

PERFORMANCE RESULTS

PPU Umwelttechnik GmbH
Bernecker Str. 73, 95448 Bayreuth, Germany

EN 12566-3, Annex B

Small wastewater treatment systems for up to 50 PT

Small wastewater treatment system ClearFox® quickONE+

Completely aerated SBR treatment process in a one-chamber tank

Test report PIA2016-273B11

This certificate is valid until 31 July 2017.

| | | |
|--|-----------------------------|-----------------|
| Nominal organic daily load | 0.23 kg BOD ₅ /d | |
| Nominal hydraulic daily load | 0.75 m ³ /d | |
| Material | Polyethylene | |
| Treatment efficiency (nominal sequences) | Efficiency | Effluent |
| | COD | 93.7 % 48 mg/l |
| | BOD ₅ | 98.1 % 6 mg/l |
| | NH ₄ -N* | 99.4 % 0.2 mg/l |
| | SS | 95.8 % 17 mg/l |
| Electrical consumption | 0.52 kWh/d | |

**determined for temperatures ≥ 12°C in the bioreactor*

Performance tested by:

PIA – Prüfinstitut für Abwassertechnik GmbH
(PIA GmbH)
Hergenrather Weg 30
52074 Aachen, Germany

This document replaces neither the declaration
of performance nor the CE marking.



Notified Body
No.: 1739



Certified according to
ISO 9001:2008



Deutsche
Akkreditierungsstelle
D-PL-17712-01-00

Prüfinstitut für Abwassertechnik GmbH
Martina Wermter
geprüft - tested - testé

Martina Wermter

July 2016

DECLARATION OF MANUFACTURER

Dokument-Nr./
Document No.: DO_20170316_CF-QuickONE+_declaration of manufacturer

Hersteller / Inverkehrbringer
Manufacturer / Distributor: PPU Umwelttechnik GmbH

Anschrift /
Address: Bernecker Str. 73,
D-95448 Bayreuth, Germany

Produktbezeichnung/
Product name: Sewage water treatment plant
Clearfox-QuickONE+

Typ / Type: Single chamber- sequential batch reactor (SBR) technology

Hiermit bestätigen wir gemäß der folgend aufgeführten Dokumente die Ausführung der Baureihe
(Datenblatt der Baureihe: ZE-DB_CF-SBR-QuickONE+_4-12p.e) hinsichtlich der Behälter/ Tanks sowie unter Berücksichtigung der
Reinigungsleistung, gemäß DIN EN 12566-1- 3.

We hereby confirm the design of the series according DIN EN 12566-1 - 3 with regard to the containers / tanks
(data sheet series: ZE-DB_CF-SBR-QuickONE+_4-12p.e) as well as the cleaning performance according to the following documents:

| Test-report Nr. / No. | Anlage / Description |
|--------------------------|--|
| PIA2016-273B11 | Nachweis / Zertifikat der Reinigungsleistung - Performance result / Certificate of cleaning efficiency |
| PIA2016-ST-PIT-1609-1111 | Prüfbericht der Standsicherheit (PIT) – Initial type test 3500L |
| PIA2007-BT-010 | Prüfbericht der Standsicherheit (PIT) – Initial type test 2250L |
| PIA2007-WD001 | Prüfbericht der Wasserdichtheit - Test report of watertightness |
| PIA2007-HW002 | Prüfbericht des hydraulischen Wirkungsgrades - Test report of hydraulic efficiency |
| PIA2013-BV-1204 1023 | Prüfbericht des Brandverhaltens - Test report of fire behavior |

Ort, Datum /
Place, date:

Bayreuth, 16.03.2017

Unterschrift
/Signature:


PPU Umwelttechnik GmbH
Bernecker Straße 73
95448 Bayreuth, Germany
Tel.: +49 (0) 921-150 63 990 Fax: 150 63 999
eMail: info@clearfox.com
web: www.ppu-umwelttechnik.de

Wolfgang Pöhl
Geschäftsführer / Managing Director

Diese Erklärung bescheinigt die Übereinstimmung mit den
genannten Richtlinien, beinhaltet jedoch keine Zusicherung von
Eigenschaften. Die Sicherheitshinweise der mitgelieferten
Produktdokumentationen sind zu beachten.

This declaration certifies compliance with the above mentioned
directives but does not include a property assurance. The safety
notes given in the product documentations, which are must be
observed.



KONFORMITÄTSERKLÄRUNG DECLARATION OF CONFORMITY

Dokument-Nr./ Document No.: DO_20170316_CF-QuickONE+_CE-declaration of conformity

Hersteller / Inverkehrbringer / Manufacturer / Distributor: PPU Umwelttechnik GmbH

Anschrift / Address: Bernecker Str. 73,
D-95448 Bayreuth, Germany

Produktbezeichnung/ Product name: Sewage water treatment plant
Clearfox-QuickONE+

Typ / Type: Single chamber- sequential batch reactor (SBR) technology

Das bezeichnete Produkt stimmt mit den Vorschriften folgender Europäischer Richtlinien überein, nachgewiesen durch die Einhaltung folgender Normen:

The above mentioned product has been manufactured according to the regulations of the following European directives and norms proven through compliance with the following standards:

| Nr. / No. | Richtlinie / Directive |
|--|---|
| MRL 2006/42/EG | EG Machinery Directive |
| 98/37/EC | EC Machinery Directive (last amended by 93/68/EEC) |
| 73/23/EEC | EC Low Voltage Directive (last amended by 93/68/EEC) |
| 89/336/EEC | EMC Directive (last amended by 93/68/EEC) |
| EN 12566-3 | Norm for treatment plants up to 50p.e. |
| 89/106/EWG | General building directive |
| ATV/DWA A 122,131, 122,135, M 210 | Design criteria, guidelines for dimensioning in conjunction with DIN EN 12255, DIN EN 4261-101 |
| DIN 1986-100:2008-05 | Drainage systems for buildings and plots section 100: Regulations in conjunction with DIN EN 752 and DIN EN 12056 |
| DIN 4261-1:2010-10 | Systems-Part 1: Plants for waste water pretreatment |
| DIN EN 1610:1997-10 | installation and inspection of sewers and- channels |
| VDE 0609 / EN 60999, 60355-1/2-55, 50082-1,55014,61000-3-2/3 | Electrical installation systems for electrical components |

Ort, Datum / Place, date:

Bayreuth, 16.03.2017

Unterschrift /Signature:

PPU water systems
PPU Umwelttechnik GmbH
Bernecker Straße 73
95448 Bayreuth, Germany
Tel.: +49 (0) 921 150 63 990 Fax: +49 (0) 921 150 63 999
eMail: info@clearfox.com
web: www.ppu-umwelttechnik.de

