



Technical Guide
January 2024 Edition 1

Ulow-E

The all-in-one radiator for
ultra-low temperature heating



Heat pump radiator





Matching **ultra-low temperature** with **high comfort levels**

While we all want to do our bit to protect the planet, we are also very much set on our daily comfort. Luckily modern technology and product innovation have made it possible to take a step forward on both fronts. Measures such as increased insulation and the installation of a (ultra-)low temperature heating system with the right emitters not only reduce the energy demand but also considerably increase indoor comfort levels.

A new generation of fan-assisted low temperature radiators

To provide a suitable heating solution for all applications, whether new build or renovation, we are now adding the Ulow-E to our product range. This ultra-low temperature fan-assisted panel radiator is a perfect match for low temperature systems with a flow temperature below 45°C. By means of its integrated fans the Ulow-E delivers up to 60 % more heat output compared to a standard radiator. This allows the system temperature to be set significantly lower to save energy without compromising comfort.



Why use low temperature radiators such as **Ulow-E**?

Stricter regulations combined with the steep rise in energy prices is forcing us to reconsider our heat sources and opt for an energy-efficient solution. After all, the well-thought-out combination of a modern heat source and matching emitters can result in significant energy savings, especially if a heat pump is installed.

A heat pump works most efficiently with low system temperatures. For flow temperatures below 45°C and if existing radiators are simply to be replaced, the Ulow-E is

particularly suitable without the radiator necessarily having to be larger, as the fan support provides more power with the same dimensions.

The Ulow-E is a fan-assisted ultra-low temperature panel radiator which automatically switches on the integrated fans when needed to support the natural convection of the radiator. This increases the radiator's performance and consequently allows for both lower temperature settings and a reduced energy consumption.

How do (ultra-)low temperature radiators work?

The water circulating in a traditional radiator is about 55 to 70°C. For low temperature radiators this is somewhere between 35 to 45°C. So, both the supply temperature of the central heating water and the surface temperature of the radiator are much lower.

Traditionally, a type 22 panel radiator provides approx. 80 % convection heat that gradually heats up the air in the room. 20 % is radiant heat that is felt more directly when the heat rays emitted by the radiator penetrate the room and hit the objects, people and surfaces that are present.

When the flow temperature of a radiator drops below 45°C, the convective share of the heating is significantly reduced, as the temperature differences between the radiator and the warming air lead to lower buoyancy forces. Low temperature radiators such as the Ulow-E use integrated fans to generate the convective heat dissipation and increase the total heat output.



Heat pump radiator for renovation projects

The Ulow-E heat pump radiator is a very interesting option for apartment blocks and other large refurbishment projects in the property sector where a quick replacement is required without a great deal of effort while the building is occupied. It can easily serve as a replacement for older Ventil and Compact radiators without having to change the pipes. There are six possible connection options. The standard bottom right connection 1 can conveniently be turned into a bottom left connection by rotating the radiator 180 degrees 2. On top of that, there are four options to install the radiator on existing pipes from the sides: the two lateral connections on the right 3 or left 4 or the two alternating (diagonal) connection variants 5 6.





Ulow-E: a new generation of fan-assisted low temperature radiators

We have already cited about the importance of a modern heat source and the installation of a low temperature system as means to increase both energy efficiency and indoor comfort. To keep both at an optimal level, it is important, however, to choose heat emitters which provide the required heating output at lower flow temperatures.

The combination of fan-assisted support and low thermal mass means that the latest generation of fan-assisted panel radiators can not only be better controlled, but also provide up to 60% more heat output to fulfil the comfort requirements in low-temperature heating systems at all times.

The Ulow-E low temperature radiator is designed to be combined with a heat pump or condensing boiler. In a low temperature heating system, this combination will ensure the optimal performance of both heat generator and the

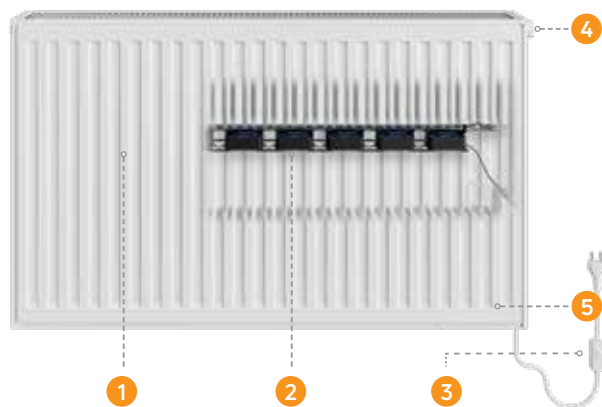
emitters. The Ulow-E can be used in new builds, but is especially useful in renovation projects since it is rotatable for a bottom left connection and can serve as a replacement for existing Ventil and Compact radiators.



