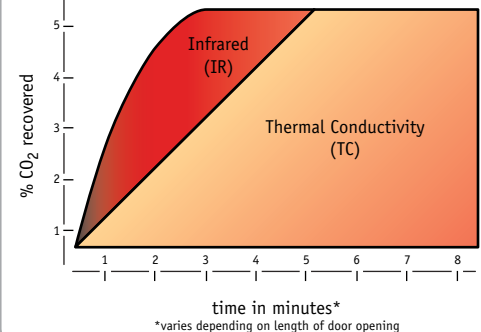
Look for this icon indicating the superior technology of an IR Sensor



## The Benefit of IR Sensors

Sheldon Manufacturing standardizes on IR.

Our Infrared Sensor is ideal for applications with frequent door openings because recovery is unaffected by changes in temperature or humidity. Continuously sampling chamber atmosphere through a spectrophotometer flow cell, the IR sensor checks wavelength and rectifies an out-of-control condition. CO<sub>2</sub> recovery is rapid and changes in CO<sub>2</sub> concentration are made within seconds.



CAESA-LAB INC.

# Water Jacket CO<sub>2</sub> Incubators

Models: 3517 | 3524



convenient front-mounted connections



covered corners for easy cleaning



patented copper-housed HEPA filtration



anti-corrosion anode



pre-heated CO<sub>2</sub> inlet



**3517**



## Anti-corrosion Anode

The anti-corrosion anode permits the use of distilled or tap water (de-ionized water should not be used). The inclusion of this anode eliminates potential rusting within the water jacket chamber. The anti-contamination features make cleaning a breeze and the CO<sub>2</sub> sample port has been moved to the front control panel for quick and easy access.

## Validation/Documentation

Maintain precise time/date stamped records of all incubator functions from one minute to 99 hrs. and 59 min. The 3500 series data logger features programmable outputs that transmit display data via the RS-232 port, directly to a printer or to a remote alarm system.

| Model          | 5 Year Limited Warranty | IR Sensor Guarantee | Water Jacket Guarantee | 1 Year Limited Warranty |
|----------------|-------------------------|---------------------|------------------------|-------------------------|
| 3503<br>3503-2 | yes                     | yes                 | yes                    |                         |
| 3517<br>3517-2 | yes                     | yes                 | yes                    |                         |
| 3524<br>3524-2 | yes                     | yes                 | yes                    |                         |
| 5215<br>5215-2 | yes                     | yes                 |                        |                         |
| 2428<br>2428-2 |                         | yes                 |                        | yes                     |
| 2440<br>2440-2 |                         | yes                 |                        | yes                     |
| 2460<br>2460-2 |                         | yes                 |                        | yes                     |
| 2406<br>2406-2 | yes                     | yes                 | yes                    |                         |

## *New 5 Year SHEL LAB CO<sub>2</sub> Incubator Limited Warranty*

- 5 Year Parts (Labor Included in the US)
- 7 Year IR Sensor
- Lifetime Water Jacket Chamber

# New Personal Water Jacket CO<sub>2</sub> Incubator

Model: 3503 | 2406



**3503**

*New 3500 Series...  
New look, new features*



- New anti-corrosion anode for easy set-up & tap water use in the water jacket
- Factory pre-set door thermostat
- Patented HEPA filtration for superior contamination prevention
- Pre-heated CO<sub>2</sub> gas inlet for increased temperature uniformity

## 3503 Personal Water Jacket

The 3503 compact, 6-gallon water jacket features an intelligent microprocessor providing superb uniformity for even the most demanding in-vitro incubations. The 3503 also offers dependable Infrared (IR) CO<sub>2</sub> Sensor control, ideal for QA / QC applications.



