

Handheld Fluorometers

Portable and light-weight, our handheld fluorometers provide exceptional sensitivity, rapid-reading, and reliability at a much lower cost than other portable fluorometers on the market. These convenient readers can be used for applications in many fields such as biology, chemistry, medicine, food safety and environmental monitoring. Three common excitation/emission wavelength configurations are offered. Built-in memory saves data, which can be retrieved for data analysis by a USB interface.



Product Type	Single Tube Fluorometer
Read Type	Discrete
Sample Format	200 µL mini glass tube
Excitation & Emission Wavelengths (nm)	360/450, 480/530, 530/590
Sensitivity	100 pM
Dynamic Range	> 6 Orders of Magnitude
Read Out	Direct Concentration or Relative Fluorescence Unit
Calibration	Linear Calibration (Blank and Standard)
User Interface	Touch Screen LCD Display
Power	5V DC Power Adaptor (included), or 4 AA Batteries
Computer Interface	USB Interface for Data Retrieval (included)
Dimensions (L x W x H)	185 mm x 90 mm x 35 mm

BioAssay Systems' assay kits are simple and convenient to use, superior in performance and require little to no time for assay optimization. With a focus on safe, non-radioactive detection techniques, our current product areas include:

- Blood & Urine Chemistry
- Metabolism
- Enzyme Activity
- Anions & Cations
- Oxidative Stress
- Signal Transduction
- HTS Reagents.



§ Fluorometer 360/450nm

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BioAssay Systems ASSAYS FOR HANDHELD READERS

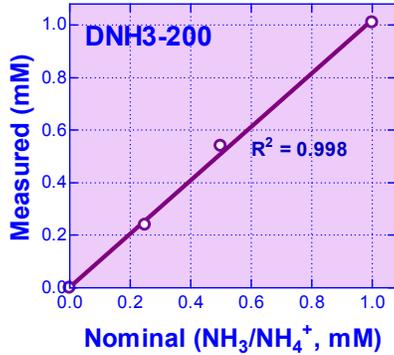
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Toll Free: 1-877-782-3888; info@bioassaysys.com; www.bioassaysys.com

Assay	Sample Types	Assay Procedure	Related Products
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Ammonia Ammonium

- Urine
- Soil extracts and other environmental samples



Assay Performance

- Linear Detection Range: 0.03 to 1 mM
- Detection Limit: 0.03 mM (0.5 ppm)
- Typical Precision (CV%): <4%

Important: prior to assay, bring the assay reagents (cat# DNH3-200) to room temperature.

1. Prepare 1mM Ammonia Standard by mixing 5 μ L provided 20 mM MH_4Cl and 95 μ L H_2O in an Eppendorf tube.

2. Prepare enough Working Reagent by combining the following per tube: 100 μ L Assay Buffer, 4 μ L Reagent A and 4 μ L Reagent B.

In separate mini glass tubes (cat#: MGLTB100), add 10 μ L H_2O (Blank), 10 μ L 1 mM NH_4Cl ("Std"), and 10 μ L Sample.

Then add 100 μ L Working Reagent to each tube and mix. Incubate for 15 min at room temperature in the dark.

3. Switch on the reader. To calibrate the reader, place the "Blank" tube into the sample holder. Press "Calibrate", "Assay 1", then "Blank". Reader starts Measuring.

Press left arrow on "<- Std ->", until the window shows "1.00".

Place the "Std" tube into the Sample holder. Press "Measure". The reader shows "Calibrate Finished". The Reader is now calibrated. Press "Return".

4. Measure. Place the sample tube into the Sample Holder.

Press "Measure" \rightarrow "Assay 1" \rightarrow "Measure".

The ammonia/ammonium concentration (mM) will be displayed in the window. Record the data, or press "Save" to save the data for later retrieval. Press "Return" and then "Measure" for the next sample.

Note: if Sample concentration is higher than the upper limit, dilute Sample in H_2O and repeat assay.

