

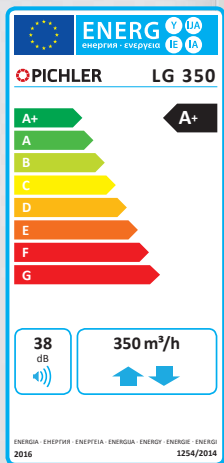
COMPACT VENTILATION UNITS LG 350 & LG 450



Z-51.3-428



EU-Regulation
1253/2014



For details – see the brochure

COMFORT
VENTILATION



optional



 **PICHLER**

Systematic Ventilation.

Product description

The compact ventilation unit LG 350 and LG 450 comprise a compact thermally insulated EPP housing without thermal bridges, of galvanized sheet steel, externally powder-coated in RAL 9010. They have a highly efficient heat recovery system with an air/air counterflow heat exchanger made of recyclable plastic, with automatic 100 % bypass and energy-saving radial

fans driven by the latest EC motor technology. The integrated air flow rate measurement guarantees balanced operation on the supply and extract air sides. The standard air filters used are of filter class ODA ISO ePM1 70 % for the outdoor air and of filter class ETA ISO Coarse 80 % for the extract air. The operation is simple and intuitive via the MINI or TOUCH (optional) operating

control unit and with connection to the Internet (LAN connection) via the Pichler app. The optional expansion options for the CO₂ sensor module and the humidity sensor allow for demand-driven ventilation operation. The compact ventilation units LG 350 and LG 450 are suitable for floor or wall mounting (removable adjustable foot brackets) in frost-free rooms.

Area of application

The compact ventilation unit LG 350 and LG 450 are used for the controlled mechanical supply and extract air ventilation of larger residential houses,

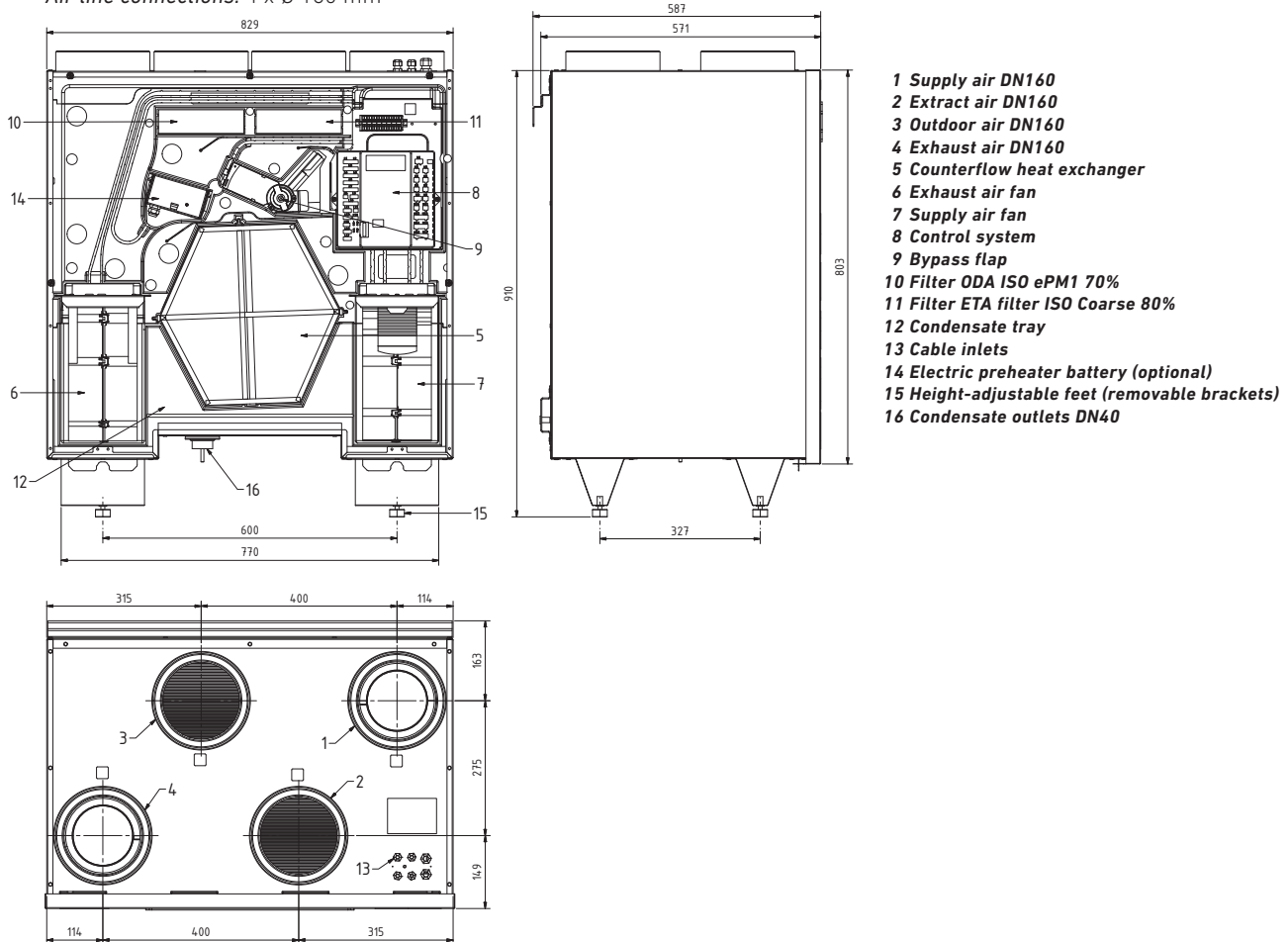
offices and similar applications. The range of use extends fundamentally to living spaces from approx. 100 m² to approx. 350 m² in passive or low

