



Heat recovery units with post heating coil $\leq 4500 \text{ m}^3/\text{h}$ (counterflow) type GTDHR Premium

Heat recovery unit with high efficiency 90%. The range consists of 4 sizes and 5 types for air flows from 200 up to 4500 m³/h. Each model **GTDHR** is equipped with 2 adjustable air flows

The **GTDHR Premium** is an autoregulating unit (plug & play) with a post-heating watercoil or an electrical post-heater, for temperatures till -10°C

Brand

- R-COVERY by ZEHNDER CALADAIR

Application

- Automatic ventilation and high efficiency heat recovery of air in non residential and industrial applications
- Air filtration, temperature control
- Compact monobloc ventilation unit, with plug & play and energy-saving control system (EN 15232)

Composition

- Structure with aluminium profiles, thermal bridge free
- Corners in reinforced polyamide
- Double skinned panels with high-density glass wool insulation 50 mm M0 (60 kg/m³)
- Outer layer: prelacquered steel plate (RAL 7035) with protection sheet.
- Inner layer: galvanized steel plate
- Internal elements access panel equipped with security bolt
- Corner pieces for floor or ceiling mounting
- Round connections with lip seals for models up to GTDHR 9048 and rectangular connections for GTDHR 9070
- Condensation tray and drain dia 20 mm
- Built in 100% Bypass, motorised and auto regulating
- Built in regulation with front display IP65
- FREE-COOLING and NIGHT-COOLING function
- Built in temperature sensors (4)
- Built in clock for two flow rate function
- Built in week clock and public holidays
- Safety switch
- Pressostat on inlet filter **F7**
- Pressostat on each fan
- Standard Modbus or Bacnet available

Fan

- Single inlet centrifugal fan with back draw blades, statically and dynamically balanced G6.3 according to DIN ISO 1940
- Direct driven EC motor with thermal protection, efficiency class IE3 (Premium Efficiency)
- Fan mounted on anti-vibration blocs
- Plug fan with epoxy coating, brand Ziehl Abegg (GTDHR 9010 in galvanized steel, brand EBM Papst)
- Direct driven EC current motor with electronic commutation (EC) with high efficiency, thermal protection and integrated speed control
- The EC technology has brought together high efficient EC motors with low energetic consumption for the management, control and the supervision of the

I.10

Heat recovery units

GTDHR Premium

- Non residential
- Counterflow
- R-COVERY by ZEHNDER CALADAIR
- $Q_v \leq 4500 \text{ m}^3/\text{h}$
- Horizontal
- Heat recovery unit with efficiency $\geq 75\%$



- duty point (regulation from 10 to 100%)
- Low noise level for a better acoustic comfort

Exchanger

- Static flux counter-flow exchanger made of seawater resistant aluminium, brand Klingenburg type GS
- Efficiency 90% at -10°C/90% inlet air - +20°C/50% on exhaust air (EN308)

Filter

- Filters are placed directly in front of the components for optimal protection
- Mounted on sliding rails with lip seals to ensure efficient air tightness
- Basic **GTDHR** type as one **F7** - ISO 16890 ePM1 – 55% (inlet air) and one **G4** - ISO 16890 Coarse 65% (exhaust air) filters, thickness 100 mm
- F7** high efficiency filter: 10x higher filtration surface than a gravimetric filter and life span 2.5x longer
- Filter class **M5** - ePM 10 50% - ISO 16890

Versions

- GTDHR 90xx-PBC**: unit equipped with an integrated post-heating watercoil
- GTDHR 90xx-PBE**: unit equipped with an integrated electrical post-heater

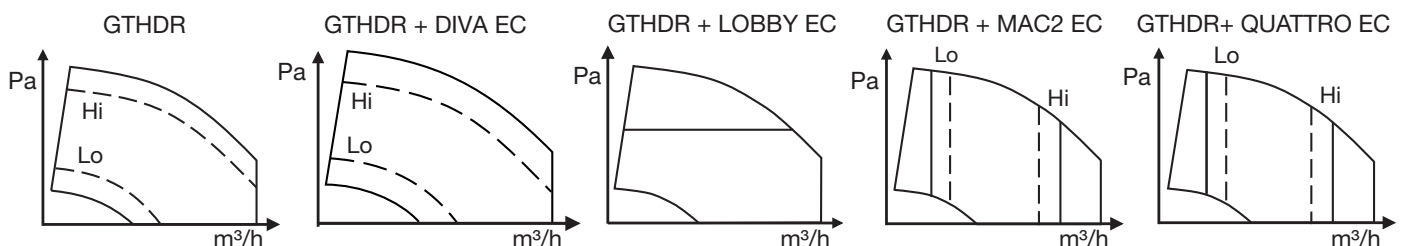
Options

- GTDHR DIVA®EC***: Proportional modulating flow (between a set min. And max. Flow) of each fan based on a built-in CO2 measurement.

The CO2 content (number of ppm) is adjustable in the control.

- GTDHR LOBBY®EC***: Constant pressure ventilation for each fan f.e. when used together with VAV controllers
- GTDHR MAC2®EC***: Two adjustable constant airflows for each fan. (except for the GTDHR 9008)
- GTDHR QUATTRO®EC***: Proportional ventilation between two constant air duties (high and low speed) for each fan (except for the GTDHR 9008) - with built-in CO₂ sensor in the exhaust side of the unit

* this regulation will be integrated in the unit. It is not possible to add this regulation afterwards



Certification

- Efficiency of the heat exchanger of more than 90% (EN308), in accordance with RT2012 and the directive ErP 2009/125/EC
- In conformity with EUROVENT classifications according to EN1886 and EN13053
- Standard construction with double skinned panels of 50 mm
- Mechanical strength class: D1
- Air tightness: Class L1
- Conductivity: T3
- Thermal bridge: TB2
- filter leakage class: F9
- Exterior panel made of steel lacquered 10/10
 - Finish RAL7035 - 25µm, gloss 40%, film 80µm
 - Primer RAL7032 - 5µm
- Inner panel made of galvanized steel 10/10^e
- Insulation: high density 50 mm mineral wool, 60kg/m³, class M0
- Structure with aluminium profiles cold bridge free

Accessories

- Airtight control valve **AKH**
- Motorizable opposite blade damper, type **MX-RM**
- Galvanized rain canopy, type **MX-AGC** with bird screen
- Flexible sleeves, type **MTS** diameter 250 to 630mm
- Controllers for GTDHR/V up to serial number 225190:**
 - E3-DSP** controller mounted on the unit as standard
 - Remote controller available as an option
 - E3-DSP** remote display (up to 100 metres, to be provided by the installer) with 3-metre **EDSP-K3** or 10-metre **EDSP-K10** Belden cable
 - ED Touch** digital controller for units type GTDHR/V, Hexamotion(-S), Freetime(-S), Silvertop, Neotime (First and Premium)

