

# ProCyte One\*

Hematology Analyzer

Operator's Guide



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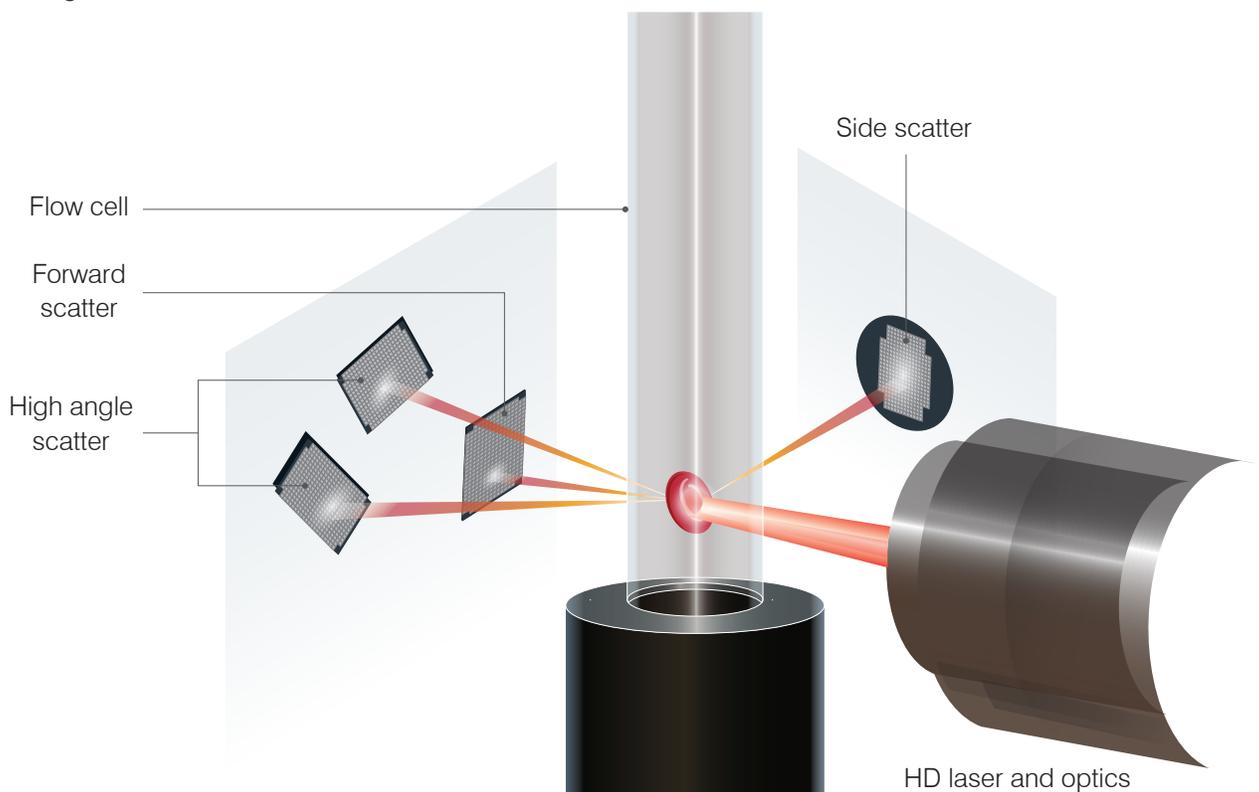
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## About the analyzer

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The IDEXX ProCyte One\* Hematology Analyzer is an automated hematology analyzer for animal blood that evaluates and provides the results of 24 parameters for each blood sample in less than 5 minutes. The ProCyte One analyzer is for veterinary use only.

The ProCyte One analyzer uses reference laboratory technology to analyze blood samples. The analyzer does so by focusing a laser beam on each individual cell and quantifying the scatter of light on four separate detectors. Simultaneously, it measures the amount of time it takes a cell to travel through the laser beam.



This cell travel time is referred to as the “time of flight,” and it provides data on the diameter of the cell. Think of a flashlight as an analogy for the laser. Passing a golf ball in front of the light would be quicker than passing a basketball through the same light. While the time of flight, or cellular diameter, is being measured, the four detectors are measuring the quantity of light bouncing off of a cell, or ball in this analogy. Continuing the analogy, the dimpled design of a golf ball would refract light differently than the seamed design of a basketball. In this analogy, the golf ball would be classified as a different “cell” from the basketball. The four detectors on the analyzer in essence are measuring many of the same qualities that a pathologist would examine when looking at a blood film. These qualities include size, complexity, granularity, and light absorption. With this information, the analyzer can analyze red blood cells and, most important, arrive at an absolute reticulocyte count. In addition, it can analyze the full five-part white blood cell differential, providing the data needed for a more complete diagnosis. Hemoglobin (HGB) is derived using spectrophotometry. After the red cells are lysed to release the HGB, the sample is analyzed for absorbance and compared using a reference sheath absorbance method using the Beer-Lambert Law.

# Sample collection and preparation

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## Compatible species

The ProCyte One\* Hematology Analyzer can analyze blood from canines, felines, and equines.

## Collecting samples for use with the ProCyte One analyzer

The ProCyte One analyzer is compatible with a variety of EDTA collection tube sizes. Because the sample volume required varies by tube type, it's important to **follow the tube manufacturer's guidelines for fill volume** to ensure:

- The proper EDTA-to-sample ratio.
- The tube isn't overfilled, which can lead to clotting or platelet clumping.
- The tube isn't underfilled, which can lead to morphological changes, such as red blood cell (RBC) shrinking (crenation).

### **IMPORTANT:**

- When using standard 13 mm x 75 mm collection tubes, the analyzer requires a minimum of 500  $\mu$ L to aspirate the sample.
- When using microtainer tubes, the analyzer requires a minimum of 200  $\mu$ L to aspirate the sample.

