INTRODUCTION

SD300A

PORTABLE & HANDHELD
EXPLOSIVE AND NARCOTICS TRACE DETECTOR

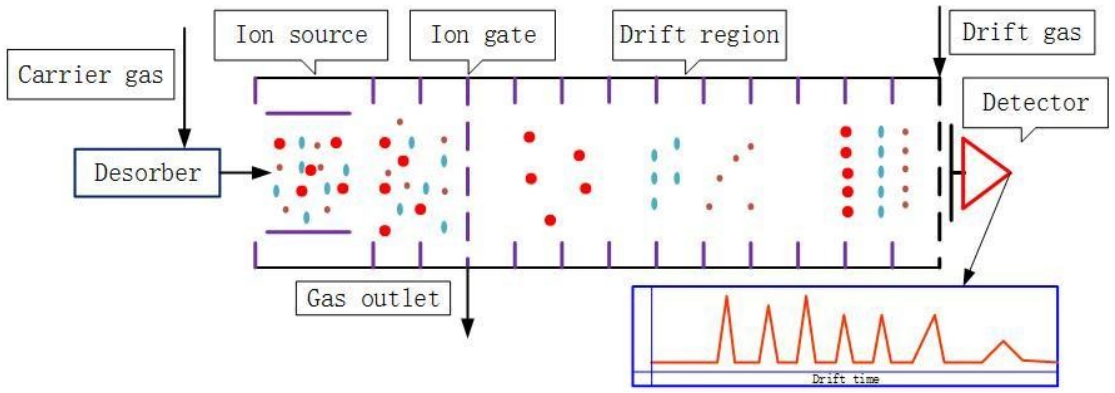
Securina SD300A portable explosive and narcotics trace detector is a narcotics and explosives detection device Based on the principle of ion mobility spectrometry, it can accurately detect particles or vapor of trace amounts of explosives and narcotics, and give the ingredient names.

Securina SD300A handheld explosive detector is small size and light, portable for carry. With low false alarm rate, low power consumption, easy to use and maintain, it features user-friendly and environmentally friendly, and produces fast and unambiguous results.

Due to the superior technical features and specifications including fast response, high precision, low power consumption, easy to operate and maintain, the detector is widely used for dangerous goods detection in airports, ports, customs checkpoints, border crossings, and crowd-gathered places, or used as a tool for forensic evidence examination and identification.

THEORY OF OPERATION

Securina SD300A portable explosive/narcotics trace detector uses a reliable trace detection technology based on the ion mobility spectrometry. The core component of this device is the drift tube, which is schematically illustrated in Figure below. It mainly included a ion source, ion gate, drift region and detector.



KEY FEATURES

1) **Dual-mode Settings**
The instrument combines the positive and negative two modes inside, which are respectively for the detection of explosives and narcotics

2) **One-touch Detection**
One-touch detection, easy to operate

3) **Precise Detection**
Based on Ion Mobility Spectrometry(IMS) technology, in practice, the instrument don't need touch directly the dangerous target from the package to make a test. Target particles can be collected on clean and new traps by hand-wiping suspect with the trap, to facilitate a simple and precise detection.

4) **Accurate Identification**
The instrument is able to accurately identify the name and ingredient name of dangerous materials.

5) **Speedy Analysis**
Fast response, can give test result within 3 seconds

6) **Automatic Calibration**
The instrument is adaptive to various external environment changes with automatic calibration function

7) **Automatic Cleaning**
with automatic cleaning function, after overload detection, the instrument can quickly and easily clean itself

8) **Automatic Diagnosis**
with automatic fault diagnosis function, and real-time warning, the user can identify whether the instrument

operate properly

9) Automatic Printing

With print function, the user can easily print out the content when necessary

10) Real-time Updates

with an open date base, the sample data can be upgraded at any time;

11) Real-time Storage

with real-time data storage, retrieval, export and other functions, the storage capacity is not less than 1 million

12) Full Color Screen

Equipped with 5.6 inch TFT color touch screen

13) Low cost Consumables

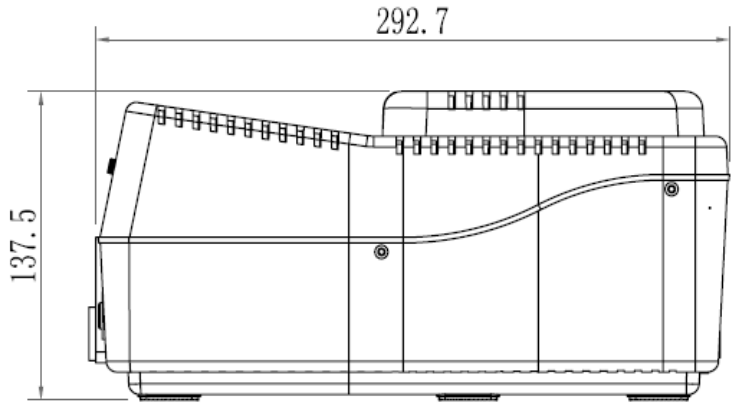
Molecular sieve-based desiccant is low cost and easy to replace

