



AD 120 B PORTABLE DEHUMIDIFIER

Function

The AD 120 B is a robust compact adsorption dehumidifier with a silica gel rotor as standard. Process air is drawn into the dehumidifier and through the rotor, which slowly turns between two sections in the dehumidifier. The silica gel rotor absorbs the moisture from the air in the drying section. This moisture is removed again by blowing hot air through the rotor in the regeneration section. The process air leaves the dehumidifier as dry air and the moisture is led out of the room through the regenerated air outlet. Dehumidification and regeneration are going on continuously until the desired relative humidity is obtained.

The silica gel rotor, drive motor, heating elements, air fans and filters are fully installed in the cabinet.

Simply connect the power supply and necessary air hoses on site and the unit is ready for immediate operation.

Applications

- Water damage restoration
- Building drying
- Room air dehumidification
- Dry air storage
- Water works
- Pumping stations

FEATURES

- Cabinet manufactured in stainless steel AISI 304
- Compact and low weight
- Built-in handle for ease of carrying and stacking
- Built-in hour run meter
- High capacity at low temperatures and low levels of relative humidity
- Deep drying at reduced process air flow
- Available pressure for connection to external ductwork
- Optional hygrostat and dew point controller as accessories
- Easy internal access for servicing and maintenance
- High performance washable silica gel desiccant rotor

Control

- MAN: Continuous operation
- HYG: Operation with connected hygrostat
- All units are prepared for connection of optional hygrostat or dew point controller



TECHNICAL DATA

Model

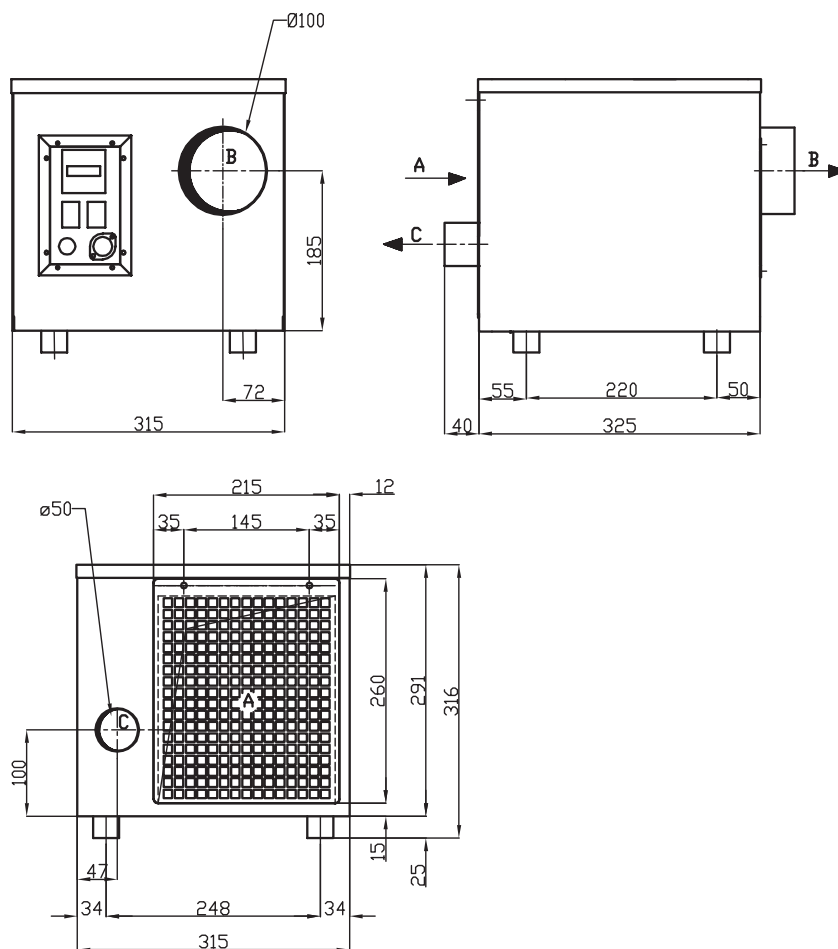
Operating range - humidity
Operating range - temperature
Dehumidification capacity at 20°C/60% RH
Nom. air volume, dry air
Nom. regenerated air volume
Power supply
Power consumption
Power consumption electric heater, nominal
External pressure, dry air
External fuse
Sound level (at 1 metre)
Protection class
Weight
Dry air outlet/duct
Regenerated air outlet/duct

AD 120 B

0-100 % RH
-15 – +35°C
0,45 kg/h
120 m³/h
35 m³/h
230/1N+PE V
0,80 kW
712 W
60 Pa
10 A
62 dB(A)
IP21
12 kg
Ø 100 mm
Ø 50 mm

Deeper drying and higher external pressure are obtained by reduced process air flow (e.g. by use of a damper or another resistance in the ducts).

DIMENSIONS AND AIR FLOWS



ACCESSORIES

Hygostat DR 10
Dew point controller DA 20
Back plate
Cable holder
Adapter for DA 20 and DR 10
(see separate data sheet)

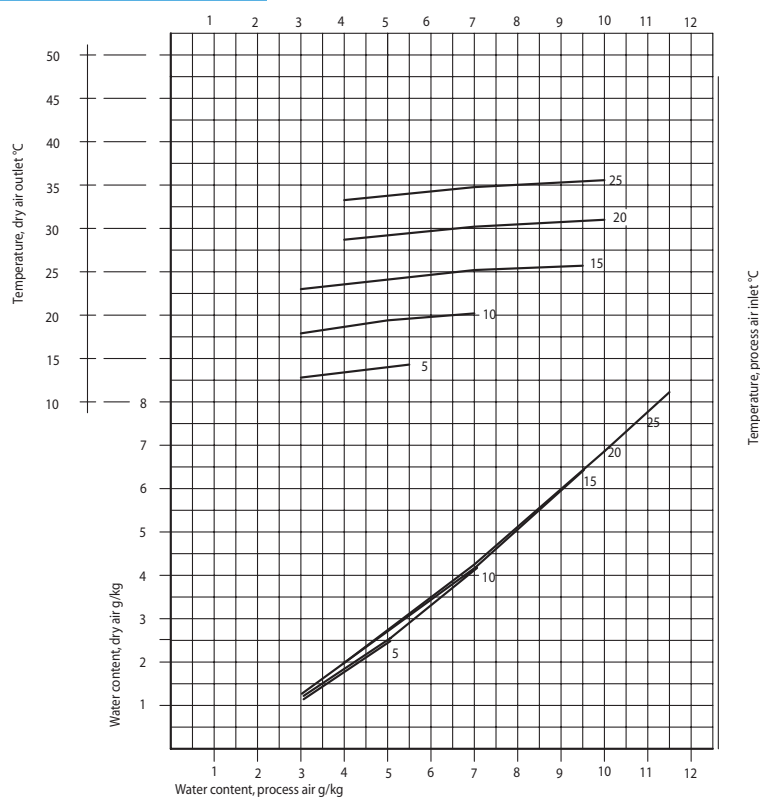
Also aviable in this series:

