

# Extremely simple

WBC 5 part differential

# Celltac ES

Automated Hematology Analyzer  
MEK-7300

## Reliable

### Enhanced Statistics

- "ADVANCE COUNT" for low PLT or WBC enhances reliability of low PLT or WBC.
- When low PLT or WBC is detected, an additional sample is analyzed automatically.

## Friendly

### Stress-free simple operation

- Large color touch screen provides intuitive operation.
- Auto priming and self-cleaning minimize start-up and Shutdown time.

## Efficient

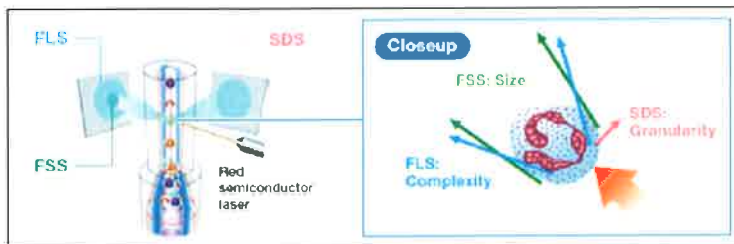
### Streamlined workflow

- Just 55  $\mu$ L sample aspiration for WBC 5 part differential
- 10  $\mu$ L/20  $\mu$ L can be measured with pre-dilution mode.
- Useful measurement modes: Open, Closed, Pre-dilution, WBC high, and WBC low





## FLOW CYTOMETRY (NON-STAINING)

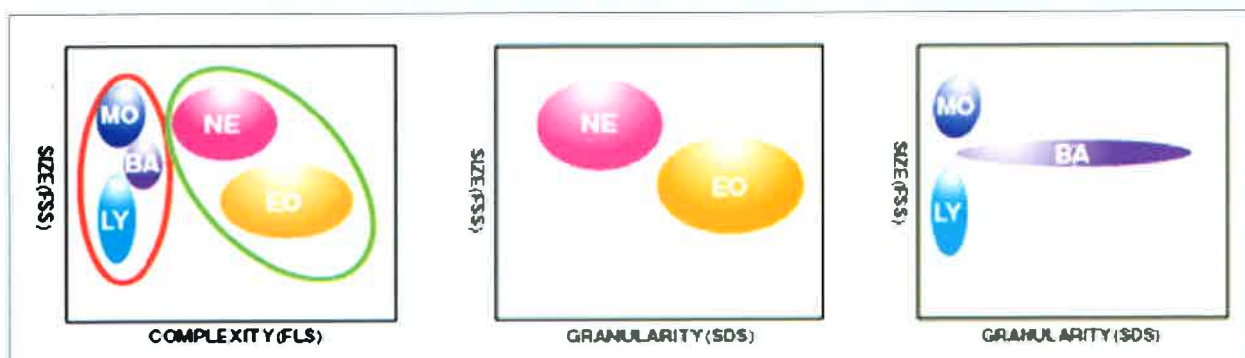


The hematology analyzer uses patented light scatter Technique to differentiate WBC population. When diluted blood is injected into flow cell. Blood cell passes through the sensing zone in a single file. A laser beam through the sensing zone is scattered by the passing cells and it is detected in three dimensional as follows.

