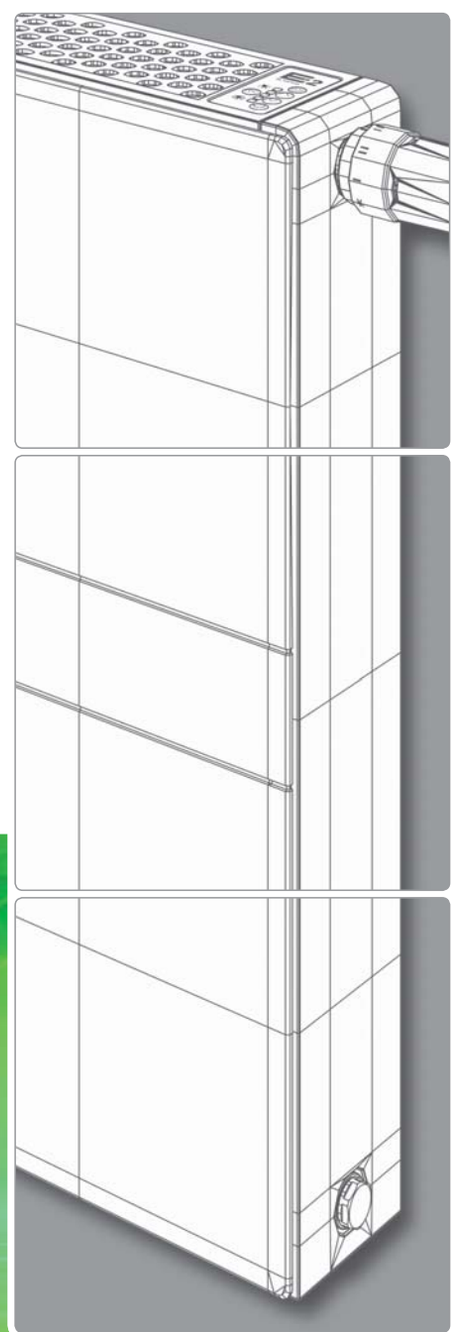
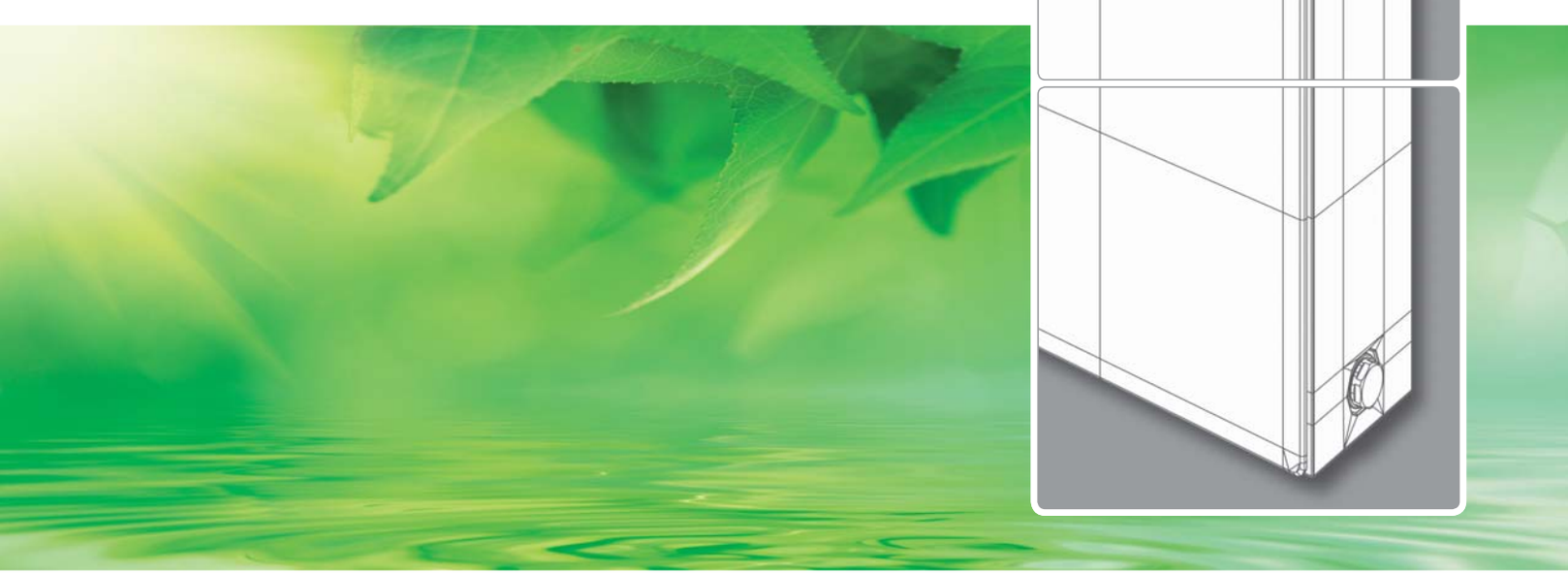
VOGEL&NOOT

LOW-TEMPERATURE RADIATOR.

