InPharmaTEC
TCR Tecora® division

Made in **Italy**

CPC - X1

Table of Contents

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CPC-X1

CRITICAL PARAMETERS CONTROLLER - MODEL X1

Switch on-off

USB

Tube Connection

Tube Connection

Display 5" Colour Touchscreen
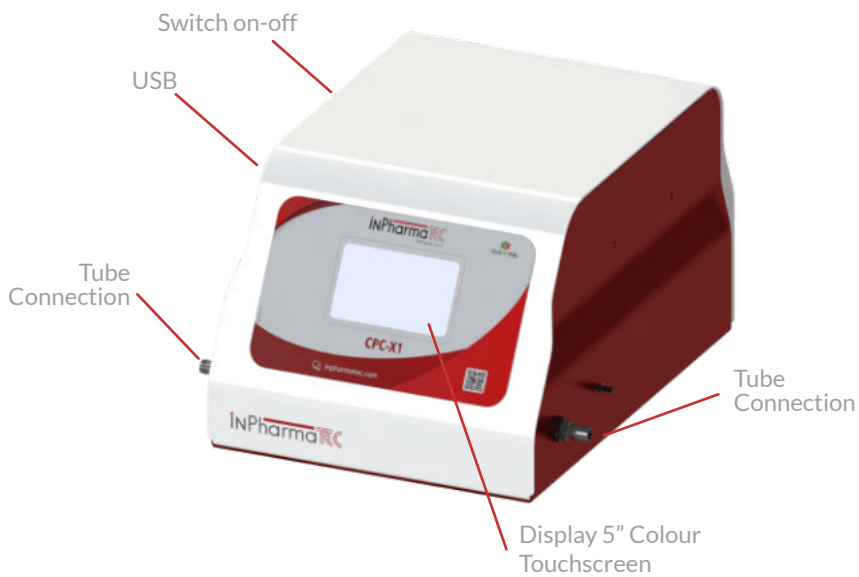
- ❯ Healthcare
- ❯ Inhaler Testing
- ❯ Pharmaceutical Production

The use of Critical Parameters Controller (CPC-X1) when testing inhalers, such as dry powder inhalers (DPIs) or metered-dose inhalers (MDIs), **is crucial to ensure that testing conditions closely simulate real-world usage and provide consistent, reliable, and accurate results.**

Key reasons for using a CPC-X1 in Inhaler Testing:

1. Consistency and Reproducibility;

2. Simulation of Real-World Conditions;

3. Compliance with Regulatory Standards;

4. Optimizing Drug Delivery;

5. Reducing the Impact of External Variability;

6. Improved Safety and Quality Control;

7. Optimization of New Formulations and Devices.

Technical Characteristics of CPC-X1:

Measurement of Critical Parameters

- **Differential Pressure Sensor.** Used to measure the resistance of the inhalation device during testing;

- **Pressure Measurement.** Captures pressure values both upstream and downstream of the control valve, ensuring precise control and monitoring of pressure variations;

- **Absolute Pressure Sensor.** Monitors the atmospheric pressure, providing crucial data for calibration and testing under real-world conditions;

- **Remote Sensor Connection.** Enables the integration of external sensors for the measurement of temperature and relative humidity, ensuring environmental factors are accurately accounted for;

- **Integrated Flowmeter.** Measures airflow rates during testing, ensuring the proper flow conditions are met for reliable performance evaluation.

Run test function

- **Timer-Controlled Solenoid Valve.** Regulates the flow duration during testing, ensuring precise control over the test period;

- **Automatic Calculation of Test Duration.** The system calculates the test duration automatically based on the test setup parameters, streamlining the process and reducing manual input;

- **Illuminated Test Actuation Button.** The button lights up to signal when the system is ready to initiate the test, enhancing usability and operational clarity;

- **External Trigger Input.** Allows for test actuation via an external TTL trigger input through the 'RUN-IN' socket, enabling integration with external systems or automated setups;

- **Actuation Settings and Count.** Includes functionality for setting and counting the number of actuations, ensuring precise control over the number of tests performed.

Data recording

- **Documentation of Parameters via USB Output.** Allows for the export of key test data directly to a computer, facilitating comprehensive record-keeping and analysis;

- **Run Test.** Records the test run details, ensuring full traceability of each test conducted;

- **Test Setup.** Logs the test setup parameters, documenting the specific conditions under which the test was performed;

- **Leak Test.** Captures data from the leak test, ensuring that the device's airtightness and performance integrity are properly documented;

- **Flow Resistance / Delta-P.** Measures and records flow resistance (ΔP), providing essential data on device performance in relation to airflow;

- **Calibration Information.** Stores calibration data to ensure all measurements are accurate and traceable to standardized reference points;

- **Impactor Leak Test Function.** Documents the impactor leak test results, ensuring the performance of the impactor in terms of leak tightness is verified;

- **Automatic Control of Leak Test Pressure.** Provides control over the leak test pressure, ensuring that this critical parameter is regulated and documented;

- **Measurement of Impactor Leak Rates.** Facilitates the measurement of leak rates in impactor systems, ensuring proper device function and compliance with test standards.