energy structures, with an adjustable air volume flow of up to 350 m³/h (LG 350) or 450 m³/h (LG 450).

Layout sketch (standing or wall-mounted installation)

Dimensions: (W x H x D) 829 x 950 x 571 mm

Air line connections: 4 x Ø 160 mm



Versions

Standing or wall-mounted	LG 350	LG 450
Item no. without a preheater battery	08LG350	08LG450
Item no. with an integrated preheater battery	08LG350V	08LG450V
Item no. with enthalpy exchanger	08LG350F	08LG450F
Item no. with enthalpy exchanger and an integrated preheater battery	08LG350FV	08LG450FV
Optionally with an air exchange module for a left-hand version	08 LG 350 + 08EPPAKM160MF 08 LG 350V + 08EPPAKM160MF 08 LG 350F + 08EPPAKM160MF 08 LG 350FV + 08EPPAKM160MF	08 LG 450 + 08EPPAKM160MF 08 LG 450V + 08EPPAKM160MF 08 LG 450F + 08EPPAKM160MF 08 LG 450FV + 08EPPAKM160MF
<p> 1 Supply air 2 Extract air 3 Outdoor air 4 Exhaust air 5 Filter revision </p>		

Overview energy efficiency classes

	LG 350 (V)	LG 350 F (V)	LG 450 (V)	LG 450 F (V)
Manual control				
Clock control				
Central demand control				
Local demand control				

Download the product fiches from: www.pichlerluft.at





Technical data

Equipment type	LG 350 (V)	LG 350 F (V)	LG 450 (V)	LG 450 F (V)
Heat exchanger	Standard	Enthalpy exchanger	Standard	Enthalpy exchanger
Air volume flow min. - max. (adjustable in steps of 5 m ³ /h)	50 - 350 m ³ /h	50 - 350 m ³ /h	50 - 450 m ³ /h	50 - 450 m ³ /h

Characteristic values in compliance with EN13141-7:2010				
Temperature ratio $\eta_{\theta,SU}^1$	93 %	81 %	91 %	79 %
Temperature ratio $\eta_{\theta,EX}^1$	86 %	75 %	84 %	71 %
Specific input power SIP ¹	0,18 Wh/m ³	0,16 Wh/m ³	0,22 Wh/m ³	0,21 Wh/m ³
Specific input power SIP ²	0,19 Wh/m ³	0,17 Wh/m ³	0,24 Wh/m ³	0,21 Wh/m ³
External leakage	< 0,50 %		< 0,40 %	
Internal leakage	< 0,50 %		< 0,40 %	

Characteristic values in compliance with PHI criteria				
Certified range of application	71 - 277 m ³ /h		71 - 350 m ³ /h	
Heat provision level $\eta_{ref,HR}$ Application range in compliance with PHI	90 %	85 %	89 %	81 %
Moisture recovery	-	76 %	-	76 %
Power efficiency η_{elec}	0,22 Wh/m ³	0,22 Wh/m ³	0,25 Wh/m ³	0,24 Wh/m ³
Power consumption in standby operation	3 W			