Wolfgang Pöhl
Geschäftsführer / Managing Director

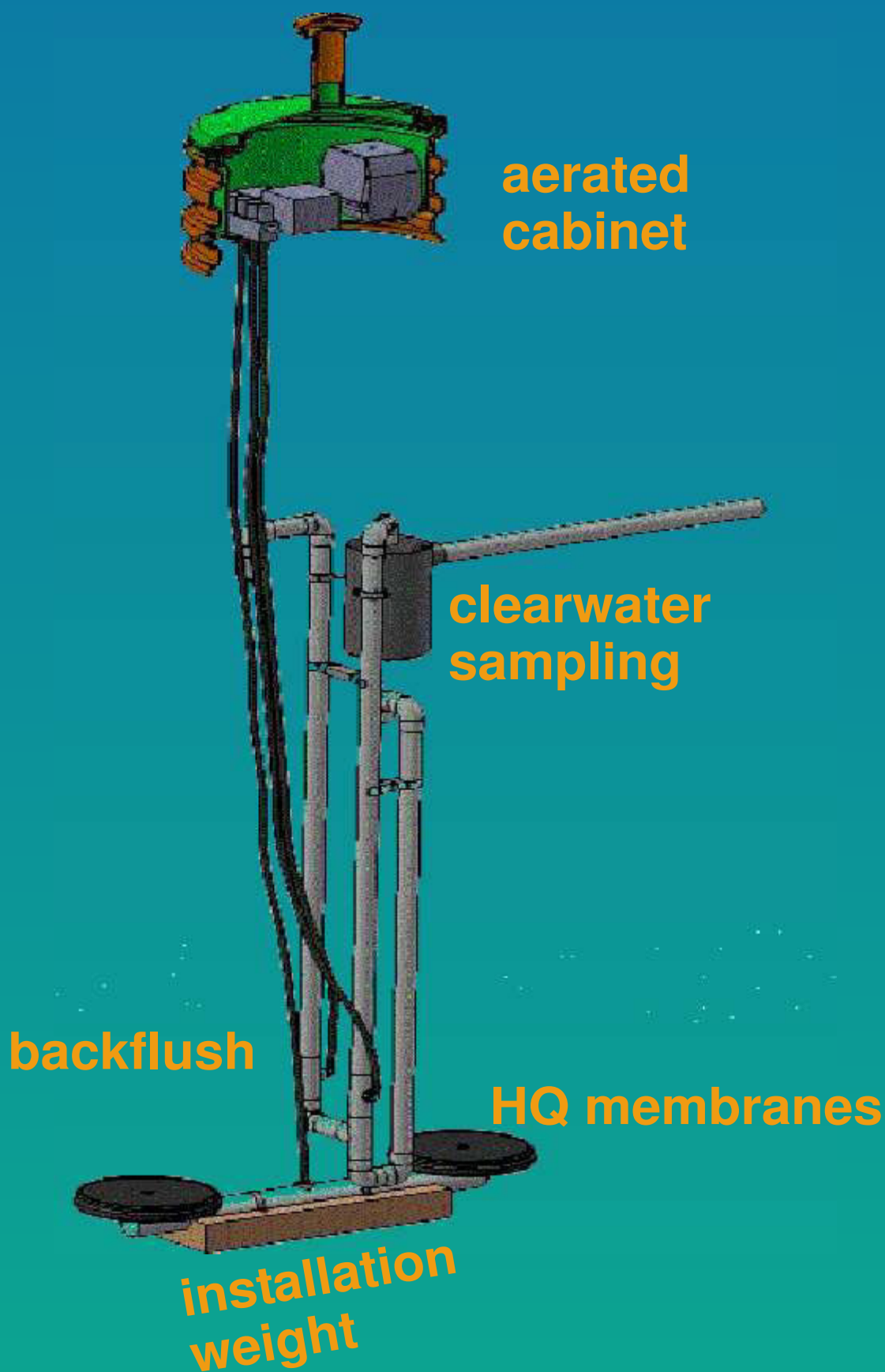
Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, beinhaltet jedoch keine Zusicherung von Eigenschaften. Die Sicherheitshinweise der mitgelieferten Produktdokumentationen sind zu beachten.

This declaration certifies compliance with the above mentioned directives but does not include a property assurance. The safety notes given in the product documentations, which are must be observed.

ClearFox[®]
[be clever]



quickONE+
single chamber
SBR KIT



one KIT for ALL
TANKS

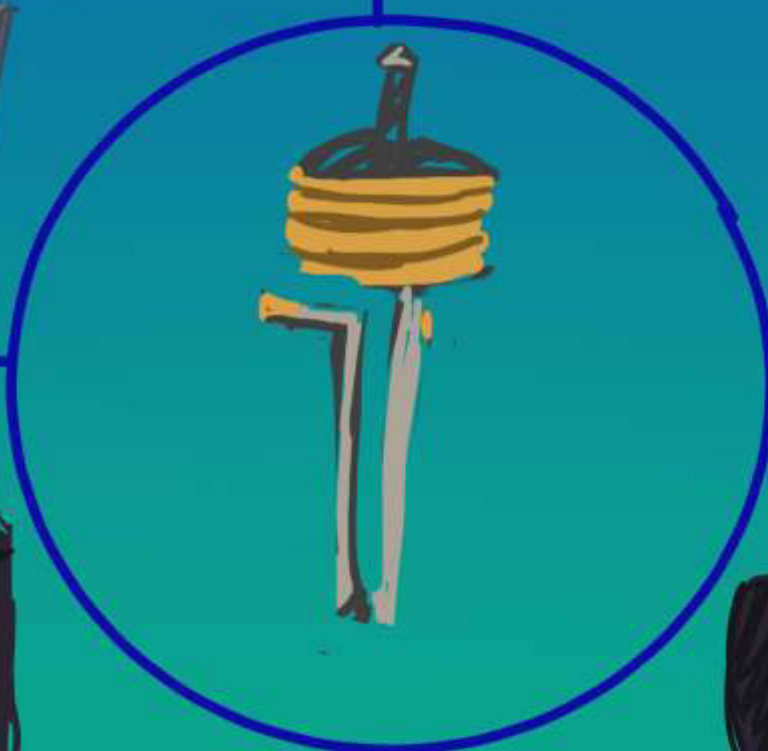
with or without baffle wall

ONE

concrete square



concrete round



plastic square

plastic tube

quick



delivery



**installation
30 min**



ready





sludge treatment

EN 12566-3:2005+A2:2013, Anhang B

Vorgefertigte Anlage zur Behandlung von häuslichem Schmutzwasser

| | |
|-----------------------|---------------------------------------|
| Name des Produkttyps: | ClearFox [®] quickONE+ |
| Werkstoff: | Polyethylen |
| Reinigungsverfahren: | Vollbelüftete Einkammer SBR-Verfahren |
| Prüfstelle: | PIA GmbH, NB 1739 |

Wirksamkeit der Behandlung:

Reinigungsleistung
(bei einer geprüften
organischen Tagesschmutzfracht
 $BSB_5 = 0,23 \text{ kg/d}$)

| | |
|-------------------|--------|
| CSB: | 93,7 % |
| BSB_5 : | 98,1 % |
| N_{ges} : | 67,6 % |
| $NH_4\text{-N}$: | 94,2 % |
| SS: | 95,8 % |

best
effluent
quality

Hydraulische Last in den
Nominalphasen (100 %)

0,75 m³/d

Häufigkeit der Schlammmentfernung

0

Energieverbrauch

0,52 kWh/d

Reinigungskapazität
(nominale Bemessung)

