



VariPRO™
Designed For Users



THE NEW DIMENSION OF AIR CONDITIONING



CHILLER CEILING PRODUCTS

A PLEASANT INDOOR CLIMATE; ENERGY EFFICIENCY
AND WITH LOW SOUND LEVEL

Chiller Oy is one of the leading system manufacturers of energy solutions in Europe. Our units are always based on our clients' specific requirements. Together we find the best solutions for each case. As both unit designer and manufacturer, we offer an extensive range of solutions.

The company's head offices and factory are located in Finland, 25 km north of Helsinki. Our premises have a surface area of more than 5,000 m². In 2014, Chiller employed over 100 staff, in ten different locations.

We have over 20 years of experience in the HEVAC industry. We have delivered more than 3,000 free cooling units with 200 kW capacities. Chiller is the most notable manufacturer of these solutions in the world.

Our ceiling product group consists of the BOX Vari™, GRAND Vari™, STUDIO Vari™, SMART Vari™ and GIANT Vari™ air conditioning units. The best energy efficiency is ensured by the Vari PRO™ control unit.

Cold water stations, water coolers, heat pumps and precision air conditioning units also constitute our core products. In the service group, we offer an Internet-based monitoring, quick-response end-to-end service called Service Next™.



VARI™ PRO -ROOM CONTROLLER

DESIGNED FOR THE USERS

Vari PRO™ room controller provides an amazing user experience. It gives direct feedback on energy consumption and service requirements for the user. More detailed data is available to Building Management Systems for energy economy reporting.

The new Vari PRO™ controller will change the way of setting desired indoor climate and receiving feedback from the room controller.

The Vari PRO™ controller function modes are designed to meet three different user groups: Consumer mode for normal use, Energy saving mode for checking energy consumption and BMS reporting, and Maintenance mode for checking maintenance needs. All three modes have a user-friendly interface.

BENEFITS FOR VARI PRO™ USERS:

- ▶ Quick and easy installation (Start-Up wizard/Self configuration).
 - ▶ Shows power consumption for each unit.
 - ▶ Indicates maintenance requirements.
 - ▶ Together with Chiller's fan coils it provides minimal energy consumption, low sound level and pleasant climate for users.
- ▶ Read more: varipro.chiller.fi



GRAND VARI™ -MINI AIR HANDLING UNITS

A NEW CONCEPT FOR THE AIR-CONDITIONING IN HOTEL ROOMS, OFFICES AS WELL AS RESIDENTIAL BUILDINGS

Grand Vari™ Mini AHU can be integrated into the room without any visible technology. It provides comfort and is easy to use. The new EC motor and technical solutions constitute a unique combination on the market.

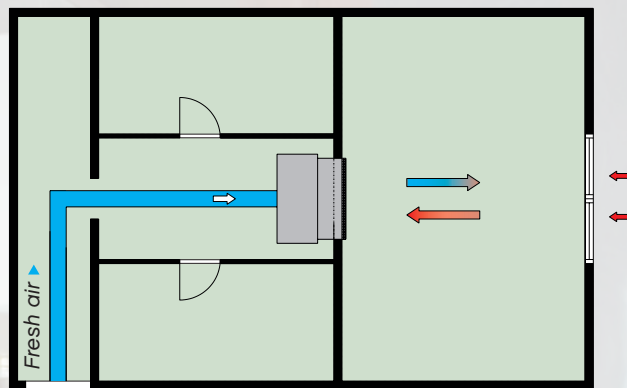
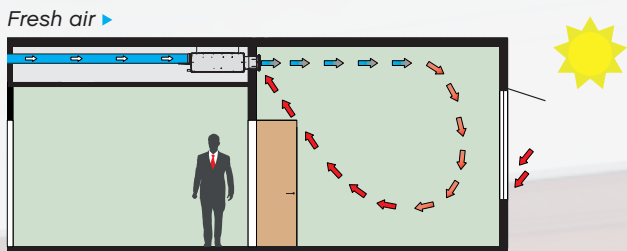
Were you to switch on the GRAND Vari™ fan coil or an LED lamp, you would not notice any difference in energy consumption. It gives 30% energy savings in system level.

EXCELLENT ENERGY EFFICIENCY

In a normal hotel room, the GRAND Vari™ consumes as much energy as one LED lamp. The EC motor allows a stepless adjustment of the fan from 0 to 100%. The annual energy consumption is only a fraction of any previous solution.

