

**LUFT/VANN ISVANNSAGGREGAT  
MED AKSIALVIFTER**

**BE/ESRAT 2002 – 7204  
R134a**



## Beskrivelse aggregat

Luft kjødt vannkjøder med aksial vifter laget for utendørs installasjon.

Aggregat er levert med olje og R134a kuldemedie. Alle aggregat er testet på fabrikk.

## Ramme

Ramme og bæestructur er laget av malte galvanisert stå

## Kompressor

Semi-hermetisk skruekompressor med 2 rotor med 5 "han" og 6 "hun" skruer. Rotor er festet rett på en 2-pole motor (2950 r.p.m.), uten bruk av unødvendige gearoverføringer. Kompressjonen foregår 5 ganger pr rotasjon slik at man slipper pulsingen som er vanlig på stempel kompressoerer.

Spesielle, vedlikeholdsfrie lager gir sjeldnere behov for overhaling. Smøring styres av en egen oljepumpe. Og egen oljeseparator sikrer riktig oljemengde i kompressoren.

Rotorene er dynamisk avbalansert. Og kombinert med få bevegelige deler gir kompressoren rolig og sikker drift.

Kapasitetsregulering for hver kompressor på 50% og 75%.

Startmetode er stjerne trekant.

Hver enkelt kompressor er utstyrt med termisk beskyttelse med manuel reset. Ellers finnes seglass, oljevermer, oljenivåtemperaturkontroll .

## Varmevekliser

Direct expansion type with asymmetric refrigerant paths to maintain the correct refrigerant velocity inside the tubes during both liquid and gaseous phases. The shell is insulated with a anti-condensation lining made by foamed reticle polyethylene with an anti-scratch coating with UVA protection . The copper pipes are internally grooved so as to improve the heat exchange. The pipes are mechanically expanded onto the tube plate ends. A thermostatically controlled electric heater prevents the formation of ice inside the casing of the heat-exchanger. The unit is equipped with hydraulic connections VICTAULIC type with additional trunk to be welded.

Differential pressure switch for controlling the water flow is standardly fitted.

## Kondensatorbatteri

Kondensatorbatteri laget av kobberø og aluminiumslameller. Den laveste del av batteri brukes til underkjøling.

## Vifter

Axial vifter med aluminiums blader.

Seks polet motor med IP 54 beskyttelse plassert i en aerodynamisk ritkig utformet ramme med beskyttelsesgitter.

Presostatstyring via av/på vifter.

## Kulde krets

Hver kuldemediekrets er utstyrt med følgende komponenter: avstengningventil i væskeledningen, magnetventil i væskeledningen, tørefilter med utskiftbar kjerne, seglass, termostatisk ekspansjonsventil med utvendig trykkutligning, høytrykks-sikkerhetsventil, høy og lavtrykkspressostater, kontrollutstyr

## UNIT DESCRIPTION

Air cooled liquid chiller with axial fans, suitable for outdoor installation.

Units are supplied with their full charge of antifreeze oil and R134a refrigerant charge, and undergo factory tests and trials.

## Supporting frame

Base and supporting structure and panels are made of galvanized polyester coated steel with high tickness (including the panels of the electrical board).

## Compressors

Semi-hermetic screw-compressors with two rotors with five and six lobes.

The five-lobe rotor is keyed directly onto the 2-pole motor (2950 r.p.m.), without the inclusion of speed increasing gears.

The compression process occurs five times every motor rotation and therefore the discharge of gas occurs continuously without the typical throbbing of reciprocating compressors.

The rotors and mechanical machining of the bearing seats are carried out with the very latest computerised-numerical-control machines.

Special, maintenance-free bearings enable very wide work cycles.

Lubrication is forced, without the use of an oil pump.

The highly efficient built-in oil separator ensures the constant presence of oil in the compressor.

The rotors are dynamically balanced thus guaranteeing the absence of those vibrations typical of reciprocating compressors.

The lack of vibrations and the absence of delicate intake and discharge valves, in addition to very fine manufacturing tolerances, sophisticated quality controls during the production process and a reduced number of moving parts, guarantee quiet and dependable operation.

The slide valve provides capacity control for each compressor of 50% and and 75%.

motor starting method is a star-delta type, to limit the current absorbed in the compressor starting stages.

Each compressor is equipped with motor thermic protection with manual reset, discharge temperature control, float oil-level control, oil-level sight-glass and an electrical resistance for heating the oil when the compressor is stopped.

Each compressor is protected against the atmospheric agents by means of an easy to remove casing which also guarantees adequate sound-proofing.

A check valve situated on the gas delivery prevents dangerous reverse rotation of rotors after stopping.