14) Strong Packaging

Goods packed by safety box with lining inside, with firm master carton outside

15) Carefree After-sale Service

24-hour service call at any time to provide technical support for customers. Contact your sales team if any engineering support required for installation and maintenance



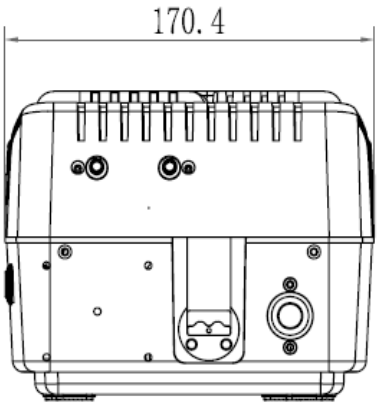


TABLE Substance List detectable for SD300A

Substance List	Narcotics	1. COCAINE 2. HEROIN 3. THC (cannabis) 4. METHAM(Methamphetamine) 5. Ketamine hydrochloride (K powder) 6. Morphine hydrochloride (morphine) 7. Ethidine 8. Ecstasy (MDA) 9. Papaverine 10. Ecstasy (MDMA) 11. Methyl ephedrine 12. Metformin 13. Synthetic ephedrine (K2) 14. Shakeballs (lysergic acid diethylamide, LSD) 15. Triazolam 16. Pentachlorophenol 17. Amphetamine 18. Fentanyl 19. Diazepam 20. Phencyclidine (PCP) 21. N-ethyl-1- (3,4-methylenedioxyphenyl) -2-propylamine (MDEA) 22. Cassione 23. Dihydroetorphine Hydrochloride (DHE)
	Explosives	1. TNT (Trinitrotoluene) 2. RDX (Cyclotrimethylene trinitramine (C4)) 3. PETN (Pentaerythritol tetranitrate) 4. NITRO (nitroglycerine, ethylene glycol dinitrate) 5. AM NO3 (ammonium nitrate) 6. Black powder (sulphur) 7. 2,4- Dinitrotoluene 8. Tetry 9. Octogen 10. Picric acid 11. NA 12. Composition C-4 13. Semtex 14. TATP 15. HMTD 16. Nitroguanidine 17. HNS 18. EGDN 19. DEGDN 20. PGDN 21. 3,4- Dinitrotoluene 22. 2,6- Dinitrotoluene 23. 3,5- Dinitrotoluene 24. 2,3- Dinitrotoluene 25. 2,5- Dinitrotoluene 26. 1,3,5- trinitrobenzene 27. 2,4,6- trinitrobenzene 28. 4-nitrotoluene 29. 2,3-dinitrobenzene; 2,3 Dimethylbutane 30. PYX 31. 2. 4. 6- TATB

Parameters

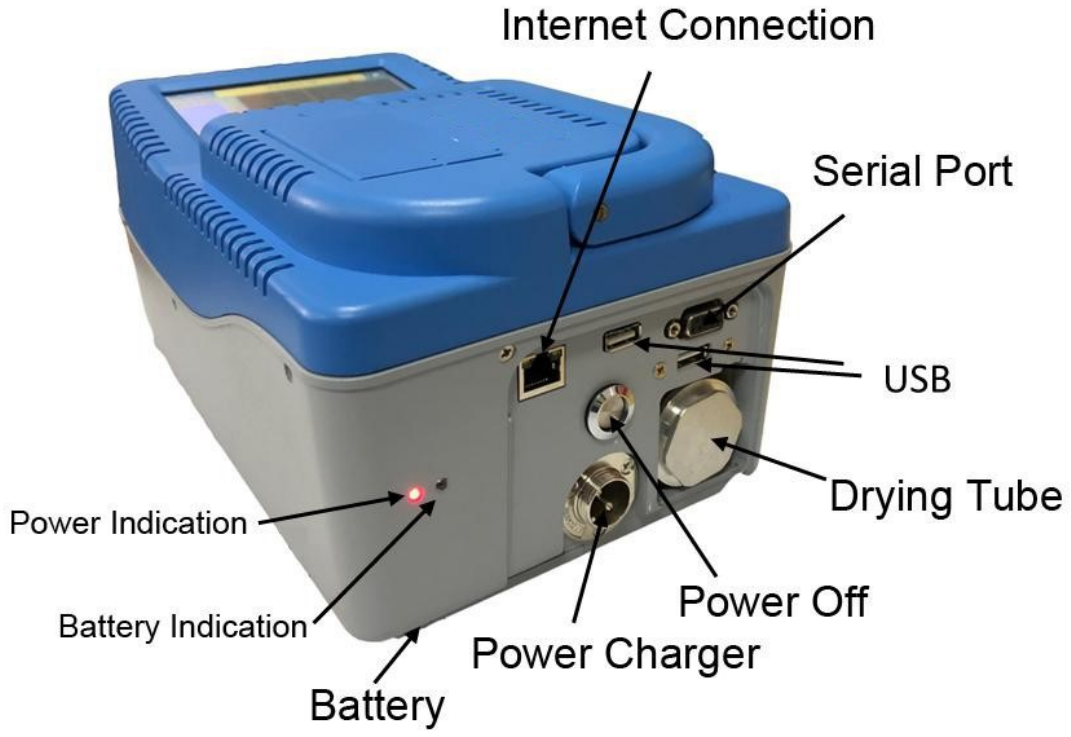
Accuracy rate	≥ 99%
False alarm rate	＜1%
Detection limit	50pg cocaine hydrochloride; 50pg TNT
Analysis time	≤ 3 seconds
Warm up time	＜5 minutes
Alarm Recovery time	＜15s
Working environment	-20℃～60℃ 99% relatively humidity
Battery	Lithium battery pack 14.8V/6700mAh continuous power supply no less than 3 hours
Outside dimensions	290mm(L)× 170 mm(W)× 145 mm(H)

