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Preface

Serving veterinarians throughout the world, IDEXX Laboratories understands that medical content, including interpretation of diagnostic results and medical protocols may vary from country to country. A medical review board has approved the content presented in this document.

IDEXX has more than 40 reference laboratories worldwide employing over 100 veterinarians. If you have any questions about the medical content or interpretation of results in this document, please contact IDEXX Laboratories.

Safety Precautions

The IDEXX ProCyte Dx* Hematology Analyzer weighs approximately 55 pounds (25 kg). It may require multiple people to lift the instrument. Be sure to use a table or desk that can support the weight of the analyzer.

Position the analyzer so that the power switch and power cord are 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.

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 ProCyte Dx analyzer uses a semiconductor laser unit. This laser unit is shielded with a sealed box cover. DO NOT remove the cover. If the cover is removed, the unit is equipped with an interlock system that prevents laser operations. DO NOT look directly into the laser beam.

Line voltage for the ProCyte Dx 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 Dx 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.

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.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
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<tbody>
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<td><img src="image" alt="Use by" /></td>
<td>Use by</td>
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<td><img src="image" alt="Use by" /></td>
<td>Verwendbar bis</td>
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<td>Codice del lotto (Partita)</td>
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<td>Représentant agréé pour la C.E.E.</td>
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<td>Autorisierte EG-Vertretung</td>
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<td>Rappresentante autorizzato nella Comunità Europea</td>
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<td>Representante autorizado en la Comunidad Europea</td>
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<td>EC内の正規販売代理店</td>
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<td><img src="image" alt="Upper limit of temperature" /></td>
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<td>Limite superior de temperatura</td>
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<td>Consult instructions for use</td>
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<td><img src="image" alt="Consult instructions for use" /></td>
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<td>Gebrauchsanweisung beachten</td>
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<td>Consultare le istruzioni per l’uso</td>
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<td><img src="image" alt="Consult instructions for use" /></td>
<td>Consultar las instrucciones de uso</td>
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<tr>
<td><img src="image" alt="Consult instructions for use" /></td>
<td>取扱説明書をご参照ください。</td>
</tr>
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<td>Keep away from sunlight</td>
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<tr>
<td><img src="image" alt="Keep away from sunlight" /></td>
<td>Conserver à l’abri de la lumière</td>
</tr>
<tr>
<td><img src="image" alt="Keep away from sunlight" /></td>
<td>Vor direkter Sonneneinstrahlung schützen</td>
</tr>
<tr>
<td><img src="image" alt="Keep away from sunlight" /></td>
<td>Mantener alejado de la luz solar</td>
</tr>
<tr>
<td><img src="image" alt="Keep away from sunlight" /></td>
<td>Tenere lontano dalla luce diretta del sole</td>
</tr>
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<td><img src="image" alt="Keep away from sunlight" /></td>
<td>避光してください。</td>
</tr>
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<td>WEEE-Richtlinie 2002/96/EG</td>
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<td>生物学的リスク</td>
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<tr>
<td>Symbol</td>
<td>Description</td>
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</tbody>
</table>
| ![Caution, consult accompanying documents](image) | Caution, consult accompanying documents  
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。 |
| ![Caution, hot surface](image) | Caution, hot surface  
Attention, surface très chaude  
Precaución, superficie caliente  
Vorsicht, heiße Oberfläche  
Attenzione, superficie rovente  
高温注意 |
| ![Keep dry](image) | Keep dry  
Conserver dans un endroit sec  
Mantener seco  
Vor Nässe schützen  
Tenere al riparo dall’umidità  
濡らさないこと。 |
| ![This side up](image) | This side up  
Haut  
Este lado hacia arriba  
Diese Seite nach oben  
Alto  
この面を上にする。 |
| ![IF INHALED:](image) | IF INHALED:  
EN CAS D’INHALATION:  
EN CASO DE INHALACIÓN:  
BEI EINATMEN:  
IN CASO DI INALAZIONE:  
吸引した場合 |
| ![GHS P 304](image) | GHS P 304 |

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
</table>
| ![Do not reuse](image) | Do not reuse  
Usage unique  
Nicht wiederverwenden  
No reutilizar  
Non riutilizzare  再利用しないでください。 |
| ![Electrostatic-sensitive device](image) | Electrostatic-sensitive device  
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 |
| ![Fragile](image) | Fragile  
Fragile  
Frágil  
Zerbrechlich  
Fragile  
取扱注意 |
| ![Date of manufacture](image) | Date of manufacture  
Date de production  
Fecha de producción  
Hersteldatum  
Data di produzione  
製造年月日: |
| ![GHS P 312](image) | GHS P 312 |

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
</table>
| ![Call a POISON CENTER or doctor/physician if you feel unwell](image) | Call a POISON CENTER or doctor/physician if you feel unwell  
Appeler un CENTRE ANTIPOISON ou un médecin en cas de malaise.  
Llamar a un CENTRO DE INFORMACIÓN TOXICOLÓGICA 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 |
<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>GHS H 303/313/333</td>
<td>May be harmful if swallowed, on contact with skin, and if inhaled.</td>
</tr>
</tbody>
</table>

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<tr>
<th>Other Symbols</th>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB symbol</td>
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<tr>
<td>Ethernet/network symbol</td>
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</tbody>
</table>

**Caution Symbols**

**Right Side of the Analyzer**

Do not put your fingers inside of the analyzer when the analyzer is powered on. Doing so may result in injury. (Caution symbol circled below.)

**Rear of the Analyzer**

To avoid electrical shock, unplug the analyzer before servicing.

Replace only with fuses of the specified type and current rating. The fuse rating is 5.0 A L 250 V (time lag low breaking capacity).
Introduction
The IDEXX ProCyte Dx* Hematology Analyzer is an automated hematology analyzer for animal blood that evaluates and provides the results of 24 parameters for each blood sample in approximately two minutes. The ProCyte Dx analyzer is for veterinary use only.

How It Works
The ProCyte Dx analyzer employs three state-of-the-art technologies—laser flow cytometry, optical fluorescence, and Laminar Flow Impedance*—as well as the SLS-hemoglobin method.

Laser Flow Cytometry
With laser flow cytometry, the system performs two separate analyses:
- Red blood cell optical—analyzes mature red blood cells, reticulocytes, and platelets
- White blood cell differential—analyzes and classifies the five-part differential

The cellular suspensions are hydrodynamically focused through a narrow orifice that is exposed to focused red laser light. Forward-scattered light and side-scattered light are then collected for each cell. These optical signatures provide information on the size, complexity, contents, and structure within each cell. This analysis mimics what a trained pathologist does when examining a blood film.

Optical Fluorescence
With optical fluorescence, the ProCyte Dx Leukocyte Stain and Reticulocyte Stain bind to nucleic acids in the cells and are excited by the red laser light. The fluorescence signatures are uniquely captured at a higher wavelength from the normal side-scattered light by utilizing a dichroic mirror. This method is the gold standard for determining reticulocytes and provides additional sensitivity for identifying the five-part white blood cell differential.
**Laminar Flow Impedance**

Laminar Flow Impedance is the fastest method for analyzing the size and number of red blood cells and platelets. With this method, a diluted sample is focused through the center of a detection aperture and an electrical signal is disrupted by each cell's presence. The resistance measured can determine the size and type of each cell. The ProCyte Dx analyzer sends the sample through the aperture in one coaxial core stream of sample and reagent. Simultaneously, the core stream is surrounded by a faster moving sheath reagent, which ensures that only one cell is in the aperture at a time, preventing any count coincidence or recirculation.

**SLS-Hemoglobin Method**

Hemoglobin conversion with the SLS-hemoglobin method is fast and does not use poisonous substances like other methods (such as the cyanmethemoglobin method), making it a suitable method for automation. And since it can be used to measure methemoglobin, it can also accurately measure blood containing methemoglobin, as is the case with control samples.

**What Is a Dot Plot?**

Dot plots are a visual representation of the complete blood count (CBC) and are a valuable tool for quickly interpreting sample results on the ProCyte Dx analyzer. Each dot in the plot represents a single cell 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 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 ProCyte Dx 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.

- **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 spend less time in front of the laser beam, absorb less light, and therefore fall closer to the bottom on the y-axis.

- **Reticulocytes** — Reticulocytes are immature red blood cells that contain ribosomal RNA. The reticulocytes are larger than many of the RBC population and more granular because of the RNA. These larger cells absorb more stain and fluoresce in the presence of the laser. They are located to the right of the RBC population.

- **RBC Fragments** — RBC fragments are fragile red blood cells that have fragmented during the red blood cell optical reagent chemistry. These are generally intact red blood cell membranes that have released their hemoglobin. The particles have a similar size to platelets but refract light differently and are therefore located to the left of the platelet population.

- **White Blood Cells** — On occasion, a small amount of white blood cells can be seen on the red blood cell dot plot. These cells are larger than reticulocytes and therefore appear higher on the plot. The cells appear because they have absorbed the IDEXX ProCyte Dx Reticulocyte Stain and, given their intercellular content, these cell signatures will have far more fluorescent light scatter than reticulocytes.
White Blood Cell Classification

The ProCyte Dx analyzer utilizes side-scattered fluorescence and side scatter for the primary classification of white blood cells:

- **Neutrophils**—Normally, the nucleic acid content of neutrophils is the lowest of the five-part differential. Conversely, they are more optically complex than the mononuclear cells, therefore they have the least fluorescence but higher scatter than lymphocytes and monocytes.

- **Lymphocytes**—Normally, lymphocytes are the smallest cells relative to the other cells in the five-part differential. They are also the least complex, but have a high concentration of nucleus to cytoplasm. Therefore, these cells have a higher fluorescence but less side scatter than neutrophils and less fluorescence than monocytes.

- **Monocytes**—Monocytes have the largest nucleus of the normal differential. They are less complex than neutrophils but can be more complex than lymphocytes due to their lacy-appearing cytoplasm. Monocytes contain the highest amount of fluorescence and have slightly more side scatter than lymphocytes but less than neutrophils.

- **Eosinophils**—There is a great deal of variation in the size and granularity of eosinophils from species to species. Normally, canine, equine, bovine, and ferret eosinophils appear as a cluster of cells uniquely higher in side scatter to the right of the neutrophils. There is also a degree of fluorescence increase as well. In feline samples, eosinophils are unique in that they have the nearly the highest fluorescence and the most scatter of all of the cells.

- **Basophils**—Basophils also vary species to species. In General, they have a more fluorescence than neutrophils, and also have more side scatter. In canine, equine, bovine, and ferret samples, they appear just above neutrophils in fluorescence, and to the right of the lymphocytes on side scatter. In feline samples, basophils appear below the eosinophils in fluorescence and to the right of lymphocytes in side scatter.

- **uRBC**—This population consists of unlysed red blood cells. Because the red blood cells have no nuclear content, they have little fluorescent light scatter and fall lower on the plot than any white blood cells.
IDEXX VetLab* Station Connectivity

The ProCyte Dx analyzer is part of the IDEXX VetLab* suite of analyzers, all of which connect to the IDEXX VetLab* Station.