5 EW

low
energy
consumption

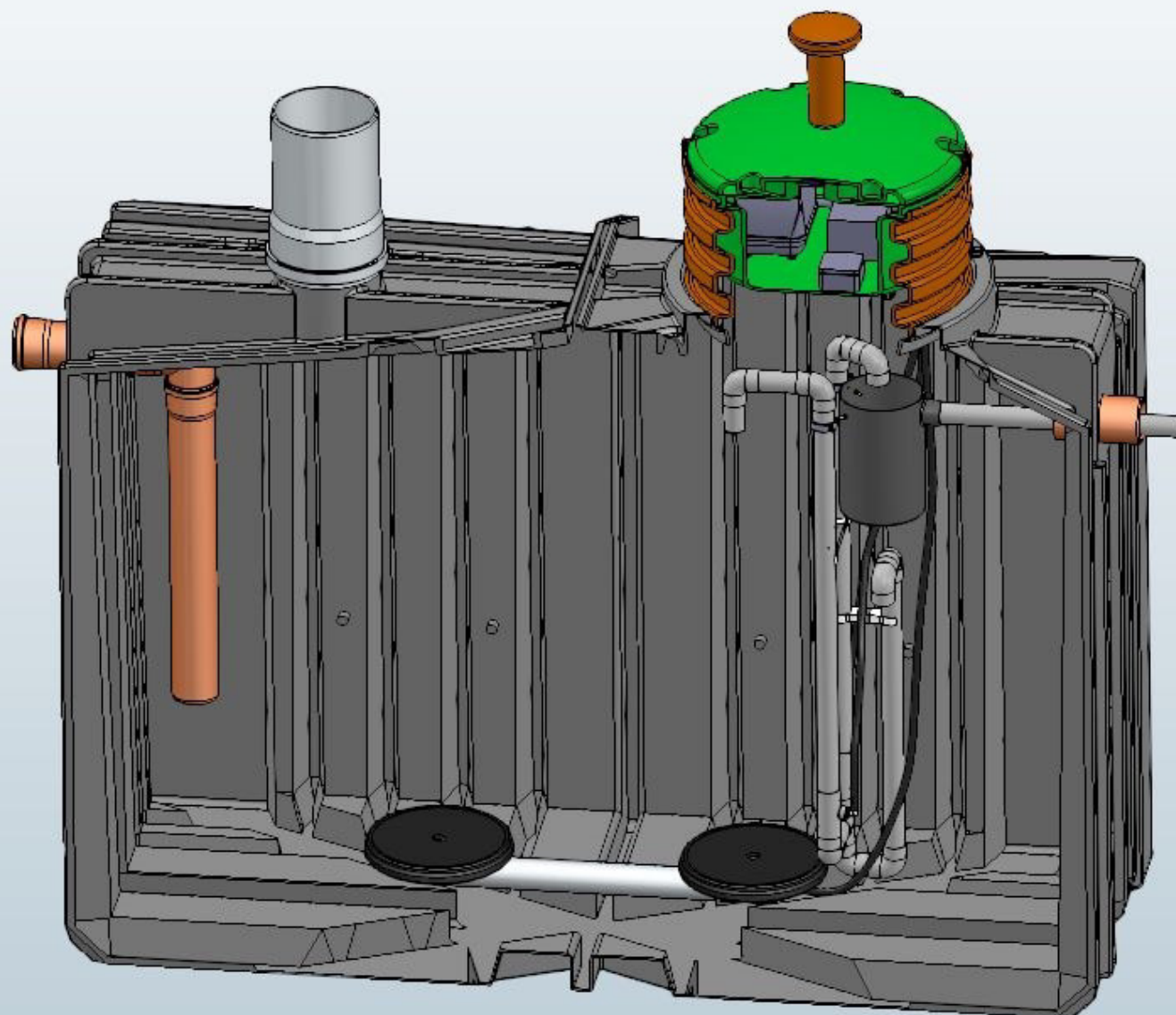


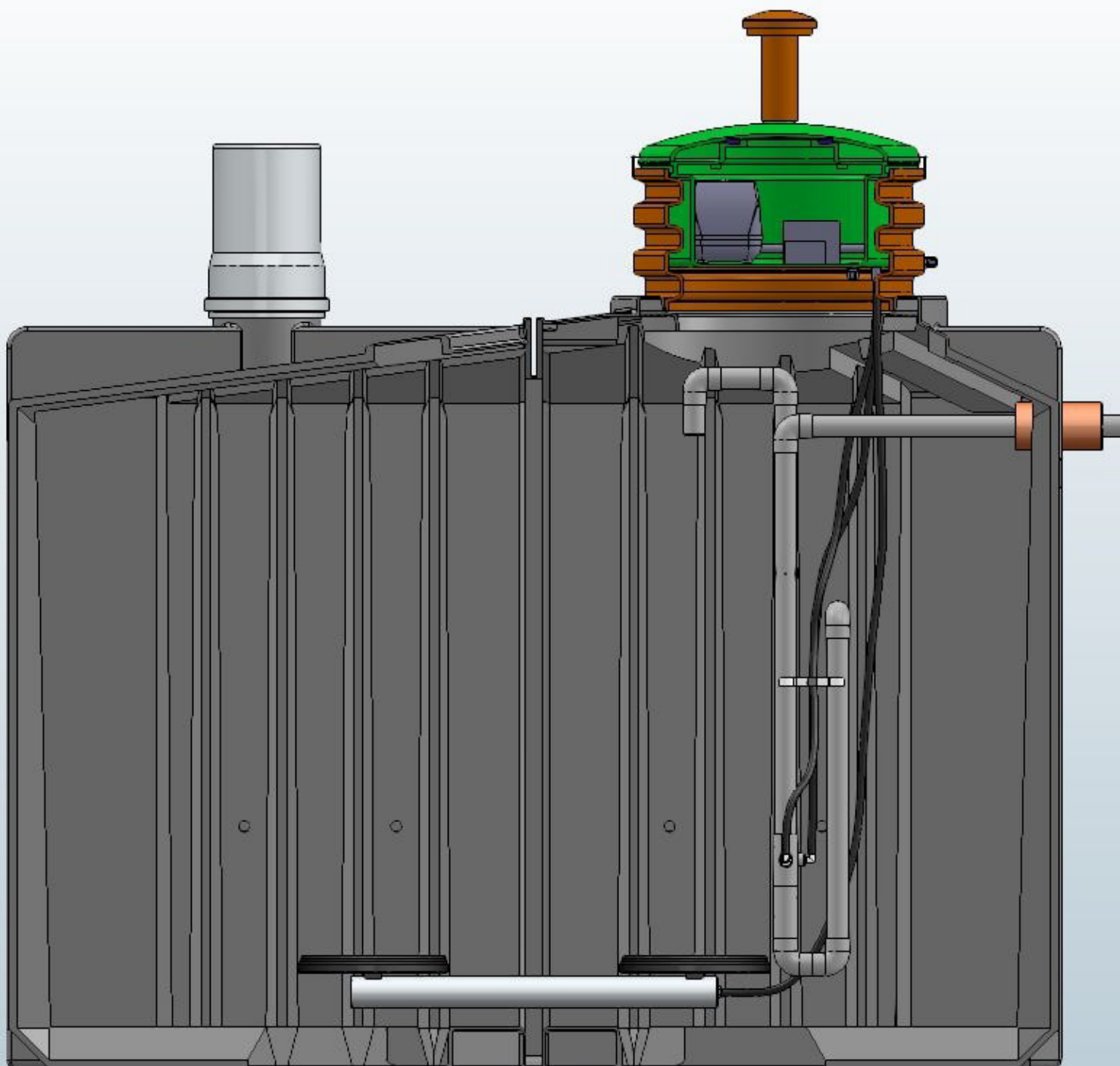
quickONE+

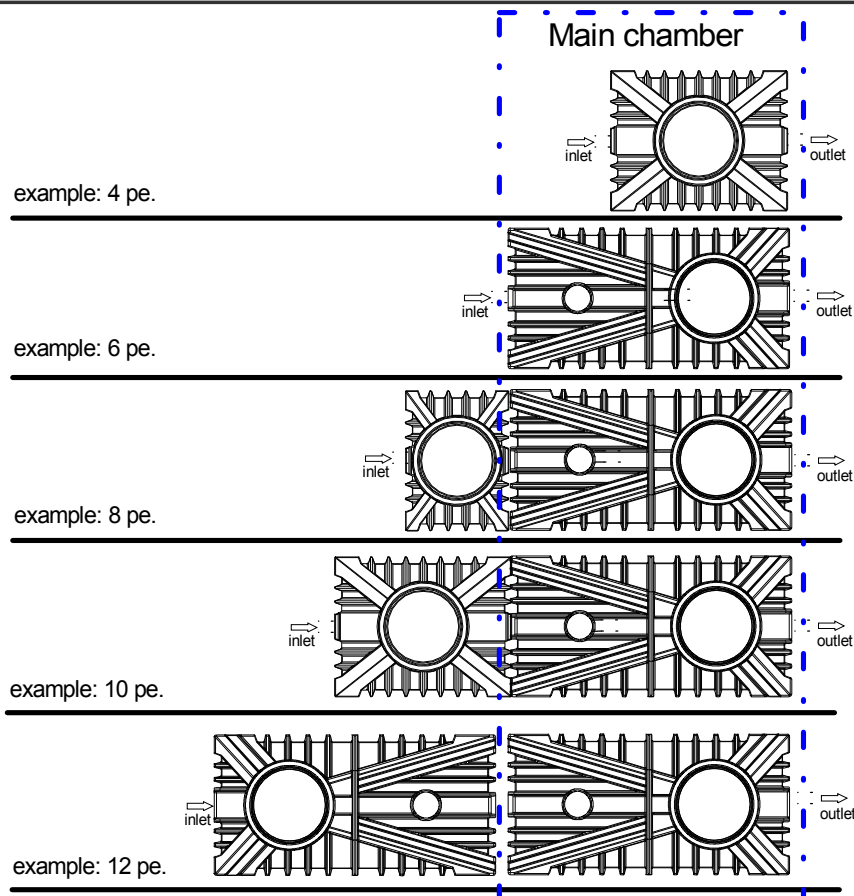
single chamber
SBR KIT

technical details:

quickONE+ works according to an SBR process. One cyclus per day cleans the waste water and treats the sludge for minimizing the waste disposal cost. All the treatment is in one tank, the specific volume for 1x people equivalent is around 600 ltr. (i.e. 5p.e=3.000l). The plug&play-KIT is including all installation material. The system cannot block due to a patented backflush. In order to get a low maintenance cost system all components are without moving parts, the control unit is installed in an areated cabinet on top of the tank. There is no additional sludge storage necessary ! The effluent quality is highest class in europe, the approved control unit can handle underload, overload, sludge stabilizing and holiday mode. The Kit - designed for the clients tank- can be installed onsite. The system is for domestic waste water from 1 p.e up to 50 p.e according EN 12566-3 tested and approved.







Basics:

Sludge removal interval: ~12 month (depends on amount of solids)

daily wastewater: up to 150 ltr / d x p.e.

