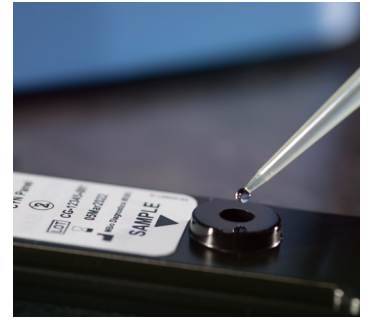
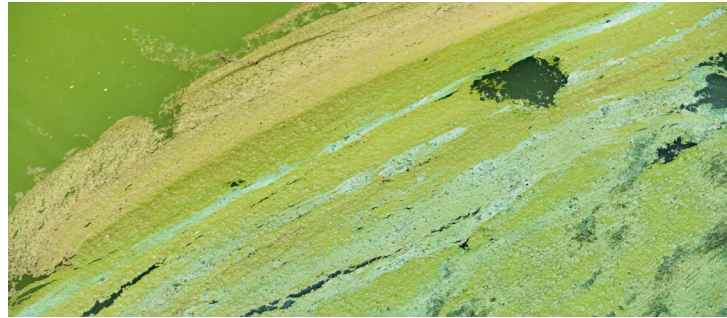




Frequently Asked Questions:

LightDeck® MINI Algal Toxin Analyzer



INSTRUMENTS & CONSUMABLES

What is included with the LightDeck Mini (Hach PN 2165600)?

The following items are included in the box: one (1) LightDeck Mini Instrument, one (1) USB 2.0 A to B cable, one (1) power supply and cord for use in the United States of America, one (1) USB flash drive containing LightDeck-T software installer, one (1) fixed volume micropipette 100 uL, thirty (30) pipette tips 5-200 uL capacity, and one (1) User Manual. Test cartridges (Hach PN 2165700) are sold separately.

What additional lab equipment is required to use the LightDeck Mini?

Users need an additional computer and LightDeck test cartridges to use the LightDeck Mini. Hach recommends that glass containers (instead of plastic ones) be used to store water samples to avoid plastic contamination.

What is included in the cartridge kits (Hach PN 2165700)?

Twenty-five (25) tests are included per kit, as well as a USB flash drive containing calibration information for the cartridges and a packed of information containing a quick start guide, user instructions, a Certificate of Analysis, and SDS Sheets.

What is lower detection limit for MC and CYN?

The lower limit of detection for MC is 0.5 µg/L and 0.7 µg/L for CYN. These lower limits may fluctuate with environmental temperatures and slightly between individual cartridge lots, which is why we do not specify firm lower limits.

What is measurement sensitivity and accuracy?

There is a lot of variation in the literature about what constitutes "accuracy." The reference EPA methods are also known to have problems. The Gen 2 cartridges have been evaluated as part of the LightDeck/NOAA MERHAB collaborations, the results of which are expected to be published in 2023. Please contact LightDeck technical support if you have questions about suitability for your application.

How does a lower limit of detection and measurement sensitivity compare to the ELISA method?

ELISA typically does have a lower limit of detection than the LightDeck method. ELISA is usually around 0.15 ug/L with an expected accuracy of 75–125% for MC (Eurofins Abraxis Microcystins-ADDA ELISA) and 80–120% for CYN (Eurofins Abraxis Cylindrospermopsin ELISA).

Can the LightDeck test handle methanol and at what level? (ELISA method can handle 5%)

We have not fully validated how much methanol can be used, but prior experience indicates that up to 5% is likely ok. LightDeck Diagnostics cannot guarantee any results if methanol is used.

Is this test method approved by EPA?

This testing method is not approved by EPA. Customers should use the LightDeck MINI as a fast and easy-to-use screening solution to monitor water samples of interest and trending toxin levels over time. Any positive results should be verified with approved methods. Ten-minute turnaround time is a critical advantage when you don't have two to three weeks to wait for lab results!

Can this analyzer measure parameters besides cyanotoxins?

LightDeck Diagnostics serves many applications across human diagnostics, veterinary diagnosis, and environmental testing. Within the water quality industry only microcystin and cylindrospermopsin are currently testable on the LightDeck MINI, although development is underway for panel expansion to include saxitoxin and anatoxin-a. The platform is flexible and can accommodate additional water-quality parameters in the future.

Non-water quality parameters include COVID-19 antibodies, COVID-19 antigens, thyroid panels, numerous male and female hormones, and blood response (biomarkers). Contact our general support line if you have questions regarding non-water quality parameters: info@lightdeckdx.com.

What is the shelf-life of the cartridges?

Expiration is eight (8) months from date of manufacture.

How does the phrase '2+10+30' relate to LightDeck?

This is Hach's mantra for the LightDeck MINI: Simultaneously test 2 major toxins, with results in 10 minutes, for less than \$30 per test!

Are Certificates of Conformance (COC) available?

No, COC's are not available for this instrument.

Are Certificates of Analysis (COA) available?

Yes, a COA will come with each new cartridge test kit. If that COA is lost, LightDeck can provide additional copies if provided with the test kit lot number.

Is this product available in Canada and Mexico?

This product will be available in Canada and Mexico in late 2022/ early 2023.

Are LightDeck Test Cartridges considered hazardous waste?

No. The only hazard is caused by the water sample that one adds to the test cartridge.

Do you offer trial periods for the LightDeck MINI?

