



HIDEX

Hidex 600 OX

Automated Oxidizer

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LabLogic

EXPERIENCE & EXPERTISE

Oxidize your samples with confidence

The Hidex 600 OX Oxidizer is a fully computer controlled automated catalytic combustion unit for the preparation of organic samples, such as soil, concrete, faeces, tissue, cellulose, paint, adipose, crude oil, blood, plant material, bones, and concrete from decommissioned nuclear power plants.

The system uses industrial standard logic and mass flow controllers to manage the sample combustion process. An organic sample is combusted into carbon dioxide and water vapour at a high temperature of 900°C. The carbon dioxide is absorbed directly into the liquid scintillation cocktail and the vial is ready for instant ¹⁴C liquid scintillation counting (LSC). In a tritium application, water vapour is condensed into a vial containing cocktail for tritium LSV measurement.



Sample Collection

Samples are collected automatically into scintillation vials. A Teflon nozzle seals the vial and cocktail is automatically aspirated into the vial. The samples are then ready for liquid scintillation counting.



User Safety

The user can specify a timed flow of cooling air past the ladles along with a specified time for the safety interlock on the ladle cover to protect the user from contact with the hot ladles following the oxidation process.



Sample Boats

Sample boats are placed on high purity quartz ladles. The Hidex 600 OX Oxidizer is compatible with both disposable and reusable sample boats.



Sample Loading

Up to six samples can be loaded in one go. The operator is then free to walk away and allow the instrument to continue the process unlike older manual systems which require continuous operator interaction.

Specifications

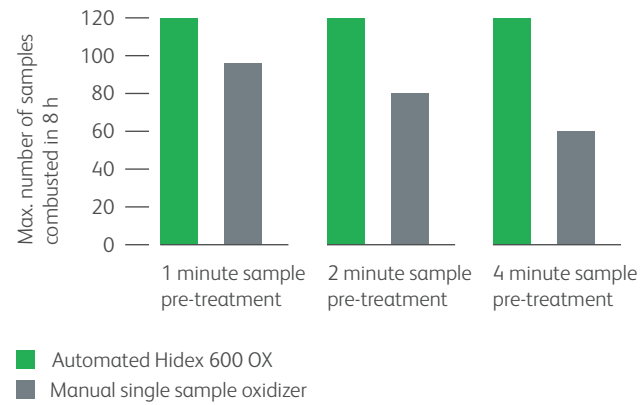
Recovery (¹⁴ C)*	99%
Memory (¹⁴ C)*	0.1%
Recovery (³ H)*	Over 90%, typical 95%
Memory (³ H)*	Typical 1%
Dimensions	90 (W) x 60 (H) x 60 (D) cm
Weight	85 kg
Power Requirements	210 - 230V, 10A or 110V, 30A
Gas Connections	Oxygen: 2-5 bar, Nitrogen: 2-5 bar, Pressurised air: 5 bar Waste gas connections to exhaust air.
Installation	Fume hood or local exhaust ventilation. Exhaust Airflow 140 m ³ /h
Typical Combustion Temperature	900°C in sample zone. 700°C in catalyst zone.
Team Viewer remote control software for maintenance use	

*The performance defined using Hidex 600 OX Radiocarbon or Tritium cocktail, cellulose chromatography paper and ¹⁴C or ³H standard installation. Please refer to the Technical Specification Sheet for further information.

Automated six samples combustion in one run for high capacity processing

The automated 600 OX Oxidizer increases tremendously the maximum sample combustion capacity per one working day compared to manual single sample oxidizers. The capacity is increased because pre-treatment of a sample, such as tissue or plant slicing and weight measurement, can be done during the automated combustion process. This is not possible with a single sample oxidizer, where the user must remain by the instrument and load the samples one by one.

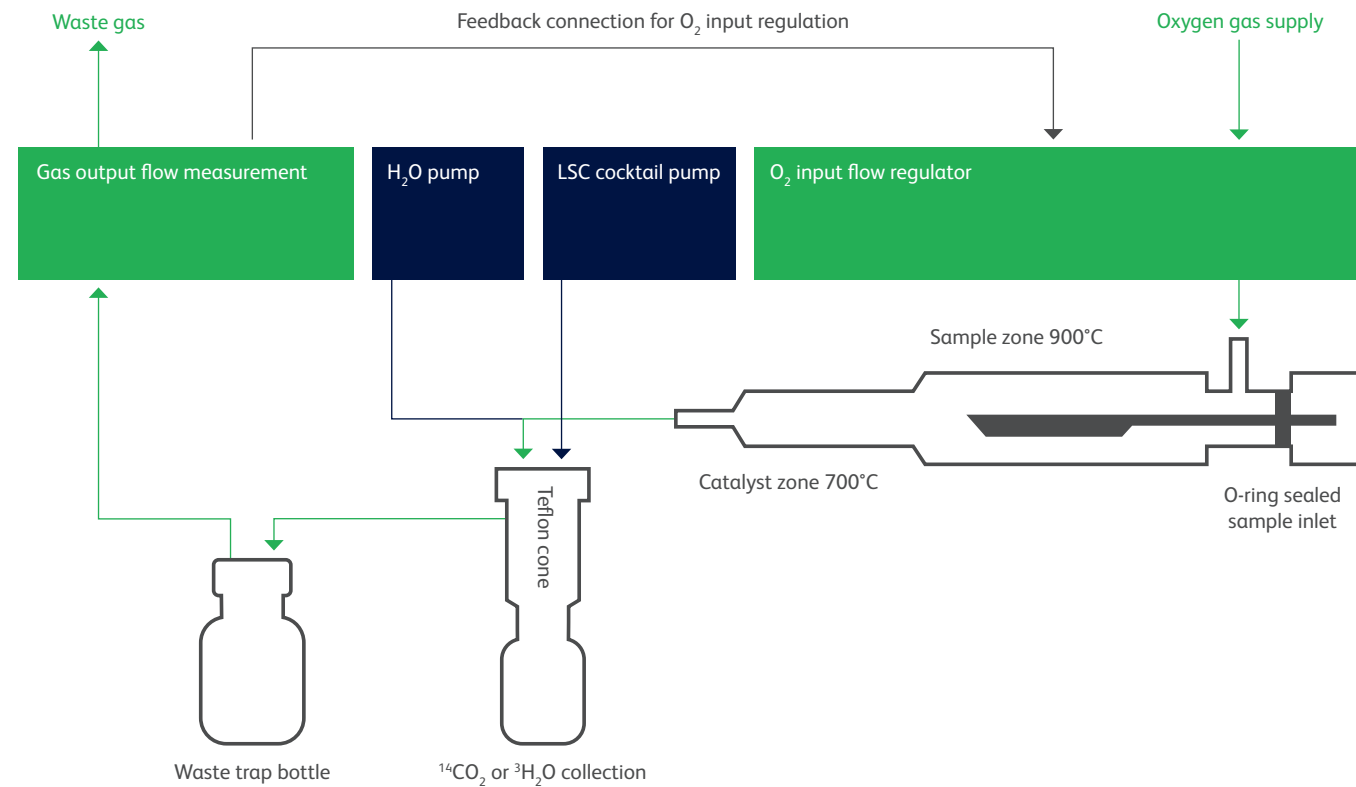
The figure illustrates the maximum number of samples that can be combusted by one user with the 600 OX Oxidizer and a manual single sample oxidizer in eight hours, depending on the different sample pre-treatment time of 1) 1 minute, 2) 2 minutes or 3) 4 minutes per sample. The sample numbers are based on 3 minutes combustion time.