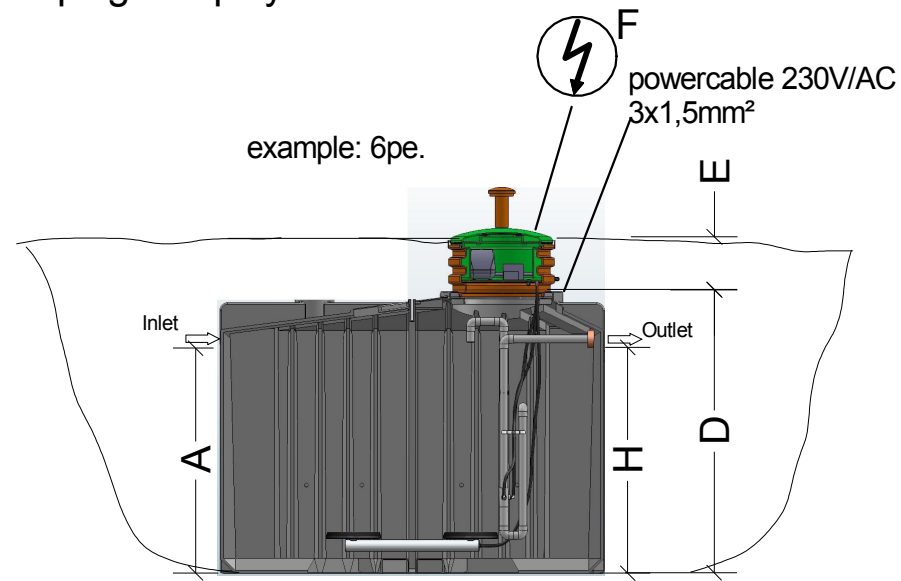
max. organic load: 60 gr / d x p.e.

Clearwater requirements 20/30/20 (mg/l) (BOD5/SS/NH4N) regarding to DIN EN 12566-3

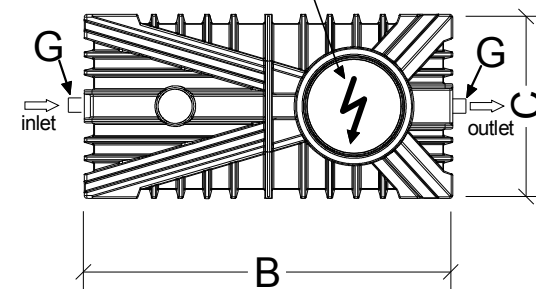
| type (p.e.) | A [m] | B [m] | C [m] | D [m] | E [m] min. /max | F | G | H [m] | air hose | power input ~ [kW] | wire cross section | voltage |
|----------------|----------|----------|----------|----------|-----------------------|----------|-------|----------|----------|--------------------------|-----------------------|---------|
| 4 | 1,42 | 1,53 | 1,22 | 1,71 | ~ 0,55 - 0,79 | CF-cmi * | DN100 | 1,42 | 1/2" | 0,06 | 3x1,5mm ² | 230V |
| 6 | 1,42 | 2,43 | 1,22 | 1,71 | ~ 0,55 - 0,79 | CF-cmi * | DN100 | 1,42 | 1/2" | 0,08 | 3x1,5mm ² | 230V |
| 8 | 1,42 | 3,33 | 1,22 | 1,71 | ~ 0,55 - 0,79 | CF-cmi * | DN100 | 1,42 | 1/2" | 0,12 | 3x1,5mm ² | 230V |
| 10 | 1,42 | 3,98 | 1,22 | 1,71 | ~ 0,55 - 0,79 | CF-cmi * | DN100 | 1,42 | 1/2" | 0,15 | 3x1,5mm ² | 230V |
| 12 | 1,42 | 4,86 | 1,22 | 1,71 | ~ 0,55 - 0,79 | CF-cmi * | DN100 | 1,42 | 1/2" | 0,15 | 3x1,5mm ² | 230V |

CF-cmi * = ClearFox - control module integrated

ClearFox SBR QuickONE+, pre-installed
with integrated control module in extension-shaft,
plug and play version



F integrated control module
inside the extension-shaft



Subject to
technical changes

ClearFox-SBR QuickONE+
4 - 12 p.e.

Specification:

Population range: 4 persons

Measures: 153 x 122 x 220 cm(l,w,h) (standard variant,complete height with aeration scoop)

Sludge treatment: stabilizing, volumereduction

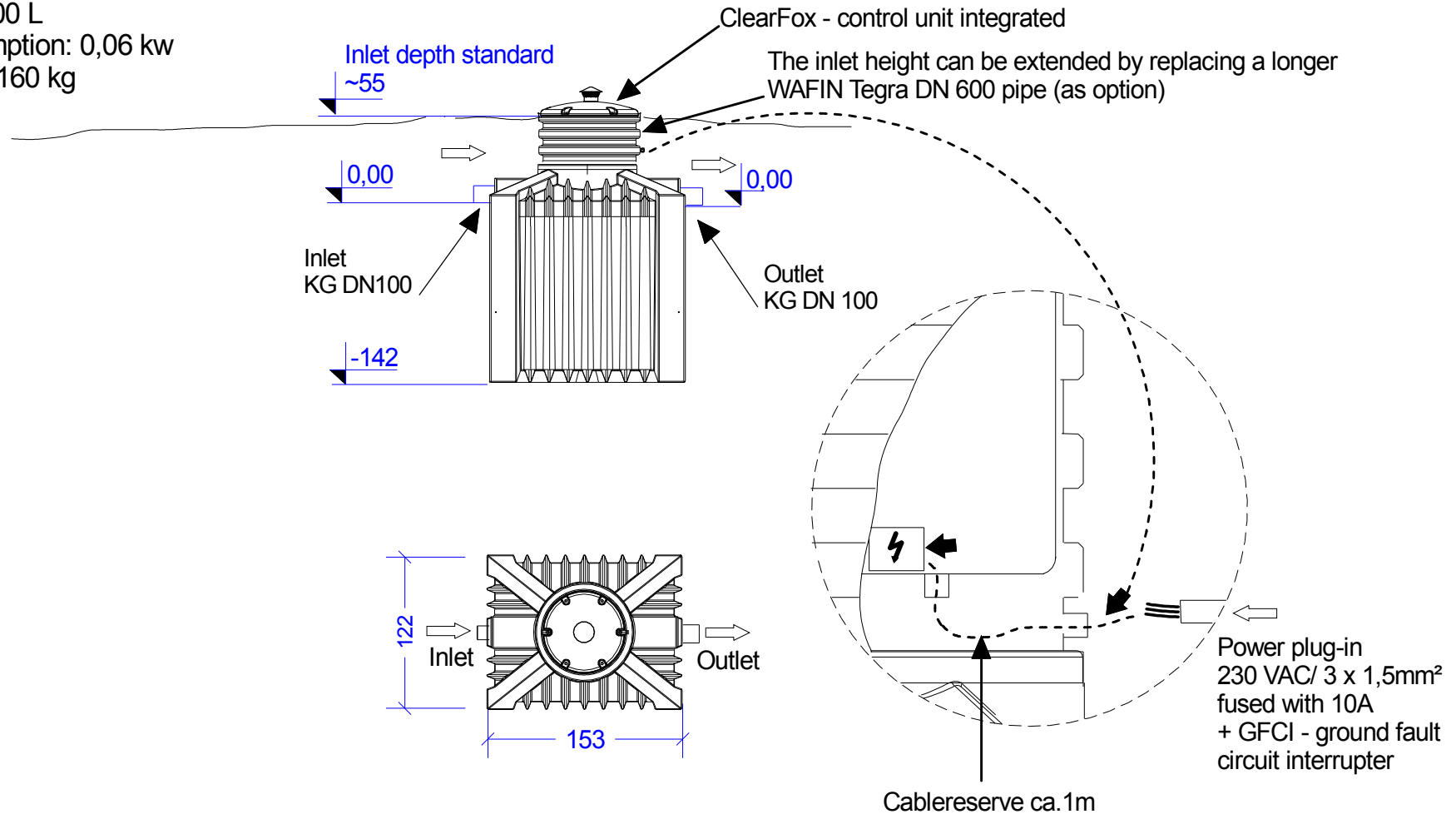
Max. organic loading: 240g BOD/Day

Max. average daily flow: 600 L

Max. blower power consumption: 0,06 kw

Weight (total/plug&play): ~160 kg

Total capacity: 2250 L



all measures in cm

ClearFox- QuickONE +
small wwntp 4 p.e.
Single chamber SBR system
according EN 12566-3

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info@clearfox.com

www.clearfox.com



M 1:50

Please note: All our drawing are in property. All rights reserved. Duplication only with prior approval of PPU.

