MAXLIFE

FLUOROMETER FOR QUANTIFICATION OF DNA, RNA, AND PROTEIN

User Manual

MADE IN RUSSIA

Contents

Introduction. 1.

The MAXLIFE is a fluorometer for the quantitation of DNA, RNA, and protein, using the highly sensitive and accurate fluorescence-based quantitation dyes. Use of dyes selective for DNA, RNA, and protein minimizes the effects of contaminants in your sample that affect the quantitation (pigments, biopolymers). Further, technologies used in the MAXLIFE Fluorometer for attaining the highest sensitivity allow you to use as little as 1 µL of sample and still achieve high levels of accuracy, even with very dilute samples.

Specifications:

- Small sample (1 ul)
- Sensitivity (DNA, RNA) - 0.5 ng/uL (10% CV)
- Sensitivity (Protein) - 5 ng/uL (10% CV)
- Calculates concentration automatically
- Portable (Battery and AC power 110-250V)
- Compact size at only 17 x 13 x 3.5 cm
- Easily customize reagents and Dyes

Instrument Specifications. 2.

Operating power: 100–240 VAC, 0.4 A
Frequency: 50–60 Hz
Electrical output: 12 VDC, 1.5 A
Installation site: Indoor use only
Operating temperature: 10–45°C
Maximum relative humidity: 20–80%, non-condensing
Instrument dimensions: 13 cm × 17 cm × 3.5 cm;
Weight: 370 g
Dynamic range: 4 orders of magnitude
Processing time: ≤ 3 seconds/sample
Light sources: Blue LED (max ~470 nm)
Emission filter: 500–800 nm
Detectors: Photodiodes
Calibration type: 2-point standard
Tube type: 0.2 mL PCR polypropylene tubes (non-colored)
Ready-to-use: 2 seconds

Description of MAXLIFE Fluorometer. 3.

(1) Display
(2) Socket for samples with lid
(3) Button [ON / OFF / START]
(4) Vents
(5) AC adapter (AC 110-220 V / DC 12 V)

Power. 4.

The MAXLIFE Fluorometer is a stand-alone instrument that does not require a connection to a computer.

1. After unpacking the instrument, place the instrument on a flat, level, dry surface.

2. Plug the power cord into the electrical outlet. Be sure to use only the power cord supplied with your instrument. Powering

the instrument with an unapproved power cord may damage the instrument. Plug end of the supplied power cord into the MAXLIFE Fluorometer.

3. The instrument is automatically charging on when it is plugged in.

4. To power-on the MAXLIFE Fluorometer, press [ON/OFF]. To power-off the MAXLIFE Fluorometer, press [ON/OFF] ca 3 sec (long press).

5. The built-in rechargeable Li-Ion battery provides up to 8 hours of continuous operation. Charger notes Batteries tend to heat up during use.

Technology. 5.

For each assay, run new standards for calibrating the MAXLIFE Fluorometer.

1. Set up two Assay Tubes for the standards and one tube for each user sample.

2. Prepare the Working Solution by diluting the Dye 1:250 in buffer. Prepare 250 µL of Working Solution for each sample and two standards.

3. Prepare the test tubes (0,2 mL PCR).

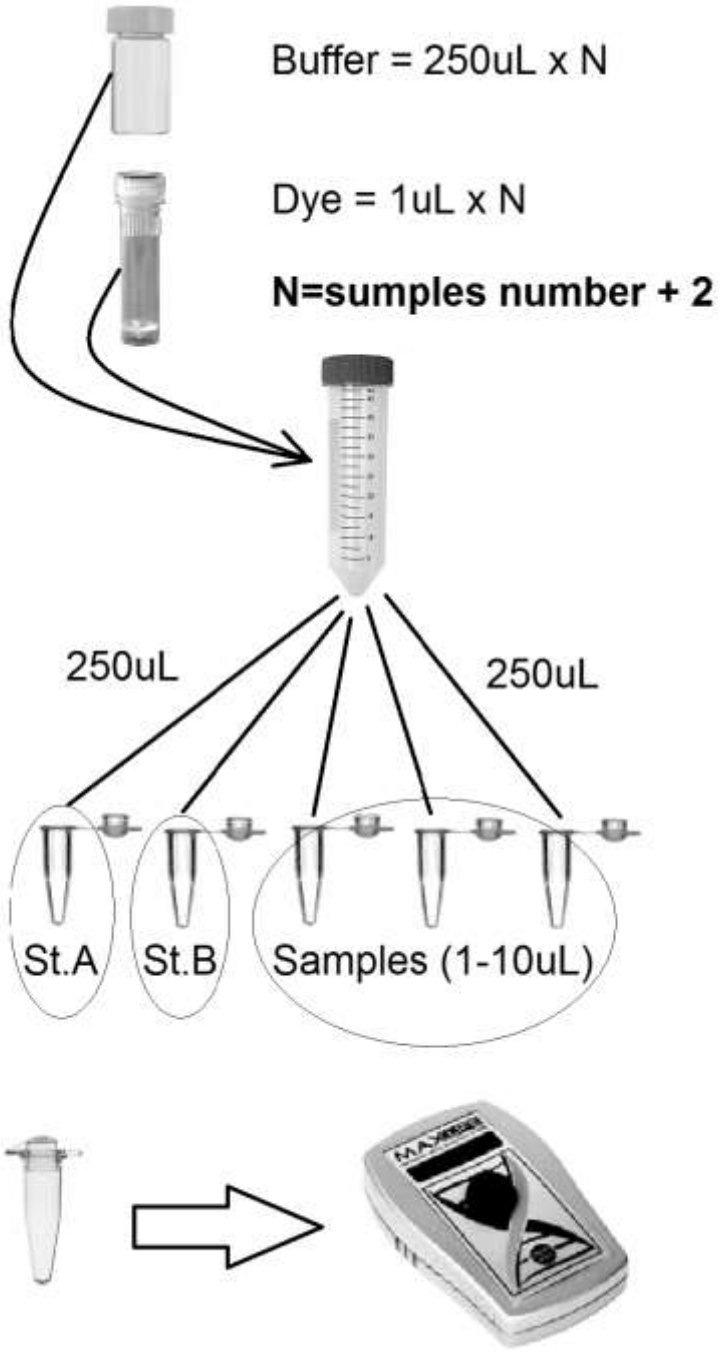
4. Pour into separate test tubes to 1 µL (10 of protein) standard or sample. Add 250 µL of Working Solution for each tube.

