

Winterwarm WWH series

Winterwarm presents the WWH-series: an LPHW heater which can heat up any area comfortably in combination with every kind of central heating system such as a boiler, heat pump or any other warm water system.



Winterwarm
heating solutions

Characteristics WWH series:

- Comfortable temperature distribution
- Various air discharge options
- Simple to control
- Low investment
- Long duration of life
- LT-version for low water temperatures
- Quiet and energy saving EC-version

The Winterwarm WWH is a simple, effective water heater (LPHW), offering excellent value for money. Due to a balanced design and an excellent combination of fan, heat exchanger and discharge options, the Winterwarm WWH is an ideal appliance for heating a shop, workshop or even a warehouse.The WWH is available in 3 models:

- **WWH standard, a reliable and simple concept for many years already offering an efficient heating solution.**
- **WWH-EC, provided with a quiet EC-fan reducing electricity consumption by 25%.**
- **WWH-LT, achieves an optimal heat generation at low water temperatures.**

Well-proven concept

Like all Winterwarm products, durability and quality are very important features. The WWH heat exchanger consists of a combination of copper pipes and fins made of a high quality fibre-reinforced synthetic material. The blades are shaped in such a way that an optimum air circulation can be achieved. The heater can be connected to all types of boilers. It is possible to control the fan speed by changing the supply voltage on the motor. This can be regulated with a 5-stage switch (optional).

WWH EC

The whole WWH-EC range is as standard supplied with an EC-fan. This offers several advantages. The EC-fans allow the air volume to be controlled by a stepless 0-10V controller. Also the sound level is reduced significantly. For those who want to decrease their electricity consumption, the WWH-EC is the right choice: the consumption is about 25% lower than with the standard WWH.

WWH LT

The WWH-LT is the most sustainable WWH-range. All 4 models are designed for application in situations with low water temperatures such as in combination with a heat pump or a district heating network. The special heat exchanger and improved airflow allow optimum heat release. They are provided as standard with an EC-fan with some 10% higher air output so that the warm air distribution is improved. The stepless control and very quiet EC fan provide a higher comfort in comparison with the standard WWH-range.





Installation and suspension

The WWH heater is easy to install. The air discharge can either be horizontal or vertical. The standard grill can be altered easily, allowing the air to be directed in any desired discharge direction and depending on where the water connection is located.

The WWH heaters are all provided with 8 x M10 suspension points, these are placed on two opposite sides of the heater. For fixing to the wall Winterwarm offers cantilever brackets; for fixing to the ceiling a set of 4 connection strips are available.

Cooling mode during summer

With the WWH-LT it is possible to provide cooling when applied in conjunction with a heat pump. All units have a facility to collect condensate when operating in cooling mode. This condensate collector does have to be connected to a suitable drain. At a water temperature of 7°C the cooling capacity is between 7 and 32 kW, depending on the model. However, with passive cooling by letting ground water or surface water flow through the heater, the WWH-LT can also provide pleasant cooling when the outside temperature rises (far) above 25°C. Ideal for smaller production areas, showrooms, workshops, etc.

Air discharge possibilities

• The standard grill is best suited for rooms no higher than 4m with the heater mounted to the wall discharging horizontally. The grill can be rotated, depending on which side the water connections need to be located. Additional louvres can be supplied to spread the air more evenly; in such cases the throw is reduced by about 30%. For rooms with heights between 5 and 8 m. it is recommended to suspend the heater to the ceiling and let the warm air discharge vertically.

• 4-way or 6-way down flow plenum. Suitable for rooms with a ceiling height lower than 4m and for suspended ceilings. The plenum is mounted underneath the heater. It optimally distributes the air in all directions without being experienced as a draft. In suspended ceilings the air heater unit can be built in above the ceiling so it is not visible in the room. This is especially important in showrooms, exhibition rooms, stores, etc.