Ammonia Assay Kit

- (cat# DNH3-200):
- 20 mL Assay Buffer
 - 1 mL Reagent A
 - 1 mL Reagent B
 - 400 μ L Standard

Sufficient for 200 tests
Ship: ambient temp.
Store: $-20^\circ C$
Shelf Life: 12 months
More details: please visit our website.

Handheld Fluorometer

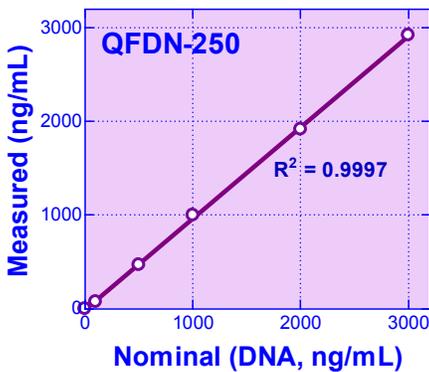
(cat# FL360450)

Mini Glass Tubes

(cat# MGLTB100):
two bags of 100 Tubes.

DNA

- Plasmid DNA
- Genomic DNA
- cDNA and others (e.g. from PCR)



Assay Performance

- Linear Detection Range: 16 - 3,000 ng/mL
- Detection Limit: 16 ng/mL (16 ppb)
- Typical Precision (CV%): <4%

Important: prior to assay, bring the assay reagents (cat# QFDN-250) to room temperature.

1. Prepare 100 μ L 1,000 ng/mL DNA by mixing 10 μ L provided 10 μ g/mL DNA standard and 90 μ L H_2O in an Eppendorf tube.

2. In separate mini-glass tubes (cat#: MGLTB100), add 10 μ L H_2O (Blank), 10 μ L 1,000 ng/mL DNA ("Std"), and 10 μ L Sample. Then add 100 μ L Reagent. Incubate for 5 min.

3. Switch on the reader. To calibrate the reader, place the "Blank" tube into the sample holder. Press "Calibrate", "Assay 1", then "Blank". Reader starts Measuring.

Press left arrow on "<-Std ->", until the window shows "1000.00".

Place the "Std" tube into the Sample holder. Press "Measure". The reader shows "Calibrate Finished". Press "Return".

4. Measure. Place the sample tube into the Sample Holder.

Press "Measure" \rightarrow "Assay 1" \rightarrow "Measure".

The DNA concentration (ng/mL) will be displayed in the window. Record the data, or press "Save" to save the data for later retrieval. Press "Return" and then "Measure" for the next sample.

Note: if Sample concentration is higher than the upper limit, dilute Sample in H_2O and repeat assay.

DNA Assay Kit

- (cat# QFDN-250):
- 50 mL Reagent
 - 1 μ L Standard

Sufficient for 500 tests
Ship: on ice
Store: Standard at $-20^\circ C$;
Reagent at $2-8^\circ C$.
Shelf Life: 12 months
More details: please visit our website.

Handheld Fluorometer

(cat# FL360450)

Mini Glass Tubes

(cat# MGLTB100):
Five bags of 100 Tubes.

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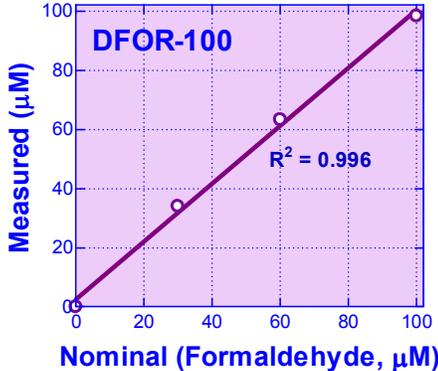
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Assay	Sample Types	Assay Procedure	Related Products
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Formaldehyde

- Formaldehyde extracted from various samples.



Assay Performance

- Linear Detection Range: 0.9 to 100 µM
- Detection Limit: 0.9 µM (27 ppb)
- Typical Precision (CV%): <4%

Important: prior to assay, bring the assay reagents (cat# DFOR-100) to room temperature.