## Heat exchangers

Direct expansion type with asymmetric refrigerant paths to maintain the correct refrigerant velocity inside the tubes during both liquid and gaseous phases. The shell is insulated with a anti-condensation lining made by foamed reticle polyethylene with an anti-scratch coating with UVA protection . The copper pipes are internally grooved so as to improve the heat exchange. The pipes are mechanically expanded onto the tube plate ends. A thermostatically controlled electric heater prevents the formation of ice inside the casing of the heat-exchanger. The unit is equipped with hydraulic connections VICTAULIC type with additional trunk to be welded.

Differential pressure switch for controlling the water flow is standardly fitted.

## Condensing coils

Heat exchanger coils made of copper tubes and aluminium fins. The lower part functions as a sub-cooling circuit.

## Fans

Axial fans with external rotor and die-cast aluminium blades.

Six pole electric motor complete with thermal protection (IP54 protection ratio). They are housed in an aerodynamic hood and equipped with safety protection grills.

Pressostatic condensing control by on/off of the fans.

## Refrigerant circuit

Each refrigerant circuit is complete with: non-return valve on compressor discharge line, liquid line shut-off valve, liquid line solenoid valves, dryer filter with replaceable core, sight glass equipped with presence of humidity signal, externally equalised thermal expansion valve, high pressure safety valve, low pressure safety valve (where foreseen by norms), control and check devices.

### Elektrisk utstyr og kontroller

Electrical power and control panel built in compliance with EN 60204-1/IEC 204-1 norms, complete with contactors and triads of fuses for the compressors and fans. The power section uses a bar-type distribution system and interlock-door mains isolator. The electrical panel is fitted with a seal-tight double door and is suitable for outdoor installation. Contactors are of spring type clamps to avoid cabling untightness due to vibrations.

The electrical section follows the norms:

CE 89/392/CEE (machine directive); 89/336/CEE (electromagnetic compatibility directive); 73/23/CEE (low tension directive).

#### Kontroll system

2002 - 2202 - 2402 - 2702 - 3002 - 3302 - 3602 - 2002 - 2202 - 2402 - 2702 - 3002 - 3302 - 3602 - 2002 - 2202 - 2402 - 2702 - 3002 - 3302 - 3602

Mikroprosessor styrt kontroll system som består av, volt og frekvens kontroll, fjern av/på felles alarmsignal, vanntemperatur fordampner inn/ut i display, feilsignal kompressor, generell alarm.

Utskriftsmulighet for temperatur og trykk (hvis installert), oppsett parametre, historiske alarmer og hendelser.

Profesjonal regulering av inngående vanntemperatur, forsinket oppstart, antall starter pr kompressor pr time, styring av utgående isvann fordampner, pump down ved kompressor start og stopp, kompressor olje nivå vifte hastighets kontroll, sentral reset av alarmer, kommunikasjonsprotokoll, automatisk selvtest.

#### Kontroll system

3903 - 4203 - 4503 - 4803 - 5103 - 5403 - 5404 - 5704 - 6004 - 6304 - 6604 - 6904 - 7204 - 3903 - 4203 - 4503 - 4803 - 5103 - 5403 - 5404 - 5704 - 6004 - 6304 - 6604 - 6904 - 7204 - 3903 - 4203 - 4503 - 4803 - 5103 - 5403 - 5404 - 5704 - 6004 - 6304 - 6604 - 6904 - 7204

Mikroprosessor styrt kontroll system som består av, volt og frekvens kontroll, fjern av/på felles alarmsignal, vanntemperatur fordampner inn/ut i display, feilsignal kompressor, generell alarm.

Utskriftsmulighet for temperatur og trykk (hvis installert), oppsett parametre, historiske alarmer og hendelser.

Profesjonal regulering av inngående vanntemperatur, forsinket oppstart, antall starter pr kompressor pr time, styring av utgående isvann fordampner, pump down ved kompressor start og stopp, kompressor olje nivå vifte hastighets kontroll, sentral reset av alarmer, kommunikasjonsprotokoll, automatisk selvtest.

### Modell BE/SRAT

Kun kjøling

#### Modell BE/SRAD

This version differs from the basic one for a freon-water heat exchanger located on the compressors discharge line. The above heat exchanger, which is in series before the traditional condenser of the refrigerant circuit, is specially sized so as to allow the recovery of the de-superheating heat for hot water production at medium-high temperatures (secondary circuit or heat recovery circuit). The hot water production, for sanitary use or others, in the heat recovery circuit is available regardless the operating mode selected. The heating capacity of the heat recovery circuit, is approximately equal to the compressor absorbed power. After having crossed the de-superheating heat exchanger, the refrigerant ends the condensation process in the condenser.

#### Modell BE/SRAR

This version differs from the basic one for a freon-water heat exchanger located on the compressors discharge line. The above heat exchanger, which is in parallel to the traditional condenser of the refrigerant circuit, is specially sized so as to allow the total heat recovery of the condensation process for hot water production (secondary circuit or heat recovery circuit). The heating capacity of the heat recovery circuit, is approximately equal to the compressor absorbed power added to the cooling capacity.

