



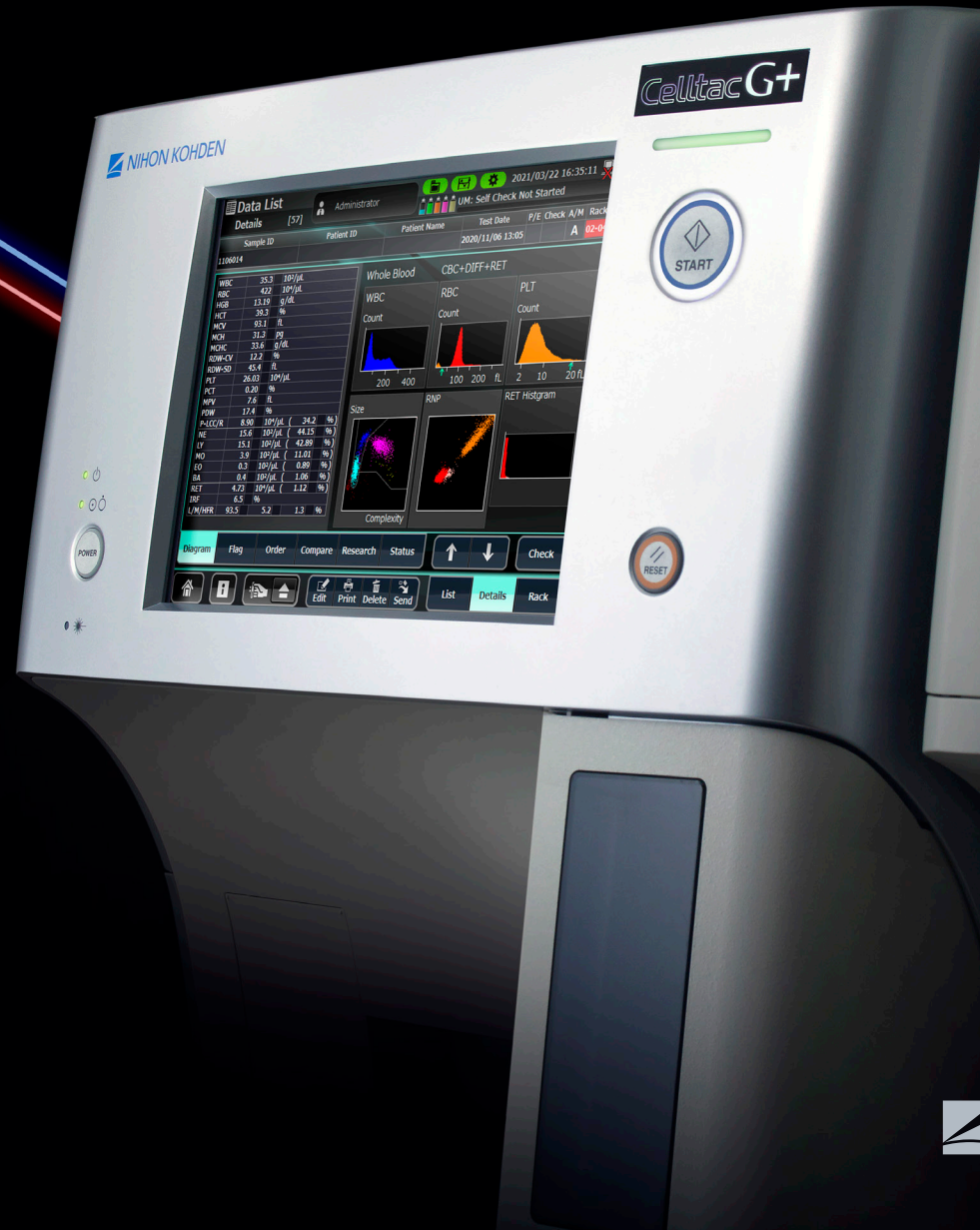
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Celltac G+