The EC grille has two parts for intake and return air supply. The EC grille has two parts for intake and outtake air supply with fresh air. The non-mixed airflows from the room allow a larger logarithmic temperature difference between air and water compared to a conventional solution. The new EC grille allows draught-free air supply, as air is forced along the ceiling.





▲ CHILLER SOLUTION

BENEFITS OF GRAND VARI™

EC grille

- ▶ Draught-free cooling.
- ▶ Excellent logarithmic temperature difference between air and water.
- ▶ Fresh air is connected in the rear side of the unit.

EC fan

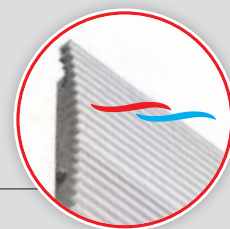
- ▶ Adjustment of fan and valve 0–100%.
- ▶ Fan section with ball bearings.

Operation and maintenance

- ▶ The filter is cleaned by vacuum cleaner through the raised grille.
- ▶ Remove of the condense water either with a pump or free drainage.
- ▶ Factory-tested for commissioning.
- ▶ Five-row coil is an big advantage in the district cooling.

Manual balancing is history

- ▶ Vari PRO™ and AB-QM.
- ▶ Water flow setting with new Vari PRO™ controller.
- ▶ Automatic balancing.
- ▶ No overflows.



INSTALLATION · OPERATION · MAINTENANCE



Use Mini AHU instead of ducted fancoils! High efficiency and low sound level allows to use setpoint changes effectively in water chiller.

HIGH-QUALITY MINI AHU

GRAND Vari™ air handling units are produced from high-quality materials. Because of continuous development and careful testing, the units are very energy efficient and produce a low sound level. Carbon emissions and life cycle costs are only a fraction compared to any other product on the market. The units require only a little of service. They can be delivered with valves from the factory.

VARI PRO™ REVOLUTION

- ▶ User-friendly and clear functions.
- ▶ Energy use display.
- ▶ Maintenance and fault notifications.
- ▶ Low operating noise and energy-efficient.
- ▶ Localised information output and via building automation systems.
- ▶ Quick to install.

▶ Read more: varipro.chiller.fi





BOX VARI™ -CASSETTE FAN COILS

COMFORT FOR LARGE AREAS

*The **BOX Vari™** cassette fan coil is the first new generation cassette fan coil for false ceiling structures. The product is protected by several international patents.*

New EC fan technology provides stepless fan speed control. Units are controlled by Vari PRO™ wall controllers.

EXCELLENT ENERGY EFFICIENCY

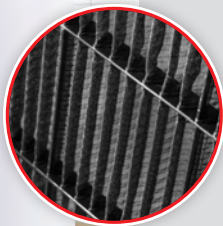
The BOX Vari™ consumes less energy than a LED lamp; only 4 watts in a living or office room.

The filter in the BOX Vari™ cassette fan coil is four times larger than in the previous model. Regular cleaning is easy.

DRAUGHT-FREE AND COMFORTABLE INDOOR AIR

The new EC grille allows a draught free and comfortable indoor climate. The power of the EC motor can be adjusted from 0-100%.





BENEFITS OF BOX Vari™

EC grille

- ▶ Significant energy savings.
- ▶ Tested in an independent laboratory.
- ▶ Comfortable indoor climate, no sense of draught.

EC fan

- ▶ Controlled by voltage signals.
- ▶ Dedicated electronics for optimization of fan and valve operation.

The unit's coil

- ▶ 3-row deep (66 mm) coil allows the use of district cooling water.
- ▶ Water side circuits according to the customer needs.

Operation and maintenance

- ▶ Large filter surface enables low service costs.
- ▶ With a condensation pump or free drainage.
- ▶ Modbus available as an option.

Manual balancing is history

- ▶ Vari PRO™ and AB-QM.
- ▶ Water flow setting with new Vari PRO™ controller.
- ▶ Automatic balancing.
- ▶ No overflows.

INSTALLATION · OPERATION · MAINTENANCE



INSTALLATION, OPERATION AND MAINTENANCE

The BOX Vari™ is delivered in an ecological cardboard package that serves as an installation shield. The unit is mounted on the ceiling surface from the corners of the bottom plate, after which the package is removed.

Maintenance of the unit is very easy. Removal of condensation water is done with free drainage or a condensation pump.

