

## XPLORIS Specifications



Parameter	Description
<b>SCIENCE DATA LOGGING</b>	
Built-in Accessible Sensors	6 built in sensors: External Temperature, Light, Distance, Sound, Heart Rate (clip sold separately), Voltage
Max. Sampling Speed	100/s
Sampling Resolution	12-bit
Measurement memory size	100,000 samples
Display type	Numeric data, bar graph
Remote Data Collection	Yes
Automatic Sensor Testing & Calibration	Yes
<b>CONTROL OUTPUTS</b>	
Open Collector switches	2 x Open Collectors outputs able to switch up to 3A
Voltage output	2 x 5V @ 100mA
Servo engine drivers	2 x PWM servo engine drivers
<b>ART</b>	
Image memory size	256 images
Display type	16x16 pixels images and animations
<b>GENERAL</b>	
Display	RGB LED dot Matrix 16x16 pixels
Speaker	0.7W 8 ohm
Keypad	Sensors and control keys
Internal Rechargeable Battery	LiPO 3.6V

Battery Life	> 10 hours
Size	$\phi= 104, H = 30$ mm
Weight	< 250gr.
Temperature Range	-10 to 50 °C
Standard Compliance	CE, FCC

## Built-in Sensor Specifications

Sensor Type	Max. Range	Accuracy
Heart rate	30 – 200 bpm	$\pm 2$ bpm
External Temperature	-25 to 125 °C	$\pm 1$ °C
Distance	0.1 to 4 m	$\pm 3$ mm
Light	1 to 60,000 lx	$\pm 10$ %
Sound Level	40 to 93 dB	$\pm 4$ dB
Voltage	0 – 5V	$\pm 2$ %

## Software Specifications

Parameter	Description
<b>CODING</b>	
BLOCKLY (google) editor	Data Types, Variables, Logical Operators, If else conditions, Loops, Input and Output Operations
Python editor	Python editor, Blockly to Python
XPLORIS simulation	Executing the code on a virtual XPLORIS simulation
Code flashing	Flash the created code to the XPLORIS via USB/BT
<b>SENSING &amp; DATA LOGGING</b>	
Data Retrieval	Real time up to 100 samples per second, or download Labdisc stored data
Display for k-6	Real time gauges and pictograph
Data Display	Line graphs, bar graphs, tables
Data Logging Configuration	Sensor selection, sampling rate, sampling points, trigger
Graph Manipulation	Placing and moving up to two markers on the graphs, zoom in/out, graph cropping, graph color change
Graph Annotation	Text annotations on the graph
Mathematical Functions	Derivative, linear regression, quadratic regression
Statistics	Minimum, maximum, average, standard deviation

<b>CONTROL</b>	
Inputs	Light, Distance, Temperature, Sound, Voltage
Conditions	Sensor level: greater, smaller, between, rising above, falling below a user defined value
Outputs	Animation speed, Servo speed, Servo angle, Left Contact on/off, Right contact on/off, Left 5V on/off, Right 5V on/off
<b>ART</b>	
Drawing tools	Pencil, color selection, color duplicator, line, rectangle, circle
Animation tools	Repeat image, image speed change
Pixel art library	Download from a cloud base library of images and animation
image flashing	Flash an image or animation via USB/BT, to be displayed on XPLORIS display