LUNOS

energy-efficient

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für Raumluftsysteme
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Catalogues from previous years become invalid with the publication of this catalogue.

Illustrations may be different from the original.

WWW.LUNOS.DE QUALITY IS THAT STANDS THE TEST OF TIME

LUNOS Home Ventilation Systems

Dear customers and business partners,

the topic of energy efficiency is more important than ever in our modern times. Low energy consumption of buildings, appliances and vehicles protects our climate, conserves the natural resources of our planet and helps to preserve our earth for future generations.

At LUNOS, we also make our contribution to a sustainable energy balance and thus bear the responsibility that a medium-sized company should bear: Our products are energy efficient and consume much less energy than the market average. We use recyclable and environmentally friendly packaging, support local and international promotional and aid projects and, despite rapid growth, we remain a family-run company with flat hierarchies and short decision-making processes. At the same time, with our new plant in Falkensee, Germany, we introduced a modern high-bay warehouse and our testing and acoustics laboratories are also unrivalled in the industry.

But it is not only in climate protection that we are at the forefront. Our engineers are constantly working on innovative products - and with success! For several years now LUNOS has been the market leader in the field of decentralised residential ventilation. And 2020 will bring another important innovation, because this year we will be coming onto the market for the first time with a central ventilation unit. You will find everything about the LUNOMAT, our world-famous decentralized ventilation units and other innovations in our new 2020 catalogue.

Your LUNOS Team

LUNOS
energy-efficient


LUNOS
energy-efficient
LUNOS ventilation systems produce hygienic ventilation of living spaces exceeding requirements and bringing a feel-good factor into the house.

Contents
General Catalogue 2020

Trust in LUNOS

Fresh air for generations

Quality is what stands the test of time

LUNOS Lüftungstechnik GmbH für Raumluftsysteme is a Berlin-based company and market leader for decentralised residential ventilation systems. The company was founded in 1959 and is still based in Berlin-Spandau. In 2019 a second location was opened in Brandenburg. This created even more expansion opportunities for the company, which manufactures its products Made in Germany and sells them in over 36 countries worldwide. In Germany, the products are sold through the three-level distribution channel.

LUNOS stands for more than a living climate

The core competencies of LUNOS are decentralised controlled residential ventilation with and without heat recovery as well as the development and manufacture of energy-efficient fans and external wall diffusers. In addition, LUNOS develops all associated components as well as many other products such as exhaust air fans and facade ventilation systems with concealed ventilation openings.

For decades LUNOS stood for highest quality, functionality and comfort. Ventilation systems, with or without heat recovery, improve the air quality in the house and save energy in everyday life at the same time.

Made in Germany


Lunos
energy-efficient

Standards & Regulations

Energy saving regulation & DIN 1946-6

Energy saving regulation

Whether renovation or new construction: According to the German Energy Saving Ordinance (EnEV), buildings must be leak-proof. This legal regulation always applies, even when renovating old buildings.

LUNOS systems help you to meet the requirements of the EnEV: On the basis of the parameters humidity and temperature the volume flow rate is increased or reduced as required. In this way as much ventilation as necessary but as little as possible is always provided.

Ventilation of internal bathrooms and WCs is the simplest form of domestic ventilation: Only if a high level of thermal insulation of the building is guaranteed and laundry drying does not take place in the apartment may the bathroom ventilator be designed to be switched off. In all other buildings, bathrooms and toilets must be permanently ventilated. This constant exhaust air volume flow in the bathroom also ensures constant, minimal ventilation of the apartment - the first step towards user-independent apartment ventilation!

DIN 1946-6

The energy saving regulation demands in a sufficient minimum air exchange. Proof can be provided with DIN 1946-6.

The most important tool of this standard is the ventilation concept. It helps to answer a simple question: Is the building adequately ventilated via the building leaks or are additional ventilation measures necessary to ensure a sufficient air exchange rate independent of the user?

If additional measures are necessary, the ventilation systems must be equipped with a user-independent, demand-based control system to meet the requirements of DIN 1946-6. LUNOS offers the suitable products for this.

LUNOS products are eligible

The energy saving effects of a building are significantly increased through the use of residential ventilation.

Beside the energetic plus points the system provides, it also results in a comfortable and always fresh room. In addition to this the protection offered to the building fabric helps to increase the value of the real estate, offering significant financial advantages.

* Sound power level: At 70 % of the maximum volume flow according to (EU 1253/1254/2014). The sound power level indicates how "loud" a unit is. The value is independent of the distance.

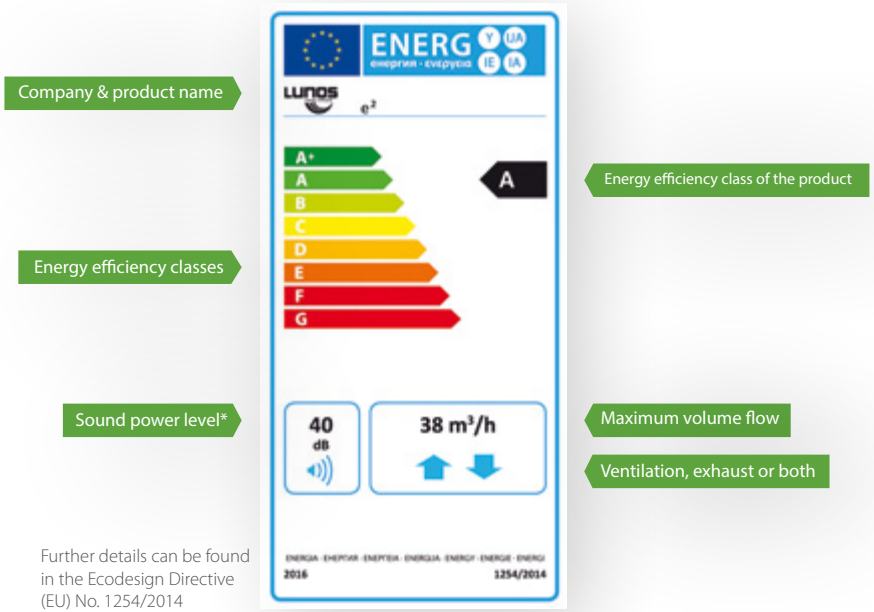
Ecodesign
Directive

Ecodesign Directive

Regulations (EU) No. 1253/2014 and (EU) No. 1254/2014 require some ventilation equipment to be classified in energy efficiency classes. They range from A+ (top rating) to G and can be easily read off an energy label.

LUNOS guarantees compliance with all product declaration regulations. All products with heat recovery as well as those devices with a maximum power consumption of more than 30 watts are included in the ventilation devices that require a label.

The Silvento ec from LUNOS is so efficient that its maximum power consumption is 14.5 watts. This means that it does not fall under this requirement and must therefore expressly not be labelled.



Further details can be found in the Ecodesign Directive (EU) No. 1254/2014

Controlled home ventilation

The concept

CONCEPT OF VENTILATION SYSTEMS

LUNOS ventilation systems are based on a demand-oriented flow through the entire living area. For efficient ventilation the decentralised fans can be combined to form three different ventilation systems:

The correct system depends on the individual requirements of the project and the habits of the residents.

01 EXHAUST SYSTEM

02 SYSTEM WITH **HEAT RECOVERY**

03 COMBINED SYSTEM

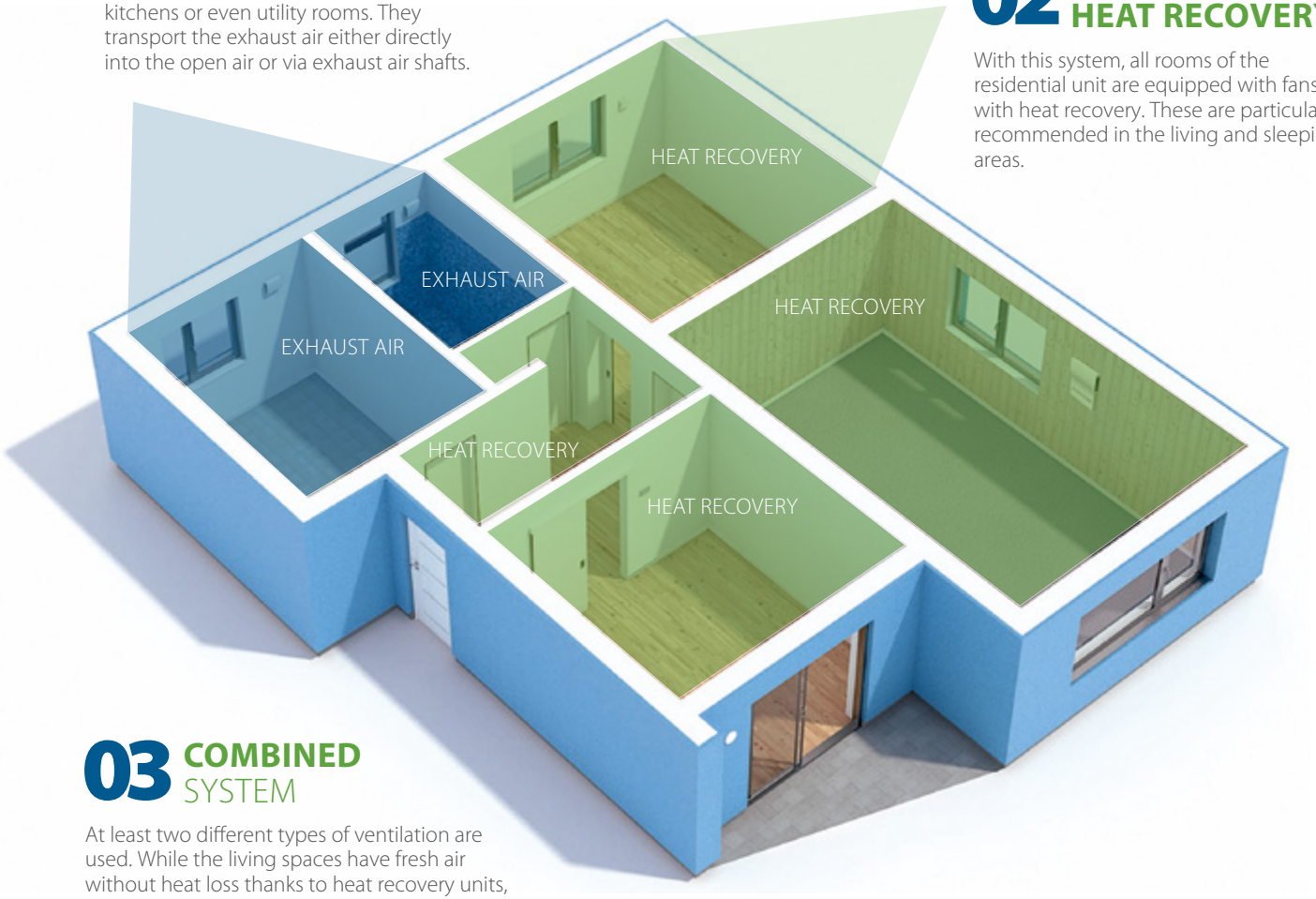
ACCORDING TO DEMAND	Inside comes	Going out	Inside stays	Outside stays
	» Fresh, filtered air	» Humid and odour-contaminated air from kitchen, bathroom, WC etc » Pollutants and outgassings from paints, carpets, furniture etc.	» Heat, for systems with heat recovery	» Suspended matter and insects (through filter inserts) » Noise (through soundproofed outer wall elements) » Wind (through wind pressure protection on the outer wall elements)

01 EXHAUST SYSTEM

Exhaust air systems are very well suited for functional rooms such as bathrooms, kitchens or even utility rooms. They transport the exhaust air either directly into the open air or via exhaust air shafts.