- Cable 4-wire 24 Vdc (Corrigo C+/GO) of 10 rmt included
- **Controllers for GTDHR/V from serial number 225191:**
 - **Easy 5.0** controller mounted on the unit as standard
 - Master touch screen controller
 - **EDT2** remote controller available as an option
 - Touch screen controller for end user

Other available products

- GTDHR First
- GTDHR Infinite

Order example

GTDHR 9023 PBCL-L

Explanation

GTDHR = type heat recovery unit

9023 = size **6**

P = Premium

BC = with water heater

BE = with electrical heater

L = LOBBY EC

D = DIVA EC

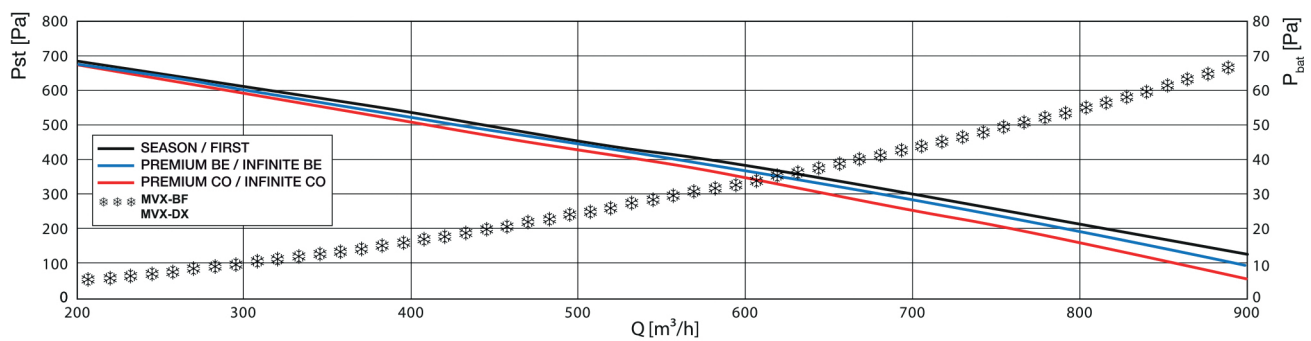
M = MAC2 EC

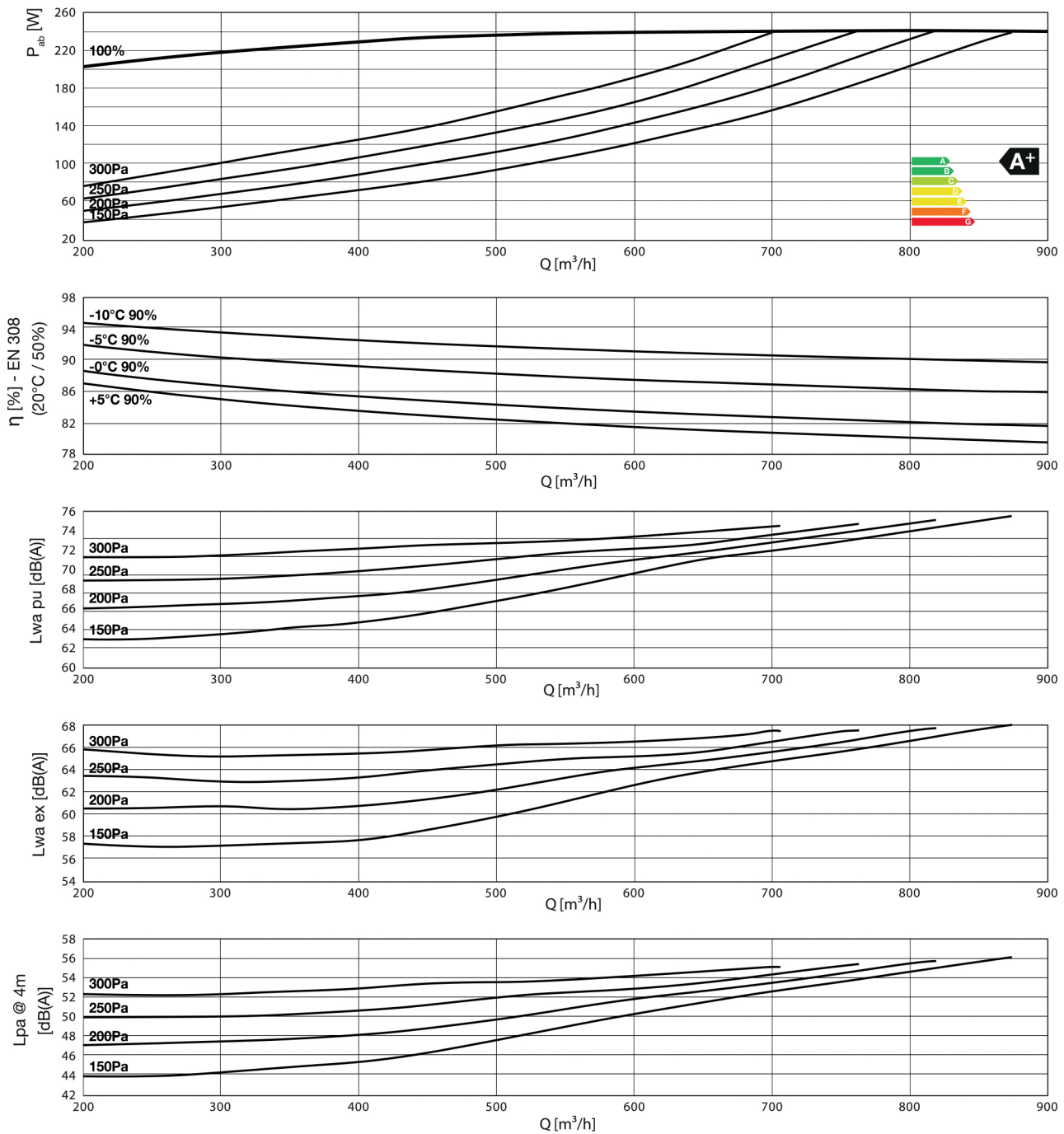
Q = QUATRO EC

L = configuration (configuration P only available on demand)