AD 240 B
AD 290 B
AD 400 B
(see separate data sheets)

A: Regenerated/process air inlet
B: Dry air outlet
C: Regenerated air outlet

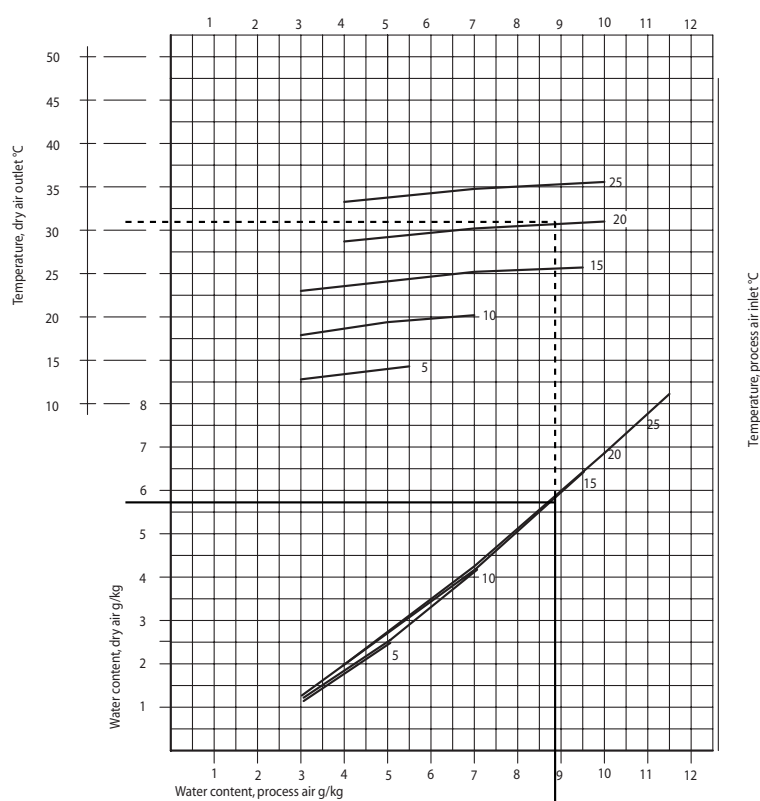
All dimensions are in mm.

CAPACITY DIAGRAM



The above capacity diagram is valid for a regenerated air volume of approx. 35 m³/h and a nom. dry air volume of 120 m³/h.

DIMENSIONING AD 120 B



Example of calculation - AD 120 B

The calculation is based on following data:

W	=	g water/hour
X1	=	dimensioning water content in the air: 12 g water/kg air
X2	=	water content in the air at desired air conditions of 20°C/60% RH: 8,7 g/kg (is found by using an hx-diagram).
ρ	=	air density (kg/m ³). The value commonly used is approximately 1,2 kg/m ³ at 15-25°C
n	=	air change in the room: 0,2/hour (well insulated room)
V	=	room volume: 400 m ³
Q	=	V x n (m ³ /h)

Calculation of dehumidification load:

The dehumidification load is calculated by using this formular

$$W = V \times n \times \rho \times (X1 - X2)$$

$$W = V \times n \times \rho \times (X1 - X2) = 400 \times 0,2 \times 1,2 \times (12 - 8,7) = 316,8 \text{ g water/hour}$$

The specific capacity of the dehumidifier W_{spec} (g water/kg air) can be found in the capacity diagram at a water content of 8,7 g/kg air (x-axis), then go up vertically to the actual temperature line (20°C) and read the water content in the dry air on the y-axis = 5,6 g water/kg air. The specific capacity is 8,7 - 5,6 = 3,1 g water/kg air, which is the amount of water that the dehumidifier can remove per kg air.

Calculation of dehumidifier capacity:

To select a suitable dehumidifier you must first determine whether a given dehumidifier can supply the necessary air volume.

$$W = Q \times \rho \times W_{\text{spec}} \Rightarrow Q = 316,8 / (1,2 \times 3,1) = 85,2 \text{ m}^3/\text{h}.$$

The nominal air volume of an AD 120 B is 120 m³/h so this is a good solution in this case.

By following the dotted line up to the next temperature line of 20°C you can read the dry air temperature which is 31°C.



AD 240 B PORTABLE DEHUMIDIFIER

Function

The AD 240 B is a robust compact adsorption dehumidifier with a silica gel rotor as standard. Process air is drawn into the dehumidifier and through the rotor, which slowly turns between two sections in the dehumidifier. The silica gel rotor absorbs the moisture from the air in the drying section. This moisture is removed again by blowing hot air through the rotor in the regeneration section. The process air leaves the dehumidifier as dry air and the moisture is led out of the room through the regenerated air outlet. Dehumidification and regeneration are going on continuously until the desired relative humidity is obtained.

The silica gel rotor, drive motor, heating elements, air fans and filters are fully installed in the cabinet.

Simply connect the power supply and necessary air hoses on site and the unit is ready for immediate operation.