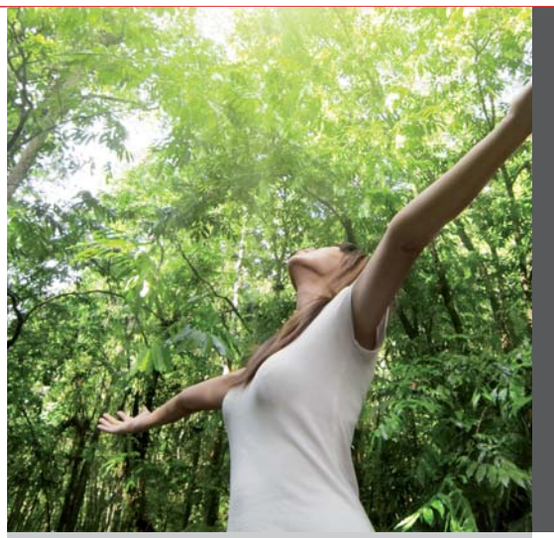
TECHNOLOGY AND PRICES 2012 A





heatingthrough**innovation.**

E2 Technology



Overall length

Overall height

Supply

Return

10 bar max. Positive operating pressure

max. Operating temperature

Protection class

Throughout this technical catalogue the above pictograms are used as a language of images. Their purpose is to let you identify the details and functional processes quickly.

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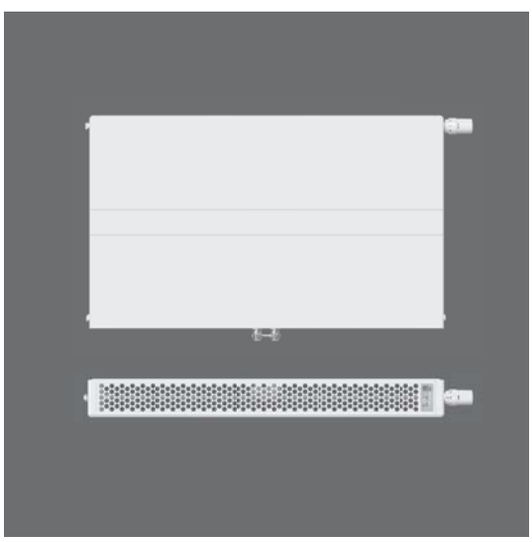
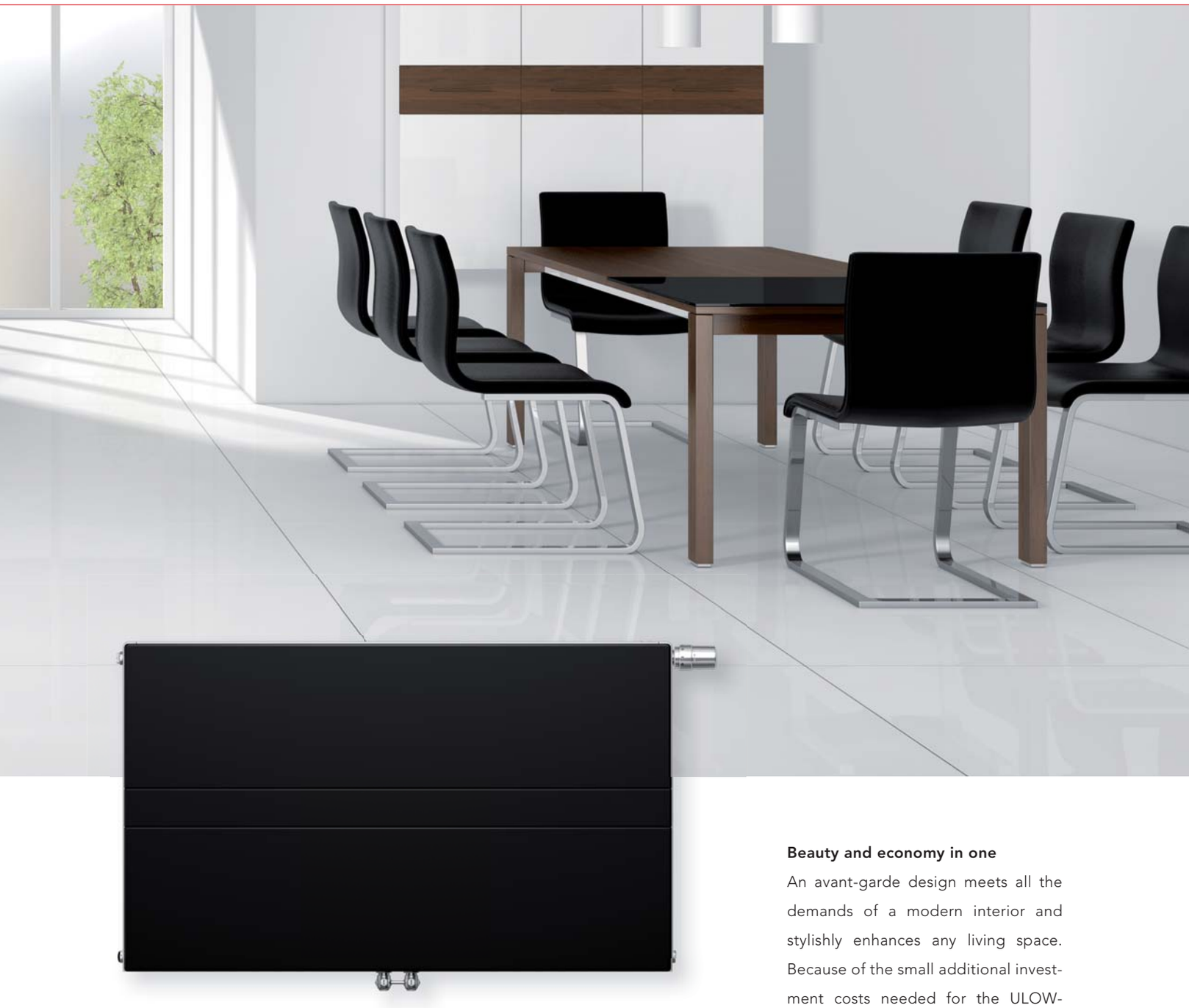