ErP 2021



standard grill with horizontal louvres



4-way discharge plenum



standard grill with vertical louvres



6-way discharge plenum

Type	1	2	3
A	505	679	834
N	200	200	200
P	240	240	290
R	181	181	-
S	714	957	-

Controls

Winterwarm has several controls available to operate the WWH-heaters:

- Simple on/off room thermostat 230 V. Can operate several WWH air heaters (up to 10 Amp).
  IW3960 IW3961
- Modulating clock thermostat, to apply a week program. Can control several heaters, up to 5 Amp.
  IW3959
- Connection thermostat, recommended for each installation to prevent the heater blowing cold air.
  IH8500
- Stepless speed controller 0-10V for WWH-EC and WWH-LT; controls the volume of the air volume by reducing the fan speed.
  GA3955
- 5-stepless switches for standard WWH-heaters. Reduces the volume of the air volume. Available from 2.2 Amp. up to 15 Amp. allowing control of several WWH heaters.
  IA8540/42/43/44/15/16
- 2-way valve, 230 V. This valve controls the boiler and the water supply to the WWH when more than one room is heated with one boiler.
  GA3980





Ceiling suspension set



Suspension with wall brackets, suspended



Suspension with wall brackets, standing

Technical data WWH series standard

Type	Unit	110	115	120	230	235	245	350	365	380
Maximum heat output*	kW	11,7	14,7	19,5	22,8	27,7	38,7	48,2	54,4	76,8
Air output	m^3/h	1400	2200	1900	2600	3850	3450	6600	8450	7600
Throw horizontal	m	10	14	12	19	22	19	20	25	21
Throw vertical	m	3,5	5	4	6	7	6	7	8	7
Voltage (50Hz)	V	230	230	230	230	230	230	230	230	230
Electrical power	W	79	164	153	175	310	326	450	561	563
Electrical current	A	0,3	0,7	0,7	0,8	1,4	1,4	2,0	2,4	2,5
Sound level (@ 5 meter)	dB(A)	50	59	58	51	61	60	62	58	56
Weight (incl. water)	kg	20	20	21	31	31	32	44	61	65
Water volume	ltr	0,6	0,6	0,9	1,4	1,4	1,7	2,2	2,2	2,6
Water connection	G"	3/4	3/4	3/4	3/4	3/4	1	1	1	1
Watersided pressure loss	kPa	2	3	3	3	3	5	4	5	9
Minimum suspension height	m	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5

**) at water temperature 90/70° and room temperature 15ºC*

Heating capacity at various water and air temperatures WWH standard

Air temperature inlet	0º	5º	10º	15º	18º	20º
Water temperature in/out ºC	kW	kW	kW	kW	kW	kW
WWH 110 90/70°C	15,21	13,92	12,87	11,70	11,00	10,65
WWH 115 90/70°C	19,11	17,49	16,17	14,70	13,82	13,38
WWH 120 90/70°C	25,35	23,21	21,45	19,50	18,33	17,75
WWH 230 90/70°C	29,64	27,13	25,08	22,80	21,43	20,75
WWH 235 90/70°C	36,01	32,96	30,47	27,70	26,04	25,21
WWH 245 90/70°C	50,31	46,05	42,57	38,70	36,38	35,22
WWH 350 90/70°C	62,66	57,36	53,02	48,20	45,31	43,86
WWH 365 90/70°C	70,72	64,74	59,84	54,40	51,14	49,50
WWH 380 90/70°C	99,84	91,39	84,48	76,80	72,19	69,89
WWH 110 80/60°C	12,99	11,82	10,65	9,59	8,89	8,54
WWH 115 80/60°C	16,32	14,85	13,38	12,05	11,17	10,73
WWH 120 80/60°C	21,65	19,70	17,75	15,99	14,82	14,24
WWH 23080/60°C	25,31	23,03	20,75	18,70	17,33	16,64
WWH 235 80/60°C	30,75	27,98	25,21	22,71	21,05	20,22
WWH 245 80/60°C	42,96	39,09	35,22	31,73	29,41	28,25
WWH 350 80/60°C	53,50	48,68	43,86	39,52	36,63	35,19
WWH 365 80/60°C	60,38	54,94	49,50	44,61	41,34	39,71
WWH 380 80/60°C	85,25	77,57	69,89	62,98	58,37	56,06
WWH 110 70/50°C	10,76	9,59	8,54	7,49	6,55	6,44
WWH 115 70/50°C	13,52	12,05	10,73	9,41	8,23	8,09
WWH 120 70/50°C	17,94	15,99	14,24	12,48	10,92	10,73
WWH 230 70/50°C	20,98	18,70	16,64	14,59	12,77	12,54
WWH 235 70/50°C	25,48	22,71	20,22	17,73	15,51	15,24
WWH 245 70/50°C	35,60	31,73	28,25	24,77	21,67	21,29
WWH 350 70/50°C	44,34	39,52	35,19	30,85	26,99	26,51
WWH 365 70/50°C	50,05	44,61	39,71	34,82	30,46	29,92
WWH 380 70/50°C	70,66	62,98	56,06	49,15	43,01	42,24

