The iRobot® 110 FirstLook® is a compact, rugged and expandable lightweight robot that provides immediate situational awareness, performs persistent observation, and investigates and manipulates dangerous and hazardous materials while keeping the operator out of harm’s way.

FirstLook is easily carried, throwable, and quickly deployed.

Among numerous integrated accessories and payloads, FirstLook can be equipped with a Small Lightweight Manipulator (SLM) to interact with the environment.

Sensor agnostic, FirstLook integrates numerous third-party sensors for HazMat, CBRN missions and supports thermal imagers for invaluable real-time information in darkness, fog, smoke, and other visually challenging environments.

Multi-mission flexibility

**Portable**
FirstLook is light, small, and stores in a standard load-out. The throwable robot weighs approximately 5 lbs and is 4” tall, 9” wide, and 10” long.

**Rugged and Agile**
FirstLook can survive 15 foot drops onto concrete and is waterproof down to 3.3 feet. Equipped with flippers, the robot can overcome obstacles up to 7” high, turn in place, and self-right when flipped over.

**Expandable**
FirstLook operates in challenging conditions. The robot can operate for more than 6 hours on typical missions and is equipped with 4 NIR enabled cameras, providing 360˚ continuous awareness.

**Manipulation**
FirstLook equipped with the Small Lightweight Manipulator (SLM) provides hands and eyes-on control in all situations. SLM can lift 3 lbs and extends 12” above the ground.
Robot
The iRobot 110 FirstLook provides multi-mission flexibility on a compact, rugged and battle-proven chassis.
Throwing (robot without accessories or payloads)
Highly mobile tracked propulsion with skid steering and zero radius turn
Integrated rechargeable battery
Operational in all weather environments and confined spaces

Operator Control Unit
The rugged, lightweight, OCU enables easy robot operation
Intuitive graphic user-interface
Recognizes and enables accessory specific behaviors
Displays real-time video from multiple visible and NIR cameras
Displays robot and flipper orientation, communications signal strength, battery charge level, and system configuration details
Includes robot discovery/selection and help pages

iRobot 110 FirstLook Robot
Components and Specifications

110 FirstLook
System Components
FirstLook Robot
Operator Control Unit
Robot and OCU AC charger with BB-2590 Adapter

Robot Specifications
<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>4” H x 9” W x 10” L (10.2 cm x 22.9 cm x 25.4 cm)</td>
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<tr>
<td>Weight</td>
<td>5.2 lbs (2.4 kg)</td>
</tr>
<tr>
<td>Speed</td>
<td>Up to 3.4 mph (5.5 km/h)</td>
</tr>
<tr>
<td>Communication</td>
<td>Line of sight range up to 656 ft (200 m)</td>
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<tr>
<td></td>
<td>Digital Radio</td>
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<tr>
<td></td>
<td>Modular Interface</td>
</tr>
<tr>
<td></td>
<td>2.4 or 4.9 GHz</td>
</tr>
<tr>
<td>Camera</td>
<td>Four (4) built-in cameras (front, rear, and side-facing)</td>
</tr>
<tr>
<td></td>
<td>Adjustable exposure and gain</td>
</tr>
<tr>
<td></td>
<td>Sensitive to visible and Near IR (NIR) light</td>
</tr>
<tr>
<td></td>
<td>8x digital zoom</td>
</tr>
<tr>
<td>Illumination</td>
<td>Near IR (NIR)</td>
</tr>
<tr>
<td>Run time</td>
<td>More than six (6) hours on average</td>
</tr>
<tr>
<td>Accessory Expansion</td>
<td>Accessory port facilitates integration of specialized cameras, thermal imagers, hazmat sensors, SLM, IDAC and charge deployment accessories</td>
</tr>
<tr>
<td>Rugged</td>
<td>IP 67 (submersible to 3.3 ft / 1 m)</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-4°F to 131°F (-20°C to 55°C)</td>
</tr>
<tr>
<td>Autonomous behaviors and poses</td>
<td>Self-right</td>
</tr>
<tr>
<td></td>
<td>Lock/Deploy (with IDAC)</td>
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</tbody>
</table>

Operator Control Unit (OCU)

OCU Components
Rechargeable
Game-style controller
Integrated Radio

OCU Specifications
<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>1.8” H x 9.3” W x 4.5” L (4.6 cm x 23.6 cm x 11.4 cm)</td>
</tr>
<tr>
<td></td>
<td>excluding collapsible antenna</td>
</tr>
<tr>
<td>Weight</td>
<td>2 lbs (0.9 kg)</td>
</tr>
<tr>
<td>Run Time</td>
<td>More than six (6) hours on average</td>
</tr>
<tr>
<td>Environmental</td>
<td>Rugged, water-resistant</td>
</tr>
<tr>
<td>LCD Screen</td>
<td>5” (12.7 cm)</td>
</tr>
<tr>
<td></td>
<td>800 x 480 resolution</td>
</tr>
</tbody>
</table>
# iRobot 110 FirstLook – Multi-mission flexibility

FirstLook’s intuitive design allows for rapid, tool-less sensor integrations, enabling the operator to complete multiple objectives with one robot on the same mission.