Datum: 10.10.2016

DIN A4

gez.: mz

Specification:

Population range: 6 persons

Measures: 243 x 122 x 220 cm (l,w,h) (standard variant, complete height with aeration scoop)

Sludge treatment: stabilizing, volumereduction

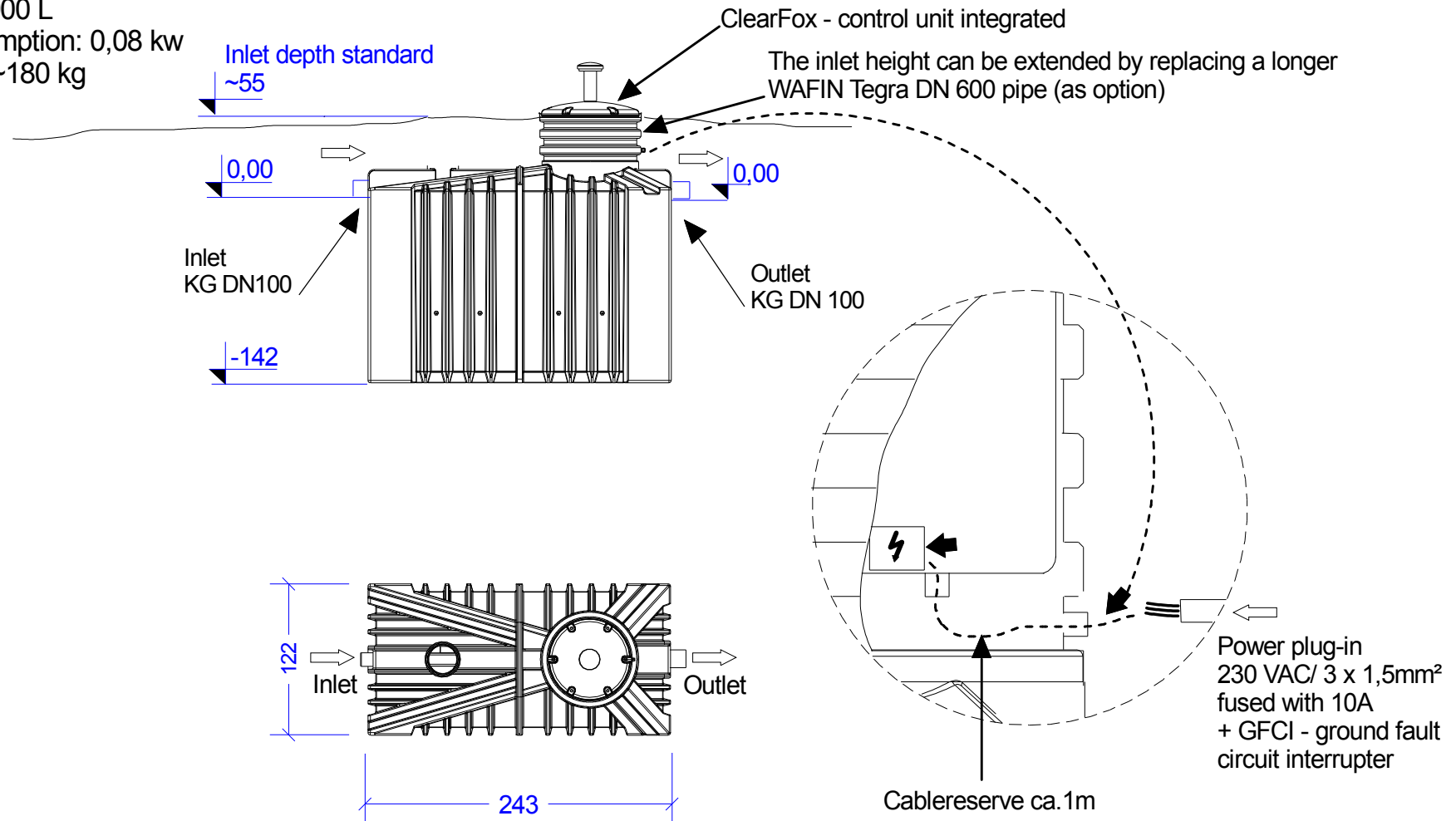
Max. organic loading: 360g BOD/Day

Max. average daily flow: 900 L

Max. blower power consumption: 0,08 kw

Weight (total/plug&play): ~180 kg

Total capacity: 3.500 L



all measures in cm

ClearFox- QuickONE +
small wwtp 6 p.e.
Single chamber SBR system
according EN 12566-3

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M 1:50

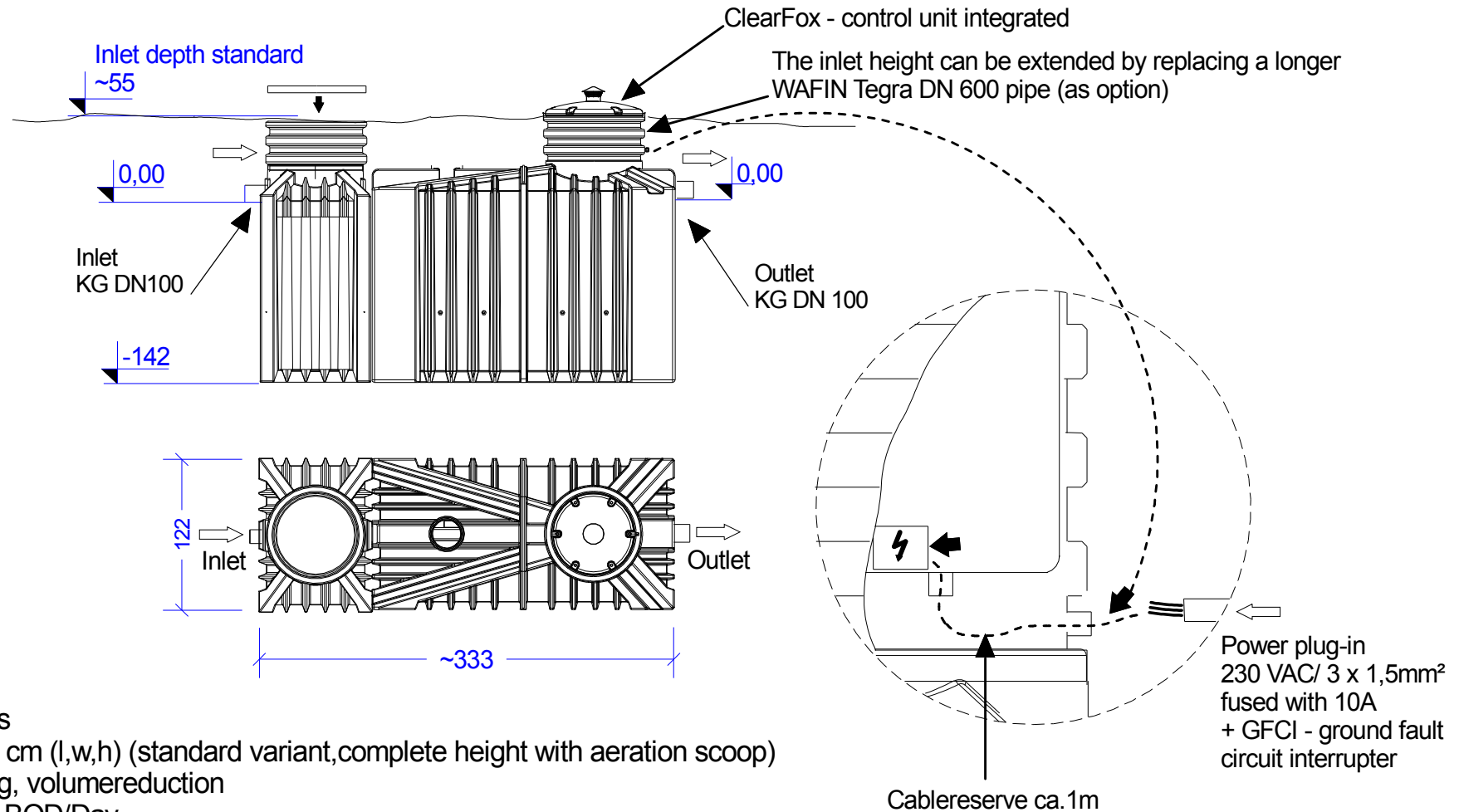
Please note: All our drawing are in property. All rights reserved. Duplication only with prior approval of PPU.