Technical data WWH EC series

Type	Unit	115EC	120EC	235EC	245EC	350EC	365EC	380EC
Maximum heat output*	kW	14,7	19,7	27,8	38,7	46,4	54,4	76,8
Air output (warm)	m^3/h	2200	1950	3900	3500	6150	8500	7600
Throw horizontal	m	16	14	22	19	21	25	21
Throw vertical	m	5	5	7	6	7	8	7
Voltage (50Hz)	V	230	230	230	230	230	230	230
Electrical power	W	111	123	200	250	320	400	308
Electrical current	A	1,0	1,1	0,9	1,1	1,5	1,8	1,4
Sound level (@ 5 meter)	dB(A)	35-54	35-54	35-59	35-57	35-60	35-56	35-54
Weight (incl. water)	kg	20	21	31	32	44	61	65
Water volume	ltr	0,6	0,9	1,4	1,7	2,2	2,2	2,6
Waterconnection (male thread)	G”	3/4	3/4	3/4	1	1	1	1
Watersided pressure loss	kPa	3	3	4	6	4	7	9
Minimum suspension height	m	2,5	2,5	2,5	2,5	2,5	2,5	2,5

**) at water temperature 90/70° and room temperature 15ºC*

Heating capacity at various water and air temperatures WWH EC series

Air temperature inlet	0º	5º	10º	15º	18º	20º
Water temperature in/out ºC	kW	kW	kW	kW	kW	kW
WWH 115 EC 90/70°C	19,11	17,49	16,17	14,70	13,82	13,38
WWH 120 EC 90/70°C	25,61	23,44	21,67	19,70	18,52	17,93
WWH 235 EC 90/70°C	36,14	33,08	30,58	27,80	26,13	25,30
WWH 245 EC 90/70°C	50,31	46,05	42,57	38,70	36,38	35,22
WWH 350 EC 90/70°C	60,32	55,22	51,04	46,40	43,62	42,22
WWH 365 EC 90/70°C	70,72	64,74	59,84	54,40	51,14	49,50
WWH 380 EC 90/70°C	99,84	91,39	84,48	76,80	72,19	69,89
WWH 115 EC 80/60°C	16,32	14,85	13,38	12,05	11,17	10,73
WWH 120 EC 80/60°C	21,87	19,90	17,93	16,15	14,97	14,38
WWH 235 EC 80/60°C	30,86	28,08	25,30	22,80	21,13	20,29
WWH 245 EC 80/60°C	42,96	39,09	35,22	31,73	29,41	28,25
WWH 350 EC 80/60°C	51,50	46,86	42,22	38,05	35,26	33,87
WWH 365 EC 80/60°C	60,38	54,94	49,50	44,61	41,34	39,71
WWH 380 EC 80/60°C	85,25	77,57	69,89	62,98	58,37	56,06
WWH 115 EC 70/50°C	13,52	12,05	10,73	9,41	8,23	8,09
WWH 120 EC 70/50°C	18,12	16,15	14,38	12,61	11,03	10,84
WWH 235 EC 70/50°C	25,58	22,80	20,29	17,79	15,57	15,29
WWH 245 EC 70/50°C	35,60	31,73	28,25	24,77	21,67	21,29
WWH 350 EC 70/50°C	42,69	38,05	33,87	29,70	25,98	25,52
WWH 365 EC 70/50°C	50,05	44,61	39,71	34,82	30,46	29,92
WWH 380 EC 70/50°C	70,66	62,98	56,06	49,15	43,01	42,24

