

# Dissolved oxygen, O2

LAST CHANGED: 31 MARCH 2022

Dissolved oxygen is measured in the field with a handheld instrument and an optical oxygen sensor which is submerged in the water. Earlier was the Winkler method used.

The optical method is in the standard ISO 17289:2014 described as:

"Optical sensors that measure luminescence/fluorescence lifetime or luminescence/fluorescence phase shift are normally composed of a luminophore or fluorescent dye situated in a sensor cap, a light source [e.g. a light emitting diode (LED)], and a photodetector. The pulsed or modulated light from the source causes excitation of the luminophore, which is quenched in the presence of oxygen. The photodetector converts the resulting light emission into an electrical signal that can be sampled and processed to compute the phase shift or fluorescence or luminescence lifetime. This phase shift or excitation lifetime is used to quantify dissolved oxygen concentrations."

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**Current method of measurement (optical sensor)**

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Method: ISO 17289:2014

Instrument: YSI portable instrument ProODO or ProSolo and cabel with ODO/T sensor or Hach portable instrument HQ30d and cable with Intellical LDO sensor

2016 to 2021 were optical sensor and the Winkler method used in parallell.

## Previous methods (Winkler method)

Measurements were made according to the Winkler method (reduction of O<sub>2</sub> by Mn(II) followed by iodometric quantification of oxidised Mn).

2008-03 – 2021-12

Method: SS EN 25813, 1st ed. (modified)

Instrument: Metrohm Titrator Titrino 785 DMP. Metrohm elektrod 6.0451.100, Pt/5-80 degrees.

1987-08 – 2008-02

Method: Karlgren, L. 1961, Vattenkemiska analysmetoder (Hydrochemical Analytical Methods, In Swedish).


Instrument: Metrohm Titrator Dosimat 665.

1965-01 – 1987-07

Method: Karlgren, L. 1961, Vattenkemiska analysmetoder (Hydrochemical Analytical Methods, In Swedish).

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## Links

Read more about [oxygen on Wikipedia](#).

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