**2406**

Our Basic Water Jacket Incubators are designed and manufactured to accommodate tight budgets without compromising fundamental needs in quality and precision. Combine this with the microprocessor controllers, heated outer door, and tempered-glass inner door and these units provide temperature uniformity, while minimizing cold spots that lead to condensation contamination. The humidity level inside the chamber is maintained at approximately 95%.

|  | 3503<br>3503-2*  | 3517<br>3517-2*  |  |  |
|--|--|--|--|--|
| Chamber Capacity   | 50 Liters/1.8 cu.ft  | 170 Liters/6.12 cu.ft.   | 170 Liters/6.12 cu.ft. each chamber*   | 190 Liters/6.7 cu.ft.  |
| Temperature Range  | Ambient +5°C to 60°C   | Ambient +5°C to 60°C   | Ambient +8°C to 60°C   | Ambient +5°C to 60°C   |
| Temperature Uniformity   | +/-0.2°C (at 37°C)   | +/-0.2°C (at 37°C)   | +/-0.2°C (at 37°C)   | +/-0.25°C (at 37°C)  |
| Temperature Display Resolution   | +/-0.1°C   | +/-0.1°C   | +/-0.1°C   | +/-0.1°C   |
| CO <sub>2</sub> Sensor   | Infrared (IR)  | Infrared (IR)  | Infrared (IR)  | Infrared (IR)  |
| CO <sub>2</sub> Range  | 0-20%  | 0-20%  | 0-20%  | 0-20%  |
| CO <sub>2</sub> Recovery Rate to 5%  | <5 minutes   | <5 minutes   | <5 minutes   | <5 minutes   |
| CO <sub>2</sub> Uniformity   | +/-0.1% @ 5%   | +/-0.1% @ 5%   | +/-0.1% @ 5%   | +/-0.1% @ 5%   |
| Alarm Conditions:<br>Temperature<br>CO <sub>2</sub>  | +/-1°C<br>+/-1%  | +/-1°C<br>+/-1%  | +/-1°C<br>+/-1%  | +/-1°C<br>+/-1%  |
| Humidity Level   | 95%  | 95%  | 95%  | 95%  |
| Exterior Dimensions (WxDxH)  | 53 x 57 x 67 cm.<br>21 x 22.5 x 26.5 in.   | 66 x 65 x 102 cm.<br>26.125 x 25.5 x 40 in.  | 66 x 65 x 204 cm.<br>26.125 x 25.5 x 80 in.  | 67 x 67 x 101 cm.<br>26 x 26 x 40 in.  |
| Interior Dimensions (WxDxH)<br>(single chamber)  | 40 x 40 x 32 cm.<br>15.75 x 15.75 x 12.5 in.   | 52 x 50.8 x 65.5 cm.<br>20.5 x 20 x 25.8 in.   | 52 x 50.8 x 65.5 cm.<br>20.5 x 20 x 25.8 in.   | 52 x 51 x 72 cm.<br>20 x 20 x 28 in.   |
| Shipping Weight  | 79.5 kg / 175 lbs  | 127 kg / 310 lbs   | 273 kg / 600 lbs   | 127 kg / 310 lbs   |
| Shelves Supplied (Max)   | 3 (8)  | 3 (16)   | 6 (32)   | 3 (16)   |
| Net Weight   | 63.5 kg / 140 lbs  | 111kg / 245 lbs  | 222kg / 490 lbs  | 111 kg / 245 lbs   |
| Electrical Requirements<br>Amps / Cycle Phase -120V<br>Amps / Cycle Phase -220V  | 5 / 60 Hz<br>3 / 50/60 Hz  | 5 / 60 Hz<br>3 / 50/60 Hz  | 5 / 60 Hz<br>3 / 50/60 Hz  | 5 / 60 Hz<br>3.5 / 50/60 Hz  |
| Fitting Sizes Diameter<br>Access Port<br>CO <sub>2</sub> Sample Port<br>CO <sub>2</sub> Inlet Port<br>Fill Port<br>Siphon Port | 2.54 cm. / 1 in.<br>0.95 cm. / 3/8 in.<br>0.95 cm. / 3/8 in.<br>2.54 cm. / 1 in.<br>1.27 cm. / 1/2 in. | 2.54 cm. / 1 in.<br>0.95 cm. / 3/8 in.<br>0.95 cm. / 3/8 in.<br>2.54 cm. / 1 in.<br>1.27 cm. / 1/2 in. | 2.54 cm. / 1 in.<br>0.95 cm. / 3/8 in.<br>0.95 cm. / 3/8 in.<br>2.54 cm. / 1 in.<br>1.27 cm. / 1/2 in. | 2.54 cm. / 1 in.<br>0.95 cm. / 3/8 in.<br>0.95 cm. / 3/8 in.<br>2.54 cm. / 1 in.<br>1.27 cm. / 1/2 in. |

\*-2 indicates 220V. Specifications are subject to change without notice.

