



## **Reflotron® Plus system**

*Tailor made solution to support your decisions*

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Roche Diagnostics Ltd.  
CH-6343 Rotkreuz  
Switzerland  
[www.cobas.com](http://www.cobas.com)

Platzhalter Versionsnummer



**cobas®**  
*Life needs answers*

# The proven clinical chemistry system for reliable, easy and efficient testing



The Reflotron Plus system is a single test clinical chemistry system which allows the measurement of 17 parameters from whole blood, plasma or serum – including liver and pancreas enzymes, metabolites, blood lipids, hemoglobin and potassium.

Immediate and reliable test results ensure a quick performance and verification of the diagnosis

without delay. The parameters that can be measured on the Reflotron Plus system cover the most important indications in primary care, such as diabetes, lipid disorders, kidney diseases, muscle diseases, anemia, liver diseases.

The system is suitable for primary care settings, as back-up system in hospitals and private labs, at screening sites and for health check-ups.

Private laboratories

Physician office laboratories

Hospital laboratories

Pharmacies

Dedicated testing laboratories

Target groups

# A Point-of-Care system that benefits both *You and the patient*

## Ease of use and convenience

- High flexibility due to wide range of parameters and sample materials
- Test results available within two to three minutes
- Easy and quick operation, user guidance via display
- Increased convenience as most tests can be stored at room temperature

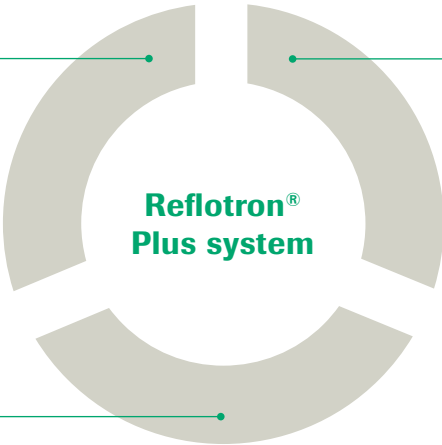
## Safe and reliable results

- Reliable test results, correlating well to standardized laboratory methods and validated in a number of clinical studies\*
- Quality assurance
- Barcode reader and/or keyboard for patient and sample ID input
- IT connectivity (**cobas IT** 1000 application)

\* Data available on request

## Cost and workflow efficiency

- Single strip technology allows the testing of the specific parameter needed
- Short warm-up time, fast start from stand-by mode
- No sample or reagent preparation required
- Immediate automated documentation of results available as a printout or online

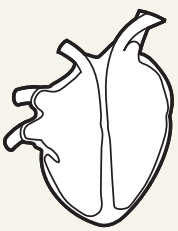
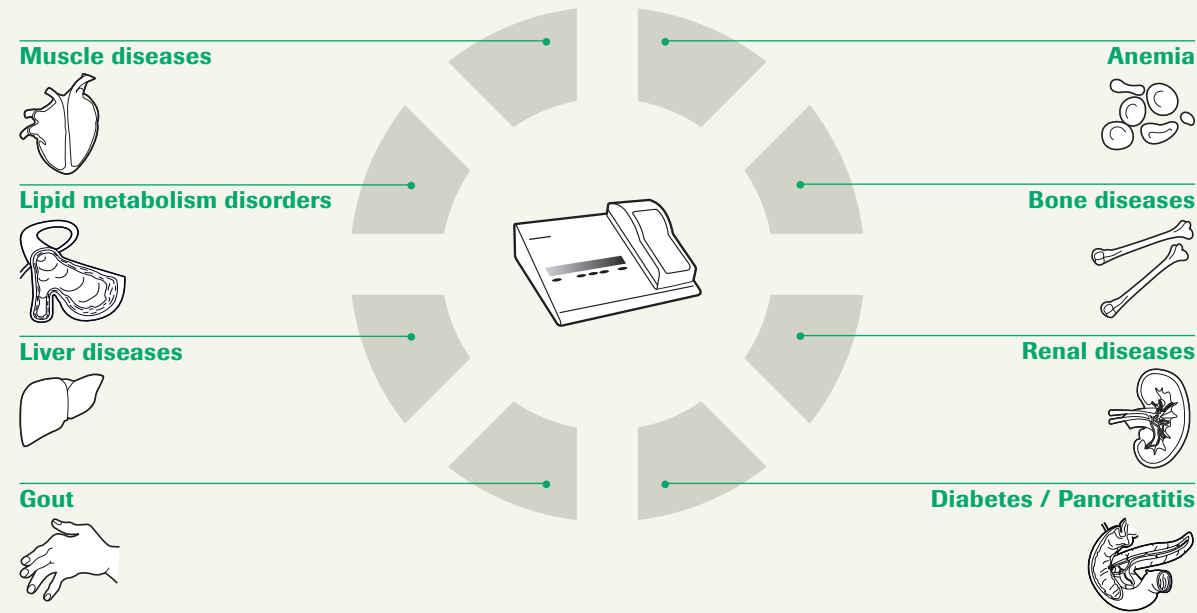