Automated Hematology Analyzer
MEK-9200



Fighting Disease with Electronics

 **NIHON KOHDEN**



Celltac G+

Automated Hematology Analyzer
MEK-9200

Feature and Functions

- Reticulocyte measurement
- DynaScatter Laser +HEM488 technology
- DynaHelix Flow technology
- Smart ColoRac Match system
- Up to 90 samples/h (CBC + DIFF)
- Up to 55 samples/h (CBC + DIFF + RET)
- 31 reportable parameters
- 8 research parameters
- Continuous sample loading system (10 samples/rack)
- STAT / manual sample analysis
- Westgard multirule function in QC mode
- Re-measurement function
- Auto-validation function
- Simple operation using barcodes for reagent management function and QC mode
- HL7 protocol through LAN connection

Technologies aiming for good laboratory operation and better patient outcomes

Hematology Products Since 1972 >>

Nihon Kohden started IVD business in 1972 and has been developing leading edge medical electronic equipment. Celltac series have been distributed to more than 120 countries in the world. We will continue fighting disease for better patient outcomes.

History of Celltac Series >>

>> 1972



MEK-1100

>> 1980



MEK-3100

>> 1987



MEK-7108

>> 1993



MEK-8118

>> 2002



MEK-8222

>> 2016



MEK-9100

>> 2021



MEK-9200

Core Concept



CelltacG+ is equipped with Nihon Kohden's unique technologies.

DynaScatter Laser +HEM488 technology contributes to accurate 5-part Diff results and reticulocyte results, DynaHelix Flow generates good quality result, and auto-loader makes Turnaround-Time shorter in laboratory operation.

Other functions and the effectiveness also support better laboratory management with efficient testing-flow.

The interaction of these factors leads to better patient care.

Unique Technology

CelltacG+ newly integrated reticulocyte parameters identified through our unique technology, DynaScatter Laser +HEM488.

The new laser technology has 2 lasers inside and one of them is a blue laser with 488 nm wavelength.

It excites stained cells and identifies reticulocyte based on the fluorescent scattered light.

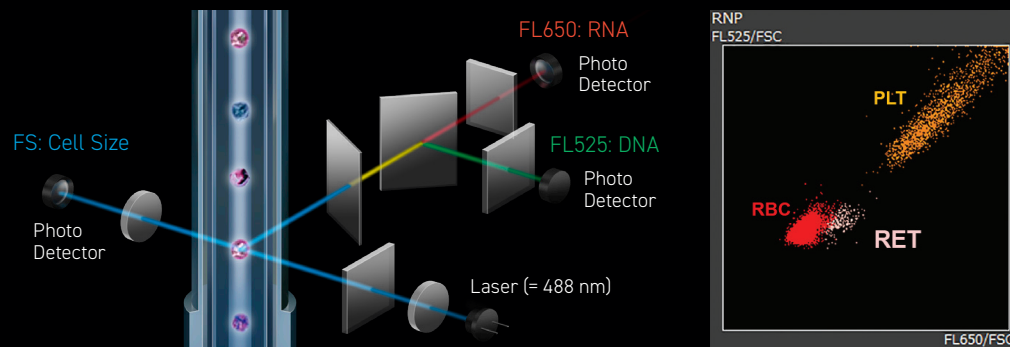
For Reticulocyte Measurement



DynaScatter Laser Technology was initially developed for 5-part Diff. with only one laser source. In CelltacG+, 488 nm blue laser was newly integrated into the technology for reticulocyte.

1. Nucleic acid staining solution stains DNA and RNA.
2. The stained cells are excited by the blue laser, and fluoresces are generated.
3. Cell size is calculated from forward scattered light, DNA information is calculated by green fluorescent light, and RNA information is calculated by red fluorescent light.

Additionally, fluorescent density is important to identify amount of reticulocytes. It is analyzed from RNP method* minimizing the influence of interfering substances for more accurate reticulocyte measurement result.

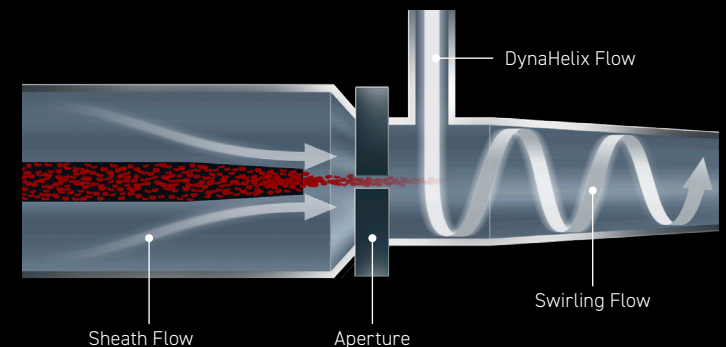


For CBC Measurement



DynaHelix Flow Technology using sheath flow and swirling flow to accurately count blood cells.