Technical data WWH LT series

Type	Unit	110LT	220LT	330LT	340LT
Heat output* 45°/35°	kW	8,3	19,4	28,6	37,9
Cooling capacity** at 7°-12°	kW	6,6	16,5	19,2	32,1
Cooling capacity** at 15°-18°	kW	3,8	8,8	12,8	17,8
Cooling capacity** at 16°-19°	kW	3,4	7,9	11,7	16,1
Air output	m^3/h	1850	4150	5450	8850
Throw horizontal (warm)	m	14	21	20	25
Throw vertical (warm)	m	5	7	7	8
Voltage (50Hz)	V	230	230	230	230
Elektrical power	W	118	515	320	718
Elektrical current	A	1,1	2,3	1,5	3,2
Sound level (@ 5 meter)	dB(A)	35-54	35-64	35-60	35-62
Weight (incl. water)	kg	22	34	66	68
Water volume	ltr	2,0	3,9	6,6	6,6
Water connection (male thread)	G"	3/4	1	1	1
Watersided pressure loss	kPa	4	11	30	30
Minimum suspension height	m	2,5	2,5	2,5	2,5

) at room temperature 15°C* *) at room temperature 28°C*

Heating capacity at various water and air temperatures WWH LT series

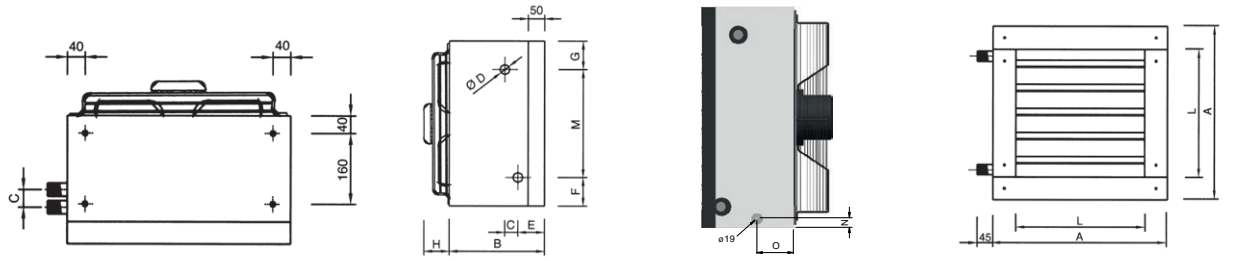
Air temperature inlet	0°	5°	10°	15°	18°	20°
Water temperature in/out °C	kW	kW	kW	kW	kW	kW
WWH 110LT 40-30	12,40	10,30	8,24	6,03	4,64	3,79
WWH 220LT 40-30	28,55	23,90	19,33	14,82	12,13	10,37
WWH 330LT 40-30	41,78	35,15	28,63	22,16	18,31	15,73
WWH 340LT 40-30	53,62	45,60	37,41	29,19	24,20	20,79
WWH 110LT 45-35	14,61	12,53	10,38	8,30	6,72	6,14
WWH 220LT 45-35	34,14	29,29	24,25	19,40	15,71	14,36
WWH 330LT 45-35	50,34	43,19	35,75	28,60	23,17	21,16
WWH 340LT 45-35	66,70	57,23	47,38	37,90	30,70	28,05
WWH 110LT 50-30	12,95	10,79	8,88	6,47	5,31	4,32
WWH 220LT 50-30	30,26	25,22	20,76	15,13	12,42	10,09
WWH 330LT 50-30	44,62	37,18	30,60	22,31	18,30	14,87
WWH 340LT 50-30	59,12	49,27	40,55	29,56	24,26	19,71
WWH 110LT 50-40	16,70	14,55	12,45	10,38	9,15	8,34
WWH 220LT 50-40	37,81	33,10	28,48	23,90	21,19	19,40
WWH 330LT 50-40	54,88	48,12	41,51	35,00	31,13	28,59
WWH 340LT 50-40	70,68	62,72	54,67	46,55	41,60	38,34
WWH 110LT 60-40	17,51	15,36	12,95	10,79	9,63	8,88
WWH 220LT 60-40	40,93	35,89	30,26	25,22	22,50	20,76
WWH 330LT 60-40	60,35	52,91	44,62	37,18	33,18	30,60
WWH 340LT 60-40	79,97	70,12	59,12	49,27	43,96	40,55