ULOW-E2 LOW-TEMPERATURE RADIATOR

E2 Technology

An unmatched concept

The ULOW-E2 low-temperature radiator, with its E2 technology is the realisation of a unique product concept, that offers efficient, economic and aesthetic heat emission.



Powerful and intelligent

On the one hand, the ULOW-E2 gives a high proportion of radiant heat thanks to its water-filled panels, whilst on the other, it provides optimised, on-demand convection. Intelligent control, switches between static and dynamic operation and ensures quick heat emission and short reaction times, with high efficiency and a maximum of thermal comfort at supply temperatures of 40° C and less.

Beauty and economy in one

An avant-garde design meets all the demands of a modern interior and stylishly enhances any living space. Because of the small additional investment costs needed for the ULOW-E2's higher efficiency, it quickly pays for itself. Manual temperature control in each room makes for maximum comfort in every one of them.

The advantages of the ULOW-E2 low-temperature radiator at a glance.

Low-temperature compatible

The ULOW-E2 low-temperature radiator gives problem-free use at supply temperatures of 40° C and less, with all modern, conventional energy sources (oil or gas burning heating systems, &c), as well as all renewable energy sources (heat pumps, solar heating, &c).

Intelligent control

What makes the ULOW-E2 so special is that it is fitted with fans that enhance natural convection, combined with an intelligent control system that can switch between static and dynamic operation either fully automatically, or according to the user's operating requirements. The fans serve as a supplement and are only switched on when needed, as this equipment provides high basic performance even in static operation.

High savings potential

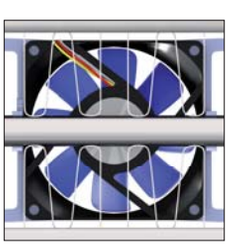
Choosing it in preference to other products currently available on the market can give you huge energy savings, because of the significantly lower ambient operational temperatures. With the ULOW-E2, operating the entire heating system is much more energy-efficient.

State-of-the-art design

The ULOW-E2's extremely elegant plane optics and its futuristically reduced artistic style appeal to persons with a sophisticated awareness of their furnishings, whilst the rounded soft-line edges exude stylish harmony. VOGEL&NOOT are trend-setting trail blazers with their completely new round-aperture optics – another prominent feature is the classy looking, intuitive touchpad control panel.

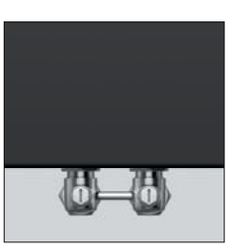
Heat emission in next to no time and a short reaction time

Because of its high proportion of radiant heat and its on-demand fan-optimised convection, the ULOW-E2 ensures fast heat emission and short reaction times. In winter any night-time drop in temperature or heat loss from ventilating room can be compensated for, no problem, in next to no time.



Tried and tested central-connection technology

In today's flexible building industry pre-piping has become indispensible. In this respect central-connection technology contributes significantly to reductions both in installation time and costs and in susceptibility to faults. It also ensures maximum freedom in planning and installation.



E2 Technology

A higher proportion of radiant heat

In contrast to simple convectors the ULOW-E2 gives a much higher proportion of radiant heat, thanks to its water-filled panels to front and rear.

Ideal for renovations and new buildings

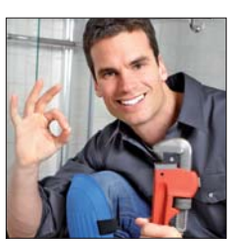
After thermal renovation and the fitting of a modern heating source, the conditions for installing the ULOW-E2 are ideal. We recommend using ULOW-E2 low-temperature radiators on their own in renovations, but in combination with other heat emission systems in new buildings.

Versatile electrical connection

To connect the ULOW-E2 to the power supply, there is a choice of two options – a plug connection or a direct cable connection. The power cable length is fully adjustable.

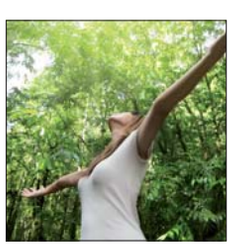
Extremely easy installation

The ULOW-E2 is delivered as a ready to connect product, and can be installed just like any standard radiator - it's easy, efficient, flexible and inexpensive. Particularly with renovations this is very important.



System compatibility

Operating in combinations in new buildings, the ULOW-E2 is perfectly compatible with other low-temperature heat emission systems, such as under-floor heating, under-floor convectors, wall heating, &c. As the ambient operational temperatures are mutually consistent, it is possible to install both on a single heating circuit.



Living in comfort all year round

In winter the ULOW-E2 works as an efficient low-temperature radiator, with high-level control quality, to give perfect heating comfort. And then the summer breeze-effect ensures that on hot days the atmosphere in your living area is pleasantly cool thanks to gentle movement of the air.