This unique technology reduces "re-entry" of blood cells going after the detection aperture because swirling flow pushes out cells to drain path. It is very effective especially for low cell volume sample.



* Y. Nagai et al. "Determination of red cells, nucleic acid-containing cells and platelets (RNP Determination) by a crossover analysis of emission DNA/RNA light" Int. Jnl. Lab. Hem. 2009; 31: 420-429

Efficient Workflow



These functions realize to improve TAT* for a prompt report on your laboratory.

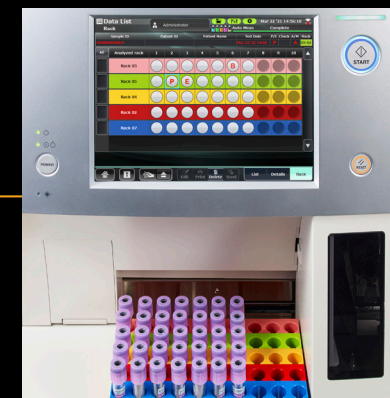
■ Re-measurement

Automatic re-measurement function occurs when unexpected alarms of equipment are detected.
(Not related to flagging alarms)

■ Auto Validation

The instrument has auto-validation function based on the criteria used in your facility.

* TAT: Turnaround Time



P: Contains positive items
E: Measurement error
B: Barcode cannot be scanned



This function provides Fast and Easy operation to pick up of samples. You may face some situations such as clinically abnormal sample, measurement error samples, or samples which barcode label cannot be read. When CelltacG+ detects such samples, the tube location with a special mark is shown on a display. You can just simply pick the sample up based on the information.

Specifications

Physical Specifications

Dimensions and Weight:

- Dimensions: 675 W × 589 D × 576 H (mm) ±10% (Main unit only, excluding protruding parts)
- Weight: 76 kg ±10%

Power Requirements:

- Line voltage: AC 100 to 240 V ±10% AC, 50/60 Hz
- Power input: max 360 VA

Sound Pressure Level: < 75 dB

31 Reportable Parameters:

- WBC, RBC, HGB, HCT, MCV, MCH, MCHC, RDW-CV, RDW-SD, PLT, PCT, MPV, PDW, P-LCR, NE, NE%, LY, LY%, MO, MO%, EO, EO%, BA, BA%, P-LCC, RET, RET%, IRF, LFR, MFR, HFR

8 Research Parameters: Mentzer Index, RDWI, IG, IG%, Band, Band%, Seg, Seg% Throughput:

- Up to 90 samples per hour (CBC + DIFF)
- Up to 55 samples per hour (CBC + DIFF + RET)

Patient Memory Capacity: 50,000 patient with graphs

Sample Volume:

- CBC: 32 µL
- CBC + DIFF: 47 µL
- CBC + RET: 47 µL
- CBC + DIFF + RET: 47 µL
- Pre-dilution mode: 20 µL

Barcode Format:

- Acceptable formats with or without check digits: Industrial 2 of 5, ITF, JAN/EAN/UPC, NW-7, CODE 93, CODE 128

Loading Capacity:

- Maximum 70 sample tubes

Repeatability and Linearity

Precision (Reproducibility)

