HumaCombilyzer &
HumaCombina urine test strips

Kerstin Brunnhuber, 24.03.2025

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HumaCombilyzer

Semi-automated urine strip reader

HumaCombilyzer is the ideal new and modern semi-automated urine test strip reader for • standardized incubation, • automated strip reading, • immediate result interpretation, • optional on-the-spot printing, with • very large data storage.

- ✓ Lightweight, handheld device, allowing for on-the spot testing.
- ✓ Optionally battery-powered, ideal for flexible use also in more rural areas.
- ✓ Coloured touch screen, further supporting the easy-to-use intuitive user interface.
- ✓ Microalbumin-to-creatinine ratio, allowing for state-of-the-art diagnostics.
- ✓ LIS capability, eliminating patient result mix-up and ensuring patient testing refund.

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HumaCombilyzer

Semi-automated urine strip reader

4 x AA batteries (optional)

Integrated thermal printer

Integrated PC, 10.000 patient results

Colour touchscreen

LIS connectivity

2 x USB micro connectivity

600 g

200x137x52 mm

Urine strip slider (inside)

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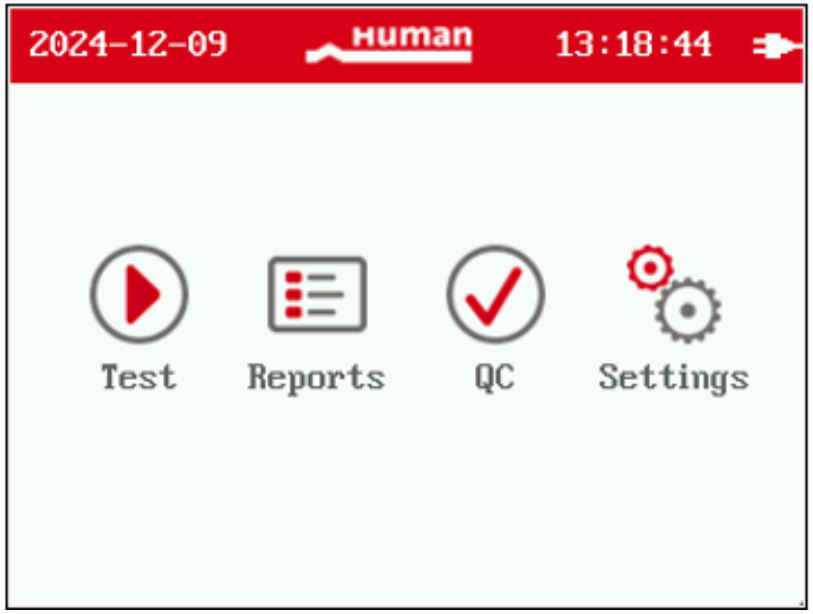
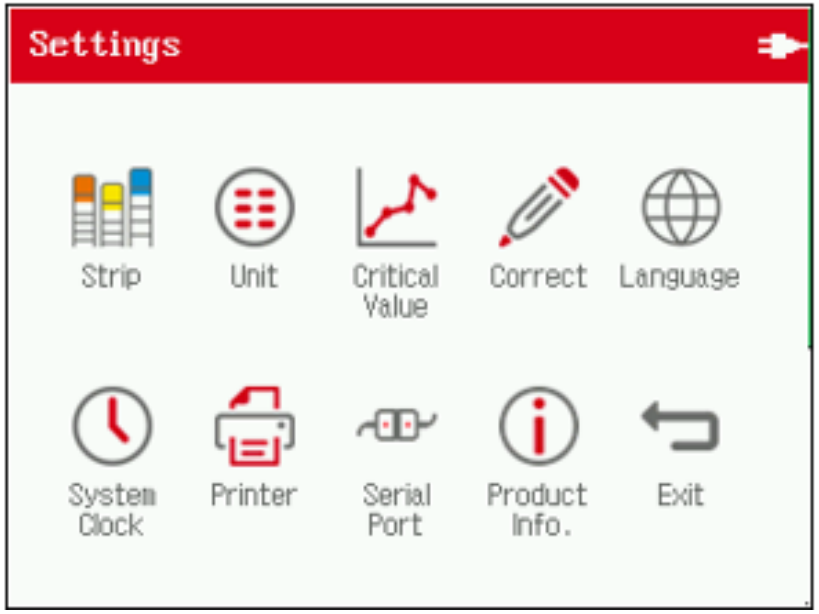
HumaCombilyzer

