

SYSTEM FEATURES AND IMPACT



ANDE® 6C INSTRUMENT

Instrument Features

Functional Impact

Dimensions	75 x 45 x 60 cm (29.5 x 17.6 x 23.6 in)	The system can easily be placed on a standard countertop.
Weight	54kg (117 lbs)	The system can be moved by two individuals. A 2 man lift under Military Standard 1472G, requires the object weigh less than 79kg.
Instrument Handling	<ul style="list-style-type: none"> • Two carrying handles are standard on the instrument • Custom ruggedized transportation cases are available 	When necessary, the instrument can be transported from one location to another easily using the handles and/or a transport case. Both ensure ease of transport and reduce the likelihood of damage to the instrument from dropping.
Ruggedization	Certified to U.S. Military Standard 810G Method 514.5 Cat 4 514.C-V11. Method 516.5 Procedure II, Procedure VI, Procedure III 4.5.4b.	Instruments may need to be transported from one location to another. Certification ensures the system has been successfully ruggedized to survive transport.
Operating Conditions	<ul style="list-style-type: none"> • Temperature 10°C to 40°C (50°F to 104°F) • 20% to 80% relative humidity, non-condensing 	Use of the instrument outside a controlled environment may be necessary and can be performed successfully.
Calibration & Alignment	No manual calibration or optical alignment is required	The system is self-calibrating and self-aligning for use by non-technical or non-scientific personnel with minimal training and without the need for a service technician or manufacturers rep to perform or oversee. Additionally, no service is required following transport of the system.
Install Time	20 minutes from unpacking to first run	The system is easy to unpack and ready for the first operational run within 20 minutes; reducing time on target.
DNA Process Time	<ul style="list-style-type: none"> • A-Chip™ 94 minutes for buccal samples • I-Chip™ in 106 minutes for samples including blood, tissue, bone and crime scene 	The ANDE System is able to produce an interpreted DNA ID from many different sample types in less than 106 minutes.
Power	<ul style="list-style-type: none"> • 100 to 240 VAC ± 10% (50 or 60 Hz) line power • <5 A peak load at 120 VAC (60Hz) line power • <3 A peak load at 230 VAC (50Hz) line power • Generator: Sine wave AC power as rated above 	The system can be run using a wide range of power sources for easy movement between locations and countries; including the use of a generator.

ANDE® 6C SYSTEM

System Features

Functional Impact

STR Assay	FlexPlex®	The System utilizes an STR assay optimized for use with a Rapid DNA system.
STR Loci	FlexPlex contains a total of 27 loci including 23 autosomal loci, 3 Y loci, and amelogenin. The assay yields results for the CODIS 20 Core Loci, the Expanded European Standard Set, and other international databases.	The System is capable of meeting the requirements of the world database(s) that could be used for comparison.
A-Chip	5 samples plus an allelic ladder	The System runs 5 simultaneous samples plus an allelic ladder. No positive or negative controls are required in each run.
I-Chip	4 samples plus an allelic ladder	The System runs 4 simultaneous samples plus an allelic ladder. No positive or negative controls are required in each run.
Sample types	Multiple sample types can be tested to include fresh and dried buccal, blood, tissue, bone and crime scene samples.	The System is capable of accepting a wide range of samples types as tested by the manufacturer and validated by the end user.
No Capillaries	The ANDE System does not hold or store capillaries within the instrument.	The capillaries are contained within the consumable chip and replaced each time a new chip is inserted into the system. The capillaries are never reused and do not require cleaning; eliminating the need for manual alignment and periodic replacement.
System Design	All reagents move through microfluidic channels within the single use Chip and do not enter the instrument.	The instrument does not have any contact with the consumable (Chip) that could lead to cross contamination of samples or require maintenance.
Thermal Cycler	A single thermal cycler is used to test all samples in a run.	The use of a single thermal cycler ensures that all samples within a run are treated identically.
Data Quality and Assurance	System performance has been tested to SWGDAM guidelines; includes resolution and precision. Formal STR and Expert System developmental validation is in progress with US and International laboratories participating.	The DNA IDs developed by the ANDE System are reliable and fit for use in human identification settings.
Sample Security and Tracking	Each smart swab contains a built-in RFID tag that is tracked by the ANDE instrument creating a unique, permanent, automated link between the Sample ID, the smart swab, the lane the smart swab was placed in, and the resulting DNA ID. In addition to the embedded RFID each smart swab is labeled with a unique 2D and 3D bar code identifier that reduces data entry errors and allows for inclusion into chain of custody tracking system.	Sample security is a critical component of a Rapid DNA System. RFID tracking of samples eliminates opportunities for sample mix-up where a DNA ID could be linked to the wrong individual due to user error by inexperienced operators or in high risk environments. Additionally, the use of fully automated sample tracking capability takes the onus off of the user to track, record and document where each sample was placed within the Chip.
Data & Database Management Software	The System uses secure ANDE FAIRS™ software to store results, create databases, and to Search and Match against the database. The software is designed to run on any windows based computer system.	Rapid DNA results can be maintained and searched using secure software designed for use with the ANDE System.