Selection curves

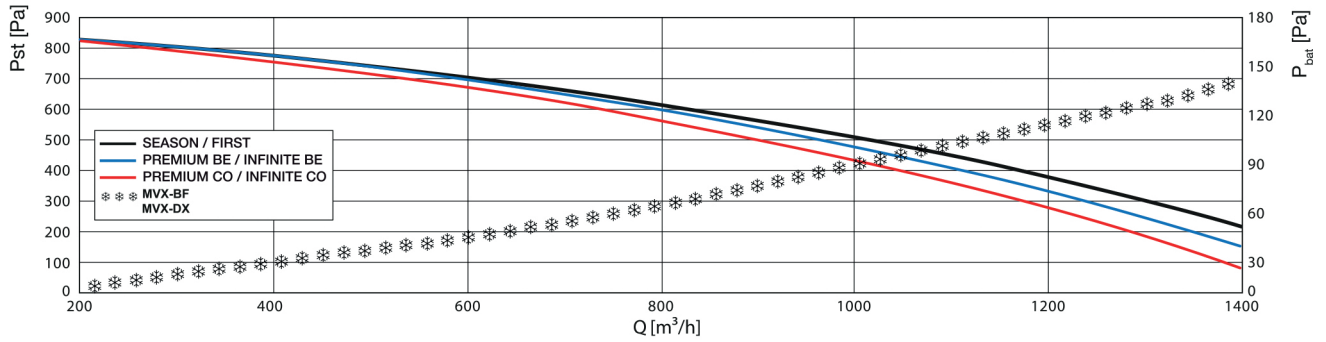
GTDHR(V) 9008

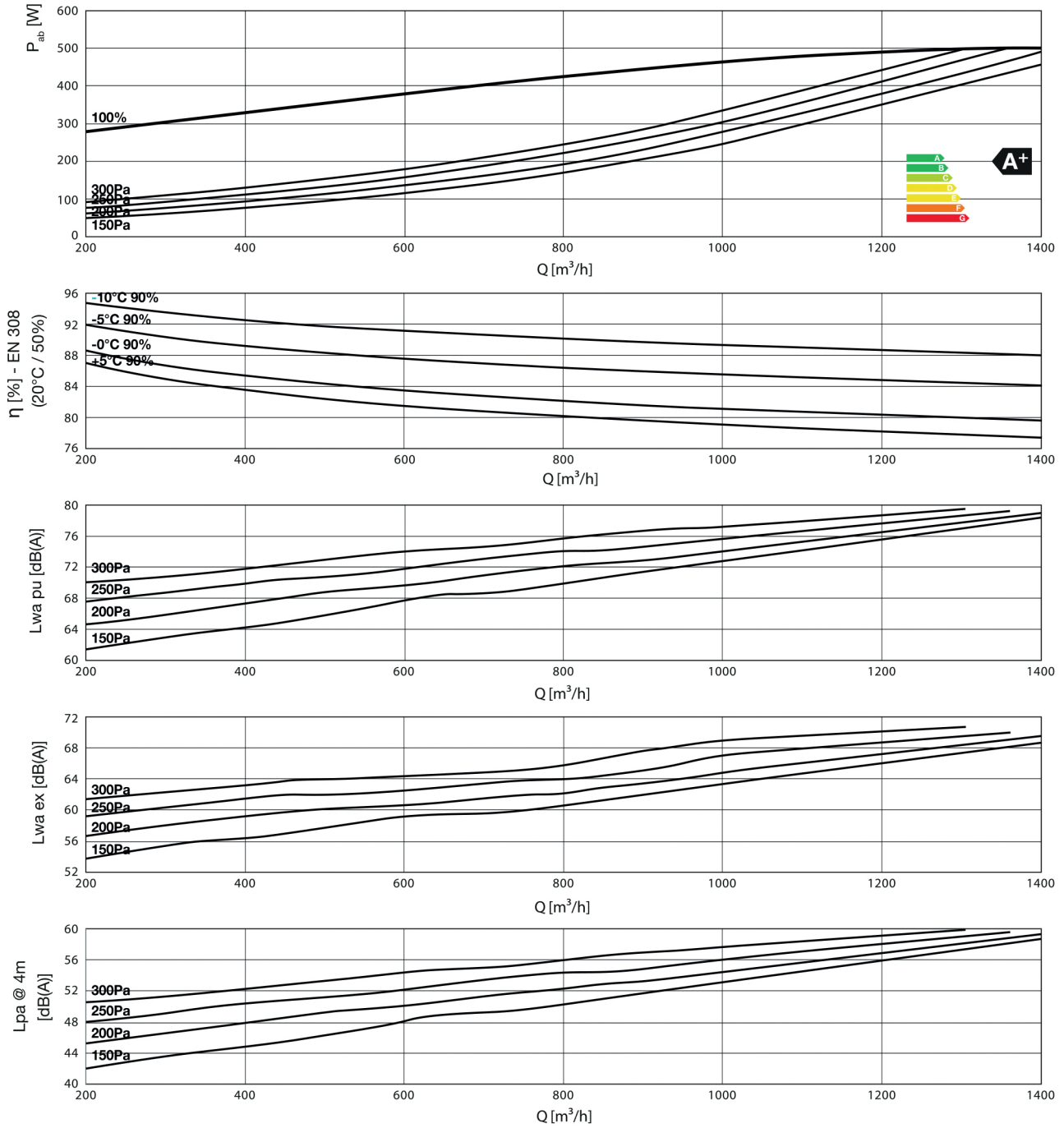




Selection curves

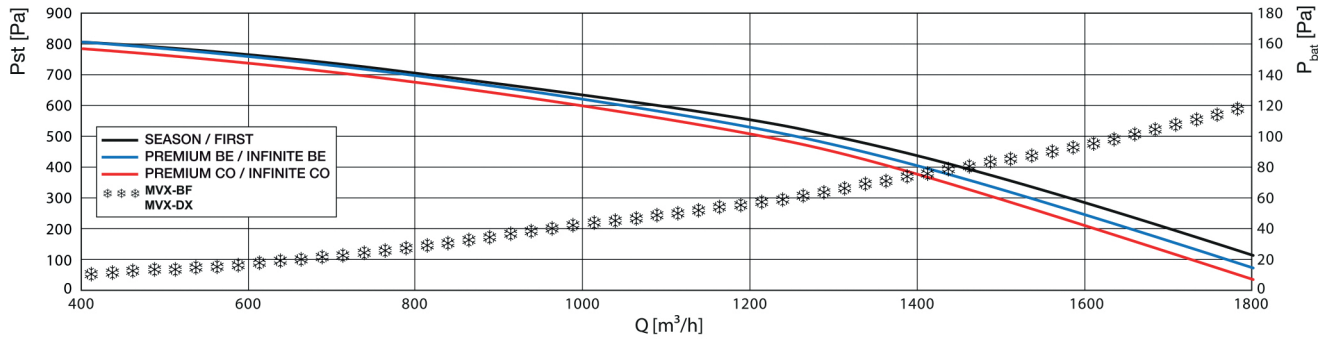
GTDHR(V) 9010

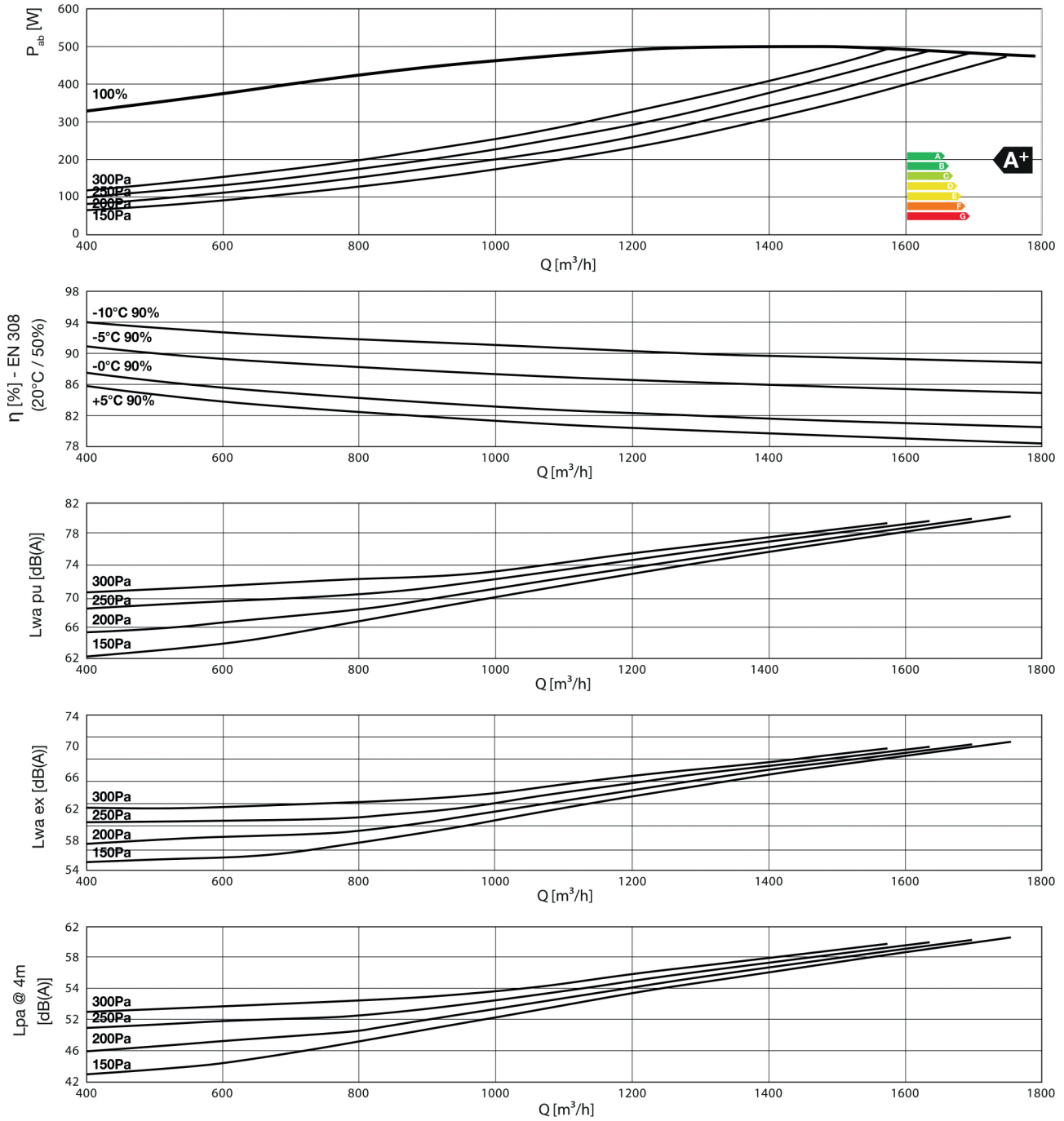




Selection curves

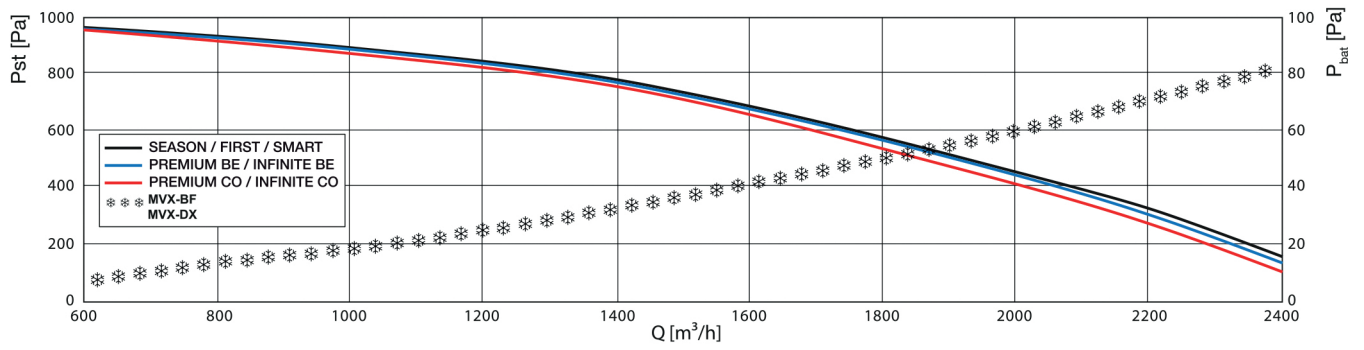
GTDHR(V) 9016

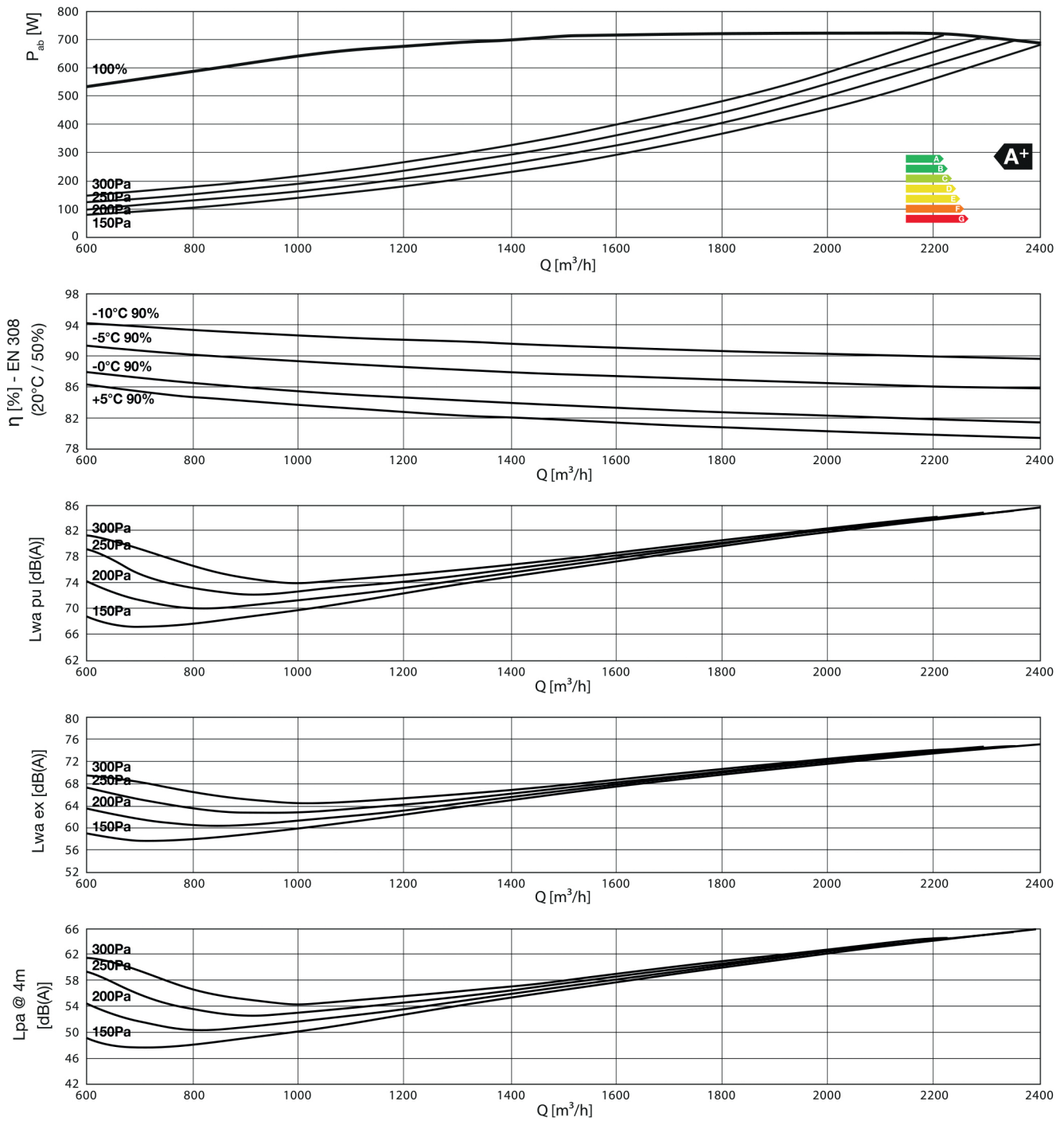




Selection curves

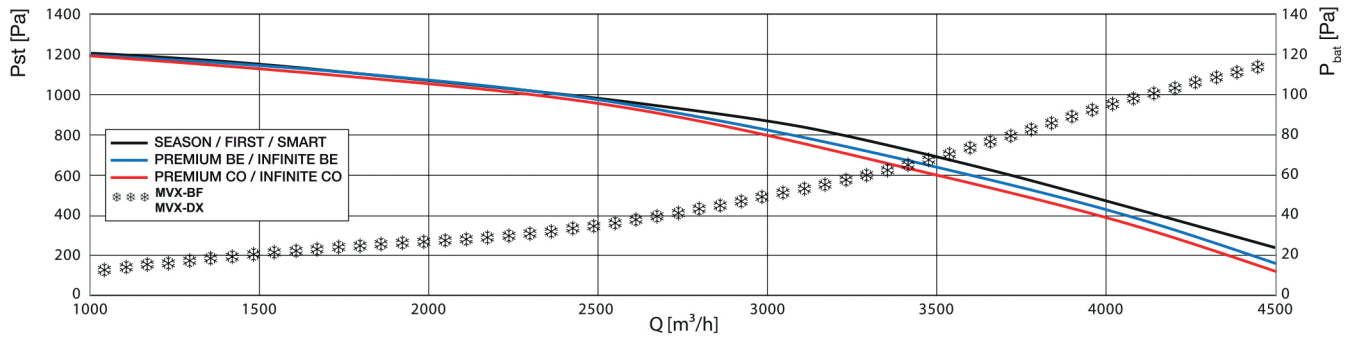
GTDHR(V) 9023

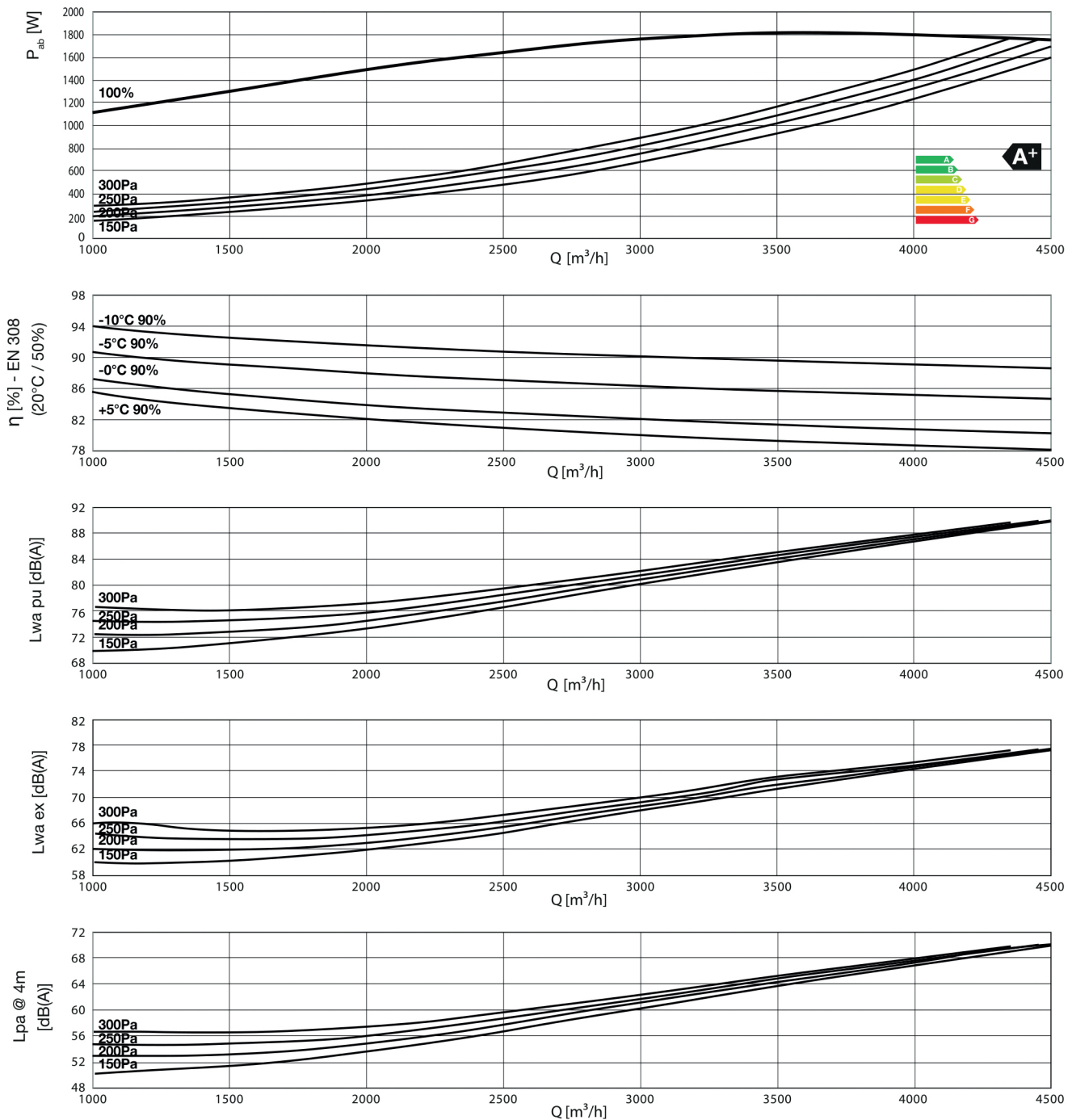




Selection curves

GTDHR(V) 9035





- Pst [Pa] = Static pressure
- P_{bat} [Pa] = Pressure loss batteries
- BE = Electrical battery
- BC = Hotwater battery
- BF = Chilled water battery
- DX = Direct expansion
- P_{ab} [W] = Absorbed power per fan
