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Automated Hematology Analyzer

XN-530™

Quick Guide

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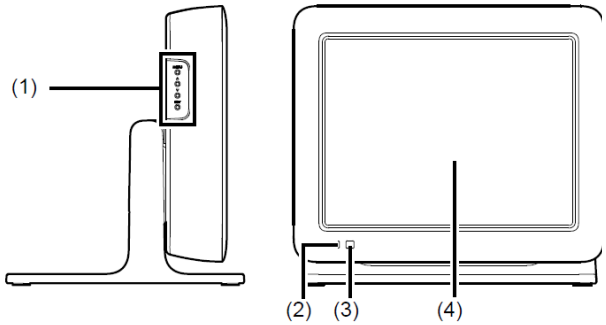
XN-530 System Overview

Front of XN-530

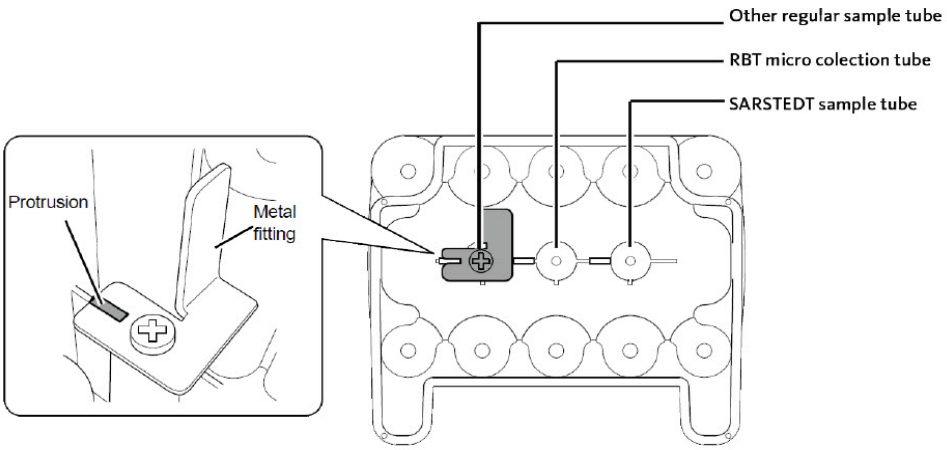


Monitor

1. On-screen display operation buttons. Use to adjust the image quality.
2. Status LED.
   - Not lit: Off.
   - Green: Power On.
   - Orange: Power On, no video signal input.
3. Power Switch.
4. Touchscreen monitor.

Sampler Adapter

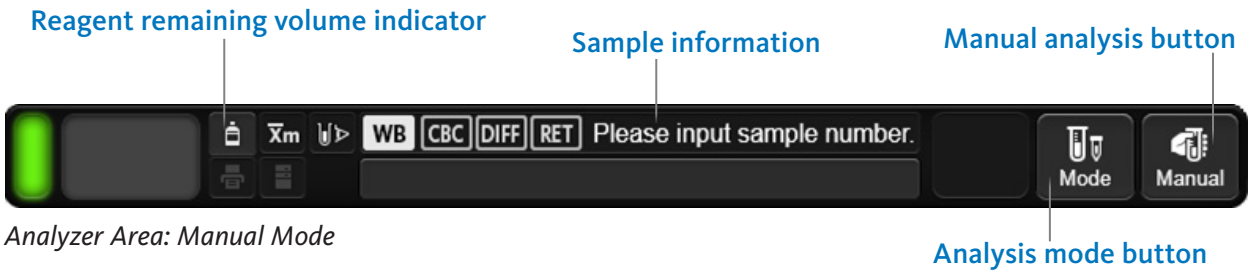
Depending on the sample tube type, the metal fitting must be attached to the back of the sampler adapter in a specific position.



