# ELOXIRAS®

# MINI Series

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**One-step**

**High efficacy**

**Easy to operate**

## The technology

ELOXIRAS® is an innovative process for the **treatment and reutilization of marine and brackish water**, developed to improve productivity and reduce the environmental impact of Recirculating Aquaculture Systems (**RAS**).

Some of its main advantages are:

- **One step –** Eliminating pollutants such as TAN, nitrite, and organic matter, while disinfecting.
- **High efficacy –** Enhanced removal rate of contaminants, increasing the capacity and productivity of the RAS.
- **Easy to operate –** Instant operation, without start-up or adapting periods (typical from biological systems).
- **Reduced environmental impact –** Due to lower requirement of water exchange with the surrounding media.
- **Compact design -** Small footprint and no civil work required, maximizing its integration possibilities.
- **Energy efficiency –** Adapting the intensity of the treatment to the fluctuating generation of pollutants.

ELOXIRAS ® **MINI Series** has been designed for **small scale RAS facilities**, offering compactness and adaptable treatment capacity.

# Functionalities

| | Concept | Basic | Confort | 4.0 |
|---|---|---|---|---|
| **Pre-treatment** | - | ● | ● | ● |
| **Feed pump** | - | ● | ● | ● |
| **Reactor** | ● | ● | ● | ● |
| **Rectifier** | ● | ● | ● | ● |
| **Reactor cleaning system** | ● | ● | ● | ● |
| **Post-treatment** | - | ● | ● | ● |
| **Electrical cabinet with PLC** | ● | ● | ● | ● |
| **Manual valves** | ● | ● | ● | ● |
| **Automatic valves** | - | - | ● | ● |
| **Compressed air system** | - | - | ● | ● |
| **ORP monitoring** | - | Optional | Optional | ● |
| **pH monitoring** | - | Optional | Optional | ● |
| **TAN monitoring** | - | Optional | Optional | Optional |
| **Total chlorine monitoring** | - | Optional | Optional | ● |
| **Temperature control system** | - | Optional | Optional | Optional |
| **Oxygenation system** | - | Optional | Optional | Optional |
| **Remote supervision and operation** | - | - | - | ● |
| **Moisture and splash protection** | Optional | Optional | Optional | Optional |

**Reduced environmental impact**

**Compact design**

**Energy efficiency**

# Standard models

| | MINI-30 | MINI-150 | MINI-300 | MINI-600 |
|---|---|---|---|---|
| **Reactor** | 1 x ELOXrc2 | 1 x ELOXrc15 | 1 x ELOXrc15 | 1 x ELOXrc38 |
| **Capacity (kg feed/day)** | 1 | 5 | 15 | 30 |
| **Water volume ($m^3$)** | 1 | 5 | 10 | 20 |
| **Flowrate ($m^3$/h)** | 1 | 5 | 10 | 20 |
| **TAN removal (g TAN/day)** | 38 | 192 | 360 | 720 |
| **Disinfection** | > 3 log | > 3 log | > 3 log | > 3 log |
| **Energy consumption (kWh/g TAN)*** | 0.34 | 0.20 | 0.17 | 0.17 |
| **Water exchange (L/kg feed)** | 50 - 200 | 50 - 200 | 50 - 200 | 50 - 200 |

NOTE: Values estimated considering water with a salinity of 35 ppt and 4.0 models implemented by Apria Systems

*Lower values for HYBRID Series: e.g. 0.13 kWh/g TAN

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# ELOXIRAS® MINI Series

# MINI-30



## Increasing the productivity of your RAS

ELOXIRAS® MINI-30 provides flexibility with an immediate response to water treatment requirements. High TAN removal -with no significant nitrate accumulation- and disinfection efficacies are achieved.

### Energy distribution



Pump, 47%
Degasser, 37%
Skimmer, 4%
Reactor, 12%
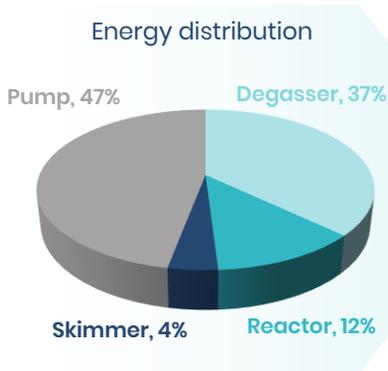
| | |
|---|---|
| **TAN removal rate** | 38 g TAN/day (> 90% per pass) |
| **Disinfection capacity** | > 3 log |
| **Water exchange rate** | 50 – 200 L/kg feed |
| **Energy consumption*** | 0.34 kWh/g TAN |