- η [%] - EN 308 (20°C / 50%) = Efficiency
- Lwa pu = Sound power level in duct motor side
- Lwa ex = Sound power level in duct filter side
- Lpa @ 4m = Sound pressure level in free field with inlets and outlets connected

Technical data										
		Q _{max} [m ³ /h] @ 150Pa	U [V]	P _F [W]	P _{EPH} [kW]	I _{max} [A]	t _m [°C]	t _o [°C]	IP	L _{pa} @ 4m [dB(A)]
GTDHR Premium BC 9008		820*	1 x 230	2 x 220	-	3.40	60	-20	IP44	37
GTDHR Premium BC 9010		1320*	1 x 230	2 x 480	-	4.30	60	-20	IP54	40
GTDHR Premium BC 9016		1660*	1 x 230	2 x 480	-	4.30	60	-20	IP54	42
GTDHR Premium BC 9023		2330*	1 x 230	2 x 700	-	6.00	40	-20	IP54	47
GTDHR Premium BC 9035		4430*	3 x 400	2 x 2500	-	7.70	50	-20	IP54	51
GTDHR Premium BE 9008	25	850*	1 x 230	2 x 220	2.50	14.30	60	-20	IP44	38
GTDHR Premium BE 9010	25	1390*	1 x 230	2 x 480	2.50	15.20	60	-20	IP54	41
GTDHR Premium BE 9016	37	1710*	1 x 230	2 x 480	3.75	20.60	60	-20	IP54	42
	52	1710*	3 x 400	2 x 480	5.25	11.90	60	-20	IP54	42
GTDHR Premium BE 9023	37	2350*	1 x 230	2 x 700	3.75	22.30	40	-20	IP54	47
	67	2350*	3 x 400	2 x 700	6.75	15.70	40	-20	IP54	47
GTDHR Premium BE 9035	67	4500*	3 x 400	2 x 2500	6.75	17.40	50	-20	IP54	52
	137	4500*	3 x 400	2 x 2500	13.50	27.20	50	-20	IP54	52

*Fancurve is adjustable by means of the integrated regulation.

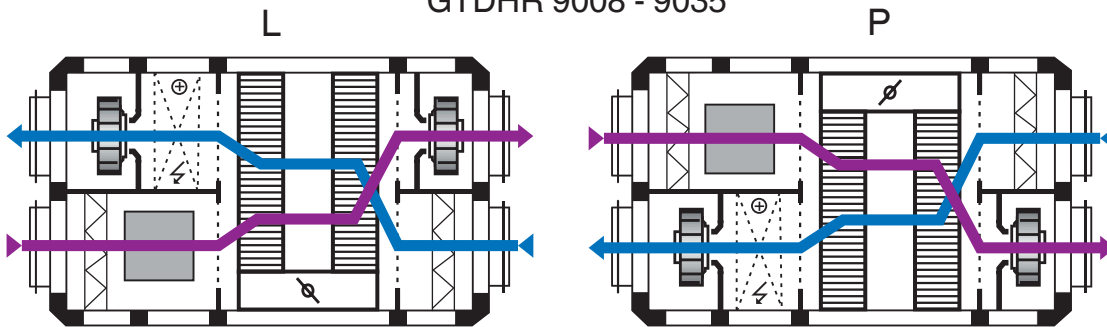
- P_F = Fan power
- P_{EPH} = Power electrical post-heater
- t_m = Maximum air temperature
- t_o = Minimum operating temperature
- L_{pa} @ 4m = Sound pressure level at 4 m

