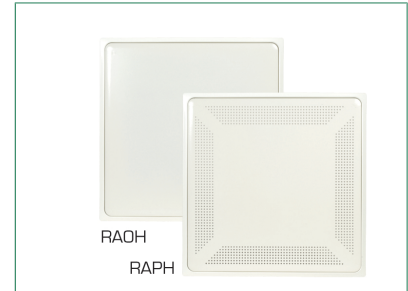
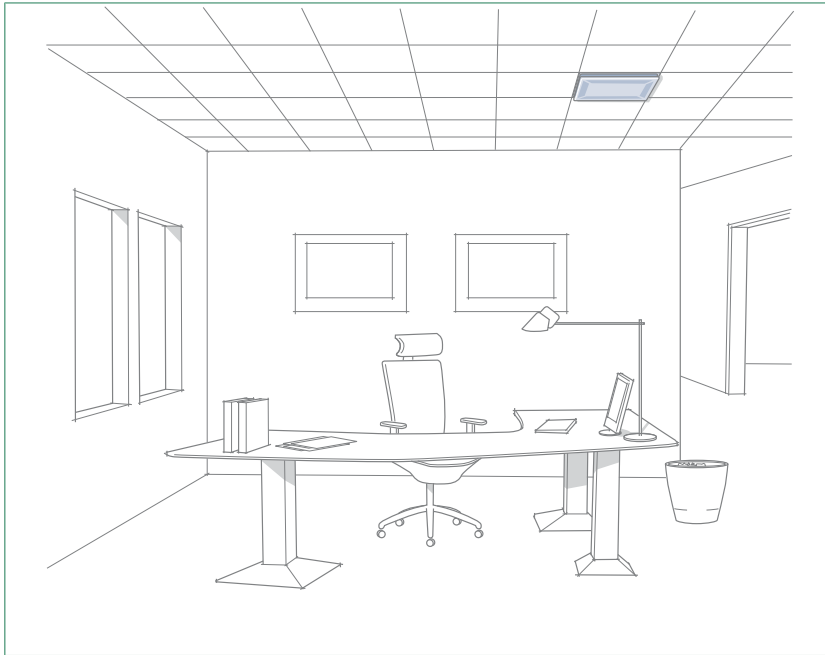
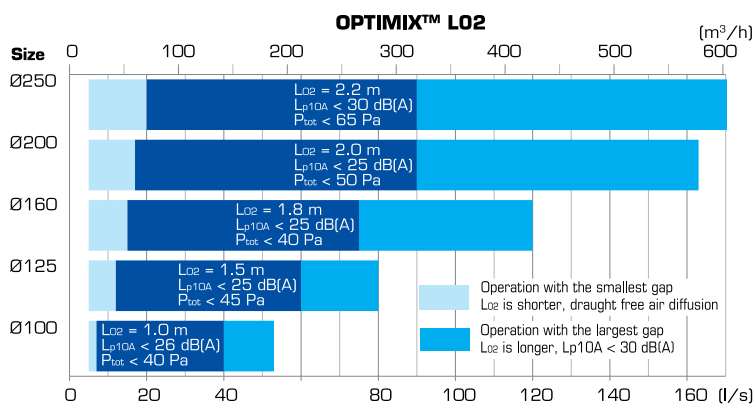


Active supply air unit OPTIMIX RAPB, RAOB



OPTIMIX RA(O,P)B supply air unit is designed especially for VAV systems. OPTIMIX RA(O,P)B is a quiet, ceiling-mounted active supply air unit with two alternative functions. It can be used either to provide constant throw at varying air flow rates (OPTIMIX L02, analog) or to control the flow rate (OPTIMIX VAV, analog or Modbus). OPTIMIX RA(O,P)B includes active diffuser RA(O,P)H and insulated plenum box ATTC. OPTIMIX makes good and draught free indoor climate in VAV systems.