Classification of air filters in accordance with EN ISO 16890	
 (Filter ODA (Outdoor air))	ISO ePM1 70%
 Filter ETA (Extract air)	ISO Coarse 80%

Operating conditions	
Permissible ambient temperature (place of installation)	+5 to +35 °C
Permissible operating temperature (outside air)	-15 to +35 °C

Electrical system	
Electrical connection	230 V / 1 ~ / 50 Hz / 16 A
IP classification	IP40 with connected air ducts
Max. power without VHR	180 W
Max. power with VHR	2050 W

Materials	
Inner part	EPP and galvanised sheet steel
Housing	Galvanised sheet steel and powder-coated in RAL 9010
Heat exchanger	Polystyrene with flame protection grid
Enthalpy exchanger	Polymer membrane

Housing	
Air duct connections	4 x Ø 160 mm (for steel nipples safe or EPP sleeve DN160)
Condensate drainage	AG 1 1/4"
Dimensions (W x H x D)	829 x 950 x 571 mm
Weight without optional accessories	approx. 56 kg

¹with 70 % of the max. volume flow

²according to the calculation basis in compliance with prEN13171-7: 2018 based on air temperature 20 °C



SOUND DATA

LG 350		Pos.	Housing emission			Outdoor air connecting piece			Supply air connecting piece			Exhaust air connecting piece			Extract air connecting piece		
		m ³ /h	245	277	350	245	277	350	245	277	350	245	277	350	245	277	350
		Pa	50	100	100	50	100	100	50	100	100	50	100	100	50	100	100
Measuring point	125 Hz	L _w in dB	37	38	41	36	37	39	45	47	50	41	49	51	37	39	44
	250 Hz		46	49	50	43	43	41	55	55	57	51	54	56	43	43	43
	500 Hz		31	34	38	26	30	34	43	46	49	42	45	49	25	28	32
	1000 Hz		27	30	34	23	28	30	40	44	47	40	44	48	23	26	30
	2000 Hz		21	25	30	17	21	26	42	45	50	41	46	50	18	21	26
	4000 Hz		< 15	< 15	19	< 15	< 15	< 15	33	38	44	32	38	44	< 15	< 15	17
	8000 Hz		< 15	< 15	< 15	< 15	< 15	< 15	23	29	36	21	28	37	< 15	< 15	< 15
	Total L _{WA} in dB(A)		38	41	45	34	36	37	49	52	56	47	51	55	33	36	38

Remark: Tolerances for sound data ± 2 dB, measured in compliance with EN ISO 9614-2

LG 450		Pos.	Housing emission			Outdoor air connecting piece			Supply air connecting piece			Exhaust air connecting piece			Extract air connecting piece		
		m ³ /h	315	350	450	315	350	450	315	350	450	315	350	450	315	350	450
		Pa	50	100	100	50	100	100	50	100	100	50	100	100	50	100	100
Measuring point	125 Hz	L _w in dB	41	43	44	39	44	47	49	51	51	51	52	60	44	44	47
	250 Hz		50	51	50	43	42	44	56	57	61	53	56	61	44	43	45
	500 Hz		37	40	52	32	35	43	48	50	70	48	49	64	31	33	41
	1000 Hz		32	33	40	30	32	36	45	48	52	46	48	55	30	31	36
	2000 Hz		27	30	35	25	28	32	48	50	55	48	51	56	25	27	32
	4000 Hz		< 15	19	26	< 15	16	22	40	44	51	41	44	52	16	19	24
	8000 Hz		< 15	< 15	< 15	< 15	< 15	< 15	32	37	46	33	38	47	< 15	< 15	17
	Total L _{WA} in dB(A)		43	45	49	37	38	43	53	56	67	53	56	63	37	39	42

