SPECIFICATIONS
Xploris and XploriLab

REV: 1.1
DATE: Jan 2026

Xploris Hardware

Parameter	Description
SCIENCE DATA LOGGING	
Built-in Accessible Sensors	5 built in sensors: temperature, light, distance, sound, voltage
Max. Sampling Speed	100/s
Sampling Resolution	12-bit
Measurement Memory Size	40 recordings or 80,000 samples
Display Type	Numeric data, bar graph
Remote Data Collection	Yes
Automatic Sensor Testing & Calibration	Yes
CONTROL OUTPUTS	
Open Collector Switches	2 x Open Collectors outputs able to switch up to 1A
Voltage Output	2 x 5V @ 100mA
Servo Engine Drivers	2 x PWM servo engine drivers
ART	
Image Memory Size	30 animations or 1800 images
Display Type	16x16 pixels images and animations
Music Composing	Up to 126 notes
GENERAL	
Display	Full color LED dot Matrix 16x16 pixels
Communication	USB 2.0, Bluetooth 4.2 (BLE)
Speaker	0.7W 8 ohm
Keypad / Buttons	7 keys/buttons
Internal Rechargeable Battery	LiPO 3.7V
Battery Life	11+ hours (low LED brightness) 7 hours (mid LED brightness) 5 hours (high LED brightness) 2 hours charging time
Size	φ= 104, H = 30 mm
Weight	140gr.
Temperature Range	-10 to 50 °C
Standard Compliance	CE, FCC

Built-in Sensors

Sensor Type	Max. Range	Accuracy
External Temperature	-25 to 125 °C	±1 °C
Ambient Temperature	-10 to 50 °C	±5 °C
Distance	40 to 400 cm	±2 mm
Light	0 to 60,000 lx	±10 %
Sound Level	42 to 100 dB	±4 dB
Voltage	0 – 5V	±2 %

XploriLab Software

Parameter	Description
CODING	
BLOCKLY/SCRATCH Editor	Data types, variables, logical operators, if else conditions, loops, input and output, operations
Python Editor	Python editor, Blockly to Python
Code Flashing	Flash the created code to the XPLORIS via USB-C/BT
SENSING & DATA LOGGING	
Data Retrieval	Real time up to 100 samples per second, or download Xploris stored data
Display for K-6	Real time gauges and pictographs
Data Display	Line graphs, bar graphs, tables
Data Logging Configuration	Sensor selection, sampling rate, sampling points
Graph Manipulation	Placing and moving up to two markers on the graphs, zoom in/out, graph cropping, graph color changing
Graph Annotation	Adding text, images, and GIFs to the graph
Functions	Average, Linear regression
CONTROL	
Inputs	light, distance, temperature, sound, voltage
Conditions	Sensor level: greater than, less than, between, rising above, falling below a user defined value
Outputs	Sound tones, animation speed, animation frame, servo angle, left contact on/off, right contact on/off, left 5V on/off, right 5V on/off
ANIMATIONS	
Drawing Tools	Pencil, color selection, color duplicator, line, rectangle, color fill, area selection, move
Animation Tools	Duplicate image, image speed change, adding sound track
Animation Layers	Supports 3 layers per animation frame

Pixel Art Library	Download from a cloud based library of images and animation
Image Flashing	Flash an image or animation via USB-C/BT, to be displayed on XPLORIS display
MUSIC COMPOSING	
Available Notes	1.5 octave, 16 notes
Composing Tools	Composition of up to 126 notes, controlling notes' duration
Composition Flashing	Flash via USB-C/BT, to be played by XPLORIS speaker
OS	Windows, iOS, Android (Chrome OS), WEB