VARI PRO™ REVOLUTION

- ▶ User-friendly and clear functions.
- ▶ Energy use display.
- ▶ Maintenance and fault notifications.
- ▶ Low operating noise and energy-efficient.
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- ▶ Quick to install.

▶ Read more: varipro.chiller.fi



VariPRO™



STUDIO VARI™ -FLAT BLOWER UNITS

NEW EC TECHNOLOGY

STUDIO Vari™ flat blower units are equipped with modern EC technology and 6-row coil. This solution is excellent for big temperature differences in district cooling.

COMPLETE DELIVERY

STUDIO Vari™ is a new fan coil equipped with high quality EC motor. Energy consumption is very low thanks to the modern fan and coil technologies.

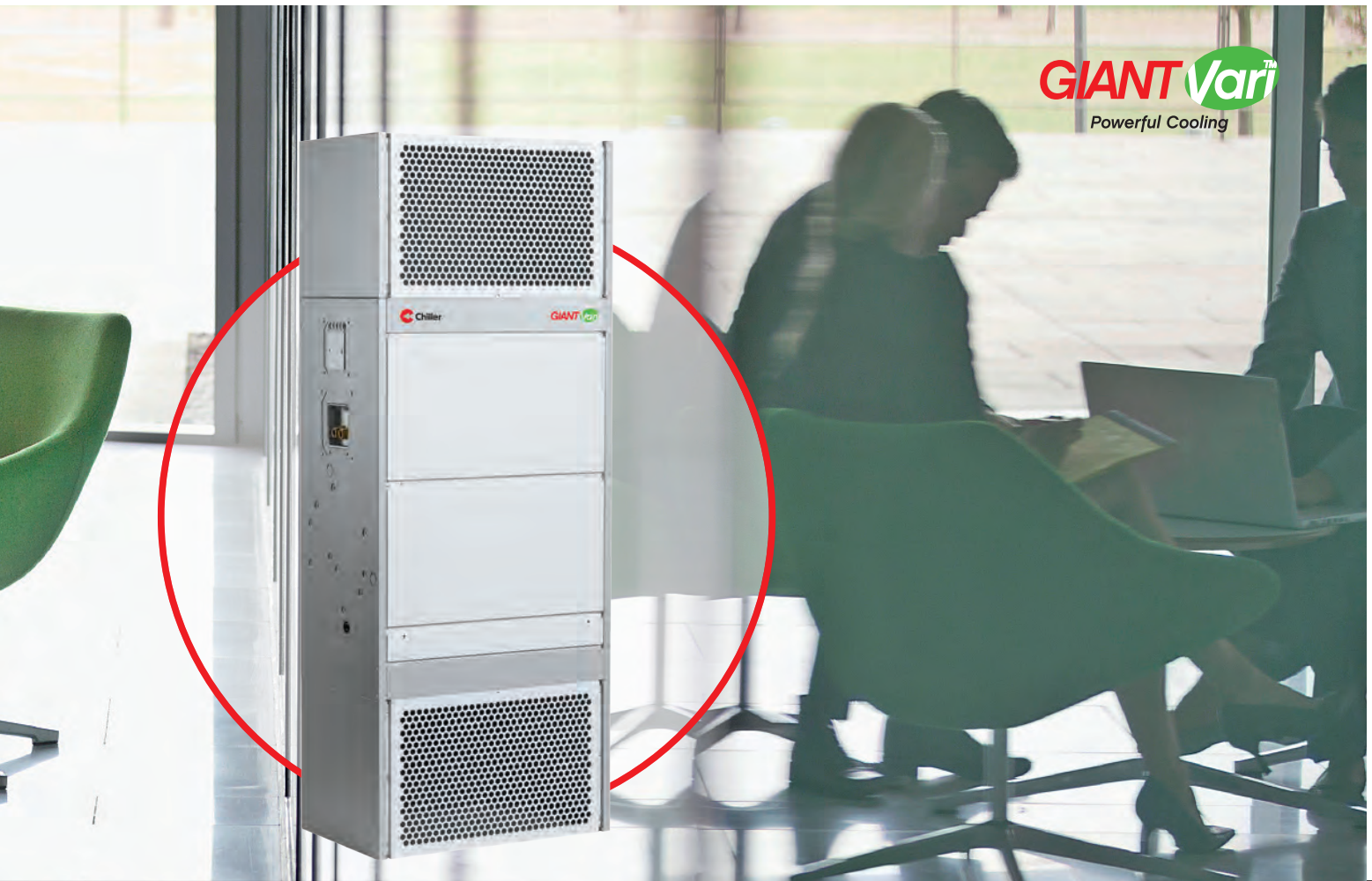


Manual balancing is history

- ▶ Vari Pro and AB-QM.
- ▶ Water flow setting with new Vari PRO™ controller.
- ▶ Automatic balancing.
- ▶ No overflows.

