

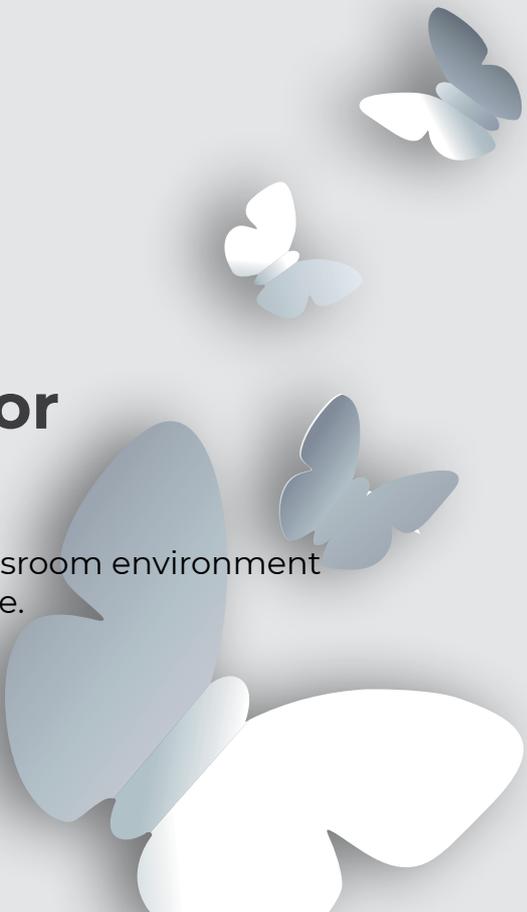


**CLASSROOM 4.0**  
WELLBEING RESOURCES



# Wellbeing Resources for your Classroom.

Controlling and adjusting the quality of the classroom environment and monitoring students' vital signs and posture.





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## Wellbeing Resources for your Classroom.

### We help students get the best results!!

CLASSROOM 4.0 is a school equipment project that monitors and improves the well-being of students and teachers in the classroom environment by incorporating non-intrusive monitoring technologies. Several studies have shown that the performance of students and teachers is influenced by the quality of the environmental conditions in the classroom. Providing a comfortable classroom environment correlates positively with students' learning and behaviour, as well as their satisfaction rates and academic performance.

This new generation of furniture and equipment includes multi-sensor IoT devices integrated into a network and incorporated into intelligent solutions, acting on two fronts:

### Classroom

Controlling and adjusting the quality of the indoor classroom environment by measuring the parameters of room temperature, humidity, carbon dioxide levels, noise, lighting levels and movement.

### Student

Monitoring students' well-being by reading vital signs (body temperature, heart rate and oxygen saturation), posture and activity/movement parameters.

This solution makes it possible to monitor and correct any deviations in the various parameters monitored, such as air conditioning, lighting, noise control and student posture. The main function of the CLASSROOM 4.0 application is to act as an interface between schools and the data collected in classrooms. This allows school managers to collect and define the ideal parameters for classroom environmental conditions, receive alerts and process the appropriate data.





# CLASSROOM 4.0

WELLBEING RESOURCES

Light 4.0

Light 4.0 + Sound 4.0

Sensor 4.0

Display 4.0

Smooth 4.0

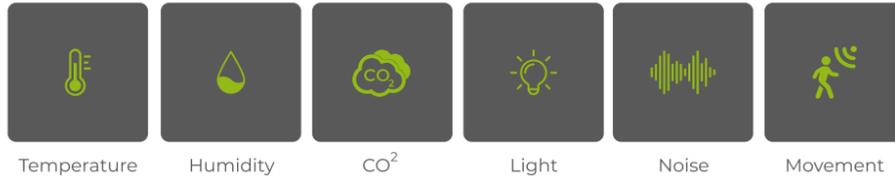




## CLASSROOM 4.0

WELLBEING RESOURCES

### CLASSROOM



### Sensor 4.0 + Display 4.0

Sensor 4.0 + Display 4.0 accurately measures the main quality parameters of the classroom's indoor environment in real time, namely temperature, humidity, carbon dioxide levels, noise, lighting levels and movement. By reading the data collected on a 10" tactile display, it is also possible to intervene directly on the Light 4.0 lighting equipment in order to correct the lighting level values if they are not within acceptable parameters.