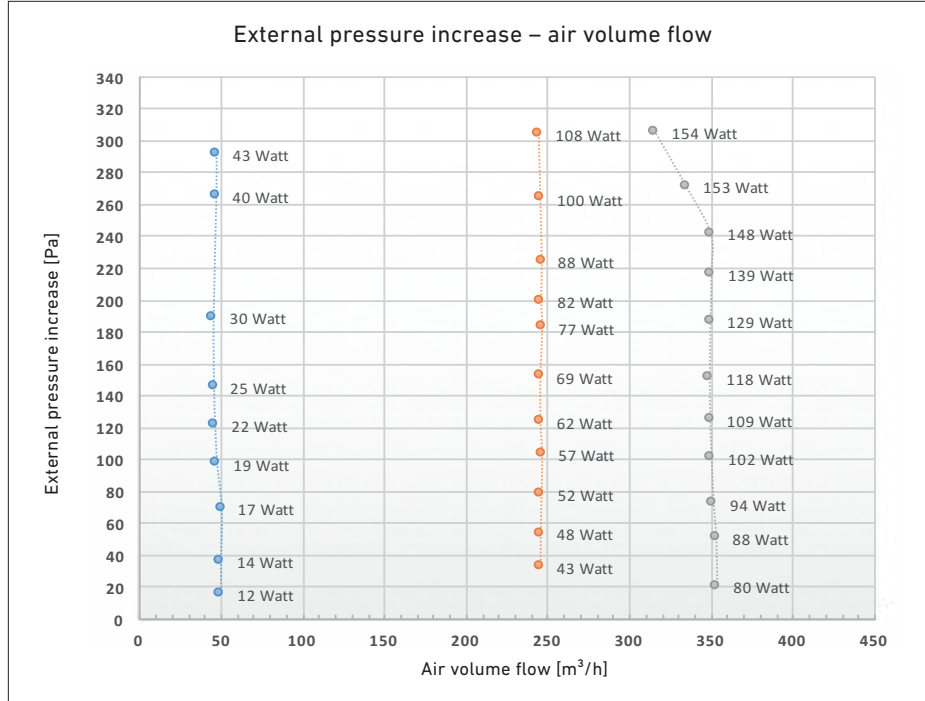
Remark: Tolerances for sound data ± 2 dB, measured in compliance with EN ISO 9614-2



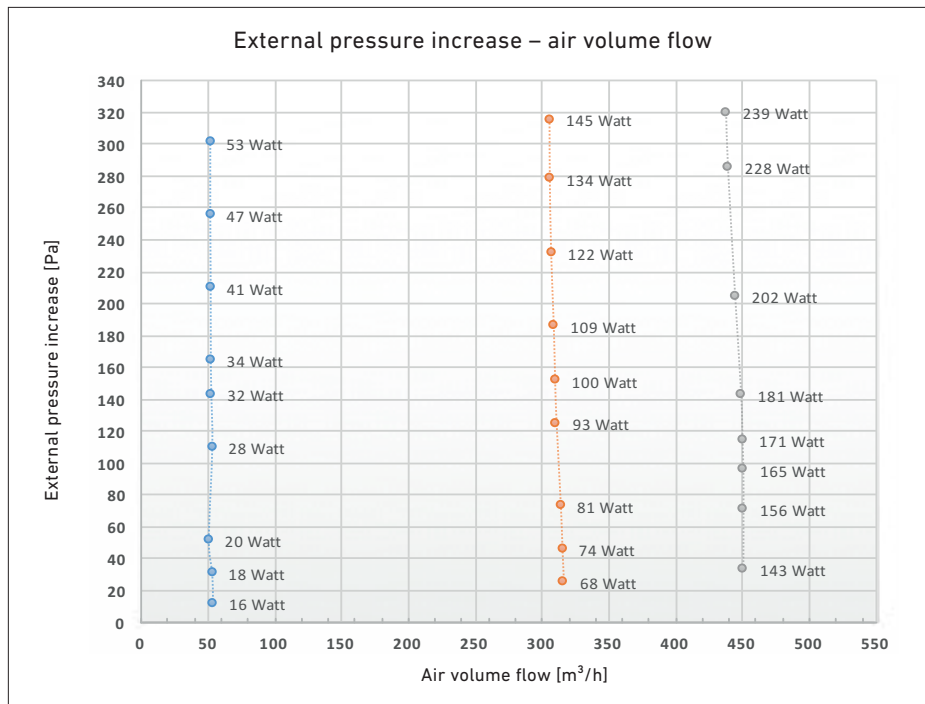
Characteristic curve – external pressure increase – air volume flow rate

The characteristic curves shown are applicable to unit type with outdoor air (filter ODA ISO ePM1 70%) and extract air filter (filter ETA ISO Coarse 80%) and with an electrical pre-heater

battery. The total power specified takes the power consumption for the two fans in the supply air and exhaust air as well as the power consumption of the controller into consideration.