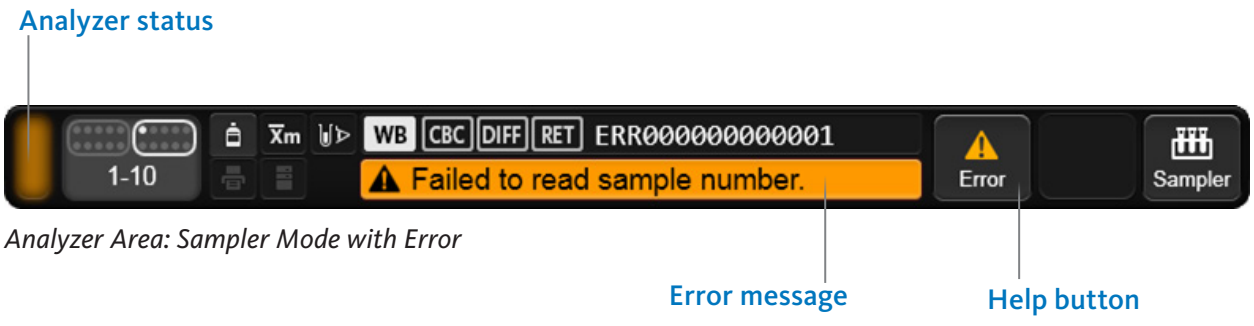
XN-530 Information

Status	Indication
	Ready; Analyzing, Start-up, changing modes, Shutdown (blinking)
	Error; Start-up, Shutdown (blinking)
	Error

Analyzer Area: Sampler Mode



Analyzer Area: Manual Mode



Analyzer Area: Sampler Mode with Error

XN-530 - Start-up

Analysis Method	Specimen	Sample Tube	Cap	Required Sample Volume	Aspirated Sample Volume
Sampler Analysis	Whole Blood	Regular Sample Tube	Closed Tube	1 mL	25µL
		RBT Micro Collection Tube	Closed Tube	250 µL	
Manual Analysis	Whole Blood	Regular Sample Tube	Closed Tube	1 mL	25µL
			Open Tube	300 µL	
		RBT Micro Collection Tube	Closed Tube	250 µL	
		Micro Collection Tube	Open Tube	100 µL	
	Diluted Blood	Regular Sample Tube	Open Tube	300 µL	70µL
		Micro Collection Tube	Open Tube	140 µL	
	Body Fluid	Regular Sample Tube	Closed Tube	1 mL	70µL
			Open Tube	300 µL	
		Micro Collection Tube	Open Tube	140 µL	

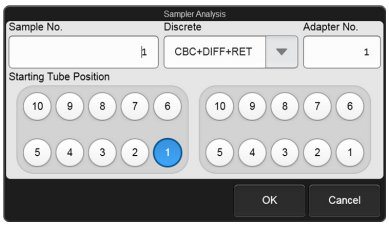
Start-up

1. Press the power switch.
2. Enter the required information and touch [OK] to log on to the instrument (Contact your administrator for your logon name and password).

XN-530 - Quality Control

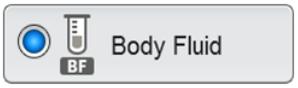
Quality Control (XN CHECK™, XN-L CHECK™) Sampler Mode Processing

1. Bring the QC material to room temperature for 15 minutes.
2. Make sure the button on the right edge of the control menu is [Sampler] and that the analyzer is in the 'Ready' state.
3. Mix the QC material according to the package insert, until the cell button is suspended.
4. Open the sampler adapter holder. Ensure that the metal fitting on the sampler adapter is set to regular sample tube (see page 2, Sampler Adapter).
5. Load all three levels of QC material into the sampler adapter.
6. Touch [Sampler] on the right edge of the control menu.
7. Touch the screen to indicate your [Starting Tube Position].
8. Touch [OK].
9. Close the sampler adapter holder.
10. Press the start switch.



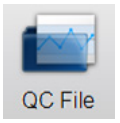
Quality Control (XN CHECK™ BF) Manual Mode Processing

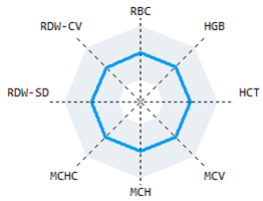
1. Bring the XN CHECK BF to room temperature for 15 minutes.
2. Make sure the analyzer is in the 'Ready' state and that the button on right edge of the control menu is [Manual]. When the mode is set to [Sampler], press the mode switch button on the main unit.
3. Touch [Mode] on the control menu.
4. Select Body Fluid.
5. Touch [OK] (Wait for the BF BACKGROUNDCHECK to complete).
6. Touch the [QC] icon in the [Menu] screen.
7. Touch the [QC Analysis] icon.
8. From the QC file list, touch the file you want to analyze.
9. Touch [OK].
10. Mix the QC material according to the package insert, until the cell button is suspended.
11. Place it in the manual analysis tube holder.
12. Press the start switch.
13. Once the manual tube holder ejects, remove the tube.
14. Touch [Accept] to plot the QC data to the L-J chart.



