**Intended Use**

The MAXAIR CAPR Helmets provide the primary re-usable components of all CAPR System Configurations.

Each Helmet provides the structure for attaching the different MAXAIR face and head covers.

Each Helmet consists of a Motor, Blower (Fan), micro-computer motor-airflow Controller, Headband-Liner, Helmet-Battery Power Cord, and a SnapOn-SnapOff Cage for motor-blower protection during shipping and for Hood configurations.

The 2081-03 Helmet includes a standard pad Headband-Liner.

The 2083-03 Helmet includes a large pad Headband-Liner, and is the CAPR Helmet exclusively used for Hard Hat configurations.

**Specifications**

Listings are approximate and may vary between units due to tolerances and fluctuations.

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Device Classification</td>
<td>PAPR, Loose Fitting</td>
</tr>
<tr>
<td>89/686/EEC Complete Device Category</td>
<td>III</td>
</tr>
<tr>
<td>93/42/EEC Complete Device Class</td>
<td>I</td>
</tr>
<tr>
<td>Recommended System Temperature Limits:</td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td>-20 to 40°C, 80% max Rel. Humidity</td>
</tr>
<tr>
<td>Use/Handling</td>
<td>0°C to 54°C, 80% max Rel. Humidity</td>
</tr>
<tr>
<td>Charging</td>
<td>0°C to 45°C, 80% max. Rel. Humidity</td>
</tr>
<tr>
<td>Effective vs natural field of vision</td>
<td>97%</td>
</tr>
<tr>
<td>Overlapped vs natural Field of vision</td>
<td>99%</td>
</tr>
<tr>
<td>Maximum Inward Leakage</td>
<td>2% @ Minimum Airflow 175 LPM</td>
</tr>
<tr>
<td>Fit Factor</td>
<td>Minimum 500</td>
</tr>
<tr>
<td>Maximum allowable Percent Leakage: Dioctyle-Phthalate Test</td>
<td>0.03% @ 107 LPM</td>
</tr>
<tr>
<td>Minimum allowable NaCl efficiency</td>
<td>99.97% @ 125 lpm</td>
</tr>
<tr>
<td>Maximum Breathing Resistance</td>
<td>5 mbar</td>
</tr>
<tr>
<td>Minimum Airflow</td>
<td>170 LPM</td>
</tr>
<tr>
<td>Battery</td>
<td>Lithium-Ion</td>
</tr>
<tr>
<td>Noise Level</td>
<td>75 dBA limit (typically ≤ 62)</td>
</tr>
<tr>
<td>Total Mass/ Total Mass on Head</td>
<td>1.25 kg/ 0.75Kg</td>
</tr>
</tbody>
</table>

**Materials**

The primary component makeup of CAPR Helmets consists of -

- Polycarbonate
- Nylon
- Polyurethane
- Polyester
- Polyethylene
- PVC
- Nickel
- Nickel plated Brass
- Nickel/Iron alloy
- Lead-free electronic components

**Regulatory**

NIOSH
Common Helmet and Headband-Liner Characteristics

1. Front Helmet Adapter
2. Clean Air Flow Distribution Holes
3. LED Safety Status Indicators
4. Front snaps for Liner
5. Front Headband Comfort Strip
6. Front Liner Pads
7. Side Adapters
8. Side Tabs
9. Side Adjustment Straps with Snaps
10. Rear Liner Pads
11. Helmet Label
12. Rear snaps for Liner
13. TurnLock Power Cord Connector
14. Liner Power Cord Slot
15. Airflow Controller
16. Comfort Pad
17. Power Cord
18. Headband Ratchet Knob

LED SAFETY STATUS INDICATORS
- Five LED Safety Status IndicatorVs located at Helmet underside front are always visible in the user’s peripheral vision to alert the user of safe air-flow and battery charge remaining operating conditions. They provide early warning to the user when the Helmet is no longer able to maintain adequate airflow and/or Battery charge to provide adequate or continuing protection for the user.
- There is one yellow, three green, and one red LED. On start-up, all LED’s come on briefly (LED test) before proceeding to normal operation. During normal operation, the LEDs continuously indicate the status of the Airflow and Battery charge level.
- Airflow is proper if the Yellow LED is off. A continuously lit or flickering Yellow LED indicates low or marginal airflow. If the Yellow LED is lit, check the Filter Cartridge for excess particulate/dirt build-up and damage, and replace if necessary.
- The Battery charge level is indicated by the three Green and one Red LEDs. The approximate charge level is continuously indicated by the changing LEDs.

<table>
<thead>
<tr>
<th>STATE</th>
<th>DESCRIPTION</th>
<th>YELLOW</th>
<th>GREEN 3</th>
<th>GREEN 2</th>
<th>GREEN 1</th>
<th>RED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Charge OK, 75% to 100%; Airflow OK</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2</td>
<td>Charge OK, 50% to 75%; Airflow OK</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>3</td>
<td>Charge OK, 25% to 50%; Airflow OK</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>4</td>
<td>Charge LOW, 0% to 25%; Airflow OK</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>5</td>
<td>Airflow LOW; Charge LOW</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>6</td>
<td>Airflow LOW; Charge OK, 75% to 100%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>7</td>
<td>Airflow LOW; Charge OK, 50% to 75%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>8</td>
<td>Airflow LOW; Charge OK, 0% to 50%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

NOTE
The flow levels, in liters per minute, are only approximate.