## Sample collection and preparation best practices

- **Do not recycle syringes and needles**—Dull needles can cause trauma to the blood vessel, leading to cell destruction, hemolysis, and platelet activation, especially in cats.
- **Choose the appropriate blood vessel and needle size**—Use a blood vessel that allows enough blood to collect within the tube or syringe selected. Select the appropriate needle size for the species.
- **Be gentle on the blood draw**—Exceeding the normal blood flow can collapse the blood vessel, which can be painful to the animal and cause hemolysis.
- **Mix the sample with EDTA as soon as possible**—When using a syringe and needle, remove the needle from the syringe before dispensing the blood. Remove the cap on the tube and fill the tube to its appropriate level.

**IMPORTANT:** Replace the cap on the tube and immediately mix the EDTA sample at least 10 times by gentle inversion.

- **Make sure the sample-to-EDTA ratio is appropriate**—Fill the tube to its appropriate level for adequate mixing with EDTA. Overfilling may result in clotting or platelet clumping; underfilling can lead to morphological changes, such as red blood cell shrinking (crenation). Refer to the manufacturer's package insert for appropriate fill volumes.
- **Analyze the sample as soon as possible**—For best results, we recommend preparing and testing the sample within 4 hours. Even when refrigerated, blood samples will become less viable after 4 hours. Refrigerated samples should be allowed to warm for 15 minutes after refrigeration.
- **Discard severely hemolyzed samples**—If hemolysis is due to improper sample collection, discard the sample and redraw. If hemolysis is persistent, it may be due to a disease state.
- **Discard clotted samples and redraw**—The presence of clots will invalidate any results obtained.

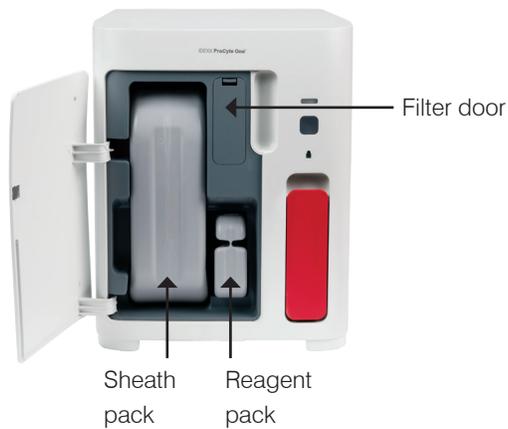
# Using the analyzer

## Analyzer components

### Front of the analyzer



### Inside of the analyzer



## Analyzing samples

1. Initiate the sample run on the IDEXX VetLab\* Station (for more information, see the *IDEXX VetLab Station Operator's Guide*).
2. After you've confirmed the patient information on the Select Instruments screen, select the **ProCyte One** icon and then tap **Run**.
3. Invert the sample tube 10 times to mix the sample with the anticoagulant. To ensure accurate results, **immediately after inversion** place the tube in the front slot in the sample drawer, close the drawer, and press the **Start** button on the front of the analyzer.

**IMPORTANT:** When using microtainer tubes, always remove the cap prior to placing them in the sample drawer.



## Canceling a run

1. In a patient-specific job status area on the Home screen, tap a **Ready to Run** or **Busy ProCyte One** icon. A dialog box appears with information about the selected patient and analyzer.
2. Tap **Cancel Run** to cancel the scheduled sample run for this patient. The ProCyte One icon is removed from the job status area and the analyzer will remain in a busy status until the analyzer returns to ready.

If an in-process sample is canceled, the run is stopped and a cleaning sequence is started, preparing the analyzer for the next analysis.

## Responding to an alert

If an analyzer experiences a problem, an alert icon  flashes on the upper-right side of the IDEXX VetLab Station title bar. If you are on the Home screen, the affected analyzer's icon also appears with an Alert status.

### To view an alert from the Home screen

Tap the analyzer icon or tap the alert message in the title bar to display the alert message. Follow the instructions displayed in the alert message.

### To view an alert from any screen in the IDEXX VetLab Station

Tap the alert message on the title bar.

## Customizing the settings

You can customize some of the settings on the ProCyte One analyzer using the ProCyte One Settings button on the ProCyte One Instruments screen.

## Low power mode

When the analyzer is idle for 10 minutes, it enters low power mode, using ~5.5 watts instead of the ~17 watts used in regular power mode. When in low power mode, the status light on the front of the analyzer changes to a slow, blinking lighter green. The analyzer exits low power mode automatically when a ProCyte One analyzer run is initiated from the IDEXX VetLab\* Station.

# Interpreting results

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## Viewing test results

1. On the IDEXX VetLab\* Station, select the patient whose results you want to view. Then, do one of the following from the Home screen:
  - Tap the patient name in the Recent Results list and then tap **View**.
  - Tap the **Records** button, tap the patient name, and then tap **View Records**.
2. On the Records: Select Results screen, tap the set of results that you want to view and then tap **View Results**.
3. On the Records: Test Results screen, tap the **ProCyte One** tab to view the analyzer's test results for the selected patient.