Connecting multiple analyzers to the IDEXX VetLab Station helps you attain a comprehensive picture of your patient’s health, with the ability to view test results from multiple analyzers on a single report. With the ProCyte Dx analyzer connected to the IDEXX VetLab Station, you can:

- Automatically review patients’ prior results on every printout for easy comparison.
- Improve client communications with illustrated diagnostic or treatment progress printouts.
- Trend serial data.
- Link to expert descriptions and common causes of abnormal values.
- Print information to help explain the significance of results to your clients.
- Allow new staff to train independently.
- View educational on-screen guides and videos, such as how to properly prepare a whole blood sample.
- Learn proper protocols and tips for best techniques.

Note: For detailed information about the IDEXX VetLab Station, including how to use all of its features, refer to the *IDEXX VetLab Station Operator’s Guide*.

Components

The ProCyte Dx analyzer is a self-contained system that analyzes animal blood and control samples. It is connected to and communicates with the IDEXX VetLab Station.

**Analyzer**

![Analyzer Diagram]

IDEXX VetLab Station

The IDEXX VetLab Station functions as the communications hub for all IDEXX analyzers, including the ProCyte Dx analyzer.
**Information Processing Unit (IPU)**

The IPU is a dedicated computer that connects to the ProCyte Dx analyzer and communicates with the IDEXX VetLab Station. This computer acts as the central processing unit for the ProCyte Dx analyzer and has been specifically designed to integrate these two IDEXX VetLab products. It is required for the system to function correctly.

**Bar Code Reader**

A bar code reader can be connected to the IDEXX VetLab Station, which provides a quick method for entering data when changing reagents, loading ProCyte Dx control targets, and loading acceptable ranges for quality control. A bar code reader is not required to complete these steps, but it does make the data entry process faster and easier.

**Note:** The bar code reader can also be used to enter patient information (from a bar code) on the Identify Patient screen.

**Analyzer Status**

The light-emitting diode (LED) indicator on the front panel of the ProCyte Dx analyzer, indicates the analyzer’s status.

**Note:** You can also view the analyzer status by viewing its icon on the IDEXX VetLab Station Home screen.

<table>
<thead>
<tr>
<th>LED Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>No color</td>
<td>OFF; analyzer is turned off</td>
</tr>
<tr>
<td>Green (steady)</td>
<td>READY; analyzer is ready to process samples or perform maintenance/diagnostic tasks</td>
</tr>
<tr>
<td>Green (flashing)</td>
<td>IN PROCESS; analyzer is aspirating sample</td>
</tr>
<tr>
<td>Red</td>
<td>ERROR; an error has occurred; review error or alert messages on the IDEXX VetLab Station</td>
</tr>
</tbody>
</table>

**Powering the Analyzer On/Off**

It is recommended that you power off the analyzer, IPU, and the IDEXX VetLab Station once per week.

**To Power On the Analyzer**

1. Ensure the IDEXX VetLab Station computer is powered on and that the touch-screen monitor displays the Home screen. If necessary, tap **Home** in the upper-left corner of the screen to access the Home screen. The ProCyte Dx icon appears with an Offline (black) status.

2. Power on the IPU by pressing the power button on the front of the IPU computer.

3. When the status of the ProCyte Dx icon on the Home screen changes from Offline (black) to Busy (yellow), power on the IDEXX ProCyte Dx analyzer using the switch located on the right side of the analyzer. The ProCyte Dx performs a variety of self-check procedures (if a self-check procedure fails, an alert message will display on the IDEXX VetLab Station Home screen). This process takes approximately 8 minutes.

4. If the self-check procedure is successful, the status of the ProCyte Dx icon on the Home screen changes to Ready (green) and the LED on the ProCyte Dx analyzer turns green (steady).
To Power Off the Analyzer

1. Tap **Instruments** on the IDEXX VetLab Station Home screen.
2. Tap the **ProCyte Dx** tab.
3. Tap **Turn Off ProCyte Dx**. The Turn Off ProCyte Dx dialog box displays.
4. Tap **OK**. The IPU powers down automatically.
5. When the Standby procedure is complete and the analyzer alarm sounds, power off the analyzer using the switch located on the right side of the analyzer.
6. Tap **Shut Down** on the IDEXX VetLab Station Home screen to power it off.

Opening/Closing the Sample Drawer

Press the **Open/Close** button on the analyzer to open or close the sample drawer.

Standby Mode

When the ProCyte Dx is idle for 11 hours and 45 minutes, the analyzer enters Standby mode. The analyzer also enters Standby mode daily at a user-defined time (7:00 p.m. by default).

To Restart the Analyzer

Tap **Exit Standby**. It takes approximately 8 minutes to exit Standby mode.

**Important:** The analyzer will perform a background check when it restarts.

You can customize when you want the analyzer to enter Standby mode. For more information, see “Running the Daily Standby Procedure” on page F-1.

Viewing Analyzer Status Information

The ProCyte Dx Instruments screen displays the analyzer’s current software version, serial number, and IPU serial number. It also displays procedures/reminders relevant to the analyzer.

1. Tap **Instruments** on the IDEXX VetLab Station Home screen.
2. Tap the **ProCyte Dx** tab. The analyzer status information displays on the left side of the screen.

Analysis Parameters

The ProCyte Dx analyzer provides results for the following parameters†:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RBC</td>
<td>Total number of erythrocytes</td>
</tr>
<tr>
<td>HCT</td>
<td>Hematocrit value: erythrocyte ratio of total blood volume</td>
</tr>
<tr>
<td>HGB</td>
<td>Hemoglobin concentration</td>
</tr>
<tr>
<td>MCV</td>
<td>Mean erythrocyte volume in total sample</td>
</tr>
<tr>
<td>MCH</td>
<td>Mean hemoglobin volume per red blood cell (RBC) count</td>
</tr>
<tr>
<td>MCHC</td>
<td>Mean hemoglobin concentration of erythrocytes</td>
</tr>
<tr>
<td>RDW</td>
<td>The degree of variation in size of the erythrocyte population</td>
</tr>
<tr>
<td>%RETIC</td>
<td>Reticulocyte percent</td>
</tr>
<tr>
<td>RETIC</td>
<td>Reticulocyte count</td>
</tr>
</tbody>
</table>
### Parameter Description

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WBC</td>
<td>Total number of leukocytes</td>
</tr>
<tr>
<td>%NEU</td>
<td>Neutrophil percent</td>
</tr>
<tr>
<td>%LYM</td>
<td>Lymphocyte percent</td>
</tr>
<tr>
<td>%MONO</td>
<td>Monocyte percent</td>
</tr>
<tr>
<td>%EOS</td>
<td>Eosinophil percent</td>
</tr>
<tr>
<td>%BASO</td>
<td>Basophil percent</td>
</tr>
<tr>
<td>NEU</td>
<td>Neutrophil count</td>
</tr>
<tr>
<td>LYM</td>
<td>Lymphocyte count</td>
</tr>
<tr>
<td>MONO</td>
<td>Monocyte count</td>
</tr>
<tr>
<td>EOS</td>
<td>Eosinophil count</td>
</tr>
<tr>
<td>BASO</td>
<td>Basophil count</td>
</tr>
<tr>
<td>PLT</td>
<td>Total number of platelets</td>
</tr>
<tr>
<td>MPV</td>
<td>Mean platelet volume</td>
</tr>
<tr>
<td>PDW</td>
<td>Platelet distribution width; the degree of variation in size of the platelet population</td>
</tr>
<tr>
<td>PCT</td>
<td>Plateletcrit value</td>
</tr>
</tbody>
</table>

*The number of reported parameters may vary according to species (e.g., reticulocytes are not reported for equine species).

### Compatible Species

The ProCyte Dx analyzer can analyze blood from the following species:

- Canine
- Feline
- Equine
- Bovine
- Ferret
- Other

*The “Other” species was incorporated for research purposes. The algorithms for “other” are based on the canine species and therefore not validated for other animal species. The canine algorithm incorporates known cellular size, scatter pattern, and unique distributions customized for that species. This mode can be used by experienced professionals with knowledge of hematology dot plots and who can make visual updates to the displayed pattern of the dot plot.
Overview
Before using the ProCyte Dx analyzer each day:

- Check the reagent levels on the ProCyte Dx Instruments screen to ensure there is a sufficient amount of reagent for the number of samples to be analyzed that day (for more information, see “Viewing Reagent/Stain Information” on page C-4).
- Check the tubing and cables attached to the analyzer. Ensure the tubing is not bent and that the power cord is securely plugged into the outlet.

Changing the Tube Adapter
Before you begin collecting a patient sample and processing it in the ProCyte Dx analyzer, be sure you have the correct tube adaptor loaded in the sample drawer of the analyzer. The ProCyte Dx analyzer has three sample tube adapters so you can use various tube sizes, if necessary.

The ProCyte Dx is capable of running most EDTA blood collection tubes. There are numerous standard (13 x 75 mm) hematology tube manufacturers. We recommend that you only use tubes from a reliable and trustworthy source. If you have any questions or concerns about EDTA tube selection, IDEXX recommends and supports the use of 2 mL draw BD standard EDTA tubes and IDEXX VetCollect* tubes.

Regular Adapter
Use with standard 13 x 75 mm diameter tubes
(such as IDEXX VetCollect tubes and BD Vacutainer* 13 x 75 mm [2.0 mL] tubes with a Hemoguard* closure)

Micro Adapter
Use with micro tubes in the following sizes:
10.25 x 50 mm, 10.25 x 64 mm, or 1.3 mL
(such as Sarstedt 1.3 mL tubes)
Important: Remove tube cap before analysis.

QC Adapter
Use with e-CHECK* (XS) quality control blood samples.

To Install the Tube Adapter
1. If the sample drawer is not open, press the Open/Close button on the ProCyte Dx analyzer to open the sample drawer.
2. Select the sample tube adapter that is appropriate for the sample tube you are using.
3. Place the sample tube adapter in the sample position area of the sample drawer.
4. Align the red mark on the adapter with the red mark on the drawer.
5. Turn the adapter to the right until you hear a click (about 45°); this ensures the adapter is properly installed.

**Note:** If you are using a micro tube, you must remove the cap before beginning the sample analysis process.

**To Remove the Tube Adapter**

1. If the sample drawer is not open, press the Open/Close button on the ProCyte Dx analyzer to open the sample drawer.
2. Turn the sample tube adapter to the left (45°) until the red mark on the adapter and the red mark in the sample position area of the drawer line up.
3. Lift the tube adapter to remove it.

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**Analyzing Samples**

The ProCyte Dx analyzer produces a complete blood count (CBC) analysis for each patient blood sample it processes. There are four different work flows that can be used to analyze a sample on the ProCyte Dx analyzer:

- **Analyze Sample Button**—Use this work flow if you do not have a practice management system connected to your IDEXX VetLab* Station via IDEXX SmartLink* or IDEXX InterLink* technology.