Applications

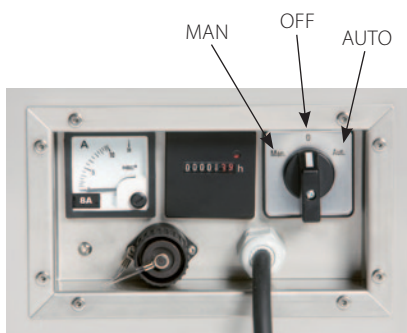
- Water damage restoration
- Building drying
- Room air dehumidification
- Dry air storage
- Water works
- Pumping stations

FEATURES

- Cabinet manufactured in stainless steel AISI 304
- Compact and low weight
- Built-in handle for ease of carrying and stacking
- Built-in hour run meter
- High capacity at low temperatures and low levels of relative humidity
- Deep drying at reduced process air flow
- Available pressure for connection to external ductwork
- Optional hygrostat and dew point controller as accessories
- Easy internal access for servicing and maintenance
- High performance washable silica gel desiccant rotor

Control

- MAN: Continuous operation
- HYG: Operation with connected hygrostat
- All units are prepared for connection of optional hygrostat or dew point controller



TECHNICAL DATA

Model

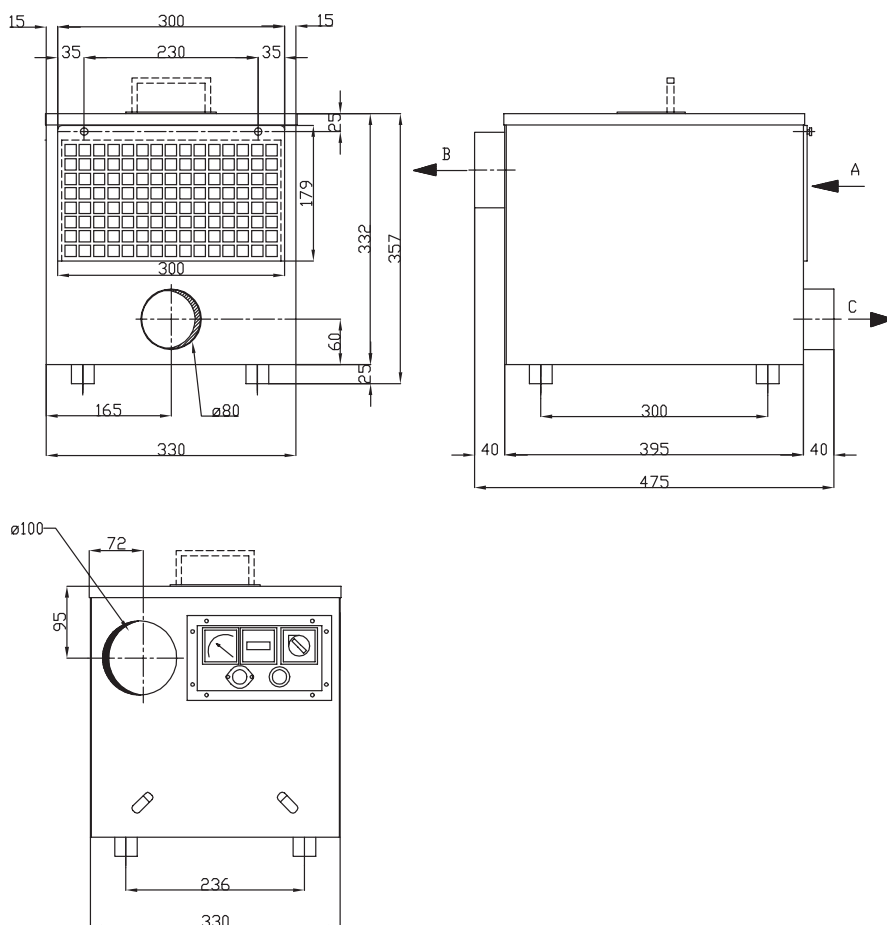
Operating range - humidity
Operating range - temperature
Dehumidification capacity at 20°C/60% RH
Nom. air volume, dry air
Nom. regenerated air volume
Power supply
Power consumption
Power consumption electric heater, nominal
External pressure, dry air
External fuse
Sound level (at 1 metre)
Protection class
Weight
Dry air outlet/duct
Regenerated air outlet/duct

AD 240 B

0-100 % RH
-15 – +35°C
0,90 kg/h
240 m³/h
45 m³/h
230/1N+PE V
1,07 kW
943 W
60 Pa
10 A
58 dB(A)
IP21
15 kg
Ø 100 mm
Ø 80 mm

Deeper drying and higher external pressure are obtained by reduced process air flow (e.g. by use of a damper or another resistance in the ducts).

DIMENSIONS AND AIR FLOWS



ACCESSORIES

Hygostat DR 10
Dew point controller DA 20
Back plate
Cable holder
Adapter for DA 20 and DR 10
(see separate data sheet)

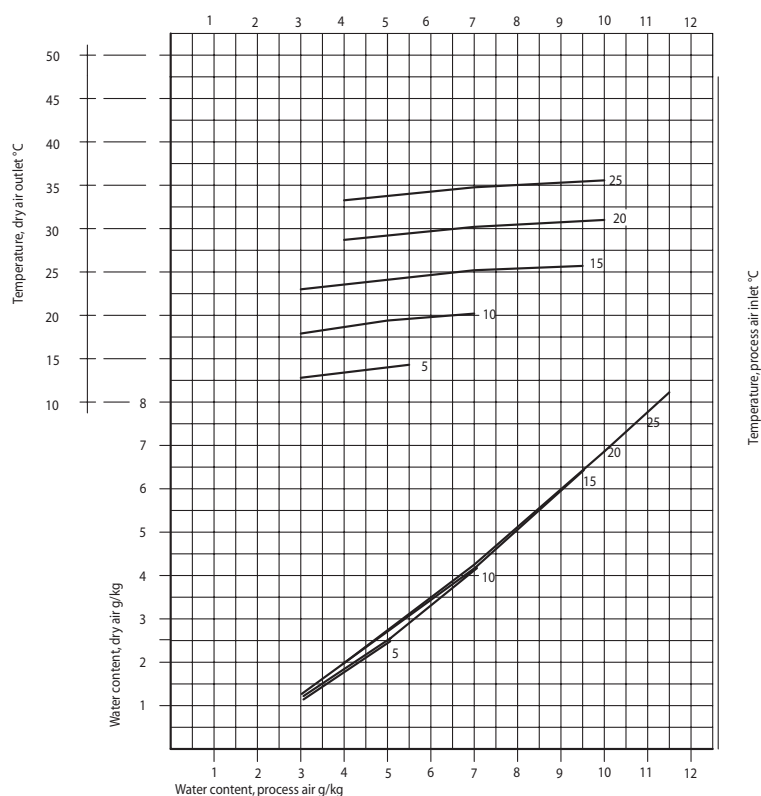
Also available in this series:

AD 120 B
AD 290 B
AD 400 B
(see separate data sheets)