BENEFITS OF STUDIO Vari™

- ▶ EC fan controlled by voltage signals
- ▶ 6-row coils, optimized for district cooling.
- ▶ Coil circuiting according to customer needs.
- ▶ Dedicated electronics for optimization of fan and valve operation.
- ▶ With a condensate pump or free drainage.



GIANT VARI™ FLAT BLOWER UNIT WITH WATER CIRCULATION

SCALABLE SOLUTIONS FOR DEMANDING AIR CONDITIONING

GIANT Vari™ flat blower units with EC technology are suitable for example for shops, small computer rooms, control rooms and offices. These units are designed for higher cooling capacity ranges than the BOX and Studio series.

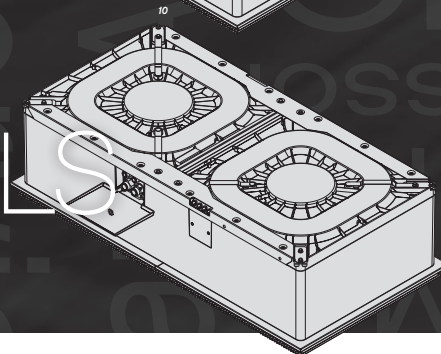
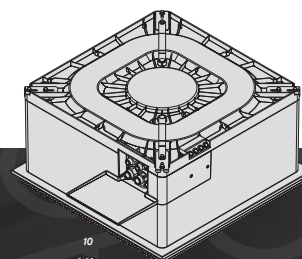
The GIANT Vari™ series allows a very flexible installation and guarantees that the desired room temperature is accurately maintained. Units delivered with factory-installed 2- or 3-way valve. The GIANT Vari™ series uses some of the same components as BOX Vari™ and GRAND Vari™. This makes installation easier when changing from one series to another

VARIOUS INSTALLATION METHODS

The construction of the unit is very flexible. Installation methods available: standing on the floor, blowing upwards or downwards, or ceiling models.

BENEFITS OF GIANT Vari™

- ▶ EC-fan controlled by voltage signals
- ▶ 6 deep coils have been optimized for district cooling.
- ▶ Several auxiliary devices for various installation methods.
- ▶ Flexible frame construction.
- ▶ With a condensate pump or free drainage.



BOX VARI™ -CASSETTE FANCOILS

BOX Vari™	Mono				Double		
	BOX 20EL	BOX 40EL	BOX 60EL	BOX 80EL	BOX 100EL	BOX 120EL	BOX 160EL
* Cap total / sensible kW	...	2,1/1,4	2,4/1,5	2,6/1,6	3,3/2,1	3,7/2,3	3,9/2,5
** Cap total / sensible kW	...	1,7/1,2	2/1,4	2,1/1,5	2,6/0,9	3/2,1	3,3/2,2
Airflow l / s	...	70	70	70	105	105	105
*** Sound level dB(A)	...	25	25	25	24	24	24
Running power W	...	5	5	5	9	9	9
	BOX 20L	BOX 40L	BOX 60L	BOX 80L	BOX 100L	BOX 120L	BOX 160L
* Cap total / sensible kW	1,3/0,9	2,4/1,6	2,8/1,8	3/1,9	3,5/2,4	4,2/2,7	4,5/2,9
** Cap total / sensible kW	1/0,8	1,9/1,4	2,3/1,6	2,6/1,7	3/2,2	3,4/2,4	3,7/2,6
Airflow l / s	85	85	85	85	126	126	126
*** Sound level dB(A)	30	30	30	30	30	30	30
Running power W	7,5	7,5	7,5	7,5	11	11	11
	BOX 20M	BOX 40M	BOX 60M	BOX 80M	BOX 100M	BOX 120M	BOX 160M
* Cap total / sensible kW	1,5/1,1	3,0/2	3,4/2,2	3,7/2,4	3,9/2,7	4,7/3,1	5,1/3,3
** Cap total / sensible kW	1,2/1	2,4/1,8	2,7/2	3,1/2,1	3,4/2,5	3,8/2,7	4,2/2,9
Airflow l / s	110	110	110	110	145	145	145
*** Sound level dB(A)	35	35	35	35	34	34	34
Running power W	9	9	9	9	14	14	14
	BOX 20H	BOX 40H	BOX 60H	BOX 80H	BOX 100H	BOX 120H	BOX 160H
* Cap total / sensible kW	1,5/1,2	3,1/2,2	4/2,6	4,5/2,9	4,6/3,2	5,6/3,7	6,2/4
** Cap total / sensible kW	1,2/1	2,5/2	3,2/2,3	3,6/2,6	3,7/2,8	4,5/3,3	5,1/3,5
Airflow l / s	135	135	135	135	178	178	178
*** Sound level dB(A)	42	42	42	42	39	39	39
Running power W	16	16	16	16	19	19	19
	BOX 20EH	BOX 40EH	BOX 60EH	BOX 80EH	BOX 100EH	BOX 120EH	BOX 160EH
* Cap total / sensible kW	2,3/1,6	4,2/2,9	5/3,4	5,7/3,7	6,2/4,3	7,8/5,2	8,8/5,7
** Cap total / sensible kW	1,8/1,5	3,4/2,6	4,0/3	4,6/3,3	4,9/3,9	6,3/4,6	7,2/5,1
Airflow l / s	180	180	180	180	265	265	265
*** Sound level dB(A)	51	51	51	51	50	50	50
Running power W	29	29	29	29	43	43	43