Yes! Please contact your local Hach sales representative or sign up for a free trial period here. We will include a few free test cartridges (while supplies last for a given HAB season) but if you need to run more than 2-3 tests, you will need to purchase a cartridge pack (Hach PN 2165700) separately.

What is the lead time for this product?

Lead times are minimal with zero supply chain risk. Expect your cartridges within approximately two (2) weeks from purchase order.

Can the LightDeck Mini be used to test finished drinking water?

Yes, the LightDeck Mini can be used to test finished drinking water, although pretreatment may be necessary. Samples with free chlorine up to 4.5 mg/L Cl₂ do not require pretreatment. For those samples with monochloramine or if the type of chlorine present is unknown, pretreat the sample with 1 drop of sodium thiosulfate per 10 mL sample (mixed well prior to measurement on the LightDeck platform). Ascorbic acid pills are not compatible with the LightDeck test. All pretreatment scenarios were tested with chlorine/monochloramine levels up to 4.5 mg/L Cl₂.

What is the warranty for the LightDeck Mini Analyzer?

The manufacturer's warranty is 1 year (365 days).

TEST PROCEDURES

What kind of computer is required to use the LightDeck Mini?

The LightDeck-T software is compatible with computers running Windows 7 or higher. To connect with the LightDeck Mini Instrument, the computer must have a USB 2.0 or higher interface.

Can LightDeck be used to detect intra- versus extra-cellular cyanotoxins?

LightDeck does not natively differentiate between levels of intra- and extra-cellular toxin concentrations. LightDeck is intended to be used for testing total toxin concentrations of MC and CYN after cell lysis, using the freeze-thaw method.

In principle, the concentration of extracellular toxin could be measured for an un-lysed sample and then compared to the total toxins measured after lysis (using a separate cartridge). This may provide an indication of relative intracellular toxin compared to total toxin concentration, however this approach is not recommended. The LightDeck MINI system is intended for measurement of total toxin concentration following lysis, so extracellular toxin concentrations of un-lysed cells may not be as reliable.

Can the LightDeck test handle quenching agents such as EDTA, Sodium Sulfide, Sodium Thiosulfate, and Ascorbic Acid?

The use of quenching agents has not been extensively tested at the LightDeck Diagnostics Research and Development Labs. In preliminary testing, the assay is compatible with 1 drop of 0.1 N Sodium Thiosulfate for each 10 mL of sample. Initial results indicate that ascorbic acid is not compatible with the LightDeck test. Insufficient evidence is available for the other quenching agents indicated, and as such they should be avoided for this test.

What is the timeline for saxitoxin and anatoxin-a sampling to become available?

Our Saxitoxin tests are in the final stages of validation and testing, with commercialization anticipated soon. Consult with your sales representative about the availability of the triplex (MC, CYN, STX) assay.

Anatoxin-a tests are still in the research and development phase and are not anticipated to be commercially available until 2024 at the earliest.

Is there an alternate method in development to the Freeze-Thaw method?

LightDeck Diagnostics has developed a field-tested, functional prototype cell lyser that does not use the time-intensive Freeze-Thaw method (which is required for ELISA testing, EPA Method 546). If you would like to be kept apprised of developments with this lyser, please consider adding yourself to our mailing list or reaching out periodically to our Technical Support help line.

Is sample preparation required?

Total toxin quantitation requires algal cell lysis. The LightDeck tests have been validated with freeze-thaw cell lysis as described in EPA Method 546 Section 11.1. Running samples without cell lysis will provide insight into dissolved toxin concentration. Users should be aware that some cell lysis may occur after sample collection during handling.

Is this a field portable instrument?

No, the LightDeck MINI is currently a benchtop analyzer, and is not recommended for use in the field.

Are there any special sample collection considerations?

Samples should be collected in glass containers and tested within 24 hours of collection. Samples must be frozen and then thawed if longer storage is needed. Plastic collection containers can absorb microcystin and cause lower results.

Does Hach/LightDeck sell control samples?

Due to the hazardous nature of cyanotoxin chemicals, neither Hach nor LightDeck sells control samples for cyanotoxins. Cyanotoxin standards are available for commercial purchase from the National Research Council Canada [here](#).

How does the calibration work (type of calibration does the manufacture perform)?

Each cartridge lot is factory calibrated by measuring a standard curve of each toxin, like calibrations done in ELISA tests. This information is directly integrated into a cartridge definition file, which is contained on the USB provided with each cartridge lot. This integrated calibration allows the LightDeck MINI system to directly report a concentration without requiring additional calibrators.

Why is there a range variation from lot to lot?

As with all immunoassays, lot to lot variation in performance is expected due to slight differences in biologic reagents during production. Each lot of cartridges are calibrated at LightDeck prior to distribution to minimize variability between lots, and to eliminate the need for user calibration prior to testing.

Can expired cartridges be used?

No, cartridges cannot be used after the provided expiration date. Beyond the provided expiration date, the chemicals needed for fluorescence testing may degrade and risk inconsistent results, such as false positives or negatives.

Where can I learn more about Harmful Algal Blooms/cyanotoxins?

The Hach website offers downloadable resources like datasheets, user manuals, application notes, and videos here. This source contains other useful resources.

For assistance with questions not answered here please consult the product data sheet, user manual or LightDeck Technical Support via email: support@lightdeckdx.com or phone: (303) 974-9381.



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