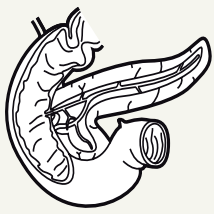


# Range of parameter

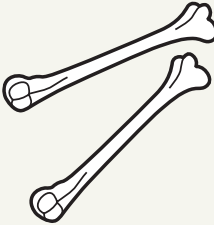
Covering a wide range of daily routine and emergency testing



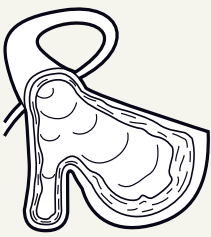
**Muscle diseases**  
• CK



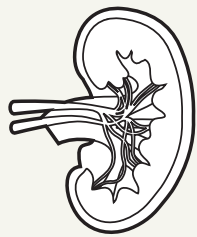
**Pancreatitis**  
• Pancr. amylase  
• Amylase



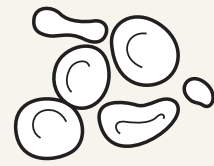
**Bone diseases**  
• Alk. phosphatase



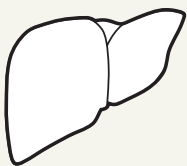
**Lipid metabolism disorders**  
• Cholesterol  
• Triglycerides  
• HDL cholesterol  
• Glucose  
• LDL cholesterol (calculated using the Friedwald equation)



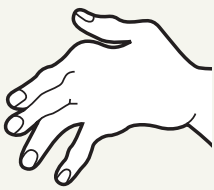
**Renal diseases**  
• Urea  
• Creatinine  
• Hemoglobin  
• Uric acid  
• K<sup>+</sup>