- **Pending List** or **Census List**—Use one of these work flows if you have a practice management system connected to your IDEXX VetLab Station via IDEXX SmartLink or IDEXX InterLink technology. Using this work flow will save you time because you do not need to enter the client and patient information into the IDEXX VetLab Station (since it has already been entered into your practice management system).

- **Ready to Run Icon**—Use this work flow if you initiated the sample run using one of the other work flows, but the analyzer was busy at the time and the sample could not be run immediately.

For more information on these work flows, see the IDEXX VetLab Station Operator’s Guide.

**To Analyze a Sample Using the Analyze Sample Button**

1. On the IDEXX VetLab Station Home screen, tap **Analyze Sample**.
2. Enter the client and patient information (required fields are noted with an asterisk) and tap **Next**.
3. On the Select Instruments screen, select the **Reason for Testing**.
4. Tap the ProCyte Dx analyzer icon to select it and add it to the current analysis job list.

5. Tap Run. The patient information is sent to the ProCyte Dx analyzer. A dialog box appears with information about the selected patient and instructions for processing the sample on the analyzer.

6. Read the instructions and tap OK. The ProCyte Dx icon now appears in the patient-specific job status area (on the IDEXX VetLab Station Home screen) with an In Process status.

7. On the ProCyte Dx analyzer, ensure the sample drawer is open. If necessary, press the Open/Close button on the analyzer to open the sample drawer.

8. Ensure the appropriate tube adapter is in the sample position area of the sample drawer.

9. Prepare the sample. Gently invert the sample 10 times to ensure it is well mixed.

10. Immediately place the sample in the tube adapter.

    Important: If you are using a micro tube, remove the cap before placing the tube in the tube adapter.

11. Press the Start button on the analyzer. The sample drawer automatically closes and the analyzer begins processing the sample.

To Analyze a Sample Using the Pending List

1. On the IDEXX VetLab Station Home screen, tap a patient name in the Pending List and then tap Run (below the Pending List).

2. On the Select Instruments screen, select the Reason for Testing.

3. Tap the ProCyte Dx analyzer icon (status is Ready) to select it and add it to the current analysis job list.

4. Tap Run. The patient information is sent to the ProCyte Dx analyzer. A dialog box appears with information about the selected patient and instructions for processing the sample on the analyzer.

5. Read the instructions and tap OK.

6. On the ProCyte Dx analyzer, ensure the sample drawer is open. If necessary, press the Open/Close button to open the sample drawer.

7. Ensure the appropriate tube adapter is in the sample position area of the sample drawer.

8. Prepare the sample. Gently invert the sample 10 times to ensure it is well mixed.

9. Immediately place the sample in the tube adapter.

    Important: If you are using a micro tube, remove the cap before placing the tube in the tube adapter.

10. Press the Start button on the analyzer. The sample drawer automatically closes and the analyzer begins processing the sample.
To Analyze a Sample Using the Census List

1. On the IDEXX VetLab Station Home screen, tap a patient name in the Census List and then tap **Run** (below the Census List).
2. On the Select Instruments screen, select the **Reason for Testing**.
3. Tap the **ProCyte Dx** analyzer icon (status is Ready) to select it and add it to the current analysis job list.
4. Tap **Run**. The patient information is sent to the ProCyte Dx analyzer. A dialog box appears with information about the selected patient and instructions for processing the sample on the analyzer.
5. Read the instructions and tap **OK**. The ProCyte Dx icon now appears in the patient-specific job status area (on the IDEXX VetLab Station Home screen) with an In Process status.
6. On the ProCyte Dx analyzer, ensure the sample drawer is open. If necessary, press the **Open/Close** button on the analyzer to open the sample drawer.
7. Ensure the appropriate tube adapter is in the sample position area of the sample drawer.
8. Prepare the sample. **Gently invert the sample 10 times** to ensure it is well mixed.
9. Immediately place the sample in the tube adapter.  
   **Important:** If you are using a micro tube, remove the cap before placing the tube in the tube adapter.
10. Press the **Start** button on the analyzer. The sample drawer automatically closes and the analyzer begins processing the sample.

To Analyze a Sample Using the Ready to Run Icon

**Note:** In order to use this workflow, the ProCyte Dx icon must appear in the patient-specific job status area (on the IDEXX VetLab Station Home screen) with a Ready to Run status.

1. On the IDEXX VetLab Station Home screen, tap the Ready to Run **ProCyte Dx** icon in the patient-specific job status area.
2. A dialog box appears with information about the selected patient and options to start or cancel the sample run.
3. Tap **Start Run** to send the patient information to the selected analyzer.
4. A second dialog box appears with information about the selected patient and instructions for processing the sample on the analyzer.
5. Read the instructions and tap **OK**. The ProCyte Dx icon now appears in the patient-specific job status area (on the IDEXX VetLab Station Home screen) with an In Process status.
6. On the ProCyte Dx analyzer, ensure the sample drawer is open. If necessary, press the **Open/Close** button on the analyzer to open the sample drawer.
7. Ensure the appropriate tube adapter is in the sample position area of the sample drawer.
8. Prepare the sample. **Gently invert the sample 10 times** to ensure it is well mixed.
9. Immediately place the sample in the tube adapter.  
   **Important:** If you are using a micro tube, remove the cap before placing the tube in the tube adapter.
10. Press the **Start** button on the analyzer. The sample drawer automatically closes and the analyzer begins processing the sample.
Canceling a Run That Has Been Sent to the Analyzer but Not Run

1. In a patient-specific job status area on the Home screen, tap a Ready to Run or Busy ProCyte Dx 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 Dx icon is removed from the job status area.

   Note: An in-process sample run cannot be canceled.

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 Results.

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 Dx 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.

Responding to an Alert

If an analyzer experiences a problem, an alert message appears 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 Dx analyzer using the ProCyte Dx Settings button on the ProCyte Dx Instruments screen. For example, you can disable the printing of dot plots with patient results, or you can customize the time that the analyzer is set to standby each day.
Displaying and Printing Dot Plots with Patient Results

1. Tap Instruments on the IDEXX VetLab Station Home screen.
2. Tap the ProCyte Dx tab.
3. Tap ProCyte Dx Settings.
4. Select the Display and print ProCyte Dx dot plot charts with patient results check box.
5. Tap OK.

Customizing the Standby Mode Time

By default, the ProCyte Dx analyzer will set itself to Standby mode at 7:00 p.m. each day. Follow these instructions if you want to change the default time for Standby mode:

1. Tap Instruments on the IDEXX VetLab Station Home screen.
2. Tap the ProCyte Dx tab.
3. Tap ProCyte Dx Settings.
4. In the Standby Mode group box, tap the hour and/or minute up and down arrows to modify the time as needed.
5. Tap a.m. or p.m.
6. Tap OK to save your changes.
Managing Reagents and Stains

Overview
The ProCyte Dx* analyzer uses self-contained reagents and stains to process patient samples. This section describes the contents of each reagent kit and stain pack and how to use them properly with the ProCyte Dx analyzer.

All ProCyte Dx analyzer reagents and stains are for veterinary use only.

Important: Reagent kits and stain packs must be kept at room temperature (15°C–30°C/59°F–86°F) when connected to the analyzer. Kits/packs that are not connected should be stored at 2°C–30°C (36°F–86°F).

IDEXX ProCyte Dx* Reagent Kit
The IDEXX ProCyte Dx Reagent Kit contains 3 reagent bottles (Lytic Reagent, Reticulocyte Diluent, and HGB Reagent), System Diluent, and a waste container. The reagent kit connects to the analyzer via the Quick-Connect Top.

Inside of the reagent kit, the reagent shelf is both color and number coded to indicate placement of each reagent, the System Diluent, and the waste container. Instructions for changing a reagent kit can be found later in this section.

Important: To ensure both customer safety and optimal system performance, IDEXX recommends that all reagent kits are placed next to or below the analyzer. Reagent kits should not be placed above the analyzer.

Quick-Connect Top
The Quick-Connect Top was designed to make changing reagents a simple and efficient process. The top has 5 probes that are designed to fit into the bottles and containers in the reagent kit. The Quick-Connect Top is reused each time you change the reagent kit.

IDEXX ProCyte Dx* Stain Pack
The IDEXX ProCyte Dx Stain Pack consists of one Leukocyte Stain pouch and one Reticulocyte Stain pouch that are fused together. Instructions for changing a stain pack can be found later in this section.

Connecting a Reagent Kit to the Analyzer
Attached to the probes on the Quick-Connect Top are tubes that connect to the Quick Disconnects on the back of the analyzer. Each tube is labeled with a color that corresponds to the colored Quick Disconnects. Be sure to connect the correct tube to the appropriate Quick Disconnect.

Changing a Reagent Kit/Stain Pack
An alert displays when the reagent kit/stain pack is empty or expired. When the reagent kit/stain pack is low or close to expiration, you can choose to change it immediately or be reminded to change it later.

Note: Be sure to review the warnings and precautions for each reagent/stain before handling these materials. For more information, see the reagent and stain descriptions on pages C-5–C-7.

Important: Disposal procedures should be compliant with local disposal laws.
To Change the Reagent Kit in Response to an Alert

1. Tap Change Reagent in the alert message.

2. If you have a bar code reader, scan the bar code on the new reagent kit. If you do not have a reader, type the bar code into the Enter a Reagent Code text box.

3. Open the top of a new reagent kit and place it next to the kit you are replacing.
   **Note:** Open a new reagent kit by folding the top cover over the opposite side of the box, exposing the reagent shelf. The top cover of the reagent kit can either be removed or easily secured by the cardboard flaps found near the bottom of the opposite side of the box.

4. Remove the caps from the 3 bottles, the System Diluent, and the waste container in the new reagent kit and set them aside. If the plastic ring around the top of the System Diluent or waste container is resting below the cardboard shelf, gently pull them up so the ring rests on the shelf.
   **Important:** Do not alter the order of the 3 reagent bottles.

5. Remove the Quick-Connect Top from the old reagent kit and position it onto the new reagent kit, ensuring the probes are inserted into the 3 reagent bottles, the System Diluent, and the waste container.

6. Ensure the Quick-Connect Top is placed securely on the reagent kit and tap Start Prime.
   **Important:** It is essential that the Quick-Connect Top is placed securely on the reagent kit when priming reagents.

7. Carefully remove each reagent bottle from the old reagent kit and dispose of the contents of each bottle according to applicable local disposal laws. Extra reagents have been added to the bottles to ensure that the analyzer does not run out of reagent and aspirate air.
   **Important:** DO NOT pour the remaining liquid from the old kit into the new kit. Pouring leftover liquid into the new kit requires the analyzer to use more reagent to prime the analyzer and can compromise the quality of the reagent.
   **Note:** Contact IDEXX Technical Support to receive a copy of the MSDS information.