1. First prepare a 35 mM Formaldehyde stock by diluting 4 µL of the provided Standard with 1490 µL H₂O. Next, dilute 4 µL of the 35 mM Formaldehyde with 1396 µL H₂O to make a 100 µM Standard.

2. Prepare enough Working Reagent by combining the following per tube: 33 µL Reagent A and 22 µL Reagent B. In separate mini glass tubes (cat#: MGLTB100), add 50 µL H₂O Blank, 50 µL 100 µM Standard ("Std"), and 50 µL Sample.

Then add 50 µL Working Reagent mix by pipetting. Incubate for 30 min in the dark.

3. Switch on the reader. To calibrate the reader, place the "Blank" tube into the sample holder. Press "Calibrate", "Assay 1", then "Blank". Reader starts Measuring.

Press left arrow on "<- Std ->", until the window shows "100.00".

Place the Std tube into the Sample holder. Press "Measure". The reader shows "Calibrate Finished". The Reader is now calibrated. Press "Return".

4. Measure. Place the sample tube into the Sample Holder.

Press "Measure" → "Assay 1" → "Measure".

The Formaldehyde concentration (µM) will be displayed in the window. Record the data, or press "Save" to save the data for later retrieval. Press "Return" and then "Measure" for the next sample.

Note: if Sample concentration is higher than the upper limit, dilute Sample in H₂O and repeat assay.

Formaldehyde Assay Kit

(cat# DFOR-100):

- 5 mL Reagent A
- 3 mL Reagent B
- 5 mL TCA
- 2 x 1.5 mL Neutralizer
- 50 µL Standard

Sufficient for 100 tests
Ship: ambient temp.
Store: Reagents A and B at 2-8°C; others at RT.
Shelf Life: 18 months
More details: please visit our website.

Handheld Fluorometer

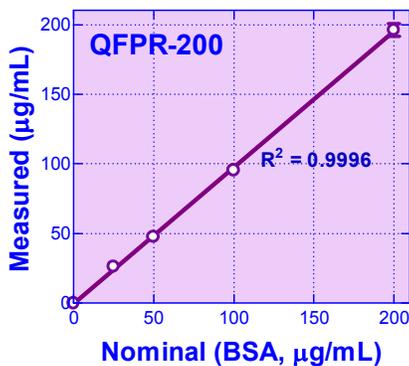
(cat# FL360450)

Mini Glass Tubes

(cat# MGLTB100):
one bag of 100 Tubes.

Protein Peptide

- Proteins
- Peptides



Assay Performance

- Linear Detection Range: 0.05 - 200 µg/mL (BSA)
- Detection Limit: 50 ng/mL (50 ppb)
- Typical Precision (CV%): <5%

Important: 1. primary amine containing buffers (Tris, glycine etc) interfere in the assay and should be avoided; a blank control with the sample buffer is recommended. 2. The assay is based on a kinetic reaction, it is important to keep the incubation times identical between different assay tubes. 3. Prior to assay, bring the assay reagents (cat# QFPR-200) to room temperature.

1. Prepare 100 µg/mL Standard by mixing 10 µL of the provided 1 mg/mL BSA standard with 90 µL H₂O or sample buffer.

2. In separate mini-glass tubes (cat#: MGLTB100), add 10 µL H₂O or Sample Buffer ("Blank"), 10 µL 100 µg/mL BSA Standard ("Std"), and 10 µL Sample.

Then add 90 µL Reagent to each tube and mix. Incubate for 10 min in the dark.

3. Switch on the reader. To calibrate the reader, place the "Blank" tube into the sample holder. Press "Calibrate", "Assay 1", then "Blank". Reader starts Measuring.

Press left arrow on "<- Std ->", until the window shows "100.00".

Place the "Std" tube into the Sample holder. Press "Measure". The reader shows "Calibrate Finished". Press "Return".

4. Measure. Place the sample tube into the Sample Holder.

Press "Measure" → "Assay 1" → "Measure".

The protein concentration (µg/mL) will be displayed in the window. Record the data, or press "Save" to save the data for later retrieval. Press "Return" and then "Measure" for the next sample.