02 SYSTEM WITH HEAT RECOVERY

With this system, all rooms of the residential unit are equipped with fans with heat recovery. These are particularly recommended in the living and sleeping areas.



03 COMBINED SYSTEM

At least two different types of ventilation are used. While the living spaces have fresh air without heat loss thanks to heat recovery units, exhaust air rooms such as the bathroom or kitchen can be ventilated cost-effectively.

Controlled home ventilation

Exhaust system

01 EXHAUST SYSTEM

Fans in the bathroom, kitchen, toilet or utility room transport the exhaust air either directly into the open air or via exhaust air shafts. The resulting slight negative pressure "pulls" fresh, filtered air through the external wall air diffusers into the living and working areas. Of Particular note: With humidity-controlled domestic ventilation, a system approved by the building authorities, ventilation heat losses can be saved to a considerable extent.

Silvento ec
Depending on the application or requirement, any Silvento ec-fan can be used. Available as surface-mounted, flush-mounted or clamp fans.

RA 15-60
Radial external wall fan with four ventilation stages and round cross-section. Can be combined with the facade element LUNOtherm.

ALD, ALD-SV and ALD-S
Outer wall air diffusers with filter, silencer and, if necessary, wind pressure protection.

9/MRD
Wall-mounted housing to accommodate the 160 round duct.
H x W x D: 240 x 210 x 500 mm

LUNOtherm-S
Facade element, without disturbing ventilation grille on the facade. Can be combined with ALD, ALD-SV or ALD-S.

EXHAUST SIDE

SUPPLY SIDE

Controlled home ventilation

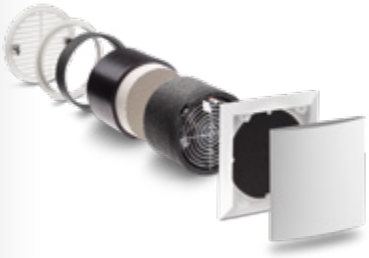
System with heat recovery

02 SYSTEM **WITH HEAT RECOVERY**

With this particularly efficient system, all rooms in the residential unit are equipped with heat recovery units - exactly where they are needed. If you are interested in this type of ventilation, we recommend our proven e^2 series fans.

Series e^2 A A+

Axial external wall ventilators with regenerative heat recovery for living rooms and bedrooms, can be combined with LUNOtherm.



e^{go} A

Exhaust fan with heat recovery for functional rooms.

Ne^{xx}t A

Radial external wall ventilator with recuperative heat recovery for living rooms, bedrooms and functional rooms. Wall ducting via 160 mm round duct.

9/MRD

Wall-mounted housing to accommodate the 160 round duct.
H x W x D: 240 x 210 x 500 mm

LUNOtherm-S

Facade element, without disturbing ventilation grille on the facade.

LUNOS
energy-efficient

SUPPLY & EXHAUST AIR **WITH HEAT RECOVERY UNIT**

Controlled home ventilation

Combined System

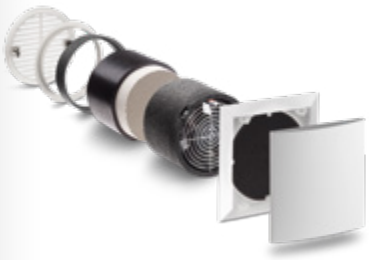
03 COMBINED SYSTEM

In combined systems, at least two different types of ventilation are used together. Combinations of extract air units and fans with heat recovery are particularly effective: While living spaces have constant fresh air without heat loss thanks to heat recovery units, classic extract air rooms such as bathrooms, toilets, kitchens or hot water boilers can be ventilated cost-efficiently as required. For windowless bathrooms and WCs, such an exhaust air unit is even mandatory.

For windowless bathrooms & toilets, the use of exhaust air devices according to DIN 18017-3 is mandatory.

Series e² A A+

Axial external wall ventilators with regenerative heat recovery for living rooms and bedrooms, can be combined with LUNOtherm.



Ne^xt A

Radial external wall ventilator with recuperative heat recovery for living rooms, bedrooms and functional rooms. Wall ducting via 160 mm round duct.

Silvento ec

Depending on the application or requirement, each fan of the Silvento ec series can be used as a surface-mounted, flush-mounted or clamp fan.

RA 15-60

Radial external wall fan with four ventilation stages and round cross-section. Can be combined with the facade element LUNOtherm.

SUPPLY & EXHAUST AIR WITH HEAT RECOVERY UNIT

EXHAUST SIDE

Silvento ec


Radial outlet connection with leakage airtight non-return valve
Housing available for surface, flush and external wall mounting
Optimised casing with efficient ec-radial fan
Exchangeable and expandable control board
Two-room connection
Filter frame with washable filter
Inner screen with filter change indicator

Silvento ec

One motor - endless solutions

Determine the functions of the Silvento ec simply by selecting the control board:

Basic board: seven ventilation stages from 15 to 90 m³/h with time lag, interval switching and switch-on delay configurable

Comfort board: Basic board plus humidity and temperature sensor

Both boards can each be combined with a plug-in expansion module:

Movement sensor module: with radar-based sensor

Wireless module: Control via wireless without further cabling

The sound power level is only 18 dB(A) at 15 m³/h (basic ventilation) and 52 dB(A) at 90 m³/h (demand ventilation)

Dimensions: Surface-mounted with 260 x 260 x 108 mm (W x H x D), cover with 260 x 260 x 23 mm and flush-mounted housing with 235 x 235 x 92 mm

SILVENTO EC TECHNICAL DATA

Silvento-Typ *V-EC[1] oder KL-EC[2]*	Basic board 5/EC-ZI (90)	Comfort board 5/EC-FK (90)
Volume flow	0/15/20/30/40/45/ 50/60/(90) m³/h	0 - 60 (90) m³/h
Sound power level L_w * [3]	from 18 dB(A)	
Power consumption [3]	1,8 - 6,2 (14,5) W	
Supply voltage	200 - 240 V AC 50/60 Hz	
Control voltage	0 - 10 V	
Protection class	IPX5	

1) Silvento V are ventilator inserts that still require a flush or surface-mounted housing. **2)** Silvento KL are complete single-pipe fans that are clamped in pre-wall constructions. Silvento KL single-pipe fans fit into the flush-mounted housings of the LUNOS Skalar series. **3)** Free blowing ***** Sound power level: The sound power level indicates how "loud" a unit is. The value is independent of the distance.

Recommendation

LUNOS recommends the use of the newly developed diagnostic software as an extension of the scope of functions and for the use of logging functions. All functions and their advantages on page 65.

Silvento ec V-EC & KL-EC

the modular system for fan trays and terminal fans

The control boards are integrated in the filter frame and can be easily configured and replaced if necessary by removing the cover. There is a slot on both the basic board and the comfort board, which can be equipped with an additional module.

Basic board | Comfort board | Cellar board | Wireless module | Movement sensor

Basic board	Comfort board
Selection of different volume flows for basic ventilation and demand ventilation possible: 15/20/30/40/45/50/60/(90)	
Time delay configurable to 0, 15 or 30 minutes	
Interval switching: 30 minutes ventilation every four hours or 15 minutes ventilation every two hours	
Switch-on delay can be set to OFF, 45 or 120 seconds	
Slot for an additional module: - Radar based motion detector 5/BM or - FM-EO wireless module or - Diagnostic cable	
Filter change indicator	
	Stepless comfort humidity-temperature control

Cellar ventilation

The Silvento ec with the suitable board is the new, innovative solution for cellar ventilation from LUNOS. It ensures clean and hygienic ventilation of the cellar area. Comfort and a pleasant room climate can thus be easily achieved. Commissioning takes place in conjunction with the Type 5/EC-KE board and the Type 5/W2 FK switch. The fan permanently records the air humidity and forms an average value which can be achieved by ventilation. A permanent voltage is required for this.

Silvento ec

Configuration of the installation housing

Type, dimensions (H x W x D in mm)	**Blow-out connection** *Length in mm*	**Fire protection**
Surface-mounted housing 3/AP, 269 x 269 x 109.5	Axially outgoing conical blow-out connection (DN 75 to DN 80), Length 69	–
Surface-mounted housing 3/AP-B 269 x 269 x 109.5	Metallic, axial outgoing blow-out connection (DN 80), length 79	With shut-off device K90-18017, suitable for installation in kitchens, connection diameter DN 80, with leakage airtight non-return valve
In-wall housing 3/UP 262 x 262 x 102,5 Installation depth 90,5 (without blow-out connection)	Radial or axial conical blow-out connection (DN 75 to DN 80), Length 69	–
In-wall housing 3/UP-BR, 270 x 270 x 114,5 Einbautiefe 102,5	Metallic, radially outgoing blow-out connection (DN 80), Length 64	With shut-off device K90-18017, suitable for installation in kitchens, connection diameter DN 80, with leakage airtight non-return valve
In-wall housing 3/UP-BA 270 x 270 x 114.5 Installation depth 102.5, with blow-out connection 175,5	Metallic, axial outlet blow-out connection (DN 80), Length 73	With shut-off device K90-18017, suitable for installation in kitchens, connection diameter DN 80, with leakage airtight non-return valve

AB 30/60

Axial fan

Exhaust air unit with ec-motor, can also be combined with the LUNOtherm facade element.