## Printing test results

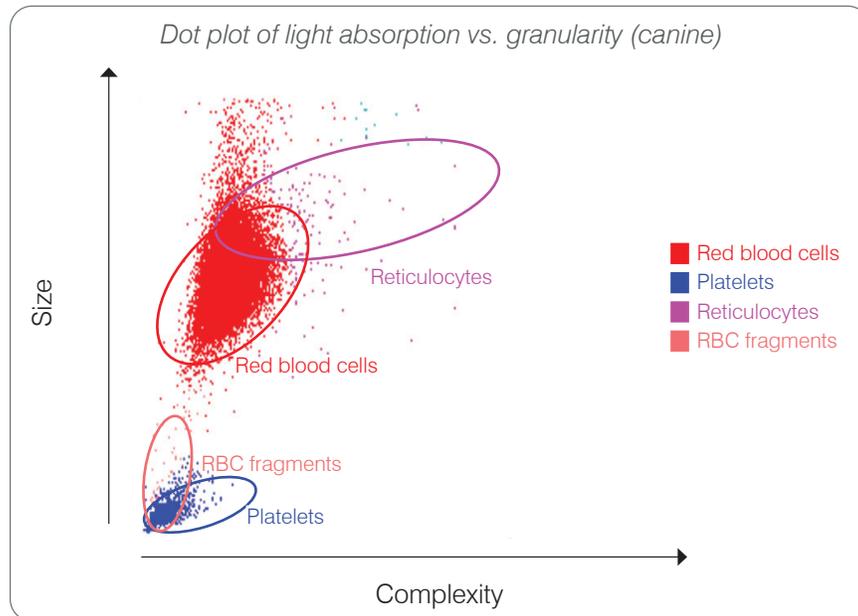
Analyzer results are automatically returned to the IDEXX VetLab Station and recorded in the appropriate patient's record. The diagnostic results report is a comprehensive report of all the test results specified in a laboratory request for that patient on a specific day.

Patient test results can be printed automatically each time a set of results are returned or you can manually print the results when needed. For more information, see the *IDEXX VetLab Station Operator's Guide*.

## Interpreting dot plots

Dot plots are a visual representation of the complete blood count (CBC) and are a valuable tool for quickly interpreting sample results on the analyzer. Each dot in the plot represents a single cellular event as it is analyzed by the device. The different cellular elements of the blood appear as distinct clouds of dots, and when the definition of the cloud is diminished or intensified, this indicates variability within that particular cellular population, which could indicate an abnormality. The greater the abnormality, the greater the potential variation is from normal. A blood film review will provide additional information. For example, if the clouds of dots are more dense than normal, an increased count for that particular cell will likely be evident in a blood film.

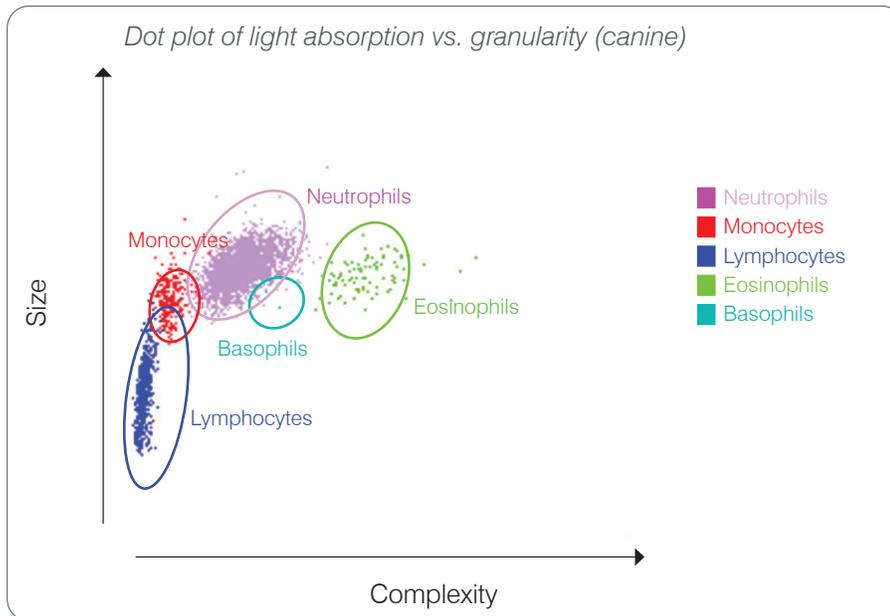
## Red blood cell classification



On the red blood cell run, the analyzer classifies the following populations:

- **Red blood cells (RBCs)**—The red blood cells (erythrocytes) are primarily responsible for carrying oxygen to tissue cells and carrying carbon dioxide from those cells. The RBC population is colored **red**.
- **Platelets**—Platelets (thrombocytes) play an integral role in the processes of primary and secondary hemostasis leading to the formation of clots. Due to their smaller size, they are located low on the y-axis. Because they have cytoplasmic complexity, the larger they are, the further right on the x-axis they will be located. Platelets are colored **blue**.
- **Reticulocytes**—Reticulocytes are immature red blood cells that contain ribosomal RNA. The reagent pack contains new methylene blue dye, which precipitates the RNA and gives the cytoplasm more complexity, placing them further right on the x-axis. On the dot plots, the reticulocytes are colored **magenta**.
- **RBC fragments**—Red blood cell fragments are portions of red blood cell membranes from broken cells. The particles have a similar size to platelets but refract light differently and, therefore, are located to the left of the platelet population. The red blood cell fragments are colored **pink**.

## White blood cell classification



On the white blood cell run, the analyzer classifies the following populations:

- **Neutrophils**—Neutrophils are generally the largest of the white blood cell populations. They are the primary defense against infection and are phagocytic. The neutrophil population is typically the densest population, and the dot plot representation of this density can quickly reveal inflammatory and infectious changes that may warrant further investigation. The neutrophils are classified above and to the right of the monocyte population in **purple**.
- **Monocytes**—Monocytes are responsible for regulating the inflammatory response and phagocytosis. They are typically larger than lymphocytes. They are also more complex than lymphocytes and are found above and slightly to the right of the lymphocytes. The population is colored **red**.
- **Lymphocytes**—Lymphocytes are an integral part of the immune system and are important in producing antibodies and cytokines. They are small relative to other white blood cell types and they are found low on the y-axis. The lymphocyte population is colored **blue**.
- **Eosinophils**—Eosinophils are associated with allergic diseases and parasitic infection by responding to histamine, which is released when parasitic antigens or the allergens bind to mast cells. There is a great deal of variation in the granularity of these cells from species to species. The differences in granularity affect the scatter of light and, therefore, affect the position, from species to species, of the populations relative to the other white blood cell populations. Eosinophils are colored **green**.
- **Basophils**—Basophils contain both heparin, which is important for inflammation as it prevents coagulation, and histamine, which is associated with hypersensitivity reactions. Basophils comprise the smallest of the major white blood cell populations classified by the analyzer and are found directly to the right of the monocytes and below the neutrophils. The basophil population is colored **turquoise**.