<table>
<thead>
<tr>
<th>Mission</th>
<th>Description</th>
<th>Configuration includes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intelligence, Surveillance, and Recon</td>
<td>The base robot and OCU combination provides an ideal solution for acquiring superior situational awareness in a range of tactical environments. The 110 FirstLook and OCU offer an expandable solution for your needs.</td>
<td>FirstLook Robot and OCU&lt;br&gt;Portable, throwable, rechargeable&lt;br&gt;5.2 lbs (2.4 kg)&lt;br&gt;4 visible and NIR cameras&lt;br&gt;Rugged, hand-held, game-style and rechargeable OCU with MESH radio communications</td>
</tr>
<tr>
<td>EOD, Object Manipulation, and Neutralization</td>
<td>Equipped with a rugged and proven third-party arm, 110 FirstLook can investigate, manipulate and lift objects as heavy as 3 lbs (1.4 kg).</td>
<td>FirstLook Robot and OCU&lt;br&gt;FirstLook SLM&lt;br&gt;Actuated mast camera&lt;br&gt;Actuated arm pitch and gripper open/close&lt;br&gt;Pre-set poses&lt;br&gt;SLM weight: 3.5 lbs (1.6 kg)&lt;br&gt;Robot w/ SLM: 8.7 lbs (4 kg)&lt;br&gt;Max lift: 3 lbs (1.4 kg)</td>
</tr>
<tr>
<td>CBRN Response</td>
<td>FirstLook provides a sensor agnostic platform to deliver third-party sensors to areas of interest and investigation. Easily integrated sensors can mount on the robot chassis and be viewed remotely on the OCU, ensuring safe stand-off distance.</td>
<td>FirstLook Robot and OCU&lt;br&gt;Sensors supported&lt;br&gt;Joint Chemical Agent Detector (JCAD)&lt;br&gt;Smiths LCD 3.3, Smiths Detection&lt;br&gt;MultiRAE, RAE Systems&lt;br&gt;Radiac, Canberra</td>
</tr>
<tr>
<td>Day/Night and All Weather Operations</td>
<td>Within seconds, the infantry can detach their L-3 Weapon Thermal Monocular unit and attach it to the FirstLook for integrated LWIR (thermal) imaging capability. The thermal image transmits directly to the robot OCU for real time heat signatures of humans and vehicles.</td>
<td>FirstLook Robot and OCU&lt;br&gt;Integrated Deployment and Camera&lt;br&gt;L-3 Weapon Thermal Monocular (WTM)</td>
</tr>
</tbody>
</table>
### Accessories

**Small Lightweight Manipulator (SLM)**

**SLM Components**
- Mast Camera with Illuminator

**SLM Specifications**
- **Size Stowed**: 3” H x 7.5” W x 10.5” L (7.6 cm x 19.1 cm x 26.7 cm)
- **Weight**: 3.7 lbs (1.7 kg)
- **Gripper Reach**: 9.2” (23.4 cm)
- **Max Lift Capacity**: 3.5 lbs (1.6 kg)
- **Actuated Degrees of Freedom**
  - Shoulder Pitch, 225°
  - Gripper Open/Close
  - Camera Mast Pitch, 90°
- **Manual Degrees of Freedom**
  - Gripper roll, 0° or 90°
  - Camera Pan/Tilt
- **Mast Camera Height Range**: 1.5” – 8” (3.8 cm – 20.3 cm)
- **Rugged**: IP 65

**Integrated Deployment and Camera (IDAC)**

**IDAC Components**
- 270° adjustable mast camera angle
- Visible light illumination
- Three motorized pins

**IDAC Specifications**
- **Size**: 6.1” H x 4.5” W x 7.5” L (15.5 cm x 11.3 cm x 19.1 cm)
- **Weight**: .8 lbs (0.36 kg)
- **Mast Camera Height**: 6.1” (15.5 cm)
- **Payload mounting points**
  - Three (3) synchronously actuated pins
  - Various mounting points
  - Eye bolt on back face for tether

### FirstLook Supported Sensors
- iRobot FirstLook carries and integrates an array of third-party sensors
  - **Carries**
    - Joint Chemical Agent Detector (JCAD)
    - Smiths LCD 3.3, Smiths Detection
    - MultiRAE, RAE Systems
    - Canberra Radiac, Canberra
  - **Integrates**
    - Weapon Thermal Monocular (WTM), L-3

iRobot and RE2 developed a rugged Small Lightweight Manipulator to give 110 FirstLook lifting, carrying, and manipulating capabilities. Together, iRobot and RE2 transformed FirstLook into a compact, fully functional dismounted system.