8. Place the caps from the bottles in the new reagent kit onto the bottles in the old reagent kit.

To Change the Reagent Kit (Without an Alert)

1. Tap Instruments on the IDEXX VetLab Station Home screen.

2. Tap the ProCyte Dx tab.

3. Tap Change Reagent.

4. If you have a bar code reader, scan the bar code on the new reagent kit. If you do not have a reader, type the bar code into the Enter a Reagent Code text box.
5. Open a new reagent kit and place it next to the kit you are replacing.
   **Note:** Open a new reagent kit by folding the top cover over the opposite side of the box, exposing the reagent shelf. The top cover of the reagent kit can either be removed or easily secured by the cardboard flaps found near the bottom of the opposite side of the box.

6. Remove the caps from the 3 reagent bottles, the System Diluent, and the waste container in the new reagent kit and set them aside. If the internal piece of the System Diluent or waste container caps are left inside of the kit, remove them.
   **Important:** Do not alter the order of the 3 reagent bottles.

7. Remove the Quick-Connect Top from the old reagent kit and position it onto the new reagent kit, ensuring the probes are inserted into the 3 reagent bottles, the System Diluent, and the waste container.

8. Ensure the Quick-Connect Top is placed securely on the reagent kit and tap **Start Prime**.
   **Important:** It is essential that the Quick-Connect Top is placed securely on the reagent kit when priming reagents.

9. Carefully remove each reagent bottle from the old reagent kit and dispose of the contents of each bottle according to applicable local disposal laws. Extra reagents have been added to the bottles to ensure that the analyzer does not run out of reagent and aspirate air.
   **Important:** DO NOT pour the remaining liquid from the old kit into the new kit. Pouring leftover liquid into the new kit requires the analyzer to use more reagent to prime the analyzer and can compromise the quality of the reagent.

10. Place the caps from the bottles in the new reagent kit onto the bottles in the old reagent kit.

**To Change the Stain Pack in Response to an Alert**

1. Tap **Change Reagent** in the alert message.

2. If you have a bar code reader, scan the bar code on the new stain pack. If you do not have a reader, type the bar code into the Enter a Reagent Code text box.

3. Open the stain compartment cover and unscrew the empty stain pack from the caps/probes.

4. Remove the caps from a new stain pack and set them aside.

5. Screw a new stain pack into the caps in the stain compartment, ensuring each probe is inserted into the correct pouch (the cords are labeled).

6. Place the caps from the new stain pack onto the empty stain pack. Dispose of the stain pack according to applicable local disposal laws.

7. Place the new stain pack into the compartment, ensuring the cords are in front of the stain pack inside the compartment. Then, close the cover.

8. Ensure the Quick-Connect Top is placed securely on the reagent kit and tap **Start Prime**.
   **Important:** It is essential that the Quick-Connect Top is placed securely on the reagent kit when priming reagents.

9. Tap **OK**.
To Change the Stain Pack (Without an Alert)

1. Tap **Instruments** on the IDEXX VetLab Station Home screen.
2. Tap the **ProCyte Dx** tab.
3. Tap **Change Reagent**.
4. If you have a bar code reader, scan the bar code on the new reagent kit. If you do not have a reader, type the bar code into the Enter a Reagent Code text box.
5. Open the stain compartment cover and unscrew the empty stain pack from the caps/probes.
6. Remove the caps from a new stain pack and set them aside.
7. Screw a new stain pack into the caps in the stain compartment, ensuring each probe is inserted into the correct pouch (the cords are labeled).
8. Repeat steps 5–7 for the other stain pouch.
9. Place the caps from the new stain pack onto the empty stain pack. Dispose of the stain pack according to applicable local disposal laws.
10. Place the new stain pack into the compartment, ensuring the cords are in front of the stain pack inside the compartment. Then, close the cover.
11. Ensure the Quick-Connect Top is placed securely on the reagent kit and tap **Start Prime**.
   **Important:** It is essential that the Quick-Connect Top is placed securely on the reagent kit when priming reagents.
12. Tap **OK**.

Viewing Reagent/Stain Information

You can view the fill status and expiration information for your reagent kit and stain pack on the ProCyte Dx Instruments screen. A log is also available to view current and historical reagent/stain information.

**To View Reagent/Stain Fill Status and Expiration Information**

1. Tap **Instruments** on the IDEXX VetLab Station Home screen.
2. Tap the **ProCyte Dx** tab. Two gauges display in the center of the screen indicating the fill status for the reagent kit and stain pack (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.

**To View the Reagent Log**

1. Tap **Instruments** on the IDEXX VetLab Station Home screen.
2. Tap the **ProCyte Dx** tab.
3. Tap **View Log**. The current reagent kit and stain pack display as black. Historical reagent kits and stain packs display as gray.
4. Tap **Back** to return to the ProCyte Dx Instruments screen or tap **Home** to return to the IDEXX VetLab Station Home screen.
Reagent Kit Components

The reagent kit has an unopened stability of 12 months from date of manufacture. Once opened, the product stability is 30 days or until the date of expiration (whichever comes first). Reagent kits must be kept at room temperature (15°C–30°C/59°F–86°F) when connected to the analyzer. Kits that are not connected should be stored at 2°C–30°C (36°F–86°F).

System Diluent

**Intended Use**
Diluent for use in the ProCyte Dx Hematology Analyzer.

**Active Ingredients**
- Sodium chloride 6.38 g/L
- Boric acid 1.0 g/L
- Sodium tetraborate 0.2 g/L
- EDTA-2K 0.2 g/L

**Methodology**
System Diluent is a ready-to-use diluent for photoelectrical analysis of whole blood.

**Warning and Precautions**
Do not ingest and avoid skin and eyes. In case of contact, flush with plenty of water immediately. Consult with physician in case of ingestion and/or contact with eyes.

Lytic Reagent

**Intended Use**
Reagent used to selectively lyse red blood cells from a sample, leaving white blood cells for analysis.

**Active Ingredients**
- Nonionic surfactant 0.18%
- Organic quaternary ammonium salts 0.08%

**Methodology**
Lytic Reagent is a ready-to-use reagent for analyzing white blood cell by photometric measurement.

**Warning and Precautions**
Do not ingest and avoid skin and eyes. In case of contact, flush with plenty of water immediately. Consult with physician in case of ingestion and/or contact with eyes.

Reticulocyte Diluent

**Intended Use**
Diluent used to determine the reticulocyte count and reticulocyte percent in blood.

**Active Ingredients**
- Tricine buffer 0.18%
Methodology
Reticulocyte Diluent is a ready-to-use diluent used for analyzing reticulocytes in blood.

Warning and Precautions
Wear gloves and a lab coat for protection. Avoid contact with skin and eyes. In case of skin contact, rinse immediately with plenty of water. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. If swallowed, induce vomiting and seek medical advice.

HGB Reagent

Intended Use
The HGB Reagent is used to determine the hemoglobin concentration of blood.

Active Ingredients
Sodium lauryl sulfate 1.7 g/L

Methodology
The HGB Reagent is a clear, azide-free and cyanide-free, low toxicity reagent. Hemoglobin measurement using the HGB Reagent is based on the sodium lauryl sulfate method developed by Iwao Oshiro et al (SLS-hemoglobin method). In the SLS-hemoglobin method, an anionic surfactant, sodium lauryl sulfate (SLS) lyses the red blood cell membrane, releasing hemoglobin. The same SLS reagent subsequently combines with the released hemoglobin to form a stable hemichrome. The concentration of hemoglobin is then quantified by colorimetry using a filter photometer. The HGB Reagent has advantage over other cyanide-free methods in that it is able to measure the hemoglobin derivatives deoxyhemoglobin, oxyhemoglobin, carboxyhemoglobin, and methemoglobin.

Warnings and Precautions
Do not ingest. Avoid contact with skin and eyes. For skin contact, flush the area with water. If eyes are affected, flush with copious amounts of water and contact a physician. If ingestion occurs, give ematic (warm normal saline) until vomit fluid is clear and contact a physician.

Literature References

Stain Pack Components
The stain pack has an unopened stability of 12 months from date of manufacture. Once opened and installed in the instrument, it is stable for 90 days or until expiration, whichever comes first. Stain packs must be kept at room temperature (15°C–30°C/59°F–86°F) when connected to the analyzer. Packs that are not connected should be stored at 2°C–30°C (36°F–86°F).

Leukocyte Stain

Intended Use
The Leukocyte Stain is used to stain the leukocytes in diluted and lysed blood samples for determination of the five-part differential count with the ProCyte Dx Hematology Analyzer.
Active Ingredients
Polymethine dye 0.002%
Methanol 3.0%
Ethylene glycol 96.9%

Methodology
A sample volume of a whole blood specimen is introduced into the analyzer where a portion of it is automatically diluted with and lysed by the Lytic Reagent. The Leukocyte Stain is then added, and the entire dilution is maintained at a constant temperature for a defined time period in order to stain the nucleated cells in the sample. The stained sample is then introduced into the laser flow cytometer, where side scatter light and side fluorescent emission are measured allowing the neutrophil (NEU) count and percentage, the lymphocyte (LYM) count and percentage, the monocyte (MONO) count and percentage, the eosinophil (EOS) count and percentage, and the basophil (BASO) count and percentage to be computed.

Warnings and Precautions
Wear gloves and a lab coat for protection. Avoid contact with skin and eyes. In case of skin contact, rinse immediately with plenty of soap and water. In case of contact with eyes, rinse immediately with water or normal saline, occasionally lifting upper and lower lids until no evidence of dye remains. Obtain medical attention. If swallowed, induce vomiting and seek medical advice. In case of accident or if you feel unwell, seek medical advice immediately.

Reticulocyte Stain

Intended Use
Reticulocyte Stain is used to stain the reticulocyte population of cells for the assay of reticulocyte count and reticulocyte percent in blood with the ProCyte Dx Hematology Analyzer.

Active Ingredients
Polymethine dye 0.03%
Methanol 7.1%
Ethylene glycol 92.8%

Methodology
A sample volume of a whole blood specimen is introduced into the analyzer where a portion of it is automatically diluted with Reticulocyte Diluent (from the IDEXX ProCyte Dx Reagent Kit). Reticulocyte Stain is then added, and the entire dilution is maintained at a constant temperature for a defined time period in order to stain the reticulocytes present in the sample. The stained sample is then introduced into the laser flow cytometer, where forward light scatter and side fluorescent emission are measured allowing for the reticulocyte count (RETIC) and the reticulocyte percent (%RETIC) to be computed.

Warnings and Precautions
Wear gloves and a lab coat for protection. Avoid contact with skin and eyes. May produce irritation and discoloration of skin. In case of skin contact, wash affected area with soap and water. Polymethine dyes may result in irritation or injury to the eye. In case of contact with eyes, rinse immediately with water or normal saline, occasionally lifting upper and lower lids, until no evidence of dye remains. Obtain medical attention. If swallowed, induce vomiting and seek medical advice. Do not breathe vapor. In case of accident or if you feel unwell, seek medical advice immediately.
Overview

The quality of your reference laboratory and in-house testing results is impacted by the quality of the sample you provide the laboratory/analyzer. Therefore, it is important that you always prepare samples properly. This chapter provides instructions for preparing quality samples, the recommended order of draw, and more.