## Analysis parameters

The ProCyt One\* Hematology Analyzer provides results for the following parameters<sup>†</sup>:

<b>Parameter</b>	<b>Description</b>
RBC	Red blood cell count
HCT	Hematocrit
HGB	Hemoglobin
MCV	Mean cell volume
MCH	Mean corpuscular hemoglobin
MCHC	Mean corpuscular hemoglobin concentration
RDW	Red blood cell distribution width
%RETIC	Reticulocyte percent
RETIC	Reticulocyte count
WBC	White blood cell count
%NEU	Neutrophil percent
%LYM	Lymphocyte percent
%MONO	Monocyte percent
%EOS	Eosinophil percent
%BASO	Basophil percent
NEU	Neutrophil count
LYM	Lymphocyte count
MONO	Monocyte count
EOS	Eosinophil count
BASO	Basophil count
PLT	Platelet count
PDW	Platelet distribution width
MPV	Mean platelet volume
PCT	Plateletcrit

<sup>†</sup>The number of reported parameters may vary according to species (e.g., PDW is not reported for feline species).

# Quality control

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## Overview

The purpose of quality control (QC) is to monitor the ProCyte One\* Hematology Analyzer's performance over time. QC also provides data that can be used for adjustment of the analyzer's parameters if they are determined to be out of specification.

## IDEXX SmartQC Control

IDEXX SmartQC\* Control is designed for the automated quality control analysis and statistical processing of the ProCyte One analyzer. It consists of synthetic polymer beads with optical properties that simulate blood cells.

The SmartQC vial resides in the sample drawer of the ProCyte One analyzer and runs automatically on a weekly basis (Sundays at 3:00 a.m.).

## Storage

Unused SmartQC vials should be stored and run at room temperature (15°C–35°C [59°F–95°F]). When properly stored, unused SmartQC vials are stable until the expiration date on the vials. A SmartQC vial is stable for 180 days after it is installed in the analyzer (the analyzer automatically detects and reports when the vial is running low, empty, or expired).

## Handling

- Vigorously shake a new vial for 10 seconds to ensure it is well mixed before placing it in the analyzer's sample drawer.
- Using the material without sufficient mixing can result in bead agglutination, potentially impacting the accuracy of the results.
- **If you forgot to shake the vial before using, do not remove the vial from the analyzer to mix/remix if the cap has been pierced (doing so may causing leaking/staining). Use a new vial.**
- Do not remove the vial cap. When the vial is opened, there is a potential for fluid evaporation from the vial, which can lead to incorrect count statistics.

## To change the vial

1. When prompted, tap **Replace SmartQC** on the IDEXX VetLab\* Station.
2. Open the sample drawer.
3. Remove the empty/expired SmartQC vial.
4. Shake a new SmartQC vial **vigorously for 10 seconds** to ensure it is well mixed and then load it into the rear slot in the sample drawer.  
**Note:** The analyzer maintains a mixed solution after the initial mixing.
5. Close the sample drawer.



## Viewing quality control results

ProCyte One quality control lot numbers and results are stored in the QC log found in the IDEXX VetLab Station, where users can change vials and view results.

### To view the QC log

1. Tap the **ProCyte One** icon on the IDEXX VetLab Station Home screen.
2. Tap **Quality Control** to view the results for each lot and date/time.

# Managing sheath and reagents

## Overview

The ProCyte One\* Hematology Analyzer uses self-contained sheath and reagents to process patient samples. This section describes the contents of the sheath pack and reagent pack and how to use them properly with the ProCyte One analyzer.

ProCyte One analyzer reagents are for veterinary use only.

**IMPORTANT:** Sheath packs and reagent packs must be at room temperature (15°C–35°C/ 59°F–95°F) before they are installed in the analyzer.

### IDEXX ProCyte One Sheath Pack

The IDEXX ProCyte One\* Sheath Pack contains both the sheath solution as well as a waste receptacle. When you are notified by the analyzer that the pack is empty, remove the old pack and insert a new one to proceed.

### IDEXX ProCyte One Reagent Pack

The IDEXX ProCyte One\* Reagent Pack contains dye and diluent solutions specific to the red blood cell or white blood cell analysis.

## Changing the sheath or reagent pack

When you are notified by the analyzer that a pack is empty, remove the old pack and insert a new one using these steps:

1. Open the analyzer door.
2. To replace the **sheath pack**: Pull to remove the large gray sheath pack from inside of the analyzer. Then insert a new sheath pack until it clicks into place.

OR

To replace the **reagent pack**: Pull to remove the small gray reagent pack from inside of the analyzer. Then insert a new reagent pack until it clicks into place.

3. Close the analyzer door.

**Note:** The door will not close completely if the pack is not seated properly.



## Viewing sheath and reagent information

You can view the fill status and expiration information for your sheath and reagent packs on the ProCyte One Instruments screen.

### To view sheath and reagent fill status and expiration information

Tap the **ProCyte One** icon on the IDEXX VetLab Station Home screen. Two gauges display in the center of the screen indicating the fill status for the sheath and reagent packs (the gray bar indicates the fill level). The remaining days until each expires displays under the gauges. When the fill status is low or empty, the gauge and days until expiration turns red.