A: Regenerated/process air inlet
B: Dry air outlet
C: Regenerated air outlet

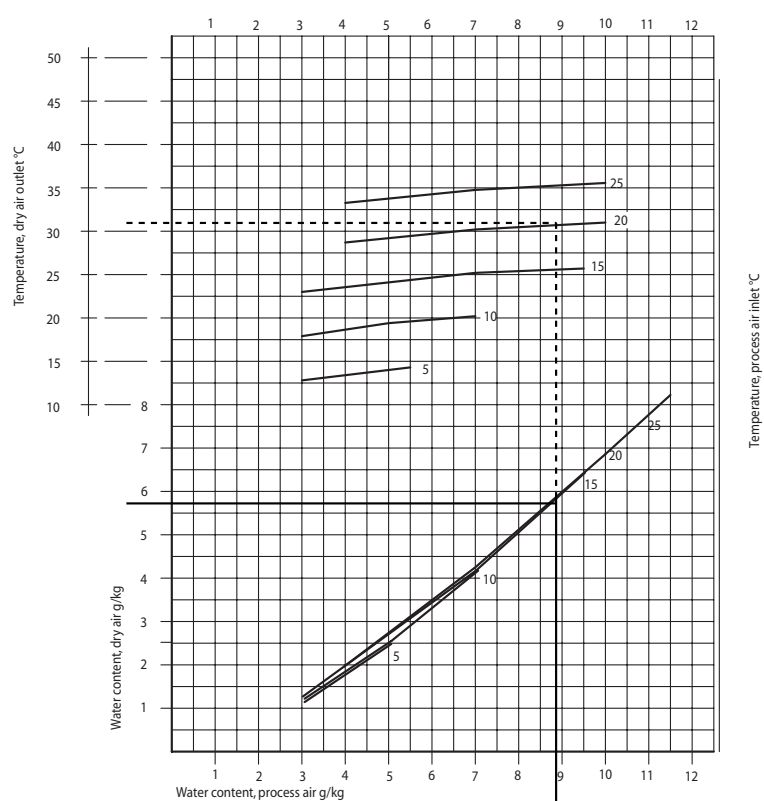
All dimensions are in mm.

CAPACITY DIAGRAM



The above capacity diagram is valid for a regenerated air volume of approx. 45 m³/h and a nom. dry air volume of 240 m³/h.

DIMENSIONING AD 240 B



EXAMPLE OF CALCULATION - AD 240 B

The calculation is based on following data:

W	=	g water/hour
X1	=	dimensioning water content in the air: 12 g water/kg air
X2	=	water content in the air at desired air conditions of 20°C/60% RH: 8,7 g/kg (is found by using an hx-diagram).
ρ	=	air density (kg/m ³). The value commonly used is approximately 1,2 kg/m ³ at 15-25°C
n	=	air change in the room: 0,3/hour
V	=	room volume: 700 m ³
Q	=	V x n (m ³ /h)

Calculation of dehumidification load:

The dehumidification load is calculated by using this formular

$$W = V \times n \times \rho \times (X1 - X2)$$

$$W = V \times n \times \rho \times (X1 - X2) = 700 \times 0,3 \times 1,2 \times (12 - 8,7) = 831,6 \text{ g water/hour}$$

The specific capacity of the dehumidifier W_{spec} (g water/kg air) can be found in the capacity diagram at a water content of 8,7 g/kg air (x-axis), then go up vertically to the actual temperature line (20°C) and read the water content in the dry air on the y-axis = 5,6 g water/kg air. The specific capacity is 8,7 - 5,6 = 3,1 g water/kg air, which is the amount of water that the dehumidifier can remove per kg air.

Calculation of dehumidifier capacity:

To select a suitable dehumidifier you must first determine whether a given dehumidifier can supply the necessary air volume.

$$W = Q \times \rho \times W_{\text{spec}} \Rightarrow Q = 831,6 / (1,2 \times 3,1) = 223,5 \text{ m}^3/\text{h}.$$

The nominal air volume of an AD 240 B is 240 m³/h so this is a good solution in this case.

By following the dotted line up to the next temperature line of 20°C you can read the dry air temperature which is 31°C.



AD 290 B PORTABLE DEHUMIDIFIER

Function

The AD 290 B is a robust compact adsorption dehumidifier with a silica gel rotor as standard. Process air is drawn into the dehumidifier and through the rotor, which slowly turns between two sections in the dehumidifier. The silica gel rotor absorbs the moisture from the air in the drying section. This moisture is removed again by blowing hot air through the rotor in the regeneration section. The process air leaves the dehumidifier as dry air and the moisture is led out of the room through the regenerated air outlet. Dehumidification and regeneration are going on continuously until the desired relative humidity is obtained.

The silica gel rotor, drive motor, heating elements, air fans and filters are fully installed in the cabinet.

Simply connect the power supply and necessary air hoses on site and the unit is ready for immediate operation.

Applications

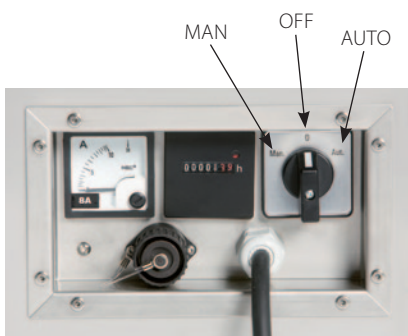
- Water damage restoration
- Building drying
- Room air dehumidification
- Dry air storage
- Water works
- Pumping stations

FEATURES

- Cabinet manufactured in stainless steel AISI 304
- Compact and low weight
- Built-in handle for ease of carrying and stacking
- Built-in hour run meter
- High capacity at low temperatures and low levels of relative humidity
- Deep drying at reduced process air flow
- Available pressure for connection to external ductwork
- Optional hygrostat and dew point controller as accessories
- Easy internal access for servicing and maintenance
- High performance washable silica gel desiccant rotor

Control

- MAN: Continuous operation
- HYG: Operation with connected hygrostat
- All units are prepared for connection of optional hygrostat or dew point controller