AB 30/60

Cost-efficient home ventilation

With its low power consumption, the AB 30/60 is energy-efficient and thus makes an active contribution to environmental protection.

The AB 30/60 axial fan is installed directly into the outer wall. It can be used alone or together with units of the e^2 series and is used for ventilating functional rooms such as kitchens and bathrooms.

The ec-motor with built-in electronics allows direct connection to the mains supply without additional components.

Computer-optimised fan blades in combination with an efficient flow channel and extensive sound insulation material ensure that the AB 30/60 provides optimum sound insulation from the outside and a very low noise level. Best performance for the environment due to low power consumption.

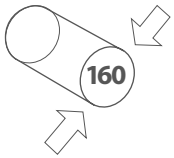
Can be combined with inner screens of the 160 series

Standard
Inner screen

Comfort Inner screen
(plastic design)

Comfort Inner screen
(glass design)

Sound insulation
Inner screen



EXHAUST AIR

TECHNICAL DATA

Volume flow
35/70 m^3/h

Sound power level* L_w
from 36 dB(A)

Power consumption
1,5/4,9 W

Supply voltage
100-240 V 50/60 Hz

Core drilling
Ø 162 mm

Minimum installation length
170 mm

Dimensions
Ø 154 x 130 mm

Protection class
IP44

* Sound power level:
The sound power level indicates how "loud" a device is. The value is independent of the distance.

AB 30/60

RA 15-60

Radial fan

The combination of consistency of pressure and renovation simplicity

RA 15-60

Perfect for outside exhaust air rooms

Exhaust air unit with ec motor, can also be combined with the LUNOtherm facade element.

The RA 15-60 owes its extraordinarily good pressure characteristic curve to the radial ec motor in combination with a very stable housing. In addition, the multi-surface sound absorbers give the RA 15-60 undreamt-of low running noise as well as optimal sound insulation from the outside.

With the aid of a LUNOS control system it is possible to operate the motor with humidity control and/or time functions.

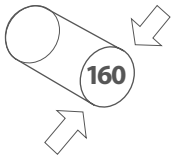
Can be combined with inner screens of the 160 series

Standard
Inner screen

Comfort Inner screen
(plastic design)

Comfort Inner screen
(glass design)

Sound insulation
Inner screen



EXHAUST AIR

TECHNICAL DATA

Volume flow
15 - 60 m³/h

Sound power level* L_w
from 24 dB(A)

Power consumption
0,6 - 7,2 W

Supply voltage
12 V DC SELV

Core drilling
Ø 162 mm

Minimum installation length
180 mm

Dimensions
Ø 154 x 147 mm

Protection class
IP20

* Sound power level:
The sound power level indicates how "loud" a device is. The value is independent of the distance.

RA 15-60

Outer wall air vents

For renovation and new construction - sound-optimised and weatherproof

Outer wall air vents

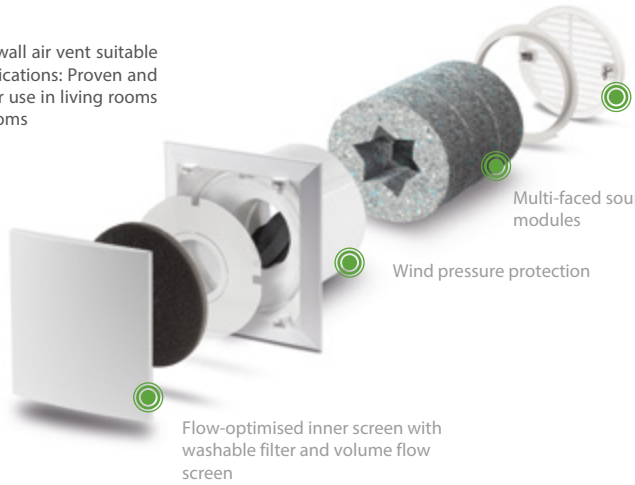
Comfortable climate in tight buildings

Inner and outer city traffic affects our home climate.

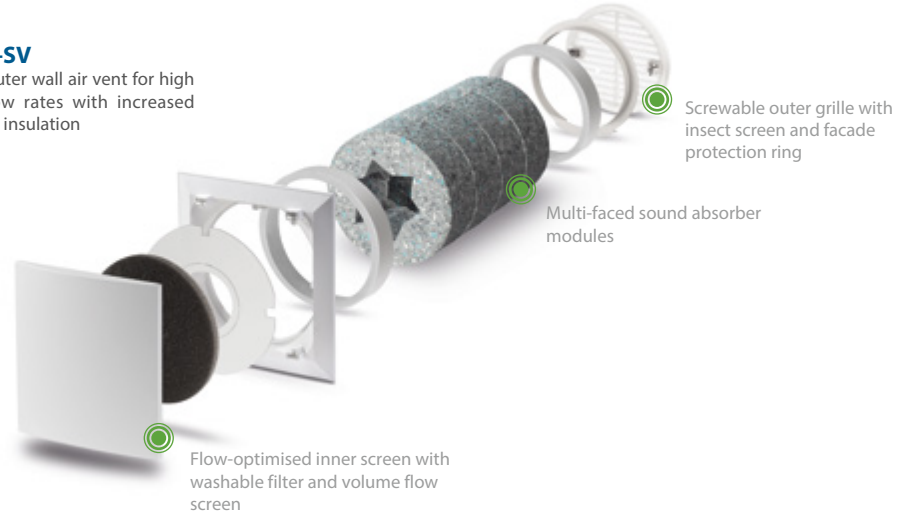
For a high level of living comfort, it is essential to integrate well thought-out sound insulation measures in wall construction, windows and fresh air supply.

Due to the high sound insulation dimensions, the LUNOS ventilation system achieves an air exchange without significant losses in the quality of living. The outer wall air vents ALD, ALD-SV and ALD-S serve as passive air supply for living rooms and bedrooms. They are mainly used in combination with LUNOS exhaust air units of the Silvento range. A constant negative pressure is created by the exhaust air in the functional rooms, such as the bathroom and kitchen, which transports fresh air into the house via the outside wall air diffusers. When planned in accordance with standards, this ensures user-independent ventilation in accordance with DIN 1946-6.

ALD
The outer wall air vent suitable for all applications: Proven and efficient for use in living rooms and bedrooms



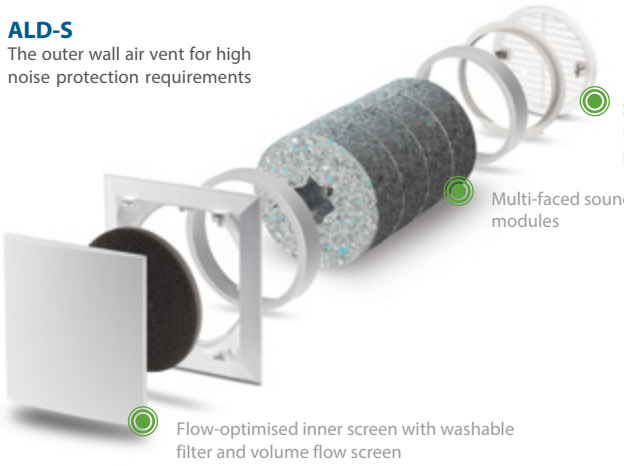
ALD-SV
The outer wall air vent for high air flow rates with increased sound insulation



Outer wall air vents

Comfortable climate in tight buildings

ALD-S
The outer wall air vent for high noise protection requirements



Can be combined with inner screens of the 160 series


Standard Inner screen


Comfort Inner screen (plastic design)


Comfort Inner screen (glass design)


Sound insulation Inner screen


Hygiene Inner screen incl. F7 filter


Hygiene Inner screen incl. F7 filter

LUNOS energy-efficient

Home ventilation with feel-good factor - of course from LUNOS

Outer wall air vents

Technical data

ALD

Length of built-in unit: 360 mm
Ø: 154 mm

V̇:	at 8 Pa	at 4 Pa
	25 m³/h	18 m³/h
	20 m³/h	13,5 m³/h
	15 m³/h	10 m³/h

Sound insulation

Dn,e,w	Wall thickness
50 – 58 dB(A)	360 mm
56 – 62 dB(A)	500 mm

ALD-SV

Length of built-in unit: 360 mm
Ø: 154 mm

V̇:	at 8 Pa	at 4 Pa
	25 m³/h	18 m³/h
	20 m³/h	13,5 m³/h
	15 m³/h	10 m³/h

Sound insulation

Dn,e,w	Wall thickness
53 – 61 dB(A)	360 mm
61 – 65 dB(A)	500 mm

ALD-S

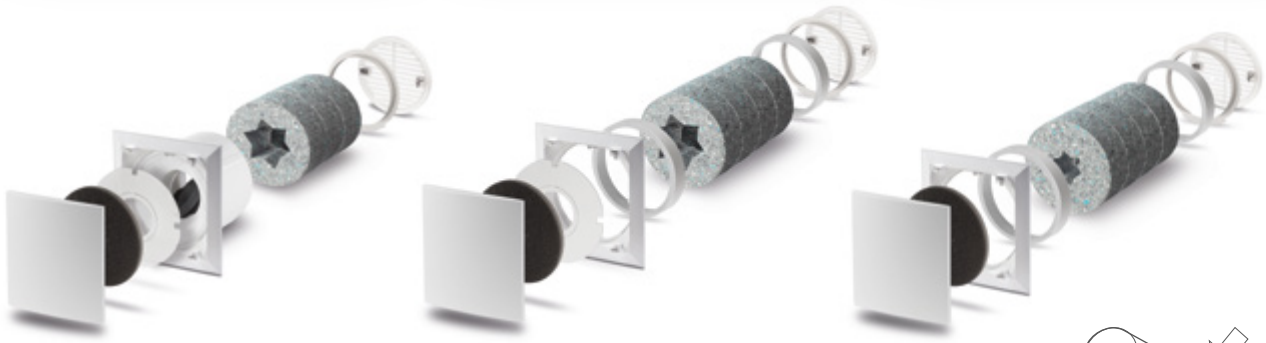
Length of built-in unit: 360 mm
Ø: 154 mm

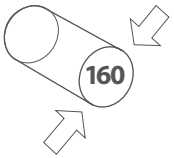
V̇:	at 8 Pa	at 4 Pa
	15 m³/h	10 m³/h

Sound insulation

Dn,e,w	Wall thickness
55 – 67 dB(A)	360 mm
67 – 71 dB(A)	500 mm

The given sound insulation values apply to the above-mentioned volume flows with a round duct completely filled with sound absorbers.

