ROBAI

Cyton Gamma 1500

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Cyton Gamma 1500™

Humanoid robot arms offer significant advantages. With many degrees of freedom, they are able to reach around obstacles and through passageways, reconfigure for strength, and manipulate objects with dexterous fluid motion.

These robots have kinematic redundancy, like that of the human arm, that enables placement of a hand or tool at a position and orientation in an unlimited number of ways. Kinematically redundant arms can continue to operate in the presence of impediments and constraints.

Combined with Energid's Actin 3D visualization, reasoning, and control software, the Robai Cyton Gamma can perform advanced control by exploiting its kinematic redundancy. Energid's optional networking software enables robust remote control through a local area network, internet, radio link, or cellular link.

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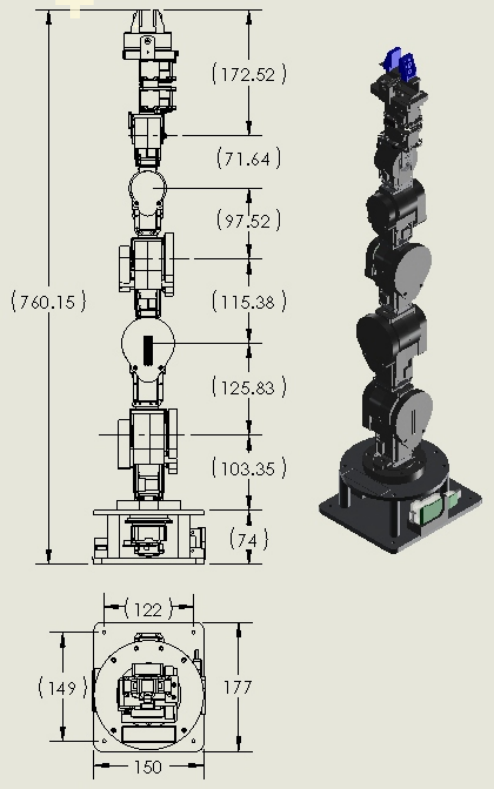

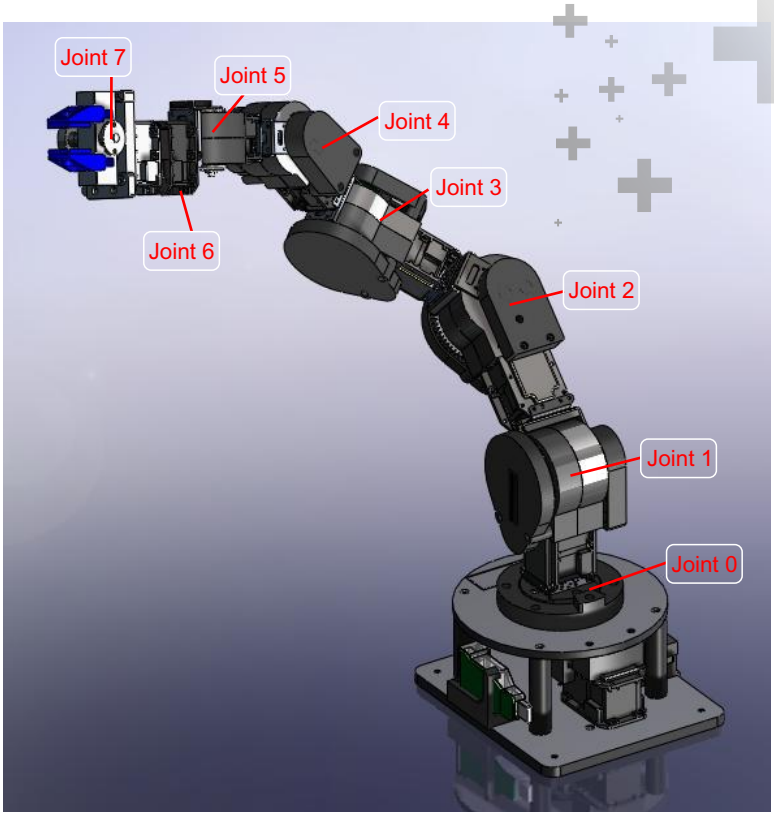

Mechanical Structure

The Cyton Gamma has seven degrees of freedom (DOF) plus an additional degree of freedom for the gripper. All axes are completely independent yet can be controlled simultaneously (using the included Actin control software). All joints have ball bearing support. Spin joints have additional planetary bearings.