Technical data water coil									
	Twr [°C/°C]	Ta,i [°C]	*	Qv,a [m³/h]					
				300	400	500	600	700	800
GTDHR 9008 PBC	80/60	11	P [kW]/ Ta,o [°C]	4.1 / 52	5.1 / 49	5.9 / 46	6.7 / 44	7.4 / 43	8.1 / 41
			Qv,w [l/h] / dp,w [kPa]	180 / 6	220 / 6	260 / 5	290 / 6	330 / 7	350 / 8
		15	P [kW]/ Ta,o [°C]	3.8 / 53	4.7 / 50	5.5 / 48	6.6 / 42 / 46	6.9 / 44	7.5 / 43
			Qv,w [l/h] / dp,w [kPa]	170 / 5	210 / 5	240 / 7	270 / 5	300 / 6	330 / 7
	90/70	11	P [kW]/ Ta,o [°C]	4.9 / 60	6.0 / 56	7.1 / 53	8.0 / 51	8.8 / 49	9.6 / 47
			Qv,w [l/h] / dp,w [kPa]	220 / 5	270 / 5	310 / 6	350 / 8	390 / 9	420 / 11
		15	P [kW]/ Ta,o [°C]	4.6 / 61	5.7 / 57	6.6 / 55	7.5 / 52	8.3 / 50	9.0 / 49
			Qv,w [l/h] / dp,w [kPa]	200 / 5	250 / 4	290 / 5	330 / 7	370 / 8	400 / 10
	45/40	11	P [kW]/ Ta,o [°C]	2.1 / 32	2.6 / 31	3.1 / 29	3.5 / 28	3.8 / 27	4.2 / 27
			Qv,w [l/h] / dp,w [kPa]	364 / 5	448 / 7	6532 / 10	302 / 12	672 / 13	728 / 15
		15	P [kW]/ Ta,o [°C]	1.8 / 33	2.3 / 32	2.6 / 31	3.0 / 30	3.3 / 29	3.6 / 28
			Qv,w [l/h] / dp,w [kPa]	322 / 6	392 / 6	462 / 8	518 / 9	574 / 11	630 / 13
60/50	11	P [kW]/ Ta,o [°C]	3.1 / 42	3.8 / 40	4.5 / 38	5.1 / 36	5.6 / 35	6.6 / 34	
		Qv,w [l/h] / dp,w [kPa]	270 / 5	330 / 8	390 / 10	440 / 13	490 / 13	560 / 15	
	15	P [kW]/ Ta,o [°C]	2.8 / 43	3.5 / 41	4.0 / 39	4.6 / 38	5.1 / 37	5.5 / 36	
		Qv,w [l/h] / dp,w [kPa]	240 / 7	300 / 6	350 / 8	400 / 10	440 / 13	480 / 12	
GTDHR 9010 PBC	80/60	11	P [kW]/ Ta,o [°C]	5.1 / 49	6.7 / 44	8.1 / 41	9.3 / 39	10.3 / 37	11.3 / 35
			Qv,w [l/h] / dp,w [kPa]	220 / 6	290 / 6	350 / 8	410 / 10	450 / 13	490 / 12
		15	P [kW]/ Ta,o [°C]	4.7 / 50	6.2 / 46	7.5 / 43	8.6 / 41	9.5 / 39	10.4 / 37
			Qv,w [l/h] / dp,w [kPa]	210 / 5	270 / 5	330 / 7	380 / 9	420 / 11	460 / 13
	90/70	11	P [kW]/ Ta,o [°C]	6.0 / 56	8.0 / 51	9.6 / 47	11.1 / 44	12.4 / 42	13.5 / 40
			Qv,w [l/h] / dp,w [kPa]	270 / 5	350 / 8	420 / 11	490 / 12	540 / 14	590 / 17
		15	P [kW]/ Ta,o [°C]	5.7 / 57	7.5 / 52	9.0 / 49	10.4 / 46	11.6 / 44	12.6 / 42
			Qv,w [l/h] / dp,w [kPa]	250 / 4	330 / 7	400 / 10	460 / 12	510 / 13	560 / 15
	45/40	11	P [kW]/ Ta,o [°C]	2.6 / 31	3.5 / 28	4.2 / 27	4.8 / 25	5.4 / 24	5.9 / 24
			Qv,w [l/h] / dp,w [kPa]	448 / 7	602 / 12	728 / 15	840 / 19	938 / 23	1022 / 27
		15	P [kW]/ Ta,o [°C]	2.3 / 32	3.0 / 30	3.6 / 28	4.1 / 27	4.6 / 26	5.0 / 26
			Qv,w [l/h] / dp,w [kPa]	392 / 6	518 / 9	630 / 13	714 / 14	798 / 18	886 / 21
60/50	11	P [kW]/ Ta,o [°C]	3.8 / 40	5.1 / 36	6.1 / 34	7.0 / 32	7.9 / 31	8.6 / 29	
		Qv,w [l/h] / dp,w [kPa]	330 / 8	440 / 13	540 / 15	620 / 19	690 / 24	750 / 28	
	15	P [kW]/ Ta,o [°C]	3.5 / 41	4.6 / 38	5.5 / 36	6.4 / 34	7.1 / 33	7.8 / 32	
		Qv,w [l/h] / dp,w [kPa]	300 / 6	400 / 10	480 / 12	560 / 16	620 / 20	680 / 23	
GTDHR 9016 PBC	80/60	11	P [kW]/ Ta,o [°C]	8.2 / 52	10.9 / 47	13.2 / 44	15.2 / 41	17.0 / 39	/
			Qv,w [l/h] / dp,w [kPa]	360 / 5	480 / 6	580 / 9	670 / 12	750 / 15	/
		15	P [kW]/ Ta,o [°C]	7.6 / 53	10.1 / 48	12.2 / 45	14.1 / 43	15.8 / 41	/
			Qv,w [l/h] / dp,w [kPa]	330 / 5	440 / 8	540 / 8	620 / 10	690 / 13	/
	90/70	11	P [kW]/ Ta,o [°C]	9.6 / 59	12.9 / 54	15.7 / 50	18.1 / 47	20.3 / 45	/
			Qv,w [l/h] / dp,w [kPa]	430 / 7	570 / 9	690 / 12	800 / 14	890 / 17	/
		15	P [kW]/ Ta,o [°C]	9.1 / 60	12.1 / 55	14.7 / 52	17.0 / 49	19.0 / 47	/
