MUNICIPAL SEWAGE



Our DAF range includes 11 standard models, as well as custom designs, to meet all customer requirements.

With nearly 70 years' experience and the supply of 7000 DAF units for 4700 references globally, our Group is strategically qualified to provide excellent treatment for municipal sewage plants.





Effluent from municipal WWTPs usually contains excessive phosphorus and needs further treatment to meet emission standards.

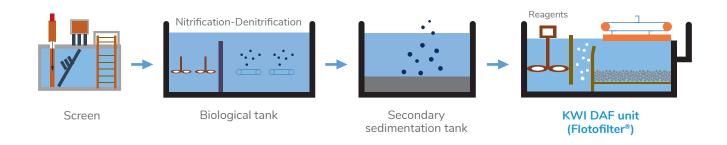
KWI DAF system is a robust solution that is easy to operate and is especially efficient in phosphorus removal.

FLOTOFILTER® is highly recommended for municipal sewage dephosphorization.

This original combined process is a compact system which guarantees very good results in tertiary treatment and dephosphorization, as proven in many KWI projects.

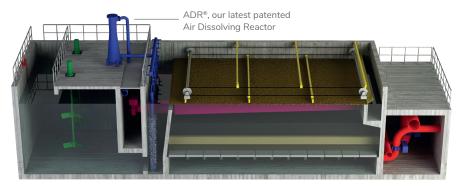
- Can reduce the use of reagents by 10-20%
- Smaller footprint than conventional DAF + media filter
- High phosphorus sludge concentration: up to 3% of solid content
- Sludge can be dewatered directly
- Combined with filtration for even higher efficiency
- Suitable for revamping existing WWTPs

■ Typical municipal sewage treatment process with Flotofilter®



■ Performance & Operating Parameters

Effluent phosphorus concentration:	<0.5 mg/l
Effluent water SS:	<5 mg/l
High hydraulic load:	10 m ³ /(m ² .h)
Sludge concentration	n: 3%
Recirculation ratio:	15%-20%
Air dissolving rate:	>80%



FLOTOFILTER®

■ Flotofilter® range

TYPE	MAXIMUM INLET FLOW* (m³/hour)	SCRAPER POWER (kW)	FILTRATION AREA SIZE LxW (m)
FF 70	730	0.25	11×6
FF 80	860	0.25	12×6.5
FF 90	1030	0.25	12×7.8
FF 100	1080	0.25	12×8.2
FF 110	1190	0.25	12×9

 $^{{}^*\!\}text{The maximum flow includes recycle flow and depends on SS loading and on the application.}$

KWI specialists have vast expertise and experience ranging from engineering to building and commissioning, and from investment to operation.

Let's work together to make your project a success!



www.kwi-france.com contact-fr@kwi-intl.com

KWI France

Savoie Technolac Bâtiment Modul A 27, allée du lac d'Aiguebelette - BP 353 73372 Le Bourget-du-Lac cedex



With nearly 70 years' experience and the supply of 7000 DAF units for 4700 references globally, our Group is strategically placed to serve process industries worldwide.

Our DAF range includes 11 standard models, as well as custom designs,





to meet all customer requirements.

Dissolved Air Flotation is considered to be very efficient and is widely used in treating the oily industrial wastewater from oil fields, oil refineries, petrochemical and chemical plants, natural gas processing plants, and similar industrial facilities.

The main target of DAF unit, in oil & gas application field, is to remove suspended oil and solids from water to be treated.

The Megacell® is highly recommended for oil removal application.

This innovative DAF unit is a compact solution, robust and easy to operate. Even start-up and shut-down phases do not modify its performance, resulting in a stable treated water quality.