### Electrical power and control panel

Electrical power and control panel built in compliance with EN 60204-1/IEC 204-1 norms, complete with contactors and triads of fuses for the compressors and fans. The power section uses a bar-type distribution system and interlock-door mains isolator. The electrical panel is fitted with a seal-tight double door and is suitable for outdoor installation. Contactors are of spring type clamps to avoid cabling untightness due to vibrations.

The electrical section follows the norms:

CE 89/392/CEE (machine directive); 89/336/CEE (electromagnetic compatibility directive); 73/23/CEE (low tension directive).

#### Computerized control system

2002 - 2202 - 2402 - 2702 - 3002 - 3302 - 3602 - 2002 - 2202 - 2402 - 2702 - 3002 - 3302 - 3602 - 2002 - 2202 - 2402 - 2702 - 3002 - 3302 - 3602

Microprocessor control system equipped with, voltage and frequency supply control, missing external consens led signal, remote on/off by external volt-free contact, cumulative fault warning alarm, evaporator inlet/outlet water temperature display, compressor/circuit failure signal, unit general-alarm signal, print-out of the temperature and pressure values (if any), configuration parameters print-out, historical alarms and events memory and print-out, proportional control on the inlet water temperature, delayed compressor start, compressor start per hour and restarting time control, compressor working-hours control and display, compressor working hours balance system, pump-down when stopped, compressor discharge temperature control, compressor oil level control, fan speed control, led display of interface board correct operation, auto-diagnostic of the electrical part, communication protocol.

#### Computerized control system

3903 - 4203 - 4503 - 4803 - 5103 - 5403 - 5404 - 5704 - 6004 - 6304 - 6604 - 6904 - 7204 - 3903 - 4203 - 4503 - 4803 - 5103 - 5403 - 5404 - 5704 - 6004 - 6304 - 6604 - 6904 - 7204 - 3903 - 4203 - 4503 - 4803 - 5103 - 5403 - 5404 - 5704 - 6004 - 6304 - 6604 - 6904 - 7204

Microprocessor control system equipped with, voltage and frequency supply control, missing external consens led signal, remote on/off by external volt-free contact, cumulative fault warning alarm, evaporator inlet/outlet water temperature display, compressor/circuit failure signal, unit general-alarm signal, print-out of the temperature and pressure values (if any), configuration parameters print-out, historical alarms and events memory and print-out, proportional control on the inlet water temperature, real-time internal clock, delayed compressor start, compressor start per hour and restarting time control, compressor working-hours control and display, compressor working hours balance system, pump-down when stopped, compressor discharge temperature control, compressor oil level control, fan speed control, led display of interface board correct operation, auto-diagnostic of the electrical part, communication protocol.

### BE/ESRAT model

Cooling only.

#### BE/ESRAD model

This version differs from the basic one for a freon-water heat exchanger located on the compressors discharge line. The above heat exchanger, which is in series before the traditional condenser of the refrigerant circuit, is specially sized so as to allow the recovery of the de-superheating heat for hot water production at medium-high temperatures (secondary circuit or heat recovery circuit). The hot water production, for sanitary use or others, in the heat recovery circuit is available regardless the operating mode selected. The heating capacity of the heat recovery circuit, is approximately equal to the compressor absorbed power. After having crossed the de-superheating heat exchanger, the refrigerant ends the condensation process in the condenser.

#### BE/ESRAR model

This version differs from the basic one for a freon-water heat exchanger located on the compressors discharge line. The above heat exchanger, which is in parallel to the traditional condenser of the refrigerant circuit, is specially sized so as to allow the total heat recovery of the condensation process for hot water production (secondary circuit or heat recovery circuit). The heating capacity of the heat recovery circuit, is approximately equal to the compressor absorbed power added to the cooling capacity.