TECHNICAL DATA

Model

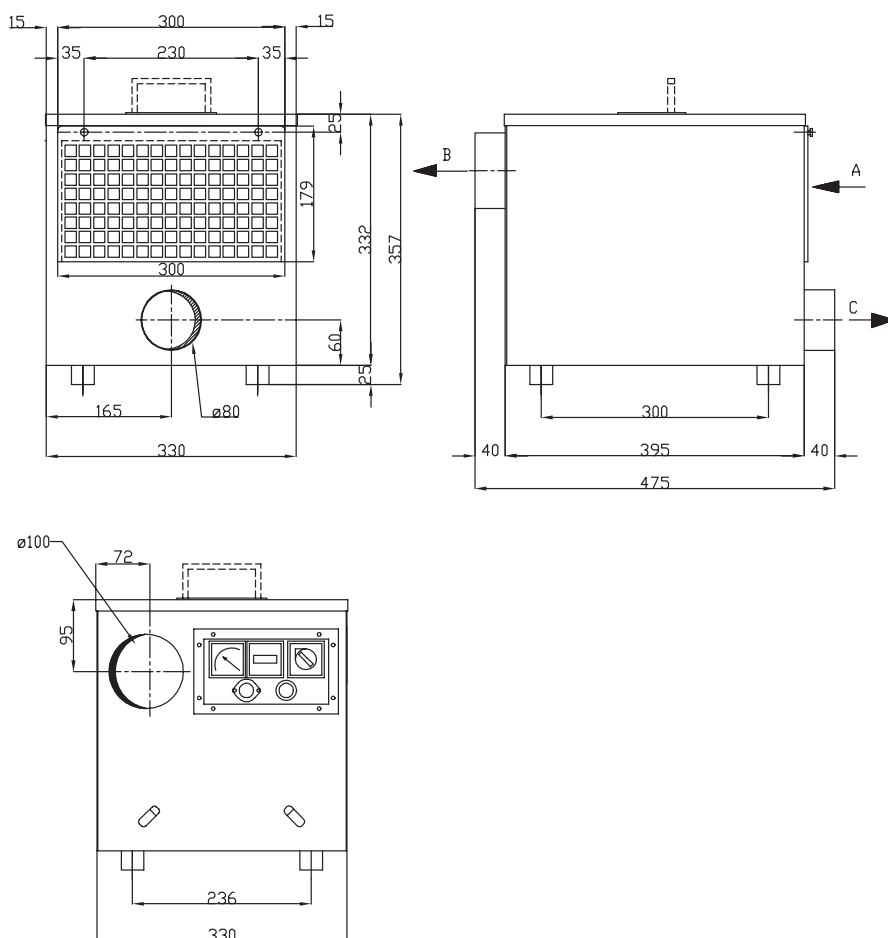
Operating range - humidity
Operating range - temperature
Dehumidification capacity at 20°C/60% RH
Nom. air volume, dry air
Nom. regenerated air volume
Power supply
Power consumption
Power consumption electric heater, nominal
External pressure, dry air
External fuse
Sound level (at 1 metre)
Protection class
Weight
Dry air outlet/duct
Regenerated air outlet/duct

AD 290 B

0-100 % RH
-15 – +35°C
1,10 kg/h
290 m³/h
65 m³/h
230/1N+PE V
1,63 kW
1380 W
60 Pa
10 A
60 dB(A)
IP21
17 kg
Ø 100 mm
Ø 80 mm

Deeper drying and higher external pressure are obtained by reduced process air flow (e.g. by use of a damper or another resistance in the ducts).

DIMENSIONS AND AIR FLOWS



ACCESSORIES

Hygostat DR 10
Dew point controller DA 20
Back plate
Cable holder
Adapter for DA 20 and DR 10
(see separate data sheet)

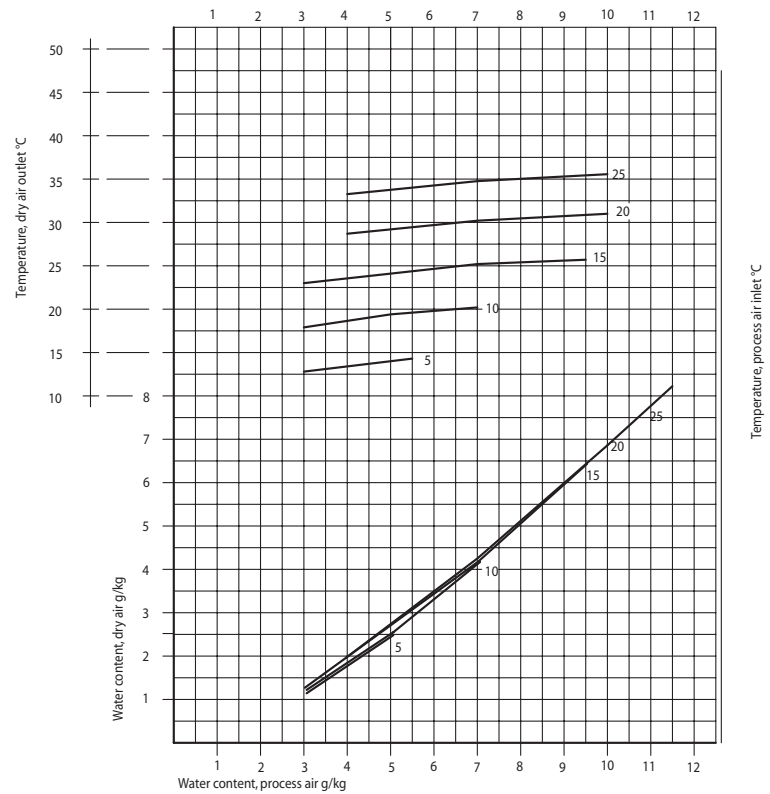
Also aviable in this series:

AD 120 B
AD 240 B
AD 400 B
(see separate data sheets)