Quick Selection



OPTIMIX L02 (analog only)

(OPTIMIX VAV and L02 quick selection examples on page 2)

Functions even with $\Delta t = -12\text{ °C}$

AIRTREND Ltd
 Predstavništvo u Beogradu
 Kumanovska 14, 11000 Beograd
 Tel: 011/3836886, 3085740
 Faks: 011/3444113
 e-mail: gobrid@eunet.rs
 web: www.airtrend.rs

Specifications

OPTIMIX L02 – Constant throw

- Easy adjustment of throw
- Maintenance of a constant throw
- Real-time throw monitoring
- Analog

OPTIMIX VAV – Flow rate control

- Easy adjustment of V_{min} and V_{max}
- Constant flow rate also possible
- Real-time flow rate monitoring
- Analog or Modbus

OPTIMIX RA(O,P)B

- Five connection sizes (Ø 100–250), one diffuser size (595 x 595)
- Available for suspended ceiling systems (595 x 595)
- Choice of diffusion directions
- Also available with CleanVent coating

Product code example

Bundle code:

RAOB-200-1-1

Ordering codes:

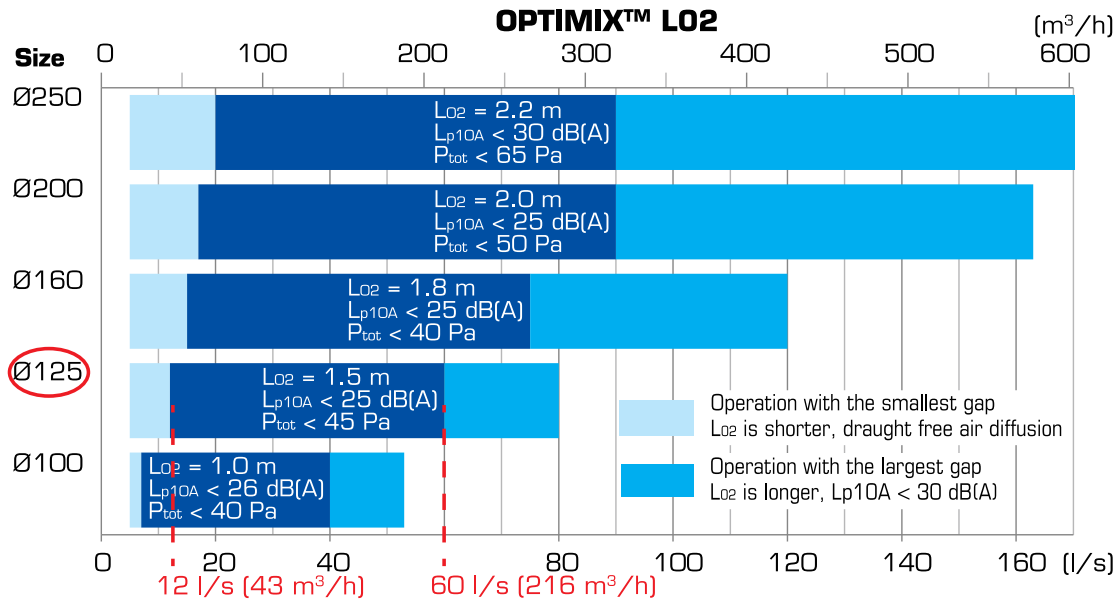
Active diffuser RAOH-315-1-1

Plenum box ATTC-200-315-1

Quick selection examples

OPTIMIX L02 (analog only)