## Sheath pack components

The ProCyte One Sheath Pack is a self-enclosed consumable containing sheath reagent and a waste receptacle and has an unopened stability of 12 months from date of manufacture. Once opened, the product is stable for 90 days or until the date of expiration (whichever comes first). Sheath packs must be at room temperature (15°C–35°C/59°F–95°F) before they are installed in the analyzer.

### Intended use

Sheath is the system fluid that is primed through all of the fluidic lines to keep them clean and ready for a sample run. It provides a reference measurement for HGB analysis and carries the core stream of cells to the laser for individual assessment.

## Reagent pack components

The reagent pack contains separate red and white reagents and has an unopened stability of 9 months from date of manufacture. Once opened, the product is stable for 90 days or until the date of expiration (whichever comes first). Reagent packs must be at room temperature (15°C–35°C/59°F–95°F) before they are installed in the analyzer.

### Intended use

The red reagent causes red blood cells to sphere, stains cells containing nucleic acids with new methylene blue dye, and provides the desired dilution for analysis. The white reagent lyses the red blood cells and provides the appropriate dilution for HGB and WBC analysis.

## Disposing of sheath and reagent packs

Dispose of the materials within the sheath and reagent packs in accordance with local regulations.

The sheath and reagent pack containers are recyclable—please recycle them in accordance with your local recycling guidelines.

# Maintenance

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## Overview

A variety of maintenance and diagnostic procedures allow you to maintain and service the ProCyte One\* Hematology Analyzer.

**Note:** Some of these tasks must be completed with assistance from an IDEXX Customer and Technical Support representative. Contact IDEXX Customer and Technical Support when prompted (see “IDEXX Customer and Technical Support contact information” on page 28).

## Upgrading the software

As new features and functionality are added to the analyzer, you will receive software upgrades from IDEXX. These upgrades will be sent automatically to your IDEXX VetLab\* Station via your IDEXX SmartService\* Solutions connection. You'll receive a message in the IDEXX VetLab Station Message Center when an upgrade is completed.

## Performing the bleach clean procedure

Although the analyzer performs a self-cleaning sequence after each analysis and cycles fluid nightly outside of normal business hours, you may be asked by IDEXX Customer and Technical Support to complete a bleach clean. This process washes contaminants from the analyzer's lines and optical detector block flow cell and takes approximately 13 minutes to complete.

If you don't have IDEXX Hydro-Clean, you must prepare a 5% bleach solution by combining filtered, unscented bleach with distilled/deionized water. The ratio of bleach to distilled/deionized water varies depending on the concentration of the bleach (for example, Clorox\* Regular Bleach has a 6% concentration, so the solution should be 5 parts Clorox Regular Bleach and 1 part distilled/deionized water).

### **IMPORTANT:**

- Only use high-quality bleach like Clorox Regular Bleach, which is a filtered and unscented bleach without surfactants. **DO NOT USE** other regular bleaches, scented bleaches, gel, high-efficiency, outdoor, splashless, or generic versions of regular bleach. **DO NOT USE** tap or sterile water. The solution can be used up to one week after it is made.
- Always wear general laboratory PPE (such as gloves, eyewear, etc.) to protect yourself from skin and/or eye irritation.

## To run the bleach clean procedure

1. Tap the **ProCyte One** icon on the IDEXX VetLab Station Home screen.
2. Tap **Diagnostics**.
3. Tap **Bleach Clean**.
4. Read the on-screen message and verify that the time required for the procedure does not impact your workflow.
5. Dispense 2 mL of IDEXX Hydro-Clean (or the 5% bleach solution) into a 13 mm x 75 mm (untreated or EDTA-treated and rinsed) tube with the stopper removed.
6. Insert the tube into the front slot in the sample drawer, close the sample drawer, and then press the **Start** button on the front of the analyzer.

## Cleaning the case

Always disconnect the power cable before cleaning the analyzer.

Clean the outside of the analyzer with a damp (not wet) lint-free cloth. A mild disinfectant or liquid soap will remove grease. Do not use any of the following near the analyzer: organic solvents, ammonia-based cleaners, ink markers, sprays containing volatile liquids, insecticides, polish, or room freshener.

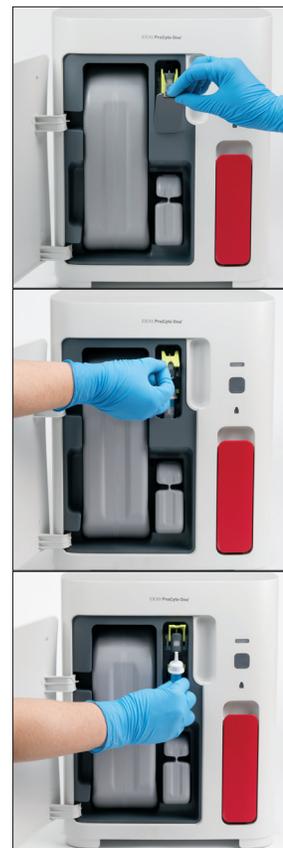
Care should be taken not to spill any samples, chemicals, cleaning agents, water, or other fluids on/in the analyzer.

**Note:** Dust and animal hair can lead to analyzer failures. Routinely dust off the analyzer and surrounding surfaces with a damp cloth.

## Replacing the filter

An alert will appear on the IDEXX VetLab Station touch screen when the filter needs to be changed. It is important that you only change the filter when prompted or by accessing the procedure found on the ProCyte One Diagnostics screen on the IDEXX VetLab Station.

1. Open the analyzer door.
2. Remove the filter panel.
3. Lift up on the green latch so that it's perpendicular to the analyzer.
4. Pull the filter to remove it from the analyzer.
5. Load a new filter into the analyzer, ensuring the arrow on the filter is pointing up and is aligned with the light gray chamber above it.
6. Lower the green latch so that it's parallel to the analyzer.
7. Replace the filter panel.
8. Close the analyzer door.