Note: if Sample concentration is higher than the upper limit, dilute Sample in H₂O and repeat assay.

Protein/Peptide Assay Kit

(cat# QFPR-200):

- 20 mL Reagent
- 1 mL Standard

Sufficient for 200 tests
Ship: ambient temp.
Store: -20°C
Shelf Life: 6 months
More details: please visit our website.

Handheld Fluorometer

(cat# FL360450)

Mini Glass Tubes

(cat# MGLTB100):
two bags of 100 Tubes.

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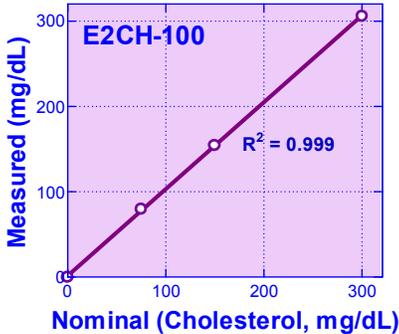
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Assay	Sample Types	Assay Procedure	Related Products
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Cholesterol

- Serum
- Plasma
- Other biological samples



Assay Performance

- Linear Detection Range: 1 to 300 mg/dL
- Detection Limit: 1 mg/dL (26 μM, 10 ppm)
- Typical Precision (CV%): <2%

Important: prior to assay, bring the assay reagents (cat# E2CH-100) to room temperature. Keep enzyme tubes cold during the assay.

1. Mix 5 μL provided cholesterol standard with 145 μL Assay Buffer. Dilute this mixture by mixing 5 μL with 495 μL Assay Buffer. Label this 3000-fold diluted standard as "100 mg/dL". Dilute serum/plasma samples 1:1000 in the Assay Buffer.

2. Prepare enough Working Reagent by combining the following per tube: 55 μL Assay Buffer, 1 μL Enzyme Mix, 1 μL Dye Reagent. In separate mini-glass tubes, add 50 μL Assay Buffer ("Blank"), 50 μL "100mg/dL" Standard ("Std"), and 50 μL Sample. Then add 50 μL Working Reagent to each tube. Incubate for 30 min at room temperature in the dark.

3. Switch on the reader. To calibrate the reader, place the "Blank" tube into the sample holder. Press "Calibrate", "Assay 1", then "Blank". Reader starts Measuring.

Press left arrow on "<- Std ->", until the window shows "100.00".

Place the "Std" tube into the Sample holder. Press "Measure". The reader shows "Calibrate Finished". The Reader is now calibrated. Press "Return".

4. Measure. Place the sample tube into the Sample Holder.

Press "Measure" → "Assay 1" → "Measure".

The Cholesterol concentration (mg/dL) will be displayed in the window. Record the data, or press "Save" to save the data for later retrieval. Press "Return" and then "Measure" for the next sample.

Note: if Sample concentration is higher than the upper limit, dilute Sample in Assay Buffer and repeat assay.

Cholesterol Assay Kit

- (cat# E2CH-100):
- 20 mL Assay Buffer
 - 120 μL Enzyme Mix
 - 120 μL Dye Reagent
 - 1 mL Standard

Sufficient for 100 tests
 Ship: on ice
 Store: -20°C
 Shelf Life: 12 months
 More details: please visit our website.

Handheld Fluorometer

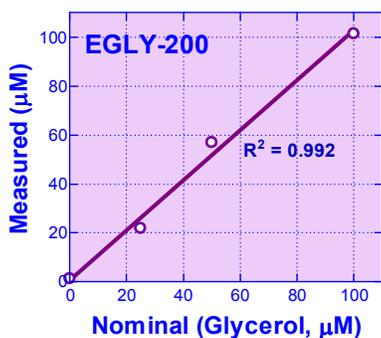
(cat# FL530590)

Mini Glass Tubes

(cat# MGLTB100):
 one bag of 100 Tubes.