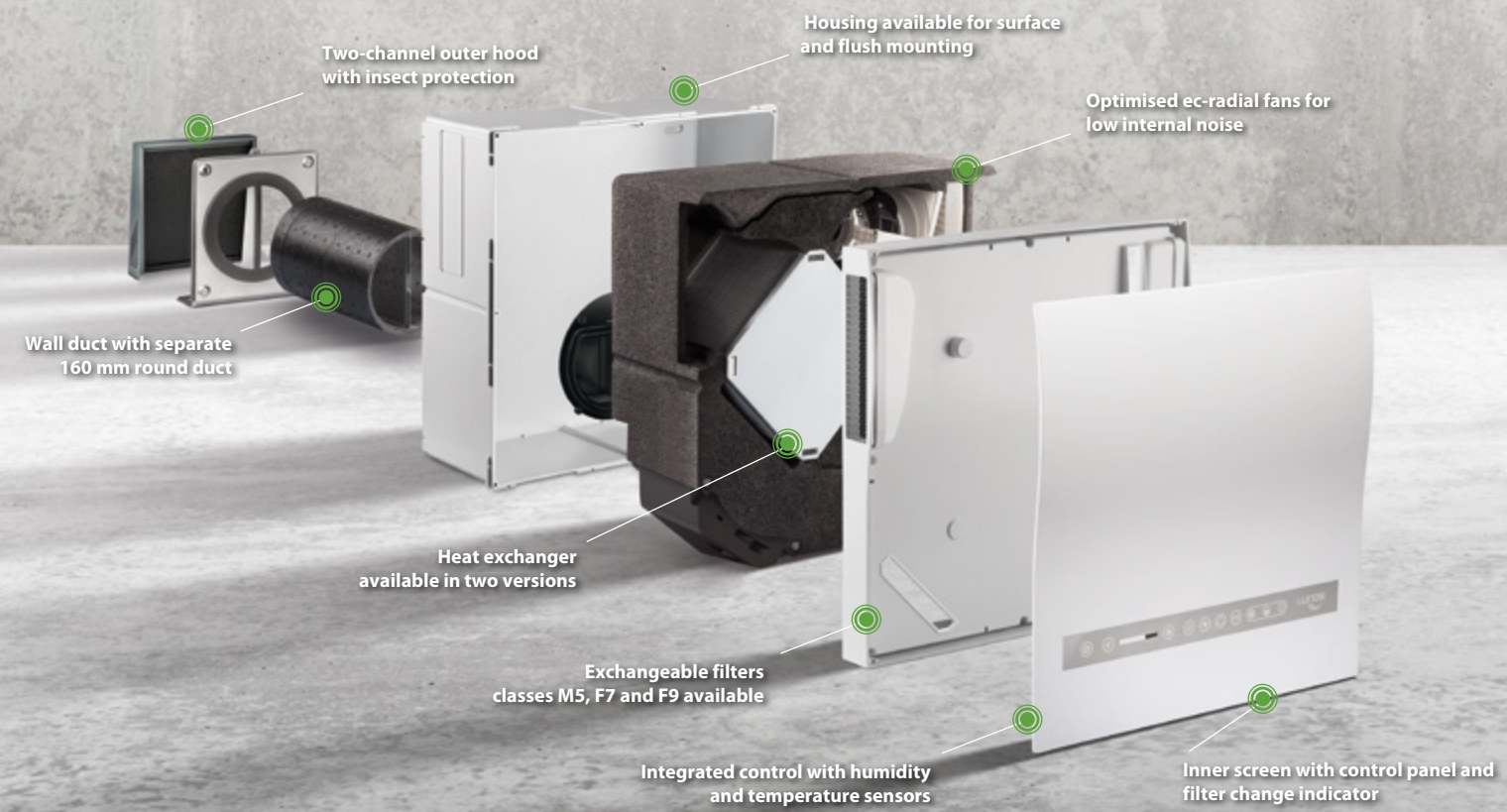




Ne^{xx}t

Heat recovery unit

The Ne^{xx}t is suitable for use in kindergartens, schools, offices, hotels and medical practices as well as in the home. The Ne^{xx}t also delivers the best results in areas or heights where extraordinary wind loads prevail and in areas where high sound insulation is required.



Ne^{xx}t

Decentralized heat recovery unit

Low noise level and maximum passive soundproofing

The Ne^{xx}t is extremely energy-efficient thanks to its very low power consumption: the ec technology with high efficiency enables low power consumption.

The integrated controller ensures perfect interaction between the various components. Equipped with humidity-temperature sensors, the automatic control system ensures efficient ventilation with moisture protection even in the standard version. Optionally, the Ne^{xx}t can be equipped with the FM-EO radio module for control and communication with other LUNOS components and for SmartHome integration.

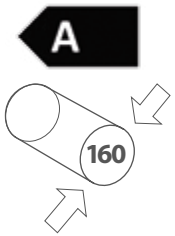
The heart of the Ne^{xx}t is the plug-in unit with heat exchanger, which is available in two versions:

Ne^{xx}t-E
The enthalpy heat exchanger achieves a heat recovery rate of up to 83 %. In addition, the mode of operation of the heat exchanger ensures that it is largely ice-free and provides comfort in the interior even with cold outside air.

Ne^{xx}t-K
The cost-efficient version with cross-flow heat exchanger achieves a heat recovery rate of up to 80 %.

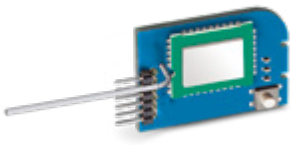
OPTIONAL **Electrical flap closure**
Electrical flap closure 9/KVEN-2 for Ne^{xx}t based on the 160 round duct. It opens or closes the panel feed-through automatically when the unit is switched on or off.

Recommendation
As an extension of the range of functions and for the use of logging functions, LUNOS recommends the use of the newly developed diagnostic software. All functions and their advantages on page 65.



HEAT RECOVERY

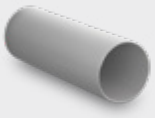
OPTIONAL **FM-EO**
Wireless module for bidirectional wireless transmission



OPTIONAL **F7- and F9-Filter**
For highest demands on hygiene

Ne^xt

The modular system for the perfect fan

PLUG-IN UNIT		HOUSING		ROUND DUCT + ADAPTER *		INNER SCREEN		EXTERNAL CLOSURE
								
NXT-E Plug-in unit		**3/NXT** Installation housing Flush mounted		**9/R 160-500** 500 mm length **9/R 160-700** 700 mm length		**9/NXT-IBF** with foil keypad		**1/HWE-2** Two-channel outer hood
	or +		or +		and +		+		or
								
NXT-K Plug-in unit		**3/NXT + 3/NXT-AP** Installation housing Surface-mounted set		**2/AD 160** Adapter*				**1/HAZ-2** Two-channel outer hood

* from 30 cm an adapter is required for each 10 cm or part thereof of the round duct

Ne^{xx}t
Technical data

Characteristics	Ne^{xx}t-E	Ne^{xx}t-K
Volume flow	15 - 110 m^3/h	15 - 110 m^3/h
Max. degree of heat supply	83 %	80 %
Heat supply level according to EN 13141-8	73 %	62 %
Max. standard sound level difference $D_{n,e,w}$	49 dB	
Sound power level L_W	from 20 dB(A)	
Power consumption*	22 W	
Supply voltage	200-240 V | 50/60 Hz (115 V | 60 Hz on request)	
Core drilling	162 mm	
Minimum installation length	Surface-mounted: 110 mm, flush-mounted: 280 mm	
Depth for wall mounting	172 mm Housing + 105 mm Flap closure in wall ducting	
Dimensions of the device	480 mm x 480 mm x 170 mm	
Size inner screen	510 mm x 510 mm x 66 mm	
Size outer hood	235 mm x 205 mm x 72 mm	
Energy efficiency class	A	
Schutzart	IP22	

* at 70 % of the maximum volume flow, according to ErP Directive, EU Regulation 1254/2014

e² series

Flexible in any field

No fan has the decentralized ventilation with heat recovery so characterized like the e² from LUNOS.

e² series
Technical data

Characteristics	e²60	e²	e²short
Volume flow	5 - 60 m³/h	15 - 38 m³/h	15 - 38 m³/h
Max. degree of heat supply	96 %	96 %	85 %
Heat supply level according to EN 13141-8	0 - 40: 88 % 0 - 60: 83 %	85 %	75 %
Max. standard sound level difference $D_{n,e,w}$	54 dB	54 dB	54 dB
Sound power level L_W	from 18 dB(A)	from 29 dB(A)	from 28 dB(A)
Power consumption	0,4 - 3,3 W	0,7 - 4 W	0,6 - 3,9 W
Minimum installation length	280 mm (lower on request)	280 mm	200 mm
Dimensions	Plug-in module Ø 154 x 243 mm	Plug-in module Ø 154 x 243 mm	Plug-in module Ø 154 x 168 mm
Compatibility	All 160 systems incl. LUNOtherm and external hoods as external finish	All 160 systems incl. LUNOtherm and external hoods as external finish	All 160 systems incl. LUNOtherm and external hoods as external finish
Energy efficiency class	A+	A	A

e²60 [esquaredsixty]

Ready for the demands of the future.

Thanks to its very low power consumption and intelligent motor control, the e²60 is extremely energy efficient and easily achieves energy efficiency class A+.

e²60

The solution for the demands of the future

With classified wind pressure stability and high volume flows, the e²60 is a reference device in its class.

The consequent improvement of the ec-technology and the wing aerodynamics ensures particularly low noise emissions.

The fact that the e²60 achieves the high heat provision level of 88 % is largely due to the newly developed and patented air diffuser, which ensures a particularly even flow through the heat exchanger.

The e²60 is the first axial fan to achieve a constant volume flow at high back pressures. This outstanding feature of external motor control ensures that the e²60 is the first unit of its type to meet the requirements of pressure class S1 according to DIN 13141-8. This makes it easy to use in areas with high wind pressures, such as on the coast or at high altitudes. A further advantage of the e²60 is its high volume flow bandwidth.