Main User Interface Screens

Main Menu



Settings



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HumaCombilyzer & HumaCombina

Components developed to fit each other

HumaCombilyzer instrument
REF 17630

Semi-automated urine strip reader

HumaCombina 13 strips
REF 22130

100 strips/vial for testing of 13 analytes

Bilirubin, blood, glucose, ketones, leukocytes,, nitrite, pH, protein, specific gravity, urobilinogen, **ascorbic acid**, **creatinine, microalbumin**

HumaCombina 10 strips
REF 22100

100 strips/vial for testing of 10 analytes

Bilirubin, blood, glucose, ketones, leukocytes,, nitrite, pH, protein, specific gravity, urobilinogen

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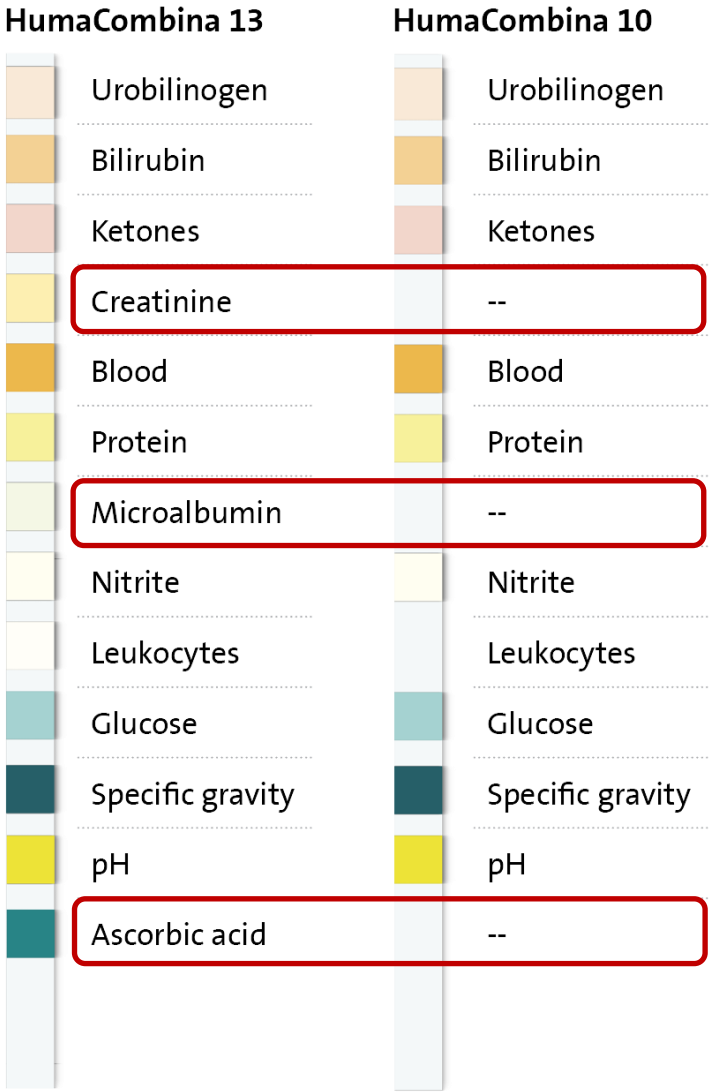
HumaCombina urine testing strips

Your choice

HumaCombina multianalyte urine strips support the diagnostics of diseases like

- Urogenital disorders
- Renal insufficiency
- Diabetes
- Liver diseases
- Tomour diagnostics