# Large Capacity CO<sub>2</sub> Incubators

Models: 2428 | 2440 | 2460



**2440**

Specifications for 2440 on back page.

These models feature large incubation space without consuming excessive floor space. When production of cell lines or large scale tissue requires a high level of dependability, count on these units. Understanding the importance of verification for these applications, a 4-20 mAmp output continuously transmits CO<sub>2</sub> and temperature levels. Large units are intended for “dry” use only. Choose from three sizes.

Available in 60, 40 and 28 cu.ft. capacities.

## Uncompromising Control

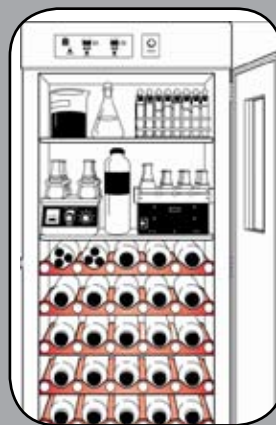
Automated performance is at your fingertips because the microprocessor controls continuously survey and adjust CO<sub>2</sub> and temperature levels with enhanced accuracy, while sensors with audible/visual alarms monitor set points. The IR CO<sub>2</sub> sensor's immediate reaction to changes in CO<sub>2</sub> levels allow for fast recovery even in chambers this size. A CO<sub>2</sub> shut-off occurs when the door opens to conserve gas consumption.

## Versatility and Outstanding Uniformity

Whether using tissue culture flasks, cell factories, or roller bottle rack systems, these units have voluminous space, four interior electrical outlets, and a reinforced floor with recessed channels to facilitate movement of equipment such as roller racks. Utilizing advanced engineering to create forced air circulation throughout the chamber, these units provide unparalleled temperature uniformity that helps all samples to incubate at the same rate. The air jacket facilitates quick and easy setup and an optional caster platform adds mobility to the long list of benefits these units provide.



40 cu.ft.  
(1133 L) capacity



roller bottle  
rack system  
(not sold by  
Sheldon Mfg. Inc.)

## CO<sub>2</sub> Incubator Accessories

|                                    |                 |  |
|------------------------------------|-----------------|--|
| CO <sub>2</sub> Regulator          | 101550          | for regulating and adjusting CO <sub>2</sub> gas pressure              |
| CO <sub>2</sub> Tank Switch        | 2002/<br>2002-2 | automatically switch from one tank to the other                        |
| HEPA Filter                        | 2800517         | collects airborne contaminants for a super clean environment           |
| Stacking Adaptor                   | 9490534         | to connect and secure stacked unit (available in models 5215 & 5215-2) |
| Castor Platform for 5215           | 9000537         | for easier cleaning and relocation                                     |
| Castor Platform for 3517 and 2406  | 9000538         | for easier cleaning and relocation                                     |
| Cooling Coil Kit Assembly          | 9710557         | for achieving below-ambient temperatures (accessory chiller required)  |
| Cooling Coil Kit Assembly for 3503 | 9710568         | for achieving below-ambient temperatures (accessory chiller required)  |
| Tri-Section Door                   | 9521004         | minimize introduction of airborne contaminants                         |