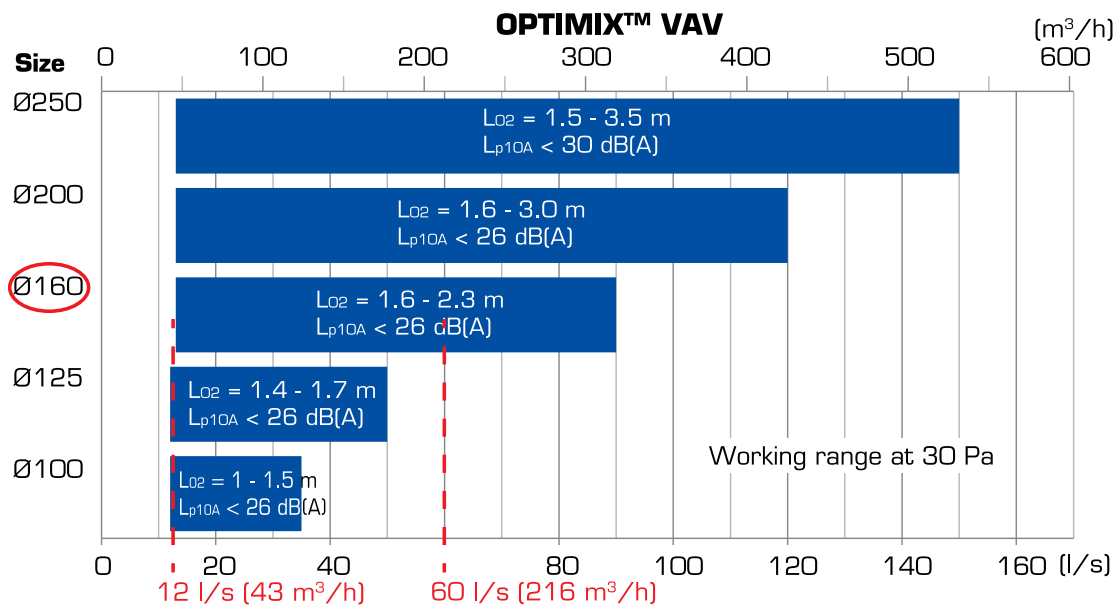
Choose OPTIMIX L02 when you like to have a good and draught free indoor climate. OPTIMIX L02 controls air pattern with variable air flow and makes it possible to have a lot of cooling effect. When the VAV system has a large variance in air flow or supply air temperature is much smaller than the temperature of the room the risk of the draught is avoided by using the OPTIMIX L02.



Needed air flow is 12 - 60 l/s. Size 125 is chosen, because the needed air flow is in the working range.

OPTIMIX VAV (analog or Modbus)

Choose OPTIMIX VAV when there is a need for a smaller air flow variance and temperature difference.



V_{nom} = 150 l/s

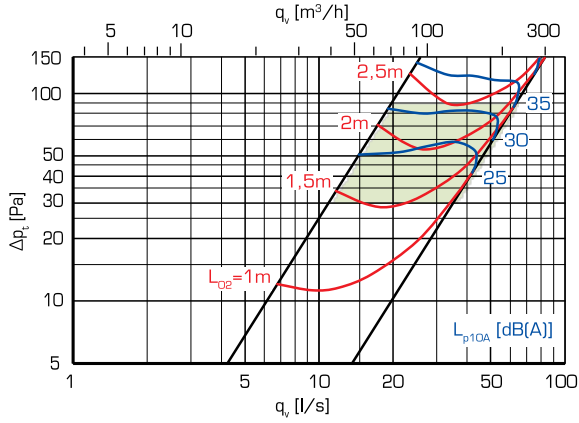
Needed air flow is 12 - 60 l/s. Size 160 is chosen, because the needed air flow best covers the working range.

Air flow, throw, pressure drop, sound level

Active supply air unit OPTIMIX RAPB, RAOB

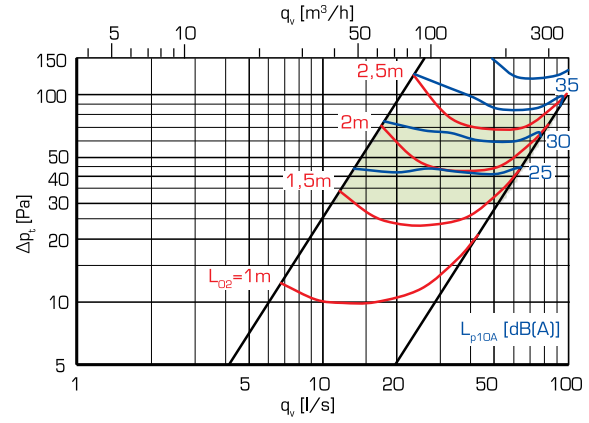
RA(P,O)B-100-b-c

[RA(P,O)H-315-b-c + ATTC-100-315-1]



