Globisens

xploris by Globisens

AN ORCHESTRA OF STEAM LEARNING IN A COMPACT, HAND-HELD DISC

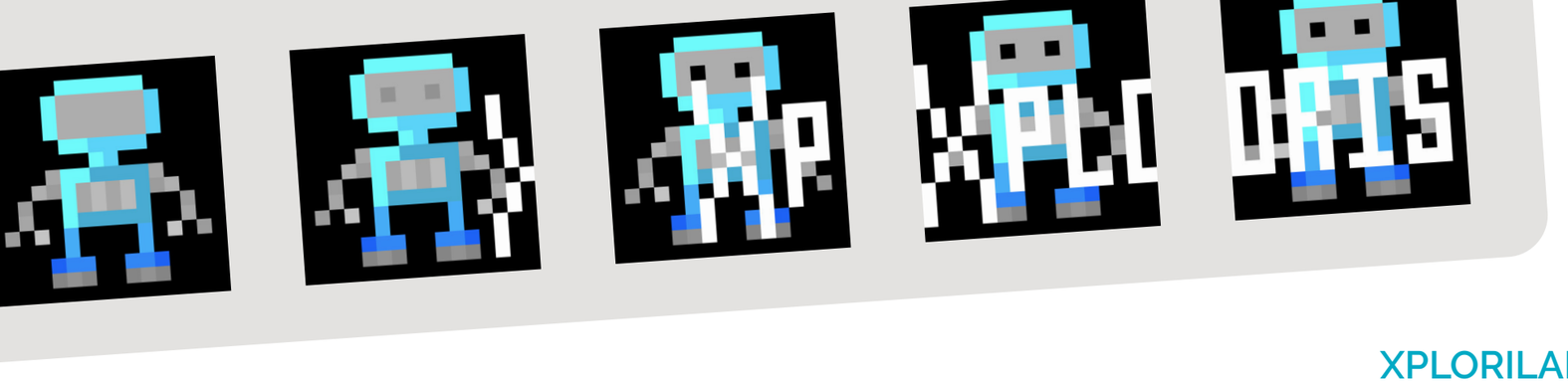
Xploris, the latest offering from Globisens is an all-in-one STEAM solution combining science data logging, coding, control and art, to provide a uniquely STEAM learning platform.

Equipped with 4 built in sensors, full color pixel art display, control outputs and a suite of 5 software application for Sensing, Science datalogging, Control, Coding and Art – the Xploris is first, true all-in-one STEAM solution.

It offers students an integrated end-to-end STEAM experience, from creating a pixel art flower animation to apply coding that opens the flower's leaves when sunlight is projected on a light sensor.

XPLORIS KEY FEATURES

- Seamless integration of all STEAM discipline.
- Wireless, fully featured, fits in the palm of your hand.
- Rich, colorful, easy to use and engaging software.
- Battery operated, with a battery life of 170 hours.
- Docking station for storing and charging 6 Xploris units.
- A cloud base repository for collaboration and sharing.
- Full suite of lesson plans for Science, Control and Coding.



XPLORIS – ONE DEVICE DOES IT ALL!

Despite of its small size and unassuming appearance - the Xploris is a powerful tool, packed with the latest modern electronic enabling full coverage of k-6 science, datalogging, art/multimedia and control.

Xploris 5 Built-in sensors, measuring temperature, light, sound, distance and voltage are all calibration free and ready to use on turn on.

Based on an ARM® Cortex®-M4 Microcomputer Xploris will smoothly run animations, play sound tracks, sample all sensors level and run Python command through its Micro-Python interpreter.

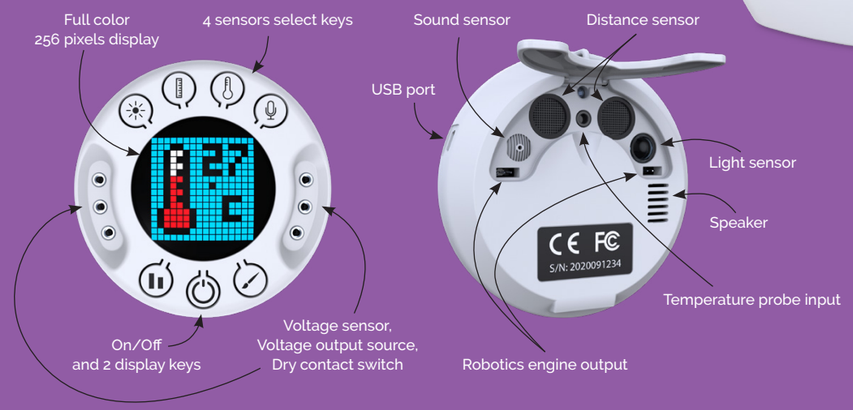
Xploris offers both USB and Bluetooth low energy communication, enabling a wire free connection to the XploriLab software, while maintaining low power consumption from its internal battery.