XN-530 - Quality Control

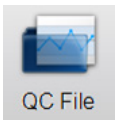
QC Result Review: Radar Charts





1. On the toolbar, touch [QC File].
2. Select a QC File.
3. Touch the display switch button.
   a. The Radar Charts will display for the selected QC File.

QC Result Review: L-J Charts



1. On the toolbar, touch [QC File].
2. Select a QC File.
3. Touch the [QC Chart] button on the toolbar.
   a. The L-J Charts will display for the selected QC File.

Return to Whole Blood (WB) Mode

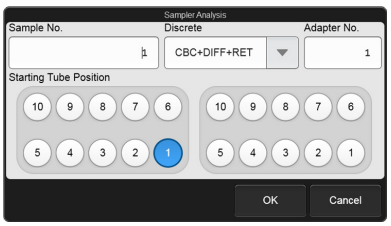
1. Touch the [Analysis Mode] button.
2. Select Whole Blood.
3. Touch [OK].

NOTE: It is recommended to put the system back into [WB] mode after using [BF], [PD], and [LWBC].

Processing Whole Blood Samples: Sampler Mode

1. Make sure the button on the right edge of the control menu is [Sampler]. If the mode is set to [Manual], press the mode switch button on the main unit.
2. Make sure that either the left or right sampler adapter holder is in a state where it can be pulled out.
3. Pull out the sampler adapter holder that you want to use. Check the metal fitting on the bottom of the sampler adapter and make sure that it is in the position for your tube type (see page 2, Sampler Adapter).
4. Place the sample tubes in the sampler adapter.
5. Touch [Sampler] on the right edge of the control menu.

6. Touch a field to:
   - Select the discrete tests, or use Query to Host.
7. Touch [OK].
8. Push in the sampler adapter holder.
9. Press the sampler analysis start/stop switch.
10. Once analysis is complete, open the sampler adapter holder and remove the sample tubes.
11. Push in the sampler adapter holder.



XN-530 - Sample Processing

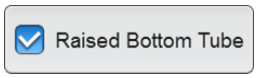
Raised Bottom Tubes (RBT) | Sampler Mode Processing

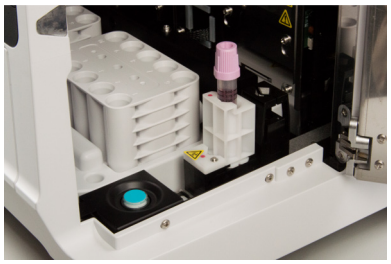
NOTE: To process Raised Bottom Tubes in the sampler mode, the metal fitting must be attached in the middle location on the bottom of the sampler adapter.

1. Make sure the button on the right edge of the control menu is [Sampler]. When the mode is set to [Manual], press the mode switch button on the main unit.
2. Make sure that either the left or right sampler adapter holder is in a state where it can be pulled out.
3. Pull out the sampler adapter holder that you want to use.
4. Place the sampler adapter fitted for RBTs (metal fitting is attached at the middle location) into the sampler adapter holder.
   - Go to step 4 of the Processing Whole Blood Samples: Sampler Mode procedure on page 6 to process the samples.
5. Once processing of RBT samples is complete, remove the sampler adapter and set aside.