Can be combined with inner screens of the 160 series

Standard
Inner screen

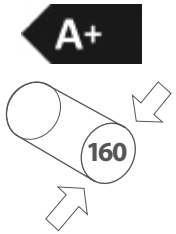
Comfort inner screen
(plastic design)

Comfort inner screen
(glass design)

Sound insulation
Inner screen

Hygiene inner screen
incl. F7 filter

Hygiene inner screen
incl. F7 filter



HEAT RECOVERY

F7-FILTER

Special pollen and fine dust filters that simply leave annoying particles outside. Included with IBG-H and IBK-H.

Reversing technology for exhaust air rooms

For bathrooms, WCs and kitchens

e^go

Supply and exhaust air in one unit

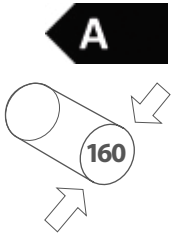
In one e^go, two fans provide simultaneous air supply and exhaust. Therefore, operation in pairs is not necessary.

The e^go ensures optimum ventilation with heat recovery in bathrooms, WCs and kitchens. It combines supply and exhaust air by means of two small fans located inside the fan.

The e^go is one of the world's smallest fans for domestic ventilation with heat recovery in the two-channel unit class.

Outer hood

The e^go can be combined with the two-channel outer hood on the façade



HEAT RECOVERY

TECHNICAL DATA

Volume flow
5 - 20 m³/h (heat recovery), 45 m³/h (exhaust)

Max. degree of heat supply
82 %

Heat supply level according to EN 13141-8
75 %

Max. standard sound level difference $D_{n,e,w}$
46 dB

Sound power level* L_w
from 28 dB(A)

Power consumption
1 - 4,9 W

Supply voltage
12 V DC SELV

Core drilling
Ø 162 mm

Minimum installation length
300 mm

Dimensions
Screen 237 x 217 mm
Plug-in module Ø 154 x 300 mm

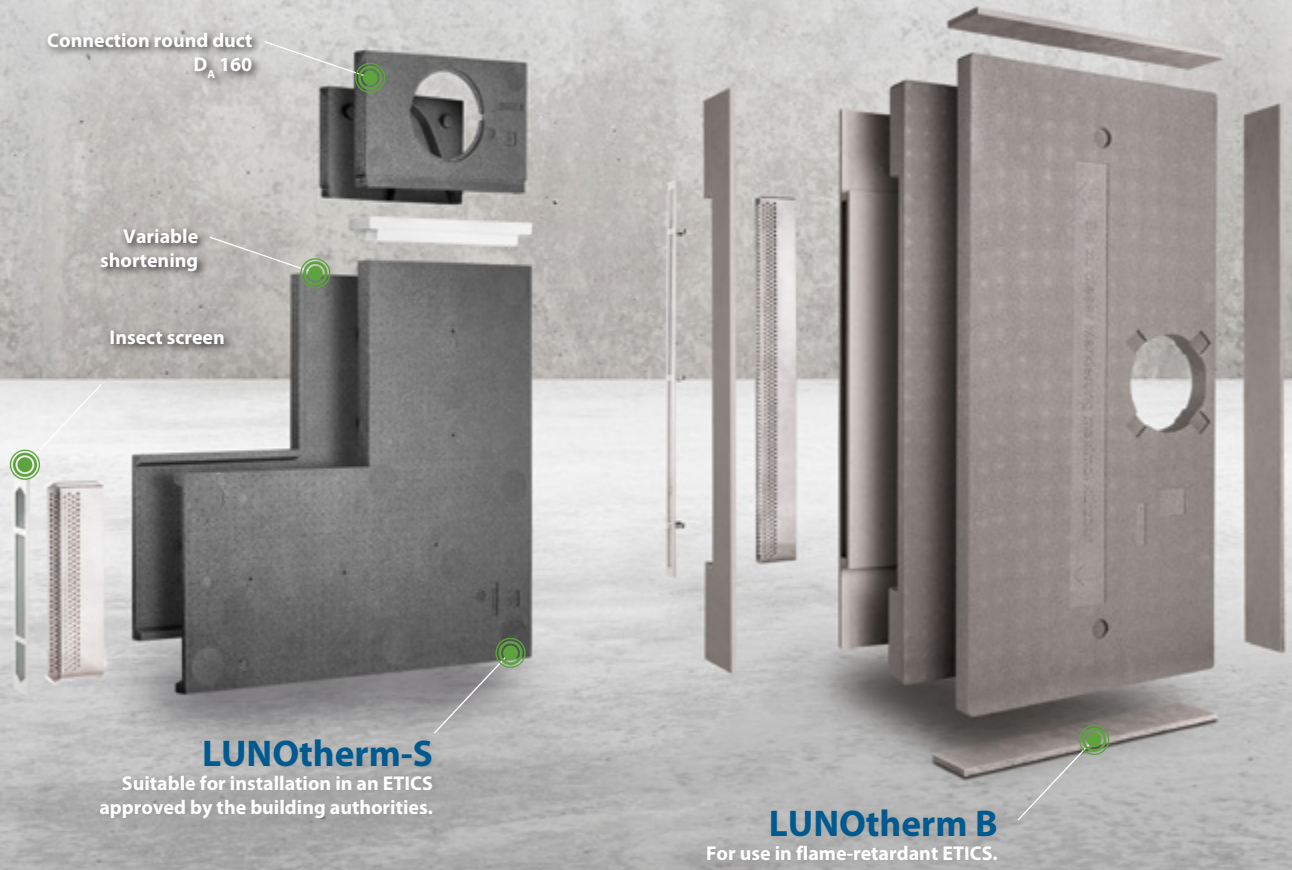
Protection class
IP22

* Sound power level:
The sound power level indicates how "loud" a device is. The value is independent of the distance.

e^go

LUNOtherm

Facade element
Draught-free, hygienic, soundproof
and almost invisible.



LUNOtherm-S
Suitable for installation in an ETICS
approved by the building authorities.

LUNOtherm B
For use in flame-retardant ETICS.

LUNOtherm

The LUNOS facade elements

With the LUNOtherm facade element the facade design is finally no longer restricted

Due to its position in the window lintel or in the window reveal, the element is inserted directly into the insulation layer of the thermal insulation composite system (ETICS) and is almost invisible from the outside. The LUNOtherm can be installed above or next to the window, so that the combination with a roller shutter box is also possible without any problems.

The new facade element LUNOtherm-S has been optimized for a significantly higher level of sound insulation and is even easier to process. The ventilation opening can be positioned variably and the deflection of the air and thus also of the sound by a further 90° ensures the high sound insulation properties of LUNOtherm-S. A significantly lower weight and an adaptable standard size additionally enable better handling in logistics and on the construction site.

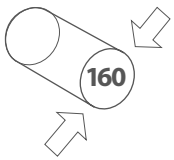
In combination with the ALD-S, the LUNOtherm-S can achieve a standard sound level difference of up to 71 dB.

Benefit from the various advantages of our product series: Especially the e^2 series and the ALD can be excellently combined with LUNOtherm.

LUNOtherm A

For use in non-combustible ETICS.

Registration number
LUNOtherm A and LUNOtherm B
Z-56.212-3473



TECHNICAL DATA

LUNOtherm A
Use in non-combustible WDVS.
Insulation thickness: 60 - 300 mm
W x H: 980 x 490 mm

LUNOtherm B
Use in flame-resistant ETICS.
The insulation core is protected by a mineral encapsulation.
Insulation thickness: 60 - 300 mm
W x H: 1000 x 500 mm

LUNOtherm-S
Suitable for installation in an ETICS approved by the building authorities.
Installation with over-insulation or under-insulation possible.
Dimensions (H x W x D): 930 x 700 x 60 mm
Dimensions outer grille (H x W): 345 x 53 mm

LUNOtherm has a general technical approval according to DIBt

LUNOtherm is supplied in insulation thickness and is processed by the facade builder like an insulation board of the ETICS. Detailed installation instructions are available on request. Since LUNOtherm is installed in the flashover area, its suitability was tested within the framework of the general building inspection approval of the DIBt. Thus, LUNOtherm A may be installed in ETICS with fire behaviour class A1 or A2-5 according to DIN-EN 13501-1 and LUNOtherm B in flame-retardant ETICS according to DIN 4102-1 B1 up to an insulation thickness of 300 mm.

Combination of the 160 series
for decentralised ventilation technology

01 PLUG-IN MODULE	**Series e²** 	**RA 15-60** 	**AB 30/60** 
02 ROUND DUCT		**9-R 160-500** Length 500 mm	
03 INNER SCREEN	**9/IBE** 	**9/IBK** 	**9/IBG** 
04 EXTERNAL CLOSURE OR LUNOTHERM	Plastic, round **1/BE 180, 1/WE 180, 1/AZ 180** 	Metal, round **1/RME 175, 1/RMK 175** 	Outer hood, metal **1/HWE, 1/HAZ** 

LUNOS energy-efficient

Use two-channel external closures!

ALD

ALD-S

ALD-SV

Ne^{xx}t

e^{go}

9-R 160-700
Length 700 mm

9/IBS

9/IBG-H

9/IBK-H

9-NXT-IBF

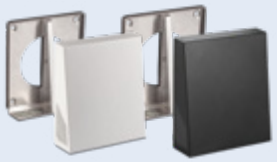
Two-channel screen 2/EGI
(Scope of delivery e^{go})

LUNOtherm-S

LUNOtherm A

LUNOtherm B

Two-channel hood, metal
1/HWE-2, 1/HAZ-2



LUNOMAT

Central home ventilation unit

Fresh air supply of the living areas, by pressure-resistant and highly efficient ec radial motors for volume flows up to 125 m^3/h.

LUNOMAT

The first central home ventilation unit from LUNOS

Highly efficient enthalpy heat exchanger with a heat supply efficiency of up to 95 %

With a highly efficient enthalpy heat exchanger and a heat supply level of up to 95 %, the LUNOMAT is the performance professional for the supply of fresh air to living spaces.

Thanks to exchangeable filters of the classes F7 and F9, the LUNOMAT can be adapted to the most diverse requirements. The pressure-resistant and highly efficient ec radial motors are also suitable for volume flows of up to 125 m^3/h at 100 Pa and are thus able to withstand even strong air pressures on the coast or at high altitudes.

In short: The LUNOMAT is the all-round talent from LUNOS for central apartment ventilation.

The LUNOMAT can be operated by almost all LUNOS control systems: TAC, universal control and gesture control. Of course, it is also possible to receive commands from the common smart home controls of homee via optional wireless modules.