# Troubleshooting

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## Overview

Some of these tasks must be completed with assistance from an IDEXX Customer and Technical Support representative. Contact IDEXX Customer and Technical Support when prompted (see “IDEXX Customer and Technical Support contact information” on page 28).

**IMPORTANT:** The ProCyte One\* Hematology Analyzer must have a Ready status to run a maintenance procedure. Most on-demand diagnostic and maintenance tasks are accessible from the ProCyte One Diagnostics screen on the IDEXX VetLab\* Station.

## Differences in results

### With a commercial laboratory or another instrument

Comparing results from different laboratories that may be using different equipment or methods is imprecise at best. Any comparisons should be performed on the same sample that has been “split,” stored under like conditions, and tested at approximately the same time. If too much time elapses between comparative sample runs, the sample can age. For example, after 8 hours, MCV values change as cells tend to swell. Compare each result to the reference interval stated by IDEXX or the commercial laboratory (as appropriate). Each result should have the same relationship to its method’s reference interval. For instance, a sample giving a ProCyte One analyzer result that is slightly below the reference interval should produce a laboratory result slightly below the laboratory’s reference interval.

### With your own expectations

If you receive results that are not what you expected for a particular patient, consider the following:

- Were there any abnormalities noted in the sample taken (e.g., hemolysis, lipemia, and stress) that could cause the changes seen?
- How far outside the reference interval is the result? The more narrow the reference interval, the more important minor changes become.
- Would any treatments or drugs the patient may be taking alter the results?
- Do clinical findings support the results? Unexpected abnormal results are usually accompanied by other evidence.
- Is the result biologically significant or possibly so?
- What other tests or procedures might be used to confirm or reject this result?

All laboratory results should be interpreted in light of the case history, the clinical signs, and the results of ancillary tests.

## What should I do if I receive an alert?

In the event of an alert, follow the on-screen instructions. If the problem persists, please contact IDEXX Customer and Technical Support.

## How do I reboot my analyzer in the event of a system issue?

Press and hold the **Start** button on the front of the analyzer for 5 seconds or until the status light begins to blink yellow. The reboot process takes approximately 4 minutes. The analyzer is available for use when the LED returns to a solid green and the ProCyte One icon on the IDEXX VetLab Station Home screen appears with a Ready status.

## Installing the ProCyte One analyzer

### Environmental guidelines

- Place the ProCyte One\* Hematology Analyzer on a level surface in a well-ventilated area away from obvious sources of heat, direct sunlight, cold, humidity, vibrations, or dust. Do not place the analyzer in a location where it can be splashed by water.
  - Mobile practices do not provide a stable environment to ensure laser alignment and optimum performance for any of IDEXX's hematology analyzers and reagents, including the ProCyte One analyzer. The laser in these analyzers requires minimal movement to ensure stability. An IDEXX SmartService\* Solutions connection also plays a very important role for Pay Per Run, sending and collecting lot information for consumables, and our ability to remotely connect to troubleshoot.
- Place the ProCyte One analyzer in a space large enough to be used safely, including when the sample drawer is open. Position with at least 2 inches ( $\approx 5$  cm) of space above, behind, and on at least one side of the analyzer. This spacing requirement also applies when placed next to other IDEXX VetLab\* instruments.
- Position the analyzer so that the power cord can reach a nearby electrical outlet. The power cord should be easily accessible.
- Do not place weight on top of the ProCyte One analyzer in excess of 12 pounds ( $\approx 5.5$  kg).
- Do not install the ProCyte One analyzer in operating environments where chemicals are stored or gas can develop. This includes areas that have electroconductive or flammable gases such as oxygen, hydrogen, and anesthesia.

### To install the IDEXX VetLab router

If you already have an IDEXX VetLab\* router connected directly to the IDEXX VetLab\* Station computer, you can skip this section and move to the "To install the analyzer" section (below).

1. Connect the AC power adapter to the power port on the back of the IDEXX-supplied router.
2. Plug the AC power adapter into an electrical outlet.
3. Connect one end of the Ethernet cable (provided with the router) into any available numbered port on the router.

**IMPORTANT:** Do not connect the IDEXX VetLab Station directly to the Internet/WAN port on the router.

4. Connect the other end of the Ethernet cable into the IDEXX VetLab Station computer's Ethernet port (located on the back of the computer).

## To install the analyzer

The ProCyte One analyzer works in conjunction with the IDEXX VetLab Station. If you do not have an open port on the IDEXX VetLab router, please contact IDEXX Customer and Technical Support.

1. Unpack the ProCyte One analyzer choosing an optimal location for the instrument per the environmental guidelines above. For optimum results, room temperature should be at 15°C–35°C (59°F–95°F) and relative humidity at 15%–75%.

**Note:** The analyzer's cooling vents are located at the base and at the back of the analyzer. Please leave these areas unobstructed to ensure proper ventilation.

2. Connect the analyzer to the IDEXX VetLab router by hooking up to a numbered port on the router using an Ethernet cable (provided).
3. Load a sheath pack and reagent pack in the ProCyte One analyzer for initial priming. For more information on changing the sheath and reagent packs, see "Changing the sheath or reagent pack" on page 15.
4. Power on the ProCyte One analyzer by plugging in the power supply. Once the ProCyte One icon displays on the IDEXX VetLab Station Home screen, the connections are complete.

Once started, the ProCyte One analyzer will automatically prime the fluidic lines (this takes approximately 8 minutes). During the prime sequence, the status light LED on the analyzer will display steady yellow. Once the status light displays steady green, the analyzer is ready for use.