A: Regenerated/process air inlet
B: Dry air outlet
C: Regenerated air outlet

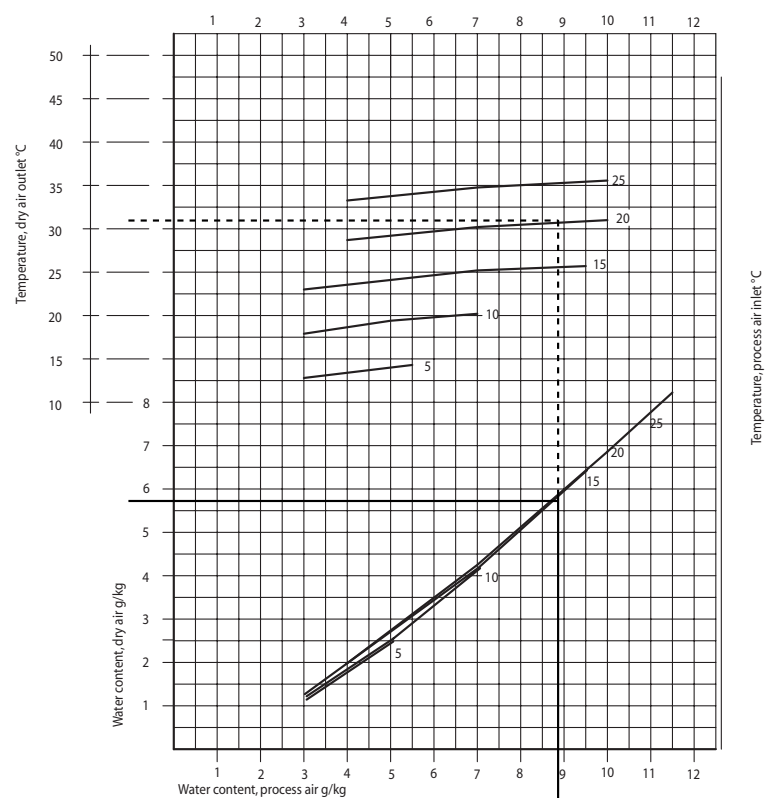
All dimensions are in mm.

CAPACITY DIAGRAM



The above capacity diagram is valid for a regenerated air volume of approx. 65 m³/h and a nom. dry air volume of 290 m³/h.

DIMENSIONING AD 290 B



EXAMPLE OF CALCULATION - AD 290 B

The calculation is based on following data:

W	=	g water/hour
X1	=	dimensioning water content in the air: 12 g water/kg air
X2	=	water content in the air at desired air conditions of 20°C/60% RH: 8,7 g/kg (is found by using an hx-diagram).
ρ	=	air density (kg/m ³). The value commonly used is approximately 1,2 kg/m ³ at 15-25°C
n	=	air change in the room: 0,3/hour
V	=	room volume: 900 m ³
Q	=	V x n (m ³ /h)

Calculation of dehumidification load:

The dehumidification load is calculated by using this formular

$$W = V \times n \times \rho \times (X1 - X2)$$

$$W = V \times n \times \rho \times (X1 - X2) = 900 \times 0,3 \times 1,2 \times (12 - 8,7) = 1069,2 \text{ g water/hour}$$

The specific capacity of the dehumidifier W_{spec} (g water/kg air) can be found in the capacity diagram at a water content of 8,7 g/kg air (x-axis), then go up vertically to the actual temperature line (20°C) and read the water content in the dry air on the y-axis = 5,6 g water/kg air. The specific capacity is 8,7 - 5,6 = 3,1 g water/kg air, which is the amount of water that the dehumidifier can remove per kg air.

Calculation of dehumidifier capacity:

To select a suitable dehumidifier you must first determine whether a given dehumidifier can supply the necessary air volume.

$$W = Q \times \rho \times W_{\text{spec}} \Rightarrow Q = 1069,2 / (1,2 \times 3,1) = 287,4 \text{ m}^3/\text{h}.$$

The nominal air volume of an AD 290 B is 290 m³/h so this is a good solution in this case.

By following the dotted line up to the next temperature line of 20°C you can read the dry air temperature which is 31°C.



AD 400 B PORTABLE DEHUMIDIFIER

Function

The AD 400 B is a robust compact adsorption dehumidifier with a silica gel rotor as standard. Process air is drawn into the dehumidifier and through the rotor, which slowly turns between two sections in the dehumidifier. The silica gel rotor absorbs the moisture from the air in the drying section. This moisture is removed again by blowing hot air through the rotor in the regeneration section. The process air leaves the dehumidifier as dry air and the moisture is led out of the room through the regenerated air outlet. Dehumidification and regeneration are going on continuously until the desired relative humidity is obtained.

The silica gel rotor, drive motor, heating elements, air fans and filters are fully installed in the cabinet.

Simply connect the power supply and necessary air hoses on site and the unit is ready for immediate operation.

Applications

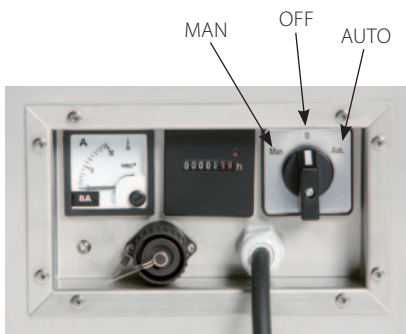
- Water damage restoration
- Building drying
- Room air dehumidification
- Dry air storage
- Water works
- Pumping stations

FEATURES

- Cabinet manufactured in stainless steel AISI 304
- Compact and low weight
- Built-in handle for ease of carrying and stacking
- Built-in hour run meter
- High capacity at low temperatures and low levels of relative humidity
- Deep drying at reduced process air flow
- Available pressure for connection to external ductwork
- Optional hygrostat and dew point controller as accessories
- Easy internal access for servicing and maintenance
- High performance washable silica gel desiccant rotor

Control

- MAN: Continuous operation
- HYG: Operation with connected hygrostat
- All units are prepared for connection of optional hygrostat or dew point controller