OPTIONAL F9 FILTER

Exchangeable filters of classes F7 and F9 available

A

HEAT RECOVERY

TECHNICAL DATA

Volume flow
40 - 125 m^3/h at 100 Pa

Heat supply level*
84 %

Heat supply level according to PHI
83 %

Device sound at 100 m^3/h, 100 Pa
45 dB(A)

Specific Power consumption (SPI) at 50 Pa*
0,3 W/(m^3/h)

Max. power consumption at 125 m^3/h,100 Pa
52 W

Mains voltage
100 - 240 V | 50/60 Hz

External and internal leakage
Klasse A1

Dimensions (H x W x D)
805 x 555 x 190 mm

Installation options
New construction and renovation
Ceiling and wall mounting
4 x DN 125 mm Outlets

* according to EN 13141-7 at reference volume flow

LUNOMAT

Controls

Whether with gesture or automated

LUNOS offers control systems that can be adapted exactly to the wishes and requirements.

Gesture control

Ventilate with a gesture

Different control systems are available for all products. The Gesture control works via an electromagnetic field, which can be activated by different gestures - that means contactless. Under the touch unit there are 60 RGB LEDs, which give feedback during operation and signal activated functions and states in an easily understandable way.

Functions

- Select standby displays: time, temperature/humidity level, filter runtime, night light
- Limit values of the humidity range adjustable
- The volume flow of the areas to be ventilated can be controlled independently for both areas
- The comfort functions intensive ventilation, night setback and summer ventilation can be individually parameterised in running time and level
- Humidity and frost protection functions
- Different device types adjustable via one control system

Possible device combinations

Universal controls as well as devices of the Ne^{xx}t and/or Silvento ec series can be connected to the two outputs of the gesture control. These two control paths or channels can be controlled separately, so that two different areas can easily be controlled independently of each other. This means that the entire ventilation system of a residential unit can be operated via one control.

Smart Comfort

Ventilation at the touch of a button

This control is extremely easy to operate. The different ventilation modes and also the humidity-temperature mode recommended for continuous operation can be set directly at the touch of a button. If the unit is in the recommended humidity-temperature mode, the ventilation system works particularly efficiently and keeps the room climate at an optimum level.

Functions

- Automatic humidity control, intensive ventilation, night setback and summer ventilation selectable via push buttons
- Four different lower limits of the humidity range adjustable
- Humidity and frost protection functions

Possible device combinations

The Smart Comfort can control all 12-volt fans from LUNOS.

5/UNI-FT

Humidity and temperature control as standard

With the universal control unit 5/UNI-FT, every ventilation unit can be controlled automatically. It is equipped as standard with humidity/temperature control and time delay module and has a summer mode. The universal control unit is a multifunctional 12-volt control unit that can be operated with a simple two-pole series switch.

Functions

- Automatic humidity control
- Three different humidity control ranges adjustable
- Manual control via series switch (four-stage)
- Integrated time tracking with interval operation
- Wireless module connectable
- 0 - 10 V input for connection to the TAC or to the home automation system

Possible device combinations

All 12-volt fans of LUNOS can be controlled via the universal controller 5/UNI-FT.

TAC

Touch Air Comfort – the multitalent of LUNOS

The TAC can be configured for different ventilation scenarios. This control proves to be an energy-efficient combination artist: either different fans or individual universal controls are connected to the three outputs of the control. The integrated power supply unit is absolutely sufficient for a three-room apartment, for example, in which four e² in the living rooms and one Silvento ec in the bathroom are controlled. If there is a higher demand for ventilation units to supply larger apartments or single-family homes, the Touch Air Comfort can also regulate several universal controls.

Possible device combinations

The 12 V fans of the 160 series as well as the Ne^{xx}t and Silvento ec can be connected directly.

Alternatively, almost any number of fans can be connected via universal controls and operated via the TAC.

Functions

- E-Ink display for lowest power consumption
- Integrated humidity/temperature sensor
- Expandable with the CO_2 sensor SCO_2-TAC
- direct operation of up to four e² or two e^{go} or one RA 15-60
- Silvento ec fans can be directly connected and controlled via the low voltage input
- Further devices can be controlled via connected universal controls
- Comfort functions such as night setback, summer ventilation, etc. also via weekly schedule via integrated real-time clock
- Humidity and frost protection functions
- USB interface for software updates, language changes and export of recorded operating and sensor data
- Dimensions: (W x H x D) 155 x 97 x 20 mm (wall mounting), incl. deep electronics box, horizontal installation, dimensions: (W x H x D) 143 x 70 x 75 mm

TAC

Touch Air Comfort – the multitalent of LUNOS

OPTIONAL **CO_2-Sensor SCO2-TAC**

A continuous measurement of the CO_2 values enables the TAC to control the fans according to the air quality. The control range is adjustable and can be adapted to different room conditions. The CO_2 program can be set simultaneously with the humidity-temperature program. The automatic system is then based on the first demand that occurs.

Recommendation
As an extension of the scope of functions and for the use of logging functions, LUNOS recommends the use of the newly developed diagnostic software. All functions and their advantages on page 65.

LUNOS SERVICE

If you have had a LUNOS design created with TAC controls, you will receive the individual configuration codes of the TAC of your building project together with the design. Alternatively, the code can be created at **www.lunos.de**.

Wireless technlogy

Wireless technology

For easy smart home connectivity

A wireless technology that meets the high requirements of LUNOS must be extremely energy efficient and safe.

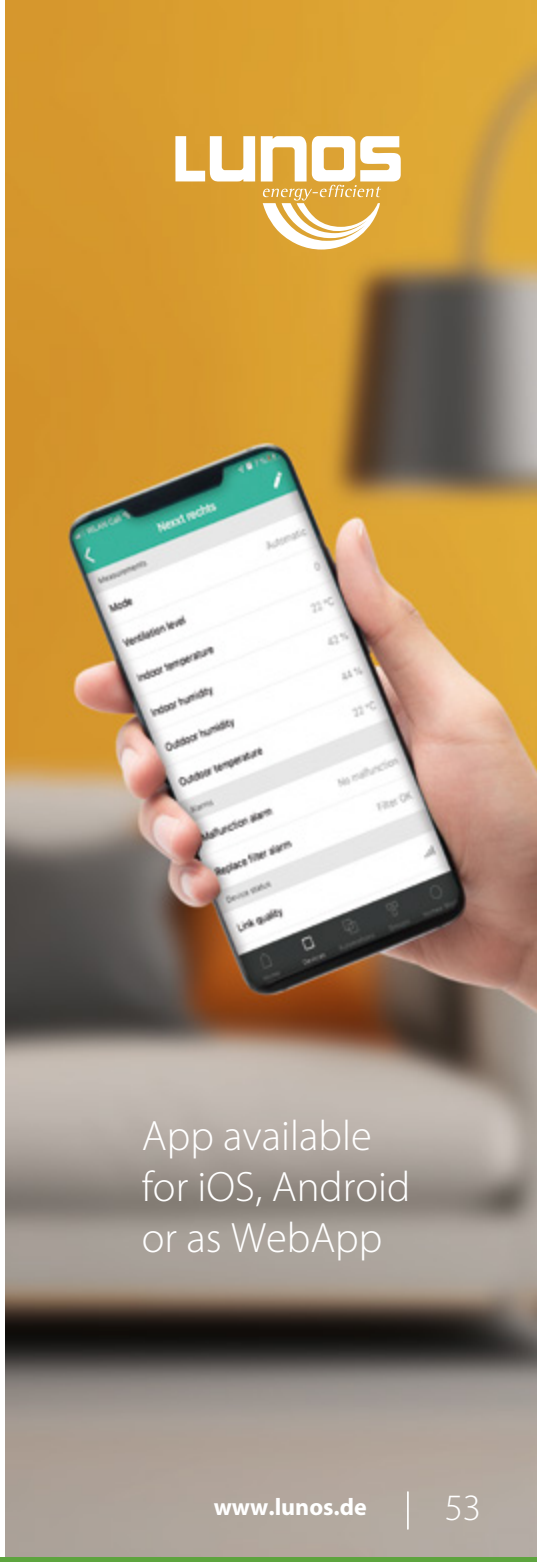
The bidirectional wireless technology transmits reliable signals with very small amounts of energy. The transmitters can be operated partly without batteries and therefore with low maintenance. The necessary energy is generated by the piezoelectricity of switches or solar cells.

In order to control the ventilation system via smartphone, tablet or computer, LUNOS recommends the use of the homee Smart Home central unit, which already has a WLAN interface as standard and thus provides for the connection to the Internet.

With the EnOcean extension module from homee the LUNOS radio modules are integrated into the smart home control center.

But the easy-to-use interface, available as an app for iOS and Android or as a WebApp, can be used to control more than just the ventilation: all smart home functions can be operated via this one application.

Brain Cube & EnOcean Cube
The Brain Cube as basis of the home smart home system with the EnOcean Cube as link to the LUNOS products makes the ventilation system smart.



Wireless technology

For easy smart home connectivity

Remote control RC-EO

The RC-EO remote control is battery-free, shock and splash-proof and is therefore suitable for all areas of everyday life. Coupled with the UNI-EO module or the FM-EO wireless module, all connected devices can be controlled by radio command. Via the two available channels, volume levels can be switched and special functions activated and deactivated.

Flush-mounted module UPM-EO

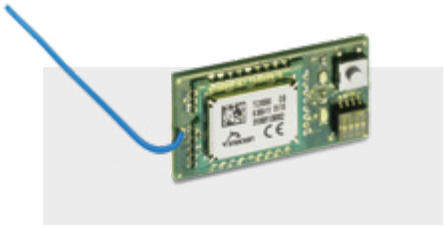
The UPM-EO flush-mounted module is a transmitter and receiver for wireless signals. Connected to an AB 30/60, the exhaust fan becomes wireless. Especially during renovation work, this allows the fan to be operated manually at a later date without the need for complex cable laying.

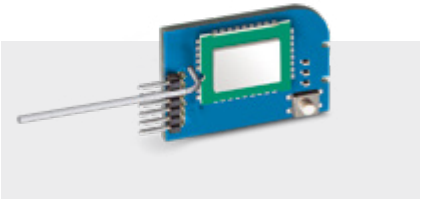
External Humidity Temperature Sensor SFT-EO

The external humidity temperature sensor SFT-EO can be installed almost anywhere and does not require any additional power supply. If you have coupled the SFT-EO as an indoor sensor to the UNI-EO or FM-EO modules, the values of the wireless sensor and internal sensors are compared and ventilation is based on the climatic conditions thus transmitted. When coupled as an outdoor sensor with the UNI-EO module, the intelligent control unit compares the absolute values of indoor and outdoor climate and adjusts the ventilation accordingly. In addition, automatic summer ventilation can also be implemented: In cooler night-time temperatures, the system ensures a reduction in room temperatures by means of refreshing cross-ventilation.