**Note:** If the ProCyte One icon does not appear on the IDEXX VetLab Station Home screen within 3 minutes, contact IDEXX Customer and Technical Support for assistance

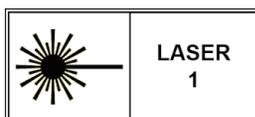
## Operating conditions and technical specifications

<b>Main unit dimensions</b>	Height: 14.1" (358 mm) Depth: 15.32" (389 mm) Width: 11.42" (290 mm)
<b>Main unit weight</b>	Approximately 22 lb (10 kg)
<b>Operating temperature</b>	15°C–35°C (59°F–95°F) Optimum: 23°C (73.4°F) For indoor use only.
<b>Storage temperature</b>	Instrument storage temperature: 5°C–38°C (41°F–100°F) Sheath and reagent pack storage temperature: 15°C–35°C (59°F–95°F)
<b>Operating humidity</b>	15%–75%
<b>Power supply</b>	100–240 VAC, 50–60 Hz, 1.5 Amps Power supply protection: IP41 Rated: 24VDC, 5A
<b>Input/output connections</b>	There are two user-accessible input/output connections on the rear of the ProCyte One analyzer (power connection and Ethernet port for connection to IDEXX VetLab Station).

**Laser**

Class 1 Laser Product containing a Class 3B Embedded Laser:

- Beam divergence (with cover off): 3 degrees
- Maximum output power: 40 milliwatts
- Wavelength: 640 nanometers
- Output: Continuous (CW)
- Laser hazard classification: Class 3B, "Warning"



This equipment complies with:

- FDA Standard 21 CFR 1040.10
- IEC 60825-1:2014

## Performance, throughput, and sample input specifications

<b>Time to results</b>	5 minutes	
<b>Display range</b>	WBC	0.00–999.99 K/ $\mu$ L
	RBC	0.00–99.99 M/ $\mu$ L
	HGB	0.0–35.0 g/dL
	HCT	0.0%–100.0%
	PLT	0–9999 K/ $\mu$ L
	%RETIC	0.00%–99.99%
	RETIC	0–9999 K/ $\mu$ L
<b>Precision</b> Precision was calculated by a mean of %CV of 10 canine runs from each of 12 analyzers (7 analyzers had 2 sets of precision runs).	WBC	3.4%
	RBC	1.1%
	HGB	1.3%
	HCT	1.2%
	PLT	3.2%
	RETIC	15% (RBC 3.00 M/ $\mu$ L or more, %RETIC 1%–4%)
	%RETIC	15% (RBC 3.00 M/ $\mu$ L or more, %RETIC 1%–4%)
<b>Analysis parameters</b>	See page 12 for a complete list of parameters.	

<b>Accuracy</b> Analysis was generated from 832 samples across 17 instruments and compared to the ProCyte Dx* Hematology Analyzer.	WBC	R ≥ 0.90
	RBC	R ≥ 0.95
	HGB	R ≥ 0.90
	HCT	R ≥ 0.90
	PLT	R ≥ 0.90
	RETIC	R ≥ 0.90
	#NEU	R ≥ 0.90
	#LYM	R ≥ 0.60
	#MONO	R ≥ 0.60
	#EOS	R ≥ 0.70
<b>Linearity</b> Data generated using whole blood panels.	WBC	0–310 K/ $\mu$ L
	RBC	0–16 M/ $\mu$ L
	HGB	0–25 g/dL
	HCT	0%–60%
	PLT	0–2000 K/ $\mu$ L
	RETIC	0–3 M/ $\mu$ L
<b>Aspiration volume</b>	55 $\mu$ L	
<b>Sample volume required for proper aspiration</b>	Standard 13 mm x 75 mm collection tubes: Minimum of 500 $\mu$ L Microtainer sample tube: Minimum of 200 $\mu$ L	

## Safety precautions

Position the analyzer so that the power cord is easily accessible.

DO NOT stack other equipment or containers on top of the analyzer.

Keep analyzer away from sources of heat or flames.

DO NOT place or operate the analyzer near x-ray equipment, photocopiers, or other devices that generate static or magnetic fields.

PROTECT your equipment from damp conditions or wet weather.

Take care not to spill water or other fluids on the unit.

CAUTION: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

DO NOT use any of the following liquids, abrasives, or aerosol sprays on or near the analyzer, as they may damage the outer case and may adversely affect results:

- Organic solvents
- Ammonia-based cleaners
- Ink markers
- Sprays containing volatile liquids
- Insecticides
- Polish
- Room freshener

The analyzer does not contain any user-serviceable components. DO NOT disassemble.

Line voltage for the ProCyte One analyzer is 100–240 V AC, 50–60 Hz. Be sure to plug all equipment into properly grounded electrical outlets.

Use only the power cable supplied.

Disconnect the power cable:

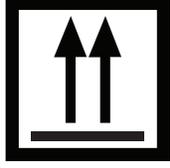
- If the cable becomes frayed or otherwise damaged.
- If anything is spilled onto the analyzer.
- If your analyzer is exposed to excessive moisture.
- If your analyzer is dropped or the case has been damaged.

The ProCyte One analyzer should only be used as described in this guide. Failure to follow these instructions may adversely affect results as well as the safety features of the analyzer (including, but not limited to, hazardous radiation exposure).

## International symbol descriptions

International symbols are often used on packaging to provide a pictorial representation of particular information related to the product (such as expiration date, temperature limitations, batch code, etc.). IDEXX Laboratories has adopted the use of international symbols on our analyzers, product boxes, labels, inserts, and manuals in an effort to provide our users with easy-to-read information.