Cooling capacity at 28°C air temperature

Air temperature inlet	28°
Water temperature in/out °C	kW
WWH 110LT 7-12	6,6
WWH 220LT 7-12	16,5
WWH 330LT 7-12	19,2
WWH 340LT 7-12	32,1
WWH 110LT 15-18	3,8
WWH 220LT 15-18	8,8
WWH 330LT 15-18	12,8
WWH 340LT 15-18	17,8
WWH 110LT 16-19	3,4
WWH 220LT 16-19	7,9
WWH 330LT 16-19	11,7
WWH 340LT 16-19	16,1

Measurements

The range of 10-80 kW is subdivided in 3 models. The model of the heater is the first number of the type name (1,2 or 3).



Type WWH	110	115	120	-	230	235	245	-	-	350	365	380
Type WWH EC	-	115	120	-	-	235	245	-	-	350	365	380
Type WWH LT	110	-	-	220	-	-	-	330	340	-	-	-
Model	1	1	1	2	2	2	2	3	3	3	3	3
A	505	505	505	679	679	679	679	834	834	834	834	834
B	290	290	290	290	290	290	290	354	354	340	354	354
C	40	40	43	-	40	40	43			40	40	43
C WWH LT	65	-	-	65	-	-	-	65	65	-	-	-
D	3/4"	3/4"	3/4"	1"	3/4"	3/4"	1"	1"	1"	1"	1"	1"
E	81	81	79,5	-	81	81	79,5	-	-	81	81	79,5
E WWH LT	72,5	-	-	72,5	-	-	-	72,5	72,5	-	-	-
F	87,5	87,5	75	-	87	87	74,5	-	-	89,5	89,5	77
F WWH LT	75	-	-	79,5	-	-	-	82	82	-	-	-
G	87,5	87,5	87,5	-	87	87	87	-	-	89,5	89,5	89,5
G WWH LT	100	-	-	104,5	-	-	-	107	107	-	-	-
H	90	90	90	-	135	135	135	-	-	190	78	78
H WWH EC	-	85	85	-	-	140	140	-	-	53	46	46
H WWH LT	85	-	-	140	-	-	-	53	46	-	-	-
L	375	375	375	535	535	535	535	690	690	690	690	690
M	330	330	343	495	505	505	518	645	645	655	655	668
N	34,5	-	-	34,5	-	-	-	36	36	-	-	-
O	93	-	-	93		-	-	137	137	-	-	-

Winterwarm: leading

Winterwarm has been engaged in the development, production and sales of industrial heating in Europe since 1936. The company not only specialises in indirect fired unit air heaters, but also sells LPHW heaters, electrical heaters, destratification fans and direct fired heaters for the agricultural and horticultural industry.



Winterwarm
heating solutions

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Famous Winterwarm quality

- 80 years of experience
- ISO 9001-2015 gecertified
- Quick delivery
- Reliable

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