Glycerol

- Serum
- Plasma
- Other samples



Assay Performance

- Linear Detection Range: 2 -100 μM
- Detection Limit: 2 μM (18 mg/dL, 0.18 ppm)
- Typical Precision (CV%): <8%

Important: prior to assay, bring the assay reagents (cat# EGLY-200) to room temperature. Keep enzyme tubes cold during the assay.

1. Prepare 1 mM Standard by mixing 5 μL of the provided standard with 495 μL distilled H₂O. Then mix 50 μL of the 1mM Standard with 450 μL H₂O to obtain 100 μM Glycerol Standard. In separate mini-glass tubes (cat#: MGLTB100), add 10 μL H₂O ("Blank"), 10 μL 100 μM Glycerol Standard ("Std"), and 10 μL Sample.

2. Prepare enough Working Reagent for all assay tubes, by mixing per tube: 100 μL Assay Buffer, 2 μL Enzyme Mix, 1 μL ATP and 1 μL Dye Reagent in a clean Eppendorf tube.

Then add 100 μL Working Reagent to each tube and mix. Incubate for 20 min in the dark.

3. Switch on the reader. To calibrate the reader, place the "Blank" tube into the sample holder. Press "Calibrate", "Assay 1", then "Blank". Reader starts Measuring.

Press left arrow on "<-Std ->", until the window shows "100.00".

Place the "Std" tube into the Sample holder. Press "Measure". The reader shows "Calibrate Finished". Press "Return".

4. Measure. Place the sample tube into the Sample Holder.

Press "Measure" → "Assay 1" → "Measure".

The Glycerol concentration (μM) will be displayed in the window. Record the data, or press "Save" to save the data for later retrieval. Press "Return" and then "Measure" for the next sample.

Note: if Sample concentration is higher than the upper limit, dilute Sample in H₂O and repeat assay.

Glycerol Assay Kit

- (cat# EGLY-200):
- 24 mL Assay Buffer
 - 500 μL Enzyme Mix
 - 250 μL ATP
 - 220 μL Dye Reagent
 - 100 μL Standard

Sufficient for 200 tests
 Ship: on ice
 Store: -20°C
 Shelf Life: 12 months
 More details: please visit our website.

Handheld Fluorometer

(cat# FL530590)

Mini Glass Tubes

(cat# MGLTB100):
 two bags of 100 Tubes.

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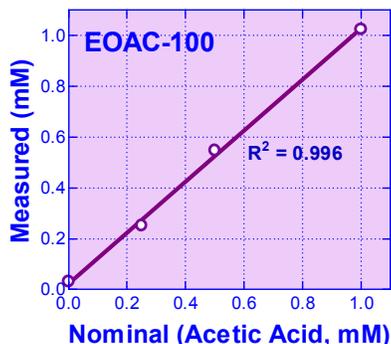
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Assay	Sample Types	Assay Procedure	Related Products
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Acetate (Acetic Acid)

- Biological samples
- Food, drink & environment samples



Assay Performance

- Linear Detection Range: 0.1 to 1 mM
- Detection Limit: 0.1 mM (0.59 mg/dL, 5.9 ppm)
- Typical Precision (CV%): <5%

Important: prior to assay, bring the assay reagents (cat# EOAC-100) to room temperature. Add 650 μ L Developer to Enzyme A and 120 μ L Developer Enzyme B tubes. Mix well by pipetting and vortexing. Keep enzyme tubes cold during the assay.

1. Prepare 1 mM Acetate Standard by mix 5 μ L provided Standard with 995 μ L H₂O. In separate mini-glass tubes, add 10 μ L H₂O ("Blank"), 10 μ L 1 mM Standard ("Std"), and 10 μ L Sample.
2. Prepare enough Working Reagent by combining the following per tube: 90 μ L Assay Buffer, 6 μ L Enzyme A, 1 μ L Enzyme B, 1 μ L ATP, 1 μ L Dye Reagent.

Add 90 μ L Working Reagent to each tube. Incubate for 30 min at room temperature in the dark.

3. Switch on the reader. To calibrate the reader, place the "Blank" tube into the sample holder. Press "Calibrate", "Assay 1", then "Blank". Reader starts Measuring.