**FSS:** Small forward angle scattered light represents the membrane size information of the WBC.

**FLS:** Large forward angle scattered light represents the cytoplasmic complexity nucleo-chromatin structure of cell.

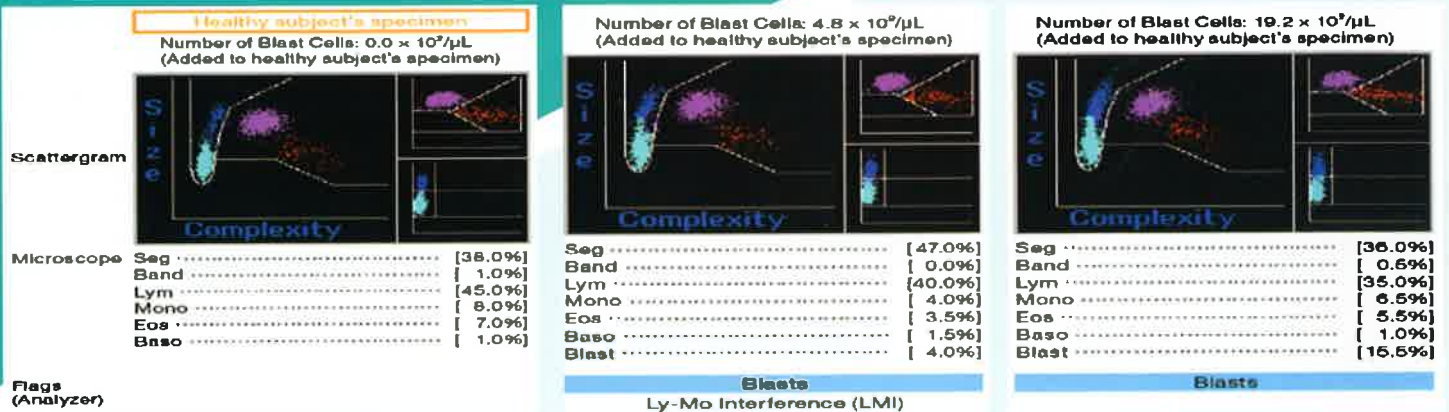
**SDS:** Side angle scattered light determines internal granularity of cell.



## No Chemical Processing of WBC Differential

The patented leukocyte classification reagent selectively hemolyse the red blood cells while leaving the white blood cell intact. The nucleus, granules and cellularity remain intact so celltac Es can get information from natural shaped WBC nuclei and granules in laminar flow and perform more accurate WBC 5 part diff measurement.

## Celltac Es MEK 7300 Detectable Sensitivity of Blast Flag



It is important to accurately notify the possibility of blasts through a flag in the hematology analyzer. We evaluated the minimum detectable sensitivity of the Blasts flag and the plots in scattergrams from Celltac Es hematology analyzer is  $4.8 \times 10^9/\mu\text{L}$ . Hence as resultant it can provide faster and more accurate clinical diagnosis because it effectively screens for blast cell presence in peripheral blood.

## Advance PLT count

The CelltacEs MEK-7300 hematology analyzer has a new ADVANCED COUNT function to enhance reproducibility of low platelet counts. If low PLT is detected, the blood sample is automatically counted several times. Available with additional threshold setting.  $15 \times 10^4/\mu\text{L}$ ,  $10 \times 10^4/\mu\text{L}$ ,  $5 \times 10^4/\mu\text{L}$

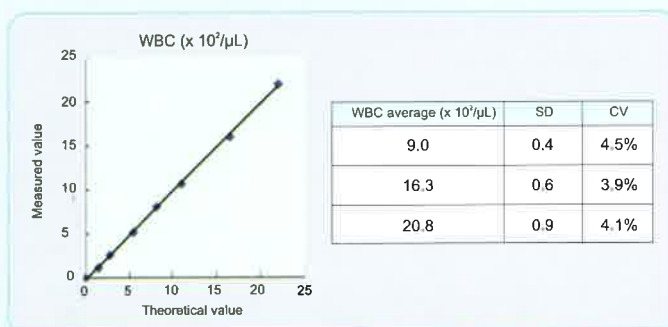
### Within-run reproducibility

$10^4/\mu\text{L}$	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Visual count	1.5	3.2	5.5	9.7	13.9
1 <sup>st</sup>	1.5	2.9	5.8	9.6	14.4
2 <sup>nd</sup>	1.3	3.0	5.8	9.5	14.8
3 <sup>rd</sup>	1.5	2.8	5.8	9.7	15.1
4 <sup>th</sup>	1.3	3.0	5.9	9.7	14.5
5 <sup>th</sup>	1.4	3.0	5.9	9.5	14.5
MEAN	1.40	2.94	5.84	9.60	14.66
SD	0.10	0.09	0.05	0.10	0.29
CV%	7.1	3.0	0.9	1.0	2.0

The measurements was done with the CelltacEs MEK 7300 factory default settings. The threshold level setting of ADVANCED COUNT can be changed depending on user's preference.