- WBC: 2.0% or less (WBC: $4.00 \times 10^3/\mu\text{L}$ or more)
- RBC: 1.5% or less (RBC: $4.00 \times 10^6/\mu\text{L}$ or more)
- HGB: 1.5% or less
- HCT: 1.5% or less
- MCV: 1.0% or less
- PLT: 4.0% or less (PLT: $100 \times 10^3/\mu\text{L}$ or more)
- NE%: 5.0% or less (NE%: 30.0% or more and WBC: $4.00 \times 10^3/\mu\text{L}$ or more)
- LY%: 5.0% or less (LY%: 15.0% or more and WBC: $4.00 \times 10^3/\mu\text{L}$ or more)
- MO%: 12.0% or less (MO%: 5.0% or more and WBC: $4.00 \times 10^3/\mu\text{L}$ or more)
- EO%: 20.0% or less or within ±1.0 EO% (WBC: $4.00 \times 10^3/\mu\text{L}$ or more)
- BA%: 30.0% or less or within ±1.0 BA% (WBC: $4.00 \times 10^3/\mu\text{L}$ or more)
- NE: 8.0% or less (NE: $1.20 \times 10^3/\mu\text{L}$ or more)
- LY: 8.0% or less (LY: $0.60 \times 10^3/\mu\text{L}$ or more)
- MO: 20.0% or less (MO: $0.20 \times 10^3/\mu\text{L}$ or more)
- EO: 25.0% or less or within ±0.10 × $10^3/\mu\text{L}$ (WBC: $4.00 \times 10^3/\mu\text{L}$ or more)
- BA: 30.0% or less or within ±0.10 × $10^3/\mu\text{L}$ (WBC: $4.00 \times 10^3/\mu\text{L}$ or more)

- RET%: 15.0% or less (RET%: 1.00% or more and RBC: $300 \times 10^6/\mu\text{L}$ or more)
- RET: 15.0% or less (RET%: 1.00% or more and RBC: $300 \times 10^6/\mu\text{L}$ or more)
- IRF: 30.0% or less (IRF: 20.0% or more and RET%: 1.00% or more and RBC: $300 \times 10^6/\mu\text{L}$ or more)
- LFR: 30.0% or less (LFR: 20.0% or more and RET%: 1.00% or more and RBC: $300 \times 10^6/\mu\text{L}$ or more)
- MFR: 50.0% or less (MFR: 20.0% or more and RET%: 1.00% or more and RBC: $300 \times 10^6/\mu\text{L}$ or more)
- HFR: 100.0% or less, or within ±2.0 HFR (RET%: 1.00% or more and RBC: $300 \times 10^6/\mu\text{L}$ or more)

(Specifications above applies to normal mode)

Linearity

- WBC: within ±3.0% OR $\pm 0.3 \times 10^3/\mu\text{L}$ (WBC: 0.20 to $95.0 \times 10^3/\mu\text{L}$)
 - RBC: within ±3.0% OR $\pm 0.08 \times 10^6/\mu\text{L}$ (RBC: 0.02 to $8.50 \times 10^6/\mu\text{L}$)
 - HGB: within ±1.5% OR $\pm 0.2 \text{ g/dL}$ (HGB: 0.10 to 25.0 g/dL)
 - HCT: within ±3.0% OR ±1.0% (HCT: 10.0 to 70.0%)
 - PLT: within ±10.0% OR $\pm 20 \times 10^3/\mu\text{L}$ (PLT: 10 to $1500 \times 10^3/\mu\text{L}$)
 - RET%: within ±20% or ± 0.30% (RET%) (RET%: 0.50 to 30.00%)
 - RET: within ±20% or ± $1.50 \times 10^4/\mu\text{L}$ (RET: 0.50 to $72.0 \times 10^4/\mu\text{L}$)
- (Specifications above applies to normal mode)

Operating Environment

- Temperature: 15 to 30°C (59 to 86°F)
- Humidity: 30 to 85% (non-condensing)
- Atmospheric pressure: 700 to 1060 hPa (altitude: < 3000 m)

Consumables and Accessories

Common Consumables with MEK-9100

- Diluent: Isotonac 3 or Isotonac 4, MEK-640 or MEK-641
- Hemolysing reagent: Hemolynac 310, MK-310W Hemolynac 510, MK-510W
- Detergent: Cleanac 710, MK-710W Cleanac 810, MK-810W
- Hematology control for 5 part DIFF: MEK-5DL/5DN/5DH

New Items



Staining reagent for reticulate: Reticulonac, MK-110W



Hematology control for reticulocyte: MK-RE1, MK-RE2, MK-RE3



(Local purchase) SPHERO™ Rainbow Fluorescent Particles (RFP-30-5)



(Option) Adapters for blood collection tube: YZ-0081B1 (BD, KABE, SARSTEDT for STAT, and SARSTEDT kit for auto loader)