Raised Bottom Tubes (RBT) | Manual Mode Processing

1. Press the mode switch.
2. Make sure the analyzer is in the 'Ready' state.
3. Touch [Manual] on the right edge of the control menu.
4. Touch a field to:
   a. Scan the barcode or manually enter the sample ID.
   b. Select the discrete tests, or use Query to Host.
   c. Place a check mark next to Raised Bottom Tube.
5. Touch [OK].
6. Mix the sample according to your laboratory protocol for processing Raised Bottom Tubes.
7. Place the tube into the regular sample tube holder.
8. Press the manual start switch.
9. After analysis is complete, remove the sample tube.
10. Press the mode switch to return to Sampler Mode.



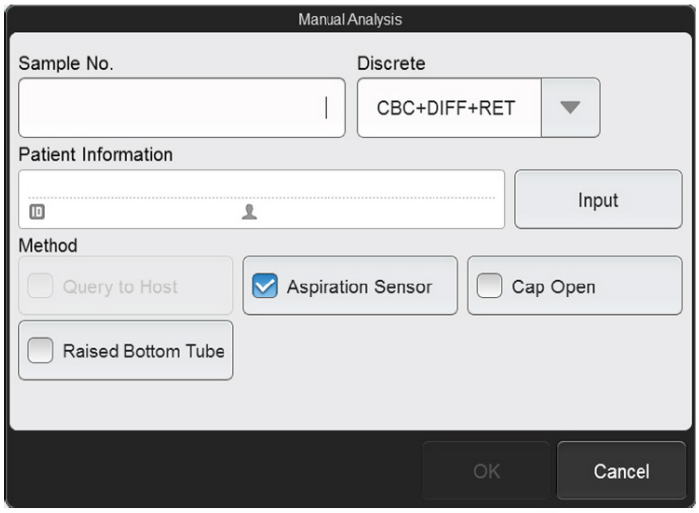


RBT must have a pierceable cap.
Do not attempt to process in RBT mode unless the tube has a pierceable cap.

XN-530 - Sample Processing

Manual Whole Blood Mode: Processing Regular Tubes

1. Make sure the button on the right edge of the control menu is [Manual]. If the mode is set to [Sampler], press the mode switch button on the main unit.
2. Make sure the instrument is in the 'Ready' state.
3. Touch [Mode] in the control menu and make sure it is set to Whole Blood.
4. Touch [Manual] on the right edge of the control menu.
5. Touch a field to:
   - Scan the barcode or manually enter the sample ID.
   - Select the discrete tests, or use Query to Host.
   - If necessary, place a check next to Cap Open.
6. Touch [OK].
7. Mix the sample according to your laboratory protocol for processing patient whole blood specimens.
8. Open the sampler cover (manual unit).
9. Place the sample tube in the sample tube holder.
10. Press the manual start switch.
11. After analysis is complete, remove the sample tube.
12. Close the sampler cover (manual unit).
13. Once processing samples in the Manual Mode is complete, return to the Sampler Mode by pressing the mode switch.

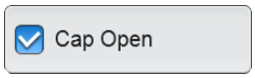


XN-530 - Sample Processing

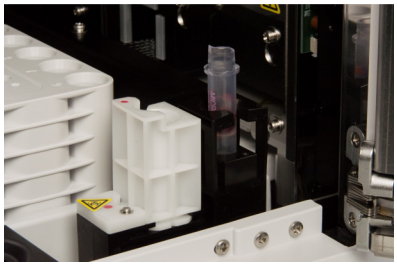
Manual Whole Blood Mode: Processing Micro Collection Tubes

1. Make sure the button on the right edge of the control menu is [Manual]. If the mode is set to [Sampler], press the mode switch button on the main unit.
2. Make sure the instrument is in the 'Ready' state.
3. Touch [Mode] in the control menu and make sure it is set to Whole Blood.
4. Touch [Manual] on the right edge of the control menu.

5. Touch a field to:
   - Scan the barcode or manually enter the sample ID.
   - Select the discrete tests, or use Query to Host.
   - Make sure to place a check next to Cap Open.



6. Touch [OK].
7. Mix the sample according to your laboratory protocol for processing micro collection tubes.
8. Open the sampler cover (manual unit).
9. Remove the cap from the micro collection tube.
10. Place the micro collection tube in the micro collection tube position at the back of the sample tube holder.
11. Press the manual start switch.
12. After analysis is complete, remove the sample tube and recap it.
13. Close the sampler cover (manual unit).
14. Once processing samples in the Manual Mode is complete, return to the Sampler Mode by pressing the mode switch.