TECHNICAL DATA

Model

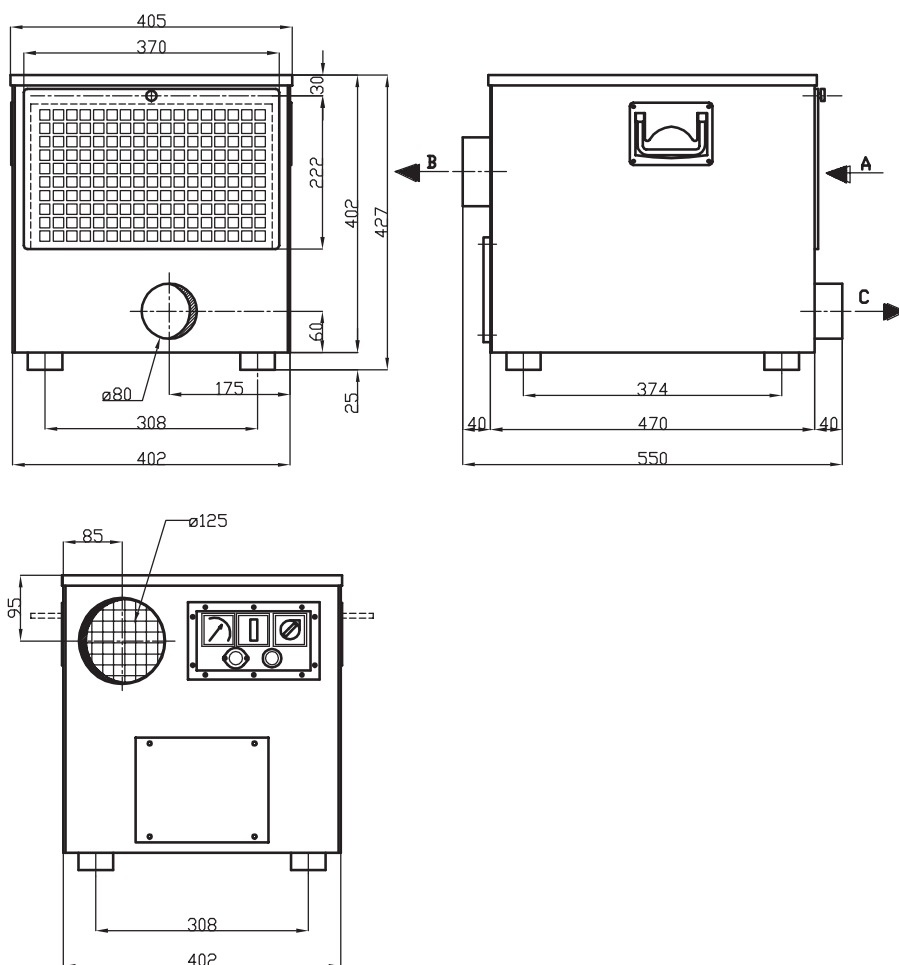
Operating range - humidity
Operating range - temperature
Dehumidification capacity at 20°C/60% RH
Nom. air volume, dry air
Nom. regenerated air volume
Power supply
Power consumption
Power consumption electric heater, nominal
External pressure, dry air
External fuse
Sound level (at 1 metre)
Protection class
Weight
Dry air outlet/duct
Regenerated air outlet/duct

AD 400 B

0-100 % RH
-15 – +35°C
1,40 kg/h
400 m³/h
85 m³/h
230/1N+PE V
1,98 kW
1840 W
60 Pa
10 A
62 dB(A)
IP21
27 kg
Ø 125 mm
Ø 80 mm

Deeper drying and higher external pressure are obtained by reduced process air flow (e.g. by use of a damper or another resistance in the ducts).

DIMENSIONS AND AIR FLOWS



ACCESSORIES

Hygostat DR 10
Dew point controller DA 20
Back plate
Cable holder
Adapter for DA 20 and DR 10
(see separate data sheet)

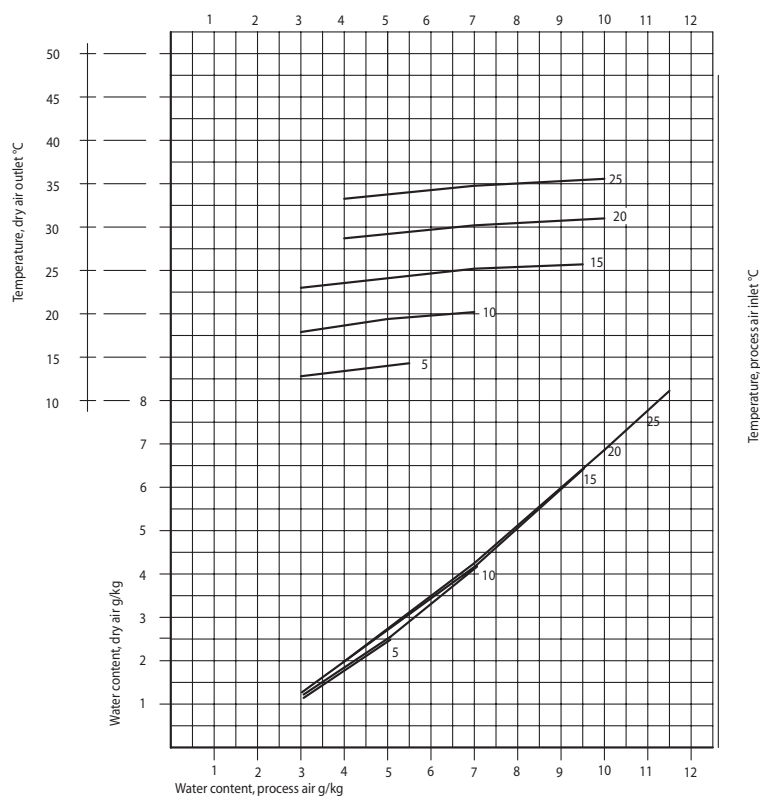
Also available in this series:

AD 120 B
AD 240 B
AD 290 B
(see separate data sheets)

A: Regenerated/process air inlet
B: Dry air outlet
C: Regenerated air outlet

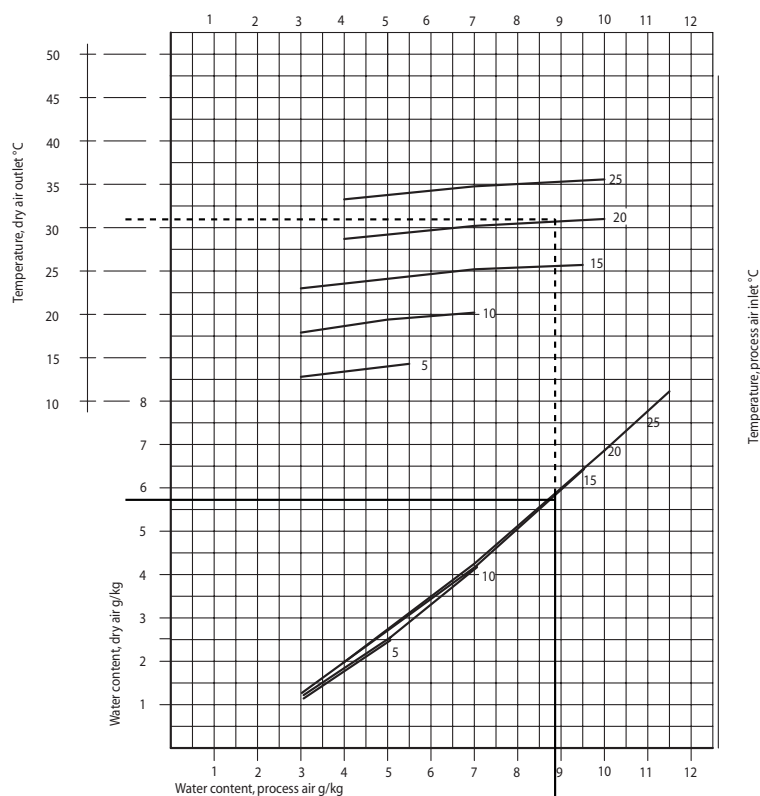
All dimensions are in mm.