**Versjon B**  
Standard versjon

**Version B**  
Standard version unit.

<b>Kapasitet</b>		<b>STØRRELSE</b>						
		<b>2002</b>	<b>2202</b>	<b>2402</b>	<b>2702</b>	<b>3002</b>	<b>3302</b>	<b>3602</b>
<b>BE/ESRAT</b>								
<b>Kulde kapasitet</b>	[kW]	<b>408</b>	<b>449</b>	<b>505</b>	<b>564</b>	<b>607</b>	<b>675</b>	<b>711</b>
Effekt forbruk	[kW]	122	139	151	170	188	211	236
Totalt effekt forbruk	[kW]	143	160	177	195	213	236	261
Fordamper vann mengde	[m³/h]	70	77	87	97	104	116	122
Fordamper trykk fall	[kPa]	18	22	26	25	28	40	45
CVM mikroprosessor		300	300	300	300	300	300	300
<b>BE/ESRAD</b>								
<b>Kulde kapasitet</b>	[kW]	<b>423</b>	<b>466</b>	<b>524</b>	<b>586</b>	<b>629</b>	<b>700</b>	<b>738</b>
Effekt forbruk	[kW]	117	134	146	164	181	204	227
Totalt effekt forbruk	[kW]	138	155	171	189	206	229	253
Desuperheater varme kapasitet	[kW]	109	124	135	152	168	188	210
Fordamper vann mengde	[m³/h]	73	80	90	101	108	120	127
Fordamper trykk fall	[kPa]	20	24	29	26	31	44	48
Desuperheater vann mengde	[m³/h]	19	22	23	26	29	33	37
Desuperheater trykkfall	[kPa]	17	22	26	26	26	28	29
CVM mikroprosessor		300	300	300	300	300	300	300
<b>BE/ESRAR</b>								
<b>Kulde kapasitet</b>	[kW]	<b>402</b>	<b>445</b>	<b>491</b>	<b>553</b>	<b>601</b>	<b>678</b>	<b>730</b>
Effekt forbruk	[kW]	124	140	157	174	190	210	229
Gjenvinning kapasitet	[kW]	519	577	639	717	780	876	946
Fordamper vann mengde	[m³/h]	69	77	85	95	104	117	126
Fordamper trykk fall	[kPa]	18	22	25	24	28	41	47
Gjenvinning vannmengde	[m³/h]	90	100	111	125	136	152	164
Gjenvinning trykk fall	[kPa]	32	34	37	42	44	47	46
CVM mikroprosessor		300	300	300	300	300	300	300
<b>Vifter</b>								
Antall vifter	[n]	10	10	12	12	12	12	12
Luft mengde	[m³/s]	57,3	56,5	63,6	62,3	61,0	59,7	58,4
<b>Kompressor</b>								
Antall kompressorer	[n]	2	2	2	2	2	2	2
Antall kretser	[n]	2	2	2	2	2	2	2
Kapasitets trinn	STD+OPT [n]	6	6	6	6	6	6	6
<b>Fylling mengder</b>								
BE/ESRAT	Kuldemedie [kg]							
BE/ESRAD	Kuldemedie [kg]							
BE/ESRAR	Kuldemedie [kg]							
	Olje [kg]	40	40	40	43	46	46	46
<b>Drifts vekt</b>								
BE/ESRAT	[kg]	5800	5920	6110	6630	7010	7230	7390
BE/ESRAD	[kg]	6010	6130	6320	6840	7210	7440	7600
BE/ESRAR	[kg]	6280	6410	6610	7130	7510	7750	7920
<b>Lyd effekt nivå</b>								
<b>Lyd trykk nivå (1)</b>	[dB(A)]							

(1) Lyd trykk nivå målt på 1 meter i åpent felt

Data refererer seg til:

**BE/ESRAT**Isvann 12/7 [°C]  
Utetemperatur 35 [°C]**BE/ESRAR**Isvann 12/7 [°C]  