Wireless technology

For easy smart home connectivity





Wireless module UNI-EO for universal control

The UNI-EO wireless module is used for universal control and ensures constant communication with the coupled LUNOS wireless components. This includes both the processing of received sensor values and switching commands as well as the transmission of system states. Automatic modes can be extended and optimized. The control system can also adapt the operation of the connected devices to linked ventilation components. For example, it is possible for connected e^2 devices to actively supply supply air when an exhaust fan transmits a switched demand ventilation by a wireless command.

Wireless module FM-EO for Silvento ec and Ne^{xx}t

The FM-EO wireless module is compatible with all Silvento ec and Ne^{xx}t models. In the exhaust air system, the Silvento ec and the ventilation behaviour can also be optimised with the coupled outdoor sensor SFT-EO. In conjunction with e^2 fans on a universal control unit with UNI-EO module, sensor values can be exchanged and the ventilation operations of the systems can be coordinated. The same applies to the combination Ne^{xx}t and Silvento ec. If several Ne^{xx}t units are operated in one utilisation unit, a temperature-controlled ventilation operation can be achieved by targeted cross-ventilation of the units among themselves. It is also possible to react efficiently to varying outside temperatures and to keep the inside temperature constant.

homee Smart Home

The modular central unit

homee is a modular smart home control center that enables the linking of various trades and technologies. It provides a clearly structured and easy-to-use interface in the form of an app for iOS and Android or as a WebApp. The central unit is the white Brain Cube, which already has a WLAN interface as standard. This ensures both the connection to the Internet and communication with WLAN-capable smart home devices. This Brain Cube can then be supplemented by further cubes, each of which represents a radio technology. So the optional cube with the EnOcean, ZigBee and Z-Wave wireless standards can be stacked on top of the central unit, which can then be expanded to form a universal communication interface.

The modular smart home central homee also enables communication between devices and sensors from different manufacturers by means of so-called homee-grams. These can be used to trigger sensor-dependent switching actions, for example, and even across different systems. This makes ventilation more convenient than ever before.

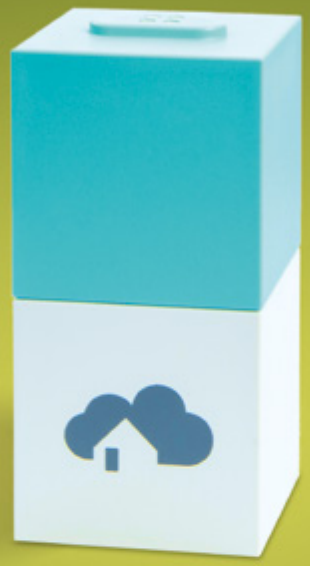
Brain Cube

The Brain Cube is the central control unit and forms the basis of the homee Smart Home. Here, the signals received by the optionally available wireless cubes are processed. The Brain Cube connects to the local network via WLAN, so that it and the connected radio components can be reached from anywhere.

EnOcean Cube

With the EnOcean Cube wireless modules from LUNOS can be integrated and controlled from home. It sends all information to the Brain Cube, which then processes it. Conversely, the Brain Cube sends instructions from app and home programs via the EnOcean Cube to the LUNOS wireless modules, which control the fans accordingly.

homee



ORDER HOMEE PRODUCTS

Codeatelier GmbH
Lindenstraße 20
74363 Güglingen

hello@codeatelier.com
www.hom.ee
Shop: www.store.hom.ee

KNX-Control

KNX Control4

The KNX LUNOS Control4 module enables the control of decentralised ventilation units with heat recovery and exhaust air fans via the KNX bus. It can network several modules with each other via the KNX bus and thus enable any desired operation. For direct control of the ventilation devices, the existing push-button inputs can be used.

The module has an integrated KNX bus coupler and requires an external power supply. It can be integrated, parameterised and controlled in the usual way in a KNX installation.

LUNOS energy-efficient

KNX®

LUNOS GOES KNX
With our partner

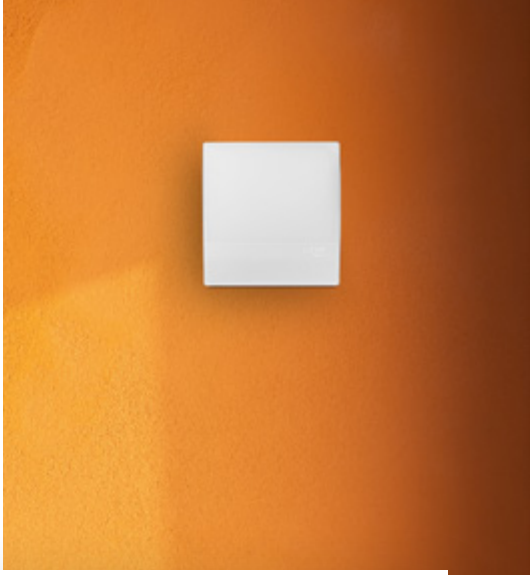
Arcus Electronic Design Services GmbH

Rigaer Str. 88
10247 Berlin

Phone + 49 30 259 339 14
Fax + 49 30 259 339 15
info@arcus-eds.de
www.arcus-eds.de

Inner screens

160 series



Comfort inner screen

The direct sound impact on the resident is reduced - the result is a more pleasant living experience. The glass variants also impress with their elegant and modern design.

In plastic design
(H x W x D) 191 x 180 x 60 mm
Description: **9/IBK**

In plastic design
incl. F7 filter,
increased hygiene protection
(H x W x D) 191 x 180 x 77 mm
Description: **9/IBK-H**

In glass design
(H x W x D) 197 x 185 x 66 mm
Description: **9/IBG**

In glass design
incl. F7 filter,
increased hygiene protection
(H x W x D) 197 x 185 x 83 mm
Description: **9/IBG-H**

Inner screens

160 series

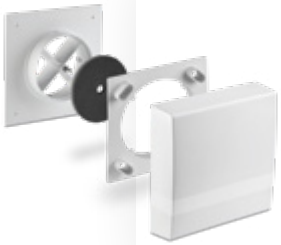
Standard inner screen

Simple screen with timeless elegance for universal use in the 160 series.

(H x W x D) 180 x 180 x 35 mm
Description: **9/IBE**

Sound insulation inner screen

Increase of the standard sound level difference by up to 6 dB, reduction of the inherent noise, incl. washable filters, one piece each of filter class G2 and G3



incl. G2 and G3 filters
(H x W x D) 250 x 250 x 78 mm
Description: **9/IBS**

External grille

Round & square

Plastic grille Ø 180 mm
for round ducts Ø 160 mm
with facade protection ring,
Claw fastening and insect protection
Description: 1/BE 180 sanded
Description: 1/WE 180 white
Description: 1/AZ 180 anthracite

Metal grille Ø 175 mm
for round ducts Ø 125 - 160 mm,
Insect screen, pluggable
Description: 1/RME 175 stainless steel
Designation: 1/RMK 175 copper

Plastic grille Ø 115 mm
for round ducts Ø 90 - 100 mm,
Insect screen, with claw fastening
Description: 1/BE 115 sanded
Description: 1/WE 115 white
Description: 1/AZ 115 anthracite

Metal grille ☐ 228 mm
for round ducts Ø 160 mm,
Insect screen, pluggable
Description: 1/QME 228 Stainless steel
Designation: 1/QMK 228 copper

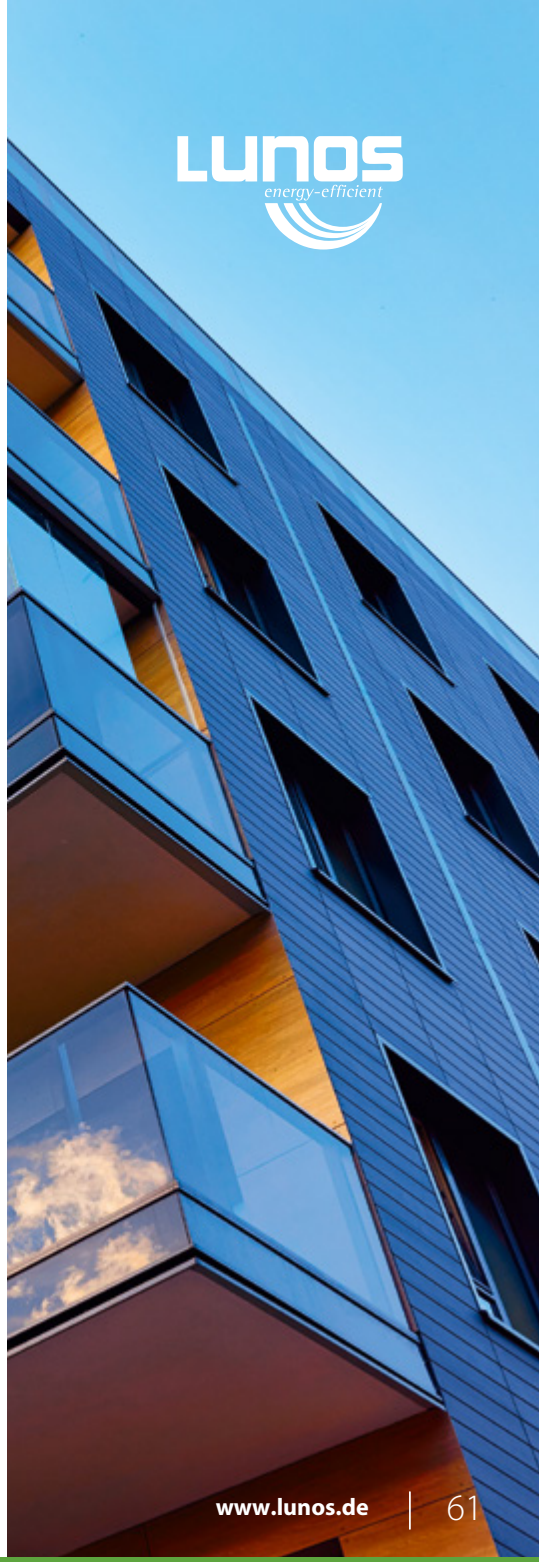
Metal grille Ø 150 mm
for round ducts Ø 80 - 125 mm,
Insect screen, pluggable
Description: 1/RME 150 Stainless steel
Designation: 1/RMK 150 copper