**Anemia**  
• Hemoglobin  
• Bilirubin



**Liver diseases**  
• GOT, GPT, GGT  
• Bilirubin  
• Alk. phosphatase



**Gout**  
• Uric acid  
• Urea  
• Creatinine  
• Glucose  
• Cholesterol  
• Triglycerides



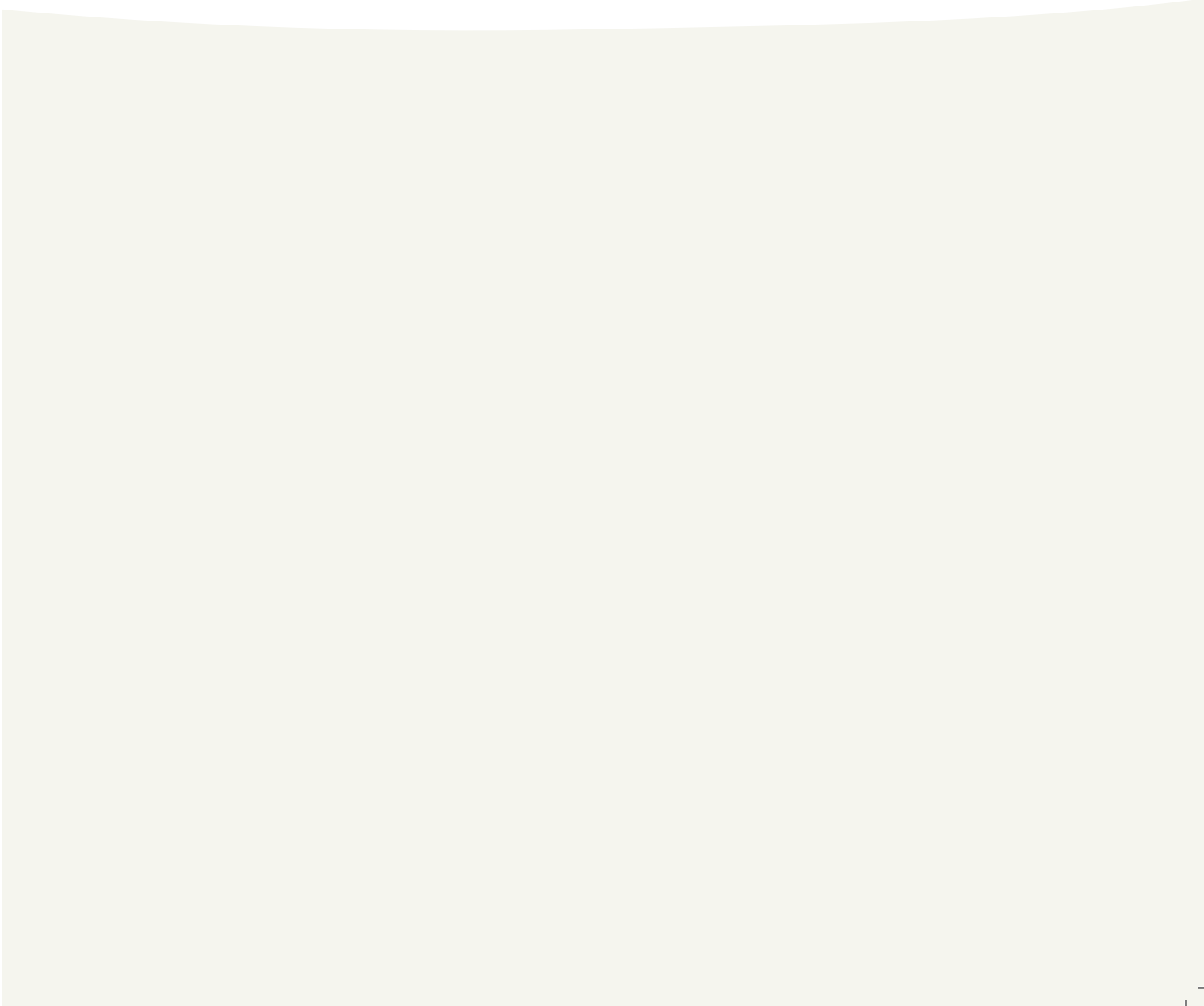
# Reflotron® Plus system

## Technical specifications

Measuring principle	Reflectance photometry
Light source	LED
Wavelengths	567 nm; 642 nm; 951 nm
Light detectors	Photodiodes (2)
Tests available	17 individual tests for clinical chemistry, and UA
Storage temperature	Room temperature, except for CK test: 2 - 8°C
Sample type	Capillary or venous whole blood, plasma, serum, EDTA or heparin for most parameters*
Sample volume	30 µL
Measuring time	2 - 3 minutes depending on test
Test temperature	37°C
Calibration	Automatic lot specific, encoded lot information on backside of strip
Operating conditions	Temperature: 15°-34°C relative humidity max. 95%
Hematocrit range	Up to 55%
Display	Alphanumeric: 2 lines of 24 characters, liquid crystal display
User guidance	Easy-to-follow on-screen text messages various language options**
Process control	On-screen text messages provide user guidance. Over 50 function controls ensure the working safety of the instrument
Memory	60 results with date, time, ID
Analytic tools	Framingham, Creatine clearance
Printer	Integrated matrix printer for printing of IDs, results etc.
Clock	Battery-buffered real-time clock
Data interface	RS 232 C serial, keyboard interface, barcode scanner
Dimensions	30 x 35 x 21 cm
Weight	5.3 kg
Power supply	115 - 230 V AC, car battery optional: 10 - 30 V AC
Power consumption	9.6W during operation, 1.7W stand-by
Noise level	< 44 dBA