- Oil and TSS removal efficiency: 95-99%
- High hydraulic load: up to 30 m³/(m².h)
- High sludge load
- Small footprint
- High sludge concentration: up to 5% of solid content
- Explosion-proof motors, sealed cover, nitrogen collect system, and other safety devices

■ Performance & Operating Parameters

Inlet oil: up to 3000 mg/l

Recirculation ratio: 15%-20%

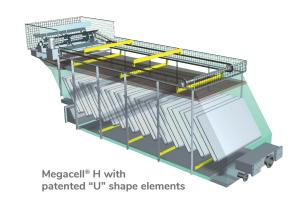
Air/Nitrogen

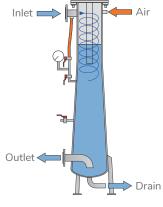
dissolving rate: >80%

Construction

material: SS304L/SS316L/SDX

Option: Sealed cover





ADR®, our latest patented Air Dissolving Reactor

■ Megacell® horizontal range

TYPE	MAXIMUM FLOW* (m³/hour)	POWER (kW)	DIMENSIONS L×WxH (m)	OPERATING WEIGHT (tons)
MCH 2	25	0.18	3.0×1.7×2.8	2.5
MCH 4	50	0.18	3.8x1.7x2.9	4.5
MCH 8	100	0.18	4.0x2.5x3.0	11.5
MCH 12	150	0.25	4.6x2.5x3.0	14.5
MCH 20	250	0.37	6.2x2.5x3.0	22
MCH 25	312	0.37	7.6x2.5x3.0	28
MCH 30	375	0.37	8.6x2.5x3.0	35
MCH 40	500	0.37	10.6x2.5x3.0	44
MCH 50	625	0.55	10.8x2.5x3.0	52
MCH 60 double	750	1.5+0.75	10.1x4.6x3.3	67
MCH 80 double	1000	1.5+0.75	12.1x4.6x3.8	116

 $^{{}^{*}}$ The maximum flow includes recycle flow and depends on SS loading and on the application.

KWI specialists have vast expertise and experience ranging from engineering to building and commissioning, and from investment to operation.

Let's work together to make your project a success!



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KWI France

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KWI Group is considered one of the pioneers of Dissolved Air Flotation (DAF) technology and is one of the oldest existing DAF unit manufacturers in the world.

Our DAF range includes 11 standard models, as well as custom designs, to meet all customer requirements.

With nearly 70 years' experience and the supply of 7000 DAF units for 4700 references globally, our Group is strategically qualified to serve process industries worldwide.





DAF is considered very efficient and is widely used in treating white water, TMP filtrates and wastewater for pulp and paper industry.

Main aim of KWI DAF units in paper mills:

For whitewater treatment, DAF can be used to separate solids/water and recover fibers and clean water which can be reused in the paper and pulping process.

In wastewater and filtration application, DAF can also remove suspended fillers, fiber and other sludge.

The Megacell® Horizontal or Vertical (MCH or MCV) are the best solutions.

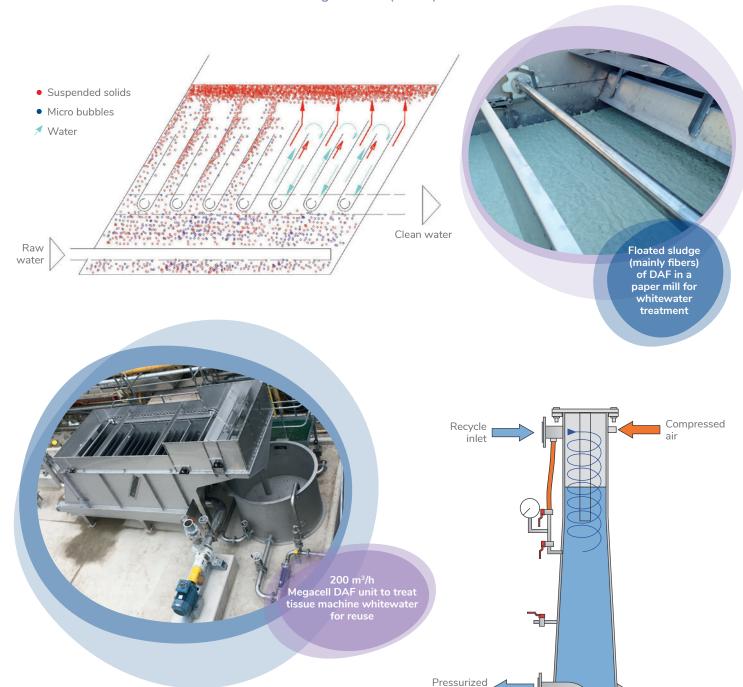
These innovative DAF units are a compact solution, robust and easy to operate. Even start-up and shut-down phases do not modify their performance.