RENOVATION, A NEW BUILDING OR SIMPLY GREATER THERMAL COMFORT.

Renovations: monovalent operation

Provided thermal renovation ensures a good standard of insulation, or a modern heating source has been fitted, the conditions for installing the ULOW-E2 are ideal. Operation with all energy sources (oil, gas, firewood, pellets, district heating or a heat pump) at a supply temperature of 40 °C and less is perfectly possible.

In new buildings: combined operation

In modern style new buildings good standards of thermal insulation already apply and modern reduced-temperature heating systems (oil- or gas-fired) are installed, or renewable low-temperature energy sources are used (firewood, pellets, and/or district heating or heat pumps). The ULOW-E2 with supply temperature as low as 40 °C and less is compatible with these heat sources.

For sure, the ULOW-E2 can in principle also be used for monovalent operation in new buildings. However, combined operation with other low-temperature heat-emission systems, such as under-floor heating, under-floor convectors, wall heating, &c is particularly recommended. Combined operation is recommended for spaces that require fast room heating and short reaction times (bedroom, fitness room, work space, &c).

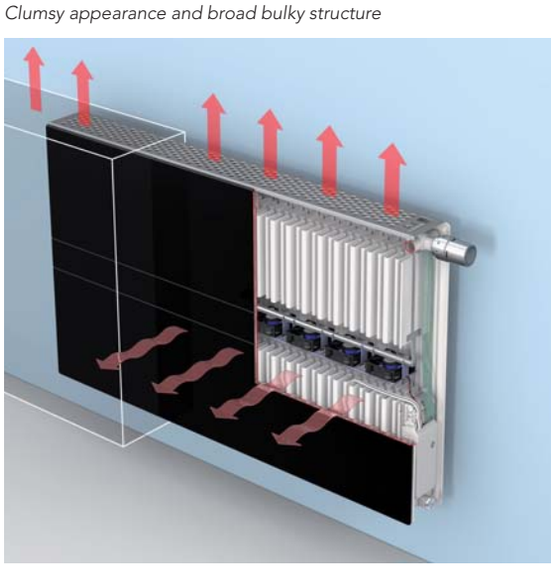
THE UNIQUE ULOW-E2 CONCEPT.

The ULOW-E2 as compared with commercially available fan convectors:

- Fan convectors generally provide either no radiant warmth or only very little. The ULOW-E2 combines convection and radiant heat, thanks to its water-charged panels.
- In static operation the ULOW-E2 is superior to commercially available fan convectors on account of its high level of basic performance. This is because aluminium heat exchangers without fan support are less efficient.
- With most fan convectors, the fans are switched on whenever the heater is in service. The ULOW-E2 has an intelligent control mechanism, which switches automatically between static and dynamic operation. It only starts the fans when it is turned full-on, or when additional output is required.
- Fan convectors are strictly limited in their designer- and architectural pretensions, because of their clumsy construction. With its distinctive 'round-hole-look', the ULOW –E2 sets new standards in radiator design. Its slim profile and elegant plane surfaces are the perfect complement to any modern living environment.
- Maintenance and cleaning of fan convectors is usually an unpleasant, time-consuming chore. The ULOW-E2, by contrast, can be cleaned just like a standard flat radiator. The rows of fans just pull out to the side, with no tools required.
- With its high performance specifications, the ULOW-E2 offers top of the range price-for-quality value.
- Fan convectors are made up of very many individual parts, some of which are complex and can only be fitted on-site. By comparison, the ULOW-E2 is delivered as a ready-to-plug-in product.
- Fan convectors do not have central connections. With the ULOW-E2 these come as standard across the range, guaranteeing maximum flexibility for planning and installation.
- Installation of fan convectors is expensive and time consuming. The ULOW-E2 can for the most part be installed with no tools needed.