Sample Type	Maximum Amount	Sample Type	Maximum Amount	Sample Type	Maximum Amount
Tissue	300 mg	Concrete	2000 mg	Fat	50 mg
Soil	1000 mg	Blood	500 mg	Paper	300 mg
Plant	1000 mg	Oil	200 µl	Faeces	300 mg

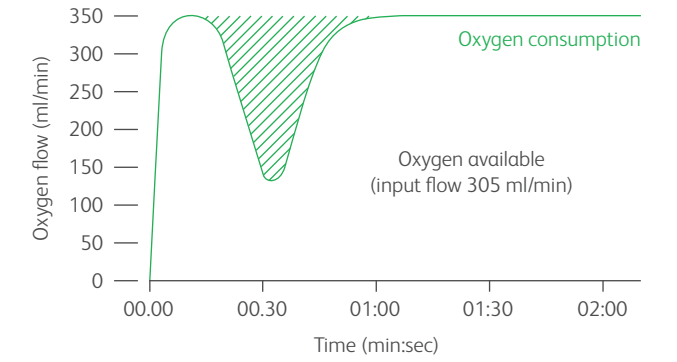
Automated gas line leak test

Gas line leak test is performed automatically before every sample combustion for safe and high-performance operation. The leak test utilises mass-flow meter based measurement and comparison of oxygen input flow and output flow at the end of the gas line.



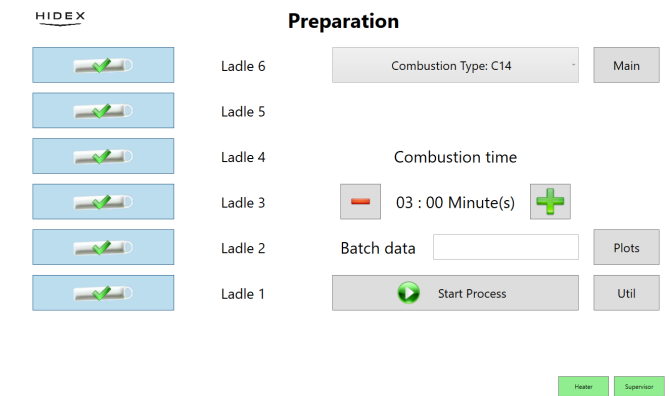
Oxygen input flow regulation

The 600 OX Oxidizer has an oxygen input flow regulation system that improves combustion of high carbon content and rapidly burning samples requiring extra oxygen. The system creates a combustion curve containing information about the amount of oxygen consumed in the combustion process, allowing the data to be used for oxygen flow optimisation.



User friendly software with easy access to the main settings

For basic use only three parameters are selected; combustion type: ¹⁴C or ³H, number of samples and combustion time. In addition, the system has easy access to several additional settings such as combustion temperature, cocktail dosing volume and oxygen flow.



Collection into one vial of several sample combustions

The system collects 1-6 sample combustions into one LSC vial. Collection of several radiocarbon or tritium samples into one vial is useful when low activity samples such as tritium from concrete is analysed. This enables higher radioactivity level collection into one bottle which makes the LSC measurement more accurate.

Service and Support

Users of our systems can benefit from our comprehensive, fully inclusive service and support.

We can give reassurance that if things go wrong or you need expert advice, help is only an e-mail or phone call away.

Validation Services

Our Validation Service enables you to implement and get maximum value from your investments as soon as possible.

We work as a partner with your Quality Manager, System Manager and users to provide a tailored Validation Plan, suited to your needs. Our Validation Specialists have years of experience in GLP system validation, detailed knowledge of our systems, together with other industry standard systems to help you meet company and regulatory requirements.

Training

LabLogic can provide a variety of training courses and workshops to help you get the most out of your instrument and software.

All training is performed by our expert Product and Support Specialists who have many years experience in the development and use of the instruments and software.

Certificates can be provided to complement your internal GLP training records.

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