PRI-ECO
普瑞亿科

IPS-1000 Portable Isotope Photosynthesis System

Using stable isotopes to understand photosynthesis stable isotopes are extremely useful for studying a wide range of biological processes either through monitoring changes in natural abundance or through enriching samples with one isotopomer and tracking how the label moves through a system. IPS-1000 is newly designed portable isotope photosynthesis system for leaf gas exchange reserch of various plants. IPS-1000 could measures both $12CO_2$ /$13CO_2$ gas exchange and isotope photosynthesis, which is a fist commercialized isotope photosynthesis system in the world. The system can be widely used in plant physiology, breeding screening, ecological research and other fields, and further enhance the depth and breadth of botanists, agronomists and ecologists in related fields.

Key Feature

Measure both $^{12}CO_2/^{13}CO_2$ and $\delta^{13}C$ photosynthesis at the same time

Automatic light curve, CO_2 curve and isotopic photosynthesis

6-channel standard gas and isotope gas

Applied to research water isotope transpiration of leaves

Specifications

Isotope analyzer	
$\delta^{13}C$ Precision (1σ)	<0.5‰ (1σ) @ 0.25s <0.3‰ (1σ) @ 1s <0.08‰ (1σ) @ 60s <0.05‰ (1σ) @ 300s
CO_2 Measurement Range	0-10000 ppm
Measurement Frequency	4 Hz
Rise-Fall 10-90%,90-10%	0.25 s
Sample Flowrate	15 mL/min, 5 mL /min(typical)
Sampling Temperature	-10 to ~45 °C
Sampling Pressure	300~1000 Torr (40~ 133 kPa)
Sampling Humidity	0-100% R.H, non-condensing

Temperature	
Range	0-80°C
Chamber Temp. Control	
Accuracy	±0.5°C
Typical Error	<0.3°C
Temp. Control Range	±8°C than Ambient temp.
Air and Leaf Temp.	
Accuracy	±0.1°C (typical)

Flowrate	
Flowrate	0~1500 mL/min

Gas Pressure Control	
Range	300~1000 Torr
Accuracy	±0.1%

Control System	
Processor	Intel Core
Memory	4G
Hard Disk	SSD, 120G
Display	PAD
Output	Digital (RS-232), Ethernet, USB
Weight	35 kg

IPS1000-I CO_2 Gas Supply System	
CO_2 Concentration Range	0~10000 ppm @500 mL/min
Cylinder	Liquid cylinder, with control switch, can be closed
Consumption	0.06~4 mL/min@150~4500 ppm&500 mL/min
Channal	3 Sample Gas and 3 Calibration Gas

IPS1000-01 LED Red, Blue, Green and White Light	
Total Output Range	0~>2000 μmol $m^{-2}s^{-1}$@ 25℃
Blue Light Output Range	0~>400 μmol $m^{-2}s^{-1}$@ 25℃
Red Light Output Range	0~>1600 μmol $m^{-2}s^{-1}$@ 25℃
Blue Light Peak Wavelength	660 nm
Red Light Peak Wavelength	453 nm
Power	<5 W @ 2000 μmol $m^{-2}s^{-1}$
Leaf Chamber Area	3×3 cm^2

IPS1000-02 LED Red and Blue Light	
Total Output Range	0~>2500 μmol $m^{-2}s^{-1}$@ 25℃
Blue Light Output Range	>2000 μmol $m^{-2}s^{-1}$@ 25℃
Green Light Output Range	>1000 μmol $m^{-2}s^{-1}$@ 25℃
Red Light Output Range	>2400 μmol $m^{-2}s^{-1}$ @ 25℃
White Light Output Range	>1500μmol $m^{-2}s^{-1}$ @ 25℃
Blue Light Peak Wavelength	453 nm
Green Light Peak Wavelength	523 nm
Red Light Peak Wavelength	660 nm
Power	<5 W @ 2000 μmol $m^{-2}s$-1
Leaf Chamber Area	3×3 cm^2

PAR Senor	
Range	0~4000 μmol m^{-2} s^{-1}
Resolution	1 μmol m^{-2} s^{-1}

Manufacturer: PRI-ECO

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