ULOW-E2: slim profile and modern design

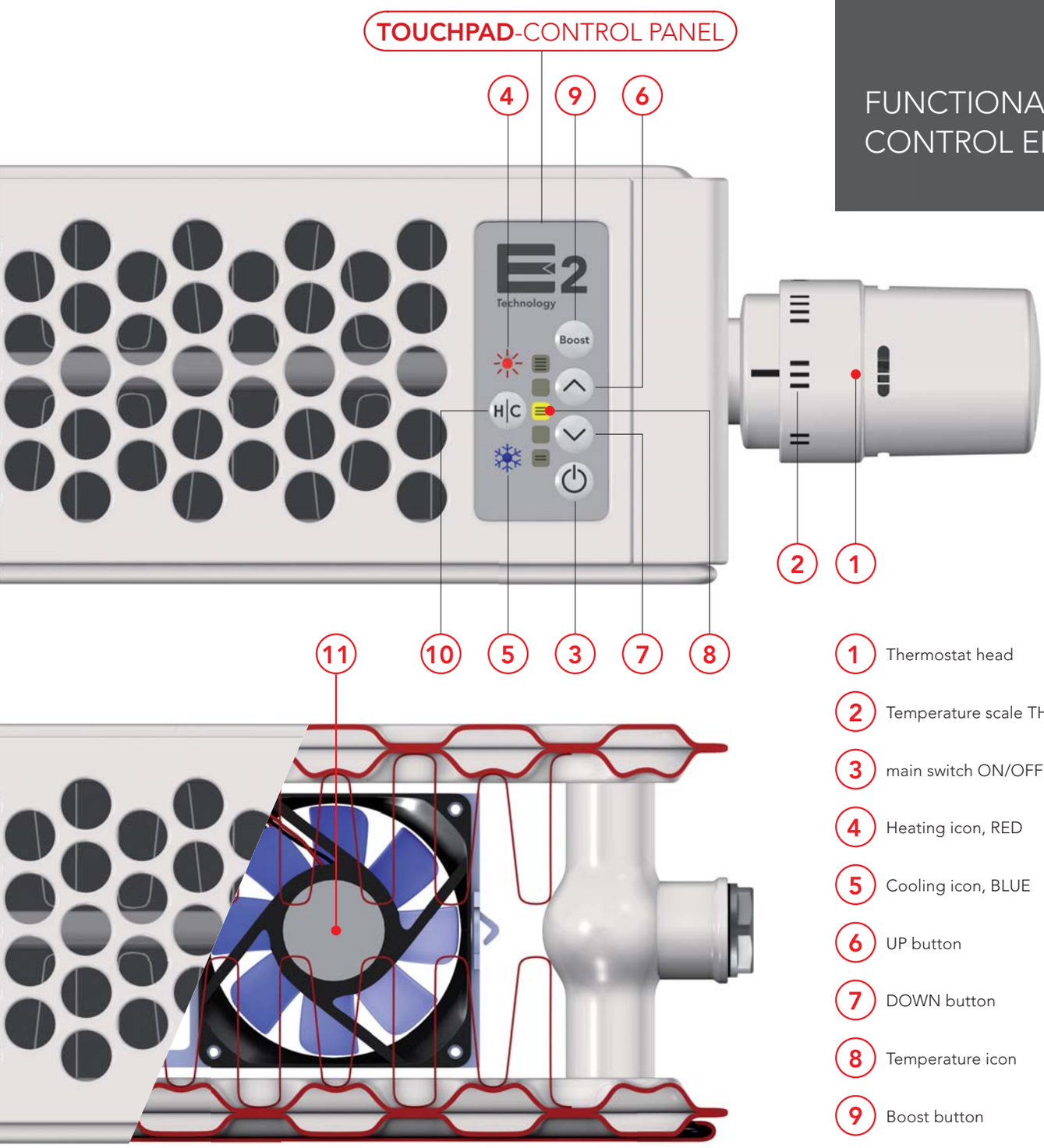
FAN CONVECTORS:
Clumsy appearance and broad bulky structure



ULOW-E2: radiant heat and convection

FAN CONVECTORS:
little radiant heat

FUNCTIONAL AND CONTROL ELEMENTS.



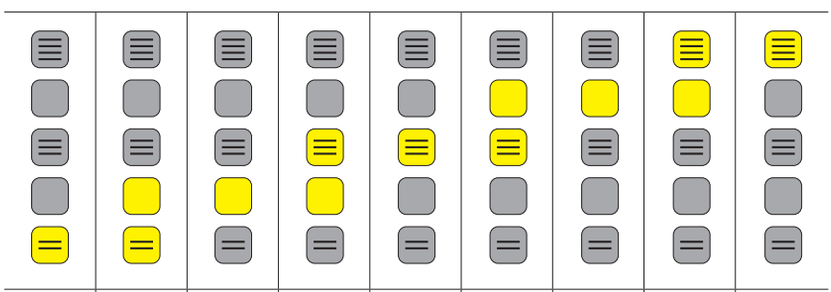
1. Thermostat head
2. Temperature scale THERMOSTAT
3. main switch ON/OFF
4. Heating icon, RED
5. Cooling icon, BLUE
6. UP button
7. DOWN button
8. Temperature icon
9. Boost button
10. Heating/Cooling button
11. Fans

Settings instructions

The thermostat head (**1**) is always the radiator's **MAIN CONTROL FUNCTION**, with the temperature scale (**2**) showing the setting selected. The ULOW-E2 is equipped with a clearly arranged **TOUCHPAD CONTROL PANEL**, with which the settings for the radiator's I**NDIVIDUAL FUNCTIONS** can be entered.

The main switch ON/OFF (**3**) switches the electronics on or off. When the heating icon's (**4**) red light shows, the heating mode is on. The factory setting for desired room temperature on first operation is 22° C. With the UP button (**6**) or the DOWN button (**7**) you can reset the temperature in 1° C increments, between 18 and 26° C. The new setting is displayed by the LED temperature icon (**8**).

Temperature settings



18 °C	19 °C	20 °C	21 °C	22 °C	23 °C	24 °C	25 °C	26 °C
1. LED is lit	1. und 2. LED are lit	2. LED is lit	2. und 3. LED are lit	3. LED is lit	3. und 4. LED are lit	4. LED is lit	4. und 5. LED are lit	5. LED is lit

The Boost button (**9**) activates 'Boost Mode', in which the power to the fans (**11**) is increased to its maximum value.
The maximum duration of 'Boost Mode' is preset by the factory at 120 mins. As soon as the selected room temperature is reached, the system automatically switches to 'Comfort Mode'.
With the Heating/Cooling button (**10**) you can switch from heating operation to cooling operation, and the cooling icon (**5**) lights up in blue.
For "Dry Comfort Cooling" operation some adaptations in the boiler house will be needed, particularly to ensure that temperatures do not fall below the dew-point. In addition the thermostat head needs to be fully opened anti-clockwise, and with extremely high room temperatures it may also occasionally be necessary to remove the thermostat head.