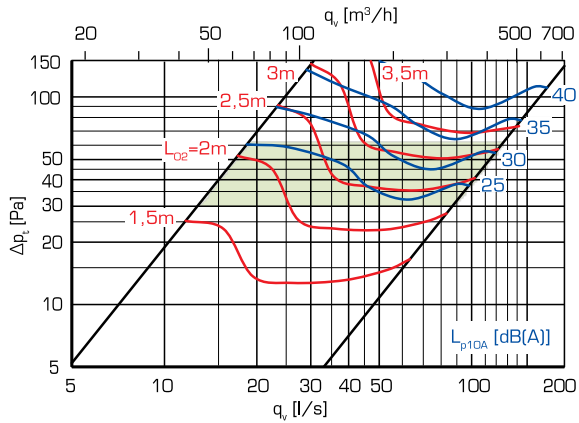
RA(P,O)B-125-b-c

[RA(P,O)H-315-b-c + ATTC-125-315-1]



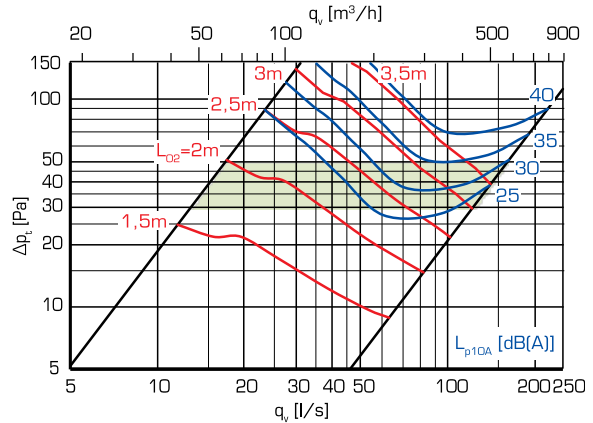
RA(P,O)B-160-b-c

[RA(P,O)H-315-b-c + ATTC-160-315-1]



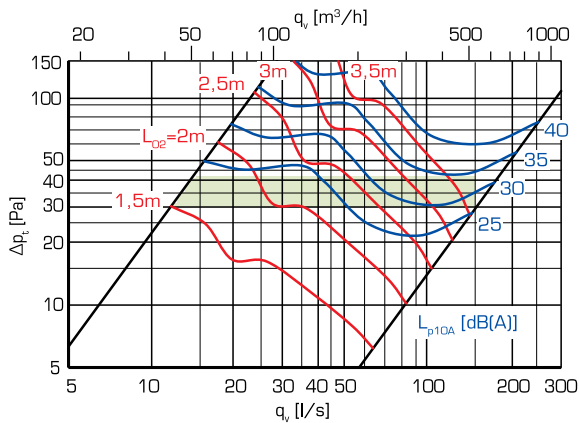
RA(P,O)B-200-b-c


[RA(P,O)H-315-b-c + ATTC-200-315-1]



RA(P,O)B-250-b-c

[RA(P,O)H-315-b-c + ATTC-250-315-1]



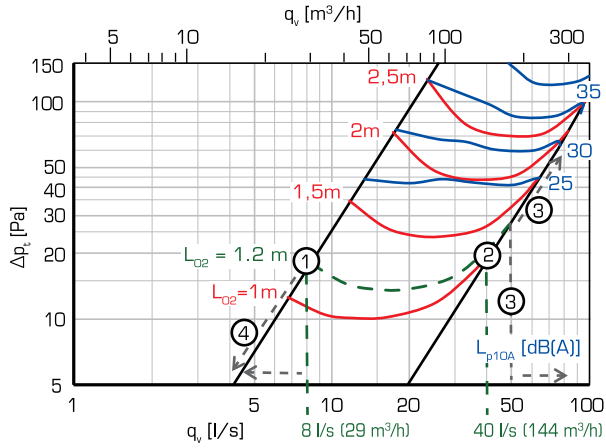

= Recommended range when using the VAV function

L02 is measured with isothermal air.

Dimensioning examples L02 (analog only)

