AGENDA

- XN Series Technology
- Extending Standardization
- XN-L Series

NEXT GENERATION DIAGNOSTICS
greater accuracy, specificity, productivity

HARMONIZED SUPPORT
Driving improvements, supporting your staff, helping you plan for the future

ADVANCED TOOLS & TECHNOLOGIES
superior insight and control, enhancing speed to treatment

PROCESS OPTIMIZATION
automatically balances work-flow and routine tasks

HARMONIZED SUPPORT
THE MOST ADVANCED HEMATOLOGY DIAGNOSTICS ON THE MARKET

- Advanced Clinical Parameters
- Body Fluid Differentials
- Repeat/Reflex Testing
- Fluorescent Platelet

ACCURATE RBC, PLT, AND HEMOGLOBIN

- RBC & Platelet DC Detection / Hydrodynamic Focusing
- Hemoglobin Absorbance / Sulfolyser

NATURAL DEFORMABILITY OF RED BLOOD CELLS

CLASSIC IMPEDANCE
- Vacuum

SHEATH FLOW IMPEDANCE
HEMATOCRIT

- Cumulative Pulse Height Detection
- Direct Measurement
- Same principle as spun hematocrit

Counting White Cells and NRBCs

WNR Channel

Fluorescent Flow Cytometry

WNR channel

PLT-F channel

RET channel
WNR CHANNEL

- BASO
- LYMPH
- MONO
- Granulocyte
- NRBC
- RBC

Polyethine Dye

NRBCs with EVERY CBC

Debris

FSC

SFL

WDF CHANNEL

- LYMPH
- MONO
- NEUT
- EO

Atypical LYMPH

Immature WBC

Polyethine Dye
REPORTING IG

Clinical Utility of IG
- Support detection of inflammations or infections together with other parameters
- Therapy monitoring

Early medical intervention
Reduce review rate
Reduce TAT

WDF CHANNEL
- WDF Channel IP Messages
- WBC Flags
  - Suspect Flagging
  - WBC Abn Scattergram
  - Blasts/Abn Lympho?
  - Left Shift?
  - Atypical Lympho?
- User Defined Flagging
  - Neutropenia/Neutrophilia
  - Lymphopenia/Lymphocytosis
  - Monocytosis
  - Eosinophilia
  - IG Present
- RBC Flags - None
- PLT Flags - PLT Clumps?
LOW WBC ANALYSIS MODE

- Analysis time extended to 3 times WB WBC count time
- Better accuracy and precision on counts < 0.50 x 10^3
- No Vote Outs – Differential results on all counts
- Increased reportable differentials
- Automated reflex to LWBC mode via on-board rules

LOW WBC ANALYSIS MODE

- Analysis Time extended to 3 times the Whole Blood WBC count time

L-WBC ANALYSIS

Low WBC analysis provides:
- Highly accurate and precise measurement of low value WBC
- Reliable differential data in leukopenia

Quick results
Reliable results
Reduce TAT
**WDF CHANNEL SUMMARY**

- Improved efficiency
- More reportable automated differentials
- 6-part differential with reportable IG%
- Enhanced Flagging
- Decreased manual interventions
- Auto-correction of lymphocytes when NRBC are present
- Rapid TAT

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**Body Fluid Analysis**

*Using RBC/PLT & WDF Channels*

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**BODY FLUID ANALYSIS**

- Body fluid mode (target species)
  - Cerebrospinal fluid (CSF)
  - Pleural fluid
  - Peritoneal fluid
  - Synovial fluid

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AUTOMATED BODY FLUID ANALYSIS

Automated BF Analysis is
- Fast and convenient
- Provides great standardization
- 7 reportable parameters
- Provides hint of bacterial or viral infections with the identification of mononuclear cells and polymorphonuclear cells

• 24/7 availability
• Pre-treatment is not needed
• Reduce TAT

- No offline pre-incubation is necessary before sample analysis
- Pre-treatment recommended for Synovial Fluids

Reticulocytes, IRF, RET-He

Reticulocyte Channel

RETICULOCYTE CHANNEL

WBC  RET  RBC  PLT

Polymethine Dye
Clinical Utility
- Differentiates between functional and non-functional iron deficiency anemia
- Iron therapy monitoring
- Early detection of suboptimal hemoglobinization and early ID.

Quick screening on the erythropoietic status
Clinical parameters at no added cost

Clinical Utility
- Differentiates between functional and non-functional iron deficiency anemia
- Iron therapy monitoring
- Early detection of suboptimal hemoglobinization and early ID.