Datum: 10.10.2016

DIN A4

gez.: mz

all measures in cm



Specification:

Population range: 8 persons

Measures: 333 x 122 x 220 cm (l,w,h) (standard variant,complete height with aeration scoop)

Sludge treatment: stabilizing, volumereduction

Max. organic loading: 480g BOD/Day

Max. average daily flow: 1200 L

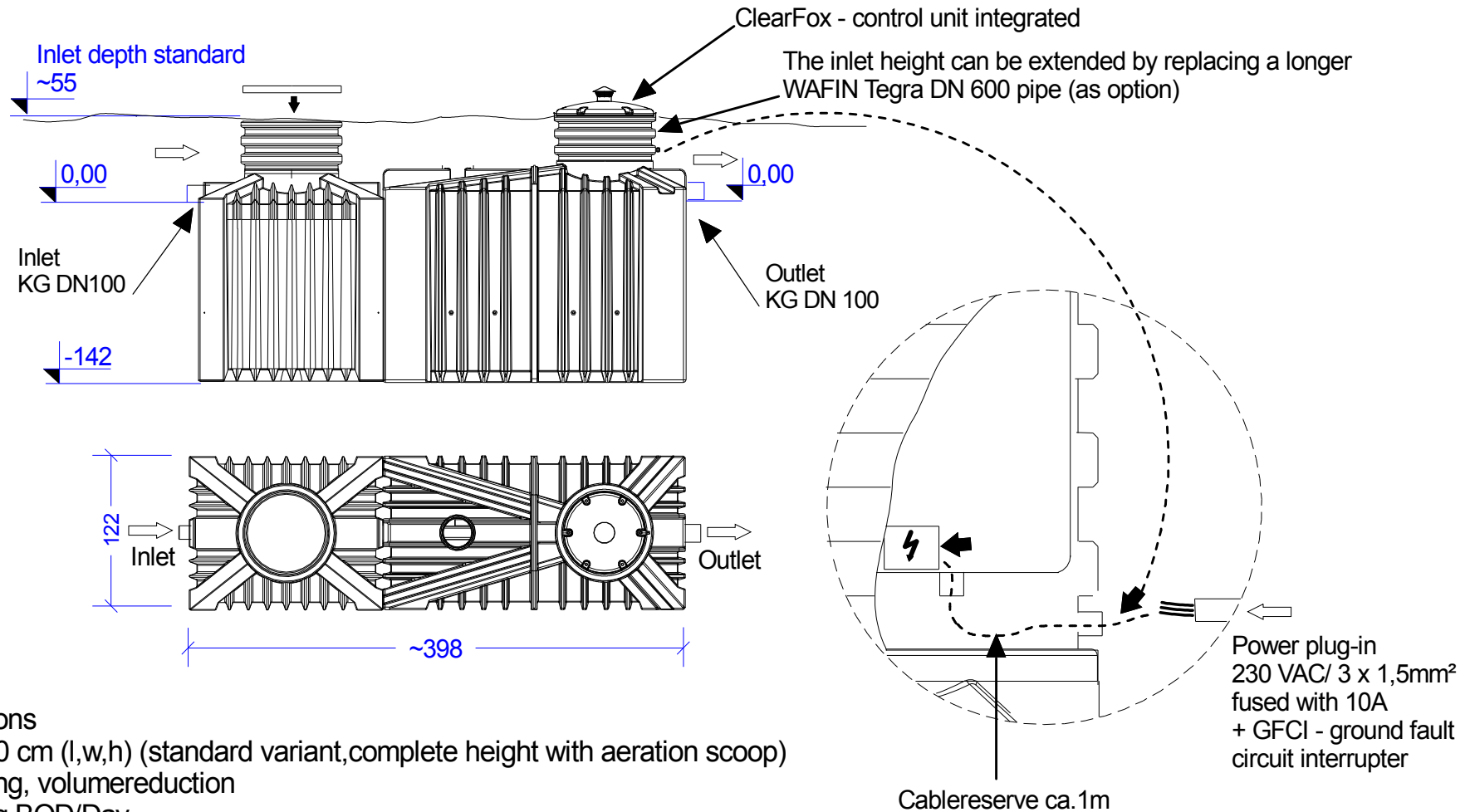
Max. blower power consumption: 0,12 kw

Weight (total/plug&play): ~270 kg

Total capacity: 4750 L

ClearFox- QuickONE +
small wwtp 8 p.e.
Single chamber SBR system
according EN 12566-3

all measures in cm



Specification:

Population range: 10 persons

Measures: 398 x 122 x 220 cm (l,w,h) (standard variant,complete height with aeration scoop)

Sludge treatment: stabilizing, volumereduction

Max. organic loading: 600g BOD/Day

Max. average daily flow: 1500 L

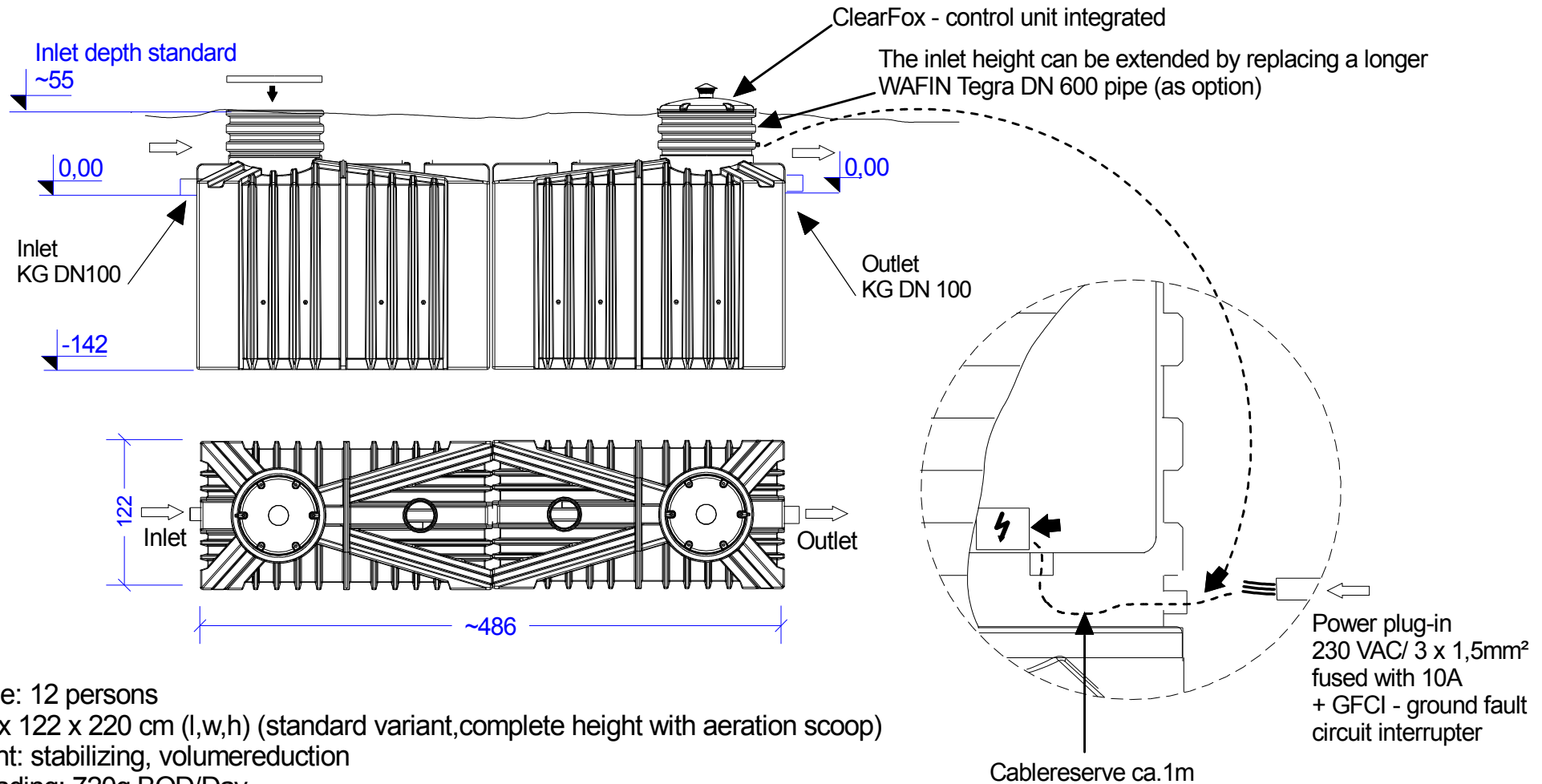
Max. blower power consumption: 0,15 kw

Weight (total/plug&play): ~330 kg

Total capacity: 5750 L

ClearFox- QuickONE +
small wwtp 10 p.e.
Single chamber SBR system
according EN 12566-3

all measures in cm



Specification:

Population range: 12 persons

Measures: 486 x 122 x 220 cm (l,w,h) (standard variant, complete height with aeration scoop)