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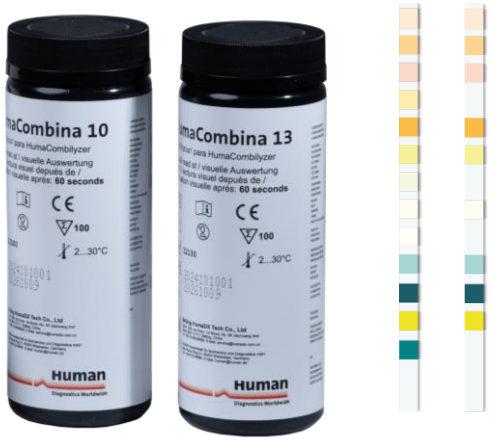
HumaCombina 10 and HumaCombina 13

General Information



Test strips / bottle

100 strips

Stability

Shelf-life 24 months

In-use 30 days

Storage temperature

2 - 30 °C

Not in refrigerator.

Analytes on strips

10: URO, BIL, KET, Blood, PRO, NIT, LEU, GLU, SG, pH

13: 10 + CREA + MALB + VC + MALB:CREA-ratio

Testing temperature

20 - 30 °C

Incubation time

60 seconds

Do not interpret coloration after > 2 min. after immersion.

Instrument Applications

10: HumaCombilyzer

13: HumaCombilyzer

13: Combilyzer^{13}

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HumaCombilyzer & HumaCombina

Products made to fit each other

Visual reading

HumaCombina 10
REF 22100

HumaCombina 13
REF 22130

HumaCombilyzer NEW

Combilyzer[13]

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HumaCombilyzer / HumaCombina

Alternative Result Units

Instrument Screen / Print out “Unit”

Select “Unit”  in the setting menu:

User Manual

11. GRADIENT TABLE

	Arbitrary	International (SI)	Conventional
UBG	Normal	3.4 µmol/L	0.2 mg/dL
	Normal	17 µmol/L	1 mg/dL
	1+	34 µmol/L	2 mg/dL
	2+	68 µmol/L	4 mg/dL
	3+	≥135 µmol/L	≥8 mg/dL
BIL	Neg.	Neg.	Neg.
	1+	17 µmol/L	1 mg/dL
	2+	51 µmol/L	3 mg/dL
	3+	≥103 µmol/L	≥6 mg/dL

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Printout on HumaCombilyzer

Arbitrary values	Conventional values	International (SI) values

Sample No: 08012007
2025-03-05 11:04:07

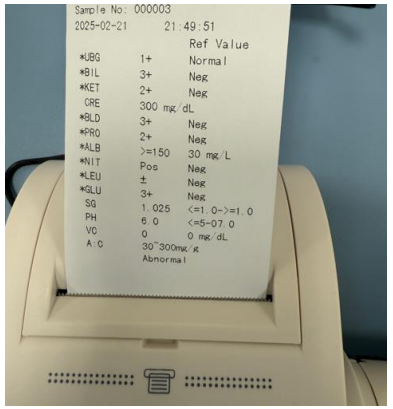
		Ref Value
UBG	Normal	Normal
BIL	Neg	Neg
KET	Neg	Neg
CRE	200 mg/dL	
*BLD	3+	Neg
*PRO	1+	Neg
*ALB	>=150	30 mg/L
*NIT	Pos	Neg
LEU	Neg	Neg
*GLU	1+	Neg
SG	1.020	<=1.0->=1.0
PH	6.0	<=5-07.0
VC	0	0 mg/dL
A:C	30~300mg/g	
	Abnormal	

Sample No: 08012007
2025-03-05 11:04:07

UBG	Normal	0.2 mg/dL
BIL	Neg	Neg.
KET	Neg	Neg.
CRE		200 mg/dL
*BLD	3+	>=200Ery/μL
*PRO	1+	30 mg/dL
*ALB		>=150 mg/L
*NIT		Pos
LEU	Neg	Neg.
*GLU	1+	100 mg/dL
SG	1.020	
PH	6.0	
VC		0 mg/dL
A:C	30~300mg/g	
	Abnormal	

Sample No: 08012007
2025-03-05 11:04:07

UBG	Normal	3.4 μmol/L
BIL	Neg	Neg.
KET	Neg	Neg.
CRE		17.7 mmol/L
*BLD	3+	>=200Ery/μL
*PRO	1+	0.3 g/L
*ALB		>=150 mg/L
*NIT		Pos
LEU	Neg	Neg.
*GLU	1+	5.6 mmol/L
SG	1.020	
PH	6.0	
VC		0 mmol/L
A:C	3.4~33.9mg/mmol	
	Abnormal	