- High TSS removal efficiency: 96%~99%
- High hydraulic load: up to 80m³/(m².h)
- High sludge load: up to 70 kg/(m² h).
- Small footprint
- Less energy and chemical consumption
- High sludge concentration: up to 5% of solid content



■ Our patents: that's what makes the difference!

Patented "U" elements and Air Dissolving Reactor (ADR®)



■ Performance & Operating Parameters

Inlet TSS:	max. 5000 mg/l
TSS Removal efficiency:	>96%
Recirculation ratio:	20-40%
Air dissolving rate:	>80%
Construction material:	SS304L/SS316L

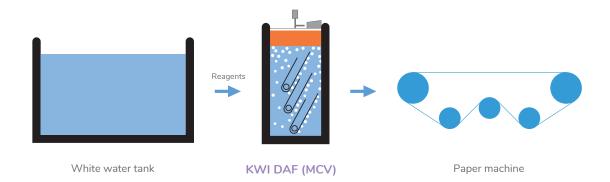
This innovative ADR® ensures floated sludge uniformity, a key factor in judging DAF performance.

water outlet

WANT TO LEARN MORE?

Please contact
our sales representatives!

■ Typical white water process treatment with Megacell® vertical (MCV)





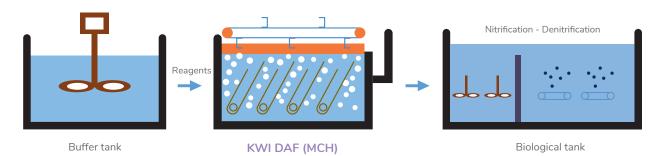


■ MCV range

TYPE	MAXIMUM INLET FLOW* (m³/hour)	POWER (kW)	TDIMENSIONS Ø or L × W × H (m)	OPERATING WEIGHT (tons)
MCV 8	100	0.55	2.2xNAx5.2	22
MCV 12	150	0.55	2.2xNAx6.2	27
MCV 20	250	0.55	2.2xNAx8.2	38
MCV 30	375	0.55	3.0xNAx9	65
MCV 20.2	250	0.55	2.2x2.3x5.3	25
MCV 30.2	375	0.55	2.2x2.3x6.8	35
MCV 40.4	500	0.55	4.3x4.3x5.3	80
MCV 60.4	750	0.55	4.3x4.3x7.6	110
MCV 80.4	1000	0.55	4.3x4.3x8.8	150
MCV 100.4	1250	0.55	4.3x4.3x6.6	200

 $^{{}^{*}}$ The maximum flow includes recycle flow and depends on SS loading and on the application.

■ Typical paper mill waste water treatment process with Megacell® horizontal (MCH)







■ MCH range

TYPE	MAXIMUM INLET FLOW* (m³/hour)	POWER (kW)	DIMENSIONS L×WxH (m)	OPERATING WEIGHT (tons)
MCH 2	25	0.18	3.0x1.7x2.8	2.5
MCH 4	50	0.18	3.8x1.7x2.9	4.5
MCH 8	100	0.18	4.0x2.5x3.0	11.5
MCH 12	150	0.25	4.6x2.5x3.0	14.5
MCH 20	250	0.37	6.2x2.5x3.0	22
MCH 25	312	0.37	7.6x2.5x3.0	28
MCH 30	375	0.37	8.6x2.5x3.0	35
MCH 40	500	0.37	10.6x2.5x3.0	44
MCH 50	625	0.55	10.8x2.5x3.0	52
MCH 60 double	750	1.5+0.75	10.1x4.6x3.3	67
MCH 80 double	1000	1.5+0.75	12.1x4.6x3.8	116

^{*}The maximum flow includes recycle flow and depends on SS loading and on the application.

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to meet all customer requirements.

With nearly 70 years' experience

Our DAF range includes 11 standard models, as well as custom designs,

and the supply of 7000 DAF units for 4700 references globally, our Group is strategically qualified to bid for large desalination plant projects.

Algae removal has always been a challenge in the seawater desalination process.

KWI's DAF unit is a proven technology already used in Europe and in the Middle East, as effective pretreatment upstream of seawater desalination systems.

Indeed, Unicell® BF (DAF unit) is a robust and simple process to use. Even the stop and start phases do not disrupt its efficiency on algae treatment!

Today, there is a constant demand for innovation to improve reliability, reduce CAPEX and OPEX, including the consumption of chemicals from the desalination plant.

By bringing together the expertise of KWI, a specialist in pre-treatment by flotation, and ltN, a specialist in ceramic ultrafiltration, we offer an innovative and economical combination:

KWI UNICELL® BF DAF unit



ItN membranes CFM System®

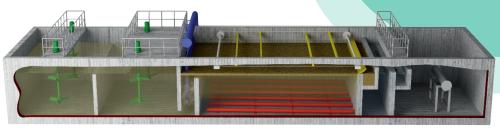


High performances with a long life-span and less operation costs





- Outlet turbidity less than 1 NTl
- TSS removal efficiency: 95%-99%
- High hydraulic load: maximum 25 m³/(m².h
- High Algae removal efficiency: 95%-98%
- High sludge concentration: max 5% of solid content
- Only seawater resistant materials
- Small footprint



■ Performance & Operating Parameters

Maximum feed suspended solids:	100 mg/l
Effluent water turbidity:	<1 NTU
Algae removal efficiency:	95%-98%
Sludge concentration:	3-5%
Recirculation ratio:	15%-20%
Air dissolving rate:	>80%



■ Unicell® BF range

TYPE	MAXIMUM INLET FLOW* (m³/hour)	SCRAPER POWER (kW)	FLOTATION AREA SIZE** L×W (m)
UNCBF30	750	0.25	6.71 × 5.5
UNCBF40	1000	0.25	7.9 × 6
UNCBF50	1250	0.25	9 x 6.5
UNCBF60	1500	0.25	9.9 x 7
UNCBF70	1750	0.25	10.2 × 8
UNCBF80	2000	0.25	10.2 × 9
UNCBF90	2250	0.25	11.2 × 9
UNCBF100	2500	0.25	11.5 × 10
UNCBF110	2750	0.25	12.2 × 10
UNCBF120	3000	0.25	13.4 × 10

^{*}The maximum flow includes recycle flow and depends on SS loading and on the application. **Including flocculated water / pressurized water mixing zone.

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Our DAF range includes 11 standard models, as well as custom designs, to meet all customer requirements.

With nearly 70 years' experience and the supply of 7000 DAF units for 4700 references globally, our Group is strategically placed to bid for large municipal or industrial projects.

KWI DAF unit is considered very efficient and is widely used in biological sludge thickening for municipal sewage treatment plants, or in industrial WWTPs.





Sedicell® and Megacell®, are especially designed for sludge thickening.

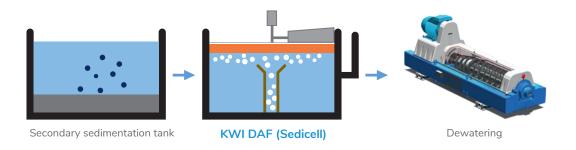
These innovative DAF units are a compact solution, robust and easy to operate.

Even start-up and shut-down phases do not modify their performance.

- Design allows tank construction in stainless steel or in concrete
- Horizontal or Vertical versions (Megacell[®] only)
- High floated sludge consistency (up to 6%) is easy to achieve and maintain
- Prevents the release of phosphorus during the thickening phase
- Insensitive to flow variations or the quality of incoming effluents
- Lower chemical consumption, none for Sedicell
- Smaller foot print
- No sludge bulking problem



■ Typical sludge thickening process with Sedicell®



■ Performance & Operating Parameters

TSS inlet:	max. 8000 mg	
TSS mass load :	8 kg/(m ² .h)	
Recirculation ratio :	50%-200%	
Sludge concentration :	up to 5%	
Air dissolving rate :	>80%	

Construction material : SS304L/SS316L/ Concrete

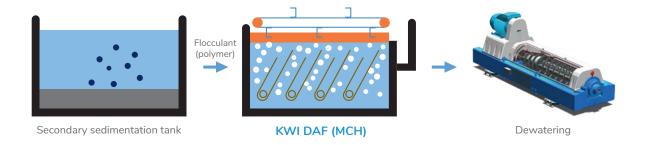


■ Sedicell® range

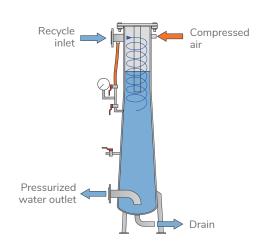
TYPE	MAXIMUM INLET FLOW* (m³/hour)	POWER (kW) scoop engine + carriage motor	DIMENSIONS Ø×H (M)
SDC 10	60	0.25+0.25	3.2x2.8
SDC 12	90	0.55+0.37	3.9x3.3
SDC 15	115	0.55+0.37	4.5x3.3
SDC 18	180	1.10+0.37	5.5x3.3
SDC 20	220	0.37+0.37	6.1×3.3
SDC 22	250	0.37+0.37	6.7x3.3
SDC 24	300	0.75+0.55	7.2x3.3
SDC 27	380	0.75+0.55	8.1x3.3
SDC 30	470	0.75+0.55	9.0x3.3
SDC 33	570	1.10+1.10	10.0×3.3
SDC 36	700	1.10+1.10	11.0×3.3
SDC 40	850	1.10+1.10	12.2×3.3
SDC 44	1000	1.50+1.50	13.4×3.3
SDC 49	1250	1.50+1.50	14.8×3.6
SDC 55	1500	1.50+1.50	16.7×3.6
SDC 65	2000	2.20+2.20	19.7×3.6
SDC 68	2200	2.20+2.20	20.4×3.6

^{*}The maximum flow includes recycle flow and depends on SS loading and on the application.

■ Typical sludge thickening process with Megacell® Horizontal (MCH)



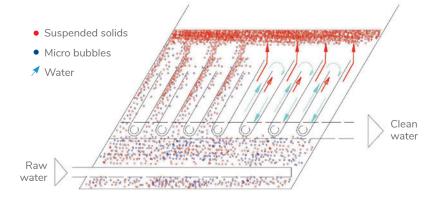
■ Performance & Operating Parameters



This innovative ADR® ensures floated sludge uniformity, a key factor in judging DAF performance

TSS inlet:	max. 8000 mg	
TSS mass load :	20 kg/(m ² .h)	
Recirculation ratio :	50%-200%	
Sludge concentration :	up to 4%	
Air dissolving rate :	>80%	

Construction material: SS304L/SS316L/Concrete



MCH range

TYPE	MAXIMUM INLET FLOW* (m³/hour)	POWER (kW)	DIMENSIONS L×WxH (m)	OPERATING WEIGHT (tons)
MCH 2	25	0.18	3.0×1.7×2.8	2.5
MCH 4	50	0.18	3.8x1.7x2.9	4.5
MCH 8	100	0.18	4.0x2.5x3.0	11.5
MCH 12	150	0.25	4.6x2.5x3.0	14.5
MCH 20	250	0.37	6.2x2.5x3.0	22
MCH 25	312	0.37	7.6x2.5x3.0	28
MCH 30	375	0.37	8.6x2.5x3.0	35
MCH 40	500	0.37	10.6×2.5×3.0	44
MCH 50	625	0.55	10.8×2.5×3.0	52
MCH 60 double	750	1.5+0.75	10.1x4.6x3.3	67
MCH 80 double	1000	1.5+0.75	12.1x4.6x3.8	116

^{*}The maximum flow includes recycle flow and depends on SS loading and on the application.

■ Typical sludge thickening process with Megacell® Vertical (MCV)



■ Performance & Operating Parameters

TSS inlet:	max. 8000 mg/l	
TSS mass load :	80 kg/(m ² .h)	
Recirculation ratio :	50%-200%	
Sludge concentration :	up to 6%	
Air dissolving rate :	>80%	

Construction material: SS304L/SS316L/Concrete



This vertical patented design is well suited to sludge thickening in industrial WWTPs, where the efficiency/surface ratio is strategic in investment choice

MCV range

TYPE	MAXIMUM INLET FLOW* (m³/hour)	POWER (kW)	DIMENSIONS Ø or L×W×H (m)	OPERATING WEIGHT (tons)
MCV 8	100	0.55	2.2xNAx5.2	22
MCV 12	150	0.55	2.2xNAx6.2	27
MCV 20	250	0.55	2.2xNAx8.2	38
MCV 30	375	0.55	3.0xNAx9.0	65
MCV 20.2	250	0.55	2.2x2.3x5.3	25
MCV 30.2	375	0.55	2.2x2.3x6.8	35
MCV 40.4	500	0.55	4.3×4.3×5.3	80
MCV 60.4	750	0.55	4.3×4.3×7.6	110
MCV 80.4	1000	0.55	4.3×4.3×8.8	150
MCV 100.4	1250	0.55	4.3×4.3×6.6	200

^{*}The maximum flow includes recycle flow and depends on SS loading and on the application.

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to meet all customer requirements. With nearly 70 years' experience

Our DAF range includes 11 standard models, as well as custom designs,

and the supply of 7000 DAF units for 4700 references globally, our Group is strategically qualified to bid for large water supply plants.





We highly recommend for water purification, 3 models:

- Unicell® BF
- Flotofilter®
- Klaricell®

Our innovative DAF process is easy to operate and very efficient. Even start-up and shut-down phases do not disrupt its high performance. It is perfectly suitable for treating algae and turbidity.

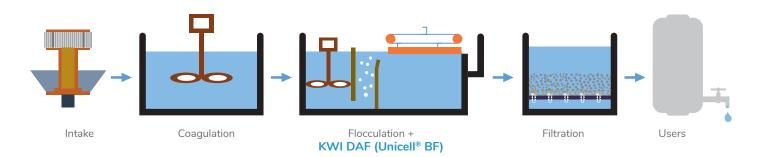
For fresh water production, the rising velocity of DAF is around 25 m/h.

> The combined KWI DAF process with integrated filtration technology, Flotofilter® and Klaricell®, are the ideal solutions for water purification!

- Stable effluent water quality and turbidity
- Turbidity less than 0.5 NTU with DAF-filtration process
- Highly efficient algae removal: up to 98%

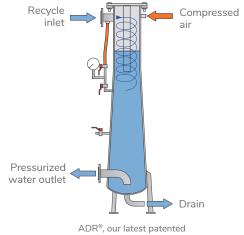


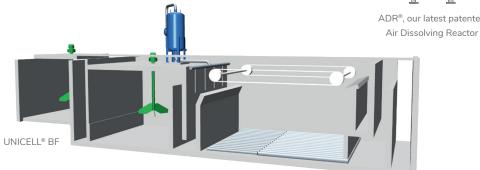
■ Typical water supply treatment process with Unicell® BF



■ Performance & Operating Parameters

Effluent water turbidity:	<1 NTU
Algae removal efficiency:	up to 98%
Sludge concentration:	maxi 3%
Recirculation ratio:	15%-20%
Air dissolving rate:	>80%





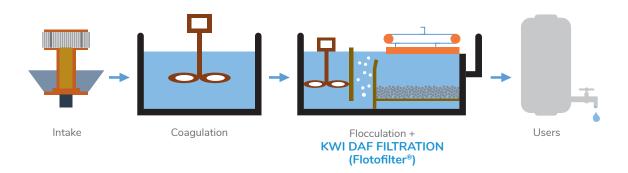
■ Unicell® BF range

ТҮРЕ	MAXIMUM INLET FLOW* (m³/hour)	SCRAPER POWER (kW)	FLOTATION AREA SIZE** L×W (m)
UNC BF30	750	0.25	6.71 × 5.5
UNC BF40	1000	0.25	7.9 × 6
UNC BF50	1250	0.25	9 x 6.5
UNC BF60	1500	0.25	9.9 x 7
UNC BF70	1750	0.25	10.2×8
UNC BF80	2000	0.25	10.2×9
UNC BF90	2250	0.25	11.2×9
UNC BF100	2500	0.25	11.5 × 10
UNC BF110	2750	0.25	12.2 × 10
UNC BF120	3000	0.25	13.4 × 10

 $^{{}^*\!\}text{The maximum flow includes recycle flow and depends on SS loading and on the application.} \\ {}^{**}\!\!\text{Including flocculated water / pressurized water mixing zone.} \\$

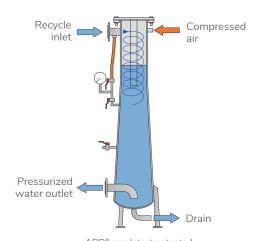
Optional items: Sludge discharge using a scraper device or gravity.

■ Typical water supply treatment process with Flotofilter®

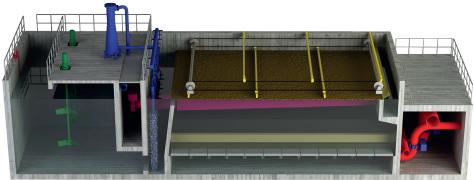


■ Performance & Operating Parameters

Effluent water turbidity:	<0.5 NTU
Algae removal efficiency:	up to 98%
Recirculation ratio:	15%-20%
Air dissolving rate:	>80%



ADR®, our latest patented Air Dissolving Reactor



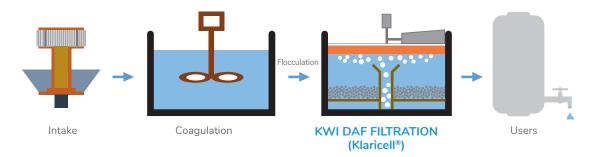
FLOTOFILTER®

■ Flotofilter® range

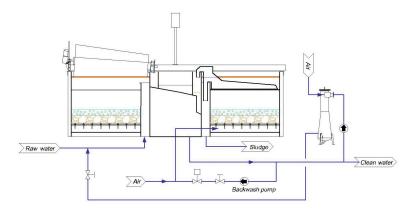
TYPE	MAXIMUM INLET FLOW* (m³/hour)	SCRAPER POWER (kW)	FILTRATION AREA SIZE LxW (m)
FF 70	730	0.25	11×6
FF 80	860	0.25	12 × 6.5
FF 90	1030	0.25	12×7.8
FF 100	1080	0.25	12×8.2
FF 110	1190	0.25	12×9

^{*}The maximum flow includes recycle flow and depends on SS loading and on the application.

■ Typical water supply treatment process with Klaricell®



■ Performance & Operating Parameters

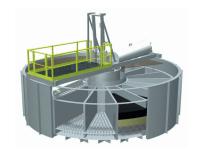


Effluent water turbidity: < 0.5 NTU

Algae removal efficiency: up to 98%

Recirculation ratio: 15%-20%

Air dissolving rate: >80%



■ Klaricell® range

TYPE	MAXIMUM INLET FLOW* (m³/hour)	POWER (kW) scoop engine + carriage motor	FLOTATION AREA SIZE** Ø x H (m)
KLC 20	200	0.37+0.37	6.1x2.3
KLC 22	235	0.37+0.37	6.7×2.4
KLC 24	280	0.37+0.37	7.3x2.4
KLC 27	360	1.1+1.1	8.3x2.4
KLC 30	440	0.75+0.75	9.2×2.4
KLC 33	520	0.75+0.75	10.0×2.4
KLC 36	630	1.1+1.1	11.0×2.4
KLC 40	770	1.1+1.1	12.2×2.5
KLC 44	920	1.1+1.1	13.4×2.5
KLC 49	1170	4+4	15.0×2.5
KLC 55	1480	4+4	16.8×2.5

^{*}The maximum flow includes recycle flow and depends on SS loading and on the application. **Including flocculated water / pressurized water mixing zone.

KWI specialists have vast expertise and experience ranging from engineering to building and commissioning, and from investment to operation.

Let's work together to make your project a success!



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