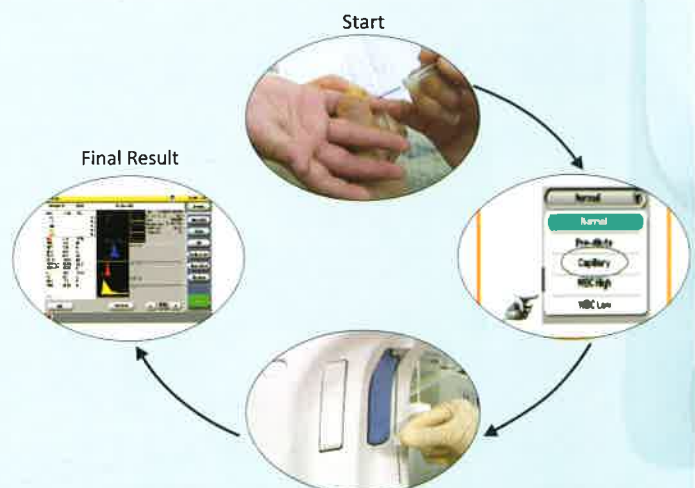
## Advance WBC count

An additional benefit to pathological sample to achieve high accurate and precise result of sampling. *Low Dilution Mode*.



## Capillary Mode

CelltacEs series has come up with a Capillary mode which uses Capillary blood  $10\mu\text{L}$  only. It has an unique  $10\mu\text{L}$  EDTA coated capillary with a specially designed adapter. That fits into sampling nozzle and allows the sampling in vacuumed manner.





### Close Mode (Cap piercing unit)

It has a Cap piercing unit for auto sampling from a vacuumed capped vacutainers automatically to avoid get in contact with infected sample performance.



### Twin sampling nozzles



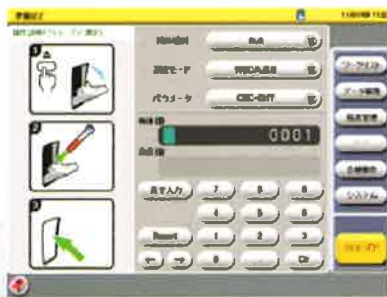
Twin diluting nozzle in celltac series is delicately diluting blood samples in both chamber separately. this prevents counting errors, due to carryover and imprecision in dilution ratio.

### Double mixing chambers

Celltac series always assure high reproducibility and accuracy by unique mechanism such as double sub bath mixing chamber for effective hemolysis and uniform distribution of cells throughout the diluted solution



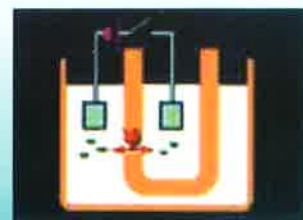
### Large Color touch screen



10.4" Colour TFT LCD touch screen display with 800 X 600 dots resolution. clearly displays the result and allows easy and intuitive operation of the analyzer. data can be enlarge by touching them.

### Automatic Electrical Clog Removal

To prevent clogging, Celltac removes blood protein and dust particles from the aperture by a high voltage clog shattering electrical pulse after each measurement if a clog occurs the celltac automatically removes the clog and recounts the sample.



## Fully automatic analyzer

- 29 parameters, 3 histogram & 3 scatter gram.
- Large color LCD display facilitates easy operation and data management, simply by touch screen.
- Automatic priming and cleaning.
- Low sample volume as low as 10 $\mu$ l or 20 $\mu$ l.
- Specially developed software with capability to generate comprehensive hematology report.
- Alphanumerical patient ID setting identification input upto 13 digits.
- Monitoring of instrument calibration, precision and accuracy of result.
- High reproducibility of results

## Hand-held bar code reader (option)



CelltacEs has an optional hand held bar code reader facility to enter Patient ID and previous patient ID.

## Optional Data Storage (SD Card )



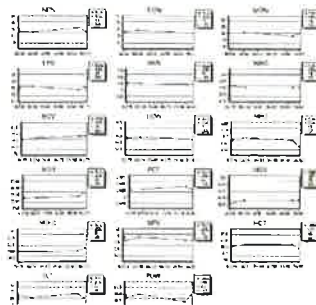
upto 30,000 results can be stored in additional 2GB SD Card

## Standalone Design

Celltac Es provides complete WBC 5 part differential and CBC measurement without a PC. This contributes to easy operation for staff who are not frequent operators such as off-peak shift in the ER or ICU. Celltac E's compact size (only 380 mm width and 485 mm depth, not including reagent bottles) also saves desktop space.