- 1 Before the refurbishment: The radiator is operated with a flow temperature of 70°C, for example.
- 2 After replacing the boiler with a highly efficient heat pump, the flow temperature is considerably lower, for example 45°C. The Ulow-E heat pump radiator ensures a pleasant room temperature thanks to fan support.

Ulow-E at a glance

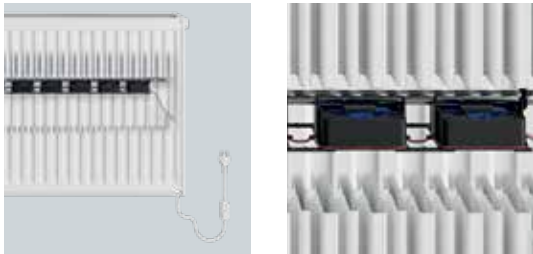
- > Fan-assisted low temperature radiator that can be used in new builds, but is also especially useful for renovation projects
- > All-in-one radiator as a replacement for Ventil and Compact radiators, for connection from the bottom right as well as from the side. The lugless radiator can be rotated for connection from the bottom left
- > Optimal performance when combined with a heat pump or condensing boiler
- > Up to 60% more heat output compared to a standard radiator thanks to the invisibly positioned fans
- > Whisper-quiet operation with only 25 dB
- > Mounting kit enclosed (VDI 6036 AK 2/3)
- > Familiar operation by means of a thermostatic head so that for the user there is no difference in usage compared to a previous radiator
- > Easy-to-reach cable switch for power disconnection in summer or at night in bedrooms



- 1 Profiled panel radiator – proven millions of times over
- 2 Integrated fans – whisper-quiet and well-protected inside the radiator
- 3 Cable switch
- 4 Operation is via a thermostatic head – it couldn't be easier! (note: a thermostatic head is not included)
- 5 Automatic operation of the fans: The switch-on temperature of the fans is about 28°C radiator return temperature

Ulow-E

Technical overview



Technical text & design

The Ulow-E is an ultra-low temperature panel radiator which automatically switches on the integrated fans when needed to support the natural convection of the radiator. This increases the radiator's performance and consequently allows for both lower temperature settings and a reduced energy consumption.

The Ulow-E low temperature radiator is designed to be combined with a heat pump or condensing boiler. In a low temperature heating system, this combination will ensure the optimal performance of both heat generator and the emitters. The Ulow-E can be used in new builds, but is also very useful in renovation projects since it is rotatable for a bottom left connection and can serve as a replacement for existing Ventil and Compact radiators.

Thanks to its timeless design and classy finish the Ulow-E can easily be used in all room settings. Compact dimensions ensure a space-saving installation without compromising on the high heating performance.

Treatment and finish

Treatment procedure according to the standard DIN 55900 and EN 442 (emission-free):

- Preparatory phase: degreasing, phosphatising and rinsing with Demin water
- First varnishing phase: application of the primer by dip coating
- Final coating: according to the epoxy-polyester powder principle

Range

- Heights: 500, 600 and 900 mm
- Lengths: 400, 600, 800, 1000, 1200, 1400, 1600, 1800 and 2000 mm
- Depth: Type 22 = 105 mm

Colours

White RAL 9016 as standard.

Scope of delivery

Valve insert incl. protection cap, sealing and air vent plugs are pre-assembled at the factory. The wall brackets are included (Monclac wall brackets: 2 pcs. up to 1600 mm; 3 pcs. for 1800 and 2000 mm). Furthermore, a complete pre-installed fan group with temperature control unit and an integrated low-voltage transformer with ready-to-connect Euro plug power cord with switch.

Mounting

The radiators are attached to the wall by using wall brackets (VDI 6036 AK 2/3).

Hydronic connection

Connections: 2 x 3/4" Eurocone bottom right, 4 x 1/2" side connections. This all-in-one radiator can be connected to the heating system from the side or from the bottom. Thus Ulow-E can serve as a replacement for the existing Ventil and Compact radiators. The radiator is rotatable for a bottom left connection (bottom right connection = standard).