LG 350 V compact ventilation unit



LG 450 V compact ventilation unit



Technical specifications LG 350 (V)

PASSIVE HOUSE CERTIFIED IN ACCORDANCE WITH PHI CRITERIA

Degree of heat provision: $\eta_{\text{eff. t, WRG}} = 90 \%$

Comfort criterion: $T_{\text{SUP}} = +16,5 \text{ °C}$ bei $T_{\text{ODA}} = -10 \text{ °C}$

Flow efficiency: $\eta_{\text{elec.}} = 0,22 \text{ Wh/m}^3$



Technical specifications LG 350 F (V) with moisture recovery

PASSIVE HOUSE CERTIFIED IN ACCORDANCE WITH PHI CRITERIA

Degree of heat provision: $\eta_{\text{eff. t, WRG}} = 85 \%$

Average moisture ratio: $\eta_x = 0,76$

Comfort criterion: $T_{\text{SUP}} = +16,5 \text{ °C}$ bei $T_{\text{ODA}} = -10 \text{ °C}$

Flow efficiency: $\eta_{\text{elec.}} = 0,22 \text{ Wh/m}^3$



Technical specifications LG 450 (V)

PASSIVE HOUSE CERTIFIED IN ACCORDANCE WITH PHI CRITERIA

Degree of heat provision: $\eta_{\text{eff. t, WRG}} = 89 \%$

Comfort criterion: $T_{\text{SUP}} = +16,5 \text{ °C}$ bei $T_{\text{ODA}} = -10 \text{ °C}$

Flow efficiency: $\eta_{\text{elec.}} = 0,25 \text{ Wh/m}^3$



Technical specifications LG 450 F (V) with moisture recovery

PASSIVE HOUSE CERTIFIED IN ACCORDANCE WITH PHI CRITERIA

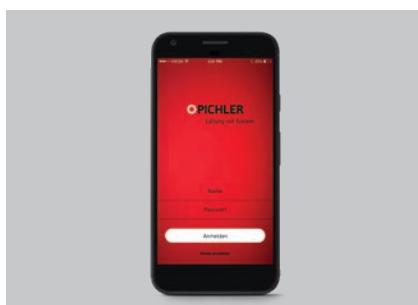
Degree of heat provision: $\eta_{\text{eff. t, WRG}} = 81 \%$

Average moisture ratio: $\eta_x = 0,76$

Comfort criterion: $T_{\text{SUP}} = +16,5 \text{ °C}$ bei $T_{\text{ODA}} = -10 \text{ °C}$

Flow efficiency: $\eta_{\text{elec.}} = 0,24 \text{ Wh/m}^3$



**TOUCH operating control unit****Pichler-App****Swiveling console**

Operation

BYPASS FOR HEAT EXCHANGER

The 100% bypass is controlled based on the measured exhaust air and outdoor temperatures. In this way, the heat exchanger is bypassed in summer and the cool outdoor air can be blown directly into the living area, or via an existing ground collector.

CONTROLLER

Scalable expansion of the control system is possible, from low-cost to high-end. Further options include connections to an external building control system using Modbus RTU and sensors to monitor room air quality.

Ventilation unit settings are made via a control unit. A MINI operating unit as a compact flush operating unit or optional a TOUCH operating unit as a surface-mounted version can be chosen to control and operate the ventilation unit.

Connection to a building automation via integrated Modbus RTU interface. Optionally, a gateway for the KNX bus system is also available.

MINI CONTROL UNIT

The MINI control unit is used to control the ventilation unit. It is easy to operate and enables the configuration of ventilation levels, switching between summer and winter mode, setting of basic volume flow, etc. In addition, the control unit displays operating status and any faults that may occur. The USB interface on the operating unit is fitted as standard. Installation is on a flush-mounted box (not included in delivery).