▶ BOX Vari™ mono and BOX Vari™ double units are equipped with EC grille and EC fan technology.

Technical data:

Electricity V - ph - Hz: 230 - 1 - 50
 Dimensions of the unit, mm: 585 x 585 x 300 or 585 x 1178 x 300
 Dimensions of the grille, mm: 625 x 625 x 40 or 1225 x 625 x 40

BOXH Vari™ is without condensate pump.
 Air flow determines the water flow. Air and water flow varies 0..100 %.

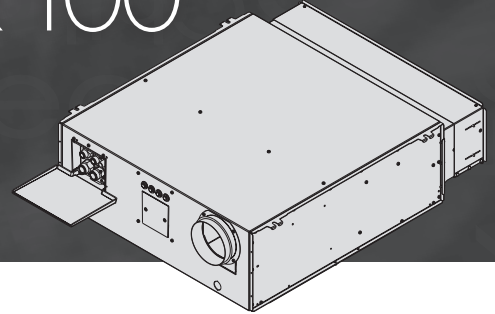
* Air 27 / 50 °C / %, water 7 / 12 °C

** Air 25 / 50 °C / %, water 7 / 12 °C

*** Sound level 10 m² Sabine

Detailed information on heating / cooling and heating solutions from Chiller Oy's sales.

GRAND VARI™ 70 & 100 -FAN COILS



GRAND Vari™	70-EL	100-EL
* Cap total / sensible kW	...	2,1/1,4
** Cap total / sensible kW	...	1,7/1,3
Airflow l / s	...	61
*** Sound level dB(A)	...	22
Running power W	...	4,7
	70-L	100-L
* Cap total / sensible kW	1,8/1,2	2,4/1,6
** Cap total / sensible kW	1,4/1,1	1,9/1,4
Airflow l / s	54	70
*** Sound level dB(A)	30	24
Running power W	8,4	6
	70-M	100-M
* Cap total / sensible kW	2,3/1,5	2,8/1,9
** Cap total / sensible kW	1,8/1,3	2,2/1,7
Airflow l / s	71	85
*** Sound level dB(A)	37	29
Running power W	16	8,7
	70-H	100-H
* Cap total / sensible kW	2,7/1,8	3,6/2,4
** Cap total / sensible kW	2,1/1,6	2,9/2,1
Airflow l / s	88	114
*** Sound level dB(A)	42	36
Running power W	26	16,6
	70-EH	100-EH
* Cap total / sensible kW	2,8/1,9	4,3/2,9
** Cap total / sensible kW	2,2/1,6	3,4/2,5
Airflow l / s	93	142
*** Sound level dB(A)	44	41
Running power W	31	29

► GRAND Vari™ units are equipped with EC grille and EC fan technology.

Technical data:

Electricity, V - ph - Hz: 230 - 1 - 50

Dimensions of the unit, mm: 700 x 1000 x 250 tai 1000 x 1000 x 250

Dimensions of the grille, mm: 736 x 210 x 36 tai 1036 x 210 x 36

* Air 27 / 50 °C / %, water 7 / 12 °C

** Air 25 / 50 °C / %, water 7 / 12 °C

*** Sound level 10 m² Sabine

Air flow determines the water flow. Air and water flow varies 0..100 %.