XN-530 - Sample Processing

Manual Mode: Pre-Dilution, Low WBC, Body Fluid

1. Make sure the button on the right edge of the control menu is [Manual]. When the mode is set to [Sampler], press the mode switch button on the main unit.
2. Make sure the instrument is in the 'Ready' state.
3. Touch [Mode] and touch the analysis mode you want to set: Low WBC, Body Fluid, or Pre-Dilution.

4. Touch [OK].
   - Go to Step 4 of the Manual Whole Blood Mode: Processing Regular Tubes procedure on page 8 to process samples in a secondary manual mode.
   - If using the Dispense Function for Pre-Dilution, see page 13 of this Quick Guide.
   - Refer to Return to Whole Blood (WB) Mode on page 6 of this Quick Guide to exit these secondary manual modes.

STAT Sample Analysis

NOTE: This procedure can be used to interrupt the Sampler Mode so a STAT sample can be processed in the Manual Mode.

1. Press the mode switch button on the main unit (do not touch the rack in process).
2. Sampler analysis will pause when analysis of the current sample is completed, and the mode will change to manual analysis mode.
3. Process the STAT sample using the Manual Mode.
4. When analysis of the STAT sample is completed, close the sampler cover (manual unit) and press the mode switch.
5. Sampler analysis will resume from the next pending sample. Sampler Mode will resume where it left off in the rack.

XN-530 - Sample Explorer

Sample Explorer: Find*

1. Touch [Explorer] on the toolbar.
2. Touch [Find] on the toolbar.
3. Enter the search criteria.
4. Touch [Prev.] or [Next] to search the Sample Explorer database.
5. Touch [Close] when the sample is located.

Sample Explorer: Modify Sample ID*

1. Touch [Explorer] on the toolbar.
2. Select the sample to be modified.
3. Touch [Validate] (Samples with Validated status cannot be modified).
4. Touch [Modify] on the toolbar.
5. Enter the correct sample information.
6. Touch [OK].
7. Touch [Validate] on the toolbar.

Sample Explorer: Reprint to Graphic Printer (GP)*

1. Touch [Explorer] on the toolbar.
2. Select the sample to be printed.

NOTE: Samples must have Validated status to be reprinted.

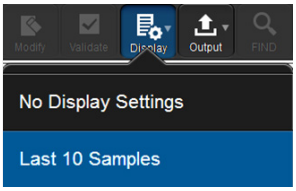
3. Touch [Output] on the toolbar.
4. Select [Report GP].

Sample Explorer: Retransmit to Host Computer (HC)*

1. Touch [Explorer] on the toolbar.
2. Select the sample to be sent to the LIS.

NOTE: Samples must have Validated status to be retransmitted.

3. Touch [Output] on the toolbar.
4. Select [Host Computer (HC)].



**These functions require that the Last 10 filter is disabled*

XN-530 - Maintenance

Reagent Replacement: Replacing the Diluent and Hemolytic Agent

1. The 'Help' dialog box will appear when the system detects an empty/expired reagent container.
2. Read the error message to determine which reagent is empty, then touch [Execute].
3. Verify that 'CAPS LOCK' is off.
4. Touch the name of the reagent to be replaced.
5. Place a check-mark next to 'Replace the reagent,' then place the cursor in the reagent code text box.

6. Using the hand-held reader, scan the reagent code on the new reagent container.

Note: Scan Reagent Code 2 when available on the reagent container.

7. Open the cap on the new container.
8. Remove the cap from the expired/empty container and carefully remove the spout.
9. Insert the spout straight into the new container.
10. Tighten the cap on the new container, and move container into position.

Note: If multiple reagents require changing, return to Step 4.

11. Touch [Execute] from the 'Reagent Replacement' dialog box.

Reagent Replacement: Replacing the Dye

1. The 'Help' dialog box will appear when the system detects an empty/expired reagent container.
2. Read the error message to determine which reagent is empty, then touch [Execute].
3. Pull out the dye holder drawer.
4. Remove the entire dye holder (cover and cartridge).
5. Slowly remove the dye cover, taking care that dye does not drip.
6. Remove the old reagent cartridge from the holder.
7. Install the new dye cartridge into the holder.
8. Place the dye cover over the cartridge.
9. Replace the dye holder and close the drawer.
   - The analyzer will beep as the information is automatically registered.
   - Reagent replacement will begin automatically; when complete the dialog box will close.