Sludge treatment: stabilizing, volumereduction

Max. organic loading: 720g BOD/Day

Max. average daily flow: 1800 L

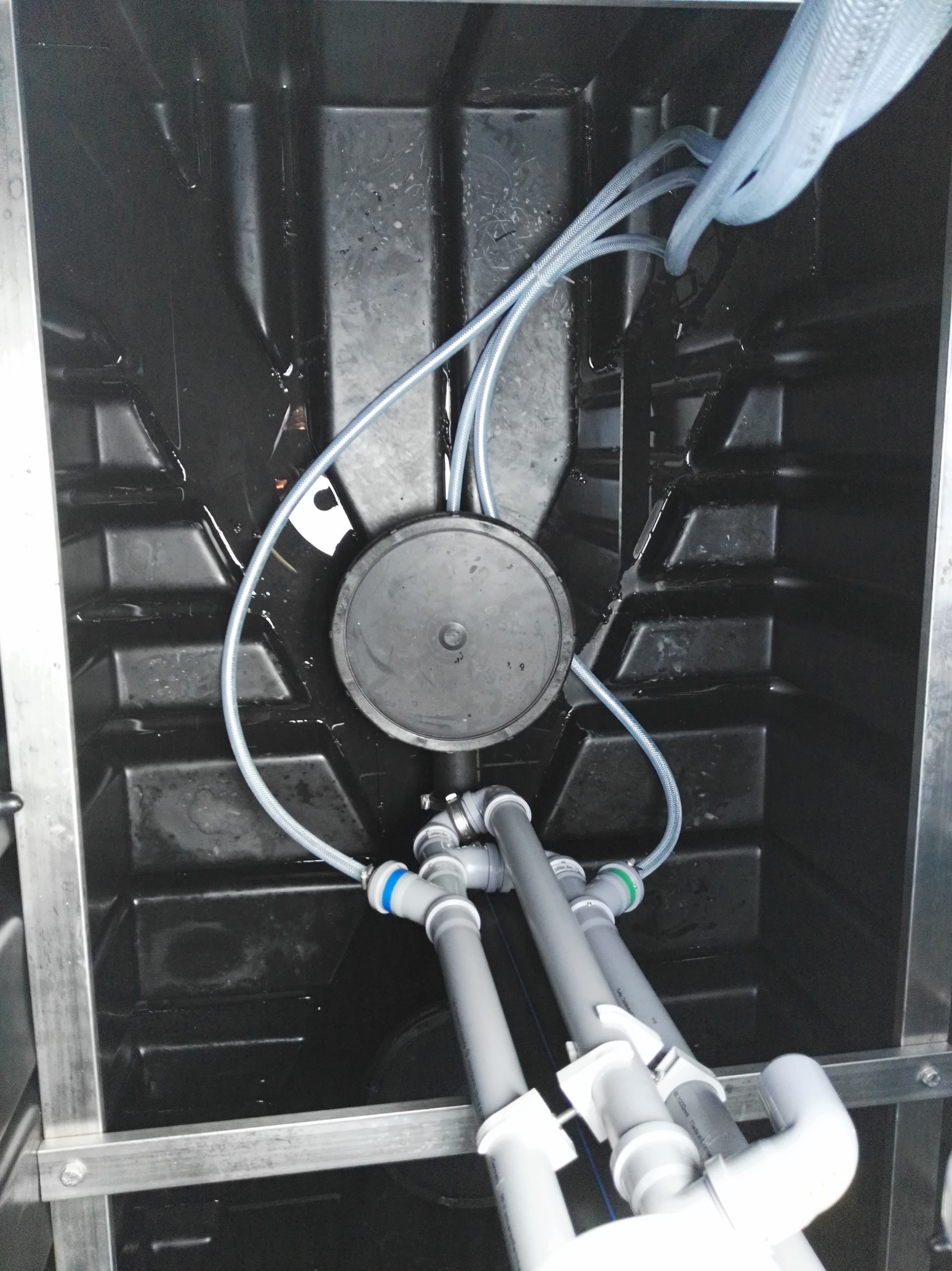
Max. blower power consumption: 0,15 kw

Weight (total/plug&play): ~360 kg

Total capacity: 7000 L

ClearFox- QuickONE +
small wwtp 12 p.e.
Single chamber SBR system
according EN 12566-3





Backflushing
(green)

391115001



Norm EN 1451-1 4186319

Clearwater
(blue)

Gebr. Ostendorf Kunststoffe
PP-Hi schuerentstamper

HTEN PN/OP

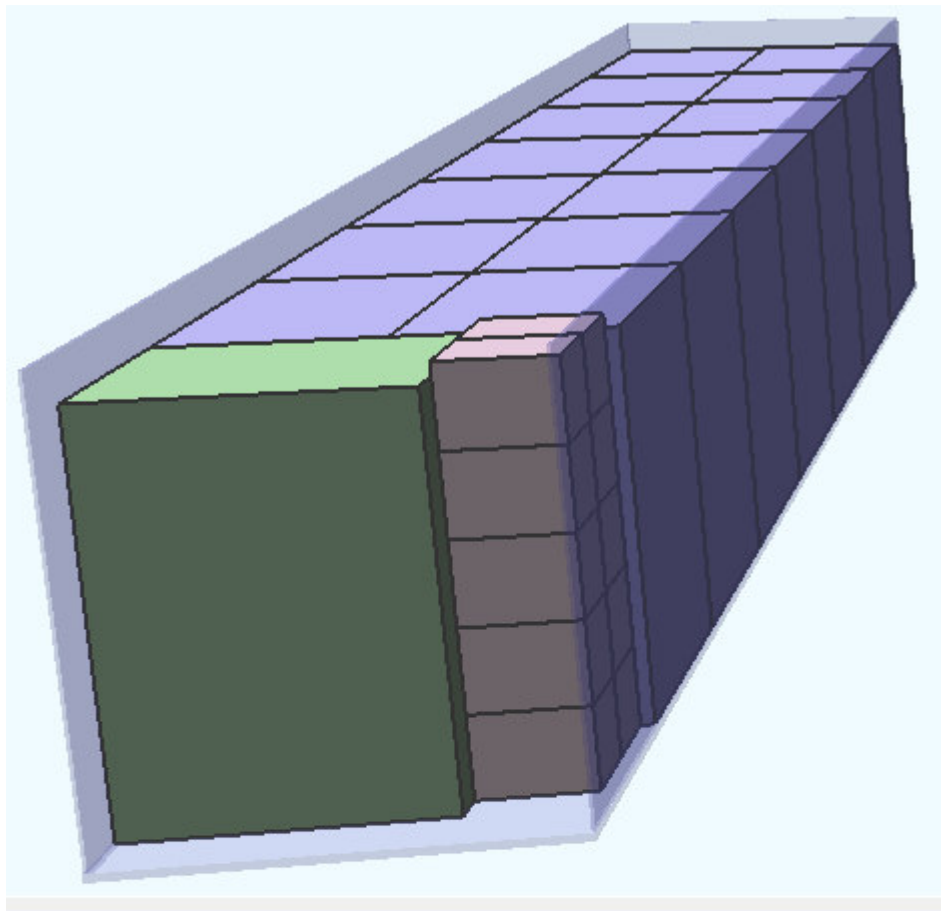
Suction
(input)

Important!
Hole needed






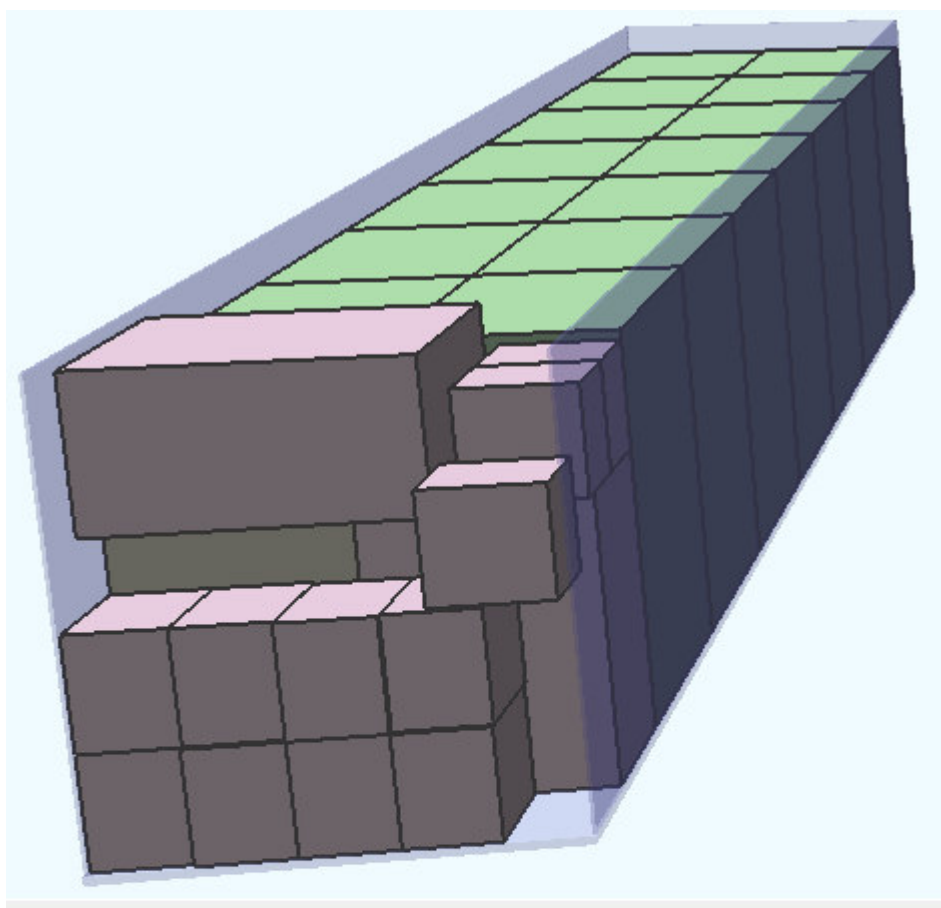
Important information for export companies:

We can load 15 systems in small sea container for a very economic transport to all places in the world, see in the following the different loading plan








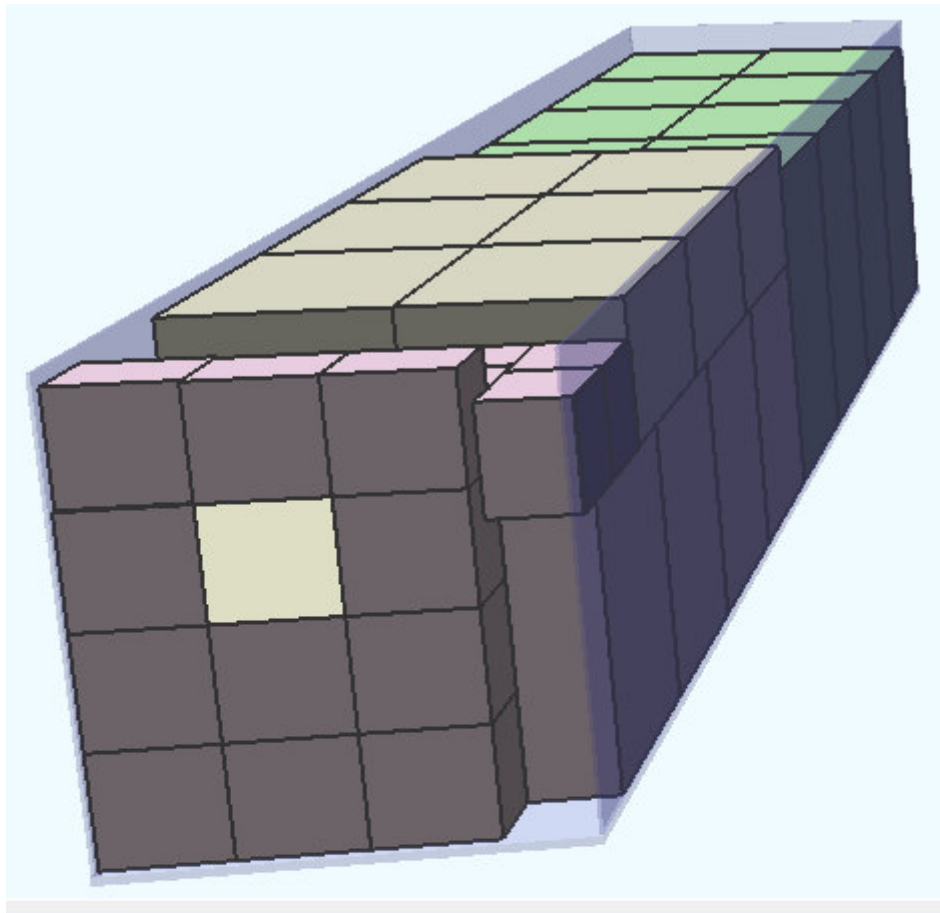
Packing List

| ... | Descripti... | Width | Depth | Height | Wei... |
|---|--------------|--------|--------|--------|--------|
|  | 1 6EW | 122 cm | 171 cm | 242 cm | 210 kg |
|  | 14 6EW | 122 cm | 171 cm | 242 cm | 210 kg |
|  | 10 Mushroom | 50 cm | 65 cm | 50 cm | 10 kg |



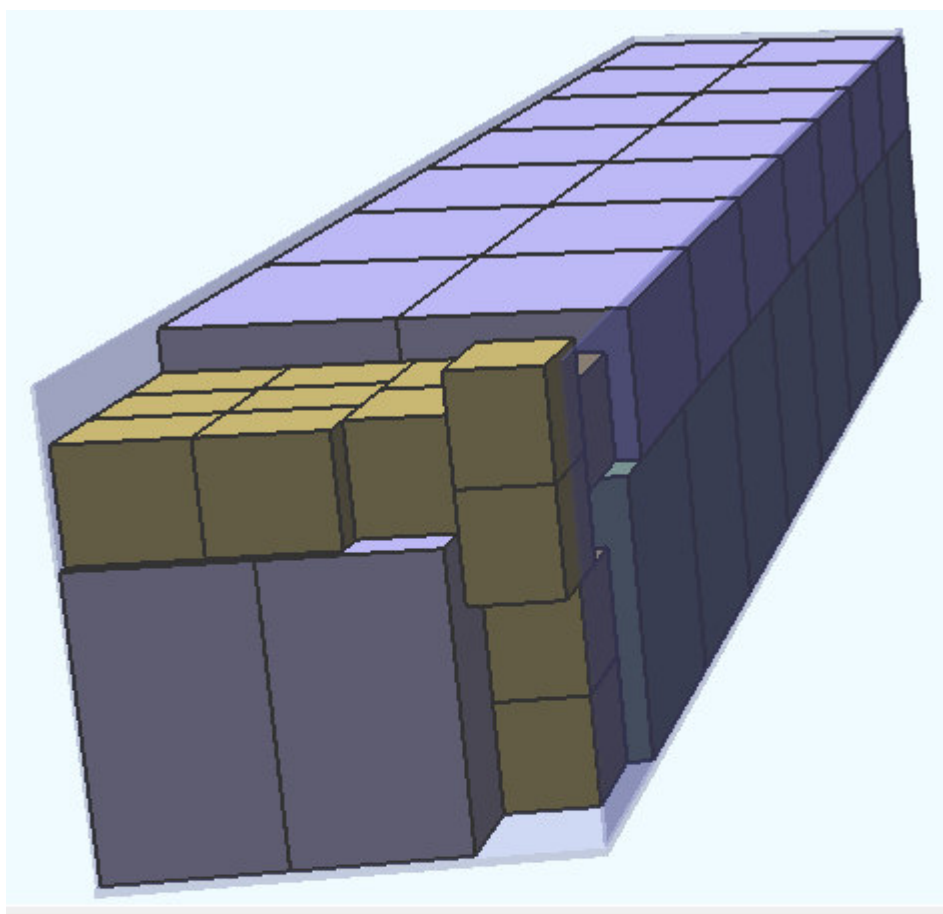
Packing List

| | Quan... | Description | Width | Depth | Height | Weight |
|---|---------|-------------|--------|--------|--------|--------|
|  | 14 | 6EW | 122 cm | 171 cm | 242 cm | 210 kg |
|  | 2 | 1250L-2 | 171 cm | 122 cm | 90 cm | 100 kg |
|  | 6 | Mushroom | 65 cm | 65 cm | 50 cm | 10 kg |
|  | 1 | 1250L | 122 cm | 90 cm | 171 cm | 100 kg |
|  | 5 | Mushroom | 65 cm | 65 cm | 50 cm | 10 kg |






Packing List

| Quan... | Description | Width | Depth | Height | Weight |
|---------|-------------|--------|--------|--------|--------|
| 8 | 6EW | 122 cm | 171 cm | 242 cm | 210 kg |
| 8 | 2250L | 122 cm | 154 cm | 171 cm | 210 kg |
| 6 | 1250L | 122 cm | 90 cm | 171 cm | 100 kg |
| 20 | Mushroom | 65 cm | 65 cm | 50 cm | 10 kg |



Packing List

| | Quan... | Description | Width | Depth | Height | Weight |
|---|---------|-------------|--------|--------|--------|--------|
|  | 16 | 2250L | 122 cm | 154 cm | 171 cm | 210 kg |
|  | 16 | 1250L | 122 cm | 90 cm | 171 cm | 100 kg |
|  | 13 | Mushroom | 65 cm | 65 cm | 50 cm | 10 kg |

45"HCPW

| | | |
|----------------|-----------------------|------------|
| Volume | 84,191 m ³ | efficiency |
| max. | 88,937 m ³ | 94,7 % |
| Weight | 5090 kg | 15,0 % |
| max. | 34000 kg | |
| Loading Length | 1354 cm | 99,9 % |
| max. | 1355 cm | |