Pressing the Heating/Cooling button (**10**) again activates the "Air Circulation Mode" and the blue cooling icon (**5**) starts to blink. In this case the fans (**11**) operate independently of the temperature sensors. The factory-setting of 12 volts can be reduced to 8 or 5 volts, and vice versa, by pressing the UP (**6**) and DOWN (**7**) buttons. If you press the Heating/Cooling button (**10**) once more, you return to the heating mode.
For more detailed information see the operating instructions, enclosed with every ULOW-E2 low-temperature radiator delivery.

Installation engineer instructions:

Under what conditions do the fans run, when working as a heater?
Regardless of whether it is "Comfort" or "Boost Mode", the output flow temperature needs to be 3° C higher than the measured room air temperature, and at the same time the measured room air temperature has to be lower than the pre-set target room temperature. When either of these conditions is no longer met, the fans switch off.

Under what conditions do the fans run, when cooling?
In this case the output flow temperature has to be 3° C lower than the measured room air temperature, and at the same time the measured room air temperature has to be higher than the pre-set target room temperature. When either of these conditions is no longer met, the fans switch off.

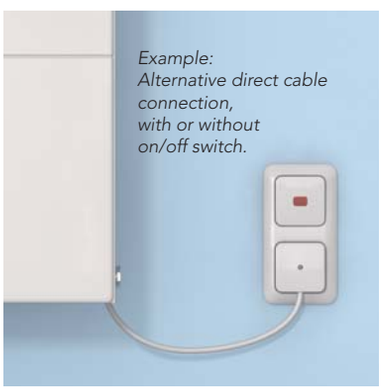
Important parameter settings
With individual servicing, basic parameters (such as hysteresis, duration of Boost operation, offset of the measured room air temperature and/or offset between output flow and room temperature) can be adjusted to suit special conditions.

SERVICE ACCESS, ELECTRICAL CONNECTION AND SECURE WALL MOUNTING.

Versatile electrical connection

Connecting the ULOW-E2 to the power supply, can be done in a variety of ways and can fit in with every structural and architectural condition. The position of the cable is fully adjustable within an overall length of 1.20 m.

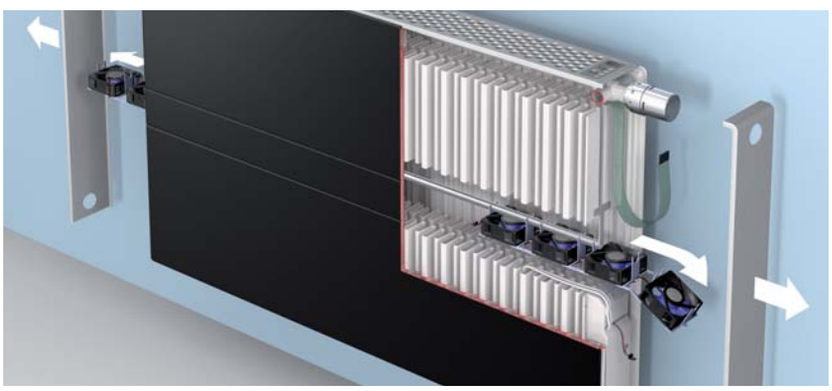
Example: Standard plug connection.

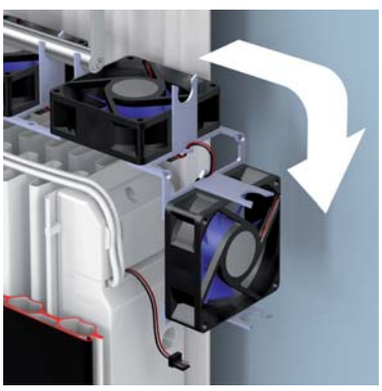


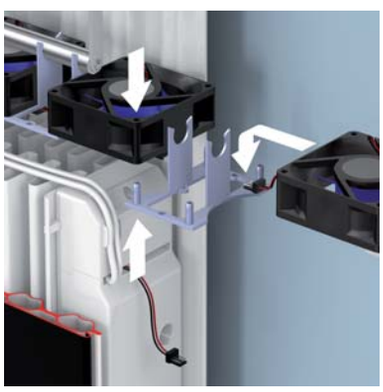
Example: Alternative direct cable connection, with or without on/off switch.

Tool-free service access

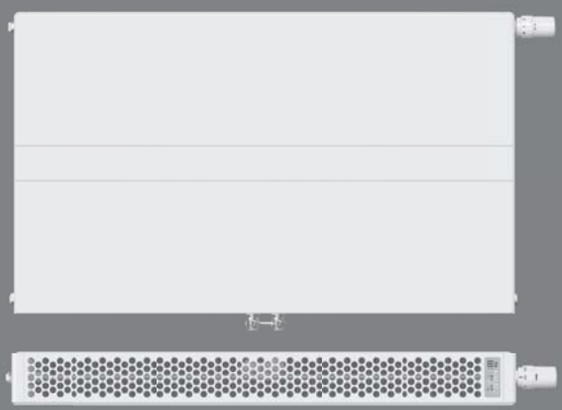
What is so special about service access for the ULOW-E2 is that not a single tool is required for removing and replacing the component parts. All functional units and electrical components are freely accessible and can be fitted by means of plug connections and clamp joints. This saves money and time for maintenance and cleaning. A ULOW-E2 is cleaned just the same way as a standard flat radiator. The fans sit on gliding cradles and can easily be slid out or in from the side of the radiator.