Standard Accessories

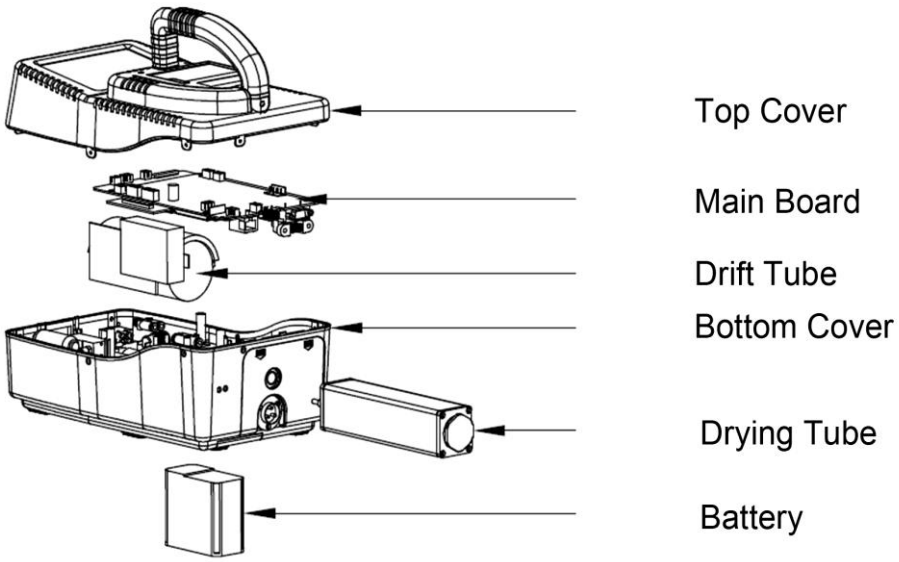
NO	Name	Quantity
1	SD300A instrument	1 unit
2	Traps	4 boxes
3	Calibration stick	2 pcs
3	Power Adapter	1 pc
4	Hand-wand	1 pc
5	Vacuum sampler	1 pc
6	Touch pen	1 pc
7	Tools	1 set
8	Gloves	1 box
9	User manual	1 pc

SD300A Front View

SD300A Back View



SD300A Structure



1. The drift tube: It is the core component of SD300A, where samples can be tested. The drift tube sealed inside the device.
2. The Sampler: Traps inserted here for thermal analysis of the sample particles on the trap surface. There are high temperature components in the desorber, which can evaporate and analyze the material particles on the traps. There is also an optical detection sensor to detect if a trap is inserted.
3. Touch screen: SD300A is equipped with a 5.6-inch color touch screen. All the functional operations are achieved through the touch screen.
4. Printer: built-in thermal printer to provide instant testing results. Test and calibration results, history and spectral data can be printed.
5. Alarm lights: This lights flashes once suspicious things are detected.
7. Handle: used to carry the device. It is foldable to facilitate the operating.
8. Drying tube: used to remove moisture and pollutants in the gas, in which the filtering particles can be replaced regularly.

9. Power supply connector: for supplying the power or charging the built-in battery.
10. Power switch: used to turn on or off the power supply of SD300A. Press to turn on the power supply; Press again, the switch reset and power is turn off.
11. Serial port: used to update the software.
12. Ethernet port: Used to connect the device to the network for data transmission.
13. USB interface: for software updates and data transfer
14. Power indicator light: light on the instrument normal power supply, light off indicates that the instrument is not powered.
15. Battery indicator: green lights indicate battery is fully charged; red stands for battery is charging, lights off means no charging equipment or battery
16. Battery: SD300A is equipped with a rechargeable lithium-ion battery. A fully charged battery can work for at least 3.5 hours

Customizing a vapor sampling port with additional cost