Assemble and Dis-assemble

<table>
<thead>
<tr>
<th>STEP</th>
<th>ASSEMBLE</th>
<th>DISASSEMBLE</th>
<th>STEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>If required, assemble the 2071-08 Helmet Liner to the Helmet. (Alternate 2071-07 for 2083-03 Helmet)</td>
<td>If required, disassemble the Liner from the Helmet.</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>Inspect and ready the 2081-03 Helmet for use. (Alternate 2083-03 Helmet)</td>
<td>If required, prep the Helmet for storage.</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Snap off the 2051-07 Cage and snap on the appropriate Filter Cartridge for the Cuff or Shroud to be used. (Leave Cage on for use with a Hood)</td>
<td>If required, disassemble the Filter Cartridge from the Helmet and re-assemble the Cage for storage or use with a Hood. (Dispose appropriately as hazardous waste.)</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Assemble the 2061-08 Filter Cover Cap to the Helmet for Cuff or Shroud use. (Alternate Covers are appropriate for other configurations.)</td>
<td>If required, disassemble the Filter Cover Cap from the Helmet.</td>
<td>1</td>
</tr>
</tbody>
</table>
Key Operational Features

Air Flow
- Air Diffusers Assist in Low Noise Operation, ≤ 62dB
- Evenly dispersed air for Comfort and Anti-Lens-Fogging

User Selectable Air Flow Level
- Set Air-Flow Range to meet activity, comfort level
- Computer controlled constancy

Front Comfort Strip (Disposable)

Rear Comfort Pad (Cleanable)

Easy grasp-and-turn Ratchet Knob to adjust head circumference and secure helmet-to-head

Turnlock Safety Power Cord Connector
- Provides safe connection
- Easy connect/disconnect
- Allows Helmet to be removed if in standby

Filter Cover Cap* (Greyish-White)

Filter Cartridge* (Blue)

Motor/Blower

Inner Shell (Clear)

DLC Lens Cuff*

Clean Filtered Air (GREEN)

Toxic Outside Air (RED)

Air Flow Pathway

Filter Cover Cap

Filter Cartridge

Motor/Blower

Inner Shell

DLC Lens Cuff

Clean Filtered Air

Toxic Outside Air

Configuring Different Vintage Helmets for Different Vintage Head and Face Covers

Helmet and Filter Cover Cap adapters must be compatible with the choice of Face and Head Covers between different historical versions. Refer to CAPR Helmet Adapters and Configurations Instructions P/N 03523254 for details.

For Hood configurations, the Hood Filter, the HLF (Heavy Loading Filter), and optionally the HFR-FCC (High Fluid Resistance Filter Cover Cap) would replace the Filter Cover Cap and Filter Cartridge as shown.

The DLC Lens Cuff is the same for Shroud configurations; it would be the same for Single Hood configurations; the Cuff is not used in Double Hood Configurations.
### Warning Device: Yellow LED Air Flow Indicator Check

**WARNING**

Prior to use of a MAXAIR CAPR System, the Helmet Yellow LED Safety Status light function should be tested for proper functionality. The Helmet Yellow LED is lighted when the System nears the limit of safe air flow and warns the user to immediately exit to a safe location and check the condition of the Filter and any damage or restrictions to proper air flow.

**Intended Use**

The MAXAIR® CAPR® 03523288 Tester is for use with all CAPR Helmets to verify the functionality of the Helmet Yellow LED Safety Indicator.

#### Standard Test Components

1. 2081-03 Helmet with 2051-07 SnapOn Cage removed, 2071-08 Liner, and 2590-05 Power Cord
2. 2500-37TSC Battery*
3. 03523288 Tester

* Alternate Batteries include the 2500-36TSC.

**Materials**

- Magenta shell: Polycarbonate
- Filter Material (inside): Electrostatic Polypropylene and modified Acrylic

**Specifications**

**MAXAIR Recommended System Temperature Limits:**

**Use/Handling:**

- 0°C to 54°C at a maximum 80% Relative Humidity.

**Charging:**

- 0°C to 45°C at a maximum 80% Relative Humidity.

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**CAUTION**

- Ensure the 03523288 tester is in good condition with no cracks and the gasket is in place.
- Remove all attachments to the Helmet except for the Liner and Power Cord; this includes any Cage, Filter Cover Cap, Hard Hat and Filter Cartridge, and any Cuff, Shroud, or Hood. (The Helmet should be as indicated in Photo 1.)
- Obtain a fully charged MAXAIR Li-Ion Battery.

**Assembly:** (Assemble the tester on to the Helmet similar to assembling a Filter Cartridge or Cage.)

1. Place the Tester over the top of the Helmet.
2. Snap the rear Snap Tab to the Helmet rear top Snap.
3. Press down on front of Tester so side Tab holes are over Helmet side snaps.
4. Snap the left side Tab to the Helmet left side Snap.
5. Snap the right side Tab to the Helmet right side Snap.

**Test**

2. Initially all five LEDs will turn on. After about 5 seconds, the LEDs will change to indicate the charge status of the Battery.
3. Allow the Helmet to compensate until the Yellow LED turns on (about 80 seconds with Air Flow set to High, about 120 seconds with Air Flow set to Low). When the Yellow LED lights, its proper functioning is confirmed.
4. Disconnect the Helmet Power Cord from the Battery. First, push down fully on the Secure Lock Button; then pull the Power Cord by its connector out from the Battery Connector.

---

**CAUTION**

Ensure the Power Cord is disconnected from the battery before proceeding to Disassembly.

**Disassembly:** Reverse Assembly steps 1. - 5. above.