We recommend that you familiarize yourself thoroughly with the following guidelines. If you have any questions about sample preparation, contact IDEXX Technical Support and we will be happy to assist you (for more information, see “IDEXX Technical Support Contact Information” on pages H-7–H-8)

- **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 will result in clotting; underfilling will alter the hematocrit and hemoglobin values. 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.

- **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, with the exception of the hematocrit.

See the table on pages D-2–D-4 for a list of the different sample types that each IDEXX VetLab* analyzer is capable of running. The table provides the sample volume required for each sample type as well as how to prepare the sample.
<table>
<thead>
<tr>
<th>Analyzer/Test</th>
<th>Sample Volume Required</th>
<th>Serum</th>
<th>Plasma Lithium Heparin</th>
<th>Plasma Fluoride Oxalate</th>
<th>Whole Blood Lithium Heparin</th>
<th>Whole Blood EDTA</th>
<th>Whole Blood Citrate</th>
<th>Whole Blood Untreated</th>
<th>Urine</th>
<th>Sample Preparation</th>
<th>Centrifuge (time/speed)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catalyst Dx* Chemistry Analyzer whole blood separator</td>
<td>600 µL–800 µL (max)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>gently invert lithium heparin collection tube for 30 seconds; use the 700 µL whole blood pipette to dispense sample into separator</td>
<td>processed automatically within Catalyst Dx analyzer</td>
<td></td>
</tr>
<tr>
<td>Catalyst Dx* Chemistry Analyzer lithium heparin whole blood separator</td>
<td>0.6–0.8 cc (max)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>gently swirl (do not invert or shake) the separator at least 5 times to mix the sample with the anticoagulant</td>
<td>processed automatically within Catalyst Dx analyzer</td>
<td></td>
</tr>
<tr>
<td>Catalyst Dx* Chemistry Analyzer sample cup</td>
<td>130 µL + 10 µL per test</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>serum: allow to clot for 20 minutes plasma: gently invert collection tube for 30 seconds urine: use Catalyst Urine P:C Diluent to dilute the UCRE sample</td>
<td>serum/plasma: 120 seconds at 12,000 rpm (10 minutes at 8,000 rpm) urine: 45 seconds on &quot;urine&quot; setting</td>
<td>fluoride oxalate: only for LAC or GLU urine: for UPC Ratio only</td>
</tr>
<tr>
<td>Ammonia Test</td>
<td>see Catalyst Dx analyzer or VetTest analyzer</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>analyze sample within 30 minutes of collection</td>
<td>none</td>
<td></td>
</tr>
<tr>
<td>VetTest* Chemistry Analyzer</td>
<td>30 µL + 10 µL per test</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>serum: allow to clot for 20 minutes plasma: gently invert collection tube for 30 seconds urine: use Catalyst Urine P:C Diluent to dilute the UCRE sample</td>
<td>serum/plasma: 120 seconds at 12,000 rpm (10 minutes at 8,000 rpm) urine: 45 seconds on &quot;urine&quot; setting</td>
<td>fluoride oxalate: only for LAC or GLU urine: for UPC Ratio only</td>
</tr>
<tr>
<td>VetLyte* Electrolyte Analyzer</td>
<td>90 µL</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>serum: allow to clot for 20 minutes plasma: fill collection tube to ½ – ⅔ full then gently invert for 30 seconds whole blood: gently invert collection tube several times</td>
<td>serum: 120 seconds at 12,000 rpm (10 minutes at 8,000 rpm) plasma: 90 seconds at 12,000 rpm (5 minutes at 8,000 rpm) whole blood: none</td>
<td>plasma/whole blood: do not use anticoagulants (e.g., EDTA, citrate, oxalate, or sodium heparin)</td>
</tr>
<tr>
<td>Analyzer/Test</td>
<td>Sample Volume Required</td>
<td>Serum</td>
<td>Plasma Lithium Heparin</td>
<td>Plasma Fluoride Oxalate</td>
<td>Whole Blood Lithium Heparin</td>
<td>Whole Blood EDTA</td>
<td>Whole Blood Citrate</td>
<td>Whole Blood Untreated</td>
<td>Urine</td>
<td>Sample Preparation</td>
<td>Centrifuge (time/speed)</td>
<td>Notes</td>
</tr>
<tr>
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<td>-------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>VetStat* Electrolyte and Blood Gas Analyzer</td>
<td>200 µL</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>serum: allow to clot for 20 minutes</td>
<td>serum/plasma: 120 seconds at 12,000 rpm (10 minutes at 8,000 rpm)</td>
<td>plasma/whole blood: do not use anticoagulants (e.g., EDTA, citrate, oxalate, or sodium heparin)</td>
</tr>
<tr>
<td>ProCyte Dx* Hematology Analyzer</td>
<td>500 µL of sample from an IDEXX VetCollect* tube or 650 µL from a 1.3 mL Sarstedt tube (analyzer aspirates 30 µL of sample)</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>gently invert collection tube 10 times</td>
<td>none</td>
<td>VetCollect* tubes are recommended for patient samples</td>
</tr>
<tr>
<td>LaserCyte* Hematology Analyzer</td>
<td>95 µL of sample from 500 µL draw</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>gently invert collection tube for 30 seconds</td>
<td>none</td>
<td>use CBC5R tube and VetCollect* tube</td>
</tr>
<tr>
<td>Coag Dx* Analyzer</td>
<td>200 µL</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>citrate: use 1.8- or 2.7-mL tube containing 3.2% sodium citrate; gently invert collection tube at least 4 times; wait 5 minutes before analyzing sample</td>
<td>none</td>
<td>citrate: analyze sample within 2 hours; keep at room temperature whole blood: collect sample only when analyzer displays “Add Sample...Press Start,”</td>
</tr>
<tr>
<td>IDEXX VetAutoread* Hematology Analyzer</td>
<td>111 µL</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>gently invert collection tube for 30 seconds (at least 10 times)</td>
<td>EDTA: 5 minutes citrate: 10 minutes (2 cycles)</td>
<td>use EDTA anticoagulated blood EDTA: canine, feline, equine citrate: bovine</td>
</tr>
<tr>
<td>IDEXX VetLab* UA* Analyzer</td>
<td>5 mL</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>dip IDEXX UA* Strip into urine and blot</td>
<td>none</td>
<td></td>
</tr>
<tr>
<td>SNAP* T&lt;sub&gt;4&lt;/sub&gt; Test</td>
<td>50 µL or 100 µL</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>serum: allow to clot for 20 minutes</td>
<td>serum/plasma: 120 seconds at 12,000 rpm (10 minutes at 8,000 rpm)</td>
<td>volume varies depending on test protocol</td>
</tr>
<tr>
<td>SNAP* Total T&lt;sub&gt;4&lt;/sub&gt; Test</td>
<td>65 µL</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>serum: allow to clot for 20 minutes</td>
<td>serum/plasma: 120 seconds at 12,000 rpm (10 minutes at 8,000 rpm)</td>
<td>volume varies depending on test protocol</td>
</tr>
<tr>
<td>Analyzer/Test</td>
<td>Sample Volume Required</td>
<td>Serum</td>
<td>Plasma Lithium Heparin</td>
<td>Plasma Fluoride Oxalate</td>
<td>Whole Blood Lithium Heparin</td>
<td>Whole Blood EDTA</td>
<td>Whole Blood Citrate</td>
<td>Whole Blood Untreated</td>
<td>Sample Preparation</td>
<td>Centrifuge (time/speed)</td>
<td>Notes</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>SNAP+ Cortisol Test</td>
<td>25 µL or 100 µL</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>serum: allow to clot for 20 minutes</td>
<td>serum: 120 seconds at 12,000 rpm (10 minutes at 8,000 rpm)</td>
<td>volume varies depending on test protocol</td>
<td></td>
</tr>
<tr>
<td>SNAP+ Bile Acids Test</td>
<td>100 µL</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>serum: allow to clot for 20 minutes</td>
<td>serum: 120 seconds at 12,000 rpm (10 minutes at 8,000 rpm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SNAP+ cPL* Test</td>
<td>3 drops</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>serum: allow to clot for 20 minutes</td>
<td>serum: 120 seconds at 12,000 rpm (10 minutes at 8,000 rpm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SNAP+ Feline Triple Test</td>
<td>3 drops</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td>serum: allow to clot for 20 minutes</td>
<td>serum/plasma: 120 seconds at 12,000 rpm (10 minutes at 8,000 rpm)</td>
<td>whole blood: none</td>
<td></td>
</tr>
<tr>
<td>SNAP+ 4Dx* Test</td>
<td>3 drops</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td>serum: allow to clot for 20 minutes</td>
<td>serum/plasma: 120 seconds at 12,000 rpm (10 minutes at 8,000 rpm)</td>
<td>whole blood: none</td>
<td></td>
</tr>
<tr>
<td>SNAP+ FIV/FeLV Combo Test</td>
<td>3 drops</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td>serum: allow to clot for 20 minutes</td>
<td>serum/plasma: 120 seconds at 12,000 rpm (10 minutes at 8,000 rpm)</td>
<td>whole blood: none</td>
<td></td>
</tr>
</tbody>
</table>
Overview
The purpose of quality control (QC) is to monitor the ProCyte Dx* analyzer’s performance over time. QC also ensures the reliability of the analyzer and reagent system. Quality control should be run on a monthly basis. It may be necessary to run quality control for troubleshooting purposes.

Quality Control Materials
e-CHECK* (XS) is the quality control material used to monitor the performance of the ProCyte Dx analyzer. Do not use any other quality control materials on the analyzer.

The e-CHECK (XS) control is a stabilized whole blood matrix designed for statistical process control of the ProCyte Dx analyzer. This product is for veterinary use only, by laboratory professionals or appropriately trained personnel.

e-CHECK (XS) can be used until the expiration date found on the product packaging.

Adding a Quality Control Lot
1. Tap Instruments on the IDEXX VetLab Station Home screen.
2. Tap the ProCyte Dx tab.
3. Tap Quality Control.
4. Tap Add QC Lot.
5. If you have a bar code reader, scan the bar code on the e-CHECK (XS) insert. If you do not have a reader, enter the bar code into the Enter a Quality Control Bar Code text box and then tap Next.
6. Repeat step 5 for all 6 bar codes. After each bar code is entered, the bar codes display in the Quality Control Bar Codes group box. When a bar code is entered successfully, a green check mark displays to the left of the bar code. When a bar code is deemed invalid (because it does not exist or has expired), a red X displays to the left of the bar code and an error message may display.
7. Tap Next. The QC Lot now displays on the Quality Control screen.

Running Quality Control
This procedure should be run monthly to ensure optimum performance of your analyzer.
1. Tap Instruments on the IDEXX VetLab Station Home screen.
2. Tap the ProCyte Dx tab.
3. Tap Quality Control.
4. Select the ProCyte Dx Quality Control lot you want to use and then tap Run QC. The ProCyte Dx sample drawer opens.