Varmt vann (gjenvinning) 40/45 [°C]**BE/ESRAD**Isvann 12/7 [°C]  
Varmt vann (desuperhea) 40/45 [°C]  
Ute temperatur 35 [°C]

<b>Kapasitet</b>		<b>STØRRELSE</b>						
		<b>3903</b>	<b>4203</b>	<b>4503</b>	<b>4803</b>	<b>5103</b>	<b>5403</b>	<b>5404</b>
<b>BE/ESRAT</b>								
<b>Kulde kapasitet</b>	[kW]	<b>804</b>	<b>843</b>	<b>886</b>	<b>929</b>	<b>958</b>	<b>998</b>	<b>1115</b>
Effekt forbruk	[kW]	245	263	280	300	325	345	338
Totalt effekt forbruk	[kW]	282	301	318	338	363	383	388
Fordamper vann mengde	[m <sup>3</sup> /h]	138	145	152	160	165	172	192
Fordamper trykk fall	[kPa]	57	63	70	77	82	89	28
CVM mikroprosessor		3000	3000	3000	3000	3000	3000	3000
<b>BE/ESRAD</b>								
<b>Kulde kapasitet</b>	[kW]	<b>834</b>	<b>875</b>	<b>919</b>	<b>964</b>	<b>994</b>	<b>1036</b>	<b>1157</b>
Effekt forbruk	[kW]	236	254	270	289	313	333	326
Totalt effekt forbruk	[kW]	274	292	308	327	351	371	377
Desuperheater varme kapasitet	[kW]	218	235	250	268	290	308	302
Fordamper vann mengde	[m <sup>3</sup> /h]	144	151	158	166	171	178	199
Fordamper trykk fall	[kPa]	62	68	75	83	88	95	30
Desuperheater vann mengde	[m <sup>3</sup> /h]	38	41	43	47	50	54	52
Desuperheater trykkfall	[kPa]	26	26	26	26	27	28	26
CVM mikroprosessor		3000	3000	3000	3000	3000	3000	3000
<b>BE/ESRAR</b>								
<b>Kulde kapasitet</b>	[kW]	<b>786</b>	<b>833</b>	<b>878</b>	<b>925</b>	<b>971</b>	<b>1016</b>	<b>1091</b>
Effekt forbruk	[kW]	252	267	284	302	320	339	348
Gjenvinning kapasitet	[kW]	1023	1085	1144	1209	1272	1334	1417
Fordamper vann mengde	[m <sup>3</sup> /h]	135	143	151	159	167	175	188
Fordamper trykk fall	[kPa]	55	62	68	76	84	92	26
Gjenvinning vannmengde	[m <sup>3</sup> /h]	178	188	199	210	221	232	246
Gjenvinning trykk fall	[kPa]	39	41	42	41	42	41	41
CVM mikroprosessor		3000	3000	3000	3000	3000	3000	3000
<b>Vifter</b>								
Antall vifter	[n]	18	18	18	18	18	18	24
Luft mengde	[m <sup>3</sup> /s]	93,2	92,1	90,7	89,4	88,1	86,8	124,6
<b>Kompressor</b>								
Antall kompressorer	[n]	3	3	3	3	3	3	4
Antall kretser	[n]	3	3	3	3	3	3	4
Kapasitets trinn	STD+OPT [n]	6	6	6	6	6	6	8
<b>Fylling mengder</b>								
BE/ESRAT	Kuldemedie [kg]							
BE/ESRAD	Kuldemedie [kg]							
BE/ESRAR	Kuldemedie [kg]							
	Olje [kg]	63	66	69	69	69	69	86
<b>Drifts vekt</b>								
BE/ESRAT	[kg]	9340	9760	10070	10220	10490	10640	12860
BE/ESRAD	[kg]	9660	10090	10400	10560	10830	10990	13290
BE/ESRAR	[kg]	10100	10530	10840	11010	11300	11470	13870
<b>Lyd effekt nivå</b>								
<b>Lyd trykk nivå (1)</b>	[dB(A)]							