Press left arrow on "<- Std ->", until the window shows "1.00".

Place the "Std" tube into the Sample holder. Press "Measure". The reader shows "Calibrate Finished". The Reader is now calibrated. Press "Return".

4. Measure. Place the sample tube into the Sample Holder.

Press "Measure" \rightarrow "Assay 1" \rightarrow "Measure".

The Acetate concentration will be displayed in the window. Record the data, or press "Save" to save the data for later retrieval. Press "Return" and then "Measure" for the next sample.

Note: if Sample concentration is higher than the upper limit, dilute Sample in H₂O and repeat assay.

Acetate Assay Kit

- (cat# EOAC-100):
- 25 mL Assay Buffer
 - Enzyme A (dried)
 - Enzyme B (dried)
 - 120 μ L ATP
 - 120 μ L Dye Reagent
 - 1 mL Developer
 - 1 mL Standard

Sufficient for 100 tests
Ship: on ice
Store: -20°C
Shelf Life: 12 months
More details: please visit our website.

Handheld Fluorometer

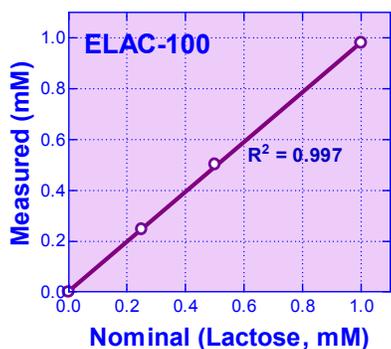
(cat# FL530590)

Mini Glass Tubes

(cat# MGLTB100):
one bag of 100 Tubes.

Lactose

- Biological samples
- Food and drink samples



Assay Performance

- Linear Detection Range: 0.04 to 1 mM
- Detection Limit: 0.04 mM (1.4 mg/dL, 14 ppm)
- Typical Precision (CV%): <5%

Important: prior to assay, bring the assay reagents (cat# ELAC-100) to room temperature. Add 120 μ L dH₂O to Enzyme Mix and 120 μ L dH₂O to Lactase tubes. Mix well by pipetting and vortexing. Keep enzyme tubes cold during the assay.

1. Prepare 1 mM Lactose Standard by mix 10 μ L provided Standard with 190 μ L H₂O. In separate mini-glass tubes, add 10 μ L H₂O ("Blank"), 10 μ L 1 mM Standard ("Std"), and 10 μ L Sample.
2. Prepare enough Working Reagent by combining the following per tube: 90 μ L Assay Buffer, 1 μ L Enzyme Mix 1 μ L Lactase and 1 μ L Dye Reagent. Mix well.

Add 90 μ L Working Reagent to each tube. Incubate for 30 min at room temperature in the dark.

3. Switch on the reader. To calibrate the reader, place the "Blank" tube into the sample holder. Press "Calibrate", "Assay 1", then "Blank". Reader starts Measuring.

Press left arrow on "<- Std ->", until the window shows "1.00".

Place the "Std" tube into the Sample holder. Press "Measure". The reader shows "Calibrate Finished". The Reader is now calibrated. Press "Return".

4. Measure. Place the sample tube into the Sample Holder.

Press "Measure" \rightarrow "Assay 1" \rightarrow "Measure".

The Lactose concentration will be displayed in the window. Record the data, or press "Save" to save the data for later retrieval. Press "Return" and then "Measure" for the next sample.

Note: if Sample concentration is higher than the upper limit, dilute Sample in H₂O and repeat assay.

Lactose Assay Kit

- (cat# ELAC-100):
- 10 mL Assay Buffer
 - Enzyme Mix (dried)
 - Lactase (dried)
 - 120 μ L Dye Reagent
 - 1 mL Standard

Sufficient for 100 tests
Ship: on ice
Store: -20°C
Shelf Life: 12 months
More details: please visit our website.

Handheld Fluorometer

(cat# FL530590)

Mini Glass Tubes

(cat# MGLTB100):
one bag of 100 Tubes.