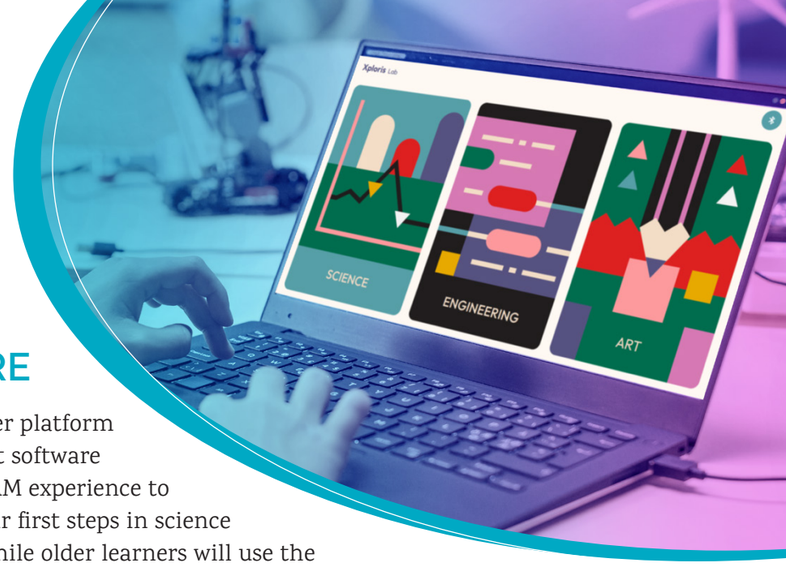
Xploris carries a large storage of up to 100,000 sensor samples, and up to 1,800 full screen images or 30 animations. Its rechargeable battery will support up to 170 hours of sensor recording on a single charge, making it ideal for long recordings, such as temperature changes over an entire week.

Through a set of 6 Banana sockets on the front of the Xploris and 2 servo outputs at the back of the device, users are able to output voltage, close internal switch and even control small robotics servo engines.

Xploris – all-in-one that does it all!

XPLORIS PORTS AND CONTROLS





XPLORILAB SOFTWARE

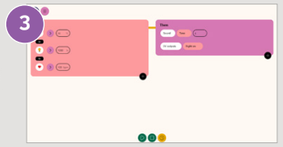
Designed with the Latest Google Flutter platform – XploriLab is consolidating 5 different software modules to deliver an integrated STEAM experience to k-6 students. Young kids will take their first steps in science research using the Sensing module, while older learners will use the Datalogging module for a full scientific data collection and analysis. With Coding, being the new literacy, it is important to have young students experience in creating simple block-based software, leading to advanced Python programming, with both these tools being part of the XploriLab Coding module. With Coding and Control modules, students are able to make the full use of the Xploris outputs for the operation of small robots, lamps and other devices, while with Art module they can demonstrate their creativity in creating colorful stills and animations.

Sensing

XploriLab sensing module is designed for early age scientific research. Students can measure temperature, light level, sound level, distance and voltage, viewing their readings in vivid and colorful displays of gauges, pictograph and bar graphs.

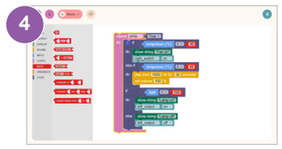
Science Datalogging

XploriLab Datalogging module incorporates sophisticated data analysis, lab reporting, plus wireless communication for full setup and control of the Xploris built-in sensors. It offers multi-media rich data visualization through Line-graphs, Tables and Bar-graphs. Graph analysis is made easy using markers, annotations and mathematical functions such as averaging, linear regression and more! All through an intuitive man machine interface.



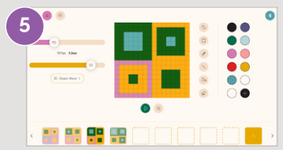
Control

Xploris includes **two engine controls and two on/off controls** to respond to data readings from sensors. Now students can take the next step and direct machines' output according to changes in their sensors' readings, such as adjusting greenhouse humidity or temperature according to live collected data.



Coding

Based on Blockly open-source coding, XploriLab software incorporates a coding editor allowing young users to apply visual programming principles via an intuitive graphical interface. In addition to Blockly graphical interface for coding, XploriLab also supports high-level Python programming for higher learning grades. This includes data types, variables, logical operators, If-Else conditions, loops, input and output operations.



Art

A newly established art form, **digital pixel art has made a huge comeback in recent years.** XploriLab offers students a platform for this creative and simple art form with a set of canvas colors and 16 x 16 LED grid for students to create, share and present their stills and animations.

HARDWARE PARAMETERS	DESCRIPTION
SCIENCE DATA LOGGING	
Built-in Accessible Sensors	5 built in sensors: temperature, light level, sound level, distance and 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
CONTROL OUTPUTS	
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
ART	
Image memory size	30 animations, 60 frames each, or 1800 still images
Display type	16x16 pixels images and animations
GENERAL	
Display	RGB LED dot Matrix 16x16 pixels
Communication	USB 2.0, Bluetooth 4.2
Speaker	0.7W 8 ohm
Keypad	7 keys
Internal Rechargeable Battery	LiPO 3.7V
Battery Life	Up to 170 hours (Datalogging, Control), 8 hours (Art)
Size	d = 104mm, H = 30 mm
Weight	140gr.
Temperature Range	-10 to 50 °C
Standard Compliance	CE, FCC

SOFTWARE PARAMETERS	DESCRIPTION
CODING	
BLOCKLY (google) 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/BT
SENSING & DATA LOGGING	
Data Retrieval	Real time up to 25 samples per second, or download Xploris 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
Graph Manipulation	Placing and moving up to two markers on the graphs, zoom in/out, graph cropping, graph color change
Graph Annotation	Adding text and images to the graph
Functions	Linear regression, average, derivative
CONTROL	
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 open/closed, right contact open/closed, left 5V on/off, right 5V on/off
ART	
Drawing tools	Pencil, color selection, color duplicator, line, rectangle, color fill
Animation tools	Repeat image, image speed change, add sound track
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
OS	Windows 11, Android, iOs

ABOUT GLOBISENS

Founded on 15 years of global innovation, Globisens brings trusted industry knowledge and proven leadership in the development and production of science and STEAM education tools. The launch of the Labdisc line has revolutionized the science and environmental education markets, with a 21st Century learning tool that integrates with the latest technologies and educational trends.