(1) Lyd trykk nivå målt på 1 meter i åpent felt

Data refererer seg til:

**BE/ESRAT**Isvann 12/7 [°C]  
Utetemperatur 35 [°C]**BE/ESRAR**Isvann 12/7 [°C]  
Varmt vann (gjenvinning) 40/45 [°C]**BE/ESRAD**Isvann 12/7 [°C]  
Varmt vann (desuperhea) 40/45 [°C]  
Ute temperatur 35 [°C]

<b>Kapasitet</b>		<b>STØRRELSE</b>					
		<b>5704</b>	<b>6004</b>	<b>6304</b>	<b>6604</b>	<b>6904</b>	<b>7204</b>
<b>BE/ESRAT</b>							
<b>Kulde kapasitet</b>	[kW]	<b>1168</b>	<b>1213</b>	<b>1288</b>	<b>1342</b>	<b>1369</b>	<b>1422</b>
Effekt forbruk	[kW]	359	376	400	421	449	471
Totalt effekt forbruk	[kW]	409	426	450	472	499	522
Fordamper vann mengde	[m³/h]	201	209	222	231	236	245
Fordamper trykk fall	[kPa]	26	28	34	38	40	45
CVM mikroprosessor		3000	3000	3000	3000	3000	3000
<b>BE/ESRAD</b>							
<b>Kulde kapasitet</b>	[kW]	<b>1212</b>	<b>1259</b>	<b>1336</b>	<b>1392</b>	<b>1421</b>	<b>1475</b>
Effekt forbruk	[kW]	346	362	386	407	433	455
Totalt effekt forbruk	[kW]	397	413	436	457	484	505
Desuperheater varme kapasitet	[kW]	320	335	357	376	401	421
Fordamper vann mengde	[m³/h]	209	217	230	240	245	254
Fordamper trykk fall	[kPa]	28	31	37	41	43	48
Desuperheater vann mengde	[m³/h]	56	58	62	65	70	73
Desuperheater trykkfall	[kPa]	26	26	27	27	28	29
CVM mikroprosessor		3000	3000	3000	3000	3000	3000
<b>BE/ESRAR</b>							
<b>Kulde kapasitet</b>	[kW]	<b>1156</b>	<b>1203</b>	<b>1287</b>	<b>1348</b>	<b>1400</b>	<b>1461</b>
Effekt forbruk	[kW]	364	380	401	420	439	458
Gjenvinning kapasitet	[kW]	1498	1560	1664	1743	1812	1891
Fordamper vann mengde	[m³/h]	199	207	222	232	241	251
Fordamper trykk fall	[kPa]	26	28	34	39	42	47
Gjenvinning vannmengde	[m³/h]	260	271	289	303	315	329
Gjenvinning trykk fall	[kPa]	43	44	46	46	46	46
CVM mikroprosessor		3000	3000	3000	3000	3000	3000
<b>Vifter</b>							
Antall vifter	[n]	24	24	24	24	24	24
Luft mengde	[m³/s]	123,3	122,0	120,7	119,4	118,2	116,9
<b>Kompressor</b>							
Antall kompressorer	[n]	4	4	4	4	4	4
Antall kretser	[n]	4	4	4	4	4	4
Kapasitets trinn	STD+OPT [n]	8	8	8	8	8	8
<b>Fylling mengder</b>							
BE/ESRAT	Kuldemedie [kg]						
BE/ESRAD	Kuldemedie [kg]						
BE/ESRAR	Kuldemedie [kg]						
	Olje [kg]	89	92	92	92	92	92
<b>Drifts vekt</b>							
BE/ESRAT	[kg]	12640	13560	14210	14360	14560	14630
BE/ESRAD	[kg]	13070	14000	14650	14800	15010	15080
BE/ESRAR	[kg]	13660	14590	15250	15420	15640	15720
<b>Lyd effekt nivå</b>							
<b>Lyd trykk nivå (1)</b>	[dB(A)]						