Daily Maintenance - Shutdown

1. Make sure the instrument is in the 'Ready' state.
2. Open the sampler cover (manual unit).
3. If a sample tube remains, remove it.
4. Close the sampler cover (manual unit).
5. Touch the [Menu] button on the toolbar.
6. Touch the [Shutdown] icon.

7. Touch [OK].

Note: The analyzer and IPU will automatically power off once the shutdown sequence is complete (approximately 2 minutes). During shutdown, no sample tubes will be processed.

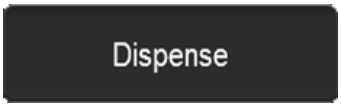
8. Turn the power of the monitor OFF.

XN-530 - Dispense Function

Dispense Function for Pre-Dilution Mode

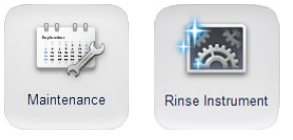
- The diluent dispensing function can be used to dispense 120 µL of CELLPACK DCL with the pipette.
- After dispensing 120 µL of CELLPACK DCL into an empty micro collection tube with the diluent dispensing function, dispense 20 µL of sample to prepare the diluted blood.

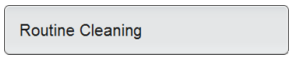
1. Make sure the button on the right edge of the control menu is [Manual]. If the mode is set to [Sampler], press the mode switch button on the main unit.
2. Make sure the instrument is in the ready state.
3. Touch [Mode] on the control menu.
4. Touch [Pre-Dilution].
5. Touch [OK].
6. Touch [Manual] on the right edge of the control menu.
7. Touch [Dispense].
8. Remove the cap from an empty micro collection tube.
9. Open the sampler cover (manual unit).
10. Place the empty micro collection tube in the sample tube holder.
11. Press the manual start switch.
    - The sample tube holder retracts into the instrument and diluent dispensing starts. When dispensing finishes, the sample tube holder is ejected.
12. Remove the micro collection tube.
13. Touch [Cancel].
14. Dispense 20 µL of the sample into the micro collection tube containing the diluent.
15. Cap the micro collection tube and mix according to laboratory policy.
    - Go to Step 5 of the Manual Whole Blood Mode: Processing Micro Collection Tubes procedure on page 9 to process the diluted sample.

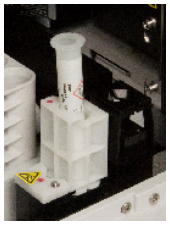


Weekly Maintenance - Routine Cleaning: CELLCLEAN AUTO™

1. Make sure the analyzer is in the 'Ready' state.
2. Touch the [Maintenance] icon in the [Menu] screen.
3. Touch the [Rinse Instrument] icon.
4. Touch [Routine Cleaning].
5. Open the sampler cover (manual unit).
6. Place CELLCLEAN AUTO in the sample tube holder.
7. Press the manual start switch.
8. When aspiration completes, remove CELLCLEAN AUTO from the tube holder.
9. Close the sampler cover (manual unit).
10. When the process finishes, approximately 15 minutes, the dialog box closes and the instrument power automatically turns OFF.







XN-530 — Results interpretation

Notations for abnormal data

Data masks

Notation	Meaning	Description
[- - - -]	Analysis impossible	Indicates that an analysis error or parsing error has occurred and the value cannot be displayed.
[++++]	Out of range	Indicates that the data cannot be displayed because the value exceeds the display limit.
[ ]	No Order	Indicates that the analysis order does not exist.