The sliding cradles for the fans are made of extremely flexible and resistant plastic. They can be bent to an angle of 90°. This is particularly useful for narrow niches and narrow side clearance with walls. Should the fan need to be replaced, press down the sliding cradle by hand and remove it from the plug connection/clamp-joint.



TECHNICAL SPECIFICATION.

Material: cold-rolled sheet steel conforming to EN 442-1, 1 mm thick zinc-plated front panel.

Connecting dimensions: central distance between supply and return 50 mm.

Casing: consists of a perforated metal top-cover and two closed removable side panels.

Coating: 1. Primer coating conforming to DIN 55900 part 1, stoved at 190° C;
2. Especially robust electrostatic powder coating conforming to DIN 55900 part 2, in RAL 9016, stoved at 210° C.

Standard design: powder coating in RAL 9016 (Traffic White).

Packaging: 1. Cardboard packaging; 2. Edge protection; 3. Shrink wrapped.
The device can be installed in packaging.

Connection modes: all models are factory-fitted with mounting brackets and can optionally be connected as valve radiators with central connection or as compact radiators. With single-pipe systems, a one-pipe manifold is absolutely essential. The side panels and top-cover are allowed for in the performance specifications.

Noise levels: comfort operation: between 20 and 25 dB; boost operation: 34 dB.
These values apply at a distance of 2m, in conformity with VDI 2081.
(Overall dimensions: 600 x 1000 mm).

Scope of delivery: thermostat valve with factory-adjusted k_v configurations including mounting cap; drain plug, dummy plug and special vent plug, all factory sealed; as well as completely pre-installed fan sets with microprocessor and thermistor control unit; an integrated low-voltage transformer with ready to plug in mains cable; and a visually attractive operating panel (in the top cover), all included in the purchase price.

Not designed for use with free-standing console-feet!

Connections:
4 x G ½ internal thread and
2 x G ¾ external thread, underside centre.

Maximum positive operating pressure:
Standard design: 10 bar

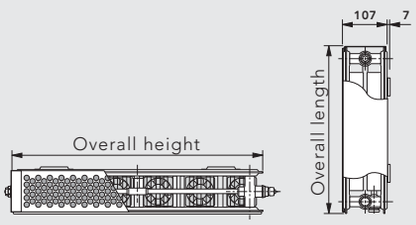
Maximum operating temperature: 60 °C

Safety class: IP24
Supply voltage: 230 V

Secure wall installation

For wall-mounting the ULOW-E2, use only mounting brackets or wall-mounting systems with integrated connection locking.

Prices and performance data - ULOW-E2, model 22 PTM



Mode of operation		Static operation			Comfort operation			Boost operation		
Overall height (mm)		500	600	900	500	600	900	500	600	900
Radiator exponent n (for 45/35/20, 40/35/20 und 35/30/20)		1,305	1,317	1,339	1,139	1,129	1,164	1,112	1,112	1,106
Overall length (mm)										
400	45/35/20	163	184	233	252	272	324	294	317	375
	40/35/20	140	157	198	220	238	282	257	277	328
	35/30/20	89	100	126	149	162	189	176	189	225
	EUR	314,--	320,--	346,--	314,--	320,--	346,--	314,--	320,--	346,--
600	45/35/20	245	276	349	379	409	486	440	475	562
	40/35/20	210	236	298	331	357	423	385	416	492
	35/30/20	134	150	188	224	242	284	263	284	337
	EUR	348,--	359,--	397,--	348,--	359,--	397,--	348,--	359,--	397,--
800	45/35/20	327	368	466	505	545	648	587	634	750
	40/35/20	280	314	397	441	476	564	514	554	656
	35/30/20	179	200	251	298	323	378	351	378	450
	EUR	383,--	397,--	448,--	383,--	397,--	448,--	383,--	397,--	448,--
1000	45/35/20	409	460	582	631	681	810	734	792	937
	40/35/20	349	393	496	551	595	705	642	693	820
	35/30/20	224	250	314	373	404	473	439	473	562
	EUR	418,--	435,--	499,--	418,--	435,--	499,--	418,--	435,--	499,--
1200	45/35/20	490	552	698	757	817	972	881	950	1124
	40/35/20	419	472	595	661	714	846	770	832	984
	35/30/20	268	300	377	448	485	568	527	568	674
	EUR	462,--	483,--	561,--	462,--	483,--	561,--	462,--	483,--	561,--
1400	45/35/20	572	644	815	883	953	1134	1028	1109	1312
	40/35/20	489	550	694	771	833	987	899	970	1148
	35/30/20	313	350	440	522	566	662	615	662	787
	EUR	502,--	527,--	619,--	502,--	527,--	619,--	502,--	527,--	619,--
1600	45/35/20	654	736	931	1010	1090	1296	1174	1267	1499
	40/35/20	559	629	794	882	952	1128	1027	1109	1312
	35/30/20	358	400	502	597	646	757	702	757	899
	EUR	543,--	572,--	678,--	543,--	572,--	678,--	543,--	572,--	678,--
1800	45/35/20	735	828	1048	1136	1226	1458	1321	1426	1687
	40/35/20	629	707	893	992	1071	1269	1156	1247	1476
	35/30/20	402	450	565	671	727	851	790	851	1012
	EUR	585,--	617,--	737,--	585,--	617,--	737,--	585,--	617,--	737,--
2000	45/35/20	817	920	1164	1262	1362	1620	1468	1584	1874
	40/35/20	699	786	992	1102	1190	1410	1284	1386	1640
	35/30/20	447	500	628	746	808	946	878	946	1124
	EUR	628,--	664,--	798,--	628,--	664,--	798,--	628,--	664,--	798,--