\* See individual packaging inserts

\*\*See Reflotron operator's manual





# Reference level, stability and sample material

Test	Reference level <sup>1</sup> (adults)		Stability and sample material						Comments
	Conventional	System International	Serum	fresh capillary and fresh venous blood	Heparin Blood	EDTA Blood	Heparin Plasma	EDTA Plasma <sup>4</sup>	
Bilirubin	< 1.2 mg/dL	< 21 µmol/L	2 h	Immediately	2 h	2 h	2 h	2 h	EDTA and Heparin blood to be kept in the dark. The Reflotron Bilirubin test can not be used on newborn because of special rheological and physiological characteristics of the sample material
Cholesterol	< 200 mg/dL	< 5.2 mmol/L	4 h <sup>2</sup> 12 h <sup>3</sup>	Immediately	4 h <sup>2</sup> 8 h <sup>3</sup>	4 h <sup>2</sup> 8 h <sup>3</sup>	4 h <sup>2</sup> 12 h <sup>3</sup>	4 h <sup>2</sup> 12 h <sup>3</sup>	Shake the sample before performing tests. Do not freeze specimens
Creatinine	< 1.1 mg/dL < 0.9 mg/dL	< 97 µmol/L < 80 µmol/L	24 h	Immediately	6 h	6 h	24 h	24 h	Urine as sample please see packaging insert
Glucose	60 - 109 mg/dL	3.3 - 6.05 mmol/L	2 h	Immediately	10 min	10 min	2 h	2 h	Separate serum from the cellular components immediately after coagulation - but no later than 1/2 hour after collection of the blood sample. Perform the glucose determination within 2 hours
Hemoglobin	♂ < 14 - 17.5 g/dL ♀ < 12.3 - 15.3 g/dL	< 8.7 - 10.9 mmol/L < 7.6 - 9.5 mmol/L	✗	Immediately	24 h	24 h	✗	✗	Heparin and EDTA blood after storage give a good shake
HDLP HDL Cholesterol	< 40 mg/dL or < 1.04 mmol/L low HDL Cholesterol (high risk for CHD) ≥ 60 mg/dL or ≥ 1.56 mmol/L high HDL Cholesterol (high risk for CHD) CHD = Coronary Heart Disease		✗	✗	✗	✗	✗	after 24 h +4%	Only fresh EDTA plasma
K+ (Potassium)	Serum Plasma	3.6 - 5.0 mmol/L 3.5 - 4.6 mmol/L	> 7 d	✗	✗	✗	> 7 d	✗	Separate serum from the clot within one hour; if heparinized plasma is used, the anticoagulated blood should be centrifuged and separated from the cells immediately after collection. In closed containers potassium is stable in serum or plasma for at least one week at +4°C to +25°C
TG Triglycerides	≤ 200 mg/dL	≤ 2.30 mmol/L	8 h <sup>2</sup> 24 h <sup>3</sup>	Immediately	8 h	8 h	8 h <sup>2</sup> 24 h <sup>3</sup>	8 h <sup>2</sup> 24 h <sup>3</sup>	Kept in closed container. Do not freeze specimens
UA Uric Acid	♂ 3.4 - 7.0 mg/dL ♀ 2.4 - 5.7 mg/dL	200 - 420 µmol/L 140 - 340 µmol/L	3 d <sup>2</sup> 7 d <sup>3</sup>	Immediately	8 h	✗	3 d <sup>2</sup> 7 d <sup>3</sup>	✗	Kept in closed container
Urea	< 65Y < 50 mg/dL > 65Y < 71 mg/dL	< 8.3 mmol/L < 11.9 mmol/L	7 d	Immediately	8 h	8 h	7 d	7 d	Kept in closed container
ALP. Alkaline Phosphates	♂ 106 - 265 U/L ♀ < 50Y normal weight 83 - 223 U/L ♀ > 50Y over weight 91 - 258 U/L	1.77 - 4.42 µkat/L 1.39 - 3.72 µkat/L 1.52 - 4.30 µkat/L	3 d 7 d <sup>3</sup>	Immediately	8 h	✗	1 d	✗	Kept in closed container
AMYL Amylase	< 100 U/L	< 1.65 µkat/L	7 d <sup>2</sup> 1 m <sup>3</sup>	Immediately	8 h	✗	7 d <sup>2</sup> 1 m <sup>3</sup>	✗	Kept in closed container
P-AM Pancreatic Amylase	< 53 U/L Random Urine 325 U/L or 5.42 µkat/L	< 0.89 µkat/L	7 d	Immediately	8 h	✗	7 d	✗	Kept in closed container. For urine samples use reference level: Random urine 2d <sup>2</sup> ≥ 10d <sup>3</sup>
CK	♂ 24 - 195 U/L ♀ 24 - 170 U/L	0.4 - 3.25 µkat/L 0.4 - 2.83 µkat/L	24 h <sup>2</sup> 7 d <sup>3</sup>	Immediately	8 h	✗	24 h <sup>2</sup> 7 d <sup>3</sup>	✗	Kept in closed container
GGT	♂ 10 - 71 U/L ♀ 6 - 42 U/L	0.17 - 1.19 µkat/L 0.10 - 0.70 µkat/L	7 d	Immediately	8 h	8 h	7 d	7 d	Kept in closed container
GOT (AST)	♂ < 40 U/L ♀ < 33 U/L	< 0.67 µkat/L < 0.55 µkat/L	4 d <sup>2</sup> 7 d <sup>3</sup>	Immediately	1 h	✗	4 d <sup>2</sup> 7 d <sup>3</sup>	✗	Kept in closed container
GPT (ALT)	♂ < 41 U/L ♀ < 32 U/L	< 0.68 µkat/L < 0.53 µkat/L	Immediately	Immediately	1 h	✗	3 d <sup>2</sup> 7 d <sup>3</sup>	✗	Kept in closed container

<sup>1</sup> testing Temperature 37°C

<sup>2</sup> kept in closed container at +20 - 25°C

<sup>3</sup> kept in closed container at +4 - 8°C

<sup>4</sup> plasma separation to be done immediately



**cobas**<sup>®</sup>

Life needs answers

# Handling

## *Three simple steps, accurate results*



### **Apply sample**

Apply the 30 µL of the sample material (capillary blood, venous blood, plasma or serum) to the test strip. There is no need to prepare reagents or to calibrate the instrument.



### **Insert test strip**

Insert the test strip into the measuring chamber, close the flap and wait for your results. A test specific magnetic code recognizes the parameter of interest.



### **Read off the result**

When the measurement is complete after 2 to 3 minutes, values are displayed, documented via the integrated printer and are also stored to the internal memory for further processing.

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