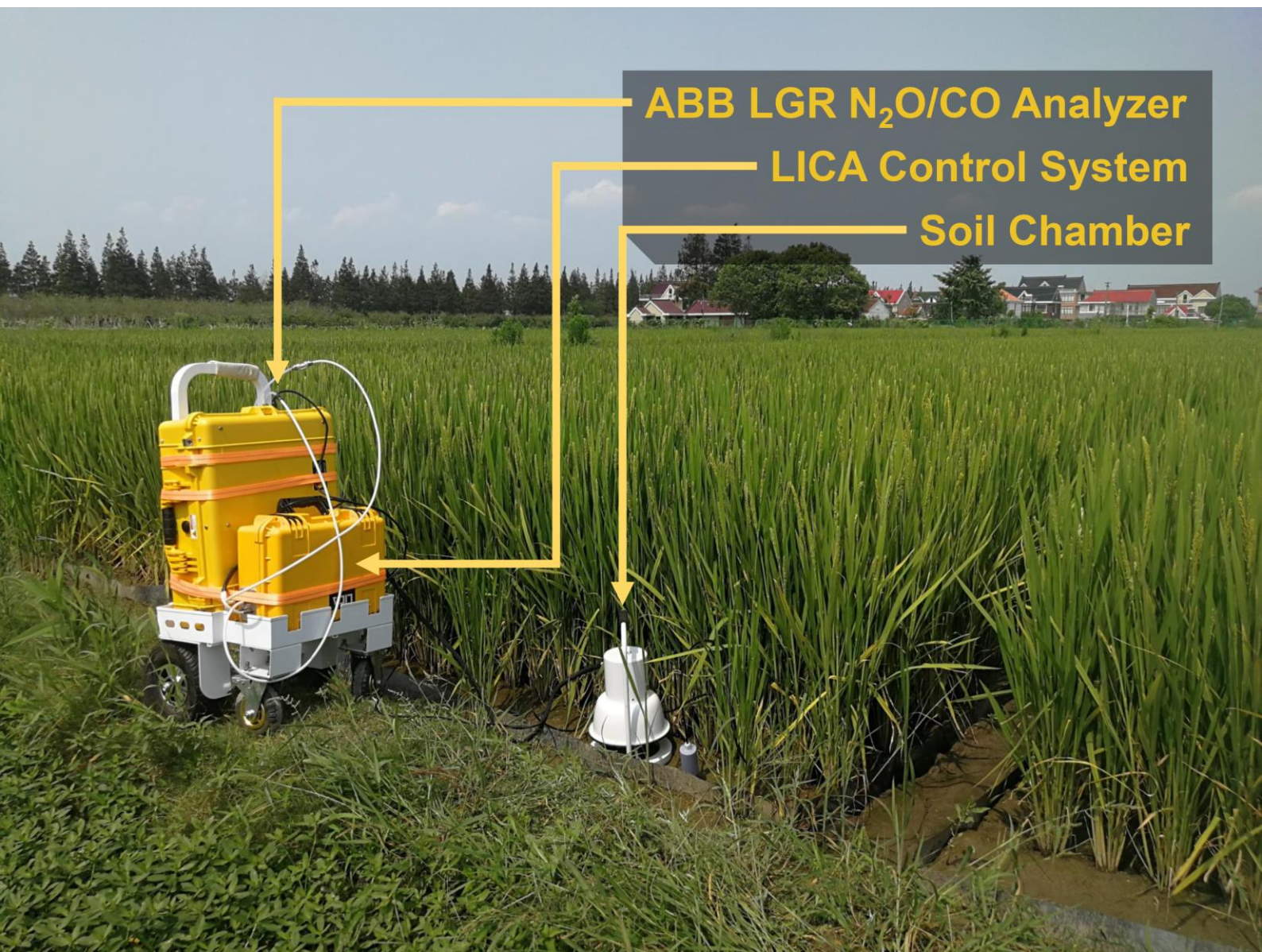


# PS-3020

## Portable Automatic Soil Respiration System



Novel Instruments Provide New Opportunities!

## Preface

In soil, excessive nitrogen fertilizer can promote microbial activities and transform nitrogen into  $N_2O$  through nitrification and denitrification.  $N_2O$  exists in the atmosphere for a long time. It can be transported to the stratosphere, destroy the ozone layer, cause the ozone hole, expose human and other organisms to the ultraviolet radiation of the sun, and cause damage to human skin, eyes and immune system.