CAPACITY DIAGRAM



The above capacity diagram is valid for a regenerated air volume of approx. 85 m³/h and a nom. dry air volume of 400 m³/h.

DIMENSIONING AD 400 B



EXAMPLE OF CALCULATION - AD 400 B

The calculation is based on following data:

W	=	g water/hour
X1	=	dimensioning water content in the air: 12 g water/kg air
X2	=	water content in the air at desired air conditions of 20°C/60% RH: 8,7 g/kg (is found by using an hx-diagram).
ρ	=	air density (kg/m ³). The value commonly used is approximately 1,2 kg/m ³ at 15-25°C
n	=	air change in the room: 0,3/hour
V	=	room volume: 1100 m ³
Q	=	V x n (m ³ /h)

Calculation of dehumidification load:

The dehumidification load is calculated by using this formular

$$W = V \times n \times \rho \times (X1 - X2)$$

$$W = V \times n \times \rho \times (X1 - X2) = 1100 \times 0,3 \times 1,2 \times (12 - 8,7) = 1306,8 \text{ g water/hour}$$

The specific capacity of the dehumidifier W_{spec} (g water/kg air) can be found in the capacity diagram at a water content of 8,7 g/kg air (x-axis), then go up vertically to the actual temperature line (20°C) and read the water content in the dry air on the y-axis = 5,6 g water/kg air. The specific capacity is 8,7 - 5,6 = 3,1 g water/kg air, which is the amount of water that the dehumidifier can remove per kg air.

Calculation of dehumidifier capacity:








To select a suitable dehumidifier you must first determine whether a given dehumidifier can supply the necessary air volume.

$$W = Q \times \rho \times W_{\text{spec}} \Rightarrow Q = 1306,8 / (1,2 \times 3,1) = 351,3 \text{ m}^3/\text{h}.$$

The nominal air volume of an AD 400 B is 400 m³/h so this is a good solution in this case.

By following the dotted line up to the next temperature line of 20°C you can read the dry air temperature which is 31°C.

ACCESSORIES AD 120 B - AD 240 B - AD 290 B - AD 400 B

Illustration	Accessory	Description	AD-type	Dantherm No.										
	Hygrostat and dew point controller DA 20	<p>DA 20 is an electronic hygrostat and dew point controller. It includes a sensor, SA 20, which is to be installed in a place where it measures representative conditions in the room. A control panel with display is built into the moisture controller.</p> <p>DA 20 controls the dehumidifier ON/OFF or modulating.</p> <table><tr><td>Operating range – relative humidity</td><td>10-90% RH</td></tr><tr><td>Operating range – dew point temperature</td><td>-5° to +25°C</td></tr><tr><td>Protection class</td><td>IP 54</td></tr><tr><td>Voltage</td><td>230 V/50 Hz</td></tr><tr><td>Fuse</td><td>16 A</td></tr></table>	Operating range – relative humidity	10-90% RH	Operating range – dew point temperature	-5° to +25°C	Protection class	IP 54	Voltage	230 V/50 Hz	Fuse	16 A	All	081842
Operating range – relative humidity	10-90% RH													
Operating range – dew point temperature	-5° to +25°C													
Protection class	IP 54													
Voltage	230 V/50 Hz													
Fuse	16 A													
	Hygrostat and dew point controller DH 24	<p>DH 24 is an electronic ON/OFF hygrostat and dew point controller with builtin sensor.</p> <table><tr><td>Operating range – relative humidity</td><td>5-95% RH</td></tr><tr><td>Operating range – dew point temperature</td><td>-5° to +45°C</td></tr><tr><td>Protection class</td><td>IP 54</td></tr><tr><td>Voltage</td><td>230 V/50 Hz</td></tr><tr><td>Fuse</td><td>16 A</td></tr></table>	Operating range – relative humidity	5-95% RH	Operating range – dew point temperature	-5° to +45°C	Protection class	IP 54	Voltage	230 V/50 Hz	Fuse	16 A	All	351037
Operating range – relative humidity	5-95% RH													
Operating range – dew point temperature	-5° to +45°C													
Protection class	IP 54													
Voltage	230 V/50 Hz													
Fuse	16 A													
	Hygrostat DR 10	<p>DR 10 is a mechanical hygrostat which is used when the maintenance of a certain RH value is required.</p> <table><tr><td>Operating range – relative humidity</td><td>30-100% RH</td></tr><tr><td>Operating range – temperature</td><td>-20° to 60°C</td></tr><tr><td>Protection class</td><td>IP 20</td></tr><tr><td>Voltage</td><td>230 V/50 Hz</td></tr><tr><td>Fuse</td><td>10 A</td></tr></table>	Operating range – relative humidity	30-100% RH	Operating range – temperature	-20° to 60°C	Protection class	IP 20	Voltage	230 V/50 Hz	Fuse	10 A	All	351036
Operating range – relative humidity	30-100% RH													
Operating range – temperature	-20° to 60°C													
Protection class	IP 20													
Voltage	230 V/50 Hz													
Fuse	10 A													
	Back plate	The back plate is used to establish a pressure stabilized system.	AD120B AD240B AD290B AD400B	351038 351034 351034 351039										
	Cable holder	Used if winding of the electrical cable is required. To be mounted on the front of the dehumidifier by means of two ready-mounted screws. Box containing two pieces.	All	351035										
	Adaptor for DA 20 and DH 24	To be used as adaptor between the dehumidifier and the controller DA 20 or DH 24.	All	064288										
	Shelf	Used for mounting the dehumidifier on the wall.	All	046387										
	Filters, 10 pcs.		All	351063										