Note: If there are no valid QC lots available, add a new quality control lot (for detailed instructions, see "Adding a Quality Control Lot" above).
5. Warm an e-CHECK (XS) vial to room temperature (18°C–25°C [64°F–77°F]) for at least 15 minutes. Do not let the vial exceed room temperature.
   
   **Note:** Do not warm the vial in your hand.

6. Verify the cap is secure and gently invert the e-CHECK (XS) vial to mix until the cell button in the bottom of the vial is completely suspended.
   
   **Note:** Inverting the vial occasionally during the warm-up process will decrease the amount of time it takes to complete this step.

7. Ensure the QC adapter is in place in the sample drawer.

8. Immediately place the e-CHECK (XS) vial in the tube adapter.

9. Tap OK. The IDEXX VetLab Station Home screen appears.

10. Press the Start button on the analyzer.

11. Return the e-CHECK (XS) vial to the refrigerator.
   
   **Note:** e-CHECK (XS) is stable for 14 days once the cap is pierced.

---

**Viewing and Printing Quality Control Results**

1. On the IDEXX VetLab Station, select the QC run you want to view. Do one of the following from the Home screen:
   
   • Tap the QC lot information in the Recent Results list and then tap View.
   
   • Tap the Records button, tap the QC lot information, and then tap View Records.

2. In 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 Dx tab to view the QC results.

4. If you made an error, such as running the QC L2 instead of the QC L1, tap Remove from QC Trend at the top of the screen to remove the data point from the trending graph. For information on trending results, see “Trending Quality Control Results” below.

5. If you want to add a comment to the test results, tap Add Comment and enter the desired information.

6. Tap Print to print a copy of the QC results.

---

**Trending Quality Control Results**

1. On the IDEXX VetLab Station Home screen, tap the Records button, tap the QC lot information, and then tap View Records.

2. Select the QC results you want to trend.

3. Tap Trend.
**Viewing Quality Control Lot Information**

1. Tap **Instruments** on the IDEXX VetLab Station Home screen.
2. Tap the **ProCyte Dx** tab.
3. Tap **Quality Control**.
4. Tap **View QC Lot Information**. The lot number, level, unopened expiration date, and parameter information for that QC lot display.
5. Tap **Back** to return to the ProCyte Dx Instruments screen.
Overview
A variety of maintenance and diagnostic procedures allow you to maintain and service the ProCyte Dx* analyzer.

**Note:** Some of these tasks must be completed with assistance from an IDEXX Technical Support representative. Contact IDEXX Technical Support when prompted (see “IDEXX Technical Support Contact Information” on pages H-7–H-8).

Upgrading the Software
IDEXX will provide you, at no charge, updated instrument software on a periodic basis. These updates may include new features. Be sure to read the software notes contained within each new release.

For detailed upgrading instructions, see the insert included with the upgrade disc.

Running the Daily Standby Procedure
The Standby procedure is initiated daily at a user-defined time or when the analyzer is not in use for more than 11 hours and 45 minutes. When Standby mode is exited, the analyzer performs a background check to determine if the analyzer is ready to run or if it needs to be cleaned or requires maintenance. The analyzer should go into Standby mode once every 24 hours. It takes approximately 8 minutes to exit Standby mode.

**Note:** If you do not plan to use the analyzer on a particular day, do not exit Standby mode.

**Important:** Failure to run the Standby procedure may yield inaccurate results. IDEXX recommends that you place the analyzer in Standby mode at the end of each day’s analyses or at least once every 24 hours if running the instrument continuously.

**To run the Standby procedure at a certain time each day:**
By default, the ProCyte Dx analyzer will set itself to Standby mode at 7:00 p.m. each day. Follow these instructions if you want to change the default time for Standby mode:

1. Tap **Instruments** on the IDEXX VetLab Station Home screen.
2. Tap the **ProCyte Dx** tab.
3. Tap **ProCyte Dx Settings**.
4. In the Standby Mode group box, tap the hour and/or minute up and down arrows to modify the time as needed.
5. Tap **a.m.** or **p.m.**
6. Tap **OK** to save your changes.
To run the Standby procedure when the analyzer is active:
1. Tap Instruments on the IDEXX VetLab Station Home screen.
2. Tap the ProCyte Dx tab.
3. Tap Set to Standby. A message appears indicating that the procedure takes approximately 3 minutes to complete.
4. Tap OK. The message box closes and the Home screen displays. The ProCyte Dx icon has a Busy status and a progress bar that shows the percentage complete. When the procedure completes, the status changes from Busy to Standby.

To exit Standby mode:
1. Tap the ProCyte Dx icon on the IDEXX VetLab Station Home screen (the icon should have a Standby status).
2. Tap Exit Standby on the ProCyte Dx Instruments screen. When prompted, tap OK to confirm that you want to exit Standby mode. The Auto Rinse procedure automatically begins on the ProCyte Dx analyzer and a background check is initiated. When these procedures are finished (after approximately 8 minutes), the ProCyte Dx analyzer is ready to begin processing samples.

Powering Off the Analyzer Weekly
It is recommended that you power off the analyzer and IPU once per week. For instructions on how to power off the analyzer, see “To Power Off the Analyzer” on page A-7.

Running the Monthly Rinse Procedure
The Monthly Rinse procedure:
• Washes contaminants from the optical detector block flow cell
• Automatically initiates the Auto Rinse procedure
• Generates a background check

The Monthly Rinse procedure takes approximately 25 minutes to complete. To ensure optimum analyzer performance, IDEXX recommends that you perform this procedure each month.

For this procedure, 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 filtered and unscented bleach without surfactants. DO NOT USE scented bleaches or generic versions of regular bleach. DO NOT USE tap water. The solution can be used up to one week after it is made.

To run the Monthly Rinse procedure:
1. Tap Instruments on the IDEXX VetLab Station Home screen.
2. Tap the ProCyte Dx tab and then tap ProCyte Dx Diagnostics.
4. Read the message and verify that the time required for the procedure does not have an impact on your work flow.
5. 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).

6. Dispense 3 mL of the bleach solution into an untreated tube and insert the tube into the sample drawer on the analyzer.

7. Tap **OK**.

8. Press the **Start** button on the analyzer to begin the Monthly Rinse procedure. The ProCyte Dx icon on the Home screen displays with a Busy status and a progress bar that shows the percentage complete for the Monthly Rinse procedure.

---

### 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.

---

### Cleaning the Fan Filter

The analyzer’s fan filter should be cleaned monthly.

The analyzer should be powered off when cleaning the fan filter. As a result, it is recommended that you clean the fan filter during the weekly reboot process when the analyzer and the IPU are both powered off.

**To clean the fan filter:**
1. Ensure the analyzer is powered off.
2. Open the analyzer’s right side cover.
3. Remove the fan filter.
4. Vacuum the filter to remove the debris.
5. Replace the fan filter and close the right side cover.

---

### Managing Data

You may want to copy your ProCyte Dx files to a CD or print a performance report for troubleshooting purposes.

**Copying Data Files to a CD**
1. Tap **Instruments** on the IDEXX VetLab Station Home screen.
2. Tap the **ProCyte Dx** tab and then tap **ProCyte Dx Diagnostics**.
3. Tap the **Data** tab.
4. Tab **Copy Data Files to CD-R**.
5. Load a CD-R into the IDEXX VetLab Station CD drive and then tap **Next**. A progress bar displays indicating the percentage complete for the copying.
6. When the copying is complete, tap **Close**.

**Printing a Performance Report**
1. Tap **Instruments** on the IDEXX VetLab Station Home screen.
2. Tap the **ProCyte Dx** tab and then tap **ProCyte Dx Diagnostics**.
3. Tap the **Data** tab.
Overview

Some of these tasks must be completed with assistance from an IDEXX Technical Support representative. Contact IDEXX Technical Support when prompted (see “IDEXX Technical Support Contact Information” on pages H-7–H-8).

Important: The ProCyte Dx* analyzer must have a Ready status to run a maintenance procedure. Most on-demand diagnostic and maintenance tasks are accessible from the ProCyte Dx Diagnostics screen on the IDEXX VetLab Station.

Differences in Results

With a Commercial Laboratory or Other 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 running sample, 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 Dx 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.

Accessing the ProCyte Dx Diagnostics Screen

1. Tap **Instruments** on the IDEXX VetLab Station Home screen.

2. Tap the **ProCyte Dx** tab and then tap **ProCyte Dx Diagnostics**.

When a maintenance function is in process, the ProCyte Dx icon on the Home screen displays with a Busy status and a progress bar that shows the percentage complete for the process.
Analyzer Icon Displays with an Offline Status

When communication between the IPU and the router is lost, the ProCyte Dx icon on the IDEXX VetLab Station Home screen displays with an Offline status. To resolve, ensure the Ethernet cable that connects the IPU to the router is properly connected. If the situation persists, follow these instructions:

1. Power off the analyzer.
2. Press and hold the power button on the IPU until it shuts down.
3. Wait 5 seconds and then power the IPU back on.
4. Once the ProCyte Dx icon on the IDEXX VetLab Station Home screen changes to a Busy status (yellow), power the analyzer back on.

Analyzer Icon Displays with an Busy Status when a Sample Is Not Being Processed

When communication between the IPU and the analyzer is lost, the ProCyte Dx icon on the IDEXX VetLab Station Home screen displays with a Busy status. To resolve, ensure the Ethernet cable that connects the IPU to the analyzer is properly connected. If the situation persists, follow these instructions:

1. Power off the analyzer.
2. Press and hold the power button on the IPU until it shuts down.
3. Wait 5 seconds and then power the IPU back on.
4. Once the ProCyte Dx icon on the IDEXX VetLab Station Home screen changes to a Busy status (yellow), power the analyzer back on.

Running the Auto Rinse Procedure

The Auto Rinse procedure cleans the detector chamber and the dilution line. It also performs a background check. The Auto Rinse procedure takes approximately 4 minutes to complete.

1. Tap **Instruments** on the IDEXX VetLab Station Home screen.
2. Tap the **ProCyte Dx** tab and then tap **ProCyte Dx Diagnostics**.
3. Tap **Auto Rinse**. The Auto Rinse message box displays.
4. Read the message and verify that the time required for the procedure does not have an impact on your work flow. Then, tap **OK**.

Running the Waste Chamber Rinse Procedure

The Waste Chamber Rinse procedure uses a 5% bleach solution to rinse the waste chamber in the ProCyte Dx analyzer. This procedure takes approximately 10 minutes to complete. This procedure should be performed when prompted.

1. Tap **Instruments** on the IDEXX VetLab Station Home screen.
2. Tap the **ProCyte Dx** tab and then tap **ProCyte Dx Diagnostics**.
3. Tap **Waste Chamber Rinse**. The Waste Chamber Rinse message box displays.
4. Read the message and verify that the time required for the procedure does not have an impact on your work flow.
5. 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 filtered and unscented bleach without surfactants. DO NOT USE scented bleaches or generic versions of regular bleach. DO NOT USE tap water. The solution can be used up to one week after it is made.

