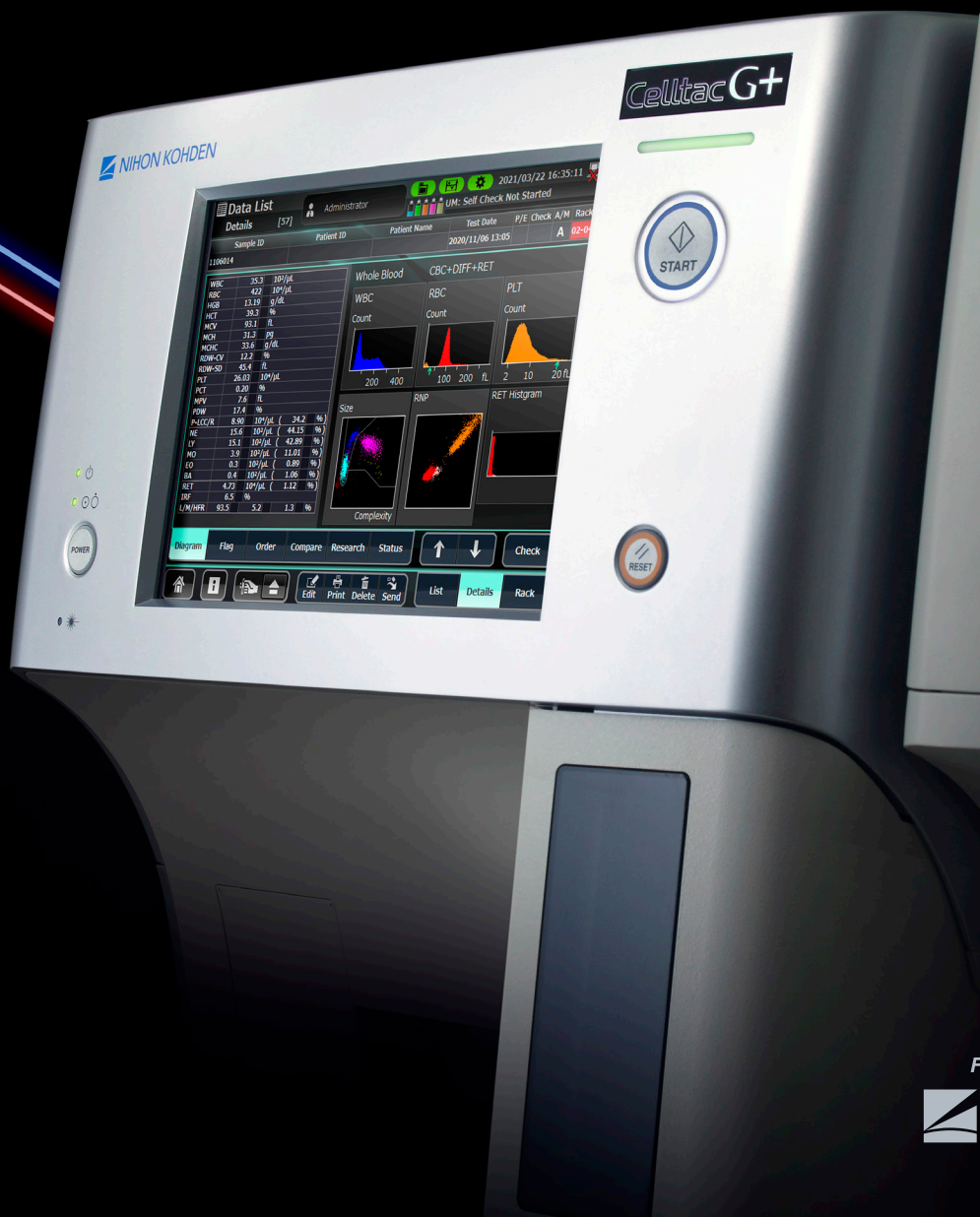
Celltac G+

Automated Hematology Analyzer

MEK-9200



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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 hematology products have been distributed to more than 120 countries in the world.
We will continue fighting disease for better patient outcomes.

History of Celltac Series ››

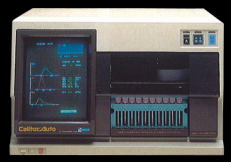
›› 1972

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 and reticulocyte results,

DynaHelix Flow generates good quality results, and the auto-loader makes Turnaround Time shorter in laboratory operation.

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

The interaction of these factors leads to better patient care.

Unique Technology

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

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

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

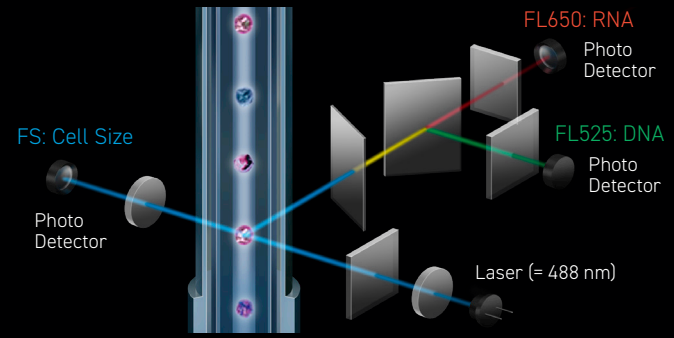
For Reticulocyte Measurement

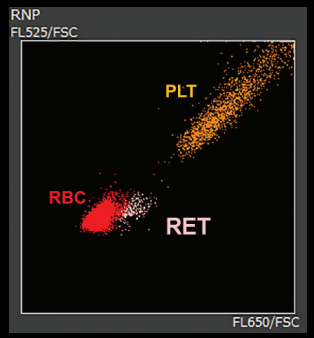
DynaScatter Laser +HEM488

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

1. Nucleic acid staining solution stains DNA and RNA.
2. The stained cells are excited by the blue laser, and two types of fluorescence 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 the amount of reticulocytes.
It is analyzed using the RNP scattergram* minimizing the influence of interfering substances for more accurate reticulocyte measurement result.