5. Vortex all tubes for 2–3 seconds. Prevent the formation of bubbles. Otherwise, spin tubes 1 sec. ca 10 000 g.

6. Insert the tubes in the MAXLIFE Fluorometer and take readings: Standard A tube; Standard B tube; samples tubes.

7. Optional: Add 9 µL sample if concentration <5 ng/uL. Divide the result by 10.

8. Optional: Dilute the sample 10 times, if concentration >200 ng/uL. Multiply the result by 10.


Buffer = 250uL x N
Dye = 1uL x N
N=sumples number + 2
250uL
250uL
St.A
St.B
Samples (1-10uL)

Calibration. 6.

For each assay, you have the choice to run a new calibration or to use the values from the previous calibration. As you first use the instrument, you should perform a new calibration each time. As you become familiar with the assays, the instrument, your pipetting accuracy, and significant temperature fluctuations within your laboratory, you should determine the level of comfort you have using the calibration data stored from the last time the instrument was calibrated. Remember also that the fluorescence signal in the tubes containing the standards and the samples is stable for not longer than 0,5 hours.

High Reading (Conc.>200ng/uL). 7.

Your sample is out of range. Use a sample that is less concentrated.

Dilute the sample 10 times

- Ensure that the lid is closed while reading standards and samples.
- Prepare samples and standards according to the instructions in the MAXLIFE assay kit you are using.
- Ensure that the assay is performed entirely at room temperature.

Low Reading (Conc.<5ng/uL). 8.

Your sample is out of range.
Add 9 µL sample into test tube.
- Ensure that you have prepared the MAXLIFE working solution correctly (1:250 dilution using the buffer provided in the kit).
- Ensure that you have prepared the standard tubes correctly (1 µL of each standard in 250 µL of working solution).
- Ensure that the standard and sample tubes are filled L.
- Protect the MAXLIFE reagent and working solutions from light.
- Standards must be used in the correct order (A, B).
- Ensure that the assay is performed entirely at room temperature.

Handling Samples. 9.

The calibration standards included in the MAXLIFE RNA Kits are high-quality RNA standards.
The integrity and concentration of these standards is critical to the optimal performance of the MAXLIFE RNA assay. We highly recommend treating the RNA standards as you would any other precious RNA. Use appropriate RNAse-free handling techniques, including RNAse-free gloves, pipette tips, and tubes. Keep the tube lids closed whenever possible; do not touch the pipet to the inside wall of the tube when withdrawing a sample, and return the RNA standard to the refrigerator as soon as possible after use.
- Ensure that the assay tubes are at room temperature at the time the reading is taken. Do not hold assay tubes in your hand and do not leave assay tubes in the MAXLIFE.

Fluorometer for longer than it takes to read the fluorescence.

- Be careful not to spill sample into the sample chamber.

Promptly wipe any spills.

- The MAXLIFE assays are very sensitive and even small amounts

of material from a previous sample may result in errors. Use a clean 0.2 mL PCR tube for each reading.

- The tube must be clean and dry on the outside when taking readings. Moisture and condensation on the tube surface can lead to reading errors.

- Minute bubbles in samples will cause errors in readings. Be sure not to introduce bubbles into samples. Slight tapping on the tube wall or brief centrifugation will often help dissipate bubbles.

Contacts