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Method Comparison to non-HUMAN devices

HumaCombina 10 & 13

n = 340 samples each for every analyte distributed throughout the whole measuring range (concentrations).		**HumaCombina 13**/HumaCombilyzer vs. DIRUI R14Ca/Dirui N600		**HumaCombina 10**/HumaCombilyzer vs. DIRUI R14Ca/Dirui N600	
Analyte	Unit	% overall concentration levels exact match	%-agreement (± one colour pad)	% overall concentration levels exact match	%-agreement (± one colour pad)
Urobilinogen	µmol/L	95.59 %	100 %	96.76 %	100 %
Bilirubin	µmol/L	99.41 %	100 %	99.41 %	100 %
Ketone	mmol/L	95.29 %	100 %	97.06 %	100 %
Creatinine	mmol/L	95.00 %	100 %	-	-
Blood	Ery/µL	95.59 %	100 %	96.76 %	100 %
Protein	g/L	97.94 %	100 %	97.65 %	100 %
Microalbumin	mg/L	96.76 %	100 %	-	-
Nitrite	Neg. / Pos.	99.71 %	100 %	99.41 %	100 %
Leukocytes	Leu/µL	96.76 %	100 %	97.65 %	100 %
Glucose	mmol/L	98.24 %	100 %	98.82 %	100 %
Specific Gravity	-	80.00 %	99.12 %	85.00%	100 %
Ascorbic Acid	mmol/L	100.00 %	100 %	-	-
pH	-	95.00 %	100 %	97.35 %	100 %
Microalbumin-to-creatinine ratio	mg/g	89.12 %	na	-	-

Method Comparison to HUMAN Combilyzer[13]

HumaCombina 13

n = 100 samples each for every analyte distributed throughout the whole measuring range (concentrations).		**HumaCombina 13**/HumaCombilyzer vs. HumaCombina 13/**Combilyzer[13]**	
Analyte	Unit	% overall concentration levels exact match	%-agreement (± one colour pad)
Urobilinogen	µmol/L	94.00 %	100 %
Bilirubin	µmol/L	99.00 %	100 %
Ketone	mmol/L	94.00 %	100 %
Creatinine	mmol/L	93.00 %	100 %
Blood	Ery/µL	94.00 %	100 %
Protein	g/L	96.00 %	100 %
Microalbumin	mg/L	96.00 %	100 %
Nitrite	Neg. / Pos.	99.00 %	100 %
Leukocytes	Leu/µL	95.00 %	100 %
Glucose	mmol/L	97.00 %	100 %
Specific Gravity	-	80.00 %	99.12 %
Ascorbic Acid	mmol/L	100.00 %	100 %
pH	-	91.00 %	100 %

HumaCombilyzer

Third party control material

BioRad Liquicheck Urinanalysis Control

- HUMAN Target values / Target value ranges
- Lot 98050 and higher
- On HUMAN website

HUMAN

Target Values

BioRad Liquicheck™ Urinalysis Control

REF

[LOT] 98050 Level 1 98051 Level 2 98052

[IVD] 2025-07-31

Link for (alternative) large value sheet:

https://www.human.de/urinalysis/target-value-sheets

HUMAN HumaCombilyzer 13 TEST STRIP [REF] 22130 (VISUAL) (1) [REF] 22130	Parameter / Analyte	Level 1 - 98031	Level 2 - 98032
	Bilirubin	Negative	51 - 103 µmol/L (2+ - 3+)
	Blood	Negative	ca. 80 - 200 Ery/µL (2+ - 3+)
	Creatinine	50 - 200 mg/dL (4.4 - 17.7 mmol/L)	200 - 300 mg/dL (17.7 - 26.5 mmol/L)
	Glucose	Negative	250 - 500 mg/dL (14 - 28 mmol/L)
	Ketones	Negative	15 - 75 mg/dL (1.5 - 7.5 mmol/L)
	Leukocytes	Negative	70 - 125 Leuco/µL
	Microalbumin	10 mg/L	80 - 150 mg/L
	Nitrite	Negative	Positive
	pH	5.0 - 6.5	5.0 - 6.5
	Protein, Total	Negative	300 - ≥2000 mg/dL (3.0 - ≥ 20.0 g/L)
	Specific Gravity	1.005 - 1.015	1.015 - 1.025
	Urobilinogen	0.2 mg/dL (3.4 µmol/L)	2 - 8 mg/dL (34 - 135 µmol/L)

