



ADVANCED AQUACULTURE SYSTEMS

SUSTAINABLE FISH FARMING

COMPANY PROFILE, RAS PROJECTS
& FEATURED EQUIPMENT

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OF THIS CATALOG ONLINE**



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MAT-KULING COMPANY PROFILE

MAT-KULING AS is a Norwegian firm, which focuses on RAS (Recirculating Aquaculture Systems), and industrial filtration equipment & technology, providing innovative solutions to



EGEMAR SEA BREAM & SEA BASS HATCHERY

intensive land based fish farming.

Working closely with aquaculture industry leaders and universities, we design & fabricate the most updated RAS filtration technology.

MAT-KULING RAS Technology offers equipment, customized to each project, aiming to



SWISS LACHS LAND BASED SALMON FARM

increase the production capacity, & eventually sustainable operations.

In MAT-KULING we thrive to design and supply RAS equipment to secure maximum available biosecurity whilst maintaining sustainable production and operation costs.



NORDZEE SEA BREAM & SEA BASS HATCHERY

We provide efficient RAS technology for closed circuit fish farming & our experienced after-sales team provides onsite 24/365 support, physically and online.

Our RAS technology, comes with 5 years warranty using MEP components made in EU &



AKVATEK SEA BREAM & SEA BASS HATCHERY

USA & we operate under ISO 14001 and 9001 protocols, carrying VIT, UL, SASO, EUOTA, and CE.



ILKNAK SEA BREAM HATCHERY



Proven Norwegian RAS Technology

LA FERME PISCICOLE DES BOBINES RAINBOW TROUT



Biosecurity Meets Intensive Fish Farming



For more information about MAT-KULING please visit our website at matkuling.com

THEY TRUST MAT-KULING



Food and Agriculture
Organization of the
United Nations



MOWI



NORDIC **KINGFISH**
SUSTAINABLE YELLOWTAIL

BalticWaters 2O3O



SAMHERJI
ICE FRESH SEAFOOD

**PESCE
GROUP**



BAKKAFROST
ESTABLISHED 1968



BIN QURAYA
CONSTRUCTION



SWISS LACHS
pure alpine salmon



Eyvi

AquaMaof



SKJERNESET



VAQ



Alsaker **Fjordbruk**



hima

OCEAN
ON LAND TECHNOLOGY



**PURE
salmon**



İLKNAK



NORDZEE



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Contact MAT-KULING today to meet people that understand your concerns in the aquaculture industry. We welcome any request seeking for intensive aquaculture filtration solutions. We understand your needs and we will make the extra step to serve you in the best possible way. We aim for continuous long lasting business relation with all our clients and friends around the world.

MAT-KULING USA

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THE TEAM



BJØRN DØRUM
Chairman



TANER BILGIC
General Manager & CTO



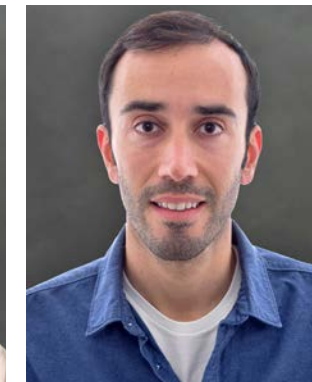
NURETTIN ERSU
Country Manager UAE, KSA,
Bahrain



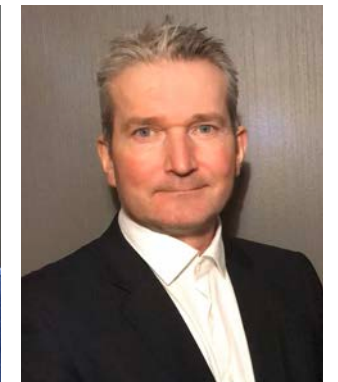
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VIT PROFANT
RAS Specialist M.Sc.



**NIL LLONCH
LLUSSA**
M.Sc. RAS Specialist &
Biologist



**KJETIL
KOLBEINSVIK**
Country Manager
Norway

NIVA (NORWEGIAN INSTITUTE FOR WATER RESEARCH) RESULTS

The Norwegian Institute for Water Research (NIVA), Norway's leading Non For Profit Institute for fundamental and applied research on marine and freshwaters. NIVA's world-class expertise is multidisciplinary with a broad scientific scope.

NIVA officials, performed an independent, nonpaid field trial on MAT-KULING's freshwater protein skimmer performance in an undisclosed salmon farm facility in Norway. The trial occurred between 12.08.2020 and 10.09.2020.

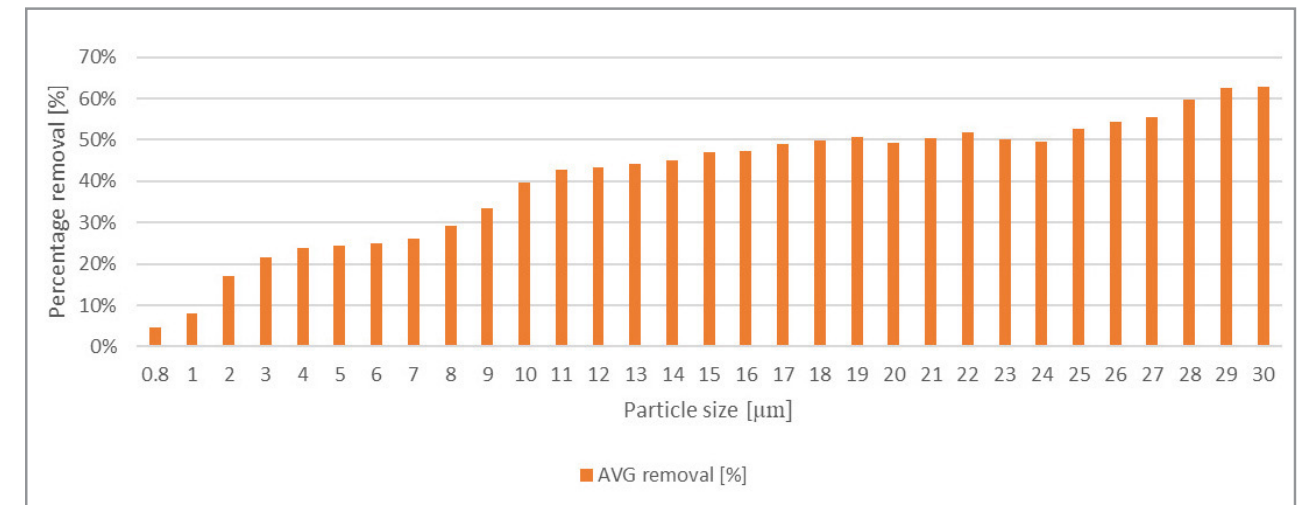
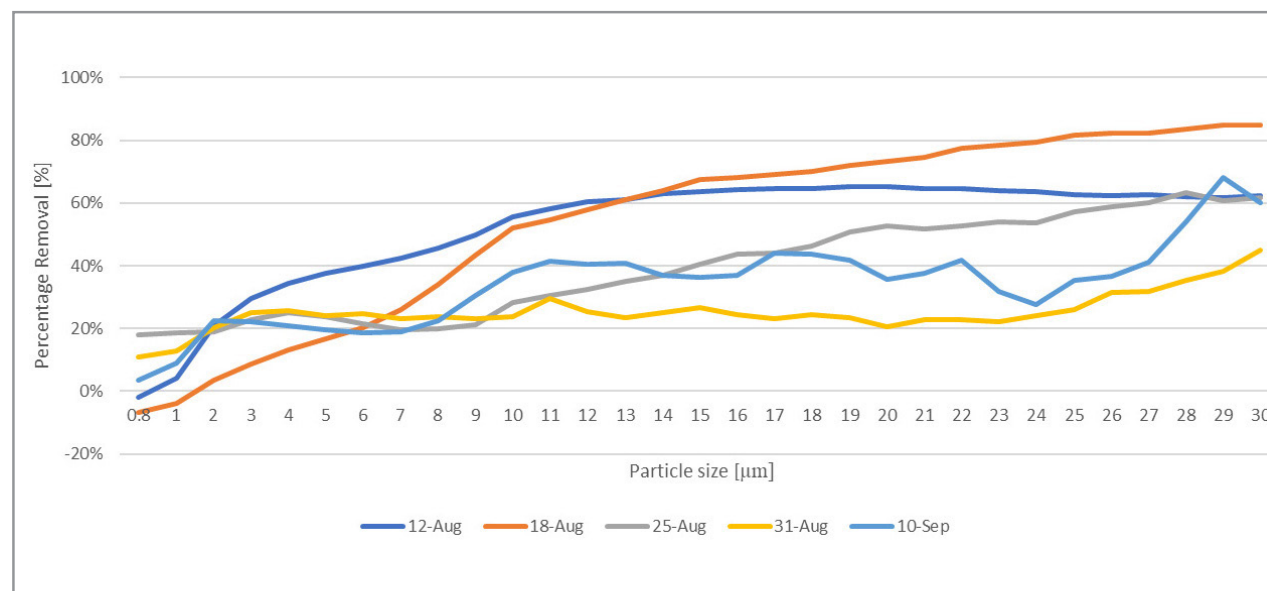
NIVA collected water samples before the installation of MAT-KULING freshwater skimmer and continued collecting samples after the installation of the Protein Skimmers for about 1 month.

During the trial the pre-smolt pool was operated in full capacity and following the

standard farming protocol.

The results as they can be observed on the diagrams presented, were better than expected.

There was significant removal in small, medium and large particles. This resulted in improvement in several water quality chemical parameters.

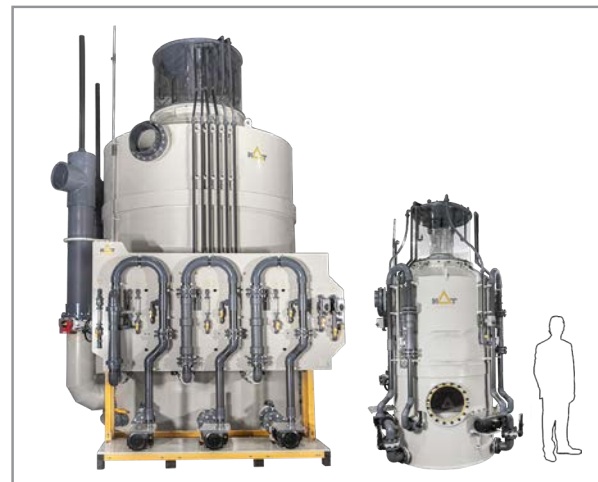


MARINE & FRESHWATER PROTEIN SKIMMERS

The Protein Skimmers / Foam Fractionators are used to provide an efficient means of floatable and dissolved solids control, by removing mechanically, fine and dissolved organics from water. A combination of a Protein Skimmer and Ozone generator is a perfect choice to increase the production capacity of the current facilities by UVT & Turbidity & COD treatment simultaneously by killing free-swimming bacteria and oxidation of a dissolved substance.

Additionally, through the fractionation process, the MAT-KULING Foam Fractionator infuses oxygen and ozone that minimize bacteria and microorganisms and

maximise O₂ concentration in Recirculated Aquaculture Systems (RAS). User-friendly operation.



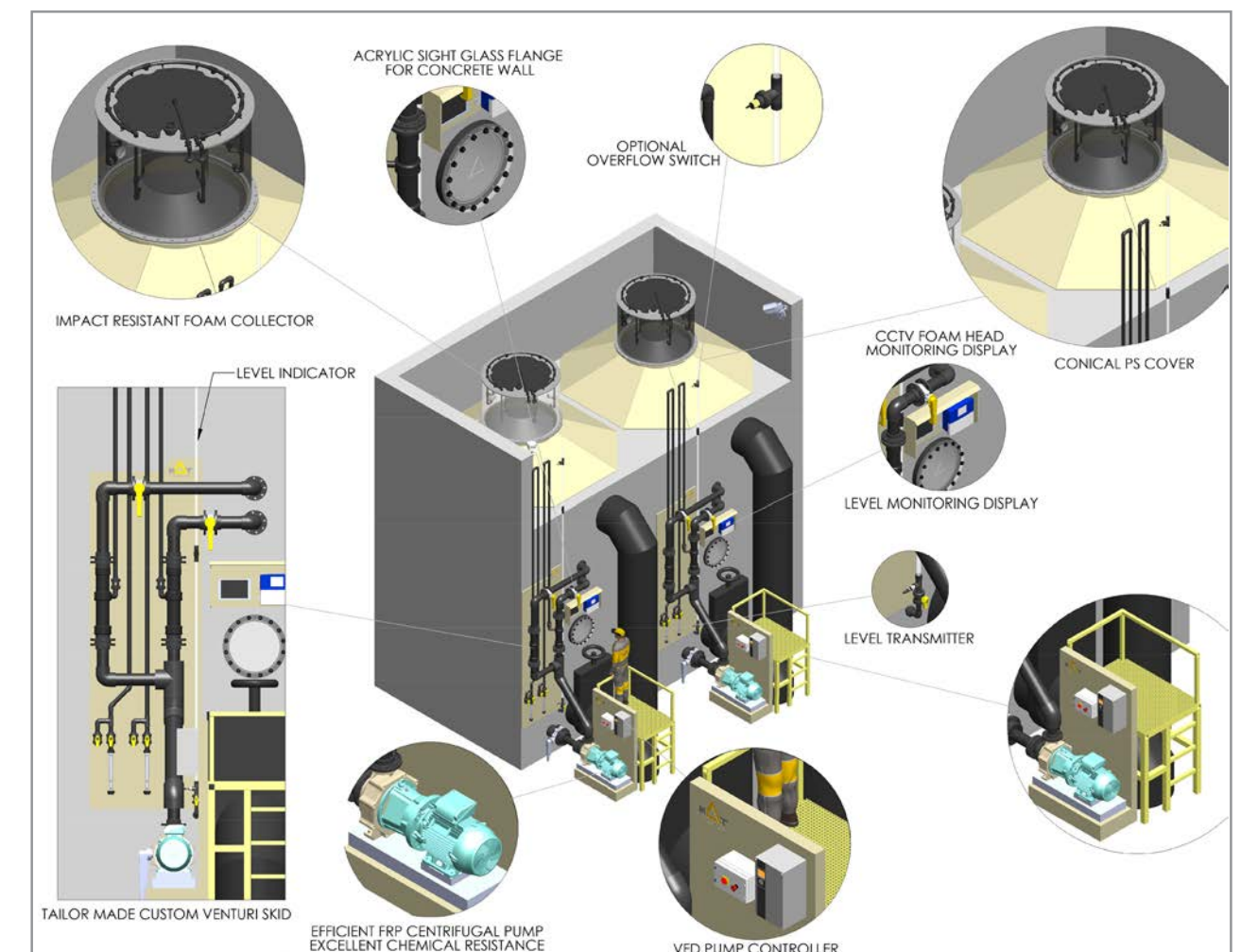
CONCRETE PROTEIN SKIMMERS

MAT-KULING can provide Protein Skimmers set-ups for concrete chambers for larger RAS applications. Concrete Protein Skimmers can be more cost-effective solutions after 1000m³/h Protein Skimmer Flowrates compared to prefabricated units with their bodies.

It is not only the most CAPEX efficient but also the most OPEX efficient foam fractionation solution. Locating concrete protein skimmers chambers into the channel

flow sequence by the designer eliminates the feed pump and main energy requirement of Protein Skimmer application.

Our Design Team supports RAS Designers/Contractors technically for the sizing of concrete chamber and channels.



16 MAT-KULING AS				
PROTEIN SKIMMER-M	PSM-14	PSM-22	PSM-62	PSM-220
Footprint Depth [mm]	800	975	1190	1700
Footprint Width [mm]	955	1195	1505	2400
Diameter [mm]	315	500	750	955
Height [mm]	1825	1929	2320	2670
Installed Power [kW]	0.45	0.68	0.71	0.97
Basic Unit Total Electric Consumption [kWh]	0.32	0.48	0.5	0.68
Supply Voltage (50Hz) [V]	3~400/230	3~400/230	3~400/230	3~400/230
Inlet Size [mm]	63	75	110	160
Inlet Qty [pcs]	1	1	1	1
Inlet Level [mm]	1196	1187	1500	1590
Outlet Size [mm]	75	90	140	225
Outlet Qty pcs	1	1	1	1
Outlet Level [mm]	1235	1227	1518	1585
Body Volume [m³]	0.09	0.24	0.71	1.29
Minimum-Maximum operation water level [mm]	1275-1533	1353-1631	1705-2010	1949-2254
Foam Collector effluent connection size [mm]	50	50	50	63
Max Flow Rate [m³/hr]	15	22	62	220
Max flow Dwell Time [second]	22	38	41	21
@1 min Dwell Time Flow Rate [m³/hr]	5.4	14.4	42.6	77.4
@1.5 min Dwell Time Flow Rate [m³/hr]	3.6	9.6	28.4	51.6
@2 min Dwell Time Flow Rate [m³/hr]	2.7	7.2	21.3	38.7
Dry weight [kg]	82	102	160	254
Operational Weight [kg]	172	400	920	1650
Body Material	PP	PP	PP	PP
Venturi Pump Qty [pcs]	1	1	1	1
Venturi Pump Model	44/8	44/12	21-40/54H G	21-40/58H G
Nominal Air Suction [Nm³/hr]	2	2	4	6

MAT-KULING AS 17					
PSM-280	PSM-360	PSM-600	PSM-800	PSM-1300	PSM-1500
1900	2100	3275	2900	3755	4185
2570	2800	3350	3810	3850	5435
1250	1500	2000	2350	3000	3400
3080	3630	3705	4600	4680	4825
1.9	3.45	4.5	7.5	11	15
1.3	2.52	3.33	5.5	8.8	12.35
3~400/230	3~400/230	3~400	3~400	3~400	3~400
200	225	315	400	500	630
1	1	1	1	1	1
1838	2300	2185	2700	2723	2593
250	280	315	400	500	630
1	1	1	1	1	1
1845	2259	2181	2560	2560	2560
2.74	4.5	8.09	14.5	23	29
2230-2605	2806-3156	2922-3372	3095-3305	3665-4065	3810-4210
63	63	90	90	90	90
280	360	600	819	1300	1500
35	45	49	42	64	70
164.4	270	485.4	570	1380	1740
109.6	180	323.6	380	920	1160
82	135	242.7	285	690	870
390	525	870	1100	1750	2070
3200	5300	9500	13500	25000	29000
PP	PP	PP	PP	PP	PP
1	1	1	1	1	1
21-50/43	21-81/33	21-81/34	CMO-N 65-125	CMO-N 65-160	CMO-N 65-160
18	23	32	45	70	90

PROTEIN SKIMMER-F	PSF-22	PSF-62	PSF-220	PSF-280
Footprint Depth [mm]	1195	1195	1400	1810
Footprint Width [mm]	1043	1525	2220	2550
Diameter [mm]	500	750	955	1250
Height [mm]	1927	2320	2670	3085
Installed Power [kW]	1.1	1.33	3.5	3.5
Basic Unit Total Electric Consumption [kWh]	0.75	1	3	3
Supply Voltage (50Hz) [V]	3~400/230	3~400/230	3~400/230	3~400/230
Inlet Size [mm]	75	110	160	200
Inlet Qty [pcs]	1	1	1	1
Inlet Level [mm]	1185	1500	1590	1838
Outlet Size [mm]	90	140	225	250
Outlet Qty [pcs]	1	1	1	1
Outlet Level [mm]	1252	1518	1585	1845
Body Volume [m ³]	0.24	0.71	1.29	2.74
Minimum-Maximum operation water level [mm]	1353-1631	1705-2010	1949-2254	2230-2605
Foam Collector effluent connection size [mm]	50	50	63	63
Max Flow Rate [m ³ /hr]	22	62	220	280
Max Flow Dwell Time [second]	38	41	21	35
@1min Dwell Time Flow Rate [m ³]	14	43	77	164.4
@1.5 min Dwell Time Flow Rate [m ³ /hr]	9.6	28.4	51.6	109.6
@2 min Dwell Time Flow Rate [m ³ /hr]	7	21	39	82
Dry Weight [kg]	100	180	262	420
Operational Weight [kgs]	435	970	1650	3265
Body Material	PP	PP	PP	PP
Venturi Pump Qty [pcs]	1	1	1	1
Venturi Pump Model	21-40/54H	21-40/58H G	21-81/33	21-81/33
Nominal Air Suction [Nm ³ /hr]	6.7	10	30	30

PSF-360	PSF-600	PSF-800	PSF-1300	PSF-1500
2100	2820	2900	3805	4185
2810	3350	4000	4775	5435
1500	2000	2350	3000	3400
3630	3705	4800	4825	4825
4.55	11	11	15	22
4	8.4	8.8	11	19.5
3~400/230	3~400/230	3~400/230	3~400/230	3~400/230
225	315	400	500	630
1	1	1	1	1
2300	2185	2700	2723	2593
280	315	400	500	630
1	1	1	1	1
2259	2179	2560	2560	2560
4.5	8.09	14.5	23	29
2806-3156	2922-3372	3095-3305	3665-4065	3665-4065
63	90	90	90	90
360	600	750	1300	1500
45	49	42	64	70
270	485	870	1380	1740
180	323.6	580	920	1160
135	243	435	690	870
530	760	1185	1960	2070
5365	9800	13585	25000	29000
PP	PP	PP	PP	PP
1	1	1	1	1
21-81/34	CMO-N 65-160	CMO-N 65-160	CDI-QL 125-100-200	CDI-QL 125-100-200
40	72	90	130	180

PROTEIN SKIMMER OPTIONAL FEATURES	PSM-14	PSM/F-22	PSM/F-62	PSM/F-220
Electrical Control Panel	optional	optional	optional	optional
Electrical Control Panel Footprint	185x550x770	185x550x770	185x550x770	included in unit
Foam Collector Autowash	Solenoid	Solenoid	Solenoid	Solenoid
Overflow Switch	N/A	optional	optional	optional
ORP Control	optional	optional	optional	optional
Foam Level Automation	N/A	N/A	N/A	optional
Operational Platform	N/A	N/A	N/A	N/A
Passive Ozone destruct	optional	optional	optional	optional
Quick Retractable ORP/PH Probe Fitting	optional	optional	optional	optional
PS Venturi Pump	optional	optional	optional	optional
Ozone Gas Rotameter	optional	optional	optional	optional
Outer Wash Port & Valve for Chemical Dosing	optional	optional	optional	optional
Reuse of off gassed ozone	optional	optional	optional	optional
Sight Glass	optional	optional	optional	optional
Manhole (PP Cover)	N/A	N/A	N/A	N/A
Manhole (Acrylic Cover)	N/A	N/A	N/A	N/A
Ozone Inlet Solenoid Valve SS 316 Body	optional	optional	optional	optional

PSM/F-280	PSM/F-360	PSM/F-600	PSM/F-800	PSM/F-1300	PSM/F-1500
optional	optional	optional	optional	optional	optional
included in unit	included in unit	included in unit	included in unit	included in unit	included in unit
Motorized	Motorized	Motorized	Motorized	Motorized	Motorized
optional	optional	optional	optional	optional	optional
optional	optional	optional	optional	optional	optional
optional	optional	optional	optional	optional	optional
N/A	optional	optional	optional	optional	optional
N/A	N/A	N/A	N/A	N/A	N/A
optional	optional	optional	optional	optional	optional
optional	optional	optional	optional	optional	optional
optional	optional	optional	optional	optional	optional
optional	optional	optional	optional	optional	optional
optional	N/A	N/A	N/A	N/A	N/A
N/A	optional	optional	optional	optional	optional
N/A	optional	optional	optional	optional	optional
optional	optional	optional	optional	optional	optional

PROTEIN SKIMMER OPTIONAL FEATURES	PSM-14	PSM/F-22	PSM/F-62	PSM/F-220
PS Camera	optional	optional	optional	optional
PS PLC Controller	optional	optional	optional	optional



PSM/F-280	PSM/F-360	PSM/F-600	PSM/F-800	PSM/F-1300	PSM/F-1500
optional	optional	optional	optional	optional	optional
optional	optional	optional	optional	optional	optional



OZONE GENERATORS

MAT-KULING ozone generators are designed and tested for aquaculture applications and fabricated in respect of EU & US HSE guidelines in our factory with quality components easy to repair or replace. Equipped with control panel and optionally with oxygen air preparation units and PLC automated control.

MAT-KULING designs and manufactures the Ozone Generators to provide stable ozone infusion in harsh conditions of aquaculture facilities from S316 stainless steel. The models start from 5 g/h up to 6500g/h and for larger applications mul-

tiple units can be assembled.

Our ozone generators are designed and fabricated to provide stable ozone output. Furthermore, they can be linked to ORP/O₃ water sensors to automatic start/stop at the required level and can be linked to ambient ozone gas sensors for the health and safety of the work environment.



OZC 1-100 Ozone Production Method	OZC-1	OZC-2	OZC-5
Corona Discharge			
Footprint Width [mm]	1000	1000	1000
Footprint Depth [mm]	500	500	500
Max Height [mm]	600	770	770
Device Weight [kg]	75	85	100
Supply Voltage 50/60 Hz [V]	1~230	1~230	1~230
Nominal Energy Consumption [Wh]	350	350	1000
Installed Power [W]	380	380	1100
Total Heat Load [W]	5	7	187
Feeding Type	Ambient Air	Ambient Air	Ambient Air
Feeding Oxygen Flow Rate [L/min]	6	12	6
Oxygen Concentration %	N/A	N/A	>90
Feeding Oxygen pressure bar	N/A	N/A	0.8-1.1
Ozone Output [g/h]	1	2	5
Ozone Flow Rate [L/min]	6	12	6
Ozone Concentration % wt	0.2	0.2	1
Cooling Type Media	Air	Air	Air
Cooling Water Flow [m3/h]	N/A	N/A	N/A
Cooling Water Parameter In/Out C	N/A	N/A	N/A
Ozone Outlet Size [mm] // inc	8	8	8
Backflow Prevention Device Model	BFP-8	BFP-8	BFP-8

CORONA DISCHARGE OZONE GENERATOR 1-100 GR/HOUR OPTIONAL FEATURES	OZC-1	OZC-2	OZC-5
Ozone Analyzer (g/Nm3)	N/A	N/A	N/A
Ozone Generator PLC Controller	Optional	Optional	Optional
Touch Screen Control Board	N/A	N/A	N/A
Dew Point Sensor Range	N/A	N/A	N/A
Oxygen Purity Sensor Range	0,1-95 %	0,1-95 %	0,1-95 %
Ambient Ozone Detector (ppm)	0.1	0.1	0.1
Ambient Ozone Detector (ppm)	0.1	0.1	0.1

OZC-10	OZC-20	OZC-50	OZC-100
Corona Discharge			
1135	1135	1320	1400
700	700	700	900
1770	1775	2095	2120
250	250	250	270
1~230	1~230	1~230	1~230
1400	1600	2000	3100
1500	1700	2100	3200
205	278	597	1438
Ambient Air	Ambient Air	Ambient Air	Ambient Air
6	6	7.5	15
>90	>90	>90	>90
0.8-1.1	0.8-1.1	0.8-1.1	0.8-1.1
10	20	50	100
6	6	7.5	15
2	4	8	8
Water	Water	Water	Water
0.75	0.75	1.2	2.5
20	20	20	20
8	8	8	8
BFP-8	BFP-8	BFP-8	BFP-8

OZC-10	OZC-20	OZC-50	OZC-100
10-200	10-200	10-200	10-200
Optional	Optional	Optional	Optional
Optional	Optional	Optional	Optional
-50 ... +20 °C TD	-50 ... +20 °C TD	-50 ... +20 °C TD	-50 ... +20 °C TD
0,1-95 %	0,1-95 %	0,1-95 %	0,1-95 %
0.1	0.1	0.1	0.1
0.1	0.1	0.1	0.1

OZC SPECIFICATIONS

OZC SPECIFICATIONS

CORONA DISCHARGE OZONE GENERATOR 1-100 GR/HOUR	OZVAC-1	OZVAC-3	OZVAC-5
Ozone Production Method	Corona Dis-charge	Corona Dis-charge	Corona Dis-charge
Footprint Width [mm]	330	750	750
Footprint Depth [mm]	255	335	335
Max Height [mm]	660	810	810
Device Weight [kg]	15	60	60
Supply Voltage 50/60 Hz [V]	1~230	1~230	1~230
Nominal Energy Consumption [Wh]	100	250	300
Installed Power [W]	115	270	320
Total Heat Load [W]	5	187	187
Feeding Type	Vacuum or Pressurized Air / Oxygen	Vacuum or Pressurized Air / Oxygen	Vacuum or Pressurized Air / Oxygen
Feeding/Vacuum, Air Flow Rate [L/min]	10	20	30
Feeding Oxygen Flow Rate [L/min]	1.5	3	5
Oxygen Concentration (%)	N/A	N/A	N/A
Feeding Oxygen pressurem (bar)	N/A	N/A	N/A
Ozone Output [g/h]	1	3	5
Ozone Concentration (Air Feed) % wt	0.14	0.22	0.22
Ozone Concentration (Oxygen Feed) % wt	0.8	1.3	1.3
Cooling Typem Media	Air	Air	Air
Ozone Outlet Size[mm] // inc	8	8	8

CORONA DISCHARGE OZONE GENERATOR OPTIONAL FEATURES	OZVAC-1	OZVAC-3	OZVAC-5
Ozone Analyzer (g/Nm3)	N/A	N/A	N/A
Backflow Prevention Device Model	BFP-8	BFP-8	BFP-8
Touch Screen Control Board	N/A	N/A	N/A
Heated Air Drier (Model)	HAD-25	HAD-25	HAD-25
Ambient Ozone Detector (ppm)	0.1	0.1	0.1

CORONA DISCHARGE OZONE GENERATOR WITH EXTERNAL OXYGEN SUPPLY	OZO-10	OZO-20	OZO-50	OZO-100
Ozone Production Method	Corona Dis-charge	Corona Dis-charge	Corona Dis-charge	Corona Dis-charge
Footprint A-Width [mm]	1000	1000	1000	1100
Footprint B-Depth [mm]	590	590	500	550
Footprint C-Height[mm]	1350	1350	1700	1750
Ozone Output [g/h]	10	20	50	100
Ozone Concentration [g/m ³]	33,4	33,4	41,4	41,6
Oxygen Concentration %	Min 90%-Max. 99%	Min 90%-Max. 99%	Min 90%-Max. 99%	Min 90%-Max. 99%
Feeding Oxygen pressure bar	1,0	1,0	1,0	1,0
Feeding Oxygen Dew Point C	< -30	< -30	< -30	< -30
Feeding Gas Minimum Ni-trogen %	≥ 1	≥ 1	≥ 1	≥ 1
Installed Power [W]	220	310	600	1350
Supply Voltage 50/60 Hz [V]	1~220	1~220	1~220	1~220
Ozone Outlet Size [mm]	8	8	8	8
Ozone Flow Rate [L/min]	4,5	10	20	40
Total Heat Load [W]	54	63	211	284
Air Conditioner Filter+Dryer	1	1	1	1
Enclosure Material	Polycarbon-ate	Polycarbon-ate	Polycarbon-ate	Metalic
Enclosure Rate[IP]	44	44	44	44
Device Weight [kg]	220	220	260	285

CORONA DISCHARGE OZONE GENERATOR WITH EXTERNAL OXYGEN SUPPLY OPTIONAL FEA- TURES	OZO-10	OZO-20	OZO-50	OZO-100
Ozone Analyzer g/Nm ³	10-600	10-600	10-600	10-600
Backflow Prevention Device Model	BFP-50	BFP-50	BFP-50	BFP-50
Ambient Ozone Detector ppm	0,1	0,1	0,1	0,1



CORONA DISCHARGE OZONE GENERATOR & OPTIONAL FEATURES			
	OZO-250	OZO-500	OZO-1000
Ozone Production Method	Corona Discharge		
Footprint Width [mm]	2060	2060	2200
Footprint Depth [mm]	700	780	1100
Max Height[mm]	2000	2200	2100
Device Weight[kg]	370	450	630
Supply Voltage 50/60 Hz[V]	3~400	3~400	3~400
Nominal Energy Consumption[kWh]	2.23	4.5	8.9
Installed Power[kW]	2.5	5	10
Total Heat Loadkcal/h	2500	5000	10000
Min-Max Ozone Variable Ozone Production Range [%]	10-100%	10-100%	10-100%
Feeding Type	Oxygen	Oxygen	Oxygen
Feeding Oxygen Flow Rate[L/min]	35	70	130
Oxygen Concentration%	>90	>90	>90
Feeding Oxygen pressure (nominal) bar	1	1	1
Min-Max Feeding Oxygen Pressure Rangebar	0.5-3	0.5-3	0.5-3
Feeding Oxygen Dew PointC	< -70	< -70	< -70
Feeding Gas Minimum Nitrogen%	≥ 1	≥ 1	≥ 1
Ozone Output[g/h]	250	500	1000
Ozone Flow Rate[L/min]	35	70	130
Ozone Concentration (nominal)% wt	9	9	9
Cooling Type	Water Cooled	Water Cooled	Water Cooled
Cooling Water Flow[m3/h]	1	1	3
Cooling Water max pressure[bar]	6	6	6
Cooling Water ParameterIn/Out C	20--22	20--22	20--22
Ozone Generator PLC Controller	Standard	Standard	Standard
Ozone Outlet Size[mm] // inc	1/4"	1/4"	1/2"
Control Panel Type / Communication	PLC/HMI/TCP IP	PLC/HMI/TCP IP	PLC/HMI/TCP IP

OZO-1500	OZO-2000	OZO-3000	OZO-4000
Corona Discharge			
2200	2200	2200	3000
1200	1200	1500	1700
2150	2150	2250	2250
800	1000	1300	1700
3~400	3~400	3~400	3~400
13.4	17.8	26.7	35.6
15	20	30	40
15000	20000	30000	40000
10-100%	10-100%	10-100%	10-100%
Oxygen	Oxygen	Oxygen	Oxygen
200	260	400	520
>90	>90	>90	>90
1	1	1	1
0.5-3	0.5-3	0.5-3	0.5-3
< -70	< -70	< -70	< -70
≥ 1	≥ 1	≥ 1	≥ 1
1500	2000	3000	4000
200	260	400	520
9	9	9	9
Water Cooled	Water Cooled	Water Cooled	Water Cooled
5	6	8	9.5
6	6	6	6
20--22	20--22	20--22	20--22
Standard	Standard	Standard	Standard
1/2"	1/2"	3/4"	1"
PLC/HMI/TCP IP	PLC/HMI/TCP IP	PLC/HMI/TCP IP	PLC/HMI/TCP IP

CORONA DISCHARGE OZONE GENERATOR & OPTIONAL FEATURES	Corona Discharge		
	OZO-5000	OZO-6500	OZO-8000
Ozone Production Method	Corona Discharge		
Footprint Width [mm]	3000	3000	3000
Footprint Depth [mm]	2000	2000	2200
Max Height[mm]	2250	2250	2250
Device Weight[kg]	2200	3500	4500
Supply Voltage 50/60 Hz[V]	3~400	3~400	3~400
Nominal Energy Consumption[kWh]	46.5	60.5	74.4
Installed Power[kW]	50	65	80
Total Heat Loadkcal/h	50000	65000	80000
Min-Max Ozone Variable Ozone Production Range [%]	10-100%	10-100%	10-100%
Feeding Type	Oxygen	Oxygen	Oxygen
Feeding Oxygen Flow Rate[L/min]	650	850	1050
Oxygen Concentration%	>90	>90	>90
Feeding Oxygen pressure (nominal) bar	1	1	1
Min-Max Feeding Oxygen Pressure Rangebar	0.5-3	0.5-3	0.5-3
Feeding Oxygen Dew PointC	< -70	< -70	< -70
Feeding Gas Minimum Nitrogen%	≥1	≥1	≥1
Ozone Output[g/h]	5000	6500	8000
Ozone Flow Rate[L/min]	650	850	1050
Ozone Concentration (nominal)% wt	9	9	9
Cooling Type	Water Cooled	Water Cooled	Water Cooled
Cooling Water Flow[m3/h]	12	33	42
Cooling Water max pressure[bar]	6	6	6
Cooling Water ParameterIn/Out C	20--22	20--22	20--22
Ozone Generator PLC Controller	Standard	Standard	Standard
Ozone Outlet Size[mm] // inc	1"	1"	1-1/4"
Control Panel Type / Communication	PLC/HMI/TCP IP	PLC/HMI/TCP IP	PLC/HMI/TCP IP

Corona Discharge	
OZO-10000	OZO-15000
4200	4200
2200	2200
2250	2250
5500	7000
3~400	3~400
93	139.5
100	150
100000	150000
10-100%	10-100%
Oxygen	Oxygen
1300	1950
>90	>90
1	1
0.5-3	0.5-3
< -70	< -70
≥1	≥1
10000	15000
1300	1950
9	9
Water Cooled	Water Cooled
55	85
6	6
20--22	20--22
Standard	Standard
1-1/4"	1-1/2"
PLC/HMI/TCP IP	PLC/HMI/TCP IP

AIR PREPARATION UNITS 250-35000 LP- MUNITS	APU-250	APU-500	APU-1000	APU-2000
Footprint Width [mm]	1700	1800	2200	2250
Depth [mm]	750	860	1000	2000
Max Height[mm]	1500	2000	2000	1700
Device Weight[kg]	370			
Supply Voltage 50/60 Hz[V]	3~400	3~400	3~400	3~400
Installed Power[kW]	3.6	6.5	12	19.5
Air Flowrate @5 bar[L/min]	250	500	1000	2000
Pressure Dew Point°C	4	4	4	4
Max. Output Pressurebar	10	10	10	10
Air Receiver Capacity[L]	200	300	500	1000
Refrigeration dryer	Included	Included	Included	Included
Sound Level @1 mtdBA	65	65	65	65
Touch Screen Control Board	Optional	Optional	Optional	Optional
Dew Point SensorRange	-50 ... +20 °C TD	-50 ... +20 °C TD	-50 ... +20 °C TD	-50 ... +20 °C TD

APU-3000	APU-5000	APU-10000	APU-18000	APU-35000
2300	2250	2200	1700	3600
2000	2600	5000	6500	4000
1900	2550	1900	2550	3600
3~400	3~400	3~400	3~400	3~400
23	32	80	138	255
3000	5000	10000	18000	35000
4	4	4	4	4
10	10	10	10	10
1000	2000	3000	4000	4000
Included	Included	Included	Included	Included
65	65	65	65	65
Optional	Optional	Optional	Optional	Optional
-50 ... +20 °C TD	-50 ... +20 °C TD	-50 ... +20 °C TD	-50 ... +20 °C TD	-50 ... +20 °C TD

OXYGEN CONCENTRA- TOR UNITS 6-2500 LPM	OX-6 PP	OX-12 PP	OX-20 PP	OX-40	OX-80
Footprint Width [mm]	400	400	460	450	650
Footprint Depth [mm]	165	185	190	400	450
Max Height [mm]	450	650	650	1250	1900
Supply Voltage 50/60 Hz [V]	24	24	24	1~230	1~230
Installed Power (W)	300	300	300	500	500
Oxygen Flowrate @1 bar ([L/ min])	6	12	20	40	80
OPTIONAL FEATURES Touch Screen Control Board	Optional	Optional	Optional	Optional	Optional
OPTIONAL FEATURES Oxy- gen Purity Sensor Range	%0-99	%0-99	%0-99	%0-99	%0-99
OPTIONAL FEATURES Dew Point Sensor Range	-50 ... +20 °C TD	-50 ... +20 °C TD	-50 ... +20 °C TD	-50 ... +20 °C TD	-50 ... +20 °C TD

OX-160	OX-250	OX-400	OX-750	OX-1500	OX-2500
850	1000	1200	1700	2005	2450
550	750	750	1000	1115	1600
2000	2250	2300	2500	2900	3500
1~230	1~230	1~230	1~230	1~230	1~230
500	500	500	500	500	500
160	250	400	750	1500	2500
Optional	Optional	Optional	Optional	Optional	Optional
%0-99	%0-99	%0-99	%0-99	%0-99	%0-99
-50 ... +20 °C TD	-50 ... +20 °C TD	-50 ... +20 °C TD	-50 ... +20 °C TD	-50 ... +20 °C TD	-50 ... +20 °C TD

DRUM FILTERS

Drum Filters for aquaculture farms are mechanical units which materialize an efficient, robust and reliable solution in the process of solid and organic matter separation and filtration.

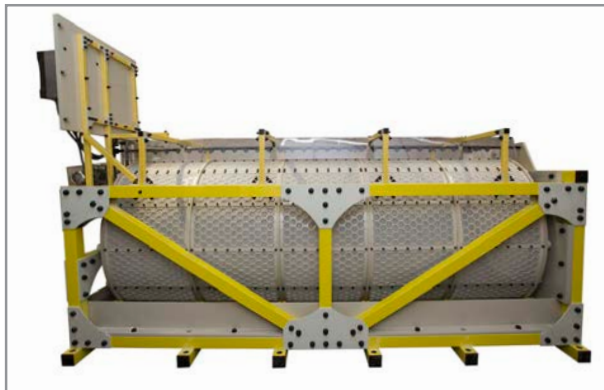
These automatic self cleaning micro-screen filters are able to handle a wide range of flow rate, 1m³/h – 4000m³/h and backwash, utilizing micron rates from 10µm up to 10000µm. They are designed for high performance filtration in land-based aquaculture water treatment systems such as salmon farms.

A well-considered and corrosion resistant

mechanism require no lubrication and on only simple maintenance that can be done by all type of staff. Robust structure of the drum filters allows the longest warrant duration of the market.

Filter panels are modular and protected by patent pending support structure. The filters are energy efficient with intermittent and continuous backwash modes for sake of lowest water consumption levels.

Smart Wash Logic Control enables operational mode selection, rotational speed adjustment, autonomous selection for optimum washing speed/time.



Drum Filter Optional Components:
Control Panel, Level Sensor, Splash Cover Lid, Screen Panel, Backwash Pump



DRUM FILTER
OPTIONAL FEAT-
URES ALL MODELS

Basic Control Panel optional

Smart Control Panel optional

Advanced (PLC) Control Panel optional

Splash Cover Lid optional

Level Sensor optional

Screen Panel optional

Backwash Pump (Marine grade) optional

Backwash Pump optional



DRUM FILTER MODEL TYPE	DRF - 10 FRAME	DRF - 10 TANK	DRF - 25 FRAME	DRF - 25 TANK	DRF - 50 FRAME
DIMENSIONS Length [mm]	1000	1000	1075	1075	1495
DIMENSIONS Width [mm]	790	790	790	790	790
DIMENSIONS Height [mm]	700	700	870	700	750
DIMENSIONS Drum diameter [mm]	340	340	355	355	355
DIMENSIONS Drum length [mm]	240	240	325	325	650
Screen Panel Type	TYPE0	TYPE0	TYPE1	TYPE1	TYPE1
Screen Panel Quantitypcs	1	1	1	1	2
Screen Panel Segment Quantitypcs	1	1	1	1	2
Screen Panel Dimensions[mm]	200 x 940	200 x 940	325 x 1100	325 x 1100	325 x 1100
Screen Panel Area (80% Transmittance) [m2]	0.15	0.15	0.32	0.32	0.58
DIMENSIONS Drain Diameter [mm]	N/A	Ø20	N/A	Ø20	N/A
DIMENSIONS Drain Qty. pcs	N/A	1	N/A	1	N/A
DIMENSIONS Drain Level [mm]	N/A	90	N/A	50	N/A
DIMENSIONS Sump Material	N/A	PP	N/A	PP	N/A
TANK TYPE INLET Inlet Diameter [mm]	N/A	110	N/A	Ø125	N/A
TANK TYPE INLET Inlet Qty. pcs	N/A	1	N/A	1	N/A
TANK TYPE INLET Inlet Level [mm]	N/A	140	N/A	152.5	N/A
TANK TYPE OUTLET Outlet Diameter [mm]	N/A	110	N/A	Ø125	N/A

DRF - 50 TANK	DRF - 100 FRAME	DRF - 100 TANK	DRF - 200 FRAME	DRF - 200 TANK	DRF - 400 FRAME	DRF - 400 TANK
1495	1610	1585	1780	1690	2550	2405
790	1005	1005	1285	1420	1285	1285
750	900	830	1615	1290	1615	1325
355	480	480	960	960	960	960
650	745	745	745	745	1490	1490
TYPE1	TYPE2	TYPE2	TYPE2	TYPE2	TYPE2	TYPE2
2	1	1	2	2	4	4
2	1	1	1	1	2	2
325 x 1100	745 x 1510	745 x 1510	745 x 1510	745 x 1510	745 x 1510	745 x 1510
0.58	0.9	0.9	1.8	1.8	3.6	3.6
Ø20	N/A	Ø32	N/A	Ø32	N/A	Ø32
1	N/A	1	N/A	1	N/A	1
50	N/A	60	N/A	50	N/A	60
PP	N/A	PP	N/A	PP	N/A	PP
Ø160	N/A	Ø200	N/A	Ø315	N/A	Ø400
1	N/A	1	N/A	1	N/A	1
167.5	N/A	190	N/A	267.5	N/A	350
Ø160	N/A	Ø200	N/A	Ø315	N/A	Ø400

DRUM FILTER MODEL TYPE	DRF - 10 FRAME	DRF - 10 TANK	DRF - 25 FRAME	DRF - 25 TANK	DRF - 50 FRAME
TANK TYPE OUTLET Outlet Qty. pcs	N/A	1	N/A	1	N/A
TANK TYPE OUTLET Outlet Level [mm]	N/A	140	N/A	152.5	N/A
MAX. OPERATIONAL WATER LEVEL Maximum Water Level [mm]	300	300	300	300	600
BACKWASH SYSTEM Waste Duct Outlet Diameter [mm]	Ø25	Ø25	Ø25	Ø25	Ø25
BACKWASH SYSTEM Waste Duct Outlet Qty. pcs	1	1	1	1	1
BACKWASH Pump(Titanium) [kw]	0.65	0.65	0.65	0.65	0.65
BACKWASH SYSTEM Backwash Pump (316L) [kw]	0.46	0.46	0.46	0.46	0.46
BACKWASH SYSTEM Nozzle Qty. (110°) pcs	2	2	3	3	6
BACKWASH SYSTEM Total Nozzle Water Flow [m³/hr]	0.42	0.42	0.42	0.42	0.63
BACKWASH SYSTEM Backwash line connection [mm]	Ø25	Ø25	Ø25	Ø25	Ø32
MESH Mesh Size Range [micron]	10-500	10-500	10-500	10-500	10-500
MESH Mesh Material	PP & 304 & 316 SS	PP & 304 & 316 SS	PP & 304 & 316 SS	PP & 304 & 316 SS	PP & 304 & 316 SS
ELECTRICAL Electrical Panel Supply (4-Wire)Ph~V @ 50 Hz	3Ph~400V	3Ph~400V	3Ph~400V	3Ph~400V	3Ph~400V
Electrical Power (Titanium) [kw]	0.9	0.9	0.9	0.9	0.9
ELECTRICAL Total Installed Power(316L) [kw]	0.68	0.68	0.68	0.68	0.68

DRF - 50 TANK	DRF - 100 FRAME	DRF - 100 TANK	DRF - 200 FRAME	DRF - 200 TANK	DRF - 400 FRAME	DRF - 400 TANK
1	N/A	1	N/A	1	N/A	1
167.5	N/A	190	N/A	267.5	N/A	350
600	600	600	1000	1000	1000	1000
Ø25	Ø50	1-1/4"	Ø63	Ø63	1 1/2"	Ø63
1	1	1	1	1	1	1
0.65	0.65	0.65	0.79	0.79	0.98	0.98
0.46	0.71	0.71	0.71	0.71	1.11	1.11
6	4	4	4	4	8	8
0.63	0.81	0.81	1.35	1.35	2.43	2.43
Ø32	Ø32	Ø32	Ø32	Ø32	Ø32	Ø32
10-500	10-500	10-500	10-500	10-500	10-500	10-500
PP & 304 & 316 SS	PP & 304 & 316 SS	PP & 304 & 316 SS	PP & 304 & 316 SS	PP & 304 & 316 SS	PP & 304 & 316 SS	PP & 304 & 316 SS
3Ph~400V	3Ph~400V	3Ph~400V	3Ph~400V	3Ph~400V	3Ph~400V	3Ph~400V
0.9	0.9	0.9	1.05	1.05	1.25	1.25
0.68	0.95	0.95	0.95	0.95	1.39	1.39

DRUM FILTER MODEL TYPE	DRF - 10 FRAME	DRF - 10 TANK	DRF - 25 FRAME	DRF - 25 TANK	DRF - 50 FRAME
ELECTRICAL Electrical Panel Current [A]	2.3	2.3	2.3	2.3	2.3
ELECTRICAL Electrical Panel IP	IP65	IP65	IP65	IP65	IP65
ELECTRICAL Drive Motor Power (DC/24V) [kw]	0.09	0.09	0.09	0.09	0.09
ELECTRICAL Logic Modul / Controller	Smart Relays	Smart Relays	Smart Relays	Smart Re-lays	Smart Re-lays
HEAD LOSS Average [mmWg]	150	150	150	150	150
WEIGHT Dry [kg]	70	100	55	55	65
WEIGHT Maximum Operational Weight [kg]	150	170	107	170	155
WEIGHT Maximum Operational Weight [kg]	107	170	155	440	255

DRF - 50 TANK	DRF - 100 FRAME	DRF - 100 TANK	DRF - 200 FRAME	DRF - 200 TANK	DRF - 400 FRAME	DRF - 400 TANK
2.3	3.2	3.2	3.2	3.2	3.9	3.9
IP65	IP65	IP65	IP65	IP65	IP65	IP65
0.09	0.09	0.09	0.09	0.09	0.09	0.09
Smart Re-lays	Smart Re-lays	Smart Re-lays	Smart Re-lays	Smart Re-lays	Smart Re-lays	Smart Re-lays
150	150	150	150	150	150	150
70	120	140	245	310	360	390
440	255	420	510	1661	740	2356
420	510	1661	740	2356	1350	6683

50MAT-KULING AS					MAT-KULING AS51					
DRUM FILTER MODEL TYPE	DRF - 800(L) FRAME	DRF - 800(L) TANK	DRF - 800(S) FRAME	DRF - 800(S) TANK	DRF - 1200(L) FRAME	DRF - 1200(L) TANK	DRF - 1200(S) FRAME	DRF - 1200(S) TANK	DRF - 1600(L) FRAME	DRF - 1600(L) TANK
DIMENSIONS Length [mm]	3405	3605	2660	2860	4175	4575	3550	3950	4950	5350
DIMENSIONS Width [mm]	1895	1895	1895	1895	1895	1895	2310	2310	1895	1895
DIMENSIONS Height [mm]	2405	1965	2405	1965	2405	1965	2880	2450	2405	1965
DIMENSIONS Drum diameter [mm]	1430	1430	1430	1430	1430	1430	1900	1900	1430	1430
DIMENSIONS Drum length [mm]	2235	2235	1490	1490	2980	2980	2235	2235	3725	3725
Screen Panel Type	TYPE2	TYPE2	TYPE2	TYPE2	TYPE2	TYPE2	TYPE2	TYPE2	TYPE2	TYPE2
Screen Panel Quantitypcs	9	9	8	8	12	12	12	12	15	15
Screen Panel Segment Quantitypcs	3	3	2	2	4	4	3	3	5	5
Screen Panel Dimensions[mm]	745 x 1510	745 x 1510	745 x 1510	745 x 1510	745 x 1510	745 x 1510	745 x 1510	745 x 1510	745 x 1510	745 x 1510
Screen Panel Area (80% Transmittance) [m2]	8.1	8.1	7.2	7.2	11.4	11.4	11.4	11.4	14.25	13.5
DIMENSIONS Drain Diameter [mm]	N/A	Ø50	N/A	Ø50	N/A	Ø63	N/A	Ø63	N/A	Ø63
DIMENSIONS Drain Qty. pcs	N/A	1	N/A	1	N/A	1	N/A	1	N/A	1
DIMENSIONS Drain Level [mm]	N/A	80	N/A	80	N/A	80	N/A	100	N/A	80
DIMENSIONS Sump Material	N/A	PP/FRP	N/A	PP/FRP	N/A	PP/FRP	N/A	PP/FRP	N/A	PP/FRP
TANK TYPE INLET Inlet Diameter [mm]	N/A	Ø630	N/A	Ø630	N/A	Ø710	N/A	Ø710	N/A	Ø800
TANK TYPE INLET Inlet Qty. pcs	N/A	1	N/A	1	N/A	1	N/A	1	N/A	1
TANK TYPE INLET Inlet Level [mm]	N/A	470	N/A	500	N/A	550	N/A	620	N/A	620
TANK TYPE OUTLET Outlet Diameter [mm]	N/A	Ø630	N/A	Ø630	N/A	Ø710	N/A	Ø710	N/A	Ø800
TANK TYPE OUTLET Outlet Qty. pcs	N/A	1	N/A	1	N/A	1	N/A	1	N/A	1
TANK TYPE OUTLET Outlet Level [mm]	N/A	470	N/A	500	N/A	550	N/A	620	N/A	620

DRUM FILTER MODEL TYPE	DRF - 800(L) FRAME	DRF - 800(L) TANK	DRF - 800(S) FRAME	DRF - 800(S) TANK
MAX. OPERATIONAL WATER LEVEL Maximum Water Level [mm]	1300	1300	1500	1500
BACKWASH SYSTEM Waste Duct Outlet Diameter [mm]	Ø75	Ø75	Ø75	Ø75
BACKWASH SYSTEM Waste Duct Outlet Qty. pcs	1	1	1	1
BACKWASH Pump(Titanium) [kw]	1.4	1.4	1.4	1.4
BACKWASH SYSTEM Backwash Pump (316L) [kw]	1.11	1.11	1.11	1.11
BACKWASH SYSTEM Nozzle Qty. (110°) pcs	12	12	8	8
BACKWASH SYSTEM Total Nozzle Water Flow [m³/hr]	3.51	3.51	2.43	2.43
BACKWASH SYSTEM Backwash line connection [mm]	Ø40	Ø40	Ø40	Ø40
MESH Mesh Size Range [micron]	10-500	10-500	10-500	10-500
MESH Mesh Material	PP & 304 & 316 SS	PP & 304 & 316 SS	PP & 304 & 316 SS	PP & 304 & 316 SS
ELECTRICAL Electrical Panel Supply (4-Wire)Ph~V @ 50 Hz	3Ph~400V	3Ph~400V	3Ph~400V	3Ph~400V
Electrical Power (Titanium) [kw]	1.67	1.67	1.25	1.25
ELECTRICAL Total Installed Power(316L) [kw]	1.29	1.29	1.39	1.39
ELECTRICAL Electrical Panel Current [A]	3	3	3.9	3.9
ELECTRICAL Electrical Panel IP	IP54	IP54	IP65	IP65

DRF - 1200(L) FRAME	DRF - 1200(L) TANK	DRF - 1200(S) FRAME	DRF - 1200(S) TANK	DRF - 1600(L) FRAME	DRF - 1600(L) TANK
1300	1300	1700	1700	1300	1300
Ø75	Ø75	Ø75	Ø75	Ø75	Ø75
1	1	1	1	1	1
1.4	1.4	1.4	1.4	1.4	1.4
1.63	1.63	1.63	1.63	1.63	1.63
16	16	12	12	20	20
4.32	4.32	3.24	3.24	4.59	4.59
Ø40	Ø40	Ø40	Ø40	Ø50	Ø50
10-500	10-500	10-500	10-500	10-500	10-500
PP & 304 & 316 SS	PP & 304 & 316 SS	PP & 304 & 316 SS	PP & 304 & 316 SS	PP & 304 & 316 SS	PP & 304 & 316 SS
3Ph~400V	3Ph~400V	3Ph~400V	3Ph~400V	3Ph~400V	3Ph~400V
1.98	1.98	1.98	1.98	1.98	1.98
1.86	1.86	1.86	1.86	1.86	1.86
4.8	4.8	4.8	4.8	4.8	4.8
IP54	IP54	IP54	IP54	IP54	IP54

DRUM FILTER MODEL TYPE	DRF - 800(L) FRAME	DRF - 800(L) TANK	DRF - 800(S) FRAME	DRF - 800(S) TANK
ELECTRICAL Drive Motor Power (DC/24V) [kw]	0.06	0.06	0.09	0.09
ELECTRICAL Logic Modul / Controller	Smart Relays	Smart Relays	Smart Relays	Smart Relays
HEAD LOSS Average [mmWg]	150	150	150	150
WEIGHT Dry [kg]	780	850	780	850
WEIGHT Maximum Operational Weight [kg]	1350	6683	1350	6683
WEIGHT Maximum Operational Weight [kg]	1950	8883	3050	10715

DRF - 1200(L) FRAME	DRF - 1200(L) TANK	DRF - 1200(S) FRAME	DRF - 1200(S) TANK	DRF - 1600(L) FRAME	DRF - 1600(L) TANK
0.06	0.06	0.06	0.06	0.06	0.06
Smart Relays	Smart Relays	Smart Relays	Smart Relays	Smart Relays	Smart Relays
150	150	150	150	150	150
1300	1450	1300	1450	1650	1750
1950	8883	1950	8883	3050	10715
2950	15506	3400	18922	4500	22412

DRUM FILTER MODEL TYPE	DRF - 1600(S) FRAME	DRF - 1600(S) TANK	DRF - 2000 FRAME	DRF - 2000 TANK
DIMENSIONS Length [mm]	4175	4775	4945	5545
DIMENSIONS Width [mm]	2310	2310	2310	2310
DIMENSIONS Height [mm]	2880	2450	2880	2450
DIMENSIONS Drum diameter [mm]	1900	1900	1900	1900
DIMENSIONS Drum length [mm]	2980	2980	3725	3725
Screen Panel Type	TYPE2	TYPE2	TYPE2	TYPE2
Screen Panel Quantity pcs	16	16	20	20
Screen Panel Segment Quantity pcs	4	4	5	5
Screen Panel Dimensions [mm]	745 x 1510	745 x 1510	745 x 1510	745 x 1510
Screen Panel Area (80% Transmittance) [m ²]	14.4	14.4	18	18
DIMENSIONS Drain Diameter [mm]	N/A	Ø63	N/A	Ø63
DIMENSIONS Drain Qty. pcs	N/A	1	N/A	2
DIMENSIONS Drain Level [mm]	N/A	100	N/A	100
DIMENSIONS Sump Material	N/A	PP/FRP	N/A	PE/FRP
TANK TYPE INLET Inlet Diameter [mm]	N/A	Ø800	N/A	Ø710
TANK TYPE INLET Inlet Qty. pcs	N/A	1	N/A	2
TANK TYPE INLET Inlet Level [mm]	N/A	620	N/A	550
TANK TYPE OUTLET Outlet Diameter [mm]	N/A	Ø800	N/A	Ø710
TANK TYPE OUTLET Outlet Qty. pcs	N/A	1	N/A	2

DRF - 2500(L) FRAME	DRF - 2500(L) TANK	DRF - 2500(S) FRAME	DRF - 2500(S) TANK
5715	6315	4970	5570
2310	2515	2710	2915
2880	2400	1920	1440
1900	1900	2300	2300
4470	4470	3725	3725
TYPE2	TYPE2	TYPE2	TYPE2
24	24	24	24
6	6	5	5
745 x 1510	745 x 1510	745 x 1510	745 x 1510
21.6	21.6	22.5	22.5
N/A	Ø63	N/A	Ø63
N/A	2	N/A	2
N/A	130	N/A	130
N/A	PE/FRP	N/A	PE/FRP
N/A	Ø710	N/A	Ø710
N/A	2	N/A	2
N/A	550	N/A	550
N/A	Ø710	N/A	Ø710
N/A	2	N/A	2

DRUM FILTER MODEL TYPE	DRF - 1600(S) FRAME	DRF - 1600(S) TANK	DRF - 2000 FRAME	DRF - 2000 TANK
TANK TYPE OUTLET Outlet Level [mm]	N/A	620	N/A	550
MAX. OPERATIONAL WATER LEVEL Maximum Water Level [mm]	1700	1700	1700	1700
BACKWASH SYSTEM Waste Duct Outlet Diameter [mm]	Ø75	Ø75	Ø75	Ø75
BACKWASH SYSTEM Waste Duct Outlet Qty. pcs	1	1	1	1
BACKWASH Pump(Titanium) [kw]	1.4	1.4	2.2	2.2
BACKWASH SYSTEM Backwash Pump (316L) [kw]	1.63	1.63	1.802	1.802
BACKWASH SYSTEM Nozzle Qty. (110°) pcs	16	16	20	20
BACKWASH SYSTEM Total Nozzle Water Flow [m³/hr]	4.32	4.32	5.67	5.67
BACKWASH SYSTEM Backwash line connection [mm]	Ø40	Ø40	Ø40	Ø40
MESH Mesh Size Range [micron]	10-500	10-500	10-500	10-500
MESH Mesh Material	PP & 304 & 316 SS	PP & 304 & 316 SS	PP & 304 & 316 SS	PP & 304 & 316 SS
ELECTRICAL Electrical Panel Supply (4-Wire)Ph~V @ 50 Hz	3Ph~400V	3Ph~400V	3Ph~400V	3Ph~400V
Electrical Power (Titanium) [kw]	1.98	1.98	2.45	2.45
ELECTRICAL Total Installed Power(316L) [kw]	1.86	1.86	2.05	2.05
ELECTRICAL Electrical Panel Current [A]	4.8	4.8	4.8	4.8

DRF - 2500(L) FRAME	DRF - 2500(L) TANK	DRF - 2500(S) FRAME	DRF - 2500(S) TANK
N/A	550	N/A	550
1700	1700	1700	1700
Ø75	Ø75	Ø75	Ø75
1	1	1	1
2.2	2.2	2.2	2.2
1.997	1.997	1.802	1.802
24	24	20	20
6.48	6.48	5.67	5.67
Ø63	Ø63	Ø63	Ø63
10-500	10-500	10-500	10-500
PP & 304 & 316 SS	PP & 304 & 316 SS	PP & 304 & 316 SS	PP & 304 & 316 SS
3Ph~400V	3Ph~400V	3Ph~400V	3Ph~400V
2.503	2.503	2.45	2.45
2.3	2.3	2.05	2.05
5.3	5.3	5.3	5.3

DRUM FILTER MODEL TYPE	DRF - 1600(S) FRAME	DRF - 1600(S) TANK	DRF - 2000 FRAME	DRF - 2000 TANK
ELECTRICAL Electrical Panel IP	IP54	IP54	IP54	IP54
ELECTRICAL Drive Motor Power (DC/24V) [kw]	0.06	0.06	0.06	0.06
ELECTRICAL Logic Modul / Controller	Smart Relays	Smart Relays	Smart Relays	Smart Relays
HEAD LOSS Average [mmWg]	150	150	150	150
WEIGHT Dry [kg]	1520	1670	1830	2060
WEIGHT Maximum Operational Weight [kg]	2950	15506	3400	18922

DRF - 2500(L) FRAME	DRF - 2500(L) TANK	DRF - 2500(S) FRAME	DRF - 2500(S) TANK
IP54	IP54	IP54	IP54
0.06	0.09	0.06	0.09
Smart Relays	Smart Relays	Smart Relays	Smart Relays
150	150	150	150
2170	2350	2170	2350
4500	22412	4500	22412

UV DISINFECTION UNITS

The comparative advantage of the UV disinfection system over various chemical disinfection methods is the unaffected physical and chemical composition of water after the UV radiation activity. The UV is effective against any type of microorganism such as algae, bacteria, virus, fungi, yeasts to provide biosecurity.

MAT-KULING produces closed UV vessels/reactors with Food Grade Polypropylene material up to 1000m³/h.

The UV C units are equipped with temperature sensors as standard and UV intensity

sensor and PLC controller optionally.



UV MODEL	UVC-1	UVC-5	UVC-10	UVC-20	UVC-50
Product Description	UV DIS-INFECTION UNIT-PP BODY				
Nominal Flow Rate [m ³ /h]	1	5	10	20	50
Max Flow Rate [m ³ /h]	2	8	12	30	55
UV dose-nominal flow [mJ/cm ²]	40	46.3	42.3	43.9	44.4
Lamp UV 254 nm efficiency [%]	38	38	38	38	38
Design Water UVT Ratio [%]	98	98	98	98	98
Quartz Sleeve Transmittance Value [%]	93	93	93	93	93
Inlet / Outlet Connection Type	Pipe Fitting Connection				Flange Adaptor with Gasket (RF)
Connection Orientation Standard	U	U	U	U	U
Connection Orientation Options	L/Z	L/Z	L/Z	L/Z	L/Z
Flange/ Pipe Connection Sizes	1" BSP	1 1/2" BSP	3" BSP	3" BSP	DN100
Piping Norm Adopte	ISO1452-2 PN10	ISO1452-2 PN10	ISO1452-2 PN10	ISO1452-2 PN10	ISO1452-2 PN10
Flange Pattern Norm	N/A	N/A	N/A	N/A	ISO1452-3 PN10
Drain Connection Type	Threaded	Threaded	Threaded	Threaded	Threaded
Drain Size [in]	½	½	½	½	½
UV Reactor Body Material	PP	PP	PP	PP	PP
UV Reactor Diameter (Ø) [mm]	63	75	160	160	140
UV Reactor Length [mm]	650	745	765	765	1785
UV Reactor Width [mm]	135	160	190	190	255
UV Reactor Height [mm]	300	300	350	350	425
Operation Temperature Range C	2 C-45 C	2 C-45 C	2 C-45 C	2 C-45 C	2 C-45 C

UVC-100	UVC-250	UVC-350	UVC-500	UVC-700	UVC-1000
UV DIS-INFECTION UNIT-PP BODY					
100	250	350	500	700	1000
115	300	370	500	700	1000
43.5	43	42.8	45.6	45.6	31.4
38	38	38	38	38	38
98	98	98	98	98	98
93	93	93	93	93	93
U	U	U	U	U	U
L/Z	L/Z	L/Z	L/Z	L/Z	L/Z
DN150	DN200	DN300	DN400	DN400	DN400
ISO1452-2 PN10	ISO1452-2 PN10	ISO1452-2 PN10	ISO1452-2 PN10	ISO1452-2 PN10	ISO1452-2 PN10
ISO1452-3 PN10	ISO1452-3 PN10	ISO1452-3 PN10	ISO1452-3 PN10	ISO1452-3 PN10	ISO1452-3 PN10
Threaded	Threaded	Threaded	Threaded	Threaded	Threaded
½	½	½	½	½	½
PP	PP	PP	PP	PP	PP
200	315	355	500	500	500
1785	1785	1760	1795	1785	1785
300	345	500	600	600	600
510	610	660	780	795	785
2 C-45 C	2 C-45 C	2 C-45 C	2 C-45 C	2 C-45 C	2 C-45 C

UV MODEL	UVC-1	UVC-5	UVC-10	UVC-20	UVC-50
Max Operating Pressure [bar]	2	5	5	5	5
Test pressure [bar]	3	7.5	7.5	7.5	7.5
UV Reactor Temperature Alarm	Standard	Standard	Standard	Standard	Standard
Number Of UV Lamps [pcs]	1	1	2	3	1
Lamp Category	Low Pressure Amalgam Lamp	Low Pressure Amalgam Lamp	Low Pressure Amalgam Lamp	Low Pressure Amalgam Lamp	Low Pressure Amalgam Lamp
Lamp Lifespan [h]	17000	17000	17000	17000	17000
Power Per Lamp [W]	48	87	87	87	400
UV Lamp Standard Cable Length [m]	6	6	6	6	6
Electrical Panel Protection Class	IP66	IP55	IP55	IP55	IP55
UV Body Operational Weight [kg]	4	6,6	9,6	11,9	34,9
UV Body Dry Weight (UV Chamber) [kg]	1,8	2,3	3,2	5,2	8,1
Control Board Width [mm]	400	400	500	500	500
Control Board Depth [mm]	210	210	210	210	210
Control Board Length [mm]	300	300	400	400	400
Control Board Dry Weight [kg]	4	6	6,8	7,5	6,8
Total Current [A]	0.3A	0.5A	1A	1.5A	2.5A
Total Installed Power [kW]	0.04	0.1	0.2	0.3	0.4
Supply Voltage 50/60Hz* [V]	1~230V AC	1~230V AC	1~230V AC	1~230V AC	1~230V AC

UVC-100	UVC-250	UVC-350	UVC-500	UVC-700	UVC-1000
5	5	5	5	5	5
7.5	7.5	7.5	7.5	7.5	7.5
Standard	Standard	Standard	Standard	Standard	Standard
2	4	6	8	10	12
Low Pressure Amalgam Lamp	Low Pressure Amalgam Lamp	Low Pressure Amalgam Lamp	Low Pressure Amalgam Lamp	Low Pressure Amalgam Lamp	Low Pressure Amalgam Lamp
17000	17000	17000	17000	17000	17000
400	400	400	400	400	400
6	6	6	6	6	6
IP55	IP55	IP55	IP55	IP55	IP55
64,9	150,4	180,7	433,8	433,8	438,3
14,9	25,7	39,7	120	120	122
600	700	800	800	1000	1000
210	300	400	400	400	400
400	500	450	450	600	600
13,2	18	65	75	85	90
5A	8.5A	7A	8.5A	10A	16A
1.0	1.2	2.4	3.2	4.0	4.8
1~230V AC	1~230V AC	3~400V AC	3~400V AC	3~400V AC	3~400V AC

UV MODEL OPTIONAL FEATURES	UVC-1	UVC-5	UVC-10	UVC-20	UVC-50
PLC Control Board	Optional	Optional	Optional	Optional	Optional
Optional Cable Length Max. [m]	6	6	6	6	6
Digital Flow Meter	Optional	Optional	Optional	Optional	Optional
Body Support Foot	Optional	Optional	Optional	Optional	Optional
Control Board Width (with PLC) [mm]	600	600	600	700	600
Control Board Depth (with PLC) [mm]	210	210	210	300	210
Control Board Length (with PLC) [mm]	400	400	400	500	400
Control Board Dry Weigth (with PLC) [kg]	4.3	6.3	7.1	7.8	7.1
UV Irradiance Sensor	Optional	Optional	Optional	Optional	Optional

UVC SPECIFICATIONS

UVC-100	UVC-250	UVC-350	UVC-500	UVC-700	UVC-1000
Optional	Optional	Optional	Optional	Optional	Optional
6	6	6	6	6	6
Optional	Optional	Optional	Optional	Optional	Optional
Optional	Optional	Optional	Optional	Optional	Optional
700	700	800	800	1000	1000
300	300	400	400	400	400
500	500	450	450	600	600
13.5	18	65	75	85	90
Optional	Optional	Optional	Optional	Optional	Optional

UVC SPECIFICATIONS

MBBRs

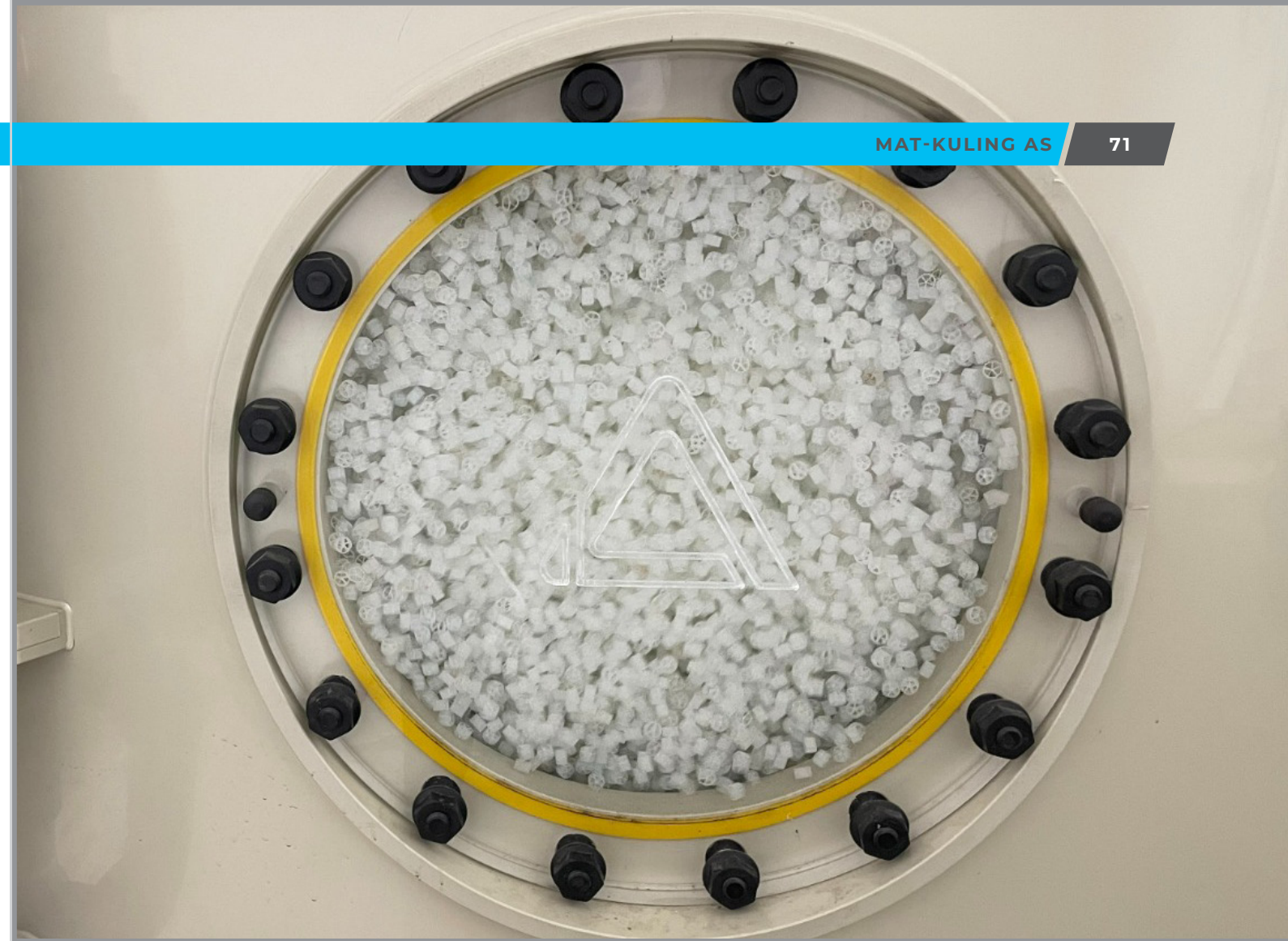
MOVING BED BIOFILTER REACTORS

MBBRs are biological filters, fabricated to provide nitrification and degradation of Total Ammonia Nitrogen (TAN) that is highly toxic. MBBR bio towers are made of PP, resistant to osmosis and ozone gas.

The Moving Bed Biofilter Reactor retains the organically loaded water by creating a vortex, to evenly move the bio media into the oxygen-rich, aerated contact chamber.

This retention allows the microorganisms to biologically absorb the nutrients off the water at a higher level than a traditional fixed biological filter. Due to the moving

structure and high specific surface area of MBBR media that play host for nitrification bacteria, MBBR units also have very low footprints compared to fixed type biological filters.



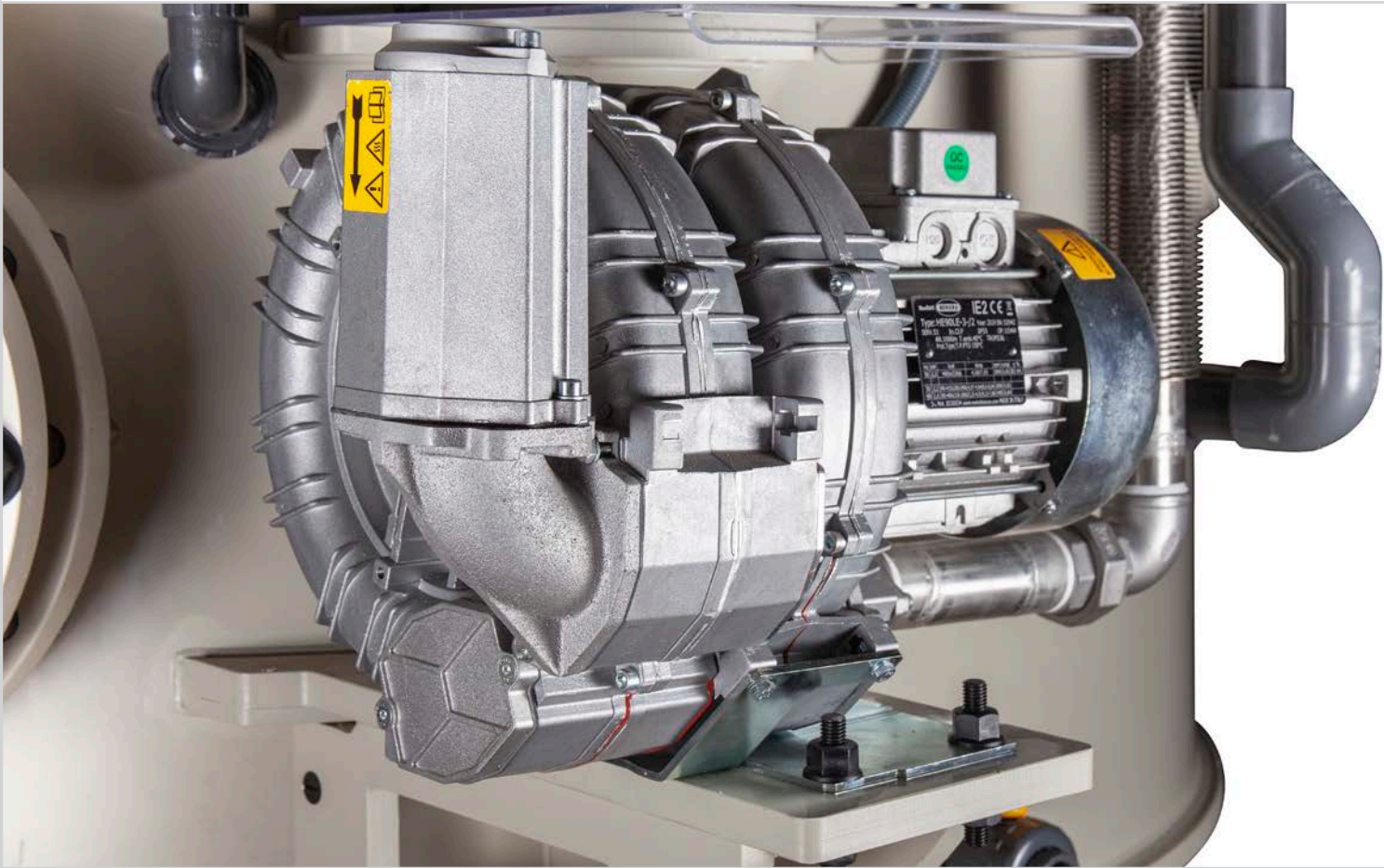
MOVING BED BIOFILM REACTOR (MBB)	MAT MBB-22	MAT MBB-62	MAT MBB-220	MAT MBB-280
Diameter [mm]	500	750	1000	1250
Footprint (WxL) [mm]	950x850	1160x1480	1415x1679	1734x2248
Height [mm]	1643	1865	2095	2353
Installed Power [kW]	0,55	1,5	3	3
Basic Unit Total Electric Consumption 50 hZ [kWh]	0,55	1,1	2,2	3
Supply Voltage 50hZ/60hZ [V]	3~400/230	3~400/230	3~400/230	3~400/230
Water Inlet Level [mm]	1252	1518	1585	1845
Inlet Size [mm]	90	140	225	250
Water Outlet Level [mm]	1240	1370	1430	1545
Outlet Size [mm]	90	140	225	250
Max water Flow [m³/h]	22	62	220	280
Max Flow Retention [second]	45	43	26	32
1 Min Retantion time flow rate [m³/h]	16,8	44,4	92,4	150
2 Min Retantion time flow rate [m³/h]	8,4	22,2	46,2	75

MAT MBB-360	MAT MBB-600	MAT MBB-800	MAT MBB-1300
1500	2000	2100	3000
1786x2673	2360x3140	3170x3377	3500x3750
3070	3000	4164	4900
3	5,5	7,5	15
3	5,5	7,5	15
3~400/230	3~400/230	3~400/230	3~400/230
2259	2179	3000	3750
280	315	400	400
1959	1879	3000	3400
280	315	400	400
360	600	819	1300
49	52	71	90
294	528	N/A	N/A
147	264	489	975

MOVING BED BIOFILM REACTOR (MBB)	MAT MBB-22	MAT MBB-62	MAT MBB-220	MAT MBB-280
4 Min Retantion time flow rate [m³/h]	4,2	11,1	23	37,5
Max Air Flow Rate 50hZ [m³/h]	19,6	32	51	121,2
Reactor Volume [m³]	0,28	0,74	1,54	2,5
Max BM-800 media [m³]	0,18	0,49	1,02	1,72
Max BM-1000 media [m³]	0,17	0,44	0,92	1,47
Dry Weight (wo/media) [kg]	90	130	200	280
Operational Weight [kg]	280	740	1540	2700
Body Material	PP food grade	PP food grade	PP food grade	PP food grade

MOVING BED BIOFILM REACTOR (MBB) OPTIONAL FEATURES	MBB-22 - MBB-1300
Biomedia BM-4500	OPTIONAL
Biomedia BM-800	OPTIONAL
Quick Retractable ORP/PH Probe Fitting	OPTIONAL
IP65 polycarbonate panel, Function/Fault Indicators, Manual Switches, Emergency stop, with visual and audible alarm.	OPTIONAL
Control board modification, PLC unit addition	OPTIONAL
MBB Blower unit with its suction filter and spare filter	OPTIONAL
Overflow Sensor	OPTIONAL
2x pH sensor and controller	OPTIONAL
Variable Frequency Driver	OPTIONAL

MAT MBB-360	MAT MBB-600	MAT MBB-800	MAT MBB-1300
74	132	245	488
121,2	172	261	433
4,9	8,8	16,3	32,5
3,23	5,81	10,75	21,45
2,94	5,28	9,78	19,5
410	650	1080	2000
4900	8801	16301	32502
PP food grade	PP food grade	PP food grade	PP food grade



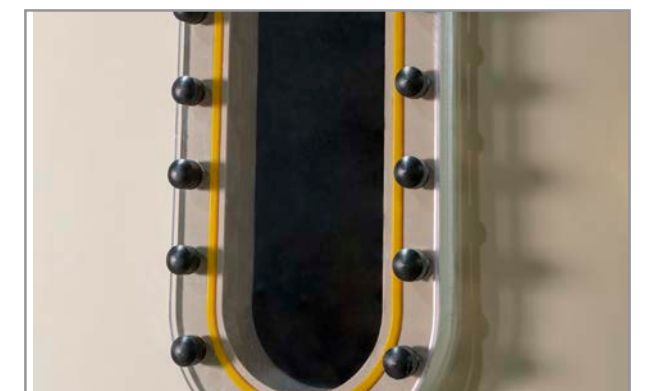
TRICKLE FILTERS

Trickle filters are fixed media filters with cross flow of air and water. Trickle filters can be used with fan to source air to the system in an energy efficient way. Trickle filters are produced from drinking/food grade thermoplastic.

Trickle filters can be applied as biological filters in Biological filter in to remove ammonia and at the same time they extract CO₂ from the system. They are energy efficient; nitrification and CO₂ removal solution provide degassing affect along with nitrification of ammonia.



If the purpose is only to remove CO₂ from the system and aerate the water then, trickle filters are loaded with special degasification media to boost its CO₂ removal performance.



TRICKLE FILTER	DGS-22	DGS-62	DGS-220
Diameter [mm]	500	750	950
Height [mm]	1561	1768	1835
Dry Weight [kg]	70	131	203
Operational Weight [kg]	291	560	980
Inlet Size [mm]	90	140	225
Outlet Size [mm]	90	140	225
Trickle Standpipe Level [mm]	1331	1518	1585
Degas Blower Inlet Size [mm]	75	125	160
Max Water Flow Rate [m³/h]	22	62	220
Recomended 2 Minute Re-tantion Water Flow [m³/h]	7.2	21.3	38.7
Max BIO-500 Media [m3]	0.18	0.5	0.9
Body Material	PP	PP	PP

DGS-280	DGS-360	DGS-600	DGS-800	DGS-1300
1250	1500	2000	2175	3000
2095	2509	2865	2910	2980
285	412	650	1080	2082
1420	1950	3705	5650	9240
250	280	315	355	400
250	280	315	400	400
1845	2420	2179	2250	2560
160	160	200	200	225
280	360	600	800	1300
60	135	242.7	330	614.7
1.73	3	5.2	7.5	12.8
PP	PP	PP	PP	PP

DGS SPECIFICATIONS

DGS SPECIFICATIONS

DEGASSING TOWERS

Degas Towers are tailor made solutions for high density land based aquaculture tanks to extract excessive CO₂ from the water. MAT DGT provides an efficient means of carbon dioxide (CO₂) and nitrogen (N₂) gas removal, maintaining the suitable conditions of treated water to fish livestock.

The undesirable gases are diffused out of the water into the ambient with minimum energy consumption. The Unit offers three operation options:

- » Static flow trough
- » Two-phase atmospheric cross flow
- » Two-phase cross flow with vacuum

MAT Vacuum Degasser Systems operation is based on the diffusional removal of undesirable gases and the enrichment of water in Oxygen by a fan and Titanium micron diffuser system. The gas exchange process is enhanced by the usage of a specifically dedicated blower that draws air into the water body. Air may flow atmospheric or under negative pressure



-vacuum- depending on the operator's selection. On all options, air and water run in cross flow both through the media and the free-spaced columns for the maximum gas exchange efficiency.

MAT-KULING Degassers have unique auto clean wash and ozonated clean in place solution to avoid any kind of fouling.



DEGASS TOWER	DGT-25V	DGT-50V	DGT-100V	DGT-150V
Max Water Flow Rate m ³ /hr	25	50	100	150
Max Hydraulic Surface Loading @Max Flow rate m ³ /m ²	150	150	150	150
Air Flow Nm ³ /hr	25 - 50	50 - 100	100 - 200	150 - 300
Air/Water Ratio G:L air/water	45323	45323	45323	45323
Operational Vacuum Pressure mBAR	100 - 150	100 - 150	100 - 150	100 - 150
Water inlet height mm	3100	3300	4315	4465
Water Outlet height mm	150	175	200	250
Tank height mm	3450	3650	4625	4780
Overall height mm	3600	3800	4775	5340
Water inlet diam. mm	140	160	200	225
Water outlet diam. mm	140	160	200	225
Cleaning Water Discharge Diamater (Gravity) mm	Ø75	Ø90	Ø110	Ø140
Cleaning Water Discharge Diamater (Pressure) inch	1 1/2"	1 1/2"	1 1/2"	1 1/2"
Tank Dia mm	500	750	1000	1250
Degassing Surface Area m ²	0.2	0.44	0.79	1.23

DGT-300V	DGT-600V	DGT-900V	DGT-1200V
300	600	900	1200
150	150	150	150
300 - 600	600 - 1200	900 - 1800	1200 - 2400
45323	45323	45323	45323
100 - 150	100 - 150	100 - 150	100 - 150
4695	4940	5260	5700
300	375	475	550
4930	5250	5620	6060
5900	6200	6500	6940
315	400	500	710
315	400	500	710
Ø160	Ø160	Ø200	Ø225
1 1/2"	1 1/2"	1 1/2"	1 1/2"
1600	2350	2850	3250
2.01	4.34	6.38	8.29

DEGASS TOWER	DGT-25V	DGT-50V	DGT-100V	DGT-150V
Manhole diam. mm	Sight Glass	Sight Glass	Sight Glass	450
Emergency Oxygen Gas Inlet inch	1/2"	1/2"	1/2"	1/2"
Media Specific Sur- face Area m2/m3	140	140	140	140
Media Column Height cm	150	150	150	150
Media Volume m3	0.43	1	1.81	2.89
Air outlet diam. mm	75	75	110	140
Air inlet diam. mm	75	75	110	140
Auto clean pump model	21-40/55-56H	21-40/58H	21-40/58H	Normblock 65/250
Blower Installed Power kW	0.75	1.5	3	4
Cleaning Pump In- stalled Power kW	1.33	1.77	1.77	5.5
Cleaning VFD Mod- el Model	EP66-0022 T3	EP66-0022 T3	EP66-0022 T3	EP66-0075 T3
Blower VFD Model Model	EP66-0015 T3	EP66-0022 T3	EP66-0040 T3	EP66-0055 T3
Blower Model	k04-ms	k05-ms	k07-ms	k075-ms

DGT-300V	DGT-600V	DGT-900V	DGT-1200V
450	450	450	450
3/4"	3/4"	1"	1"
140	140	140	140
150	150	150	250
4.68	10.35	15.09	19.54
200	250	315	500
200	250	315	500
Normblock 65/250	Normblock Multi 100/250	Normblock 125/250	Normblock 125/250
5.5	18.5	22	37
7.5	11	18.5	22
EP66-0110 T3	EP66-0150 T3	EP66-0220 T3	EP66-0300 T3
EP66-0075 T3	EP66-0220 T3	2XEP66-0150 T3	2XEP66-0220 T3
k10-ms	k12-ts	k09-ts x 2	k12-ts x 2

86MAT-KULING AS							
DEGASS TOWER	DGT-25	DGT-25H	DGT-50	DGT-50H	DGT-100	DGT-100H	DGT-150
Max Water Flow Rate m3/hr	25	25	50	50	100	100	150
Hydraulic Surface Loading @Max Flow rate (m3/m2)	150	150	150	150	150	150	150
Atmospheric Type Max Air Flow @5Mbar(Nm3/hr)	200	200	400	400	800	800	1200
Air/Water Ratio G:L (air/water)	8	8	8	8	8	8	8
Water inlet height (mm)	2100	3100	2300	3300	3315	4315	3500
Water Outlet Height (mm)	150	150	175	175	190	200	250
Tank height (mm)	2450	3450	2650	3650	3625	4625	3900
Overall height (mm)	2600	3600	2800	3800	3845	4845	4200
Water inlet diam. (mm)	140	140	160	160	200	200	225
Water outlet diam. (mm)	140	140	160	160	200	200	225
Cleaning Water Dis-charge Diamater (Gravity) (mm)	Ø75	Ø75	Ø90	Ø90	Ø110	Ø110	Ø140
Cleaning Water Dis-charge Diamater (Pressure) (inch)	1 1/2 "	1 1/2 "	1 1/2 "	1 1/2 "	1 1/2 "	1 1/2 "	1 1/2 "
Tank Dia mm	500	500	750	750	1000	1000	1250
Degassing Surface Area (m2)	0.2	0.2	0.44	0.44	0.79	0.79	1.23
Manhole diam. mm	Sight Glass	Sight Glass	Sight Glass	Sight Glass	Sight Glass	Sight Glass	450

MAT-KULING AS87								
DGT-150H	DGT-300	DGT-300H	DGT-600	DGT-600H	DGT-900	DGT-900H	DGT-1200	DGT-1200H
150	300	300	600	600	900	900	1200	1200
150	150	150	150	150	150	150	150	150
1200	2400	2400	4800	4800	7200	7200	9600	9600
8	8	8	8	8	8	8	8	8
4500	3695	4695	3940	4940	4260	5260	4700	5700
250	270	300	328	375	445	475	550	550
4900	3930	4930	4250	5250	4620	5620	5060	6060
5200	5000	6000	5320	6320	5655	6655	5940	6940
225	315	315	400	400	500	500	710	710
225	315	315	400	400	500	500	710	710
Ø140	Ø160	Ø160	Ø160	Ø160	Ø160	Ø200	Ø200	Ø225
11/2 "	11/2 "	11/2 "	11/2 "	11/2 "	11/2 "	11/2 "	11/2 "	11/2 "
1250	1600	1600	2350	2350	2850	2850	3250	3250
1.23	2.01	2.01	4.34	4.34	6.38	6.38	8.29	8.29
450	450	450	450	450	450	450	450	450

88MAT-KULING AS								MAT-KULING AS89								
DEGASS TOWER	DGT-25	DGT-25H	DGT-50	DGT-50H	DGT-100	DGT-100H	DGT-150	DGT-150H	DGT-300	DGT-300H	DGT-600	DGT-600H	DGT-900	DGT-900H	DGT-1200	DGT-1200H
Emergency Oxygen Gas Inlet (inch)	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"	1"	1"	1"	1"
Media Specific Surface Area (m2/m3)	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140
Media Column Height (cm)	0.26	0.43	0.6	1	1.08	1.81	1.74	2.89	2.81	4.68	6.21	10.35	9.05	15.09	11.72	19.54
Media Volume (m3)	110	110	140	140	160	200	200	200	200	280	355	400	400	450	450	500
Air outlet diam. (mm)	110	110	140	140	160	200	200	225	225	280	355	355	355	450	450	500
Air inlet diam. (mm)	21-40/55-56H	21-40/55-56H	21-40/58H	21-40/58H	21-40/58H	21-40/58H	Norm-block 65/250	Norm-block 65/250	Norm-block 65/250	Norm-block 65/250	Norm-block Multi 100/250	Norm-block Multi 100/250	Norm-block Multi 125/250	Norm-block Multi 125/250	Norm-block Multi 125/250	Norm-block Multi 125/250
Auto clean pump model	0.18	0.18	0.18	0.18	0.18	0.18	0.37	0.37	0.75	0.75	1.1	1.1	3	3	3	3
Air Fan Installed Power (kW)	1.33	1.33	1.77	1.77	1.77	1.77	5.5	5.5	7.5	7.5	11	11	18.5	18.5	22	22
Cleaning Pump Installed Power (kW)	EP66-0022 T3	EP66-0022 T3	EP66-0022 T3	EP66-0022 T3	EP66-0022 T3	EP66-0022 T3	EP66-0075 T3	EP66-0075 T3	EP66-0110 T3	EP66-0110 T3	EP66-0150 T3	EP66-0150 T3	EP66-0220 T3	EP66-0220 T3	EP66-0300 T3	EP66-0300 T3

DGS OPTIONAL FEATURES	DGS-22 - DGS-1300
Overflow Switch	optional
Air Fan	optional
Air/Water Ratio On 2 Min Retention Time	5//1
Biomedica BIO-100	optional
Biomedica BIO-500	optional



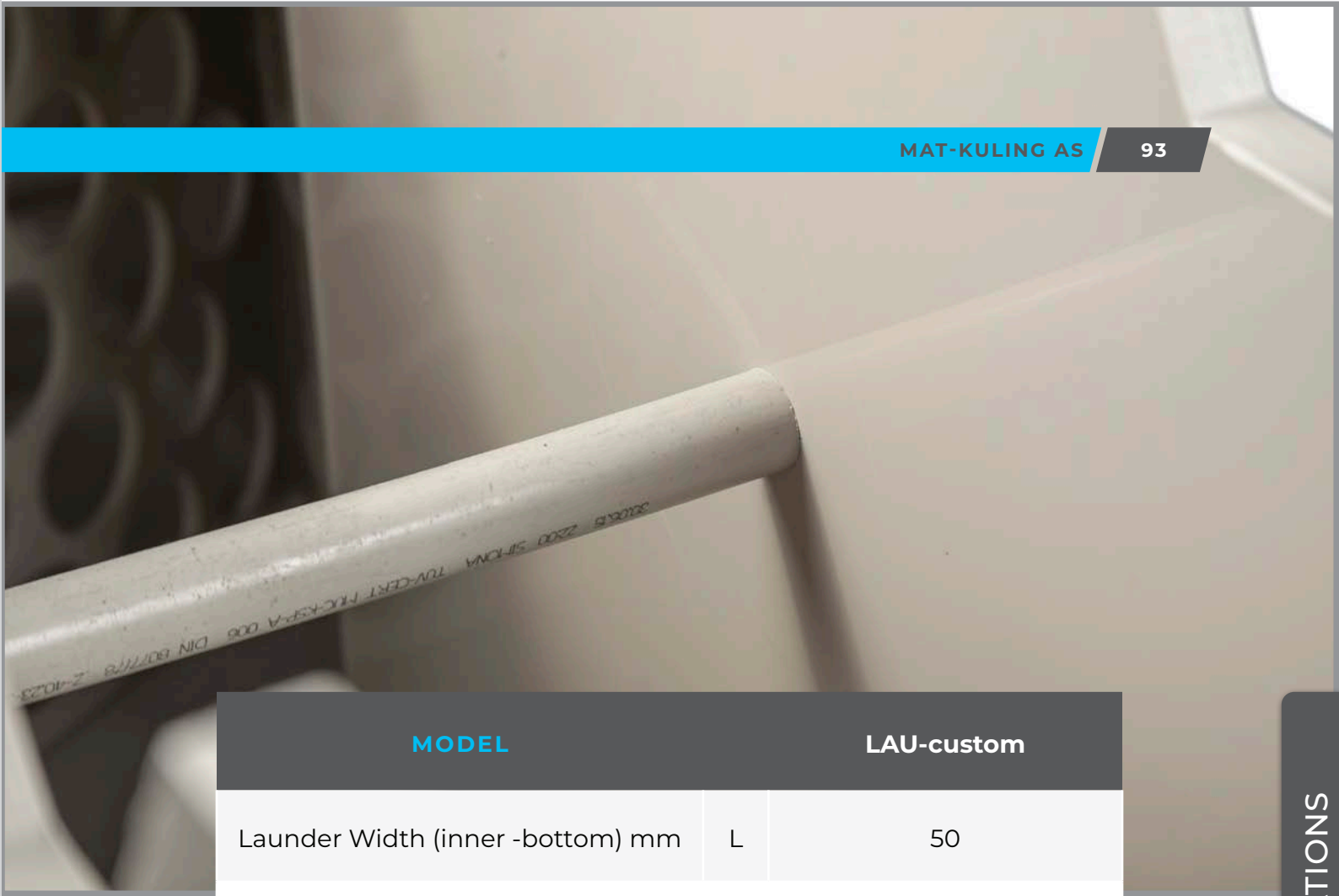
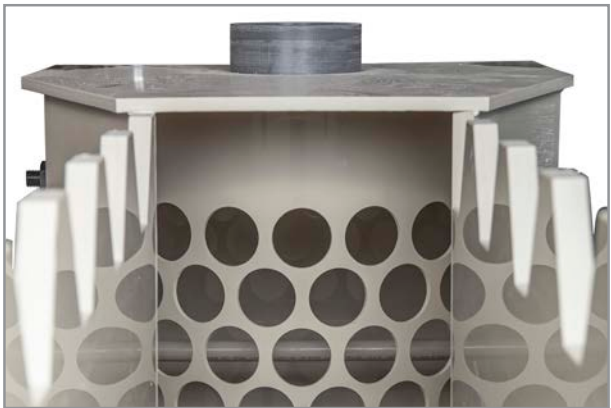
DEGASS TOWER OPTIONAL FEATURES	DGT-25 - DGT-1200H
Blower (Vacuum Unit)	optional
Air Fan (Atmospheric Unit)	optional
Blower VFD	optional
pH sensor	optional
CO2 probes	optional
O2 probes	optional
Turbidity Probe	optional
Water level sensor	optional
Overflow sensor	optional
Cleaning Pump	optional
Manual Face Piping Valve Manifold	optional
Auto Clean System Motorized Face Piping Valve Manifold	optional
Electrical Control Panel	optional
PLC Automated Control Panel	optional



DEGASSING SOLUTIONS OVERFLOW LAUNDERS

The Overflow Launder is a robust structural element built of PP (Polypropylene) and it allows the water to trickle and degas through its gradual flow design. It is used in industrial effluent wastewater treatment and in intensive land based fish farming applications as a degassing / aeration solution.

MAT-KULING manufactures custom overflow effluent launders according to each fish farm design specifications.



MODEL		LAU-custom
Launder Width (inner -bottom) mm	L	50
Theta rad	θ	1063
Launder Entry Width (inner) mm	W	600
Launder Height mm	h	50
Launder Height (max) mm	D	85
Launder Length (max) mm		11500
Length between Notches mm		200
Flowrate per Launder m3/hr		1300
Flowrate Through Notch m3/hr		4,13
Wet Weight (max) kg		3750
Dry Weight (max) kg		260

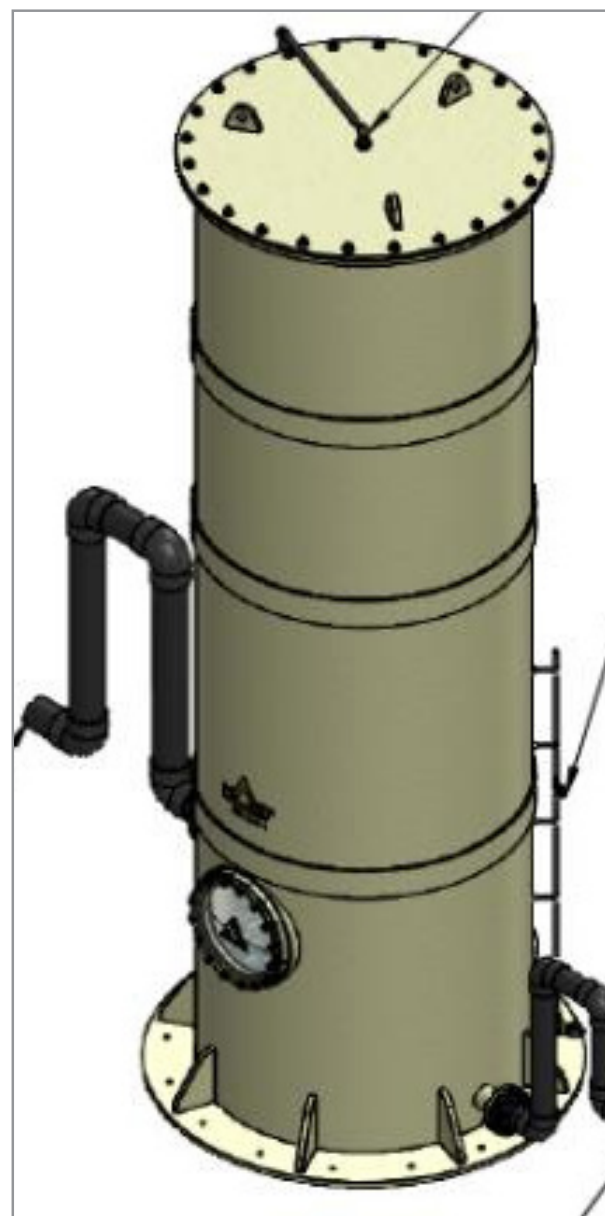
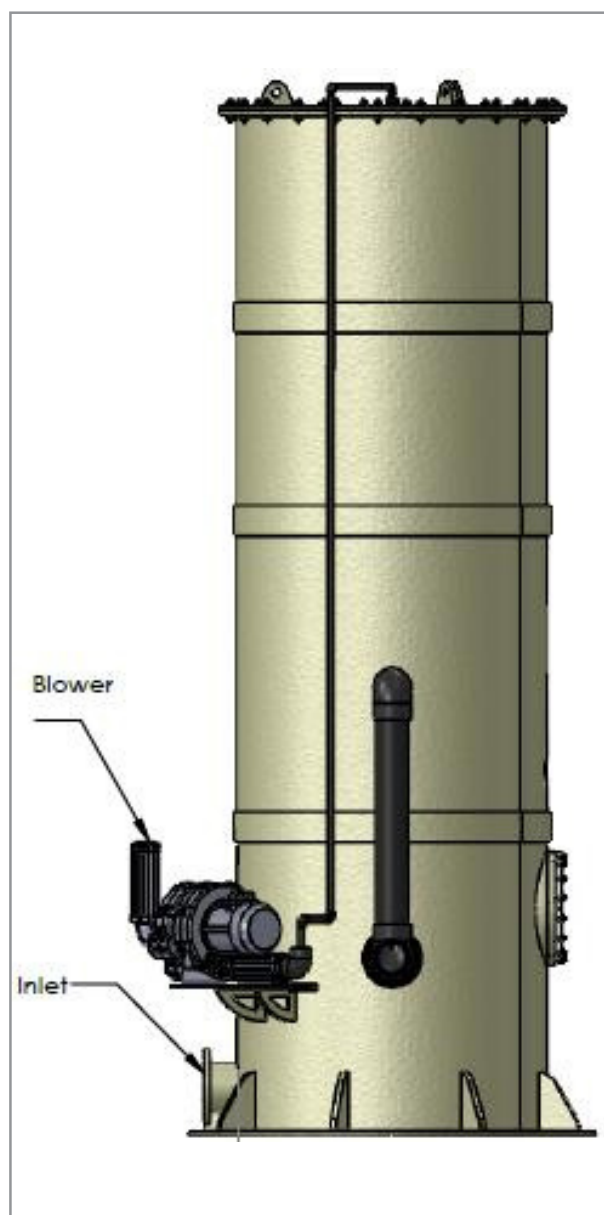
FOAM EXTRACTORS

MAT-KULING FE Unit is a Foam Extractor System used to extract the thick foam from Very Large Protein Skimmer Collector Heads via a special water lock where any possible remained ozone gas is separated from foam and is diverted to the ozone outlet.

The Foam Extractor consists of a tower

and a waste gas blower that forms the subpressure to pull the waste gas out of the tower column.

The extractor inlet is secured against backflows and the water exit includes a siphon to ensure water is kept at the designed level.



FOAM EXTRACTOR	FEX-100	FEX-300	FEX-600	FEX-1200
Diameter mm	500	750	1000	1500
Height mm	2085	2270	2400	2590
Volume m3	0.35	0.75	1.57	4.59
Dry Weight kg	110	150	185	250
Operational Weight (Kg)	245	350	586	1300
Water/Gas Inlet Diameter (mm)	63	90	110	160
Water Discharge Diameter (mm)	40	75	90	110
Max Water Flow Rate (m3/hr)	3	8	15	30
Max Gas Flow @-100Mbar Nm3/hr	100	300	600	1200
Blower model	K04MS	K07MS	K10MS	K09TS
Blower Max Power (Kw)	0.75	2.2	5.5	11
VFD model	EP66-0007-T3	EP66-0022 T3	EP66-0055 T3	EP66-0110 T3

FEX OPTIONAL FEATURES	FEX-300 - FEX 1200
Clear Observation Window	optional
Vacuum Blower	optional
Auto Foam Supression	optional
Variable Frequency Driver	optional
Anti-Foam Dosage Pump & Tank	optional

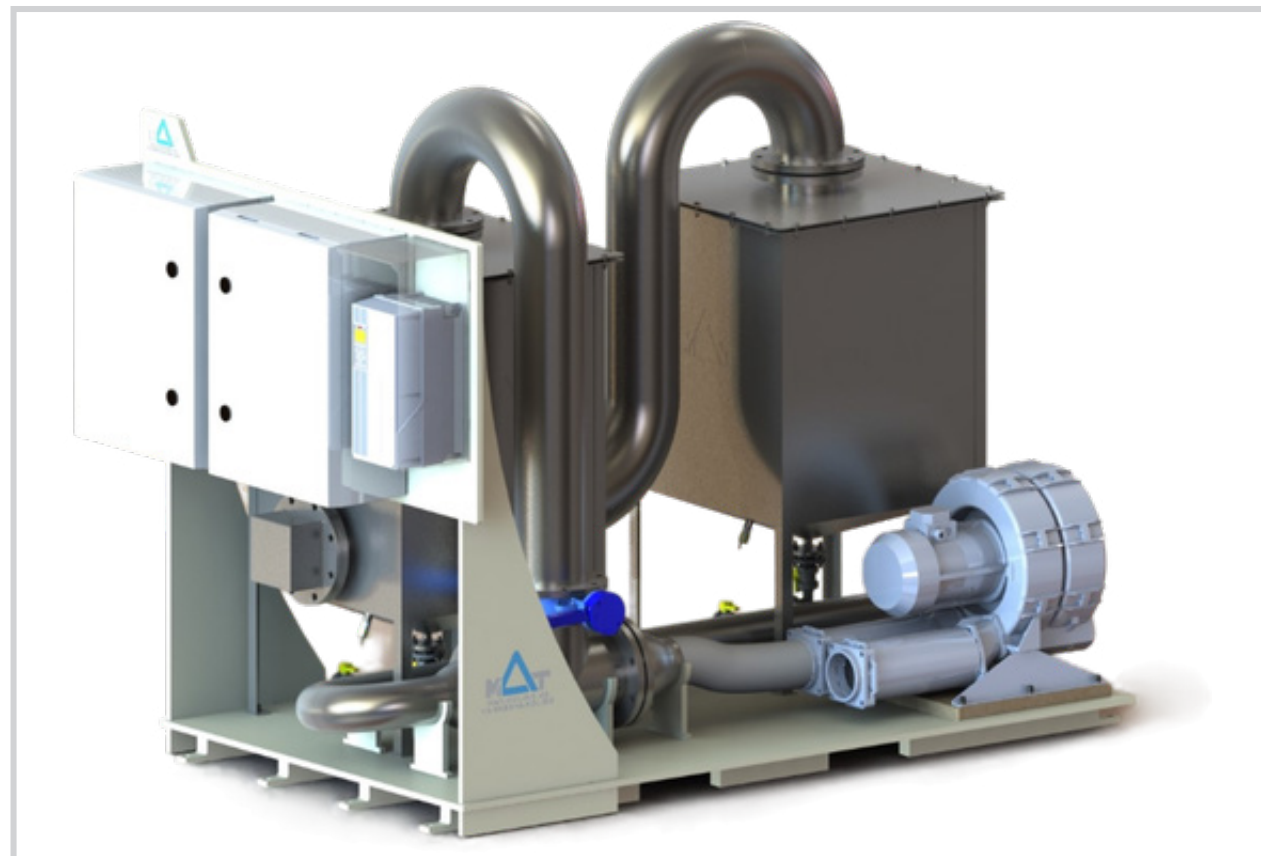
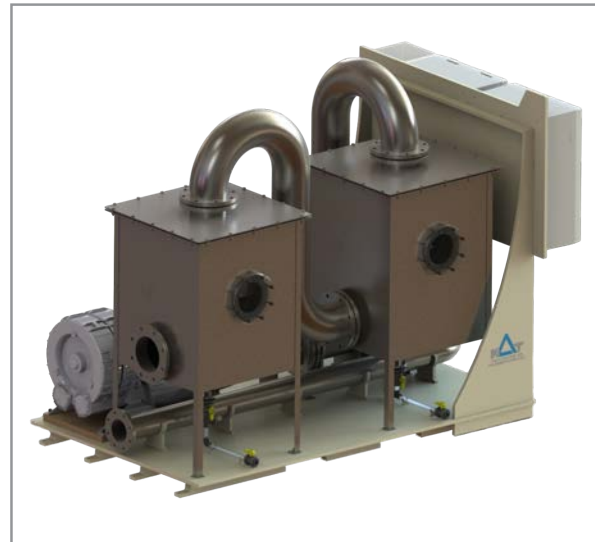
FEX OPTIONAL FEATURES	FEX-300 - FEX 1200
Foam Extractor Unit Control Board	optional
Photoelectrics Liquid Level Switch	optional
Foam Level conductivity sensor	optional
Control board modification, PLC unit addition	optional
Air lock system	optional

OZONE DESTRUCT SYSTEMS

MAT-KULING Ozone Destruct Units offer the solution for the safe and rapid destruction of ozone and should be a core element of a proper ozone generator installation in confined mechanical room.

We produce either activated carbon or thermal catalytic types of Ozone Destruct Units.

Thermal Catalytic Ozone Destruct Units are ideal for large ozone production plants for superior safety and less space requirement.



98	MAT-KULING AS				
OZONE DE-STRUCT CATALYSIS	ODT-1	ODT-5	ODT-10	ODT-25	ODT-50
Flow rate Nm³/h	1	5	10	25	50
Footprint Width [mm]	450	500	600	1200	950
Footprint Depth [mm]	180	220	500	400	1035
Max Height [mm]	1200	1460	1000	1600	1820
Dry Weight kg	11	22	35	79	185
Demister/Destructor Material	316 SS	316 SS	316 SS	316 SS	316 SS
Chasis Material	N/A	N/A	PP or GRP	PP or GRP	PP
Pipeline Material	U-PVC and 316 SS	U-PVC and 316 SS	U-PVC and 316 SS	U-PVC and 316 SS	U-PVC and 316 SS
Installed Power [kW]	0.1	0.15	0.8	1.15	2
Supply Voltage 50/60 Hz [V]	1~230	1~230	3~400	3~400	3~400
Heater Power kW	0.1	0.15	0.4	0.75	1.25
Residual Ozone Line Connection [mm]	DN15	DN25	DN25	DN32	DN50
Off-Gass Outlet Connection [mm]	DN15	DN25	DN25	DN32	DN40
Destructor Inlet Max Ozone Con- centration %wt	3	3	3	3	3

MAT-KULING AS					99
ODT-100	ODT-200	ODT-400	ODT-800	ODT-1200	ODT-2000
100	200	400	800	1200	2000
1000	1050	1200	1900	1550	1750
1160	1285	1435	1200	2840	1865
1820	1820	1845	2000	2115	2480
225	250	357	420	670	800
316 SS	316 SS	316 SS	316 SS	316 SS	316 SS
PP	PP	PP	PP or GRP	PP or GRP	PP or GRP
U-PVC and 316 SS	U-PVC and 316 SS	U-PVC and 316 SS	U-PVC and 316 SS	U-PVC and 316 SS	U-PVC and 316 SS
3.5	5.5	10	21.5	26.5	45
3~400	3~400	3~400	3~400	3~400	3~400
2	3	5.5	10	15	22
DN80	DN100	DN125	DN110	DN150	DN200
DN50	DN50	DN80	DN110	DN150	DN200
3	3	3	3	3	3

OZONE DE-STRUCT CATALYSIS	ODT-1	ODT-5	ODT-10	ODT-25	ODT-50
Destructor Outlet Max Ozone Concentration ppm	<0,1	<0,1	<0,1	<0,1	<0,1
Demister Drain Connection [mm]	DN15	DN15	DN20	DN20	DN20
Carulite Media Quantity [kg]	1	2	3	6	10
Blower Model (Recommended)	N/A	N/A	10 DL MD	K03 MS	K04 MS
Blower Power @-50mbar, 50/60Hz. kW	N/A	N/A	0.37	0.37	0.75
Blower Quantity pcs.	N/A	N/A	1	1	1
Max Suction Pressure @ Duty Point mBAR	N/A	N/A	-140	-140	-140
Variable Frequency Driver Model vfd	N/A	N/A	EP66-0007 T3	EP66-0007 T3	EP66-0007 T3
Max Temperature Increase caused by Heater °C	12	12	12	12	12

ODT-100	ODT-200	ODT-400	ODT-800	ODT-1200	ODT-2000
<0,1	<0,1	<0,1	<0,1	<0,1	<0,1
DN20	DN20	DN20	DN32	DN32	DN32
20	40	75	155	225	375
K05 MS	K06 MS	K08 MS	K12 MS	K10 TS	K09 TS
1.5	2.2	4	9.2	11	11x2
1	1	1	1	1	2
-140	-140	-140	-150	-140	-150
EP66-0015 T3	EP66-0022 T3	EP66-0040 T3	EP66-0110 T3	EP66-0110 T3	EP66-0110 T3
12	12	12	12	12	12

OZONE DE-STRUCT CATALYSIS	ODT-1	ODT-5	ODT-10	ODT-25	ODT-50
Thermal Catalytic Ozone Destruct Control Board	Optional	Optional	Optional	Optional	Optional
Thermal Catalytic ODT Blower	N/A	N/A	Optional	Optional	Optional
Thermal Catalytic ODT Blower VFD	N/A	N/A	Optional	Optional	Optional
Temperature Probe with standard probe cable	Optional	Optional	Optional	Optional	Optional
Corrosion Resistant Sensor -1...9bar (4-20mA)	Optional	Optional	Optional	Optional	Optional
Overflow Level Sensor	Optional	Optional	Optional	Optional	Optional
Thermal Catalytic ODT PLC Controller	Optional	Optional	Optional	Optional	Optional

ODT-100	ODT-200	ODT-400	ODT-800	ODT-1200	ODT-2000
Optional	Optional	Optional	Optional	Optional	Optional
Optional	Optional	Optional	Optional	Optional	Optional
Optional	Optional	Optional	Optional	Optional	Optional
Optional	Optional	Optional	Optional	Optional	Optional
Optional	Optional	Optional	Optional	Optional	Optional
Optional	Optional	Optional	Optional	Optional	Optional

OZONE DESTRUCT	ODC-6	ODC-25
Footprint Width [mm]	510	655
Footprint Depth [mm]	460	550
Max Height [mm]	1110	1390
Body Diameter [mm]	250	315
Body Material	PP	PP
Installed Power [W]	80	105
Supply Voltage 50 Hz [V]	1~230	1~230
Residual Ozone Line Connection [mm]	50	75
Off-Gass Outlet Connection [mm]	75	110
Water Drain Connection [mm]	40	50
Activated Carbon Media Quantity [L]	20	40
Max Gas Inlet Ozone concentration %wt	1	1
Max Gas Outlet Ozone Concentration ppm	0,1	0,1
Water Trap/Drain Column	standart	standart
Blower [model]	G2E120-AR77-01	G2E140-AE77-01

ODC-50	ODC-100	ODC-200
750	825	955
680	760	890
1430	1490	1490
400	500	630
PP	PP	PP
240	400	400
1~230	1~230	1~230
90	90	90
110	125	140
63	75	75
60	110	200
1	1	1
0,1	0,1	0,1
standart	standart	standart
G2E160-AY47-01	G2E180-EH03-01	G2E180-EH03-01

OZONE CONTACT & OZONE DOSING SKIDS

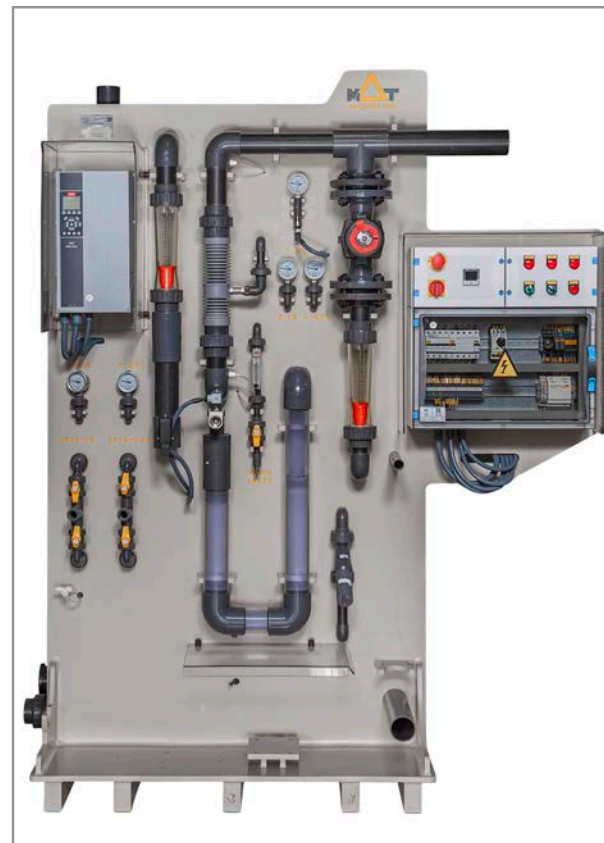
Ozone is a gas that needs to be infused into water under a compressed infusion process, in multiple points of a filtration system. In saline water, protein fractionators (skimmers) are traditionally used to achieve this through a venturi device, infusing ozone mixed with air into the water column.

Latest developments have shown us that the infusion of ozone is not best achieved only by using this venturi infusion. Thus, a mixing and contact tank is required and in some applications, a pressurized vessel needs to be implemented to infuse ozone

into the water column under a pressurized mixture.

MAT-KULING has two types of injection units:

ODS series is for Low-Pressure Ozone Injection through pipes, header or atmospheric contact tanks. OCS series is for high-pressure ozone diffusing through a pressurized mixing and contact chamber.



OZONATION SKID FOR MARINE/ FRESH WATER	OCS-10	OCS-20
Footprint Depth [mm]	1150	1300
Footprint Width [mm]	1850	1860
Max. Height [mm]	2600	2600
Contact Tank Diameter [mm]	600	800
Installed Power [kW]	5.5	5.5
Basic Unit Total Electric Consumption [kWh]	2.7	3.2
Supply Voltage (50Hz) [V]	3~400/230	3~400/230
Inlet Size [mm]	50	63
Outlet Size [mm]	40	50
Contact Time [min]	5	5
Ozone Concentration [ppm]	0,5-2	0,5-2
Ozone Dosing [g/h]	10	20
Ozone Dosing [L/min]	4,5	5
CT Value	10	10
Booster Pump Material	PP	PP
Pressure Sensor TANK-IN	YES	YES
Pump Model	TMR 30.25	TMR 30.25
Pump Variable Frequency Driver Model	EP66-0055 T3	EP66-0055 T3
Ozone Contact Tank Model/ Cylinder height	R60C/1700	R80C/1700
Ozone Contact Tank Total Height [mm]	2270	2350

OCS-50	OCS-100	OCS-150	OCS-250
1430	1800	2020	2465
2760	4745	5175	5925
2850	2900	3500	3385
1200	1600	1800	2200
5.5	11	11	18.5
4.6	8.5	7.4	18
3~400/230	3~400	3~400	3~400
110	140	160	200
90	140	160	200
5	5	5	5
0,5-2	0,5-2	0,5-2	0,5-2
50	100	150	250
10	39	49	40
10	10	10	10
PP	PP	PP	PP
YES	YES	YES	YES
TMR 20.36	CMO-N 65-160	CMO-N 65-160	CDI-QL 125-100-250
EP66-0055 T3	EP66-0110 T3	EP66-0150 T3	EP66-0220 T3
R120C/1700	R160C/1700	R180C/2000	R220C/2000
2550	2750	3150	3350

110MAT-KULING AS			MAT-KULING AS111				
OZONATION SKID FOR MARINE/ FRESH WATER			OCS-10		OCS-20		
Dry Weight (kg)			180		250		
Ozone Destruct			STANDARD		STANDARD		
Max Line Pressure [bar]			1,7		1,9		
Pump Flow Rate [m³/h]			5		10		
Venturi Inlet Pressure [bar]			3		3		
Tank Operating Pressure [bar]			1,9		2,1		
Ozone GAS Suction Rate [L/min]			4,5		5		
OCS OPTIONAL FEATURES			OCS-10 - OCS-250				
Pressure Probe TANK-OUT			optional				
PH/ORP Probe & Fittings			optional				
DO3 PROBE & Fitting			optional				
Control Board			optional				
Control Board with PLC			optional				
Ambient Ozone Monitor			optional				
OCT TANKS			OCT-10	OCT-20	OCT-50		
Description			OZONE CON-TACT TANK	OZONE CON-TACT TANK	OZONE CON-TACT TANK		
Material			FRP	FRP	FRP		
Type			Vertical	Vertical	Vertical		
Diameter/ Footprint Size mm			1700	1700	1700		
Height mm			2270	2350	2550		
Tank Volume m3			0,45	0,85	2,5		
Nominal Operational Pressure bar			2,5	2,5	2,5		
Maximum Permitted Pressure bar			6	6	6		
			OCS-50	OCS-100	OCS-150	OCS-250	
			460	1250	1420	1875	
			STANDARD	STANDARD	STANDARD	STANDARD	
			1,7	1,7	1,7	1,7	
			25	50	75	125	
			3	3	3	3	
			1,9	1,9	1,9	1,9	
			10	39	49	40	
OCS OPTIONAL FEATURES			OCS-10 - OCS-250				
FRP Body Ozone Contact Tank			optional				
Ozone Contact Skid Pump			optional				
Ozone Contact Skid Pump VFD			optional				
Ozone Dosing Skid Digital Flowmeter			optional				
Automatic Air Purge 1"			optional				
Automatic Air Purge 2"			optional				
Pressure Relief Valve			optional				
			OCT-100	OCT-150	OCT-250	OCT-500	OCT-1000
			OZONE CON-TACT TANK	OZONE CON-TACT TANK	OZONE CON-TACT TANK	OZONE CON-TACT TANK	OZONE CON-TACT TANK
			FRP	FRP	FRP	FRP	FRP
			Vertical	Vertical	Vertical	Vertical	Vertical
			1700	2000	2000	TBD	TBD
			2750	3150	3350	TBD	TBD
			4,5	6,5	11	TBD	TBD
			2,5	2,5	2,5	2,5	2,5
			6	6	6	6	6

OZONE DOSING SKID FOR MA- RINE/ FRESH WA- TER	ODS-10	ODS-20	ODS-50
Footprint Depth [mm]	700	700	700
Footprint Width [mm]	1135	1135	1140
Max. Height [mm]	2130	2130	2130
Installed Power [kW]	1,1	1,1	1,3
Supply Voltage (50Hz) [V]	3~400/230	3~400/230	3~400/230
Inlet Size [mm]	50	50	50
Outlet Size [mm]	50	50	50
Ozone Dosing [g/h]	10	20	50
Ozone Dosing [L/min]	4,5	6	10
Pump Model pump	21-40/53 H	21-40/53 H	21-40/54 H
Max Outlet Pressure (Higher pressures possible with custom design) [bar]	0,7	0,7	0,7
Inlet/outlet pressure monitors gauge/bar	1--4	1--4	1--4
Pump Flow Rate @ Max line pressure [m³/h]	7,3	7,3	7,7
Ozone GAS Suction Rate @ Max line pressure [L/min]	5	6	10
Venturi Model vnt	250M	260M	260M

ODS-100	ODS-250	ODS-500	ODS-1000
700	700	700	800
1270	1270	1750	1900
2180	2230	2500	2500
2,2	2,2	3,7	4,8
3~400/230	3~400/230	3~400/230	3~400
63	63	90	110
63	63	90	110
100	250	500	1000
39	40	80	160
21-40/58 G	21-40/58 G	21-60/46 G	21-80/34 G
0,7	0,7	0,7	0,7
1--4	1--4	1--4	1--4
14	14	40	63
39	40	80	160
350M	350M	430M	600M

**OZONE DOSING
SKID FOR MA-
RINE/ FRESH WA-
TER OPTIONAL
FEATURES**

	ODS-10	ODS-20	ODS-50
Variable Frequency Driver vfd	EP66-0015 T3	EP66-0015 T3	EP66-0015 T3
ORP/PH Probe & Probe Fitting	optional	optional	optional
DO3 Probe & Probe Fitting	optional	optional	optional
Control Board	optional	optional	optional
Digital pressure probes	optional	optional	optional
PLC Control	optional	optional	optional
Ozone Ambient De-tector	optional	optional	optional
ODS Booster Pump	optional	optional	optional
Digital Flowmeter	optional	optional	optional

ODS-100	ODS-250	ODS-500	ODS-1000
EP66-0022 T3	EP66-0022 T3	EP66-0040 T3	EP66-0055 T3
optional	optional	optional	optional
optional	optional	optional	optional
optional	optional	optional	optional
optional	optional	optional	optional
optional	optional	optional	optional
optional	optional	optional	optional
optional	optional	optional	optional
optional	optional	optional	optional



PRESSURIZED MEDIA FILTER SKIDS & FILTER TANKS

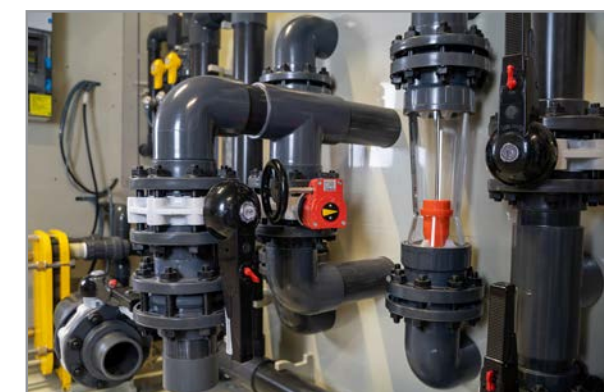
Filter Tanks are generally filled in with Glass Filter Media instead of silica sand, for multiple advantages and advanced performance.

The PMF Skid System is a complete plug-and-play water treatment solution. PMF Skid Systems are sold hydro-tested and fully assembled.

Complete ease of operation and low energy consumption. The unit includes top-notch mechanical filtration with powerful disinfection.

PMF SKID FEATURES:

- » Pressurised Mechanical Filter Tank
- » Circulation Pump
- » UV-C Sterilizer
- » Piping & Valves
- » Flow Meters
- » Plate Heat Exchanger
- » Chemical Dosage & Controller
- » Variable Pump motor drivers
- » Pressure sensors
- » Temperature Monitoring

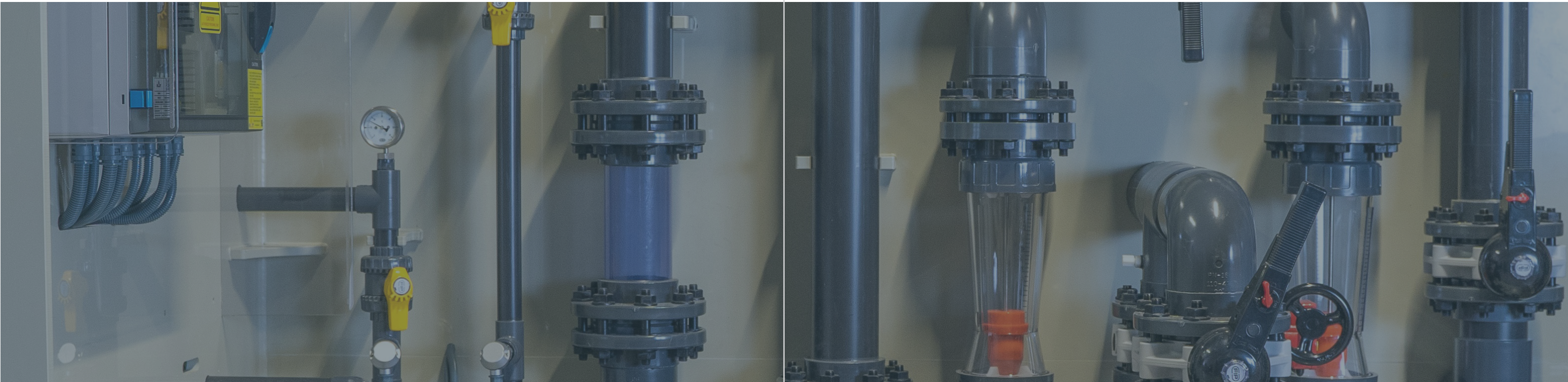


PMF SKID	PMF-4	PMF-12	PMF-22
Footprint Width [mm]	2200	3100	3500
Footprint Length [mm]	830	1400	1400
Unit Height [mm]	2060	2250	2200
Recommended Room Height [mm]	3000	3000	3000
PMF Tank Diameter & Area [mm]	500	830	1000
PMF Tank Diameter & Area [m ²]	0,19	0,5	0,79
Installed Power [kW]	0,75	1,77	2,55
Basic Unit Total Electric Consumption [kWh]	0,65	1,5	2,2
Supply Voltage (50Hz) [V]	3~400/230	3~400/230	3~400/230
Skid Inlet [mm]	50	75	90
Skid Outlet [mm]	50	63	75
Backwash Inlet Size [mm]	40	63	75
Nominal Flowrate [m ³ /h]	5	11	21
Dry Weight [kg]	450	765	950
System Pump Model	Speck Prime 13 AK	Speck Prime 30 AK	Speck Prime 40 AK
System Pump Driver Model	EP66-0022 T3	EP66-0022 T3	EP66-0022 T3

PMF-38	PMF-50	PMF-64	PMF-80
4300	4830	5000	5300
1620	1850	2100	2600
2300	2400	2600	2700
4500	4500	5000	5000
1400	1600	1800	2000
1,54	2,01	2,54	3,14
3,8	4,8	6,4	6,4
3,25	4	5,5	5,5
3~400/230	3~400	3~400	3~400
140	160	160	200
110	140	140	160
110	110	125	140
38	50	63	78
1250	1550	1850	2100
Speck Resort 50 AK	Speck Resort 80 AK	Speck Resort 110 AK	Speck Resort 110 AK
EP66-0040 T3	EP66-0040 T3	EP66-0055 T3	EP66-0055 T3

PMF SKID OPTIONAL FEATURES	PMF-4	PMF-12	PMF-22
AUTOMATIC BACKWASH	PNEUMATIC/MOTORISED		
Temperature Sensor	OPTIONAL	OPTIONAL	OPTIONAL
TITANIUM HEAT EXCHANGER	OPTIONAL	OPTIONAL	OPTIONAL
Titanium Heat Exchanger Capacity [kWh]	3/5	5/10	15/20
ELECTRICAL TITANIUM HEATER	OCDV6	OCDV9	OCDV15
Electrical Heater Capacity [kWh]	6	9	15
PLC CONTROL	OPTIONAL	OPTIONAL	OPTIONAL
UV DISINFECTION	UV 5	UV 10	UV 20
AUTOMATIC CHEMICAL CONTROL & DOSING SYSTEM	POOL GUARD Include Chemical Regulator Pumps & PH/ORP Propes		
Disinfection System Footprint Width [mm]	950	950	1100
Disinfection System Footprint Depth [mm]	500	500	500

PMF-38	PMF-50	PMF-64	PMF-80
PNEUMATIC/MOTORISED			
OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
20/40	25/50	30/75	50/100
OCDV24	OCDV24	2 x OCDV24	2 x OCDV24
24	24	48	48
OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
UV 50	UV 50	UV 100	UV 100
POOL GUARD Include Chemical Regulator Pumps & PH/ORP Propes			
1200	1200	1200	1200
600	600	600	600



TANK MODEL NUMBER	FT-500	FT-830	FT-900
Material	GRP	GRP	GRP
Type	Vertical	Vertical	Vertical
Diameter/ Footprint Size mm	500	830	900
Height mm	1605	1770	1730
Tank Volume m3	0.4	1.23	1.42
FLOWRATE m3/h	4.75	13.5	16
FILTRATION SPEED m3/h/m2	25	25	25
FILTRATION AREA m2	0.2	0.5	0.64
CONNENCTION FLNGED/UNION	UNION	UNION	UNION
CONNENCTION SIZE mm	50	63	63
SAND MEDIA DEPTH mm	1000	1000	1000
TOTAL SAND MEDIA CAPACITY Kg	276	743	885
Nominal Operational Pressure bar	2.5	2.5	2.5

Design Pressure	3.5	3.5	3.5
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FT-1000	FT-1200	FT-1400	FT-1600	FT-1800	FT-2000
GRP	GRP	GRP	GRP	GRP	GRP
Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
1000	1200	1400	1600	1800	2000
1310	1410	1560	1860	2050	2160
1.37	1.05	1.6	2.5	3.6	4.8
19.8	28.3	38.5	50.3	63.5	78.5
25	25	25	25	25	25
0.79	1.13	1.54	2.01	2.54	3.14
UNION	FLANGED	FLANGED	FLANGED	FLANGED	FLANGED
75	90	110	125	140	160
1000	870	1000	1200	1280	1380
1075	1316	2085	3245	4308	5844
2.5	2.5	2.5	2.5	2.5	2.5

3.5	3.5	3.5	3.5	3.5	3.5
-----	-----	-----	-----	-----	-----

TANK MODEL NUMBER	FT-2200	FT-2400	FT-2X2.5
Material	GRP	GRP	GRP
Type	Vertical	Vertical	Horizontal
Diameter/ Footprint Size mm	2200	2400	2000x2500(L)
Height mm	2360	2660	2300
Tank Volume m3	6.7	8.8	6.9
FLOWRATE m3/h	95	108	102
FILTRATION SPEED m3/h/m2	25	25	25
FILTRATION AREA m2	3.8	4.34	4.1
CONNENCTION FLNGED/UNION	FLANGED	FLANGED	FLANGED
CONNENCTION SIZE mm	160	160	160
SAND MEDIA DEPTH mm	1380	1380	1000
TOTAL SAND MEDIA CAPACITY Kg	5700	6510	7380
Nominal Operational Pressure bar	2.5	2.5	2.5
Design Pressure	3.5	3.5	3.5

FT-2X3	FT-2X4	FT-2X5
GRP	GRP	GRP
Horizontal	Horizontal	Horizontal
2000x3000(L)	2000x4000(L)	2000x5000(L)
2300	2300	2300
8.5	11.3	14
125	170	221
25	25	25
5	7	8.8
FLANGED	FLANGED	FLANGED
160	225	225
1000	1000	1000
9000	12600	15840
2.5	2.5	2.5
3.5	3.5	3.5

THERMO-PLASTIC PUMP STRAINERS / PRE-FILTERS

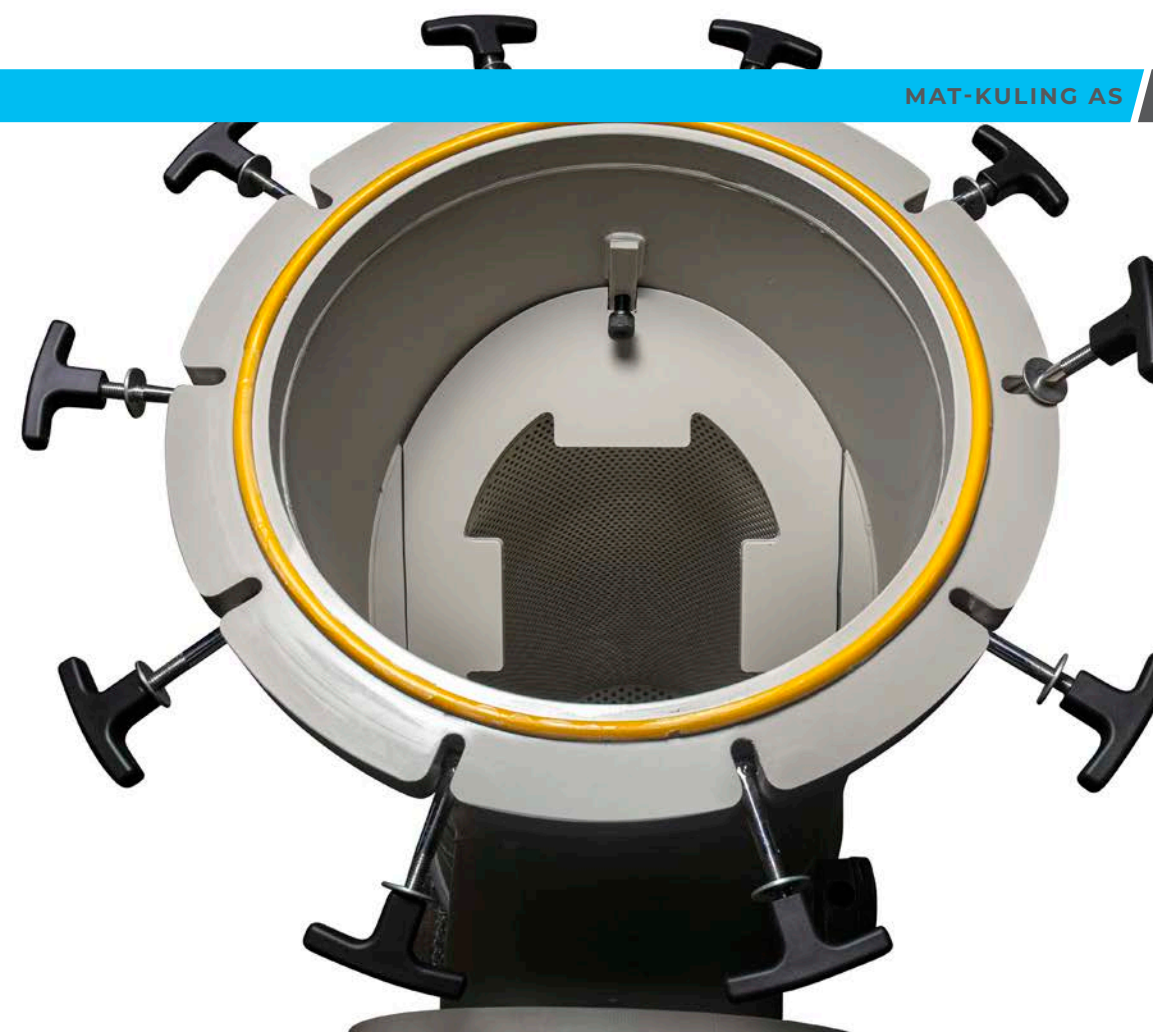
MAT-KULING manufactures corrosion-resistant pump strainers/pre-filters to not only protect pumps but also other downstream equipment in any part of the process.

The Thermo-Plastic Strainers are a specially designed and manufactured product to serve in harsh and corrosive conditions. They have the ideal fabrication material for acidic and corrosive liquids. They offer protection to pumps and the various elements of an installation, with minimized maintenance needs thanks to quick open cover for cleaning.

MAT-KULING Strainers are produced in Polypropylene but they can be also produced in Polyethylene. The standard aquaculture Strainer mesh size is 5mm but can be adjusted as per the request.

The complete visible acrylic cover and the quick open/close mechanism that allows open /close the strainer in seconds are the main advantages.

Standard Strainers are being manufactured up to 600m³/h but custom models can be produced up to 2000m³/h.



BASKET STRAINER	BSF-50	BSF-85
Flange Size A	DN 100	DN 125
Height B [mm]	800	850
Inlet Level C [mm]	365	400
Outlet Level D [mm]	160	220
Body Diameter E [mm]	400	400
Max. Width F [mm]	620	630
Max Flow Rate [m ³ /h]	50	85
Mesh Size [mm]	5	5
Vmin [m/s]	0,5	0,5
V nominal [m/s]	1,0	1,0
Vmax [m/s]	2,0	2,0
Pressure Loss (Vnom) [mbar]	50,0	52,9
Mesh / Pipe Opening ratio	1/ 4,3	1/ 4,3
Maximum Working pressure [bar]	2.5	2.5
Working temperature range [C°]	10--40	10--40
Dry Weight [kg]	40	44
Operational Weight [kg]	115	120
Material	PP	PP
Inlet and Outlet Manometers	Optional	Optional

BSF-115	BSF-220	BSF-430	BSF-650
DN 150	DN 200	DN 300	DN 350
900	1000	1254	1456
420	545	775	960
250	270	280	577
400	400	500	500
640	650	760	780
115	220	430	650
5	5	5	5
0,5	0,5	0,5	0,5
1,0	1,0	1,0	1,0
2,0	2,0	2,0	2,0
55,9	50,0	50,0	70,6
1/ 4,3	1/ 4,3	1/ 4,3	1/ 4,3
2.5	2.5	2.5	2.5
10--40	10--40	10--40	10--40
48	53	113	122
125	130	290	325
PP	PP	PP	PP
Optional	Optional	Optional	Optional

STATIC SCREEN FILTERS

The Static Screen filter, known as the static sieve, separates solid and liquid substances within Waste Water Treatment applications. It serves two primary purposes:

- » It serves as the initial treatment for wastewater, utilizing a mesh size ranging from 0.5mm to 10mm.
- » It is a pre-treatment solution for the solid-liquid waste separation process.

The application is particularly effective in removing thick waste from industries such as paper, textiles, tanning, laundry, canning, milk processing, and slaughter-

houses, aquaculture, and food processing facilities among others. The static screen offers a cost-effective solution for the continuous solid-liquid separation process, requiring minimal maintenance and consuming zero energy. Its composition primarily comprises a body and the mesh frame crafted from food and drinking grade non corrosive Polypropylene and Polyethylene.

MAT-KULLING Static Screen Filters Options:

- » Sieve Lid/Cover



- » Mechanical Manual Sieve/Mesh Cleaning
- » Mechanical Auto Sieve/Mesh Cleaning
- » Auto wash Sieve/Mesh Cleaning
- » Different body and mesh material
- » Solid Collection Hooper

MAT-KULLING Static Screen Filters usage offers various advantages such as:

- » Corrosive free and robust product construction.
- » Assembly built to withstand harsh operational conditions and ozone and chemical attacks, ensuring long-lasting operation.

- » Combination of a front and back cleaned screen in a single unit (Optional).
- » Adjustable Optimized Rinsing System with means of both Water Level Difference and Timer to conserve water (Optional).
- » Low cost for maintenance and operation.
- » Designed with the ability to provide tailor-made solutions that match each project-specific need.
- » Eco-friendly solution with recycled material and low CO2 footprint.

STATIC SCREEN MODEL	SSF-1	SSF-2
Piping Connections (DN) Inlet Dia	110	110
Piping Connections (DN) Outlet Dia	150	200
Piping Connections (DN) Drain Dia	110	110
Physical Dimensions (mm) A	500	1050
Physical Dimensions (mm) L	1267	1267
Physical Dimensions (mm) W	715	1265
Physical Dimensions (mm) H	1486	1486
Weight (Kg)	92	130
Max. Capacity (m ³ /h) Aperture = 1 mm	21	42
Max. Capacity (m ³ /h) Aperture = 2 mm	41	80
Max. Capacity (m ³ /h) Aperture = 3 mm	50	100

SSF-3	SSF-4	SSF-5
150	150	200
250	300	400
150	150	200
1680	2100	3150
1325	1325	1325
1895	2350	3350
1635	1635	1635
305	315	470
63	84	126
124	164	246
150	200	300

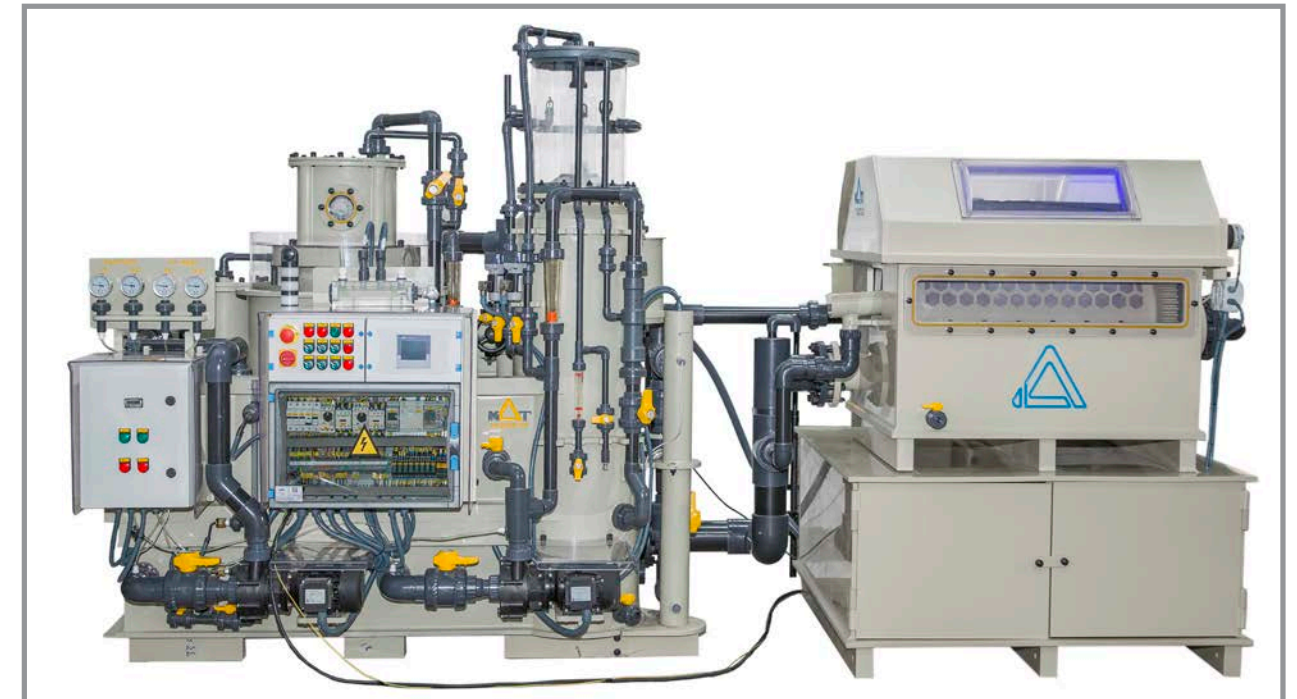
RAS & COMPACT SKID FILTRATION SYSTEMS

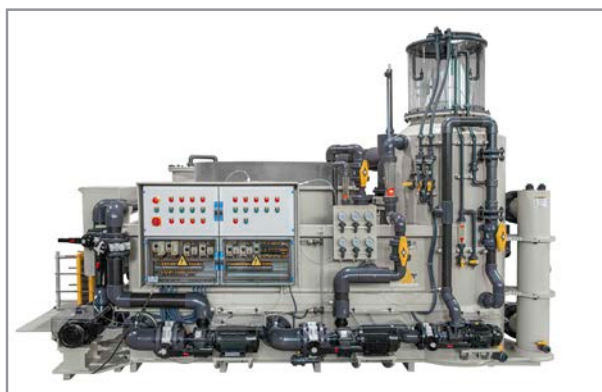
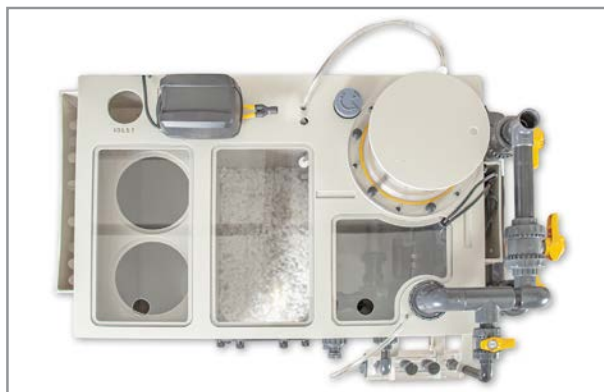
The MAT-KULING Recirculating aquaculture skid filtration systems are tailor-made complete filtration units designed for simple Recirculating Aquaculture operation, with the smallest footprint and minimum energy consumption.

The units are equipped to provide complete mechanical, biological, organic removal treatments along with disinfection and aeration/oxygen enrichment based on the requirements of the applications.

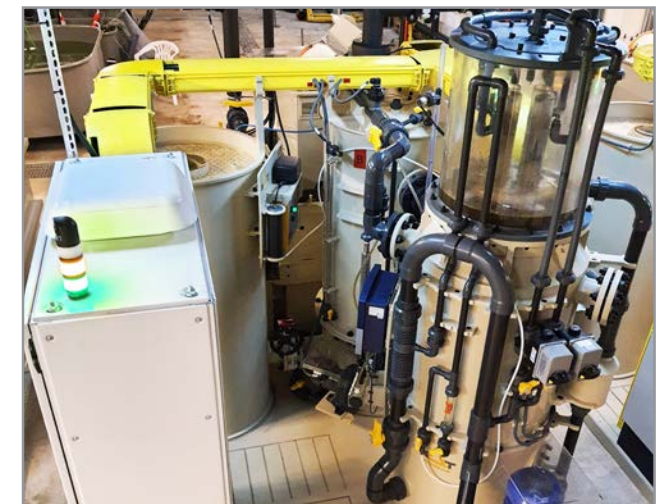
Plug and Play Skid Units are fully tested in the factory before delivery.

Compact units are standard products for low-bio load applications.





TAILOR MADE RAS DESIGN & INSTALLATION



COMPACT FILTER	CPT-1	CPT-5	CPT-10
Footprint Depth C [mm]	700	975	1200
Footprint Width A [mm]	1020	1700	1900
Skimmer Diameter [mm]	200	315	400
Max Height B [mm]	750	1100	1950
Footprint with Sand/Glass Filter Depth [mm]	N/A	1079	1235
Footprint with Sand/Glass Filter Width [mm]	N/A	portable control pane w/ 1 2245 - w/o 3100	2580
Installed Power [kW]	0,15	1,05	1,53
Basic Unit Total Electric Consumption [kWh]	0,15	0,74	1,07
Supply Voltage (50Hz) [V]	1~110-240	3~400/230	3~400/230
Max. Sump Level [mm]	370	525	865
Inlet Level [mm]	430	120	245
Inlet Size [mm]	50	63	110
Outlet Size [mm]	40	50	63
Overflow Connection Size [mm]	N/A	32	63
Compact Unit Nominal Flow [m³/hr]	1	4	10
Max. Allowable TDH after compact [m]	4,5	5	10
Max. Allowable TDH after compact with Sand/Glass filter [m]	N/A	1	6
Balance Water Volume [L]	53	142	330
Water Operation Level [mm]	345	370	580
TAN Removal Rate [gr TAN/day]	10	21	53
Canister Cartridge Volume [L]	N/A	2,1	7,45
Uv Disinfection Unit	UVC 1	UVC 5	UVC 10
Recommended Ozone Dosage [gr/h]	0,2	0,5	1

CPT-20	CPT-30	CPT-40	CPT-75
1300	1700	1900	2470
2100	2700	3050	3580
482	630	750	950
2100	2400	2500	2810
1326	1685	approx. 2000	approx. 2600
2985	3995	approx. 4785	approx. 5586
2,12	4,1	4,5	10
1,48	2,87	3,15	7
3~400/230	3~400/230	3~400/230	3~400
930	985	1035	1190
255	260	260	265
125	140	160	225
63	75	75	110
63	63	63	75
20	30	40	75
7	9	6	10
3	5	2	6
530	940	1360	2750
600	615	620	640
76	162	263	540
13,5	18,5	30	50
UVC 20	UVC 50	UVC 50	UVC 100
2	3	5	10

COMPACT FILTER	CPT-1	CPT-5	CPT-10
Pump Quantity [pcs]	2	2	2
PS/MBBR Pump Model	DC Runner ECO 6.0 (400-015-032)	44/4	21-40/53H
Circulation Pump Model	DC Runner 9.2	44/12	21-40/53
Sand/Glass Filter Body Di- ameter [mm]	N/A	500	710
Total Sand Media Capacity kg	N/A	100	250
Total Glass Media Capacity GRADE-1 (kg)	N/A	50	125
Total Glass Media Capacity GRADE-2 (kg)	N/A	17	42
Total Glass Media Capacity GRADE-3 (kg)	N/A	17	42
Media Filter Valve Type	N/A	5 way multiport valve	5 way multiport valve
Dry Load [kg]	50	130	280
Operational Load [kg]	225	500	1250

CPT-20	CPT-30	CPT-40	CPT-75
2	2	2	2
21-40/54H	21-40/58	21-50/43	21-81/34
21-40/54	21-40/58	21-50/43	21-81/34
900	1000	1200	1400
450	700	1500	1950
225	350	750	975
75	117	250	325
75	117	250	325
5 way multiport valve	5 way multiport valve	5 way multiport valve	5 way multiport valve
330	560	630	1150
1725	3070	4265	7755

COMPACT FILTER OPTIONAL FEATURES	CPT-1	CPT-5	CPT-10
Carbon Media	N/A	optional	optional
Bag Filters	optional	optional	optional
Bag filter Number [pcs]	2	3	4
Sand filter	N/A	optional	optional
Trickling media	N/A	optional	optional
MBBR Media	optional	optional	optional
Sump Level Control	optional	optional	optional
PS Overflow Switches	N/A	N/A	optional
pH Probe	optional	optional	optional
ORP Probe	optional	optional	optional
Temperature Probe	optional	optional	optional
Touch Screen Smart Trans- mitter For Probes	optional	optional	optional
Foam Collector Autowash	N/A	Solenoid	Solenoid
External Fresh Water Line Valve For Autowash option	Motorized	Motorized	Motorized
Control Board	N/A	optional	optional
Control Board with PLC	N/A	optional	optional
Passive Ozon Destruct	N/A	optional	optional
Makeup Water Automation	optional	optional	optional
PS Circulation and Distribu- tion pump for Fresh water CPT	N/A	optional	optional

CPT-20	CPT-30	CPT-40	CPT-75
optional	optional	optional	optional
optional	optional	optional	optional
4	7	8	11
optional	optional	optional	optional
optional	optional	optional	optional
optional	optional	optional	optional
optional	optional	optional	optional
optional	optional	optional	optional
optional	optional	optional	optional
optional	optional	optional	optional
Solenoid	Solenoid	Solenoid	Solenoid
Motorized	Motorized	Motorized	Motorized
optional	optional	optional	optional
optional	optional	optional	optional
optional	optional	optional	optional
optional	optional	optional	optional
optional	optional	optional	optional

AQUACULTURE TANKS

MAT-KULING produces aquaculture tanks from food grade Polypropylene with multiple customised features like sight windows, covers, net holders, bottom and overflow drains and pipe connection from 0.1m³ to 200m³.

MAT-KULING designs and manufactures PP tanks in-house with 3D Models and CNC Automated cutting, bending and welding machines.



Aquaculture Fish Tank



Aquaculture Fish Tank



Aquaculture Fish Tank



Aquaculture Fish Tank

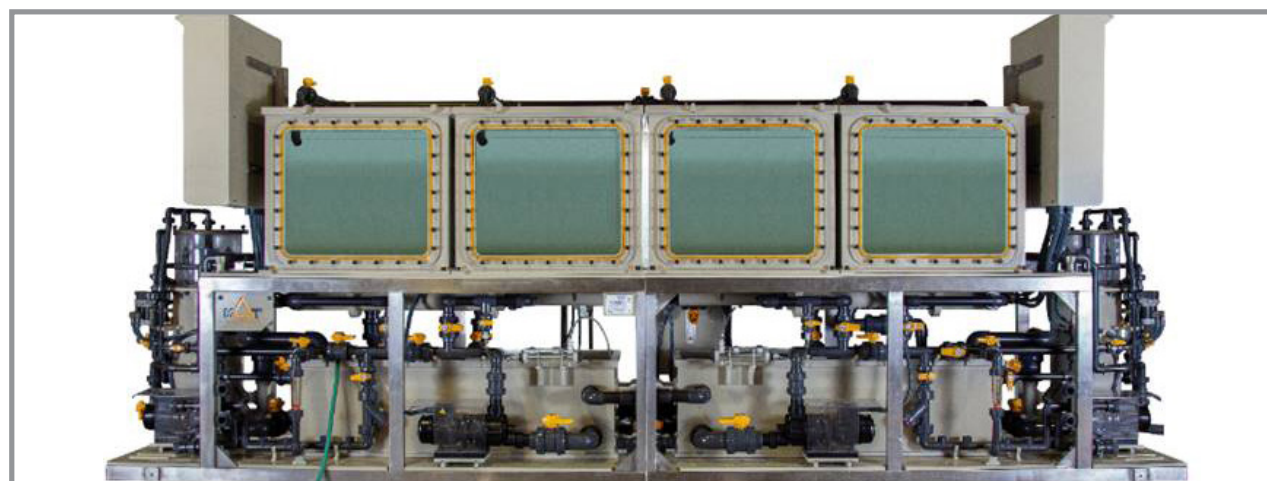
AQUACULTURE TANKS



Square Quarantine Skid System



Pyramid Skid System



Square Skid System



QUARANTINE SKID	PYR-1	SQR-1	QRT-1
Footprint mm	2298	4500	1922
Footprint mm	1932	932	1295
Max. Height mm	1773	1930	1750
Skimmer Diameter mm	315	315	200
Total Electric Power kw	1,06	1,3	0,18
Power Supply	3~400/230V 50Hz	3~400/230V 50Hz	1~230V 50/60 Hz
Max Sump Level mm	525	375	1610
Skid Unit Nom. Flow m3/hr	4	4	1
TAN Removal Rate gr/d	21	21	10
Pump qty pcs	2	4	2
PS-MBBR Pump type	Badu 44/4	Badu 44/4	DC Runner ECO 6.0 (400-015-032)
Main Pump Model type	Badu 44/12	Badu 44/4	DC Runner 9.2
Dry-Weight kg	1180	700	245
Operational Weight kg	2100	2600	1360
UV Model	MAT UVC-5 L shaped	MAT UVC-5 L shaped	UVC 1
UV Radiation Rate J/m2	400	400	400
UV Lamp Power kW	87	87	40
Recommended Ozone Dosage g/h	0,5	1	0,2
Bag Filters pcs	4	8	2

ARTEMIA HATCHING SYSTEMS

The Artemia Salina Hatching and Enrichment Module Tanks are an efficient hatching environment of Artemia salina cysts as well as a proper enrichment environment for Artemia salina Nauplii I and II.

The units provide accuracy and control of the hatching and enrichment conditions and offer excellent performance, bio secure hatching environment, stable hatching media physicochemical parameters, ease of operation and robust fabrication in a superior quality.

Artemia salina nauplii is used in aquariums, institutes, universities, laboratories, aquaculture and ornamental sector and is considered as a beneficial and nutritional food source at the critical larvae stages,



providing better survival rates and larvae quality.

The natural DHA and EPA resources of Artemia salina Nauplii, in addition with the Enrichment process in an absolute controlled environment guarantee the culture process.

The Artemia LFP Skid Systems include four pieces of single vessels mounted upon one table, where each vessel is 18,5lt.

Only one valve with a camlock is used for each vessel to collect the livestock and for drainage.



ROTIFERS CULTURE SYSTEMS

The Rotifers Live Feed Production Unit is designed to provide an efficient means of Rotifers culture and enrichment conditions, providing excellent performance, ease of operation and robust fabrication in a higher quality.

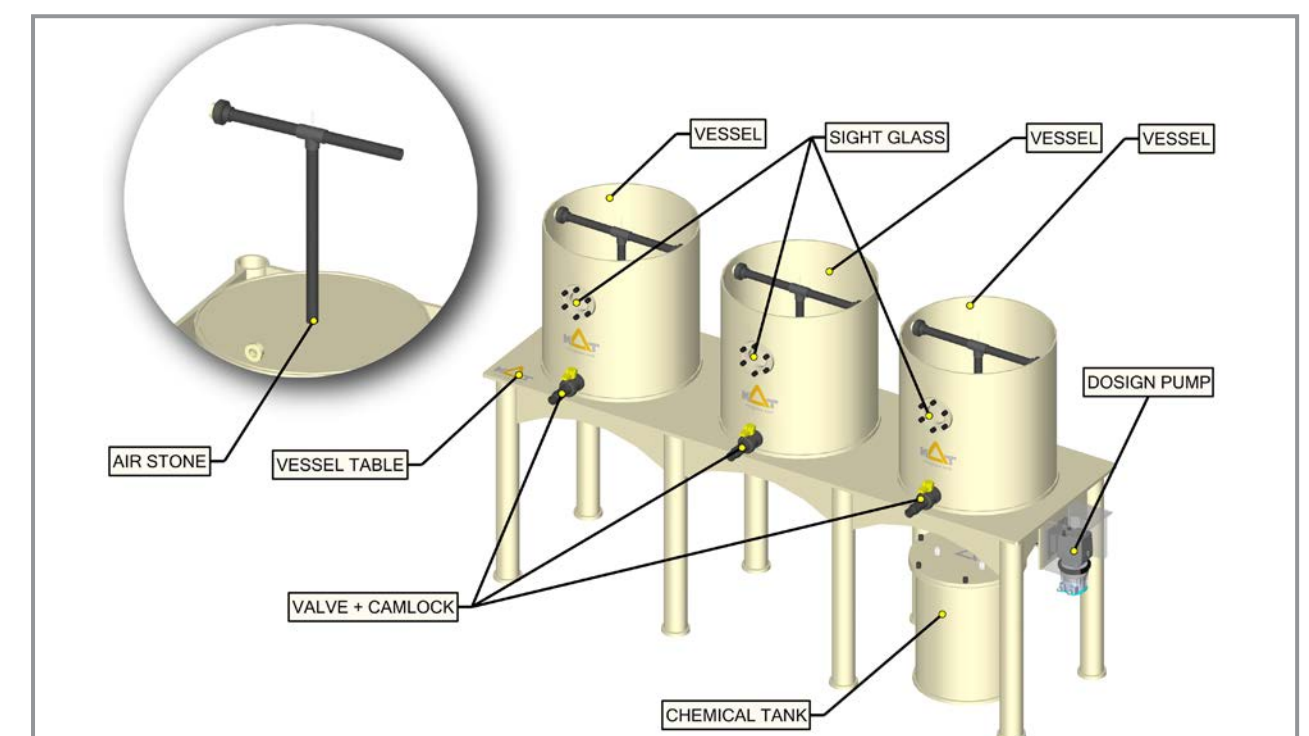
Live rotifers are used in aquariums and aquaculture and are generally considered nutritionally critical and necessary as a food source for marine organisms and more specific for their larvae stages.

The Rotifer Skid System consists of the vessel, the nutrition tank, the dosage pump, and the air stone. Three pieces of single vessels are mounted upon one table, where each vessel is of 17lt. The air stone is utilized to provide the necessary oxygenation by diffusing air into the ves-

sel. The air supply blower is an external part (not included) of the skid. Only one valve with a camlock is used for each vessel to collect the livestock and for drainage.

The MAT-KULING Rotifer Skid System offer excellent performance in Rotifer culture conditions distributing the Rotifer feed equally in every single point of the Unit, assisting the Rotifers to obtain their nutritional value.

The Rotifer Skid System provides a controlled physicochemical environment, culture and enrichment conditions of the Rotifer, which is vitally critical for the EPA and DHA nutritional value and better survival and quality of the larvae.



COPEPODS CULTURE SYSTEMS

MAT-KULING Copepod Live Feed Production units are designed to provide an efficient means of Copepod reproduction, providing excellent performance, ease of operation and robust fabrication in a higher quality.

Live copepods are used in aquariums and aquaculture and are generally considered beneficial as a food source.

MAT-KULING Copepod LFP Skid includes



one vessel of 420lt and the sump of 450lt. Only two valves with camlock are used. The first one is used for livestock collection and drainage and is located on the sump.

The second one is used to transfer from the vessel to the sump.

SKID UNIT:	Artemia Reproduction Skid
Footprint Width mm	1800

Footprint Depth mm	600
--------------------	-----

Max. Height mm	1495
----------------	------

Table Height mm	640
-----------------	-----

Vessel Volume Lt	18,5
------------------	------

Camlock Valves qty pcs	1
---------------------------	---

Valve mm	32
----------	----

Camlock Size in	1
-----------------	---

SKID UNIT:	Rotifer Reproduction Skid
Footprint Width mm	2400

Footprint Depth mm	710
--------------------	-----

Max. Height mm	1510
----------------	------

Table Height mm	900
-----------------	-----

Vessel Volume Lt	158
------------------	-----

Camlock Valves qty/ves- sel pcs	1
------------------------------------	---

Valve mm	32
----------	----

Camlock Size in	1
-----------------	---

Chemical Tank	Standard
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SKID UNIT:	Copepod Reproduction Skid
Footprint Width mm	900

Footprint Depth mm	900
--------------------	-----

Max. Height mm	2295
----------------	------

Table Height mm	1395
-----------------	------

Copepod Vessel Diam- eter mm	800
---------------------------------	-----

Copepod Vessel Vol- ume Lt	420
-------------------------------	-----

Sump Volume Lt	450
----------------	-----

Camlock Valves qty pcs	2
---------------------------	---

Valve mm	32
----------	----

Camlock Size in	1
-----------------	---

ALGAE REPRODUCTION SKID SYSTEMS



Algae LFP Unit operation is based on LED triggered photosynthesis efficiently improving Algae reproduction.

The heat that is generated by the photosynthesis' lights is removed by an air current created from a blower through a ventilation shaft on the Skid surface. Furthermore, the circulation pump and the cooling blower are controlled by VFD for fine-tuning their function. Required chemicals can be introduced into the circuit by a dosing pump that is part of the skid. Also, CO₂ gas can be infused via a port with a solenoid valve.

UNIQUE FEATURES OF ALGAE LFP SKID:

» Efficient Algae reproduction by LED

triggered photosynthesis.

- » VFD units are utilized for fine-tuning the circulation pump and cooling blower.
- » A dosing pump is included in the Skid for the required chemicals
- » CO₂ gas infusion port with solenoid valve is available.
- » LED Ballast Panel & Main Control Panel
- » PLC controlled panel with HMI Screen
- » The fabrication process offers a resistant and robust product.
- » MAT Algae LFP Unit range covers Marine and Freshwater application.

SKID UNIT:		ALGAE LFP		Optional Features	
Footprint Length mm	6320			Pump VFD	√
Footprint Depth mm	1060			Blower VFD	√
Max. Height mm	2314			Probe holder	√
Production capacity ml/unit day	1 billion cells			pH Probe	√
Algae pipe diameter x No-Length mm	50			Temperature Probe	√
Algae pipes pcs	16			Flowmeter paddle-wheel	√
Algae pipes total length m	95			Main Control Panel	√
LED power/meter W	21			LED Ballast Control Panel	√
LED spectrum K	6500			PLC Controlled Panel with Touch Screen	√
Installed Power kW	4.3			Chemical tank	√
Supply Voltage 50Hz V	3~400VAC ±6%			CO ₂ gas infusion port	√
Rated current A	18.2A				
Harvest Valve Ømm	32				
Drain Valve Ømm	32				
Dry weight kg	854				
Circulation pump	BADU SPECK - 44/8 - AK - SSV				

OXYGEN CONTACT WIZARD

MAT-KULING Oxygen Contact Wizard provides efficient gas dissolves into the water.

Completely recyclable materials and a complex internal design allow for a smaller body and environment-friendly unit compared to conventional FRP Cones.



MODEL	OCW-500	OCW-1000	OCW-1500
Height (mm)	2485	2485	2485
Diameter (mm)	315	500	630
Inlet / Outlet Flange Connection Diameter (mm)	110	200	250
Inner Volume (m ³)	0.12	0.29	0.46
Max Water Flowrate for Oxygen [m ³ /h]	45	90	135
Nominal Water Flow [m ³ /h]	22.5	45	67
Nominal Water Flow [lt/m]	375	750	1120
Material	HDPE	HDPE	HDPE
Standard Max. Operational/Design Pressure (bar)	2 / 3	2 / 3	2 / 3
High-Pressure Version Operational/Design Pressure (bar)	4 / 5	4 / 5	4 / 5
Flange Connection	EN1092-1	EN1092-1	EN1092-1
Dry Weightkg	73	150	220
Operational Weight (kg)	120	195	550
Gas Inlet diameter [inch]	1 / 2	3 / 4	3 / 4
Oxygen Absorption 100% Sat 10°C 0,5 bar Fresh-water (kg/hr)	0.25	0.5	0.77
Oxygen Absorption 100% Sat 10°C @1bar Fresh-water (kg/hr)	0.5	0.99	1.54
Oxygen Absorption 100% Sat 10°C @2bar Fresh-water (kg/hr)	0.99	1.98	3.08
Oxygen Absorption 100% Sat 10°C @3bar Fresh-water (kg/hr)	1.49	2.97	4.62
Oxygen Absorption 100% Sat 10°C @4bar Fresh-water (kg/hr)	1.98	3.96	6.16
Oxygen Absorption 100% Sat 15°C 0,5 bar Fresh-water (kg/hr)	0.23	0.45	0.7
Oxygen Absorption 100% Sat 15°C @1bar Fresh-water (kg/hr)	0.45	0.9	1.4
Oxygen Absorption 100% Sat 15°C @2bar Fresh-water (kg/hr)	0.9	1.8	2.8
Oxygen Absorption 100% Sat 15°C @3bar Fresh-water (kg/hr)	1.35	2.7	4.2
Oxygen Absorption 100% Sat 15°C @4bar Fresh-water (kg/hr)	1.8	3.6	5.6
Oxygen Absorption 100% Sat 20°C 0,5 bar Fresh-water (kg/hr)	0.2	0.41	0.63
Oxygen Absorption 100% Sat 20°C @1bar Fresh-water (kg/hr)	0.41	0.81	1.26
Oxygen Absorption 100% Sat 20°C @2bar Fresh-water (kg/hr)	0.81	1.62	2.52

OCW-2000	OCW-3000	OCW-3500	OCW-4000
2485	2485	2485	2485
800	1000	1200	1400
280	355	400	400
0.75	1.17	1.69	2.3
200	300	350	400
100	150	175	200
1670	2500	2917	3340
HDPE	HDPE	HDPE	HDPE
2 / 3	2 / 3	2 / 3	2 / 3
4 / 5	4 / 5	4 / 5	4 / 5
EN1092-1	EN1092-1	EN1092-1	EN1092-1
285	365	505	650
1200	1750	2600	3560
3 / 4	1	1	1
1.1	1.65	1.93	2.2
2.2	3.3	3.85	4.4
4.4	6.6	7.7	8.8
6.6	9.9	11.55	13.2
8.8	13.2	15.4	17.6
1	1.5	1.75	2
2	3	3.5	4
4	6	7	8
6	9	10.5	12
8	12	14	16
0.9	1.35	1.58	1.8
1.8	2.7	3.15	3.6
3.6	5.4	6.3	7.2

MODEL	OCW-500	OCW-1000	OCW-1500
Oxygen Absorption 100% Sat 20°C @3bar Fresh-water (kg/hr)	1.22	2.43	3.78
Oxygen Absorption 100% Sat 20°C @4bar Fresh-water (kg/hr)	1.62	3.24	5.04
Oxygen Absorption 100% Sat 25°C 0,5 bar Fresh-water (kg/hr)	0.18	0.36	0.57
Oxygen Absorption 100% Sat 25°C @1bar Fresh-water (kg/hr)	0.36	0.73	1.13
Oxygen Absorption 100% Sat 25°C @2bar Fresh-water (kg/hr)	0.73	1.46	2.27
Oxygen Absorption 100% Sat 25°C @3bar Fresh-water (kg/hr)	1.09	2.19	3.4
Oxygen Absorption 100% Sat 25°C @4bar Fresh-water (kg/hr)	1.46	2.92	4.54
Maximum Oxygen Dosage Capacity (kg/h)	2.25	4.5	7
Oxygen Gas Pressure Gauge	Optional	Optional	Optional
Max Operational Pressure 4 Bar/Design Pressure 5 bar	Optional	Optional	Optional
Manuel Oxygen Gas Valve	Optional	Optional	Optional
Solenoid Oxygen Gas Valve	Optional	Optional	Optional
Oxygen Gas Pressure Sensor (-1 to 10 bar)	Optional	Optional	Optional
Oxygen Gas Flowmeter	Optional	Optional	Optional
Oxygen Gas Digital Flow Meter (Inline)	Optional	Optional	Optional
Oxygen Cone Pressure Gauge	Optional	Optional	Optional
Oxygen Cone Pressure Sensor (-1 to 9 bar)	Optional	Optional	Optional
Oxygen Cone Dissolved O2 Probe, DO2 Probe Fitting & Transmitter, Colourful Touchscreen panel	Optional	Optional	Optional

OCW-2000	OCW-3000	OCW-3500	OCW-4000
5.4	8.1	9.45	10.8
7.2	10.8	12.6	14.4
0.81	1.22	1.42	1.62
1.62	2.43	2.84	3.24
3.24	4.86	5.67	6.48
4.86	7.29	8.51	9.72
6.48	9.72	11.34	12.96
10	15	17.5	20
Optional	Optional	Optional	Optional
Optional	Optional	Optional	Optional
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
Optional	Optional	Optional	Optional
N/A	N/A	N/A	N/A
Optional	Optional	Optional	Optional
Optional	Optional	Optional	Optional
Optional	Optional	Optional	Optional
Optional	Optional	Optional	Optional

OXYGEN CONES

MAT OXC Oxygen Cone is a conical vessel designed to reinforce the process of oxygen gas mixing and saturation into the water.

The OXC is always paired with an oxygen supply device which provides the necessary oxygen gas quantity to be delivered to the mixing chamber.

The vessel is specially designed to achieve through a simple operation the best possible oxygen gas-water mixing.

The aquatic system's water along with infused oxygen are delivered on the top in-

let of the cone flowing downwards to the base with gradually reduced velocity as the vessel diameter increases.

Along this path the transferred stream of oxygen bubbles stream is continuously dissolving into the water until the complete saturation.



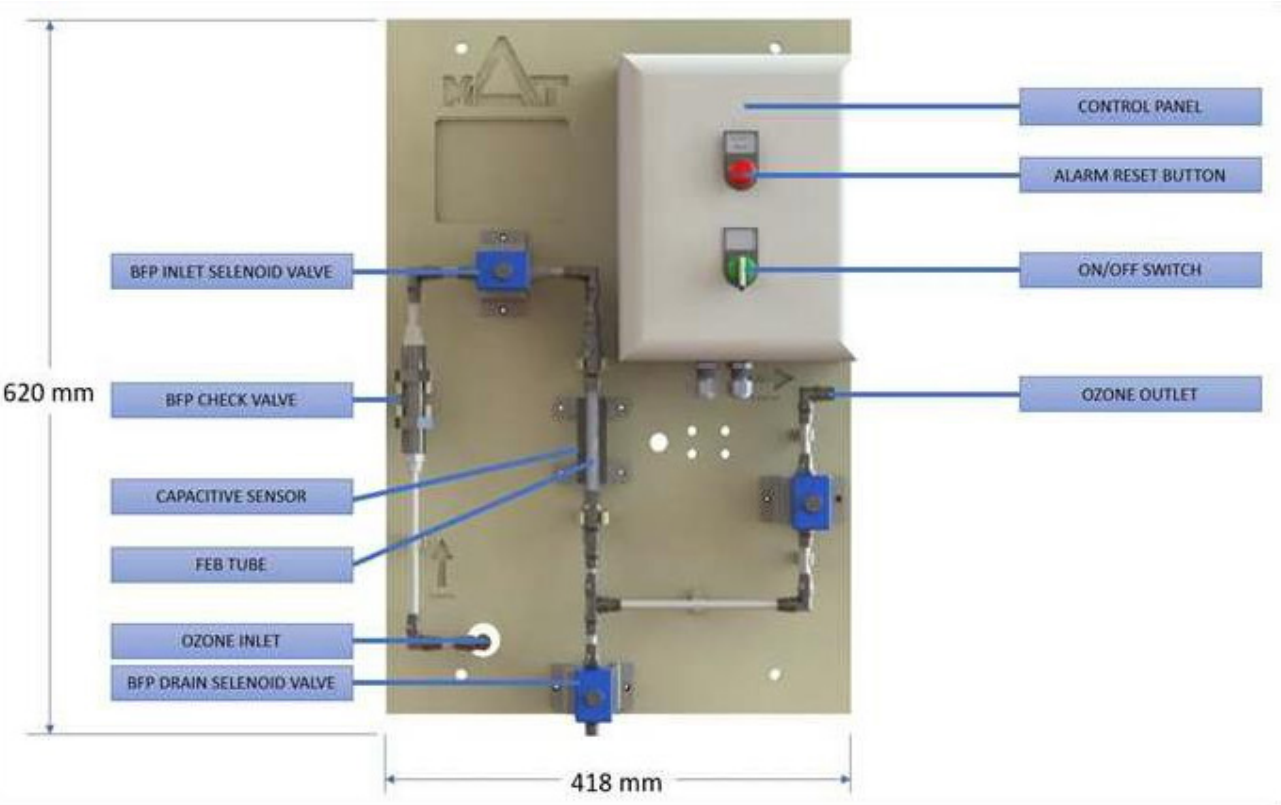
OPTIONAL FEATURES	OXC-10 - OXC-680
Oxygen Gas Pressure Gauge	Optional
Max Operational Pressure 4 Bar/Design Pressure 6 bar	Optional
Manuel Oxygen Gas Valve	Optional
Solenoid Oxygen Gas Valve	Optional
Oxygen Gas Pressure Sensor (-1 to 10 bar)	Optional
Oxygen Gas Flowmeter	Optional
Oxygen Gas Digital Flow Meter (Inline)	Optional
Oxygen Cone Pressure Gauge	Optional

OPTIONAL FEATURES	OXC-10 - OXC-680
Oxygen Cone Pressure Sensor (-1 to 9 bar)	Optional
Oxygen Cone Dissolved O2 Probe, DO2 Probe Fitting & Transmitter, Colourful Touchscreen panel	Optional
Oxygen Gas Inlet Automatic Solenoid Valve	Optional
Pressure Relief Valve	Optional

OXYGEN CONE MODEL	OXC-10	OXC-45
Diameter [mm]	300	600
Max. Height [mm]	970	1680
Inlet Size [DN]	40	80
Outlet Size [DN]	40	80
Max Water Flow [m³/h]	10	42
Max Water Flow [lt/m]	170	702
Standard Max. Operational/Design Pressure[bar]	2 / 3	2 / 3
High-Pressure Version Operational/Design Pressure[bar]	4 / 6	4 / 6
Oxygen Absorption 100% Sat 10°C @0,5bar Freshwater [kg/h]	0.17	0.66
Oxygen Absorption 100% Sat 10°C @1bar Freshwater [kg/h]	0.33	1.32
Oxygen Absorption 100% Sat 10°C @2bar Freshwater [kg/h]	0.66	2.64
Oxygen Absorption 100% Sat 10°C @3bar Freshwater [kg/h]	0.99	3.96
Oxygen Absorption 100% Sat 10°C @4bar Freshwater [kg/h]	1.32	5.28
Oxygen Absorption 100% Sat 15°C @0,5bar Freshwater [kg/h]	0.15	0.6
Oxygen Absorption 100% Sat 15°C @1bar Freshwater [kg/h]	0.3	1.2
Oxygen Absorption 100% Sat 15°C @2bar Freshwater [kg/h]	0.6	2.4
Oxygen Absorption 100% Sat 15°C @3bar Freshwater [kg/h]	0.9	3.6
Oxygen Absorption 100% Sat 15°C @4bar Freshwater [kg/h]	1.2	4.8
Oxygen Absorption 100% Sat 20°C @0,5bar Freshwater [kg/h]	0.14	0.54
Oxygen Absorption 100% Sat 20°C @1bar Freshwater [kg/h]	0.27	1.08
Oxygen Absorption 100% Sat 20°C @2bar Freshwater [kg/h]	0.54	2.16
Oxygen Absorption 100% Sat 20°C @3bar Freshwater [kg/h]	0.81	3.24
Oxygen Absorption 100% Sat 20°C @4bar Freshwater [kg/h]	1.08	4.32
Oxygen Absorption 100% Sat 25°C @0,5bar Freshwater [kg/h]	0.12	0.49
Oxygen Absorption 100% Sat 25°C @1bar Freshwater [kg/h]	0.24	0.97
Oxygen Absorption 100% Sat 25°C @2bar Freshwater [kg/h]	0.49	1.94
Oxygen Absorption 100% Sat 25°C @3bar Freshwater [kg/h]	0.73	2.916
Oxygen Absorption 100% Sat 25°C @4bar Freshwater [kg/h]	0.97	3.89
Maximum Oxygen Dosage Capacity (kg/h)	1.5	6
Oxygen Gas Connection Size (inch)	1/ 4 "	1/ 2 "
Cone Body Material	FRP	FRP

OXC-100	OXC-170	OXC-380	OXC-510	OXC-580	OXC-680
900	1200	1800	2000	2100	2200
2390	3100	4550	5300	5800	6250
150	150	250	315	350	400
150	150	250	315	350	400
100	170	380	510	580	680
1670	2840	6330	8500	9666.67	11333.33
2 / 3	2 / 3	2 / 3	2 / 3	2 / 3	2 / 3
4 / 6	4 / 6	4 / 6	4 / 6	4 / 6	4 / 6
1.49	2.64	5.5	7.43	8.17	8.98
2.97	5.28	11	14.85	16.63	18.46
5.94	10.56	22	29.7	33.26	36.92
8.91	15.84	33	44.55	49.9	55.38
11.88	21.12	44	59.4	66.53	73.85
1.35	2.4	5	6.75	7.43	8.17
2.7	4.8	10	13.5	15.12	16.78
5.4	9.6	20	27	30.24	33.57
8.1	14.4	30	40.5	45.36	50.35
10.8	19.2	40	54	60.48	67.13
1.22	2.16	4.5	6.08	6.68	7.35
2.43	4.32	9	12.15	13.61	15.1
4.86	8.64	18	24.3	27.22	30.21
7.29	12.96	27	36.45	40.82	45.35
9.72	17.28	36	48.6	54.43	60.42
1.09	1.94	4.05	5.47	6.01	6.62
2.19	3.89	8.1	10.94	12.25	13.59
4.37	7.776	16.2	21.87	24.49	27.19
6.56	11.66	24.3	32.81	36.74	40.78
8.75	15.55	32.4	43.74	48.99	54.38
13.5	24	50	67.5	75.6	83.92
1/ 2 "	3/ 4 "	3/ 4 "	1 "	1 "	1 "
FRP	FRP	FRP	FRP	FRP	FRP

BACKFLOW
PREVENTION DEVICE

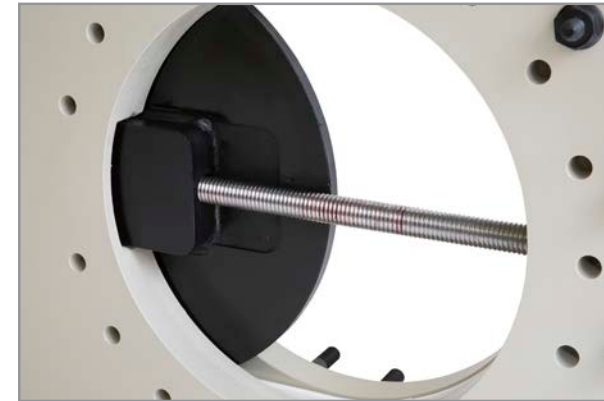


BACKFLOW PREVEN-
TION DEVICE:

	BFP-8	BFP-15	BFP-22	BFP-35	BFP-50
Footprint Width (mm)	530	560	610	750	1000
Footprint Depth (mm)	255	255	255	255	255
Max. Height (mm)	660	750	810	1000	1000
Total Electric Power (W)	80	120	120	120	120
Power Supply	230V 50Hz	230V 50Hz	230V 50Hz	230V 50Hz	230V 50Hz
Dry Weight (Kg)	10		15	15	20
Protection Rate	66	66	66	66	66
Pipe Material	Teflon	Teflon	Teflon	Teflon	Teflon
Piping Pressure Rate	PN10	PN10	PN10	PN10	PN10
BFP Vessel Material	Clear PVC	Clear PVC	Clear PVC	Clear PVC	316 Stain- less Steel + Glass
Connection Dimension to BFP	8 mm	1/4 "	1/2 "	1 "	1 1/2 "
Solenoid Valves Material	316 Stain- less Steel	316 Stain- less Steel	316 Stain- less Steel	316 Stain- less Steel	316 Stain- less Steel

GATE VALVES

MAT-KULING produces Gate Valves from a thermo-plastic material to ensure a corrosion-free solution for facilities up to D700mm flange size up to 3 Bar Nominal operational pressure.



GATE VALVE	GTV-75	GTV-90	GTV-110	GTV-125	GTV-140	GTV-160	GTV-200	GTV-225
Height mm	412	417	450	500	553	600	693	770
Width mm	170	180	196	224	230	280	304	392
Thickness mm	88	88	88	88	88	108	108	108
Diameter mm	75	90	110	125	140	160	200	225
Body Material	PP	PP	PP	PP	PP	PP	PP	PP
Shaft Material	Titanium/316L							
Operational Pressure kg/cm2	2	2	2	2	2	2	2	1,5
Corrosion Resistance (salt water/ fresh water)	Salt/fresh							
Flange Connection	EN1452-3							
Weight kg	3,5	3,5	4	4,5	5	8	11	16
Test Pressure kg/cm2	3	3	3	3	3	3	3	2
Titanium/316Ti/ SuperDuplex Spindle	optional	optional	optional	optional	optional	optional	optional	optional
316L Stem Length Extension=1m	optional	optional	optional	optional	optional	optional	optional	optional
Titanium/316Ti/ SuperDuplex Stem Length Extension=1m	optional	optional	optional	optional	optional	optional	optional	optional

GTV-250	GTV-280	GTV-315	GTV-355	GTV-400	GTV-450	GTV-500	GTV-750	GTV-1000
880	990	1100	900	1000	1150	1483	2640	3465
448	504	560	620	700	720	800	1344	1764
108	108	120	120	150	200	200	288	378
250	280	315	355	400	450	500	750	1000
PP	PP	PP	PP	PP	PP	PP	PP	PP
Titanium/316L								
1,5	1,5	1,5	1	1	1	0,5	0,5	0,5
Salt/fresh								
EN1452-3								
21	28	40	75	90	120	160	220	300
2	2	2	2	2	2	1	1	1
optional	optional	optional	optional	optional	optional	optional	optional	optional
optional	optional	optional	optional	optional	optional	optional	optional	optional
optional	optional	optional	optional	optional	optional	optional	optional	optional

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