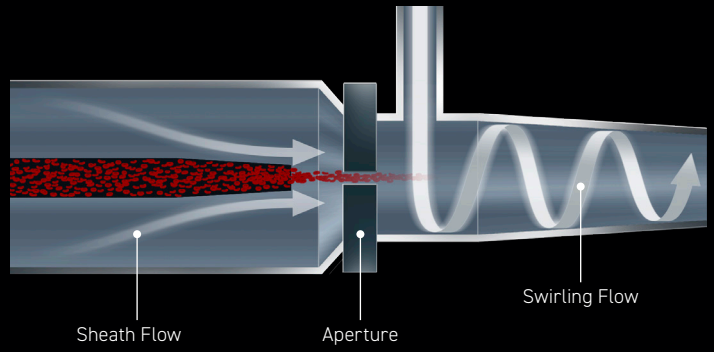


For CBC Measurement

DynaHelix Flow

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

This unique technology reduces “re-entry” of blood cells after passing the detection aperture because the swirling flow pushes cells out into the drain path. This is is very effective especially for low cell volume samples.



* 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

DynaScatter Laser +HEM488

DynaHelix Flow

These functions realize improved TAT* for a prompt report in your laboratory.

Re-measurement

Automatic re-measurement occurs when an unexpected alarm occurs on the hematology analyzer.
(Not related to flagging alarms)

Auto Validation

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

* TAT: Turnaround Time

Measurement → **Confirmation of results** → **Validation**

Confirmation of results: Pickup abnormal samples; Inspected by standard method, etc.

Smart ColoRac Match

This function provides fast and easy operation to detect abnormal samples. You may face some situations such as clinically abnormal sample, measurement error samples, or samples for which the barcode label cannot be read. When CelltacG+ detects such samples, the tube location with a special mark is shown on a display. You can easily identify the sample based on the information.

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

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 × 10^3/µL or more)
- RBC: 1.5% or less (RBC: 4.00 × 10^6/µL or more)
- HGB: 1.5% or less
- HCT: 1.5% or less
- MCV: 1.0% or less
- PLT: 4.0% or less (PLT: 100 × 10^3/µL or more)
- NE%: 5.0% or less (NE%: 30.0% or more and WBC: 4.00 × 10^3/µL or more)
- LY%: 5.0% or less (LY%: 15.0% or more and WBC: 4.00 × 10^3/µL or more)
- MO%: 12.0% or less (MO%: 5.0% or more and WBC: 4.00 × 10^3/µL or more)
- EO%: 20.0% or less or within ±1.0 EO% (WBC: 4.00 × 10^3/µL or more)
- BA%: 30.0% or less or within ±1.0 BA% (WBC: 4.00 × 10^3/µL or more)
- NE: 8.0% or less (NE: 1.20 × 10^3/µL or more)
- LY: 8.0% or less (LY: 0.60 × 10^3/µL or more)
- MO: 20.0% or less (MO: 0.20 × 10^3/µL or more)
- EO: 25.0% or less or within ±0.10 × 10^3/µL (WBC: 4.00 × 10^3/µL or more)
- BA: 30.0% or less or within ±0.10 × 10^3/µL (WBC: 4.00 × 10^3/µL or more)
- RET%: 15.0% or less (RET%: 1.00% or more and RBC: 300 × 10^6/µL or more)
- RET: 15.0% or less (RET%: 1.00% or more and RBC: 300 × 10^6/µL or more)
- IRF: 30.0% or less (IRF: 20.0% or more and RET%: 1.00% or more and RBC: 300 × 10^6/µL or more)
- LFR: 30.0% or less (LFR: 20.0% or more and RET%: 1.00% or more and RBC: 300 × 10^6/µL or more)
- MFR: 50.0% or less (MFR: 20.0% or more and RET%: 1.00% or more and RBC: 300 × 10^6/µL or more)
- HFR: 100.0% or less, or within ±2.0 HFR (RET%: 1.00% or more and RBC: 300× 10^6/µL or more)

(Specifications above applies to normal mode)
Linearity
- WBC: within ±3.0% OR ±0.3 × 10^3/µL (WBC: 0.20 to 95.0 × 10^3/µL)
- RBC: within ±3.0% OR ±0.08 × 10^6/µL (RBC: 0.02 to 8.50 × 10^6/µL)
- HGB: within ±1.5% OR ±0.2 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 ±20 × 10^3/µL (PLT: 10 to 1500 × 10^3/µL)
- RET%: within ±20% or ± 0.30% (RET%) (RET%: 0.50 to 30.00%)
- RET: within ±20% or ± 1.50 × 10^4/µL (RET: 0.50 to 72.0 × 10^4/µL)

(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 used with MEK-9100/9200

- 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

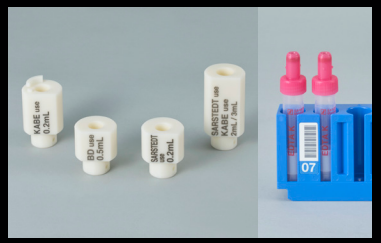
New Items

Staining reagent for reticulocyte: Reticulonac, MK-110W

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

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

SPHERO is a trademark of Spherotech, Inc.



(Left) STAT adapter kit for SARSTED/BD/KABE
(Right) SARSTEDT kit for autoloader

This brochure may be revised or replaced by Nihon Kohden at any time without notice.

NIHON KOHDEN

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