HUMAN HumaCombilyzer 13 TEST STRIP [REF] 22130 / Combilyzer 13 ANALYZER [REF] 17600	Parameter / Analyte	Level 1 - 98031	Level 2 - 98032
	Bilirubin	Negative	51 - 103 µmol/L (2+ - 3+)
	Blood	Negative	ca. 80 - 200 Ery/µL (2+ - 3+)
	Creatinine	50 - 200 mg/dL (4.4 - 17.7 mmol/L)	200 - 300 mg/dL (17.7 - 26.5 mmol/L)
	Glucose	Negative	250 - 500 mg/dL (14 - 28 mmol/L)
	Ketones	Negative	15 - 75 mg/dL (1.5 - 7.5 mmol/L)
	Leukocytes	Negative	70 - 125 Leuco/µL
	Microalbumin	10 mg/L	80 - 150 mg/L
	Nitrite	Negative	Positive
	pH	5.0 - 6.0	5.0 - 6.0
	Protein, Total	Negative	100 - 300mg/dL (1.0 - 3.0 g/L)
	Protein-to-Creatinine Ratio	normal (30 mg/g ((3.4 mg/mmol)	Abnormal; 30 - 300 mg/g (3.4 - 33.9 mg/mmol)
	Specific Gravity	1.010 - 1.020	1.020 - 1.030
	Urobilinogen	0.2 mg/dL (3.4 µmol/L), normal	2 - 8 mg/dL (34 - 135 µmol/L)

HUMAN HumaCombilyzer 13 TEST STRIP [REF] 22130 / HumaCombilyzer ANALYZER [REF] 12530	Parameter / Analyte	Level 1 - 98031	Level 2 - 98032
	Bilirubin	Negative	51 - 103 µmol/L (2+ - 3+)
	Blood	Negative	ca. 80 - 200 Ery/µL (2+ - 3+)
	Creatinine	50 - 200 mg/dL (4.4 - 17.7 mmol/L)	200 - 300 mg/dL (17.7 - 26.5 mmol/L)
	Glucose	Negative	250 - 500 mg/dL (14 - 28 mmol/L)
	Ketones	Negative	15 - 75 mg/dL (1.5 - 7.5 mmol/L)
	Leukocytes	Negative	70 - 125 Leuco/µL
	Microalbumin	10 mg/L	80 - 150 mg/L
	Nitrite	Negative	Positive
	pH	5.0 - 6.0	5.0 - 6.0
	Protein, Total	Negative	100 - 300mg/dL (1.0 - 3.0 g/L)
	Protein-to-Creatinine Ratio	normal (30 mg/g ((3.4 mg/mmol)	Abnormal; 30 - 300 mg/g (3.4 - 33.9 mg/mmol)
	Specific Gravity	1.010 - 1.020	1.020 - 1.030
	Urobilinogen	0.2 mg/dL (3.4 µmol/L), normal	2 - 8 mg/dL (34 - 135 µmol/L)

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Human

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DEUTSCH
(1) Bei einigen Analyten kann eine atypische Farbe beobachtet werden. Ergebnisse basieren auf Reaktionsstärken.
(2) Atypische Färbung beobachtet

ENGLISH
(1) Atypical color may be observed with some analytes. Results are based on reaction strengths.
(2) Atypical coloration observed

FRANÇAIS
(1) Une couleur atypique peut être observée pour certains analytes. Les résultats sont basés sur les intensités de réaction.
(2) Coloration atypique observée

ESPAÑOL

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Thank you for your attention!

Any questions?

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