Among all kinds of air pollutants discharged by industry, CO is the main one. The pollutants will fall into the soil with precipitation and natural sedimentation, which will lead to the decline of land production potential and the deterioration of product quality, and cause serious harm to human beings, animals and plants.

The **PS-3020 portable automatic soil respiration system** is a measurement system that utilizes the chamber method to measure soil  $N_2O$  and CO flux emissions. The system has the functions of control measurement, storage and data processing. The PS-3020 can read the changes of  $N_2O$  and CO in the respiration chamber measured by the portable  $N_2O$  and CO analyzer in real time, and combine the monitoring data of the air temperature, atmospheric pressure and soil temperature. The  $N_2O$  and CO emission flux values are then can be obtained. Meantime the acquired raw data and the calculated flux results are stored in the SD card.

SC-12N portable automatic soil respiration chamber can automatically repeat measurements. Also it is light, easy to carry and operate in situ. Uniquely designed, measurement results will be more accurate.

PS-3020 set a variety of measurement parameters through the wireless mobile phone APP real-time, and displays the measurement results of the instrument at the same time.



## Main features

- The analyzer could measure  $N_2O$ 、 $CO$  and  $H_2O$  flux at the same time.
- The analyzer's measuring frequency could reach 10 Hz.
- Simplified user interface, could easily get the results with only a few operations.
- No need the steps of data post-processing, the measured results can be directly displayed and saved.
- Weight is as light as 23 kg.

## Specifications

### Analyzer: Portable $N_2O$ and $CO$ analyzer

#### Precision (1s, 1 sec / 10 sec):

$N_2O$ : 0.5 ppb / 0.2 ppb [ $<500$  ppb]

$CO$ : 0.5 ppb / 0.2 ppb [ $<500$  ppb]

$H_2O$ : 100 ppm / 40 ppm

#### Linear measurement ranges (meets all specifications):

$N_2O$ : Up to 4 ppm

$CO$ : Up to 4 ppm

$H_2O$ : Up to 30 000 ppm

#### Operational ranges:

$N_2O$ : Up to 40 ppm

$CO$ : Up to 40 ppm

$H_2O$ :  $<99\%$  RH, non-condensing

#### Measurement rate:

0.01 – 1 Hz (user selectable)

#### Flow response time:

$<30$  seconds (1/e)

$<10$  seconds (1/e) with external diaphragm pump ACC-DP3H

#### Sampling conditions:

Operating temperature: 5 – 45 °C

Ambient humidity:  $<99\%$  relative humidity non-condensing

#### Data outputs:

WiFi, Ethernet, USB, Serial (RS-232)

#### Power requirements:

24-30VDC

110/240 VAC, 50/60 Hz

180 watts (steady state)

max 300 watts with ACC-DP3H

#### Dimensions:

51 cm (20 in.) x 61cm (24 in.) x 20 cm (8 in.)

#### Weight:

23 kg (51 pounds)



## PS-3020 Control system

Display screen: Mobile app (Android)  
Micro-processor: ARM Cortex-m3  
Operating temperature: -20-60 °C  
Power requirements: < 10W  
Storage medium: SD card  
Communication interface: WiFi, RS-232, SDI-12  
Synchronous pump: 12V, < 0.5A  
Flow rate: 3L / min  
Battery type: 24 v-40 ah lithium battery  
Battery life: 3-4 hours (single battery)  
Weight: 10.95 kg (including single battery)



## Portable automatic soil respiration chamber (SC-12N)

Measuring Area: 276.27 (cm <sup>2</sup> )	Power requirements: < 2.2 W
Fixed volume of air chamber: 3451.00 (cm <sup>3</sup> )	Dimensions: 27.5*24.5*44.5 cm
Cable Length: 2 m	Weight: 3.85 kg

## Soil temperature and humidity sensor (LI-520A)

Humidity measurement range: 0-100%	Accuracy: ±2%(0-50%), ±3%(51-100%)
Temperature measurement range: -30 ~ +70°C	Accuracy: ±0.5°C
Communication mode: SDI-12	Cable Length: 2 m

## Ordering Information

1. GLA151-N2OCM: N<sub>2</sub>O and CO analyzer
2. PS-3020: Control system

(Including instrument storage and control module, cart, two lithium batteries, two lithium battery chargers, soil temperature and humidity sensor, a handheld controller, etc)

3. SC-12N: Portable soil respiration chamber

**Support: Provide technical support and service for life**

**Manufacturer: ABB LGR, Canada / LICA, China**

## Contact us

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