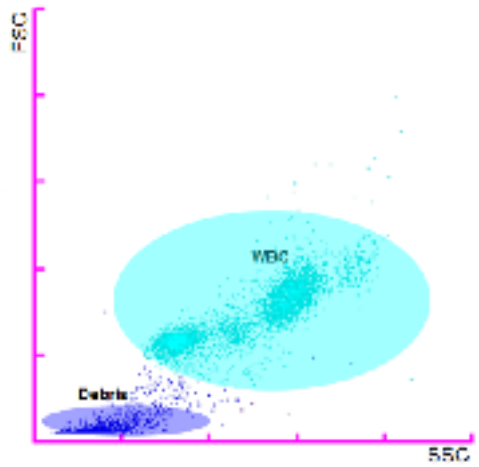
Masks*

Notation	Meaning	Description
[*]	Low reliability	Indicates that the reliability of the data is low.
[@]	Out of range	Indicates that the data is outside the linearity limits.
[!]	Exceeds upper panic limit / below lower panic limit Exceeds upper acceptable background check value limit	Indicates that the value is higher than or less than the clinical panic value. Also indicates that the value is higher than the allowed value for a background check.
[+]	Exceeds upper limit	Indicates that the value is higher than the reference interval.
[-]	Exceeds lower limit	Indicates that the value is less than the reference interval.

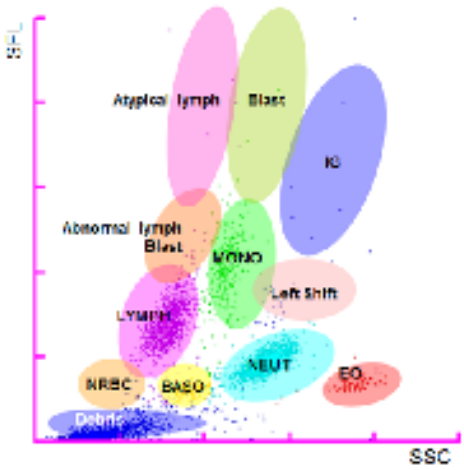
** Only one mark can be appended per data value. If multiple abnormalities apply to an analysis result, whichever abnormality has the highest priority is noted. Priorities are assigned to the marks in the order they appear in the table above.*

XN-530 — Scattergrams

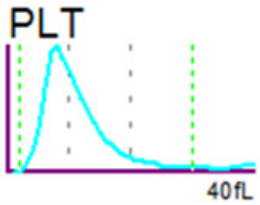
WDF (CBC)



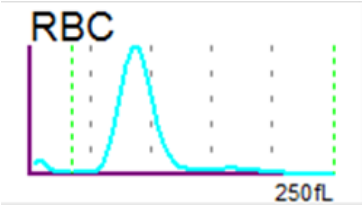
WDF-D (DIFF)



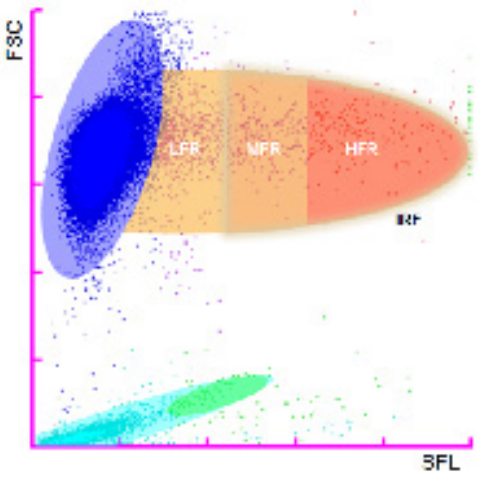
PLT



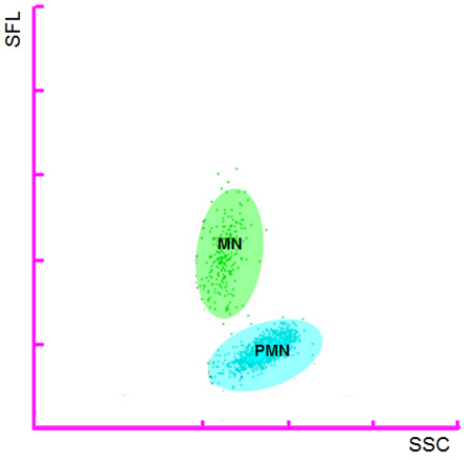
RBC



RET



WDF - BODY FLUID



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