Detailed information on heating / cooling and heating solutions from Chiller Oy's sales.

STUDIO VARI™ -FLAT BLOWER UNIT



STUDIO Vari™	9-EL	10-EL	11-EL	13-EL	16-EL	17-EL
* Cap total / sensible kW	1,6/1	2,4/1,5	...	2,7/1,8	4,2/2,7	...
** Cap total / sensible kW	1,4/1	2/1,4	...	2,2/1,6	3,4/2,4	...
Airflow l / s	45	65	...	74	114	...
*** Sound level dB(A)	26	25	...	25	29	...
Running power W	4	4	...	4,3	8	...
	9-L	10-L	11-L	13-L	16-L	17-EL
* Cap total / sensible kW	2,3/1,5	3,2/2	...	3,8/2,5	5,7/3,6	...
** Cap total / sensible kW	1,9/1,3	2,6/1,8	...	3,1/2,2	4,6/3,3	...
Airflow l / s	65	88	...	105	159	...
*** Sound level dB(A)	31	31	...	34	35	...
Running power W	5,5	6	...	7	13	...
	9-M	10-M	11-M	13-M	16-M	17-M
* Cap total / sensible kW	2,9/1,8	3,6/2,3	4,9/3,1	4/2,6	6,2/4	7,1/4,6
** Cap total / sensible kW	2,3/1,6	3/2,1	4/2,8	3,3/2,3	5,1/3,6	5,8/4,1
Airflow l / s	83	103	144	111	177	206
*** Sound level dB(A)	35	35	44	35	36	46
Running power W	8,6	8	18	7,8	16	26
	9-H	10-H	11-H	13-H	16-H	17-H
* Cap total / sensible kW	3,8/2,4	5,2/3,3	6,3/4,1	6,3/4	9,5/6,1	9,4/6
** Cap total / sensible kW	3,1/2,2	4,2/3	5,1/3,6	5,1/3,6	7,7/5,4	7,6/5,4
Airflow l / s	116	154	197	184	287	287
*** Sound level dB(A)	44	45	52	47	48	54
Running power W	18	19	37	22	39	56
	9-EH	10-EH	11-EH	13-EH	16-EH	17-EH
* Cap total / sensible kW	4,6/2,9	6,2/4	7,8/5	7,4/4,7	11,4/7,3	12,6/8,1
** Cap total / sensible kW	3,7/2,6	5/3,6	6,3/4,5	6/4,2	9,2/6,5	10,2/7,2
Airflow l / s	145	192	254	222	358	407
*** Sound level dB(A)	49	51	60	51	53	61
Running power W	30	33	71	36	63	114

► STUDIO Vari™ units are equipped with EC fan technology.

Technical data:

Electricity V - ph - Hz: 230 - 1 - 50

* Air 27 / 50 °C / %, water 7 / 12 °C

** Air 25 / 50 °C / %, water 7 / 12 °C

*** Sound level 10 m² Sabine

Dimensions of the unit, mm: 890–1920 x 450 x 250

Air flow determines the water flow. Air and water flow varies 0..100 %.

Detailed information on heating / cooling and heating solutions from Chiller Oy's sales.



GIANT VARI™ -FLAT BLOWER UNIT



GIANT Vari™	700-EL	1300-EL
* Cap total / sensible kW	5,7/3,8	10,6/7
** Cap total / sensible kW	4,7/3,5	8,5/6,3
Ilmamäärä l / s	170	306
*** Äänitaso dB(A)	46	50
Puhaltimen ottoteho W	28	56
	700-L	1300-L
* Jäähd. teho kokon. / tuntuva kW	8,1/5,4	15,1/10
** Jäähd. teho kokon. / tuntuva kW	6,5/4,8	12/9
Ilmamäärä l / s	255	459
*** Äänitaso dB(A)	54	58
Puhaltimen ottoteho W	45	89
	700-M	1300-M
* Jäähd. teho kokon. / tuntuva kW	10,4/6,9	19,3/12,9
** Jäähd. teho kokon. / tuntuva kW	8,2/6,1	15,4/11,5
Ilmamäärä l / s	342	615
*** Äänitaso dB(A)	60	64
Puhaltimen ottoteho W	86	172

► GIANT Vari™ units are equipped with EC fan technology.