Specifications	
Total Weight	2.5 Kg
Maximum Payload	1500 gms at full range
Reach	76.15 cm (base to tip)
Maximum linear arm speed	5 cm / sec
Repeatability	+/- 1 mm
2 parallel finger gripper (default) max. opening	3.5 cm
3 finger hand	Optional
Can be mounted in any configuration (no passive gravity counter balancing springs)	

Environment
Ambient temperature from 20ºC to 35ºC
Can be used under normal atmospheric pressure conditions

Axis Range	
Total independent axis	7
Shoulder roll (Spin)	300 deg.
Shoulder pitch (Articulate)	210 deg.
Shoulder yaw (Articulate)	210 deg.
Elbow pitch (Articulate)	210 deg.
Wrist yaw (Articulate)	210 deg.
Wrist pitch(Articulate)	210 deg.
Wrist roll (spin)	300 deg.

Electrical
Input Voltage: 100-240VAC. alternatively 12V DC 2A battery supply.
Current: 2.5A max in normal use

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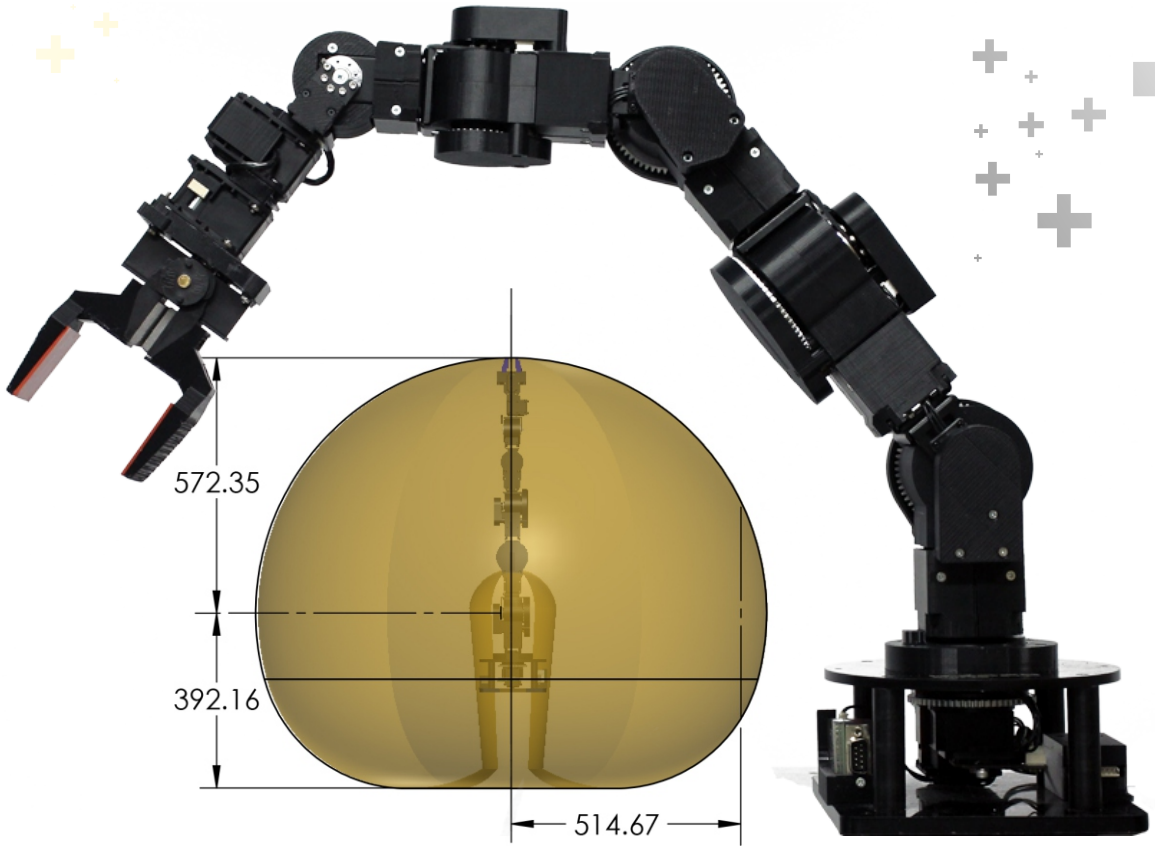

Actuators

High-performance, intelligent actuators give feedback on position, speed, load, voltage, and temperature. They also include status indicators and configurable fail safe switches.

Interface Electronics

Control is made through a USB or RS485 actuator controller card with configurable channel allocations. All actuators are connected through a single, daisy-chained cable.

Training Mode

In addition to programmatic control and control through the GUI, the user can train the arm by physically moving the end effector in space through any direction, orientation, and path. In this mode the trajectory is captured and stored. Stored trajectories and poses can be played back at a later time, enabling the user to set up task maneuvers and plan desired motions with ease.

Highly Dexterous

All the joints have a large range of motion. As such, the robot is exceptionally flexible and dexterous—unlike most traditional robotic arms of equal or fewer degrees of freedom.

Link Level Configurability

The user is able to configure actuator parameters through a convenient XML file. Torque limits, joint limits, voltage limits, and temperature limits are supported.

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