INTERMEDIATE INDUSTRIAL & VEHICLE APPLICATIONS EDUCATIONAL ROBOTICS CAMP
Technical sheet

Krypton 1 Robotics kit – SOLD SEPARATELY
What's in the box?

Programmable Logic Controller:
User friendly main control board. This is the brain for every project in this course. The controller manages the program signals from and to each sensor and actuator. It connects to a mobile device through a Wi-Fi connection.
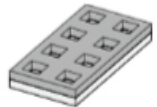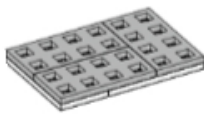

Main characteristics:
- RJ15 connector pins for 4 sensors and 2 motors
- Multicore Cortex-A7 processor @1.3GHz
- 1.6Gb storage
- 64KB RAM
- Wi-Fi module
- Embedded indicator LED light
- 6 AA Batteries (Included)

Structural parts:

A total of **715** plastic parts are included in this kit. These structural components are meant to be assembled without the need of special tools.
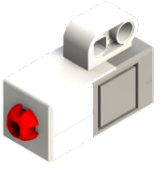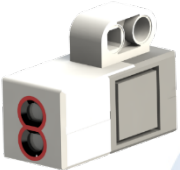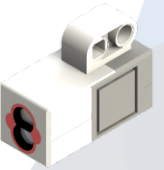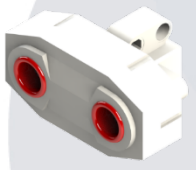
Part list				
Porous beam Black 30mm x12	Porous beam Red 30mm x6	Porous beam Green 30mm x6	Porous beam Yellow 30mm x6	Porous beam Blue 30mm x6
Porous beam 20mm x14	Porous beam Gray 30mm x12	Porous beam gray 70mm x20	Porous beam White 110mm x16	Axle(20mm) x8
Axle (30mm) x8	Axle (40mm) x8	Axle(50mm) x8	Axle (60mm) x8	Axle(80mm) x8
Coupling (90°) x6	Mecanum Wheel x 1	Guide Wheel x4	Coupling(20mm) x8	Marble x1
Bolt(20mm) x160	Bolt(30mm) x80	Bolt(15mm) x30	Axle sleeve x30	Beam U shape x2
Middle A connector x4	Slide bearing x8	Short bolt(2mm) x8	Middle L connector x8	Middle H connector x2

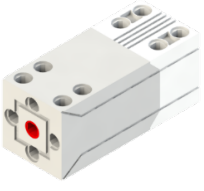|				
Porous beam 90° x10	Porous beam 126.87° x12	Porous beam 90° x6	Porous beam 126.87° x12	Gray gear #1 x4
Black gear #1 x4	Yellow gear #1 x4	Gray gear #1 x4	Black gear #2 x4	Yellow gear #2 x4
Cube x24	Half cube x8	Cube connector x20	Slope cube x6	60° cube x6
Non-slip rubber x20	Rail x40	Rail rim x4	Tire x2	Rim x2
Square beam x6	Small slab x1	1# Slab x3	2# Slab x2	3# Slab x1
4# Slab x1	8# Slab x1	Motor cable x6	AA Battery x6	

Sensors

These components are used to collect data from the environment. Each sensor must be connected to the PLC board and be programmed individually.

Sensor list

Picture	Name	Quantity	Function
-	Position (embedded in motor)	2	Determines motor's axis actual position and RPM
	Touch	1	Recalls the current state of the button, either pressed or not.
	Grayscale	2	Analyses the color of an object (how light or dark) to determine its shade of gray.
	Color	1	Determines the color of an object in front of it (red, green, blue, yellow, or white) or the intensity of a light shining upon the sensor. Best reads at 0.5in.
	Ultrasonic	1	Using an ultrasonic soundwave calculates the distance between the sensor and an object in front of it. Best reads from 1 to 25in.

Actuators

These components are used to create motion within an assembly. Each actuator must be connected to the PLC board and be programmed individually.

Actuator list			
Picture	Name	Quantity	Function
-	Speaker (embedded)	1	Play any sound coming from the PLC board.
	Small motor	2	Creates rotational motion at low torque and high speeds.

Minimum Hardware Requirements

Mobile Device: with Operating Systems iOS 9.3 or later or Android Oreo 8.0 or later. Memory: 8GB Minimum and RAM: 2GB Minimum.

Applications:

Download the following Apps in your device:

- Abilix Krypton Mobile App

This application encloses every functionality the Krypton robotics family has. The app contains introductory activities, a project gallery, interactive 3D assembly manuals, and three different block-based programming environments.

The app is available for iOS and Android users:
Apple AppStore: https://apps.apple.com/mx/app/abilix-krypton-todays-future/id1140118489
Google PlayStore: https://play.google.com/store/apps/details?id=com.partnerx.CRobotgplay

The App Includes 3 programming modules:

- Block-based Programming (Krypton Project Programming)

This programming tool is the easiest way to start programming robotics. The user works in an environment in which there are pre-programmed blocks; each block contains a predefined sequence which makes the robot move in a certain way. In this tool, there is no chance for failure since every block has been previously proven to work. This programming method is recommended for absolute beginners.

- Krypton Scratch Programming

This programming tool uses natural language blocks to program the robot; works just as any other Scratch programming environment. If you are already familiar using Scratch, this tool will fit you best.

- Krypton Chart Programming

This tool follows a flowchart programming scheme. Just as a regular flowchart program in any environment, the program will play from top to bottom following each block's configuration. This is the ideal tool for a more complete and complex project development.