6. Dispense 3 mL of the bleach solution into an untreated tube and insert the tube into the sample drawer on the analyzer.

7. Tap **OK**.

8. On the ProCyte Dx analyzer, press the **Start** button to begin the Waste Chamber Rinse procedure. The ProCyte Dx icon on the Home screen displays with a Busy status and a progress bar that shows the percentage complete for the Waste Chamber Rinse procedure.

---

**Running the Flow Cell Rinse Procedure**

The Flow Cell Rinse procedure washes contaminants from the optical detector block flow cell. This procedure takes approximately 6 minutes to complete.

1. Tap **Instruments** on the IDEXX VetLab Station Home screen.

2. Tap the **ProCyte Dx** tab and then tap **ProCyte Dx Diagnostics**.


4. Read the message and verify that the time required for the procedure does not have an impact on your work flow.

5. 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 filtered and unscented bleach without surfactants. DO NOT USE scented bleaches or generic versions of regular bleach. DO NOT USE tap water. The solution can be used up to one week after it is made.

6. Dispense 3 mL of the bleach solution into an untreated tube and insert the tube into the sample drawer on the analyzer.

7. Tap **OK**.

8. On the ProCyte Dx analyzer, press the **Start** button to begin the Flow Cell Rinse procedure. The ProCyte Dx icon on the Home screen displays with a Busy status and a progress bar that shows the percentage complete for the Flow Cell Rinse procedure.
Running the Drain Reaction Chamber Procedure

The Drain Reaction Chamber procedure, which takes less than 1 minute to complete, drains accumulated reagents out of the reaction chamber and reprimes the ProCyte Dx analyzer. Immediately following this procedure, the Auto Rinse procedure automatically begins. Total time for both procedures to complete is approximately 9 minutes.

1. Tap **Instruments** on the IDEXX VetLab Station Home screen.
2. Tap the **ProCyte Dx** tab and then tap **ProCyte Dx Diagnostics**.
3. Tap **Drain Reaction Chamber**. The Drain Reaction Chamber message box displays.
4. Read the message and verify that the time required for the procedure does not have an impact on your work flow. Tap **OK**.

Running the Drain RBC Isolation Chamber Procedure

The Drain RBC Isolation Chamber procedure, which takes approximately 3 minutes to complete, drains accumulated reagents out of the RBC isolation chamber.

1. Tap **Instruments** on the IDEXX VetLab Station Home screen.
2. Tap the **ProCyte Dx** tab and then tap **ProCyte Dx Diagnostics**.
3. Tap **Drain RBC Isolation Chamber**. The Drain RBC Isolation Chamber message box displays.
4. Read the message and verify that the time required for the procedure does not have an impact on your work flow. Tap **OK**.

The ProCyte Dx icon displays on the IDEXX VetLab Station Home screen with a Busy status along with a progress bar indicating the percentage that the Drain RBC Isolation Chamber procedure is complete.

Running the Drain Waste Chamber Procedure

When draining the waste chamber, the waste chamber drainage sequence can be run to drain accumulated waste out of the waste chamber. The Drain Waste Chamber message box is displayed while the sequence is running.

**Note:** For the Drain Waste Chamber sequence to run, the ProCyte Dx must be in Ready status. If a process is attempted while the analyzer is in any other status, an error warning will be sounded on the analyzer and the Drain Waste Chamber message box will not appear.

1. Tap **Instruments** on the IDEXX VetLab Station Home screen.
2. Tap the **ProCyte Dx** tab and then tap **ProCyte Dx Diagnostics**.
3. Tap **Drain Waste Chamber**. The Drain Waste Fluid message box displays. When the drainage process is complete, this window closes.
4. Tap **OK**.
Running the Reset Air Pump Procedure
The Reset Air Pump procedure, which takes less than 1 minute to complete and should be performed when the pump is replaced.

1. Tap **Instruments** on the IDEXX VetLab Station Home screen.
2. Tap the **ProCyte Dx** tab and then tap **ProCyte Dx Diagnostics**.
3. Tap **Reset Air Pump**. The Reset Air Pump message box displays.
4. Tap **OK**.

Running the Reset Aspiration Motor Procedure
The Reset Aspiration Motor procedure takes less than 1 minute to complete.

1. Tap **Instruments** on the IDEXX VetLab Station Home screen.
2. Tap the **ProCyte Dx** tab and then tap **ProCyte Dx Diagnostics**.
4. Tap **OK**.

Running the Reset Sheath Motor Procedure
The Reset Sheath Motor procedure takes less than 1 minute to complete.

1. Tap **Instruments** on the IDEXX VetLab Station Home screen.
2. Tap the **ProCyte Dx** tab and then tap **ProCyte Dx Diagnostics**.
4. Tap **OK**.

Running the Reset Tube Motor Procedure
The Reset Tube Motor procedure takes less than 1 minute to complete.

1. Tap **Instruments** on the IDEXX VetLab Station Home screen.
2. Tap the **ProCyte Dx** tab and then tap **ProCyte Dx Diagnostics**.
3. Tap **Reset Tube Motor**. The Reset Tube Motor message box displays.
4. Tap **OK**.

Running the Reset WB Motor Procedure
The Reset WB Motor procedure takes less than 1 minute to complete.

1. Tap **Instruments** on the IDEXX VetLab Station Home screen.
2. Tap the **ProCyte Dx** tab and then tap **ProCyte Dx Diagnostics**.
4. Tap **OK**.
Running the Remove Clog Procedure

The Remove Clog procedure, which takes approximately 1 minute to complete, eliminates clogs from the RBC detector.

1. Ensure the ProCyte Dx analyzer has a Ready status.
2. Tap Instruments on the IDEXX VetLab Station Home screen.
3. Tap the ProCyte Dx tab and then tap ProCyte Dx Diagnostics.
4. Tap Remove Clog. The Remove Clog message box displays.
5. Read the message and verify that the time required for the procedure does not have an impact on your work flow. Tap OK.
6. On the ProCyte Dx analyzer, press the Start button to begin the Remove Clog procedure. The ProCyte Dx icon on the Home screen displays with a Busy status and a progress bar that shows the percentage complete for the Remove Clog procedure.

Running the Clear Pinch Valve Procedure

The Clear Pinch Valve procedure takes approximately 1 minute to complete.

1. Ensure the ProCyte Dx analyzer has a Ready status.
2. Tap Instruments on the IDEXX VetLab Station Home screen.
3. Tap the ProCyte Dx tab and then tap ProCyte Dx Diagnostics.
5. Read the message and verify that the time required for the procedure does not have an impact on your work flow. Tap OK.
Smart Flags*

Automated cell counters have two main objectives. First, they must examine the various components of a blood sample and return the appropriate red blood cell count, white blood cell count, platelet count, and various cellular indices. Second, they must prompt the user with a message in the event that the accuracy of these cellular evaluations may be compromised. For example, if the blood sample being analyzed contains white blood cells with markedly abnormal morphology, the analyzer may not be able to provide full characterization and the device will return a message suggesting a blood film should be reviewed for confirmation.

The flagging for the ProCyte Dx analyzer signals the user that an abnormal cell or group of cells is present and it cannot be characterized in the normal hemogram. An asterisk (*) indicates the analyzer is questioning the presence of the cellular population. A hash mark (---) indicates the analyzer was unable to return a result for a particular parameter. In either case, a blood film should be consulted. These message flags act as internal controls to remind the doctor that a sample must be examined under a microscope. In the vast majority of cases, this microscopic review process will take less than 1–3 minutes. A manual leukocyte differential will be needed only rarely.

<table>
<thead>
<tr>
<th>Flag</th>
<th>Displays when any of the following parameters is flagged with an asterisk (*) or hash marks (---)</th>
<th>Description</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>WBC Abnormal Distribution</td>
<td>WBC %NEU NEU %LYM LYM %MONO MONO EOS %EOS BASO</td>
<td>The patient’s white blood cell morphology made it difficult to separate individual populations.</td>
<td>Evaluate the blood film to confirm the values.</td>
</tr>
<tr>
<td>RBC Abnormal Distribution</td>
<td>RBC HCT MCHC MCH RDW RETIC MCV RETIC MCH %RETIC</td>
<td>Abnormal distribution of the size, shape, or numbers of the patient’s red blood cells.</td>
<td></td>
</tr>
<tr>
<td>RETIC Abnormal Distribution</td>
<td>RETIC %RETIC</td>
<td>Abnormal distribution of the size, shape, or numbers of the patient’s reticulocytes.</td>
<td></td>
</tr>
<tr>
<td>PLT Abnormal Distribution</td>
<td>PLT MPV PDW PCT</td>
<td>Abnormal distribution of the size, shape, or numbers of the patient’s platelets or too few platelets available for accurate assessment.</td>
<td></td>
</tr>
<tr>
<td>PLT Aggregates Detected</td>
<td>PLT MPV PDW PCT EOS BASO † %EOS %BASO †</td>
<td>The patient’s platelets may be clumped and interfere with accurate platelet parameters as well as basophil and eosinophil distribution.</td>
<td></td>
</tr>
</tbody>
</table>

*For feline species, BASO and %BASO cannot be determined and a result of “---” will be reported.

Troubleshooting
Installing the ProCyte Dx* Analyzer

- The ProCyte Dx analyzer weighs approximately 55 pounds (25 kg). It may require multiple people to lift the instrument. Be sure to use a table or desk that can support the weight of the analyzer.

- Position the analyzer so that the power switch and power cord are easily accessible.

- To secure the space required for maintenance, install the IDEXX VetLab Station touch-screen monitor and computer on the right side of the ProCyte Dx analyzer.

- The analyzer should be installed in a well-ventilated location, away from water, dust, and direct sunlight. Do not place the analyzer in a location where it can be splashed by water. It should be located in a space large enough to be used safely, including when the sample drawer is open. If additional equipment is to be attached/connected to it, additional desk space will be required.

- The analyzer should be placed on a level surface with a minimum of 2 inches (5 cm) between the back of the analyzer and any wall.

- Do not install in an area of elevated temperature and vibration.

- Do not install this instrument in places where chemicals are stored or gas can develop.

- Do not use this instrument in any operating environment that has electroconductive or flammable gases, including oxygen, hydrogen, and anesthesia.

- The power cable for this instrument is approximately 6 feet (1.8 m) long. Use a nearby outlet that is designed for it.

**To install the analyzer:**

1. Before you unpack the analyzer, choose an optimum location for the instrument. Choose a well-ventilated area away from obvious sources of heat, direct sunlight, cold, humidity, or vibrations. For optimum results, room temperature should be at 15°C–30°C (59°F–86°F) and relative humidity at 30%–85%.