TOUCH CONTROL UNIT

The control unit with a 4.3" colour-touch-display is used to control the ventilation unit. Operation is simple and intuitive. The most important settings and readings are very easy to make. The user-friendly handling provides for automatic or manual setting of the ventilation levels. In Automatic mode, the system is controlled by programmable time programmes, closed-loop humidity or CO₂ controls and works in a fully

automated fashion, whereas in manual mode ventilation levels may, for instance, be individually increased (boost ventilation). Further functions are the changeover function between summer and winter operation as well as the setting for the volume flows. The operating mode, temperatures, a required filter change and possible faults are displayed in plain text. The control unit also has an integrated temperature sensor, which can be used as a room temperature sensor when needed. Installation is on a flush-mounted box (not included in delivery).

Advantages of controlling:

- Easy display of current operating settings
- Individually adjustable air volumes
- Time and weekly programs (TOUCH only)

Item	Item number
STANDARD: operating control unit MINI for LG 350 and 450	08LGMINI350450
OPTIONAL: operating control unit TOUCH for LG 350 and LG 450	08LG350450T
OPTIONAL: Swiveling console for attaching the TOUCH operating control unit directly to the ventilation unit	40LG350BG140

EASY OPERATION WITH THE PICHLER APP

User-friendly: the compact ventilation unit can be operated easily with our free smartphone app for Android and iOS, whether you are at home or out and about.

REMOTE ACCESS / PICHLER CONNECT

Operational safety: Remote access facilitates a prompt response with minimal effort for the Pichler customer service in the event of a malfunction.





CO₂ sensor





Hot water heater battery

Accessories

SPARE FILTER

will ensure perfect hygiene and air quality given regular replacement, also proper functionality and efficient operation of the equipment.

Item	Item number
 Filter ETA ISO Coarse 80% (Extract air)	40LG0500000A
 Filter ODA ISO ePM1 70% (Outdoor air)	40LG0500001A

DEMAND-ORIENTED VENTILATION CONTROL

CO₂, humidity and room temperature sensors for demand-oriented ventilation control. The ventilation unit will automatically increase or reduce the air volumes depending on the quality of the air in the room. The sensor in the surface-mounted housing is suitable for wall mounting.

Colour: white

Dimensions: W x H x D = 85 x 85 x 35 mm

Ambient temperature: 10-50°C

Measuring range: 0-2000 ppm

Sensor supply voltage: 24V AC/DC

Control signal: 0-10 V

Item	Item number
CO ₂ sensor	07RC0248330

Colour: white

Dimensions: W x H x D = 85 x 85 x 35 mm

Ambient temperature: 0-60° C (no condensation)

Measuring range: 0-100% RH

Sensor supply voltage: 24V AC/DC

Control signal: 0-10 V

Item	Item number
Humidity sensor	07RHF49360

Type of room temperature sensor: NTC 10k

Dimensions: W x H x D = 85 x 85 x 35 mm

Item	Artikelnummer
Room temperature sensor	07RTF49357

UNITS FOR INSTALLATION INTO THE AIR SUPPLY DUCT

LG 350	
Item	Item number
Combination register (cold water coil) for duct installation Ø 160 mm	01CWK160
Hot water heating coil for duct installation Ø 160 mm	01VBC160
DN15 KVS 0.63 three-way valve with LR24ASR actuator	07R309LR24ASR
External electric re-heating battery	08CV16121MTXL

LG 450	
Item	Item number
Combination register (cold water coil) for duct installation Ø 200 mm	01CWK200
Hot water heating coil for duct installation Ø 200 mm	01VBC200
DN15 KVS 1.00 three-way valve with LR24ASR actuator	07R310LR24ASR
External electric re-heating battery	08CV16121MTXL

EXTERNAL CABLE TEMPERATURE SENSOR

NTC thermistor sensor with metal sleeve required for operation of the cold water coil, hot water heating coil, or electric re-heating battery.

Item	Item number
NTC thermistor sensor, length 2 m	40LG041920

CONDENSATE SIPHON

DN40 condensate siphon with vertical connection 5/4", water odour seal (60 mm) and mechanical odour seal.

Item	Item number
Condensate siphon DN40 x 5/4"	40LG030620





Air exchange module

Accessories

SHUT-OFF VALVE

Shut-off valve. Made from galvanized sheet steel with double-lip sealing.

Item	Item number
Shut-off valve Ø 160 mm with motor CM 230-F	11DTBU160
Shut-off valve Ø 200 mm with motor LM 230-A	11DTBU200

COMPLETE PROGRAM FOR AIR DISTRIBUTION SYSTEMS

We offer a complete program of air distribution systems, such as Komflex (round or oval). Details of our air distribution program can be found in the technical documentation.