Outer hoods

Soundproofed

Outer hood aluminium
(H x W x D) 170 x 140 x 72 mm
for round ducts up to Ø 105 mm, insect screen, with sound insulation, to screw. Increase of the standard sound level difference by up to 6 dB.
Description: 1/HWE 115 white powder-coated
Description: 1/HAZ 115 anthracite powder-coated

Outer hood aluminium
(H x W x D) 235 x 205 x 72 mm
for round ducts Ø 160 mm, insect screen, with sound insulation, to screw. Increase of the standard sound level difference by up to 6 dB.
Description: 1/HWE white powder-coated
Description: 1/HAZ anthracite powder-coated



Outer hoods

160 Two-channel system

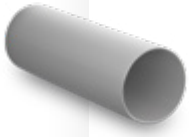
Two-channel outer hood Aluminium
(H x W x D) 235 x 205 x 72 mm
for round ducts Ø 160 mm, insect screen,
with sound insulation, for screwing.
Increase of the standard sound level difference by up to 6 dB.
Description: 1/HWE-2 white powder-coated

Two-channel outer hood Aluminium
(H x W x D) 235 x 205 x 72 mm
for round ducts Ø 160 mm, insect screen,
with sound insulation, for screwing.
Increase of the standard sound level difference by up to 6 dB.
Description: 1/HAZ-2 anthracite powder-coated

Wall mounting

Housings & Channels

Wall mounting case 9/MRD
(H x W x D) 240 x 210 x 500 mm
Wall mounting case made of EPS with slope to the outside. Suitable for all round ducts of the 160 series and also usable with LUNOtherm. Can be shortened continuously.
Description: 9/MRD



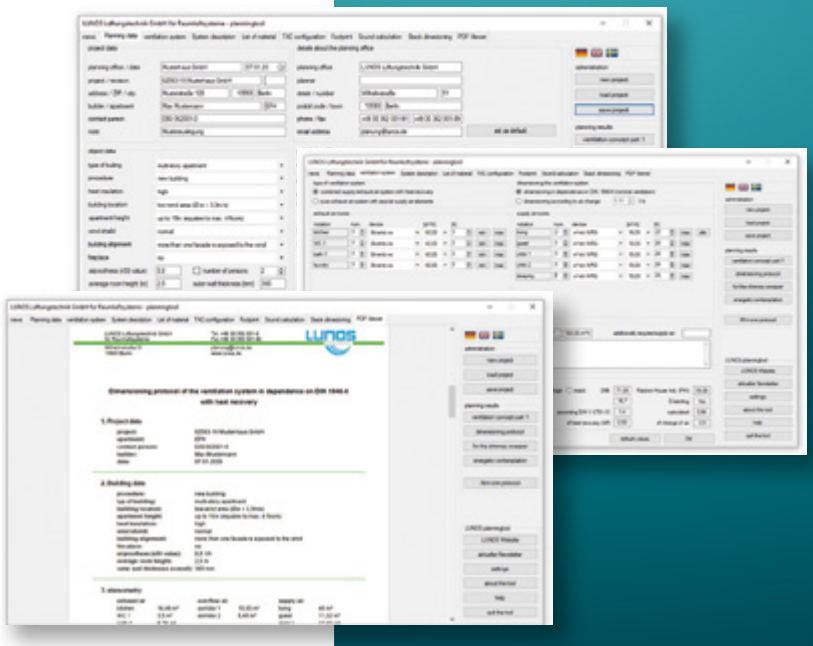
Round channel
for all devices of the 160 series and
can also be used with LUNOtherm
Description: 9/R 160-500 (Ø x L) 160 x 500 mm
Description: 9/R 160-700 (Ø x L) 160 x 700 mm

Design software
from LUNOS

The design is based on the recognized rules of technology and meets the requirements of DIN 1946-6, which is used to determine the necessary volume flows to ensure the minimum air exchange rate for the protection of the building structure. These volume flows depend on the number of extract air rooms, the living space and the tightness, location and orientation of the building. The fan-assisted residential ventilation is designed according to the nominal ventilation stage, which covers the required air exchange rate during normal use.

Design tool based on the specifications of DIN 1946-6

- Proof of the necessity of ventilation measures (ventilation concept part 1)
- Design related to exhaust air spaces or useful area
- Design of the fresh air volume flows
- Calculation for moisture protection, reduced ventilation, nominal and intensive ventilation
- Calculation of the infiltration volume flows
- Component design of the ventilation system such as fans, external wall air diffusers and overflow cross sections
- Consideration of the requirements for exhaust air systems in connection with fireplaces
- Calculation of efficiency and effectiveness of the planned ventilation system
- Creation of complete material lists
- Calculation of the sound insulation of an exterior wall in combination with ventilation components
- All calculation results are output by the design tool in clear reports in PDF format



Diagnostic software
from LUNOS

LUNOS fans can be quickly and flexibly adapted on site to the planning/design and individual requirements.

For this purpose, most LUNOS controllers and devices have a diagnostic interface that provides limited access to the firmware and allows extended configuration and calibration via LUNOS' own software.

The operating data of the fan can also be read out via the same interface. This allows you to perform comprehensive diagnostics and troubleshooting on site. With an existing Internet connection, it is also possible to analyse the data remotely together with LUNOS customer support.

Diagnostic tool based on the specifications of DIN 1946-6

- Advanced configuration and calibration
- Production data acquisition and analysis
- Operating hours, motor running time, filter service life, sensor data, and switching operations, control priorities, activated ventilation stages, occurring back pressures
- With an existing Internet connection, the data can be analyzed remotely together with LUNOS customer support.

REFERENCES

Examples of energy-efficient ventilation

Low-energy house Clane

Kildare, Ireland

RENOVATION

Building type	Renovation of a farmhouse from the 18th century with the addition of a modern building complex to create a low-energy house
Building owner	Jordan family, Kildare - Ireland
Ventilation concept	Controlled home ventilation with heat recovery
Supply and exhaust air	Living spaces: e^2 with heat recovery Function rooms: e^{90} with heat recovery
Completion	Spring 2017
Energy standard	Low-energy house with a decentralised ventilation system with heat recovery, air heat pump with separate split evaporator and sufficiently dimensioned separate storage tank, high thermal insulation and triple thermal insulation glazing.

References
New building

NEW BUILDING
Plus-Energie-Projekt Powerhouse, Berlin

Building type	New construction of an innovative plus-energy project with 128 two- to four-room apartments spread over five buildings.
Building owner	HOWOGE housing association, Berlin
Ventilation concept	Controlled home ventilation with heat recovery in a decentralised hybrid system with exhaust air fans in the functional rooms
Supply and exhaust air	Living spaces: e^2 with heat recovery
Exhaust air	Exhaust air units of the Silvento-ec series are installed in the functional rooms.
Completion	Late summer 2017
Energy standard	Plus Energy House Standard: Holistic energy concept with solar thermal system, which in combination with the district heating network enables a balanced heat supply. Supplemented by photovoltaic system, hybrid ventilation system with heat recovery and high thermal insulation.

NEW BUILDING
Multi-familiy house, Berlin

Building type	New construction of an apartment building with tenants' meeting place
Building owner	Märkische Scholle Wohnungsunternehmen eG, Berlin
Ventilation concept	Controlled home ventilation with heat recovery in a decentralised hybrid system
Supply and exhaust air	e^2 with heat recovery and facade-side closure via the facade element LUNOtherm
Exhaust air	Exhaust air units of the Silvento UP series are installed in the functional rooms.
Completion	2013
Energy standard	KfW-55 standard: high thermal insulation (200 mm), triple-glazed windows, hybrid ventilation system with heat recovery, Heating and hot water production in the system.

References
Renovation

RENOVATION
Plus-Energy-MFH, Bern, Swtzerland

Building type	An apartment building from the 1950s is turned into a small power station. According to data from the cantonal building programme in Switzerland, the building is the first in the city of Bern to meet the highest energy requirements. Multi-family house with five family apartments and two penthouse apartments.
Building owner	Quadrat AG, Zollikofen
Ventilation concept	Controlled home ventilation with heat recovery in a decentralised system
Supply and exhaust air	Living spaces: e^2 with heat recovery Function rooms: e^{90} with heat recovery
Completion	May 2014
Energy standard	Plus Energy House of GEAK category AA (GEAK=Building Energy Performance Certificate of the cantons, comparable to Dena Energy Performance Certificate): triple-glazed windows, ventilation system with heat recovery, solar thermal system and photovoltaic system with an electricity surplus of 7 %.

RENOVATION
Container-Project Ripple, Dublin, Ireland

Building type	Conversion of an overseas container as an apartment to use the St. Vincent de Paul church as a shelter for the homeless. Completion was achieved in just three days as part of the Ripple Container Homes project. The container home offers six sleeping places, a bathroom unit, kitchen, living room and an outdoor terrace.
Building owner	RIPPLE Container Build Team
Ventilation concept	Controlled home ventilation with heat recovery
Supply and exhaust air	Living spaces: e^2 with heat recovery Function rooms: e^{90} with heat recovery
Completion	November 2014
Energy standard	High thermal insulation, ventilation system with heat recovery and solar thermal system.

Representatives
Germany

- Berlin, Brandenburg
- Saxony
- Thuringia
- Mecklenburg-Western Pomerania
- Hamburg, Schleswig-Holstein
- Southern North Rhine-Westphalia
- Lower Saxony, northern North Rhine-Westphalia
- Saxony-Anhalt
- Rhineland-Palatinate, Saarland
- Hesse, western Franconia, northern Baden
- Baden-Württemberg
- Franconia
- Bavaria

Representatives
International

- Australia
- Belgium
- Chile
- China
- Denmark
- Estonia
- Finland
- France
- Great Britain
- Greece
- India
- Ireland
- Italy
- Japan
- Canada
- Latvia
- Lithuania
- Luxembourg
- Morocco
- New Zealand
- Norway
- Austria
- Poland
- Portugal
- Sweden
- Switzerland
- Slovakia
- Slovenia
- Spain
- South Africa
- South Korea
- Czech Republic
- Thailand
- Ukraine
- Hungary
- USA

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