

Unmanned Systems and Integrated Solutions

Robots for Nuclear Power Plants

**CURTISS -
WRIGHT**

Nuclear Power Products and Services



About our Teaming Partner

Curtiss-Wright has partnered with Teledyne FLIR to provide unmanned systems and integrated solutions to customers that require platforms for remote data collection, inspections, access to hazardous areas or precision manipulations. Teledyne FLIR has delivered more than 20,000 unmanned platforms to over 50 countries. Its products include unmanned aerial systems, unmanned ground systems, and integrated solutions, including advanced thermal cameras and intelligent sensors used to detect chemical, biological, radiation, nuclear and explosive threats.

Teledyne FLIR has direct experience in the nuclear market, with a mature installed base of ground robotics in several commercial nuclear power plants and Department of Energy sites, as well as international projects.

Curtiss-Wright can provide the following unmanned systems support:

- Mission preparation
- Supply unmanned ground systems
- Platform maintenance and upgrades
- Conduct inspections
- Documentation/reporting
- Training
- Service



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Monitoring and Inspections

Teledyne FLIR robots are able to go into the radiation control area and perform monitoring and inspections including:

- Thermal and Visual Inspection
- Video Recording of Inspections
- Audio Capability
- In-service Inspections
- Leak Detection
- Meter and Gauge Reading Verifications
- Radiation Monitoring
 - Dosimetry
 - Survey
- Other Applications
 - Confined Space Operations
 - Detection, Monitoring and Measurements
 - Emergency Response
 - Environmental Cleanup
 - Material Transport and Storage
 - Remote Manipulation
 - Security
 - Waste Handling

Teledyne FLIR offers a family of robots for the nuclear power industry, all controllable from a common interface, with the best-known models being the FirstLook, PackBot, and Kobra.

FIRSTLOOK®

This 6.6 lbs remote reconnaissance robot for confined spaces features IR illumination for operation in dark environments.

- Sealed to IP67 – Easy to Decon
- Throwable – Survives 16-foot drops
- Waterproof to 3 feet
- Supports optional sensors and optional manipulator

PACKBOT®

This proven, versatile robot climbs stairs and features a manipulator that lifts up to 44 lbs at close-in position.

- Weighs ~65 lbs
- Sealed to IP67 – Easy to Decon
- High-definition zoom camera and video for detailed inspections
- 7+-foot camera reach and 4+-foot gripper reach
- Maximum manipulator lift of 44 lbs
- Designed for and compliant with a wide variety of EMI standards

KOBRA™

This powerful robot lifts 330 lbs at a close-in position and 100 lbs at full extension.

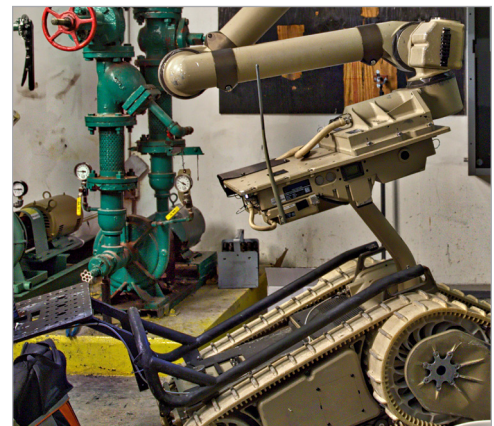
- Weighs ~500 lbs
- Sealed to IP67 – Easy to Decon
- Wireless or fiber optic communication
- Maximum manipulator lift of 330 lbs
- Designed to meet MIL-STD-461 and 464 for Electromagnetic Interference characteristics



At just 4.9" H X 9" W X 10.3" L, FirstLook has cameras on all four sides, making it a good fit for inspection.



PackBot supports multiple sensors including thermal camera and sensors for HAZMAT and radiation detection.



Kobra features a gripper reach of up to 11 feet, as well as multiple cameras and illumination capabilities.

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