ULOW-E2 weight

Overall height (mm)		500	600	900
Overall length (mm)	Model	22 PTM	22 PTM	22 PTM
400	kg	15,70	17,59	25,19
600	kg	22,43	25,20	36,57
800	kg	29,18	32,82	47,95
1000	kg	36,11	40,62	59,51
1200	kg	42,85	48,24	70,90
1400	kg	49,69	55,94	82,37
1600	kg	56,53	63,65	93,84
1800	kg	63,46	71,45	105,41
2000	kg	70,20	79,07	116,79

The stated prices are only valid for the Austrian market, design in standard colour RAL 9016 Traffic White. For the bi-colour design in the combination RAL 9005 Deep Black and RAL 9006 White Aluminium a surcharge of 30% is to be added.
Available from September 2012!

E2 Text for invitations to tender

Item	Number	Description

ULOW-E2 low-temperature radiator, type 22

General remarks:

The ULOW-E2 low-temperature radiator is a combination of a T6 central-connection type 22 radiator with a dynamically controlled fan unit, which – depending on pre-settings – switches on automatically at full load. This ensures a significant increase in heat output.
In light of these purely factual considerations, the VOGEL&NOOT – ULOW-E2 is suitable for use in all low-temperature heating circuits (e.g. 40/35; 35/30…) and is compatible with other systems (e.g. under-floor heating, wall heating).

Thanks to its traditional design, the ULOW-E2 low-temperature radiator can be operated with all heat-generating sources (biomass, heat pump, solar technology, condensing boiler, oil-fired condensing boiler &c).
When connected to a heat source that can be switched to cooling operation (e.g. heat pump), the ULOW-E2 low-temperature radiator has a pre-installed and already integrated "temperature control function". (Note: this function is only available if all pre-installed system settings for cooling operation have been implemented.)

Materials & surfaces

Central-connection radiator made of cold-rolled sheet steel, conforming to EN 442-1; zinc-plated 1mm thick front panel; primer coating, conforming to DIN 55900 part 1, stoved at 190° C; finished with an electrostatic powder coating, conforming to DIN 55900 part 2, in RAL 9016, stoved at an object temperature of 210° C; complete with a built-in valve set, suitable for double-pipe and single-pipe operation using a one-pipe manifold; the kv value of the factory-installed built-in valve is pre-set and co-ordinated with the heat output, but adjustments in the range 0.13 to 0.72 can be made as required.
Setting for the radiator share with single-pipe systems: 30% to 50%.

Fittings:

Fitted with an installed thermostat valve and mounting cap, welded rear-side mounting brackets, removable perforated top-cover, and two closed removable side panels.
Integrated, ready-installed 12 volt fan unit as a support for full-load operation (each unit approx. 1 watt – the number of air output units depends on the radiator's overall length and is determined by the manufacturers). The fan units are flexibly fastened to a guide rail; to replace them remove one side panel by loosening the contacts under the top-cover, then simply pull the fan units out (the lateral wall clearance has to be at least 150mm so as to ensure that the fan units can be removed and replaced). The integrated fan units are controlled by a clearly set out regulation and control unit where individual settings can be entered. The regulation and control unit is located on the upper surface of the top-cover and its operation requires a 230volt connection. The appropriate thermostat head is also enclosed as part of the package (the symbols on the thermostat head match the settings symbols on the specified control & regulation unit – and so proper operation is only possible with the enclosed thermostat head). Additionally there is a drain plug, pivoting special vent plug and dummy plug, all of them sealed.

Technical data:

Complete pre-installation is an option; for flushing and leak testing use VN mounting template ¾ external thread and VN flush device (accessory); can alternatively be connected as a compact radiator, with single-sided or interchangeable connection; performance tested, in conformity with DIN EN 442; production is constantly monitored, in conformity with EN-ISO 9001/9002; triple-packaging (cardboard, edge protection, shrink foil); different connection options for copper, steel, plastic and metal-plastic bonded pipes.
Maximum positive operating pressure: 10 bar, and test pressure: 13 bar;
Maximum operating temperature: 60° C (because of the fan units);
Safety class: IP24
Operation modes: static operation, comfort operation and boost operation.

Connections:

4 x G ½ internal thread and 2 x G ¾ external thread, underside centre.
Thermostat valve top right (can be swapped to top left problem-free).

Model:	Watts:
Overall height:	Items:
Overall length:	

VOGEL&NOOT

Rettig Austria GmbH Vogel und Noot Straße 4, 8661 Wartberg, Austria
T: +43 3858 601-0, F: -1298, info@vogelundnoot.com, www.vogelundnoot.com

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