NOTE: Values estimated considering water with a salinity of 35 ppt and 4.0 models implemented by Apria Systems
*Lower values for HYBRID Series: e.g. 0.13 kWh/g TAN
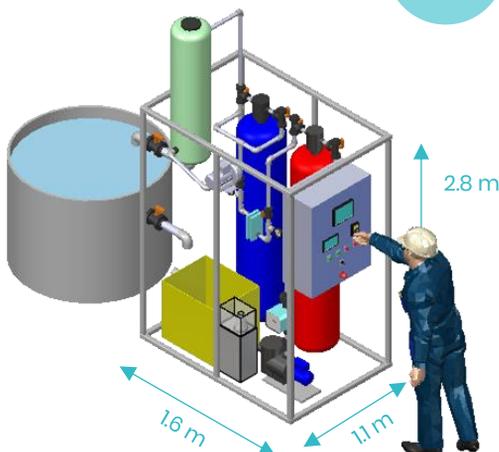
### Tank volume
1 m³

### Max. treatment capacity
1 kg feed /day

### Flowrate
1 m³/h

## Dimensions

Estimated footprint for the 4.0 model    1.8 m²



2.8 m
1.6 m
1.1 m

## Operation & maintenance costs

| | |
|---|---|
| **Energy consumption** | 65% |
| **Post-treatment regeneration** | 3% |
| **Reactor cleaning system** | – |
| **Reactor maintenance*** | 32% |

NOTES:
- Values estimated considering water with a salinity of 35 ppt and 4.0 models implemented by Apria Systems
- Software license cost not included

* Value based on a lifetime of 2 years

# ELOXIRAS® MINI Series

# MINI-150

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## Increasing the productivity of your RAS

ELOXIRAS® MINI-150 provides flexibility with an immediate response to water treatment requirements. High TAN removal -with no significant nitrate accumulation- and disinfection efficacies are achieved.

### Energy distribution



Pump, 35%

Degasser, 35%

Skimmer, 15%

Reactor, 15%
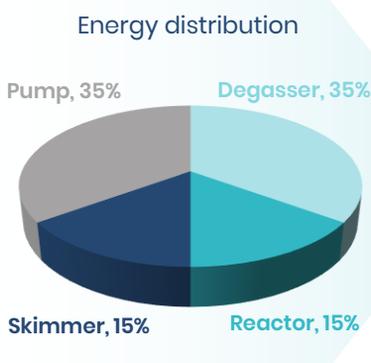
| | |
|---|---|
| **TAN removal rate** | 192 g TAN/day (> 90% per pass) |
| **Disinfection capacity** | > 3 log |
| **Water exchange rate** | 50 – 200 L/kg feed |
| **Energy consumption*** | 0.20 kWh/g TAN |

NOTE: Values estimated considering water with a salinity of 35 ppt and 4.0 models implemented by Apria Systems
*Lower values for HYBRID Series: e.g. 0.13 kWh/g TAN
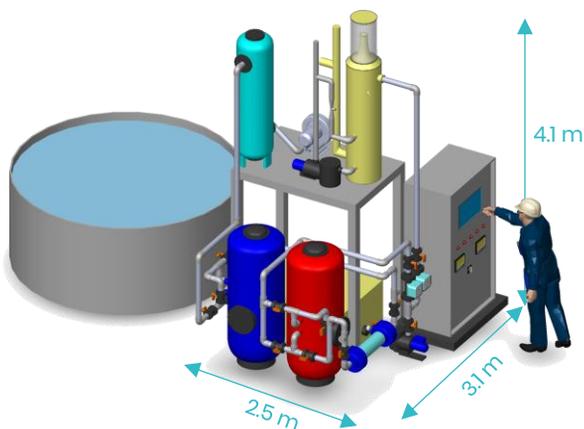
| Tank volume | Max. treatment capacity | Flowrate |
|---|---|---|
| 5 m³ | 5 kg feed /day | 5 m³/h |

## Dimensions

Estimated footprint for the 4.0 model  7.8 m²



4.1 m

3.1 m

2.5 m

## Operation & maintenance costs

| | |
|---|---|
| **Energy consumption** | 60% |
| **Post-treatment regeneration** | 4% |
| **Reactor cleaning system** | – |
| **Reactor maintenance*** | 36% |

NOTES:
- Values estimated considering water with a salinity of 35 ppt and 4.0 models implemented by Apria Systems
- Software license cost not included
* Value based on a lifetime of 2 years

# ELOXIRAS® MINI Series

# MINI-300

## Increasing the productivity of your RAS

ELOXIRAS® MINI-300 provides flexibility with an immediate response to water treatment requirements. High TAN removal -with no significant nitrate accumulation- and disinfection efficacies are achieved.