(1) Lyd trykk nivå målt på 1 meter i åpent felt

Data refererer seg til:

**BE/ESRAT**Isvann 12/7 [°C]  
Utetemperatur 35 [°C]**BE/ESRAR**Isvann 12/7 [°C]  
Varmt vann (gjenvinning) 40/45 [°C]**BE/ESRAD**Isvann 12/7 [°C]  
Varmt vann (desuperhea) 40/45 [°C]  
Ute temperatur 35 [°C]

Tev	Modell 2002				Tev	Modell 2202				Tev	Modell 2402				Tev	Modell 2702				Tev	Modell 3002			
	Twc					Twc					Twc					Twc					Twc			
	inn ut	11 5	13 7	15 9		inn ut	11 5	13 7	15 9		inn ut	11 5	13 7	15 9		inn ut	11 5	13 7	15 9		inn ut	11 5	13 7	15 9
20	Pf	480	508	537	20	Pf	528	558	589	20	Pf	592	626	661	20	Pf	663	702	741	20	Pf	713	754	795
	Qev	83	87	92		Qev	91	96	101		Qev	102	108	114		Qev	114	121	128		Qev	123	130	137
	dPev	25	28	32		dPev	31	34	38		dPev	36	41	45		dPev	34	38	42		dPev	39	44	49
	Pt	566	595	625		Pt	620	652	684		Pt	697	733	770		Pt	780	820	861		Pt	837	879	922
	Pa	87	90	93		Pa	99	102	106		Pa	108	111	115		Pa	122	125	129		Pa	134	138	143
Qc	97	103	108	Qc	107	112	118	Qc	120	126	133	Qc	134	141	148	Qc	144	152	159					
dPc	35	39	43	dPc	42	47	51	dPc	50	56	62	dPc	47	52	57	dPc	54	60	66					
22	Pf	467	495	522	22	Pf	514	544	574	22	Pf	576	610	644	22	Pf	646	683	721	22	Pf	694	734	775
	Qev	80	85	90		Qev	88	94	99		Qev	99	105	111		Qev	111	118	124		Qev	119	126	133
	dPev	24	27	30		dPev	29	32	36		dPev	34	39	43		dPev	32	36	40		dPev	37	42	46
	Pt	550	579	607		Pt	604	634	665		Pt	679	713	749		Pt	760	798	837		Pt	815	856	897
	Pa	91	94	97		Pa	104	107	110		Pa	113	116	120		Pa	127	131	135		Pa	140	144	149
Qc	95	100	105	Qc	104	109	115	Qc	117	123	129	Qc	131	138	144	Qc	140	148	155					
dPc	33	37	41	dPc	40	44	49	dPc	48	53	58	dPc	45	49	54	dPc	51	57	62					
24	Pf	454	481	508	24	Pf	500	529	558	24	Pf	561	594	627	24	Pf	628	665	702	24	Pf	675	715	754
	Qev	78	83	88		Qev	86	91	96		Qev	96	102	108		Qev	108	114	121		Qev	116	123	130
	dPev	23	25	28		dPev	27	31	34		dPev	33	37	41		dPev	30	34	38		dPev	35	39	44
	Pt	535	563	590		Pt	588	617	647		Pt	661	694	728		Pt	739	777	814		Pt	793	833	872
	Pa	95	98	101		Pa	108	111	114		Pa	118	121	125		Pa	133	136	140		Pa	147	151	155
Qc	92	97	102	Qc	101	106	112	Qc	114	120	126	Qc	127	134	140	Qc	137	144	150					
dPc	31	35	38	dPc	38	42	46	dPc	45	50	55	dPc	42	47	51	dPc	49	54	59					
25	Pf	448	474	501	25	Pf	493	522	551	25	Pf	553	586	619	25	Pf	619	656	692	25	Pf	666	705	744
	Qev	77	82	86		Qev	85	90	95		Qev	95	101	107		Qev	107	113	119		Qev	115	121	128
	dPev	22	25	28		dPev	27	30	33		dPev	32	36	40		dPev	30	33	37		dPev	34	38	43
	Pt	528	555	581		Pt	580	609	638		Pt	652	685	718		Pt	729	766	803		Pt	782	821	860
	Pa	97	100	103		Pa	111	114	117		Pa	121	124	127		Pa	136	139	143		Pa	150	154	158
Qc	91	96	100	Qc	100	105	110	Qc	112	118	124	Qc	126	132	138	Qc	135	142	148					
dPc	31	34	37	dPc	37	41	45	dPc	44	49	54	dPc	41	45	50	dPc	47	52	57					
27	Pf	435	461	487	27	Pf	479	507	535	27	Pf	537	570	602	27	Pf	602	637	673	27	Pf	647	685	723
	Qev	75	79	84		Qev	82	87	92		Qev	92	98	104		Qev	104	110	116		Qev	111	118	125
	dPev	21	23	26		dPev	25	28	31		dPev	30	34	38		dPev	28	31	35		dPev	32	36	40
	Pt	513	539	565		Pt	564	592	620		Pt	634	666	698		Pt	709	744	780		Pt	761	798	836
	Pa	101	104	107		Pa	116	118	121		Pa	126	129	132		Pa	142	145	149		Pa	156	160	164
Qc	88	93	97	Qc	97	102	107	Qc	109	115	120	Qc	122	128	135	Qc	131	138	144					
dPc	29	32	35	dPc	35	38	42	dPc	42	46	51	dPc	39	43	47	dPc	45	49	54					
30	Pf	416	441	466	30	Pf	458	485	513	30	Pf	514	545	577	30	Pf	575	610	645	30	Pf	618	656	692
	Qev	72	76	80		Qev	79	84	88		Qev	88	94	99		Qev	99	105	111		Qev	106	113	119
	dPev	19	21	24		dPev	23	26	29		dPev	27	31	35		dPev	25	29	32		dPev	29	33	37
	Pt	491	516	541		Pt	540	567	593		Pt	608	638	669		Pt	679	713	747		Pt	729	765	801
	Pa	108	111	113		Pa	123	126	129		Pa	134	137	140		Pa	151	154	158		Pa	166	170	174
Qc	85	89	93	Qc	93	98	102	Qc	105	110	115	Qc	117	123	129	Qc	126	132	138					
dPc	27	29	32	dPc	32	35	39	dPc	38	42	47	dPc	36	39	43	dPc	41	45	50					