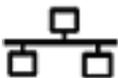
Symbol	Description	Symbol	Description
	<b>Use by</b> A utiliser avant Verwendbar bis Usare entro Usar antes de 使用期限		<b>Temperature limitation</b> Température limite Zulässiger Temperaturbereich Temperatura limite Limitación de temperatura 保存温度(下限)
	<b>Batch code (Lot)</b> Code de lot (Lot) Chargenbezeichnung (Partie) Codice del lotto (partita) Código de lote (Lote) ロット番号		<b>Upper limit of temperature</b> Limite supérieure de température Temperaturobergrenze Limite superiore di temperatura Limite superior de temperatura 保存温度(上限)
	<b>Serial number</b> Numéro de série Seriennummer Numero di serie Número de serie シリアル番号		<b>Consult instructions for use</b> Consulter la notice d'utilisation Gebrauchsanweisung beachten Consultare le istruzioni per l'uso Consultar las instrucciones de uso 取扱説明書をご参照ください。
	<b>Catalog number</b> Numéro catalogue Bestellnummer Numero di catalogo Número de catálogo 製品番号		<b>Keep away from sunlight</b> Conserver à l'abri de la lumière Vor direkter Sonneneinstrahlung schützen Mantener alejado de la luz solar Tenere lontano dalla luce diretta del sole 遮光してください。

Symbol	Description	Symbol	Description
	<b>Authorized Representative in the European Community</b> Représentant agréé pour la C.E.E. Autorisierte EG-Vertretung Rappresentante autorizzato nella Comunità Europea Representante autorizado en la Comunidad Europea EC内の正規販売代理店		<b>WEEE Directive 2002/96/EC</b> Directive 2002/96/CE (DEEE) WEEE-Richtlinie 2002/96/EG Directiva 2002/96/CE RAEE Direttiva RAEE 2002/96/CE 廃電気電子機器指令 (WEEE Directive 2002/96/EC)
	<b>Manufacturer</b> Fabricant Hersteller Ditta produttrice Fabricante 製造元		<b>Biological risks</b> Risques biologiques Biogefährlich Rischi biologici Riesgos biológicos 生物学的リスク
	<b>Caution, consult accompanying documents</b> Attention, consulter les documents joints Achtung, Begleitdokumente beachten Attenzione, consultare la documentazione allegata Precaución, consultar la documentación adjunta 注意、添付文書をご参照ください。		<b>Do not reuse</b> Usage unique Nicht wiederverwenden No reutilizarw Non riutilizzare 再利用しないでください。
	<b>Caution, hot surface</b> Attention, surface très chaude Precaución, superficie caliente Vorsicht, heiße Oberfläche Attenzione, superficie rovente 高温注意		<b>Electrostatic-sensitive device</b> Appareil sensible aux charges électrostatiques Dispositivo sensible a descargas electrostáticas Gerät ist sensibel auf elektrostatische Ladung Dispositivo sensibile alle scariche elettrostatiche 静電気の影響を受ける装置
	<b>Keep dry</b> Conserver dans un endroit sec Mantener seco Vor Nässe schützen Tenere al riparo dall'umidità 濡らさないこと。		<b>Fragile</b> Fragile Frágil Zerbrechlich Fragile 取扱注意
	<b>This side up</b> Haut Este lado hacia arriba Diese Seite nach oben Alto この面を上にする。		<b>Date of manufacture</b> Date de production Fecha de producción Herstelldatum Data di produzione 製造年月日:

Symbol	Description	Symbol	Description
<b>GHS P 304</b>	<b>IF INHALED:</b> EN CAS D'INHALATION: EN CASO DE INHALACIÓN: BEI EINATMEN: IN CASO DI INALAZIONE: 吸引した場合	<b>GHS P 312</b>	<b>Call a POISON CENTER or doctor/physician if you feel unwell</b> Appeler un CENTRE ANTIPOISON ou un médecin en cas de malaise. Llamar a un CENTRO DE INFORMACION TOXICOLOGICA o a un médico en caso de malestar Bei Unwohlsein GIFTINFORMATIONSZENTRUM oder Arzt anrufen In caso di malessere, contattare un CENTRO ANTIVELENI o un medico 気分が悪くなった時は医師に連絡すること

Symbol	Description
<b>GHS H 303/313/333</b>	<b>May be harmful if swallowed, on contact with skin, and if inhaled</b> Peut être nocif par ingestion, inhalation, par contact avec la peau et par inhalation Puede ser nocivo en caso de ingestión, en contacto con la piel o en caso de inhalación Kontakt mit der Haut, einatmen oder verschlucken kann Gesundheitschäden verursachen Può essere nocivo per ingestione, inalazione, e contatto con la pelle 吸入、接触または飲み込むと有害のおそれ。

## Other symbols

Symbol	Description	Symbol	Description
	USB symbol		Ethernet/network symbol

## IDEXX Customer and Technical Support contact information

IDEXX representative: \_\_\_\_\_

Telephone/voice mail: \_\_\_\_\_

United States: 1-800-248-2483

Latin America: tecnico-latam@idexx.com

Australia: 1300 44 33 99

Luxembourg: 352 (0)34 20 80 87 22

Austria: 43 (0)1 206 092 729

Netherlands: 31 (0)70 700 7033

Belgium: 32 (0)27 00 64 38

New Zealand: 0800 83 85 22

Brazil: 0800-777-7027

Norway: 47 24 05 51 10

Canada: 1-800-248-2483

Poland: 48 22 853 40 01

China (PRC): 400-678-6682

Russia: 7-4999-511-255

Czech Republic: 420-239018034

Singapore: 65 6807-6277

Denmark: 45 (0) 43 31 04 39

Slovakia: 421-268622417

Finland: 358 (0)9 7252 2253

South Africa: 27 11 691 8200

France: 33 (0) 810 433 999

South Korea: 080 7979 133

Germany: 49 (0)69 153 253 290

Spain: 34 932 672 660 or 34 916 376 317

Ireland: 353 (0)1 562 1211

Sweden: 46 (0)8 5198 9566

Italy: 39 02 87 10 36 76

Switzerland: 41 (0)44 511 22 37

Japan: 0120-71-4921

Taiwan: 0800 291 018

United Kingdom: 44 (0)20 3788 7508