AIR EXCHANGE MODULE Ø 160 / S15 MM

The air exchange module is used to convert the right-hand ventilation unit to a left-hand operation. It serves to exchange the outdoor air with the supply air or the extract air with the exhaust air. It consists of a thermal bridge-free and thermally insulated EPP enclosure with optional connection positions at the top or at the side. Direct connection of EPP ducts with DN160 mm and a wall thickness of 15 mm without additional connecting elements.

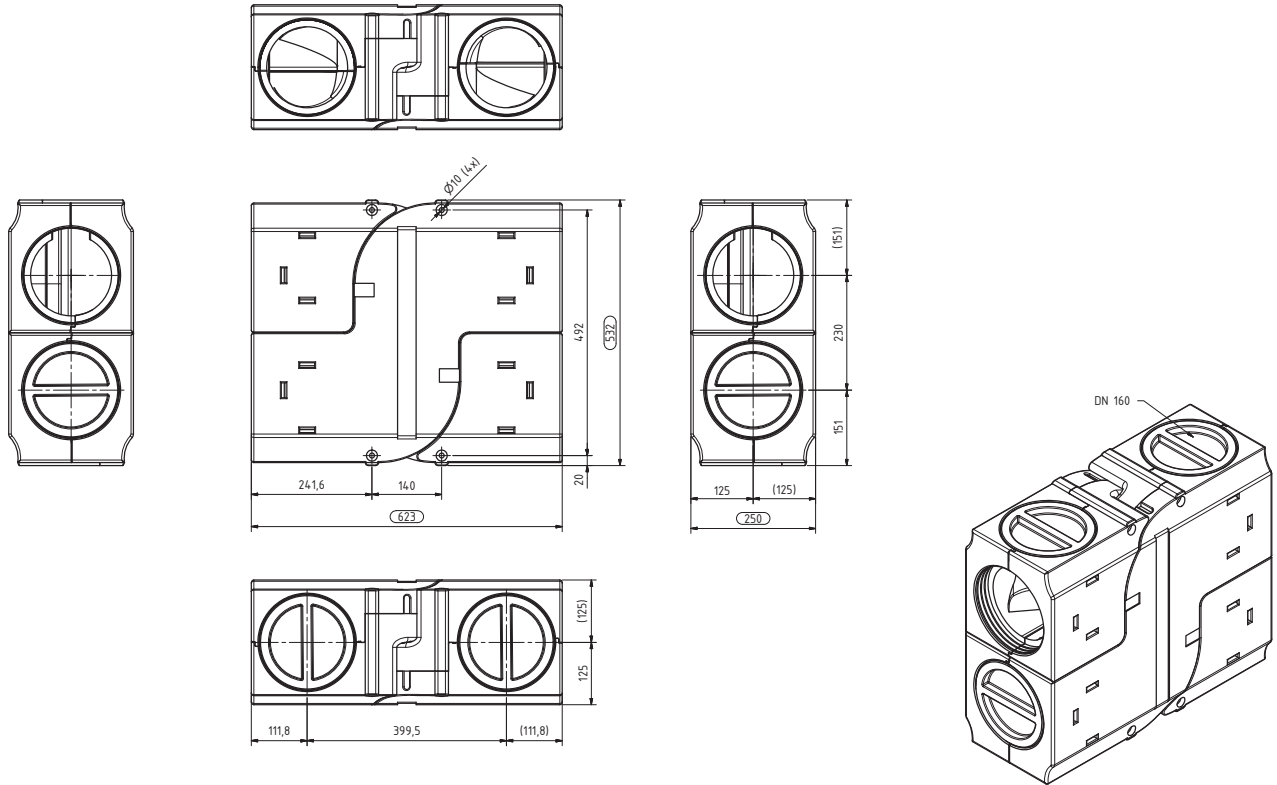
The connections that are not required can be sealed by means of the sealing plugs included in the scope of delivery. Galvanized, cylindrical reductions with a dual lip seal are required for the transition to spiral ducts with Ø 200 or Ø 160 mm.