Electric connection

A power connection is required to operate the integrated fans. The power cable is equipped with an easy-to-reach cable switch for power disconnection in summer, service or at night in bedrooms. Cable length 1,2 m with Euro plug.

Packaging & protection

The radiator is protected by durable board sheets and with cardboard corner protection. Additionally it is factory wrapped in a heat-shrinkable film. The plastic foil packaging remains around the radiator until it is mounted, in order to prevent damage or dirt.

Warranty

10 years – 2 years for the electrical parts



A heat pump radiator for all settings

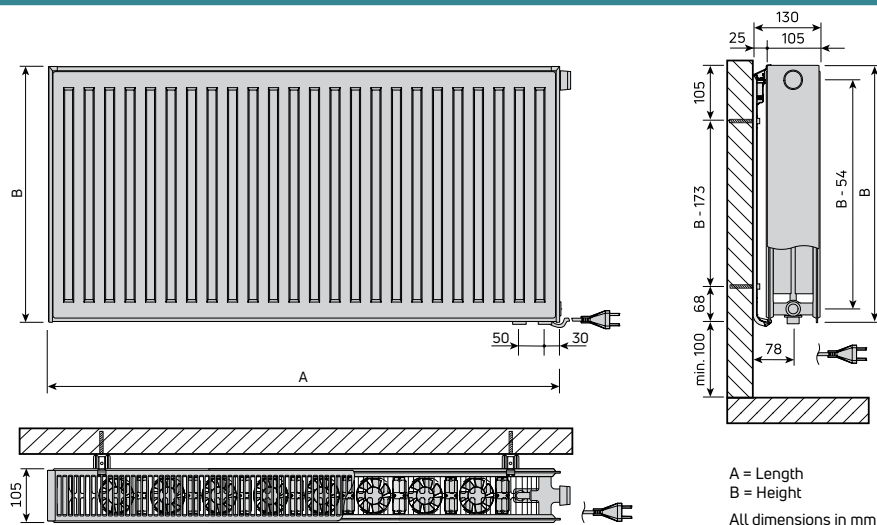
Given the large variety of buildings that need to improve their heating system, it was important for us to offer an all-round solution. Not only in terms of installation flexibility, but also in terms of usability and design. The Ulow-E heat pump radiator has a classic panel design so that it can easily be integrated in all room settings. Its compact dimensions ensure a space-saving installation without compromising its heat output. Moreover, the integrated fans are whisper-quiet with only 25 dB so there are no disturbing noises when the radiator is on. Finally, Ulow-E has an easy-to-reach cable switch so that the power can effortlessly be disconnected, for example at night in the bedroom or in summer time.