			Qv,w [l/h] / dp,w [kPa]	400 / 6	530 / 8	650 / 11	750 / 14	840 / 16	/
	45/40	11	P [kW]/ Ta,o [°C]	4.2 / 32	5.6 / 30	6.8 / 28	7.9 / 27	8.8 / 26	/
			Qv,w [l/h] / dp,w [kPa]	520 / 8	700 / 14	850 / 18	980 / 23	1100 / 28	/
		15	P [kW]/ Ta,o [°C]	3.6 / 33	4.8 / 31	5.9 / 30	6.8 / 29	7.6 / 28	/
			Qv,w [l/h] / dp,w [kPa]	450 / 8	600 / 11	730 / 15	840 / 17	940 / 21	/
60/50	11	P [kW]/ Ta,o [°C]	6.1 / 41	8.2 / 38	10.0 / 36	11.5 / 34	12.9 / 32	/	
		Qv,w [l/h] / dp,w [kPa]	530 / 8	710 / 14	870 / 18	1010 / 23	1130 / 27	/	
	15	P [kW]/ Ta,o [°C]	5.5 / 43	7.4 / 40	9.0 / 37	10.4 / 36	11.7 / 34	/	
		Qv,w [l/h] / dp,w [kPa]	480 / 7	650 / 12	790 / 15	910 / 19	1020 / 24	/	
GTDHR 9023 PBC	80/60	11	P [kW]/ Ta,o [°C]	11.2 / 53	15.1 / 49	18.3 / 45	21.2 / 43	23.8 / 41	/
			Qv,w [l/h] / dp,w [kPa]	490 / 3	660 / 6	810 / 6	930 / 8	1050 / 10	/
		15	P [kW]/ Ta,o [°C]	10.4 / 54	14.0 / 50	17.0 / 47	19.7 / 44	22.1 / 43	/
			Qv,w [l/h] / dp,w [kPa]	460 / 5	610 / 5	750 / 7	860 / 7	970 / 9	/
	90/70	11	P [kW]/ Ta,o [°C]	13.3 / 61	17.9 / 56	21.8 / 52	25.3 / 49	28.5 / 46	/
			Qv,w [l/h] / dp,w [kPa]	590 / 4	790 / 6	960 / 8	1110 / 11	1250 / 12	/
		15	P [kW]/ Ta,o [°C]	12.5 / 62	16.8 / 57	20.5 / 53	23.8 / 51	26.7 / 48	/
			Qv,w [l/h] / dp,w [kPa]	550 / 4	740 / 7	900 / 7	1050 / 10	1180 / 11	/
	45/40	11	P [kW]/ Ta,o [°C]	5.8 / 33	7.8 / 30	9.5 / 29	11.0 / 27	12.4 / 26	/
			Qv,w [l/h] / dp,w [kPa]	1008 / 7	1344 / 9	1652 / 12	1918 / 15	2142 / 19	/
		15	P [kW]/ Ta,o [°C]	5.0 / 34	6.7 / 32	8.2 / 30	9.5 / 29	10.6 / 28	/
			Qv,w [l/h] / dp,w [kPa]	868 / 5	1162 / 7	1414 / 10	1638 / 12	1848 / 15	/
60/50	11	P [kW]/ Ta,o [°C]	8.4 / 42	11.3 / 39	13.9 / 37	16.1 / 35	18.1 / 34	/	
		Qv,w [l/h] / dp,w [kPa]	740 / 7	990 / 9	1210 / 12	1400 / 16	1580 / 17	/	
	15	P [kW]/ Ta,o [°C]	7.6 / 44	10.3 / 41	12.5 / 38	14.5 / 37	16.3 / 35	/	
		Qv,w [l/h] / dp,w [kPa]	670 / 6	900 / 8	1090 / 11	1270 / 13	1430 / 16	/	
GTDHR 9035 PBC	80/60	11	P [kW]/ Ta,o [°C]	19.5 / 50	24.7 / 46	29.2 / 43	33.2 / 41	36.8 / 39	40.1 / 38
			Qv,w [l/h] / dp,w [kPa]	860 / 4	1080 / 6	1280 / 6	1460 / 8	1620 / 7	1760 / 8
		15	P [kW]/ Ta,o [°C]	18.1 / 51	22.9 / 48	27.0 / 45	30.7 / 43	34.0 / 41	37.1 / 40
			Qv,w [l/h] / dp,w [kPa]	800 / 3	1000 / 5	1190 / 5	1350 / 7	1490 / 8	1630 / 7
	90/70	11	P [kW]/ Ta,o [°C]	23.2 / 57	29.4 / 53	34.8 / 50	39.6 / 47	44.0 / 45	48.0 / 43
			Qv,w [l/h] / dp,w [kPa]	1020 / 5	1290 / 6	1530 / 8	1750 / 8	1940 / 10	2110 / 11
		15	P [kW]/ Ta,o [°C]	21.8 / 58	27.6 / 54	32.6 / 51	37.2 / 49	41.2 / 47	45.0 / 45
			Qv,w [l/h] / dp,w [kPa]	960 / 5	1220 / 5	1440 / 7	1640 / 7	1820 / 9	1980 / 10
	45/40	11	P [kW]/ Ta,o [°C]	10.1 / 31	12.8 / 29	15.1 / 28	17.2 / 27	19.1 / 26	20.8 / 25
			Qv,w [l/h] / dp,w [kPa]	1750 / 6	2212 / 7	2618 / 10	2982 / 13	3318 / 16	3626 / 18
		15	P [kW]/ Ta,o [°C]	8.7 / 32	11.0 / 31	13.0 / 29	14.8 / 28	16.4 / 28	17.9 / 27
			Qv,w [l/h] / dp,w [kPa]	1498 / 6	1904 / 7	2254 / 8	2562 / 10	2842 / 12	3108 / 14
60/50	11	P [kW]/ Ta,o [°C]	14.7 / 40	18.6 / 38	22.1 / 35	25.2 / 34	28.0 / 32	30.5 / 31	
		Qv,w [l/h] / dp,w [kPa]	1280 / 6	1630 / 8	1930 / 10	2200 / 13	2440 / 16	2670 / 17	
	15	P [kW]/ Ta,o [°C]	13.3 / 41	16.8 / 39	20.0 / 37	22.7 / 36	25.2 / 34	27.5 / 33	
		Qv,w [l/h] / dp,w [kPa]	1160 / 5	1470 / 8	1740 / 9	1990 / 11	2210 / 13	2410 / 15	