Item	Dimensions (w x h x d)	Item number
Air exchange module Ø 160 / S15 mm	623 x 532 x 250 mm	08EPPAKM160MF
Reduction for the transition to spiral ducts with Ø 160 mm		11RCU190160
Reduction for the transition to spiral ducts with Ø 200 mm		11RCU200190

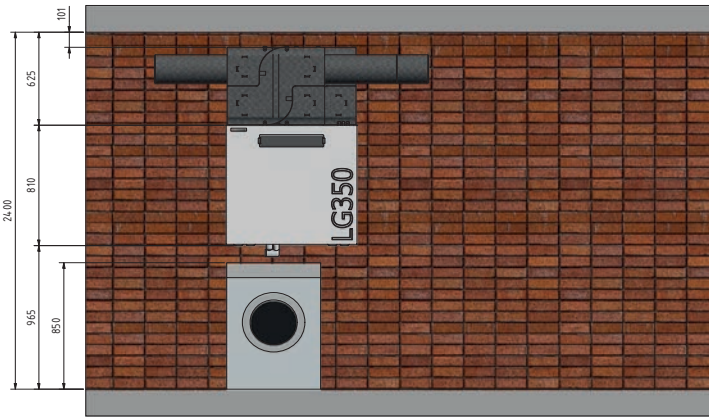
Note: To cross out all 4 air connections, 2 air exchange modules are required.



Layout sketch



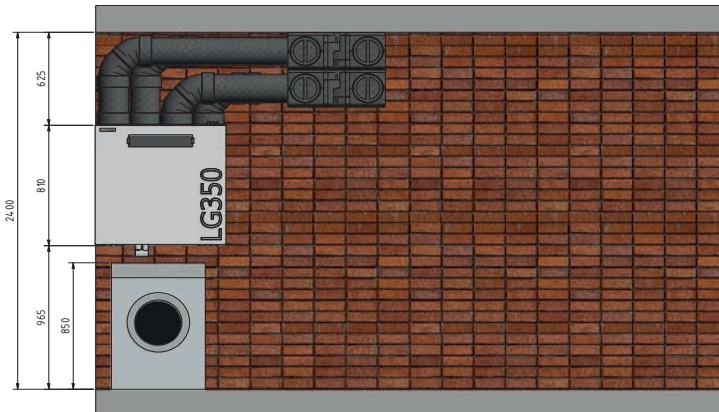
Mounting example for wall-mounted installation



Wall-mounted installation with air exchange module



Wall-mounted installation with air exchange silencers



Corner mounting with air exchange module
(note: here two bends must be mitre-cut at approx. 10°)

LG 350 & LG 450 at a glance!

Fans:

Energy-saving radial fans direct current (latest EC motor technology)

Counterflow heat exchanger:

High-efficiency heat recovery system with air/air-counterflow heat exchanger made from recyclable plastic with automatic 100% bypass

Air volume flow:

Up to 350 m³/h (LG 350) or 450 m³/h (LG 450) for external pressures to 250 Pa

Filters:

Filter ODA ISO ePM1 70% in the outdoor air, filter ETA ISO Coarse 80% in the extract air

Electrical preheater battery for frost protection:

With stepless control, optional

Housing:

Made from galvanised steel sheeting, powder-coated in RAL 9010 with thermal insulation

Air connections:

Left-hand and right-hand unit versions (left-hand version with an air exchange module). ODA/EHA/SUP/ETA: each Ø 160 mm

Installation position:

Standing or wall-mounted device (removable adjustable foot brackets)

Summer changeover:

Integrated 100% bypass flap

Electrical connection:

Supplied ready to plug in

Operation:

Via the MINI or TOUCH (optional) operating control unit and with connection to the Internet (LAN connection) via the Pichler app.

Service – Maintenance – Initial startup

Can be combined with the LBE 500 air humidification unit

OUR LG 350 & LG 450 COMPACT-VENTILATION UNITS HAVE BEEN EXTERNALLY TESTED BY

- TÜV SÜD München

OUR COMPACT VENTILATION UNITS LG 350 & LG 450 HAVE BEEN APPROVED BY

- DIBt – Deutsches Institut für Bautechnik (Z-51.3-428)

OUR COMPACT VENTILATION UNITS LG 350 & LG 450 HAVE BEEN CERTIFIED BY

- Passivhausinstitut Darmstadt

Note:

Our supplier range includes unit sizes up to 10.000 m³/h as well as a wide range of accessories.



ErP 2018

Fulfills the requirements of the Ecodesign Directive, in accordance with EU Regulation 1253/2014.



Your partner/installer:



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