2. Unpack the analyzer.

3. Using the flat blade screwdriver provided, unlock and open the right side door.

4. Remove the binder clip from the piercer belt.

5. Remove the piece of tape on the protection plate 174.

6. Close and lock the right side door.

7. Open the stain compartment cover and unscrew the empty stain pack from the caps/probes.

8. Remove the caps from a new stain pack and set them aside.

9. Screw a new stain pack into the caps in the stain compartment, ensuring each probe is inserted into the correct pouch (the cords are labeled).

10. Place the caps from the new stain pack onto the empty stain pack. Dispose of the stain pack according to applicable local disposal laws.
11. Place the new stain pack into the compartment, ensuring the cords are in front of the stain pack inside the compartment. Then, close the cover.

12. Connect the ends of the tubes on the Quick-Connect Top to the back of the analyzer. Each tube, matching the labels on the tubes and on the back of the analyzer.

13. Open a reagent kit, remove the caps from the 3 bottles, System Diluent, and the waste container and place the Quick-Connect Top over the kit so that the probes are inserted into the 3 bottles, System Diluent, and the waste container.

14. Ensure the analyzer is powered off and then connect the power cable to the analyzer and to a properly grounded electrical outlet.

Warning:
- Be sure to ground this analyzer. Improper grounding may cause electrical shock.
- The analyzer’s power supply cord uses a 3-prong plug. When the power supply socket is provided with grounding, simply plug it to the socket.
- Be sure not to exceed socket capacity. Failure to do so may cause a fire.

To Install the IDEXX VetLab Router

Note: If you already have a router connected directly to the IDEXX VetLab Station computer, you can skip this section and move to the To Connect the ProCyte Dx Analyzer to the IPU section (below).

1. Connect the AC power adapter to the power port on the back of the router supplied by IDEXX Laboratories.

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 (from step 3) into the IDEXX VetLab Station computer’s Ethernet port, which is located near the center panel on the back of the computer.

   Note: If this Ethernet port on the IDEXX VetLab Station computer is currently being used to connect the IDEXX VetStat* Electrolyte and Blood Gas Analyzer (red Ethernet cable) to your IDEXX VetLab Station, disconnect the red Ethernet cable. Then complete step 4 above. The To Reconnect the VetStat Analyzer section, found on the next page, explains how to reconnect the VetStat analyzer after the router is installed.

To Connect the ProCyte Dx Analyzer to the IPU

1. Connect the Ethernet end of the shielded Ethernet cable into the USB-to-Ethernet adaptor and then into the ProCyte Dx analyzer.

   Note: This cable should ONLY be used to connect the ProCyte Dx analyzer to the IPU.

2. Connect the USB end of the shielded Ethernet-to-USB converted cable into an available USB port on the back of the IPU.

3. Power on the ProCyte Dx analyzer.
To Connect the IPU to the IDEXX VetLab Station Connectivity Router

1. Connect the Ethernet cable provided to the next available port on the back of the router.
   **Important:** Do not connect the ProCyte Dx analyzer directly to the Internet port on the router.

2. Connect the other end of the Ethernet cable (from step 1) into the Ethernet port on the back of the IPU.

3. Power on the IDEXX VetLab Station.

4. Once all of the analyzer icons (except ProCyte Dx) are present with a Ready status, power on the IPU.

5. When the ProCyte Dx icon displays with a Busy status (yellow), power on the ProCyte Dx analyzer.
   **Note:** If the ProCyte Dx icon does not appear on the IDEXX VetLab Station Home screen within 5 minutes, contact IDEXX Technical Support for assistance (see “IDEXX Technical Support Contact Information” on pages H-7–H-8).

To Reconnect the VetStat Analyzer

**Important:** This information is only for practices with a VetStat analyzer. The direct connection between the VetStat analyzer and the IDEXX VetLab Station uses a standard Ethernet cable with a light-purple cross-over adapter. This light-purple crossover adapter, which is located on one end of the cable, must be removed before reconnecting the Ethernet cable to the router.

1. Ensure the light-purple crossover adapter has been removed from the VetStat Ethernet cable.

2. Connect one end of the VetStat Ethernet cable to the VetStat analyzer and the other end to the next available port on the router.
   **Important:** Do not connect the VetStat analyzer directly to the Internet port on the router.

3. On the VetStat Home screen, tap **System Manager** and then tap **Setup**.

4. Use the alphanumeric keypad to enter the setup password, **207**, and tap **OK**.

5. From the Setup screen, tap **Hardware** and then tap the **Ethernet** tab.

6. Select **Dynamic** as the network setting and then tap **OK** to save the change.

7. Turn off the VetStat analyzer by toggling the power switch to OFF. Then, turn on the analyzer. After the VetStat analyzer returns to the Home screen, the VetStat icon will appear at the bottom of the IDEXX VetLab Station Home screen.
   **Note:** If the VetStat icon does not appear on the IDEXX VetLab Station Home screen within 3 minutes, contact IDEXX Technical Support for assistance (see “IDEXX Technical Support Contact Information” on pages H-7–H-8).
## Technical Specifications

### Dimensions and Weight

<table>
<thead>
<tr>
<th>Main Unit Dimensions</th>
<th>Width: 12.6” (320 mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Height: 15.8” (403 mm)</td>
</tr>
<tr>
<td></td>
<td>Depth: 16.26” (413 mm)</td>
</tr>
<tr>
<td>Main Unit Weight</td>
<td>Approximately 55 lb (25 kg)</td>
</tr>
</tbody>
</table>

### Performance Specifications and Throughput

<table>
<thead>
<tr>
<th>Throughput</th>
<th>CBC+DIFF+RETIC: approximately 30 samples/hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient temperature</td>
<td>15°C–30°C (59°F–86°F)</td>
</tr>
<tr>
<td></td>
<td>Optimum: 23°C (73.4°F)</td>
</tr>
<tr>
<td>Relative humidity</td>
<td>30%–85%</td>
</tr>
<tr>
<td>Power supply</td>
<td>100–240 V AC, 50/60 Hz</td>
</tr>
<tr>
<td>Power consumption</td>
<td>210 VA or less</td>
</tr>
</tbody>
</table>

| Display range         | WBC: 0.00–999.99 K/µL                         |
|                       | RBC: 0.00–99.99 M/µL                          |
|                       | HGB: 0.0–35.0 g/dL                            |
|                       | HCT: 0.0%–100.0%                              |
|                       | PLT: 0–9999 K/µL                              |
|                       | %RETIC: 0.00%–99.99%                          |
|                       | RETIC: 0–9999 K/µL                            |

| Background limits     | WBC: 0.1 K/µL                                  |
|                       | RBC: 0.02 M/µL                                 |
|                       | HGB: 0.1 g/dL                                  |
|                       | PLT: 10 K/µL                                   |
|                       | PLT-O: 10 K/µL                                 |

### Precision

Precision data generated by a trained professional running 6 instruments across five days. Ten replicates of normal level control were gathered each day for a total of 300 precision runs.

| Precision   | WBC: 3.0%                                     |
|            | RBC: 1.5%                                     |
|            | HGB: 1.5%                                     |
|            | HCT: 1.5%                                     |
|            | PLT: 4.0% (100 K/µL or more)                   |
|            | %NEU: 8.0%                                    |
|            | %LYM: 8.0%                                    |
|            | %MONO: 11.0%                                  |
|            | RETIC: 15% (RBC 3.00 M/µL or more, %RETIC 1%–4%) |
|            | %RETIC: 15% (RBC 3.00 M/µL or more, %RETIC 1%–4%) |

### Analysis Parameters

See pages A-7–A-8
### Accuracy
Analysis was generated from 250 total samples (50 of each species) and compared to the Sysmex XT-V.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>WBC</td>
<td>R ≥ 0.95</td>
</tr>
<tr>
<td>RBC</td>
<td>R ≥ 0.95</td>
</tr>
<tr>
<td>HGB</td>
<td>R ≥ 0.95</td>
</tr>
<tr>
<td>HCT</td>
<td>R ≥ 0.95</td>
</tr>
<tr>
<td>PLT</td>
<td>R ≥ 0.90</td>
</tr>
<tr>
<td>RETIC</td>
<td>R ≥ 0.90</td>
</tr>
<tr>
<td>%RETIC</td>
<td>R ≥ 0.90</td>
</tr>
<tr>
<td>%NEU</td>
<td>R ≥ 0.90</td>
</tr>
<tr>
<td>%LYM</td>
<td>R ≥ 0.60</td>
</tr>
<tr>
<td>%MONO</td>
<td>R ≥ 0.60</td>
</tr>
<tr>
<td>%EOS</td>
<td>R ≥ 0.70</td>
</tr>
<tr>
<td>%BASO</td>
<td>R ≥ 0.45</td>
</tr>
</tbody>
</table>

†Accuracy data for basophil generated from samples obtained during University studies (combined results for canine, feline, equine species).

### Linearity
Data generated using both whole blood panels and commercially available linearity controls.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>WBC</td>
<td>0–310 K/µL</td>
</tr>
<tr>
<td>RBC</td>
<td>0.00–16.00 M/µL</td>
</tr>
<tr>
<td>HGB</td>
<td>0.0–25.0 g/dL</td>
</tr>
<tr>
<td>HCT</td>
<td>0.0%–60.0% HCT</td>
</tr>
<tr>
<td>PLT</td>
<td>0–2000 K/µL</td>
</tr>
<tr>
<td>%RETIC</td>
<td>0.0%–23%</td>
</tr>
<tr>
<td>RETIC</td>
<td>0.00–3.0 M/µL</td>
</tr>
</tbody>
</table>

### Carryover

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>WBC</td>
<td>1.0% or less</td>
</tr>
<tr>
<td>RBC</td>
<td>1.0% or less</td>
</tr>
<tr>
<td>HGB</td>
<td>1.0% or less</td>
</tr>
<tr>
<td>HCT</td>
<td>1.0% or less</td>
</tr>
<tr>
<td>PLT</td>
<td>1.0% or less</td>
</tr>
</tbody>
</table>

### Aspiration Volume
30 µL

### Sample Volume Required for Proper Aspiration
- VetCollect* sample tube: Minimum of 500 µL
- Micro sample tube: Minimum of 90 µL (dependent on the tube manufacturer’s recommendations)

### Data Storage Capacity
Data is stored on the IDEXX VetLab* Station. The IDEXX VetLab Station memory is upgradeable, and therefore, data capacity is virtually unlimited.

### Storage Condition (Transportation)
- Ambient temperature: -10°C–60°C (14°F–140°F)
- Relative humidity: 10%–90% or less (no condensation/keep dry)
| Laser | Class 1 device, 635 nM, 15 mW capability adjusted to 5.5 ± 0.1 mW  
This equipment complies with:  
• FDA Standard 21 CFR 1040.10  
• IEC 60825-1, 2nd Ed., 2007 Safety of Laser Products Part I: Equipment Classification and Requirements |
|---|---|
| Reagent kit and stain pack operating and storage temperatures | Operating temperature: 15°C–30°C (59°F–86°F)  
Storage temperature: 2°C–30°C (36°F–86°F) |
IDEXX Technical Support Contact Information

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