



Canāree

Air Quality Monitoring and Classification of Particulate Matter Product Specification

Product Summary

Canāree is a compact Air Quality Monitor that can classify particulate matter (PM). When connected to a PC, network device (Wireless Access Points) or any Host Device via USB it becomes IoT Enabled. Canāree collects real-time PM data locally on the device it's connected to and can also send data to a cloud service for remote monitoring and analysis. SenseiAQ™ Software displays the data on a dashboard including Air-Quality-Index (AQI) Scores, alerts for vape, smoke, etc. from particle count and distribution. An API supports third party integrations such as Air Quality Management Systems, Air Purifiers, etc. SenseiAQ runs on Windows, MAC, iOS or Android locally or on a cloud service.



Figure 1 - Canāree (7cm x 5cm x 1.4cm)
(2.75" x 2" x 0.5")

Canāree utilizes Piera's Intelligent Particle Sensor series 7100. Using a unique algorithm to identify different particulate sizes - Canāree provides real-time precise airborne particulate matter monitoring such as air-pollution, smoke, vape and noxious gas detection for indoor applications.

Features

- Ultra-high sensitivity for detecting PM0.1 – PM10 airborne particulates. Submicron particle detection
- Fast data acquisition and sampling (1 sec.)
- 7 particle size bins
- OTA Firmware update capability
- Small, robust, self-cleaning and long lifespan
- Plug-and-play USB installation

Applications

- Enterprise monitoring of indoor air quality, AQI reporting
- Ideal for Clean Rooms, Hospitals, Office-Spaces, College Campuses, Hotel/Shared living and Industrial Environments
- Smoke/vape detection with real-time alerts and notifications
- Air Quality Mitigation (Air Purifiers, HVAC Systems)

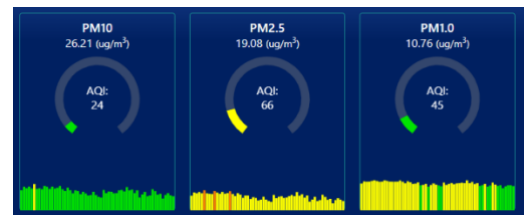


Figure 2: SenseiAQ Dashboard

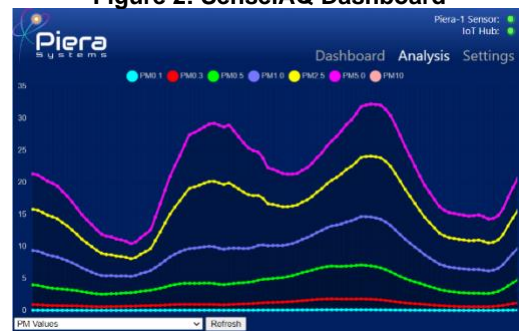


Figure 3: SenseiAQ Software

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1. Canāree Specifications

Specifications	
USB-Serial Driver	Silicon Labs CP2102 UART Bridge
Baud Rate / Data Bits / Parity / Stop Bits	115200 / 8 / N / 1
USB Power Draw	5.5V @ 80mA (Continuous Operation)
USB Connector Type	Type A - USB 2.0 Max Length 10' (Cable Extension)
Physical Dimensions	7cm x 5cm x 1.4cm (2.75" x 2" x 0.5")
Weight	35g (1.2 oz)
Onboard LED	Status indicator
Software Supported	SenseiAQ (Windows / MacOS) Application
Cloud Reporting Support	Microsoft Azure IoT Hub
MTBF (24-hour operation)	8 Years ¹
Power Saving Mode	Supported (through SenseiAQ)
Cleaning Mode	Supported (through SenseiAQ)
Operating temperature range	-10°C to +60°C
Storage temperature range	-40°C to +80°C
Operating humidity range	0 to 95% RH (non-condensing)

Parameter	Conditions	Value	Units
Particle count accuracy ¹	-	±10	%
Particle count resolution	-	1	#/CF
Particle count range	-	85 million	#/CF
Mass concentration range ⁴	-	5,000	ug/m ³
Particle size range for particle count binning (differential)	PC0.1 ⁴	<0.1	um
	PC0.3	0.1 - 0.3	um
	PC0.5	0.3 - 0.5	um
	PC1.0	0.5 - 1.0	um
	PC2.5	1.0 - 2.5	um
	PC5.0	2.5 - 5.0	um
	PC10	5.0 - 10	um
Particle size range for mass concentration binning (cumulative)	PM0.1 ⁴	<0.1	um
	PM0.3	<0.3	um
	PM0.5	<0.5	um
	PM1.0	<1.0	um
	PM2.5	<2.5	um
	PM5.0	<5.0	um
	PM10	<10	um
Sampling time	-	>0.1	s
Start-up time	-	6 @1s sample time	s

Table 1. Canāree PM Specifications

- Lifetime may vary depending on different operating conditions.
- Deviation from reference counter (GRIMM 11D model year 2006) based on average readings over 3-minute period. The accuracy is verified after calibration using a Smoke Detector Tester Spray, SDI LLC. Ask Piera Systems for further details.
- Mass concentration detection limit is estimated for PC2.5. May vary depending on size and density of particles.

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4. Number concentration of PM0.1 is estimated by extrapolation.

2. Installation

2.1 Types of Installations

Single or Multiple devices plugged into Host Device via USB. Host Devices include Wireless Access points, PC's, Smart TV's, iOS/Android phones. Canāree PM has been validated and works with HPE-Aruba Wireless Access Points (ArubaOS V8.8 or later). Piera Systems is an HPE-Aruba Solution Partner.

2.2 Coverage Area

10 m², 100 ft²

2.3 Configuration and setup

Via SenseiAQ Software running on host device or remotely. Device automatically registers on Piera Systems MS Azure Cloud service and is ready for use after it is plugged into Host's USB port.

3. Cloud Support

2.1 Microsoft Azure

2.2 Other Public and Private Cloud Services – Contact Piera Systems support@pierasystems.com.

4. Ordering Information

Please visit www.pierasystems.com or email to info@pierasystems.com.

5. Important Notices

5.1 Warning, Personal Injury

Do not use this product as safety or emergency stop devices or in any other application where failure of the product could result in personal injury. Do not use this product for applications other than its intended and authorized use. Before installing, handling, using or servicing this product, please consult the data sheet and application notes. Failure to comply with these instructions could result in death or serious injury.

If the Buyer shall purchase or use Canāree PM for any unintended or unauthorized application, Buyer shall defend, indemnify and hold harmless PIERA SYSTEMS and its officers, employees, subsidiaries, affiliates and distributors against all claims, costs, damages and expenses, and

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reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if PIERA SYSTEMS shall be allegedly negligent with respect to the design or the manufacture of the product.

5.2 Warranty

Piera Systems warrants solely to the original purchaser of this product for a period of 12 months (one year) from the date of delivery that this product shall be of the quality, material and workmanship defined in Piera Systems' published specifications of the product. Within such period, if proven to be defective, PIERA SYSTEMS shall repair and/or replace the product, in PIERA SYSTEMS's discretion, free of charge to the Buyer, provided that:

- notice in writing describing the defects shall be given to PIERA SYSTEMS within 14 (fourteen) days after their appearance;
- such defects shall be found, to PIERA SYSTEMS's reasonable satisfaction, to have arisen from PIERA SYSTEMS's faulty design, material, or workmanship;
- the defective product shall be returned to PIERA SYSTEMS at the Buyer's expense; and
- the warranty period for any repaired or replaced product shall be limited to the unexpired portion of the original period.

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PRELIMINARY

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