Ulow-E

Technical specifications

Dimensions



Heat outputs, weights and water contents

Height B (mm)			Length A (mm)								
			400	600	800	1000	1200	1400	1600	1800	2000
500	Heat output fan assisted	55/45/20°C (W)	458	688	917	1146	1375	1604	1834	2063	2292
		45/35/20°C (W)	284	425	567	709	851	993	1134	1276	1418
	Heat output static	55/45/20°C (W)	302	452	603	754	905	1056	1206	1357	1508
		45/35/20°C (W)	170	256	341	426	511	596	682	767	852
	Exponent n fan assisted	55/45/20°C	1,1878	1,1878	1,1878	1,1878	1,1878	1,1878	1,1878	1,1878	1,1878
		45/35/20°C	1,1327	1,1327	1,1327	1,1327	1,1327	1,1327	1,1327	1,1327	1,1327
	Exponent n static	55/45/20°C	1,3424	1,3424	1,3424	1,3424	1,3424	1,3424	1,3424	1,3424	1,3424
		45/35/20°C	1,3463	1,3463	1,3463	1,3463	1,3463	1,3463	1,3463	1,3463	1,3463
Weight (kg)		13,81	19,16	24,5	29,93	35,27	40,7	46,04	51,57	56,91	
Water content (l)		2,44	3,66	4,88	6,1	7,32	8,54	9,76	10,98	12,2	
600	Heat output fan assisted	55/45/20°C (W)	493	740	986	1233	1480	1726	1973	2219	2466
		45/35/20°C (W)	306	460	613	766	919	1072	1226	1379	1532
	Heat output static	55/45/20°C (W)	335	502	670	837	1004	1172	1339	1507	1674
		45/35/20°C (W)	192	287	383	479	575	671	766	862	958
	Exponent n fan assisted	55/45/20°C	1,1967	1,1967	1,1967	1,1967	1,1967	1,1967	1,1967	1,1967	1,1967
		45/35/20°C	1,1208	1,1208	1,1208	1,1208	1,1208	1,1208	1,1208	1,1208	1,1208
	Exponent n static	55/45/20°C	1,3545	1,3545	1,3545	1,3545	1,3545	1,3545	1,3545	1,3545	1,3545
		45/35/20°C	1,3110	1,3110	1,3110	1,3110	1,3110	1,3110	1,3110	1,3110	1,3110
Weight (kg)		15,24	21,22	27,2	33,26	39,24	45,31	51,28	57,45	63,43	
Water content (l)		2,84	4,26	5,68	7,1	8,52	9,94	11,36	12,78	14,2	
900	Heat output fan assisted	55/45/20°C (W)	602	903	1204	1505	1806	2107	2408	2709	3010
		45/35/20°C (W)	369	554	738	923	1108	1292	1477	1661	1846
	Heat output static	55/45/20°C (W)	445	667	890	1112	1334	1557	1779	2002	2224
		45/35/20°C (W)	252	377	503	629	755	881	1006	1132	1258
	Exponent n fan assisted	55/45/20°C	1,2441	1,2441	1,2441	1,2441	1,2441	1,2441	1,2441	1,2441	1,2441
		45/35/20°C	1,1548	1,1548	1,1548	1,1548	1,1548	1,1548	1,1548	1,1548	1,1548
	Exponent n static	55/45/20°C	1,3743	1,3743	1,3743	1,3743	1,3743	1,3743	1,3743	1,3743	1,3743
		45/35/20°C	1,3484	1,3484	1,3484	1,3484	1,3484	1,3484	1,3484	1,3484	1,3484
Weight (kg)		21,39	30,41	39,42	48,53	57,55	66,65	75,67	84,88	93,9	
Water content (l)		4,08	6,12	8,16	10,2	12,24	14,28	16,32	18,36	20,4	

Heat outputs according to EN 16430

Ulow-E

Technical specifications

Product codes			
Length (mm)	Height (mm)		
	500	600	900
400	FMT2205004011000	FMT2206004011000	FMT2209004011000
600	FMT2205006011000	FMT2206006011000	FMT2209006011000
800	FMT2205008011000	FMT2206008011000	FMT2209008011000
1000	FMT2205010011000	FMT2206010011000	FMT2209010011000
1200	FMT2205012011000	FMT2206012011000	FMT2209012011000
1400	FMT2205014011000	FMT2206014011000	FMT2209014011000
1600	FMT2205016011000	FMT2206016011000	FMT2209016011000
1800	FMT2205018011000	FMT2206018011000	FMT2209018011000
2000	FMT2205020011000	FMT2206020011000	FMT2209020011000

Hydronic and electric connection

Connection from below (using the integrated valve set)

Side connection (external valve needed)

Positioning of the socket outlet

Accessories and spare parts		
Visual	Description	Product code
	3/4" screw cap eurocone Required for side connection to seal the unused bottom connections; Set of two	AZ0PL000C0002000
	Valve insert M 30x1,5 mm Pre setting = 6	AZ1VE000V0001000
	Side panel For height = 500 mm For height = 600 mm For height = 900 mm	ACI220500001SP00 ACI220600001SP00 ACI220900001SP00
	Top grille For length = 400 mm For length = 600 mm For length = 800 mm For length = 1000 mm For length = 1200 mm For length = 1400 mm For length = 1600 mm For length = 1800 mm For length = 2000 mm	ACI220000401TG00 ACI220000601TG00 ACI220000801TG00 ACI220001001TG00 ACI220001201TG00 ACI220001401TG00 ACI220001601TG00 ACI220001801TG00 ACI220002001TG00
	Wall bracket Monclac Set of two MCA-D 500 – for height = 500 mm MCA-D 600 – for height = 600 mm MCA-D 900 – for height = 900 mm	AGR5BW5187224300 AGR5BW5187224400 AGR5BW5187224600



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A PURMO GROUP BRAND

Bulevardi 46
P.O. Box 115
FI-00121 Helsinki
Finland
www.purmogroup.com

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