convenient keyhole design



fully adjustable shelf slides



unique design keeps shelf from tipping



|  | 2460<br>2460-2*  | 2440<br>2440-2*  | 2428<br>2428-2*  | 5215<br>5215-2*  |
|--|--|--|--|--|
| Chamber Capacity   | 1700 Liters/60 cu.ft.                                      | 1133 Liters/40 cu.ft                                       | 793 Liters/28 cu.ft.                                       | 160 Liters/5.7 cu.ft.  |
| Temperature Range  | Ambient +8°C to 60°C                                       | Ambient +8°C to 60°C                                       | Ambient +8°C to 60°C                                       | Ambient +8°C to 60°C   |
| Temperature Uniformity   | +/-0.25°C (at 37°C)  | +/-0.25°C (at 37°C)  | +/-0.25°C (at 37°C)  | +/-0.35°C (at 37°C)  |
| Temperature Display Resolution   | +/-0.1°C   | +/-0.1°C   | +/-0.1°C   | +/-0.1°C   |
| CO <sub>2</sub> Sensor   | Infrared (IR)  | Infrared (IR)  | Infrared (IR)  | Infrared (IR)  |
| CO <sub>2</sub> Range  | 0-20%  | 0-20%  | 0-20%  | 0-20%  |
| CO <sub>2</sub> Recovery Rate to 5%  | <5 minutes   | <5 minutes   | <5 minutes   | <5 minutes   |
| CO <sub>2</sub> Uniformity   | +/-0.1% @ 5%   | +/-0.1% @ 5%   | +/-0.1% @ 5%   | +/-0.1% @ 5%   |
| Alarm Conditions:<br>Temperature<br>CO <sub>2</sub>  | +/-1°C<br>+/-1%  | +/-1°C<br>+/-1%  | +/-1°C<br>+/-1%  | +/-1°C<br>+/-1%  |
| Humidity Level   | NA   | NA   | NA   | 95%  |
| Exterior Dimensions (WxDxH)  | 124 x 104 x 201 cm.<br>49 x 41 x 79 in.                    | 104 x 86 x 224 cm.<br>41 x 34 x 87 in.                     | 94 x 91.5 x 188 cm.<br>37 x 36 x 74 in.                    | 65 x 69 x 96 cm.<br>25 x 27 x 38 in.                                   |
| Interior Dimensions (WxDxH)<br>(single chamber)  | 109 x 89 x 173 cm.<br>43 x 35 x 68 in.                     | 89 x 66 x 193 cm.<br>35 x 26 x 76.5 in.                    | 84 x 68 x 158 cm.<br>33 x 27 x 62 in.                      | 49 x 50 x 65 cm.<br>19 x 20 x 26 in.                                   |
| Shipping Weight  | 432 kg / 950 lbs   | 386 kg / 850 lbs   | 300 kg / 660 lbs   | 134 kg / 295 lbs   |
| Shelves Supplied (Max)   | 6 (30)   | 6 (30)   | 6 (30)   | 3 (16)   |
| Net Weight   | 402 kg / 885 lbs   | 230 kg / 505 lbs   | 193 kg / 425 lbs   | 91 kg / 250 lbs  |
| Electrical Requirements<br>Amps / Cycle Phase -120V<br>Amps / Cycle Phase -220V  | 15 / 60 Hz<br>10 / 50/60 Hz                                | 15 / 60 Hz<br>10 / 50/60 Hz                                | 15 / 60 Hz<br>10 / 50/60 Hz                                | 5 / 60 Hz<br>3 / 50/60 Hz  |
| Fitting Sizes Diameter<br>Access Port<br>CO <sub>2</sub> Sample Port<br>CO <sub>2</sub> Inlet Port<br>Fill Port<br>Siphon Port | N/A<br>0.95 cm / 3/8 in.<br>0.95cm / 3/8 in.<br>N/A<br>N/A | N/A<br>0.95 cm / 3/8 in.<br>0.95cm / 3/8 in.<br>N/A<br>N/A | N/A<br>0.95 cm / 3/8 in.<br>0.95cm / 3/8 in.<br>N/A<br>N/A | 2.54 cm / 1 in.<br>0.95 cm / 3/8 in.<br>0.95cm / 3/8 in.<br>N/A<br>N/A |

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**CAESA-LAB INC.**

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