### Energy distribution

Pump, 34%
Degasser, 28%
Skimmer, 15%
Reactor, 23%
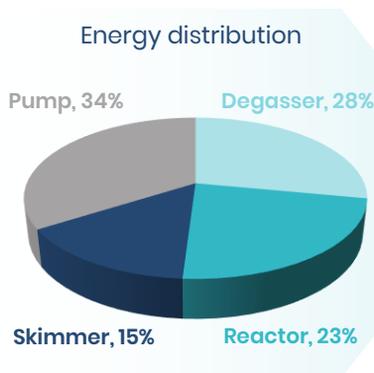
| | |
|---|---|
| **TAN removal rate** | 360 g TAN/day (> 90% per pass) |
| **Disinfection capacity** | > 3 log |
| **Water exchange rate** | 50 – 200 L/kg feed |
| **Energy consumption*** | 0.17 kWh/g TAN |

NOTE: Values estimated considering water with a salinity of 35 ppt and 4.0 models implemented by Apria Systems
*Lower values for HYBRID Series: e.g. 0.13 kWh/g TAN
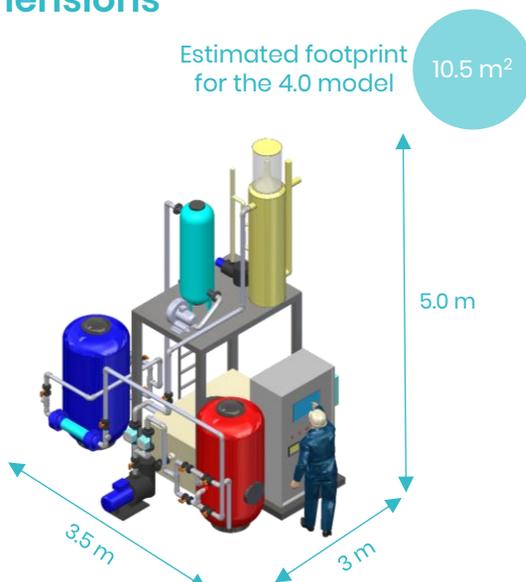
**Tank volume**
10 m³

**Max. treatment capacity**
15 kg feed /day

**Flowrate**
10 m³/h

## Dimensions

Estimated footprint for the 4.0 model    10.5 m²

5.0 m
3.5 m
3 m

## Operation & maintenance costs

| | |
|---|---|
| **Energy consumption** | 70% |
| **Post-treatment regeneration** | 6% |
| **Reactor cleaning system** | – |
| **Reactor maintenance*** | 24% |

NOTES:
- Values estimated considering water with a salinity of 35 ppt and 4.0 models implemented by Apria Systems
- Software license cost not included
* Value based on a lifetime of 2 years

# ELOXIRAS® MINI Series

# MINI-600

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## Increasing the productivity of your RAS

ELOXIRAS® MINI-600 provides flexibility with an immediate response to water treatment requirements. High TAN removal -with no significant nitrate accumulation- and disinfection efficacies are achieved.

### Energy distribution

Pump, 32%
Degasser, 28%
Skimmer, 18%
Reactor, 22%
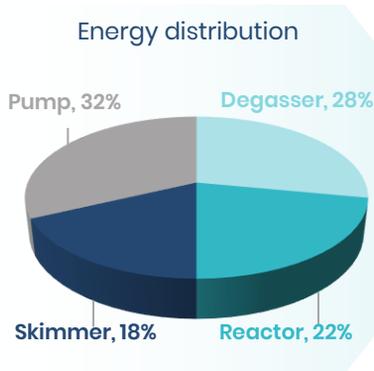
| | |
|---|---|
| **TAN removal rate** | 720 g TAN/day (> 90% per pass) |
| **Disinfection capacity** | > 3 log |
| **Water exchange rate** | 50 – 200 L/kg feed |
| **Energy consumption*** | 0.17 kWh/g TAN |

NOTE: Values estimated considering water with a salinity of 35 ppt and 4.0 models implemented by Apria Systems

*Lower values for HYBRID Series: e.g. 0.13 kWh/g TAN
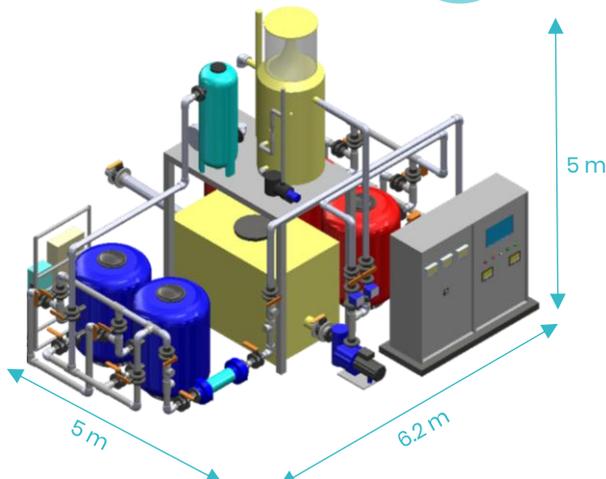
**Tank volume**
20 m³

**Max. treatment capacity**
30 kg feed /day

**Flowrate**
20 m³/h

## Dimensions

Estimated footprint for the 4.0 model 30 m²

5 m
5 m
6.2 m

## Operation & maintenance costs

| | |
|---|---|
| **Energy consumption** | 75% |
| **Post-treatment regeneration** | 6% |
| **Reactor cleaning system** | – |
| **Reactor maintenance*** | 19% |

NOTES:
- Values estimated considering water with a salinity of 35 ppt and 4.0 models implemented by Apria Systems
- Software license cost not included
* Value based on a lifetime of 2 years