- Twr = Temperature water regime
- Ta,i = Temperature air before the coil
- *P = Power of the coil
- *Ta, o = Temperature after the coil
- *Qv,w = Water flow
- *dp,w = Water pressure loss

Horizontal configurations - side by side flow - top view

GTDHR 9008 - 9035

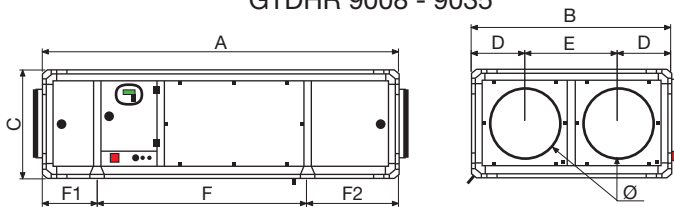


Blue arrow: Fresh air
Purple arrow: Return air

Configuration P only available on demand

Product drawing horizontal configuration

GTDHR 9008 - 9035



	Dimensions										
	Ø [mm]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	F1 [mm]	F2 [mm]	T [Ø]**	[kg]
GTDHR Premium 9008	315	2010	915	505	255	405	1097	362	517	1/2	218
GTDHR Premium 9010	315	2010	915	505	255	405	1097	362	517	1/2	223
GTDHR Premium 9016	400	2230	1115	605	305	505	1261	362	607	1/2	300
GTDHR Premium 9023	450	2345	1315	705	355	605	1376	362	607	3/4	402
GTDHR Premium 9035	500	2625	1515	805	405	705	1520	450	655	3/4	560

- The GTDHR 9048 and 9070 only exist in vertical configuration