Operational Efficiency
- Reduced Interference From:
  - WBCs
  - Howell Jolley Bodies
  - Parasites
  - Sickle cells
- Quick and automatic

Clinical Utility
- Monitor RBC development at the cellular level
- IRF for Retic production
- RET-He for effectiveness of hematopoiesis
- Clinically relevant information for the management of anemia in conjunction with other available clinical information

PLT-F Channel
Platelets by Fluorescence
PLT-F CHANNEL

**Oxazine Dye**

RBC  PLT  IPF

**WHY A second Platelet channel?**

- Impedance platelet analysis (size) has limitations
- Identification and discrimination of platelets from interfering particles with the same size
- Reflex testing based on on-board rules: numeric results and/or flagging

**PLT-F CHANNEL SUMMARY**

- Second reportable method of platelet enumeration
- Extended count time for accuracy, especially in low platelet counts
- Fluorescent dye specific for platelet organelle
- Good comparison with CD41/CD61
- Minimizes interference from RBC fragments, microcytic RBCs and WBC fragments
- Automated Action message and reflex actions (model specific)
- Generates reportable PLT-F and IPF results
- Accurate low platelet counts
- Fewer manual interventions
- Improved Turnaround times
The XN Series

COMMON ANALYTICAL UNIT

- Up to 100/hr/module with 88µl sample size
- Common Reagent System
- Common QC System
- Common Software System

SMART REAGENT MANAGEMENT SYSTEM

- Color coded Reagents
- Easy to identify and change
- RFID cartridges
- Clean, neat, easy storage
SIMPLE. EASY. QUALITY CONTROL.

- 3 Levels all inclusive QC material
  - CBC
  - Differential, including IG
  - NRBC
  - Retic, IRF, RET-H
  - PLT-F, IPF
- No mode to mode QC
- 84 day expiration dating
- Consolidated QC Reporting

MAINTENANCE

- CELLCLEAN Auto
  - Automatic shutdown/daily maintenance for the instruments
  - One tube per XN Module or SP-10

XN SERIES SUMMARY

- Easy to use
- Designed with the operator’s needs in mind
- Improved workflow
- Automation for every laboratory
- Minimal maintenance
- Easy QC with more information at your fingertips
- Improved reagent management
XN-L STANDARDIZATION
For lower volume laboratories

INTRODUCING
XN-L SERIES

XN-L STRATEGY
• Extend the XN-Series technologies to the low volume testing laboratory
• Expand the clinical values of XN-Series with IG, Reticulocyte and Body Fluid analysis
• Differentiate from other vendors by providing unique clinical, operational and financial values
PRODUCT CAPABILITIES

- Low volume XN family extension
- Standardization
  - Central labs
  - Satellite labs
  - Clinics and POLs.
- L-WBC
  - Improves reliability of analysis in low WBC samples
- 6 part Differential
  - Including IG on each on every sample

PRODUCT CAPABILITIES

- RET*
  - Enumerated reticulocytes
    - Anemia management offering
      - Immature Retic Fraction (IRF)
      - Reticulocyte Hemoglobin (RET-He)

- XN-BF* (Body Fluids)
  - Provides the ability to directly measure body fluids.

INTRODUCING THE XN-L SERIES
XN-350
- CBC with 6-part diff and L-WBC license standard
- Open tube sampling only
- Action Message: Repeat, Rerun, Reflex
- Sample volume only 25 µl
- Throughput of 60 samples per hour
- Same reagents and QC as XN analyzer

XN-450
- CBC with 6-part diff and L-WBC license standard
- Retic and Body Fluid available with activated license
- Single tube; open or closed sample
- Action Message: Repeat, Rerun, Reflex
- Sample volume only 25 µl
- Throughput of 60 sample per hour
- Same reagents and QC as XN analyzers

XN-550
- CBC with 6-part diff and L-WBC license standard
- Retic and Body Fluid available with activated license
- With autoloader
- External IPU
- Fully automated: Repeat, Rerun, Reflex
- Sample volume 25 µl
- Throughput of 60 samples per hour
- Same reagents and QC as XN analyzers
CONTINUOUS LOADING OF SAMPLES

Left drawer  Right drawer

XN-L Technology
Analytical Technologies

MEASUREMENT CHANNELS

XN-Series

XX-Series

No NRBC  No PLT-F
### SYSMEX INSTRUMENT COMPARISON

<table>
<thead>
<tr>
<th>Feature</th>
<th>XN-Series</th>
<th>XN-L Series</th>
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<tbody>
<tr>
<td>Immature Granulocytes</td>
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<td>X</td>
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<tr>
<td>Enumerated NRBC</td>
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<td>Flagging</td>
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<td>Reticulocytes</td>
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**B E Y O N D A B E T T E R B O X™**