

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**That the Chlorine and TRO monitor**

with type designation(s)  
**CLX-XT2**

Issued to

**HF scientific, Inc.**  
**Fort Myers, FL, USA**

is found to comply with

**DNV GL rules for classification – Ships**  
**USCG Federal Register 46 CFR part 162, subpart 162.060-30**

## Application :

**Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

### Location classes:

|                    |                                       |
|--------------------|---------------------------------------|
| <b>Temperature</b> | <b>C (See Application/Limitation)</b> |
| <b>Humidity</b>    | <b>B</b>                              |
| <b>Vibration</b>   | <b>A</b>                              |
| <b>EMC</b>         | <b>A</b>                              |
| <b>Enclosure</b>   | <b>B / IP56</b>                       |

Issued at **Høvik** on **2018-10-30**

This Certificate is valid until **2023-10-29**.

DNV GL local station: **Miami**

for **DNV GL**

Approval Engineer: **Siri Tag**

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**Odd Magne Nesvåg**  
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



## Product description

The CLX-XT2 Online Chlorine and TRO Monitor allow for the reading of oxidant levels in a water sample. The CLX-XT2 uses a 515nm LED as the measurement light source.

## Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Measures to be provided for operation below 0°C to avoid freezing of water.

The product has been tested for nominal voltage from 100 – 240 VAC.

## Type Approval documentation

### Tests carried out

Applicable tests according to:

Class guideline, DNVGL-CG-0339, November 2016.

USCG Federal Register 46 CFR part 162, subpart 162.060-30.

### Marking of product

Name of maker: "HF scientific"

Unit type: CLX-XT2 CHLORINE MONITOR

Serial number

Supply voltage: 100-240 VAC

Supply frequency: 47-63 Hz

Supply power: 250 VA

### Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE