

# T-Rack<sup>®</sup> 3.0

Innovative rack solutions for ultrafiltration



## T-Rack® 3.0 – state-of-the-art ultrafiltration solutions

- Suitable for direct feed – high pressure operability
- Optimized for sea water – high corrosion resistance
- Small footprint – high treatment capacity
- Plug-and-play installation – easy to assemble
- Easy to add more modules – great flexibility

We carefully tailor our product development to the **needs of the market** and our customers' requirements. That's why we've decided to address the specific requirements of larger-scale filtration systems (e.g. those used for pretreatment in sea water desalination or waste water reuse) by launching the **next generation** of our ultra-compact racks – **the T-Rack® 3.0**.

**Robust:** Two of the most important requirements for an ultrafiltration rack – particularly for the pretreatment stage of sea water desalination – are **corrosion resistance** and **high pressure operability**, especially at high temperatures. The new T-Rack® 3.0 meets both these requirements thanks to the direct welding of the T-pieces to the module body, connection of the individual modules to the headers using 6" flexible pipe couplings and the elimination of all adhesive connections. As a result, the design pressure\* of our new T-Rack® 3.0 is 5 bar at 40°C with a 10 year service life\*\*.

**Compact:** Integrating the header pipes in the module end caps enables us to position the modules closer together in the rack. This **space-saving design** gives the T-Rack® 3.0 a footprint that is up to 60 percent smaller than conventional rack designs. By using standardized components, we have made our new rack into a fully scalable solution.

**High capacity:** To increase the output of our UF systems, we have provided the dizzer® XL module with a 70 m<sup>2</sup> (754 ft<sup>2</sup>) membrane area for the variant with a Multibore® 0.9 membrane. That means our new rack design offers **more capacity than ever**. The maximum rack size of 136 modules provides up to 9520 m<sup>2</sup> (102.480 ft<sup>2</sup>) of membrane area. Assuming a flux rate of 80 LMH (47 gfd), that corresponds to a water treatment capacity of approx. 760 m<sup>3</sup>/h (4.8 MGD). The membrane area for the version with the Multibore® 1.5 is 50 m<sup>2</sup> (538 ft<sup>2</sup>) per module, which corresponds to a treatment capacity of approx. 540 m<sup>3</sup>/h (3.4 MGD) for the maximum rack size.

**Expandable:** The standardized components and the modular design of the rack make it quick and easy to expand capacity to reflect changing needs. **Additional individual modules** can simply be added to the end of the rack.

\* The design pressure corresponds to the maximum permitted operating pressure in continuous operation at the specified design temperature. Higher operating pressures than 5 bar at 40°C may be possible in certain cases. However, this must first be verified and approved by inge®.

\*\* Use DIN ISO 9080 and/or ASTM D 2837 to calculate the design pressure for different temperatures and service lives. For example, the design pressure of 5 bar at 40°C with a service life of 10 years corresponds to a design pressure of 8.2 bar at 20°C. Once again, however, this must first be verified and approved by inge®.

® = Registered trademark of BASF

## T-Rack® 3.0 – flexible design for maximum performance

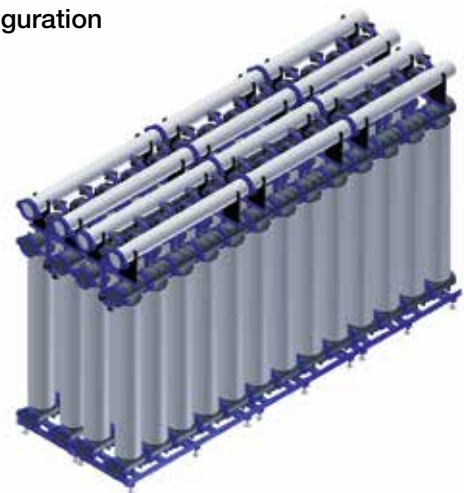
**Flexible:** The more flexibility you have to configure a system, the more you can tailor it to your exact requirements. Depending on the required system size and treatment capacity, we can supply **configurations with either two or four rows of modules**. However, the design includes separate filtrate headers, so each row can still be operated as a separate filtration line. For systems containing 72 modules or more, the racks are arranged on both sides of a manifold unit. inge® offers the option of providing the manifold unit as a T-Rack® Manifold.

### Rack configurations (examples):

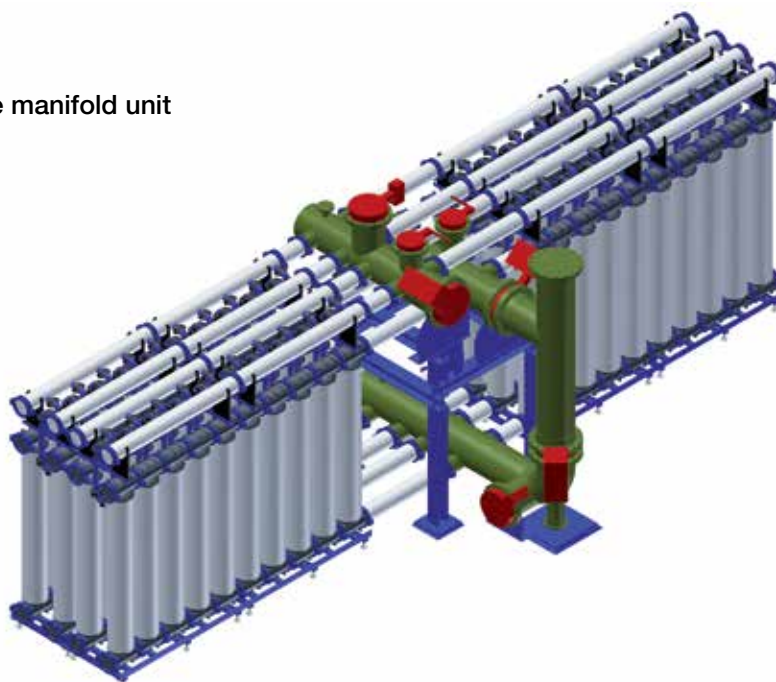
2-row configuration



4-row configuration

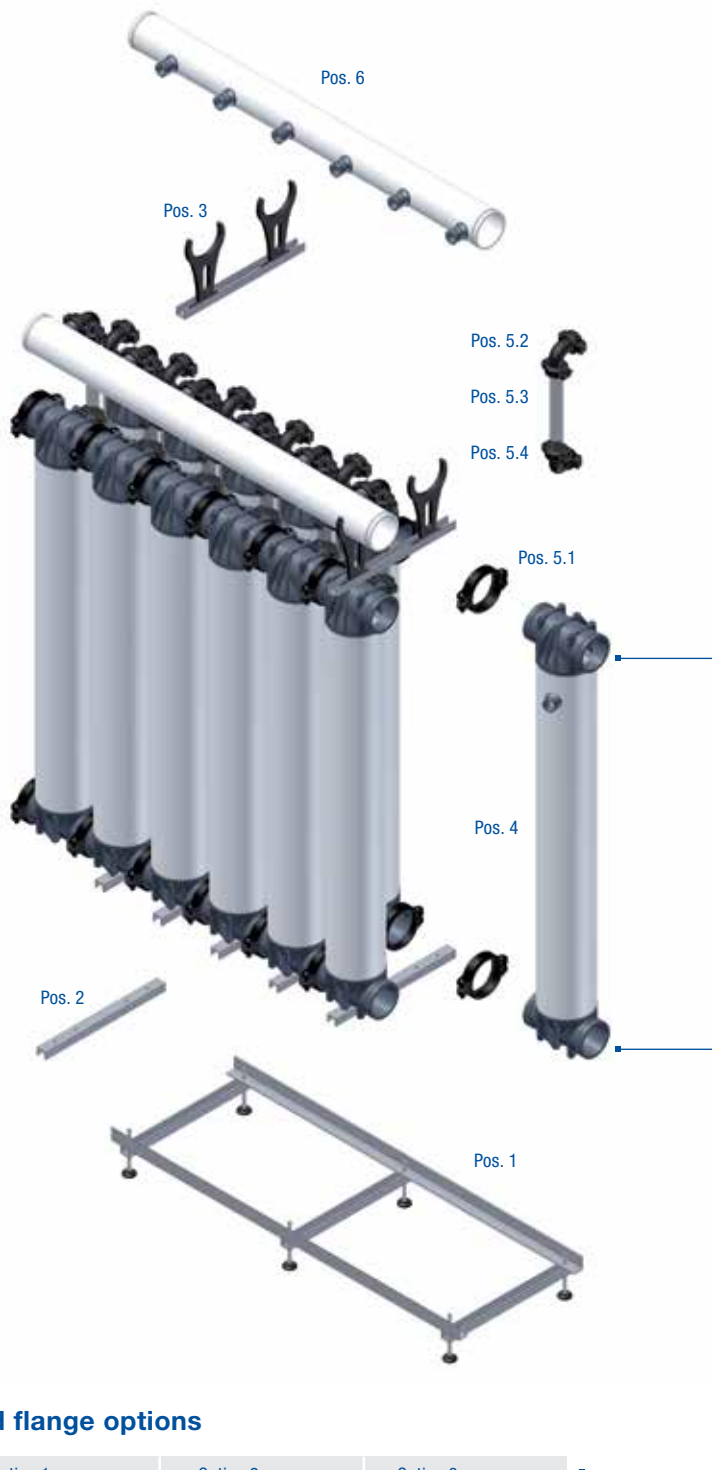


4-row configuration  
on both sides of the manifold unit



**Optional features:** The standard version of the racks features C4-coated frame profiles. A stainless steel version is also available on request.

# T-Rack® 3.0 – modular and standardized design



## T-Rack® 3.0 parts list

Pos.	Article description	Material
1	Bottom frame	
1.1	Angle profile L 65 x 50 x 5 x div.*	1.0037 C4 coated
1.2	Channel section U 50 x 710 mm*	1.0037 C4 coated
1.3	Hexagon nut (DIN 934) M16	1.4401
1.4	Hexagon bolt (DIN 933) M16 x 150	1.4401
1.5	Washer (DIN 125) A17	1.4401
1.6	Adjustable feet M16	PA6 GF 30
2	Bottom connecting brace	
2.1	Channel section U 50 x 688 mm*	1.0037 C4 coated
2.2	Threaded pins (DIN 913) M10 x 50	1.4401
2.3	Washer (DIN 125) A10.5	1.4401
2.4	Hexagon nut (DIN 934) M10	1.4401
3	Top cross brace	
3.1	Channel section U 50 x 688 mm*	1.0037 C4 coated
3.2	Threaded pins (DIN 913) M10 x 50	1.4401
3.3	Washer (DIN 125) A10.5	1.4401
3.4	Hexagon nut (DIN 934) M10	1.4401
3.5	Mounting clamp PE	PE
4	dizzer® XL-WT module body	PVC-U
5	Module connecting parts	
5.1	Flexible coupling 6" / d168 incl. galvanized bolts and EPDM seal	cast iron, C4 coated
5.2	90° elbow piece PP 2"	PP
5.3	Transparent filtrate pipe 2" / 464 mm	PVC-U
5.4	Flexible coupling 2" incl. galvanized bolts and EPDM seal	PA6 GF30
6	Filtrate header 168.3 mm / 6"	PVC-U

\* Frame parts optionally available in stainless steel.

## T-Rack® 3.0 End flange options\*

Option	Part number	Article description	Description
1	KT-0162	Flange DN 150 x 6"	Connection of 6" grooved coupling system to flange with connecting dimensions according to ISO 7005 PN 10, ANSI Class 150
2	KT-0163	Blinde flange 6"	Sealing of feed and filtrate headers
3	KT-0164	Blinde flange 6" with G2"	Connection of equipment for venting, measuring, etc., G 2" internal thread according to DIN ISO 228 BSPP

\* Securing of end flange with 6" coupling (S0-0093) not included in standard package.

## End flange options



## dizzer® XL ultrafiltration module and Multibore® membrane

### Multibore® membrane

Membrane specifications		Multibore® 0.9	Multibore® 1.5
Capillaries per fiber		7	7
Inside diameter	mm	0.9	1.5
Outside diameter	mm	4.0	6.0
Pore size	µm	approx. 0.02	approx. 0.02
Material		PESM	PESM

### dizzer® XL in T-Rack® 3.0

Module specifications			dizzer® XL 0.9 MB 70 WT		dizzer® XL 1.5 MB 50 WT	
Part number			VK-1087		VK-1101	
Active membrane area	m²	sq.ft.	70	753	50	538
Length (incl. T-piece)	mm	inch	2100 ± 1.5	82 2/3	2100 ± 1.5	82 2/3
Module diameter	mm	inch	250	9 7/8	250	9 7/8
Shipping weight	kg	lbs.	58	128	58	128
Casing material			PVC-U, white		PVC-U, white	
Operating parameters						
Permissible temperature range	°C	°F	1 – 40	34 – 104	1 – 40	34 – 104
Max. operating pressure T-Rack®						
20°C	bar	psi	8.2	119	8.2	119
40°C	bar	psi	5	72	5	72
Flux rate						
Filtration*	l/(m²h)	gfd	60 – 180	35 – 105	60 – 180	35 – 180
Standard backwash	l/(m²h)	gfd	230	135	230	135
Backwash range	l/(m²h)	gfd	230 – 300	135 – 175	230 – 300	135 – 175
Transmembrane pressure (TMP)						
Filtration*	bar	psi	0.1 – 1.5	1.5 – 20	0.1 – 1.5	1.5 – 20
Standard backwash*	bar	psi	0.3 – 3.0	5 – 40	0.3 – 3.0	5 – 40
Burst pressure (membrane)	bar	psi	> 10	> 150	> 10	> 150
Cleaning/disinfection chemicals						
Free chlorine	ppm	ppm x h	max. 200 max. 200,000 (at pH ≥ 9.5)		max. 200 max. 200,000 (at pH ≥ 9.5)	
H <sub>2</sub> O <sub>2</sub> (hydrogen peroxide)	ppm		max. 500		max. 500	
Caustic pH			max. 13		max. 13	
Acid pH			min. 1		min. 1	

\* Specifications apply to normal operating conditions.



## T-Rack® 3.0 – system configuration with 2 rows

### Configuration with 2 rows and Multibore® 0.9 membrane

Number of modules	T-Rack® 3.0 unit	Part number <sup>1)</sup>	Length (A) <sup>2)</sup>		Membrane area <sup>3)</sup>		Shipping weight <sup>4)</sup>		Weight, filled <sup>4)</sup>		Hold-up volume, feed side		Hold-up volume, filtrate side	
			mm	ft.	m <sup>2</sup>	sq.ft.	kg	lbs.	kg	lbs.	m <sup>3</sup>	US. gal	m <sup>3</sup>	US. gal
4	TR-4-2-1-3.0	TR-0004	661	2.17	280	3014	315	693	608	1341	0.12	32.7	0.21	55.5
6	TR-6-2-1-3.0	TR-0006	991	3.25	420	4521	458	1009	899	1981	0.19	49.0	0.32	83.3
8	TR-8-2-1-3.0	TR-0008	1322	4.34	560	6028	601	1325	1189	2621	0.25	65.3	0.42	111.1
10	TR-10-2-1-3.0	TR-0010	1652	5.42	700	7535	744	1641	1479	3261	0.31	81.7	0.53	138.9
12	TR-12-2-1-3.0	TR-0012	1983	6.51	840	9042	887	1956	1769	3900	0.37	98.0	0.63	166.6
14	TR-14-2-1-3.1	TR-0014	2313	7.59	980	10549	1059	2334	2087	4602	0.43	114.3	0.74	194.4
16	TR-16-2-1-3.0	TR-0016	2644	8.67	1120	12056	1202	2650	2378	5242	0.49	130.6	0.84	222.2
18	TR-18-2-1-3.0	TR-0018	2974	9.76	1260	13563	1345	2966	2668	5881	0.56	147.0	0.95	249.9
20	TR-20-2-1-3.0	TR-0020	3305	10.84	1400	15070	1488	3281	2958	6521	0.62	163.3	1.05	277.7
22	TR-22-2-1-3.0	TR-0022	3635	11.93	1540	16577	1632	3597	3248	7161	0.68	179.6	1.16	305.5
24	TR-24-2-1-3.0	TR-0024	3966	13.01	1680	18084	1775	3913	3538	7800	0.74	196.0	1.26	333.3
26	TR-26-2-1-3.0	TR-0026	4296	14.10	1820	19591	1946	4291	3856	8502	0.80	212.3	1.37	361.0
28	TR-28-2-1-3.0	TR-0028	4627	15.18	1960	21098	2089	4606	4147	9142	0.87	228.6	1.47	388.8
30	TR-30-2-1-3.0	TR-0030	4957	16.26	2100	22605	2233	4922	4437	9782	0.93	245.0	1.58	416.6
32	TR-32-2-1-3.0	TR-0032	5288	17.35	2240	24112	2376	5238	4727	10421	0.99	261.3	1.68	444.3
34	TR-34-2-1-3.0	TR-0034	5618	18.43	2380	25619	2519	5554	5017	11061	1.05	277.6	1.79	472.1

<sup>1)</sup> Rack parts without modules   <sup>2)</sup> Tolerance to ISO 2768-1c   <sup>3)</sup> Rack equipped with 70m<sup>2</sup> (754 sq.ft.) dizzer® XL 0.9 MB 70 WT modules   <sup>4)</sup> incl. modules and frame

### Configuration with 2 rows and Multibore® 1.5 membrane

Number of modules	T-Rack® 3.0 unit	Part number <sup>1)</sup>	Length (A) <sup>2)</sup>		Membrane area <sup>3)</sup>		Shipping weight <sup>4)</sup>		Weight, filled <sup>4)</sup>		Hold-up volume, feed side		Hold-up volume, filtrate side	
			mm	ft.	m <sup>2</sup>	sq.ft.	kg	lbs.	kg	lbs.	m <sup>3</sup>	US. gal	m <sup>3</sup>	US. gal
4	TR-4-2-1-3.0	TR-0004	661	2.17	200	3014	320	705	617	1361	0.14	36.4	0.28	74.3
6	TR-6-2-1-3.0	TR-0006	991	3.25	300	4521	466	1027	912	2010	0.21	54.5	0.42	111.4
8	TR-8-2-1-3.0	TR-0008	1322	4.34	400	4306	612	1349	1206	2659	0.28	72.7	0.56	148.6
10	TR-10-2-1-3.0	TR-0010	1652	5.42	500	5382	758	1670	1501	3308	0.34	90.9	0.70	185.7
12	TR-12-2-1-3.0	TR-0012	1983	6.51	600	6459	903	1992	1795	3958	0.41	109.1	0.84	222.9
14	TR-14-2-1-3.0	TR-0014	2313	7.59	700	7535	1077	2375	2118	4669	0.48	127.3	0.98	260.0
16	TR-16-2-1-3.0	TR-0016	2644	8.67	800	8611	1223	2697	2412	5318	0.55	145.4	1.12	297.2
18	TR-18-2-1-3.0	TR-0018	2974	9.76	900	9688	1369	3019	2707	5968	0.62	163.6	1.27	334.3
20	TR-20-2-1-3.0	TR-0020	3305	10.84	1000	10764	1515	3340	3001	6617	0.69	181.8	1.41	371.5
22	TR-22-2-1-3.0	TR-0022	3635	11.93	1100	11841	1661	3662	3296	7266	0.76	200.0	1.55	408.6
24	TR-24-2-1-3.0	TR-0024	3966	13.01	1200	12917	1807	3984	3590	7916	0.83	218.1	1.69	445.8
26	TR-26-2-1-3.0	TR-0026	4296	14.10	1300	13994	1981	4367	3913	8627	0.89	236.3	1.83	482.9
28	TR-28-2-1-3.0	TR-0028	4627	15.18	1400	15070	2127	4689	4208	9276	0.96	254.5	1.97	520.1
30	TR-30-2-1-3.0	TR-0030	4957	16.26	1500	16146	2273	5010	4502	9925	1.03	272.7	2.11	557.2
32	TR-32-2-1-3.0	TR-0032	5288	17.35	1600	17223	2419	5332	4797	10575	1.10	290.9	2.25	594.4
34	TR-34-2-1-3.0	TR-0034	5618	18.43	1700	18299	2565	5654	5091	11224	1.17	309.0	2.39	631.5

<sup>1)</sup> Rack parts without modules   <sup>2)</sup> Tolerance to ISO 2768-1c   <sup>3)</sup> Rack equipped with 50m<sup>2</sup> (538 sq.ft.) dizzer® XL 1.5 MB 50 WT modules   <sup>4)</sup> incl. modules and frame

## T-Rack® 3.0 – system configuration with 4 rows

### Configuration with 4 rows and Multibore® 0.9 membrane

Number of modules	T-Rack® 3.0 unit	Part number <sup>1)</sup>	Length (A) <sup>2)</sup>		Membrane area <sup>3)</sup>		Shipping weight <sup>4)</sup>		Weight, filled <sup>4)</sup>		Hold-up volume, feed side		Hold-up volume, filtrate side	
			mm	ft.	m <sup>2</sup>	sq.ft.	kg	lbs.	kg	lbs.	m <sup>3</sup>	US. gal	m <sup>3</sup>	US. gal
36	TR-36-4-1-3.0	TR-0036	2974	9.76	2520	27126	2690	5931	5335	11763	0.99	261.3	1.68	444.3
40	TR-40-4-1-3.0	TR-0040	3305	10.84	2800	30140	2977	6563	5916	13042	1.24	326.6	2.10	555.4
44	TR-44-4-1-3.0	TR-0044	3635	11.93	3080	33154	3263	7194	6496	14321	1.36	359.3	2.31	611.0
48	TR-48-4-1-3.0	TR-0048	3966	13.01	3360	36168	3550	7826	7076	15601	1.48	391.9	2.52	666.5
52	TR-52-4-1-3.0	TR-0052	4296	14.10	3640	39182	3892	8581	7713	17004	1.61	424.6	2.73	722.1
56	TR-56-4-1-3.0	TR-0056	4627	15.18	3920	42196	4179	9213	8293	18284	1.73	457.3	2.94	777.6
60	TR-60-4-1-3.0	TR-0060	4957	16.26	4200	45210	4465	9844	8874	19563	1.85	489.9	3.15	833.1
64	TR-64-4-1-3.0	TR-0064	5288	17.35	4480	48224	4752	10476	9454	20842	1.98	522.6	3.36	888.7
68	TR-68-4-1-3.0	TR-0068	5618	18.43	4760	51238	5038	11107	10034	22122	2.10	555.2	3.57	944.2

<sup>1)</sup> Rack parts without modules   <sup>2)</sup> Tolerance to ISO 2768-1c   <sup>3)</sup> Rack equipped with 70m<sup>2</sup> (754 sq.ft.) dizzer® XL 0.9 MB 70 WT modules   <sup>4)</sup> incl. modules and frame

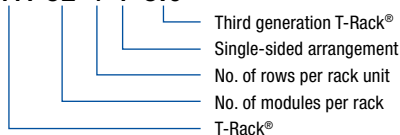
### Configuration with 4 rows and Multibore® 1.5 membrane

Number of modules	T-Rack® 3.0 unit	Part number <sup>1)</sup>	Length (A) <sup>2)</sup>		Membrane area <sup>3)</sup>		Shipping weight <sup>4)</sup>		Weight, filled <sup>4)</sup>		Hold-up volume, feed side		Hold-up volume, filtrate side	
			mm	ft.	m <sup>2</sup>	sq.ft.	kg	lbs.	kg	lbs.	m <sup>3</sup>	US. gal	m <sup>3</sup>	US. gal
36	TR-36-4-1-3.0	TR-0036	2974	9.76	1800	19376	2738	6037	5414	11935	1.10	290.9	2.25	594.4
40	TR-40-4-1-3.0	TR-0040	3305	10.84	2000	21529	3030	6681	6003	13234	1.38	363.6	2.81	743.0
44	TR-44-4-1-3.0	TR-0044	3635	11.93	2200	23681	3322	7324	6592	14533	1.51	399.9	3.09	817.3
48	TR-48-4-1-3.0	TR-0048	3966	13.01	2400	25834	3614	7967	7181	15831	1.65	436.3	3.37	891.6
52	TR-52-4-1-3.0	TR-0052	4296	14.10	2600	27987	3962	8734	7826	17254	1.79	472.7	3.66	965.9
56	TR-56-4-1-3.0	TR-0056	4627	15.18	2800	30140	4254	9378	8415	18552	1.93	509.0	3.94	1040.2
60	TR-60-4-1-3.0	TR-0060	4957	16.26	3000	32293	4545	10021	9004	19851	2.06	545.4	4.22	1114.5
64	TR-64-4-1-3.0	TR-0064	5288	17.35	3200	34446	4837	10664	9593	21150	2.20	581.7	4.50	1188.7
68	TR-68-4-1-3.0	TR-0068	5618	18.43	3400	36598	5129	11308	10182	22448	2.34	618.1	4.78	1263.0

<sup>1)</sup> Rack parts without modules   <sup>2)</sup> Tolerance to ISO 2768-1c   <sup>3)</sup> Rack equipped with 50m<sup>2</sup> (538 sq.ft.) dizzer® XL 1.5 MB 50 WT modules   <sup>4)</sup> incl. modules and frame

### T-Rack® designation:

TR-52-4-1-3.0



## T-Rack® 3.0 – system configuration with 4 rows on both sides of the manifold

### Configuration with 4 rows double-sided and Multibore® 0.9 membrane

Number of modules	T-Rack® 3.0 unit	Part number <sup>1)</sup>	Length (A) <sup>2)</sup>		Membrane area <sup>3)</sup>		Shipping weight <sup>5)</sup>		Weight, filled <sup>5)</sup>		Hold-up volume, feed side		Hold-up volume, filtrate side	
			mm	ft.	m <sup>2</sup>	sq.ft.	kg	lbs.	kg	lbs.	m <sup>3</sup>	US. gal	m <sup>3</sup>	US. gal
72	TR-72-4-2-3.0	TR-0072	5949	19.52	5040	54251.9	5381	11863	10671	23525	1.98	522.6	3.36	888.7
76	TR-76-4-2-3.0 <sup>4)</sup>	TR-0076	6279	20.60	5320	57265.9	5667	12494	11251	24805	2.23	587.9	3.78	999.8
80	TR-80-4-2-3.0	TR-0080	6610	21.69	5600	60279.9	5954	13126	11832	26084	2.47	653.2	4.21	1110.8
84	TR-84-4-2-3.0 <sup>4)</sup>	TR-0084	6940	22.77	5880	63293.9	6240	13757	12412	27363	2.60	685.9	4.42	1166.4
88	TR-88-4-2-3.0	TR-0088	7271	23.85	6160	66307.9	6527	14389	12992	28643	2.72	718.6	4.63	1221.9
92	TR-92-4-2-3.0 <sup>4)</sup>	TR-0092	7601	24.94	6440	69321.9	6813	15020	13573	29922	2.84	751.2	4.84	1277.5
96	TR-96-4-2-3.0	TR-0096	7932	26.02	6720	72335.8	7100	15652	14153	31202	2.97	783.9	5.05	1333.0
100	TR-100-4-2-3.0 <sup>4)</sup>	TR-0100	8262	27.11	7000	75349.8	7442	16407	14789	32605	3.09	816.5	5.26	1388.6
104	TR-104-4-2-3.0	TR-0104	8593	28.19	7280	78363.8	7785	17163	15426	34008	3.21	849.2	5.47	1444.1
108	TR-108-4-2-3.0 <sup>4)</sup>	TR-0108	8923	29.27	7560	81377.8	8071	17794	16006	35288	3.34	881.9	5.68	1499.6
112	TR-112-4-2-3.0	TR-0112	9254	30.36	7840	84391.8	8358	18426	16587	36567	3.46	914.5	5.89	1555.2
116	TR-116-4-2-3.0 <sup>4)</sup>	TR-0116	9584	31.44	8120	87405.8	8644	19057	17167	37847	3.59	947.2	6.10	1610.7
120	TR-120-4-2-3.0	TR-0120	9915	32.53	8400	90419.8	8931	19689	17747	39126	3.71	979.9	6.31	1666.3
124	TR-124-4-2-3.0 <sup>4)</sup>	TR-0124	10245	33.61	8680	93433.8	9217	20320	18328	40406	3.83	1012.5	6.52	1721.8
128	TR-128-4-2-3.0	TR-0128	10576	34.70	8960	96447.8	9504	20952	18908	41685	3.96	1045.2	6.73	1777.4
132	TR-132-4-2-3.0 <sup>4)</sup>	TR-0132	10906	35.78	9240	99461.8	9790	21583	19488	42964	4.08	1077.8	6.94	1832.9
136	TR-136-4-2-3.0	TR-0136	11237	36.87	9520	102476	10076	22215	20069	44244	4.20	1110.5	7.15	1888.4

<sup>1)</sup> Rack parts without modules    <sup>2)</sup> Length = length rack 1 + rack 2, excl. central header pipe, Tolerance to ISO 2768-1c  
<sup>3)</sup> Rack equipped with 70m<sup>2</sup> (754 sq.ft.) dizzer® XL 0.9 MB 70 WT modules    <sup>4)</sup> Asymmetric module arrangement    <sup>5)</sup> incl. modules and frame

### Configuration with 4 rows double-sided and Multibore® 1.5 membrane

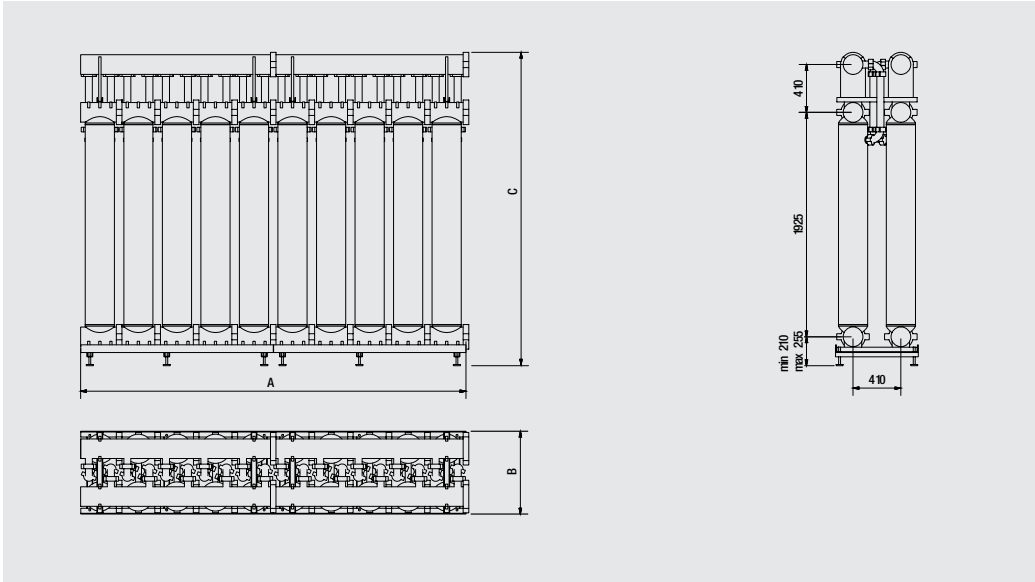
Number of modules	T-Rack® 3.0 unit	Part number <sup>1)</sup>	Length (A) <sup>2)</sup>		Membrane area <sup>3)</sup>		Shipping weight <sup>5)</sup>		Weight, filled <sup>5)</sup>		Hold-up volume, feed side		Hold-up volume, filtrate side	
			mm	ft.	m <sup>2</sup>	sq.ft.	kg	lbs.	kg	lbs.	m <sup>3</sup>	US. gal	m <sup>3</sup>	US. gal
72	TR-72-4-2-3.0	TR-0072	5949	19.52	3600	38751.3	5477	12075	10828	23871	2.20	581.7	4.50	1188.7
76	TR-76-4-2-3.0 <sup>4)</sup>	TR-0076	6279	20.60	3800	40904.2	5769	12718	11417	25169	2.48	654.4	5.06	1337.3
80	TR-80-4-2-3.0	TR-0080	6610	21.69	4000	43057.1	6061	13361	12006	26468	2.75	727.2	5.62	1485.9
84	TR-84-4-2-3.0 <sup>4)</sup>	TR-0084	6940	22.77	4200	45209.9	6352	14005	12595	27767	2.89	763.5	5.91	1560.2
88	TR-88-4-2-3.0	TR-0088	7271	23.85	4400	47362.8	6644	14648	13184	29065	3.03	799.9	6.19	1634.5
92	TR-92-4-2-3.0 <sup>4)</sup>	TR-0092	7601	24.94	4600	49515.6	6936	15291	13773	30364	3.17	836.2	6.47	1708.8
96	TR-96-4-2-3.0	TR-0096	7932	26.02	4800	51668.5	7228	15934	14362	31662	3.30	872.6	6.75	1783.1
100	TR-100-4-2-3.0 <sup>4)</sup>	TR-0100	8262	27.11	5000	53821.3	7576	16702	15007	33085	3.44	908.9	7.03	1857.4
104	TR-104-4-2-3.0	TR-0104	8593	28.19	5200	55974.2	7924	17469	15652	34507	3.58	945.3	7.31	1931.7
108	TR-108-4-2-3.0 <sup>4)</sup>	TR-0108	8923	29.27	5400	58127	8215	18112	16241	35806	3.72	981.7	7.59	2006.0
112	TR-112-4-2-3.0	TR-0112	9254	30.36	5600	60279.9	8507	18755	16830	37105	3.85	1018.0	7.87	2080.3
116	TR-116-4-2-3.0 <sup>4)</sup>	TR-0116	9584	31.44	5800	62432.7	8799	19399	17419	38403	3.99	1054.4	8.16	2154.6
120	TR-120-4-2-3.0	TR-0120	9915	32.53	6000	64585.6	9091	20042	18008	39702	4.13	1090.7	8.44	2228.9
124	TR-124-4-2-3.0 <sup>4)</sup>	TR-0124	10245	33.61	6200	66738.4	9383	20685	18597	41000	4.27	1127.1	8.72	2303.2
128	TR-128-4-2-3.0	TR-0128	10576	34.70	6400	68891.3	9674	21328	19187	42299	4.40	1163.5	9.00	2377.5
132	TR-132-4-2-3.0 <sup>4)</sup>	TR-0132	10906	35.78	6600	71044.1	9966	21972	19776	43598	4.54	1199.8	9.28	2451.8
136	TR-136-4-2-3.0	TR-0136	11237	36.87	6800	73196	10258	22615	20365	44896	4.68	1236.2	9.56	2526.1

<sup>1)</sup> Rack parts without modules    <sup>2)</sup> Length = length rack 1 + rack 2, excl. central header pipe, Tolerance to ISO 2768-1c  
<sup>3)</sup> Rack equipped with 50m<sup>2</sup> (538 sq.ft.) dizzer® XL 1.5 MB 50 WT modules    <sup>4)</sup> Asymmetric module arrangement    <sup>5)</sup> incl. modules and frame



## T-Rack® 3.0 – sample configuration

### TR-20-2-1-3.0



Header feed / drain  
 $d_i = 142 \text{ mm (5.59 inch)}$   
 $d_o = 168 \text{ mm (6.61 inch)}$

Header filtrate  
 $d_i = 152 \text{ mm (5.98 inch)}$   
 $d_o = 168 \text{ mm (6.61 inch)}$

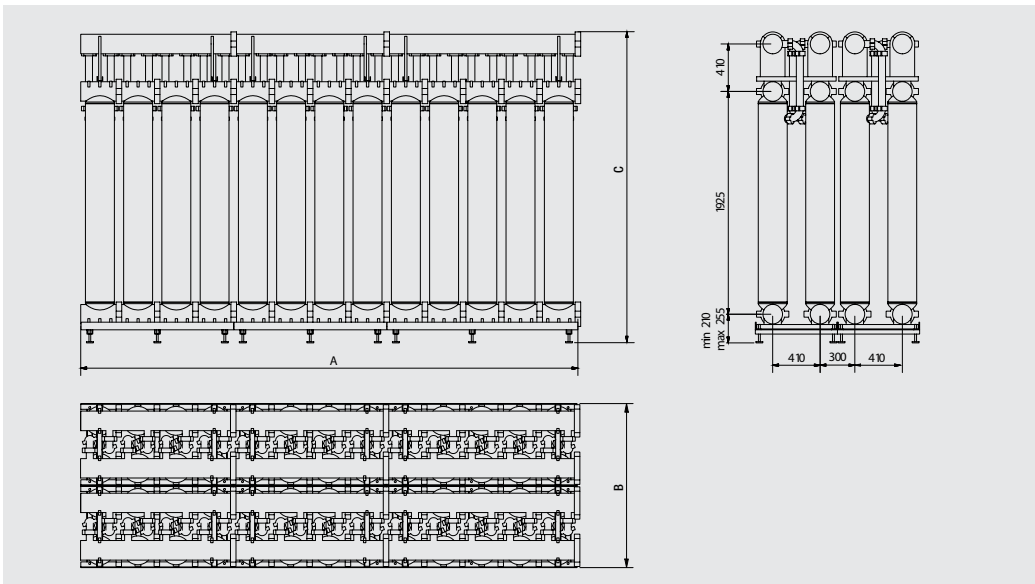
Height (C)\*  
 min = 2650 mm (8.70 ft.)  
 max = 2695 mm (8.85 ft.)

Width (B)\*  
 $B = 710 \text{ mm (2.33 ft.)}$

\* Tolerance to ISO 2768-1c

Connection for 6" grooved pipe coupling  
 Manifold ends equipped with 6" couplings  
 on one side as standard

### TR-52-4-1-3.0



Header feed / drain  
 $d_i = 142 \text{ mm (5.59 inch)}$   
 $d_o = 168 \text{ mm (6.61 inch)}$

Header filtrate  
 $d_i = 152 \text{ mm (5.98 inch)}$   
 $d_o = 168 \text{ mm (6.61 inch)}$

Height (C)\*  
 min = 2650 mm (8.70 ft.)  
 max = 2695 mm (8.85 ft.)

Width (B)\*  
 $B = 1420 \text{ mm (4.66 ft.)}$

\* Tolerance to ISO 2768-1c

Connection for 6" grooved pipe coupling  
 Manifold ends equipped with 6" couplings  
 on one side as standard

**Note**

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By courtesy of inge GmbH, Germany

Technical Specifications T-Rack 3.0 3.2(2015-01) E inge

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