#### Main features:

- 10" tactile display and IoT sensor(s) in black;
- Real-time and accurate measurement of the quality of the classroom's environmental conditions in 6 parameters;
- Visual feedback of abnormal values for subsequent correction.
- Extremely easy installation: only 2 sockets required;
- The device is equipped with a wireless network for communication between the Display 4.0 and the Sensor 4.0 (and with the solution's complementary items);
- No configuration required;
- Online data access (browser);
- Report generation;
- Includes power cable and wall mounting bracket.

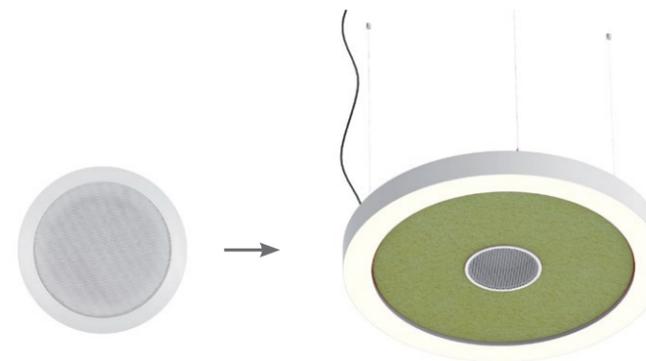


### Light 4.0

Continuously dimmable luminaire that can be networked, i.e. connected to other Light 4.0 luminaires. When operated in a network, the luminous flux of the different luminaires can be individually dimmed one by one, by groups or all at the same time.

#### Main features:

- Continuous dimming;
- Homogeneous, diffuse and efficient lighting;
- With integrated PET acoustic panel and available in various colours;
- Application suspended from stainless steel cables with quick height adjustment without the need to open the luminaire.



### Sound 4.0

Sound quality is also a crucial element when it comes to general well-being in the classroom. In the Light 4.0 luminaires there is the possibility of integrating Sound 4.0 equipment to enhance the sound experience inside the classroom. These devices with Bluetooth technology can be used to transmit high-quality sound, background music or even for sound therapy purposes.

#### Main features:

- Equipped with Bluetooth technology;
- Coaxial speaker with 3 power levels (2.5/5/10W) for 100V systems;
- Includes power supply





## CLASSROOM 4.0

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### STUDENT



Temperature



Heart Beats



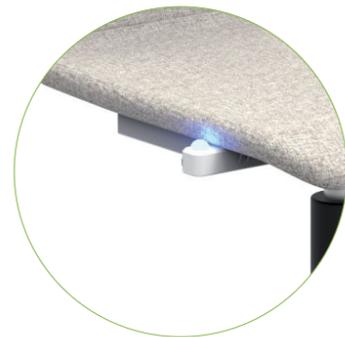
Blood O<sub>2</sub>



Posture



Activity



### Smooth 4.0

Smart chair made up of pressure and point contact sensors, which allow the student's body temperature, heart rate, oxygen saturation, posture and movement to be read and monitored. Equipped with an ID card reader to validate the student's presence in the classroom and assign the data collected to the student's profile. It also has a battery that powers a microcontroller (with a unique identity) equipped with lights and sound signals that indicate the system's status. It can communicate the data collected via the Wi-Fi network.

#### Main features:

- Plywood shell with rounded corners covered in semi-skin or fire-retardant fabric;
- Centre standing chair with gas height adjustment;
- Real-time and accurate measurement of 5 parameters (body temperature, heart rate, oxygen saturation, posture and movement).
- Identification card reader (no need to assign chairs to students) which allows the data collected to be assign the data collected to the student's profile;
- Equipped with an alert system for authenticating and measuring vital signs;
- Allows the data collected to be communicated via the Wi-Fi network;
- Battery included.



### Monitoring and adjustment

The main function of the CLASSROOM 4.0 application is to act as an interface between schools and the data collected in classrooms. This allows school managers to collect and define the ideal parameters for environmental conditions, receive alerts and process the appropriate data. The application is accessible online so that it can be accessed from various devices.





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