Tev	[°C]	Fordamper utgående vann
Twc	[°C]	condenser water in/out
Pf	[kW]	Kulde kapasitet
Pt	[kW]	Varme kapasitet
Pa	[kW]	Kompressorer effekt forbruk
Qev	[m³/h]	Fordamper vann mengde
dPev	[kPa]	Fordamper trykk fall
Qc	[m³/h]	Kondensator vann mengde
dPc	[kPa]	Kondensator trykk fall

Tev	Modell 3302				Tev	Modell 3602				Tev	Modell 3903				Tev	Modell 4203				Tev	Modell 4503							
	Twc					Twc					Twc					Twc					Twc							
	inn ut	11 5	13 7	15 9		inn ut	11 5	13 7	15 9		inn ut	11 5	13 7	15 9		inn ut	11 5	13 7	15 9		inn ut	11 5	13 7	15 9	inn ut	11 5	13 7	15 9
20	Pf	798	844	890	20	Pf	844	891	938	20	Pf	942	996	1051	20	Pf	989	1045	1102	20	Pf	1039	1097	1156				
	Qev	137	145	153		Qev	145	153	162		Qev	162	172	181		Qev	170	180	190		Qev	179	189	199	Qev	179	189	199
	dPev	57	63	70		dPev	63	71	78		dPev	79	88	98		dPev	87	97	108		dPev	96	107	119	dPev	96	107	119
	Pt	936	982	1029		Pt	986	1034	1081		Pt	1107	1164	1222		Pt	1160	1218	1278		Pt	1216	1277	1339	Pt	1216	1277	1339
	Pa	152	157	162		Pa	170	175	181		Pa	175	180	185		Pa	188	193	199		Pa	199	205	211	Pa	199	205	211
Qc	161	169	177	Qc	170	178	187	Qc	191	201	211	Qc	200	210	220	Qc	210	220	231	Qc	210	220	231					
dPc	78	86	94	dPc	87	95	104	dPc	109	121	133	dPc	120	132	146	dPc	132	145	160	dPc	132	145	160					
22	Pf	776	821	866	22	Pf	820	867	913	22	Pf	917	971	1024	22	Pf	963	1018	1074	22	Pf	1011	1069	1127				
	Qev	134	141	149		Qev	141	149	157		Qev	158	167	176		Qev	166	175	185		Qev	174	184	194	Qev	174	184	194
	dPev	54	60	67		dPev	60	67	74		dPev	75	84	93		dPev	82	92	103		dPev	91	102	113	dPev	91	102	113
	Pt	910	955	1000		Pt	959	1005	1051		Pt	1079	1133	1189		Pt	1130	1186	1243		Pt	1185	1244	1304	Pt	1185	1244	1304
	Pa	159	164	169		Pa	178	183	188		Pa	183	188	193		Pa	196	202	208		Pa	208	214	220	Pa	208	214	220
Qc	157	165	172	Qc	165	173	181	Qc	186	195	205	Qc	195	205	214	Qc	204	214	225	Qc	204	214	225					
dPc	74	81	89	dPc	82	90	99	dPc	104	115	126	dPc	114	125	138	dPc	125	138	152	dPc	125	138	152					
24	Pf	754	798	842	24	Pf	797	843	888	24	Pf	893	945	997	24	Pf	937	991	1045	24	Pf	984	1041	1097				
	Qev	130	137	145		Qev	137	145	153		Qev	154	163	172		Qev	161	171	180		Qev	169	179	189	Qev	169	179	189
	dPev	51	57	63		dPev	56	63	70		dPev	71	79	89		dPev	78	87	97		dPev	86	96	107	dPev	86	96	107
	Pt	885	928	972		Pt	932	977	1021		Pt	1050	1103	1157		Pt	1100	1155	1210		Pt	1154	1211	1269	Pt	1154	1211	1269
	Pa	166	171	175		Pa	185	190	196		Pa	191	196	201		Pa	205	211	216		Pa	218	224	230	Pa	218	224	230
Qc	153	160	168	Qc	161	168	176	Qc	181	190	199	Qc	190	199	209	Qc	199	209	219	Qc	199	209	219					
dPc	70	77	84	dPc	77	85	93	dPc	98	109	119	dPc	108	119	131	dPc	119	131	144	dPc	119	131	144					
25	Pf	744	787	830	25	Pf	785	830	875	25	Pf	880	932	984	25	Pf	924	978	1031	25	Pf	970	1027	1083				
	Qev	128	135	143		Qev	135	143	151		Qev	151	160	169		Qev	159	168	178		Qev	167	177	186	Qev	167	177	186
	dPev	49	55	61		dPev	55	61	68		dPev	69	77	86		dPev	76	85	95		dPev	84	94	104	dPev	84	94	104
	Pt	873	915	958		Pt	919	963	1007		Pt	1036	1088	1141		Pt	1085	1139	1193		Pt	1139	1195	1251	Pt	1139	1195	1251
	Pa	169	174	179		Pa	189	194	200		Pa	195	200	205		Pa	210	215	221		Pa	223	229	235	Pa	223	229	235
Qc	150	158	165	Qc	158	166	174	Qc	179	188	197	Qc	187	196	206	Qc	196	206	216	Qc	196	206	216					
dPc	68	75	82	dPc	75	83	90	dPc	96	106	116	dPc	105	116	127	dPc	116	127	140	dPc	116	127	140					
27	Pf	722	764	806	27	Pf	762	806	850	27	Pf	856	906	957	27	Pf	898	951	1003	27	Pf	943	998	1053				
	Qev	124	132	139		Qev	131	139	146		Qev	147	156	165		Qev	154	164	173		Qev	162	172	181	Qev	162	172	181
	dPev	46	52	58		dPev	52	58	64		dPev	65	73	82		dPev	72	80	90		dPev	79	89	99	dPev	79	89	99
	Pt	848	889	930		Pt	893	936	978		Pt	1008	1059	1109		Pt	1056	1108	1160		Pt	1108	1163	1217	Pt	1108	1163	1217
	Pa	176	181	186		Pa	197	202	207		Pa	204	209	214		Pa	219	224	230		Pa	233	238	244	Pa	233	238	244
Qc	146	153	160	Qc	154	161	169	Qc	174	182	191	Qc	182	191	200	Qc	191	200	210	Qc	191	200	210					
dPc	64	71	77	dPc	71	78	85	dPc	90	100	110	dPc	99	109	120	dPc	109	121	132	dPc	109	121	132					
30	Pf	689	730	771	30	Pf	727	770	813	30	Pf	819	868	917	30	Pf	859	910	961	30	Pf	902	956	1010				
	Qev	119	126	133		Qev	125	133	140		Qev	141	149	158		Qev	148	157	166		Qev	155	165	174	Qev	155	165	174
	dPev	42	47	53		dPev	47	53	59		dPev	60	67	75		dPev	66	74	82		dPev	72	81	91	dPev	72	81	91
	Pt	811	851	890		Pt	855	896	936		Pt	966	1015	1063		Pt	1012	1062	1112		Pt	1063	1115	1167	Pt	1063	1115	1167
	Pa	187	192	197		Pa	209	214	220		Pa	217	222	227		Pa	233	238	244		Pa	248	254	259	Pa	248	254	259
Qc	140	147	154	Qc	147	154	161	Qc	166	175	183	Qc	174	183	192	Qc	183	192	201	Qc	183	192	201					
dPc	59	65	71	dPc	65	72	78	dPc	83	92	101	dPc	91	101	110	dPc	101	111	122	dPc	101	111	122					

Tev [°C] Fordamper utgående vann  
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