Technical data:

Electricity V - ph - Hz: 230 - 1 - 50

* Air 27 / 50 °C / %, water 7 / 12 °C

** Air 25 / 50 °C / %, water 7 / 12 °C

*** Sound level 10 m² Sabine

Dimensions of the unit, mm: 1050 x 730 x 450 mm

Dimensions of the chambers, mm: 425 x 730 x 450 mm

Air flow determines the water flow. Air and water flow varies 0...100 %.

Detailed information on heating / cooling and heating solutions from Chiller Oy's sales.

POOR BALANCING COSTS MORE MONEY

EASY COMFORT WITH AB-QM

Conventional distribution designs using constant flow systems or variable flow systems must be manually balanced to ensure there is enough pressure to reach those locations farthest from the pumps.

Manual balancing cannot adapt to varying demand, causing over-pumping and low delta T syndrome (where the chilled water is returned to the chiller still cold), keeping operating costs closer to 100% even when cooling demand is only half of that. The main challenge in using conventional distribution systems is that temperature regulation becomes unstable, varying similar to on/off control, reducing users thermal comfort, leading to additional cooling demand and higher costs.

Pressure independence – easy comfort with AB-QM

- ▶ The AB-QM from Danfoss combines three functions in one valve body.
- ▶ Pressure Controller – ensures pressure independence.
- ▶ Automatic Balancing – limits maximum flow rate.
- ▶ Control Valve – precisely regulates flow to match demand.



SERVICE NEXT™ -OVERALL CONCEPT

OPTIMIZATION, MONITORING AND COST-EFFICIENCY

ServiceNext™

Overall Concept

The Service Next™ overall concept is a service for realtime supervision and control. It can be used to prevent unit malfunction and optimize the unit's functions to the best possible range of coefficient of performance. Service Next™ helps to forecast, among other things, the need for service.



BOX Vari

GRAND Vari

- cassettes and fancoils
for the indoor
climate solutions



- heat pumps
for the needs of processes and buildings



GROUP Controller™
- for controlling
groups of units



- Three-in- one
room controllers

VariPRO™



Chillquick™ Chillquick Eco™ Chillquick Light™
- water chillers and cold water stations
for the needs of processes and buildings



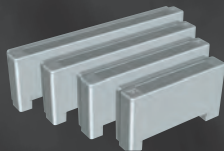
**COPTronic™
KIOTronic™**

- for monitoring
the coefficient of
performance and
leak of refrigerant



GIANT Vari

- fancoils
for the indoor climate solutions



Studio Vari



SMART Vari

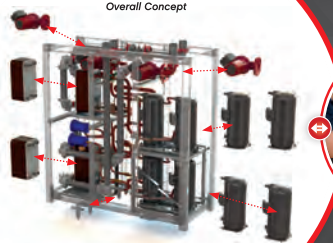
- precision air-conditioners
for efficient cooling of computer and data rooms



NETWORK
SERVER

ServiceNext™

Overall Concept



Explodes the unit
into components.



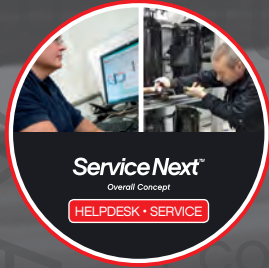
HELPSK - SERVICE

FOR COMPREHENSIVE
LIFE CYCLE MANAGEMENT AND OPTIMIZATION.
▶ READ MORE: www.chiller.fi/en/servicenext

Chiller Oy offers the Service Next™ overall concept free of charge for two years. The end user only has to provide an Internet connection to the unit without any extra equipment or software. The operative technical support - Help Desk - is part of the service; there is no need for guesswork on the site.

Service Next™ provides reports on, e.g. energy consumption, alarms, refrigerant leaks and utilization rates.

All events, regulations and disorders will be stored in the systems database. Information about those factors allows for life cycle control and optimisation. Savings can only be achieved by measuring and analyzing.



OUR SALES AND MAINTENANCE NETWORK AT YOUR SERVICE

Chiller Oy is one of Europe's leading manufacturers of energy-efficient and optimized air conditioning solutions. Design and service are always based on the customers' specific requirements. For more information, please contact our head office or foreign business partners.

► [Read more: www.chiller.fi/en](http://www.chiller.fi/en)

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ServiceNext™
Overall Concept