ANDE® CHIP SPECIFICATIONS

Chip Features	Functional Impact	
Consumable	Single disposable plastic consumable with all reagents factory preloaded onto the Chip.	The System utilizes a single, disposable, factory preloaded consumable to facilitate and simplify use by non-technical personnel.
Capillaries	Plastic capillaries are an integrated part of the Chip. As such, they are also single use and disposed of at the completion of the run.	The integration of capillaries into the single use, disposable consumable eliminates the possibility of cross contamination between sample runs. Additionally, there is no requirement for capillary care or maintenance.
STR Assay	FlexPlex®	The System utilizes an STR assay that has been optimized for use with a Rapid DNA system.
STR Loci	FlexPlex contains a total of 27 loci including 23 autosomal loci, 3 Y loci, and amelogenin. The assay yields results for the CODIS 20 Core Loci, the Expanded European Standard Set, and other international databases.	The System is capable of meeting the requirements of the world databases that could be used for comparison.
A-Chip and I-Chip Options	Two Chips are available, one optimized for buccal samples containing large amounts of DNA (A-Chip) and one optimized for samples containing limited amounts of DNA (I-Chip).	The availability of two different Chips allows each to be optimized for the specific types of samples to be tested; increasing the quality of DNA ID's in all cases.
A-Chip	The A-Chip is appropriate for buccal swabs.	Optimized testing of samples containing large amounts of DNA allowing for easy identification of individuals.
I-Chip	The I-Chip is appropriate for samples including blood, tissue, bone and crime scene samples	Optimized testing of samples containing small amounts of DNA, including touch items.
Multiple Chip Options	Chips components are optimized on each Chip allow the system to generate good results for multiple DNA inputs.	Each Chip is optimized for specific sample types to ensure the best results for each sample type rather than treating all samples in the same manner with reduced quality of results.
Chip Storage & Stability	Storage at room temperature 5°C to 25°C (41°F to 77°F) for up to 6 months	All reagents can be stored at room temperature without the need for refrigerators.
Ruggedization	Certified to U.S. Military Standard 810G for vibration and shock during transportation.	Chips may need to be transported from one location to another. Certification ensures the consumables have successfully been designed to survive transport.
RFID Tagged for System Automation	Chips contain RFID identifiers which automate protocol selection, ensuring the correct testing protocols are run.	Automation of protocol selection through RFID tagged Chips reduces or eliminates errors in running the system.
Training Mode	A Chip is available containing an RFID identifier that initiates a quick training or demonstration run.	Training can be conducted directly on the system repeatedly using techniques identical to normal operation in a very short amount of time.
Desiccant Smart Swab	Smart swab transport and storage container includes dessicant.	Desiccant helps the sample dry quickly, reducing the potential for bacterial growth and degradation of the sample if there is a delay in time between collection and processing.

ANDE® ACCESSORIES

Accessory

Functional Impact

Ruggedized transport case size

98.8cm x 80.3cm x 88.1cm, 38.9" x 31.6" x 34.7" (LxWxH)

The transport case fits through a standard 33" clear opening (standard US door frame).

Rugged case cart

Carbon fiber with locking casters

Allows for easy movement of the instrument in the transport case.

Ruggedized transport case

Transit Drop – 24" drop exposure on any of the bottom four corners tested in its transit case in accordance MIL-STD-810G Method 516.6, Procedure IV, Note B.

Vibration Test – Instrument shall conform to truck vibration exposure for restrained cargo. Instrument shall pass vibration conditions specified in MIL-STD-810G Method 514.6, Category 4 – Common carrier (U.S. highway truck vibration exposures) Table 514.6C-II, Figure 514.6C-1.

Bench Handling Test – Instrument shall operate correctly after a 4" drop test where two base corners are resting on a rigid table. All four directions must be tested to comply with the appropriate sections of MIL-STD-810G Method 516.6, Procedure IV.

Fragility – The fragility of the instrument shall be determined by calculation according to MIL-STD-810G Method 516.6, Procedure III.

Instruments may need to be transported from one location to another. Certification ensures the system has been successfully ruggedized to survive transport.



ANDE® SAMPLE PROCESSING STEPS

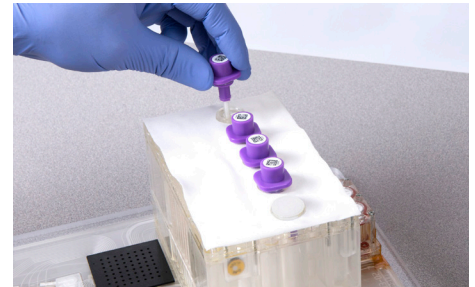
The user follows a series of simple steps to initiate a run:



1. Collect sample swabs



2. Input sample ID and read RFID tag



3. Load samples into the single use Chip



4. Load the Chip into ANDE



5. Close the door

After the user closes the door the ANDE system automates the remainder of the testing process. The correct protocol is chosen and the samples processed. Following data collection, the integrated Expert System processes the raw data, assigns allele calls and interprets the DNA ID. At the end of the run the user removes the Chip and can immediately see an assessment of the run results.

All calibration and alignment steps are performed by the system, requiring no maintenance be performed by the user.