## Data Management Software (DMS Pro, QP822V option)



User-friendly DMS pro software gives easy operation research parameters of ImG#, ImG%, Band#, Band%, Seg#, Seg%.

## Roller Pump Replaces a Compressed Air Source

Celltac incorporates a silent roller pump inside the instrument, replacing noisy external air compressor making the instrument much compact.



## Technical Specification

**Parameters**—29 parameters, + 3 Histogram RBC, WBC, PLT + 3 Scatter gram of WBC.

### WBC COUNT

WBC, NE%, NE# LYM%, LYM#,  
MON%, MON#, EOS%, EOS#, BA%,  
BA#, IG\*, IG%\*, Band%\*, Band#\*,  
SEG%\*, SEG#\*.  
(\*For research use only)

### RBC COUNT

RBC, HCT, MCV, RDW-CV,  
RDW-SD, MCH, MCHC,  
HGB.

### PLT COUNT

PLT, PCT, MPV, PDW

#### Analysis Principle:-

- Blood cell count: Electrical resistance detection
- Hemoglobin: Surfactant method (colorimetric method)
- Hematocrit: Histogram calculated
- WBC population: Flow cytometry 3D analysis (Optical method)
- Platelet crit: Histogram calculated
- RBC distribution width: Histogram calculated
- Platelet distribution width: Histogram calculated

#### Modes / Volume:-

- Open – (CBC-30 $\mu$ l),(CBC+Diff-55 $\mu$ l)
- Closed- (CBC-30 $\mu$ l),(CBC+Diff-55 $\mu$ l)
- Pre-dilution-10 $\mu$ l or 20 $\mu$ l
- Capillary-10 $\mu$ l (CBC only)

#### Display: -

- 10.4 inch, LCD Color touch screen.
- Resolution: 800 x 600 dots
- Screen size: approx. 211.2 x 158.4 mm
- Display contents: Numeric data, scattergrams, histograms, measuring conditions, alarm

#### Throughput:-

- Open mode: about 60s/sample
- Closed mode: about 75s/sample

#### Measurement range with CV%:-

- |                                       |               |
|---------------------------------------|---------------|
| • WBC:- 0 to 299 $\times 10^3/\mu$ L  | within 2.0%CV |
| • RBC:- 0 to 14.9 $\times 10^6/\mu$ L | within 1.5%CV |
| • HGB:- 0 to 29.9 g/dL                | within 1.5%CV |
| • PLT:- 0 to 1490 $\times 10^3/\mu$ L | within 4.0%CV |

#### Data storage:-

- 400 Numerical +50 Histogram sample.
- Expandable upto 30,000 data by using 2GB SD card (Optional)

#### Software Interface:-

- USB,
- RS-232C serial port.

#### Qc-program:-

- X Bar-R,
- L&J,
- X Bar-B,

#### Dimensions Weight:-

- 382 W  $\times$  465 D  $\times$  532 H (mm)
- Net weight: approx. 35 kg

#### Power supply:-

- Power requirements: 110 to 240 V  $\pm$  10% AC, 50/60 Hz
- Power consumption: 250 VA

#### Operating environment:-

- Temperature:- 15-30 $^{\circ}$ C (59-86 $^{\circ}$ F)
- Humidity:-30 to 85%
- Air pressure:-70 to 1060 hPa

#### Flags: - 27 suspected flags

#### WBC

- Leukocytosis
- Leukopenia
- Neutrophilia
- Neutropenia
- Lymphocytosis
- Lymphopenia
- Eosinophilia
- Monocytosis
- Basophilia
- Blast
- Immature granulocyte
- Left Shift
- Atypical Lymphocyte
- Small nucleated cell
- Ly-Mo Interference
- Ne-Eo interference
- Poor hemolysis
- RBC ghost

#### RBC

- Erythrocytosis
- Anemia
- Anisocytosis
- Hypochromia
- Abnormal MCHC
- Macrocytosis
- Microcytosis

#### PLT

- Thrombocytosis
- Thrombocytopenia
- PLT-RBC Interference
- PLT-Clumps

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



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