CPC-X1 System

The **CPC-X1** operates in three distinct modes, each designed to accommodate different testing requirements for inhalation devices:
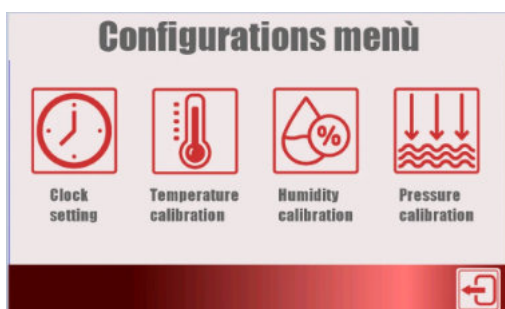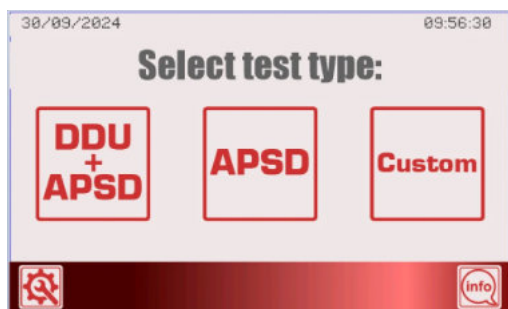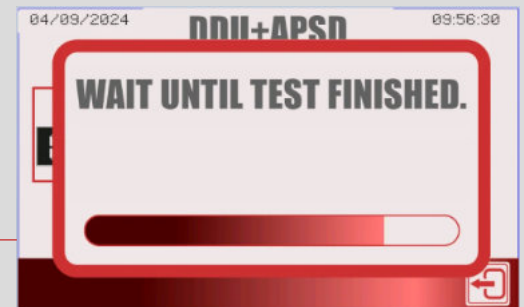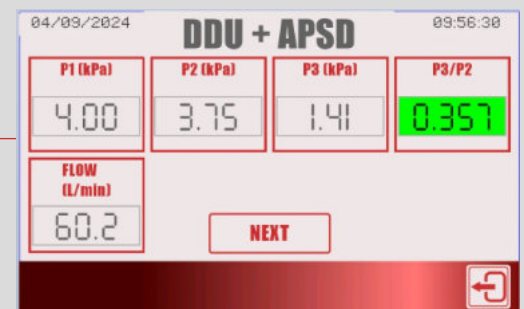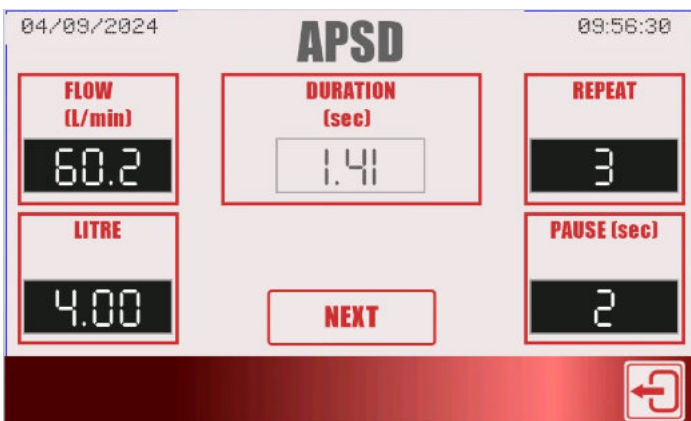
Step 1

Step 2

Step 3

DDU and APSD Mode:

This mode is specifically tailored for testing powder-based inhalers (such as Dry Powder Inhalers, DPIs). The system automatically calculates the required airflow based on the inhaler's type and its flow resistance, ensuring accurate and standardized test conditions.

APSD Mode:

Primarily used for Metered Dose Inhalers (MDIs) or for situations where the required airflow for device testing is already known.
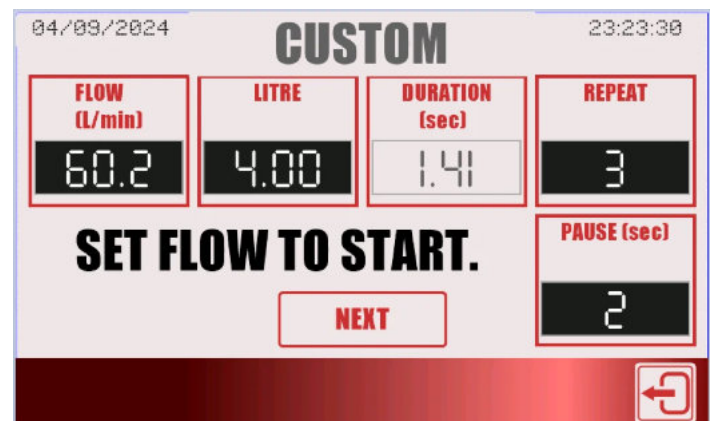
Custom Mode:

This mode allows for flexibility in the testing procedure, where test conditions are fully customizable according to the customer's specifications. It is ideal for specialized tests or non-standard devices where unique parameters need to be configured based on specific requirements.

Each mode provides tailored functionality to meet the varied needs of inhaler testing, ensuring precise and relevant data based on the type of device and test objectives.

Example of Application using CPC-X1:
APSD Testing for DPIs

Main Features

Dimensions (mm)	304 x 415 x 230
Power	110 VAC/230 VAC, 50/60Hz
Weight (Kg)	About 4

Product Code

Product	Code
Critical Parameters Controller (CPC-X1) 230 VAC	AC99-122-1021SP
Critical Parameters Controller (CPC-X1) 110 VAC	AC99-122-1023SP