

# Luminometr LUMIStox 300

## SPECIFICATIONS

It is a measuring system in full equipment for the determination of toxicity according to ČSN EN ISO 11348-1 Water quality - Determination of the inhibitory effect of water samples on the light emission *Vibrio fischeri* (Luminescent bacteria test) - Part 1: Method using freshly prepared bacteria using luminescent bacteria. The measurement set consists of luminometer LUMIStox 300 and thermostat LUMIStherm from Hach - Lange GmbH. The thermostat is used for tempering bacteria and is a condition of the procedure for working with luminometers according to ČSN. It is an external separate unit with shafts for 30 measuring cuvettes and two storage containers for toxicant solutions. In addition to measurements according to these standards, the instrument can also be used for measurements according to other luminometric methods.

## MEASURING METHODS

The Bacterial Bioluminescence Toxicity Test (BBTT) is used to determine the acute toxicity of various substances. The principle is based on the ability of marine fluorescent bacteria to respond by changing bioluminescence to the presence of xenobiotics in their surroundings. The luminescent bacteria *Vibrio fischeri*, which are supplied by the manufacturer in a dehydrated state guaranteeing sufficient bioluminescence, are kept in the cold until the toxicity is determined and are rehydrated just before use. After resuscitation, the suspension is treated as a normal chemical.



## OVERVIEW OF MEASURABLE PARAMETERS / OUTPUT INFORMATION

The BBTT test takes only a few minutes depending on the type of substance (screening) or several tens of minutes to determine an effective  $EC_{50}$  concentration.

## TYPES OF SAMPLES SUITABLE FOR ANALYSIS / MEASUREMENT CONDITIONS

The  $EC_{50}$  parameter can be determined for liquid samples, e.g. contaminated surface or industrial wastewater. Measurements can be performed under normal laboratory conditions and ambient temperature, optimally according to the standard at 21 °C.