RA(P,O)B-125-b-1

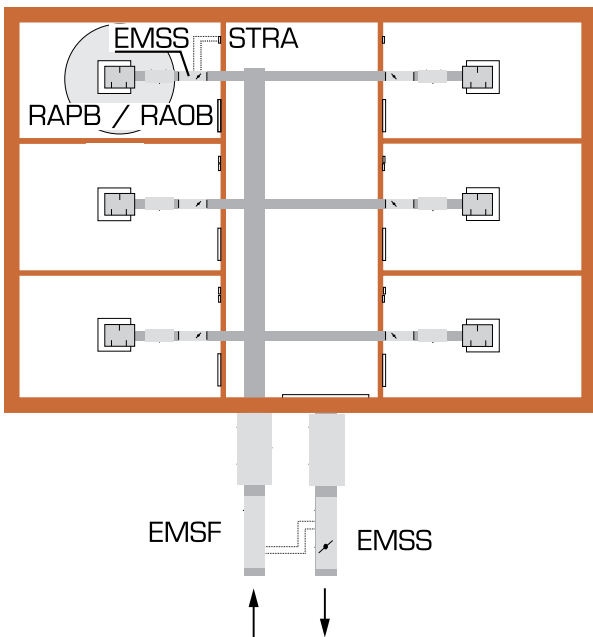
[RA(P,O)H-315-b-1 + ATTC-125-315-1]



1. In an office of 3 x 4 m, the desired throw over a flow rate range of 8 - 40 l/s is $L_{02} = 1.2$ m.
2. Follow the throw curve $L_{02} = 1.2$ m up to the maximum flow rate of 40 l/s.
3. The maximum flow rate at which constant throw $L_{02} = 1.2$ m is possible is 50 l/s. Flow rates higher than this give an increase in throw at maximum slot.
4. At flow rates below the minimum rate, there will be a decrease in throw at minimum slot.

Example – OPTIMIX L02

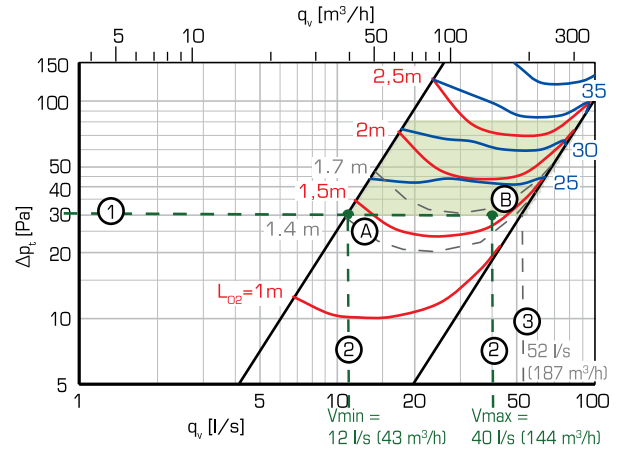
Office 8 - 40 l/s



Dimensioning examples VAV (analog or Modbus)

RA(P,O)B-125-b-1/5

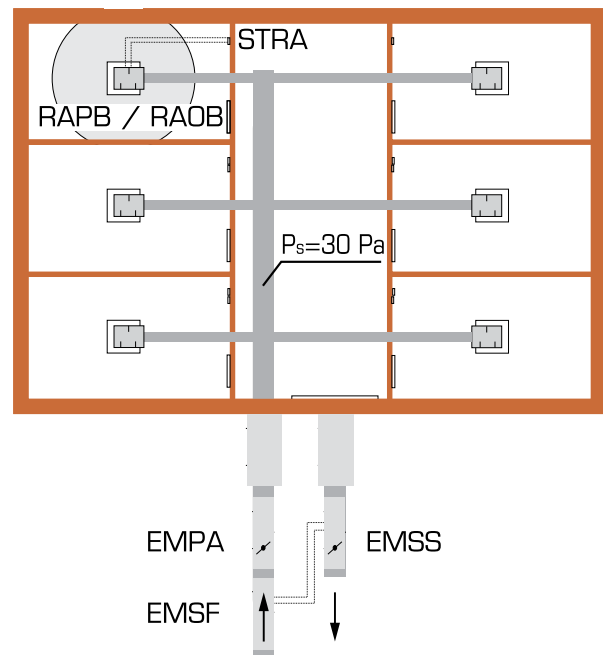
[RA(P,O)H-315-b-1/5 + ATTC-125-315-1]



1. The duct pressure in a selected zone is set, with an EMPA controller, to 30 Pa.
2. In an office of 3 x 4 m, the desired flow rate range is 12 - 40 l/s: $V_{min} = 12$ l/s and $V_{max} = 40$ l/s. Follow the horizontal pressure curve 30 Pa up to the vertical V_{min} and V_{max} curves (12 and 40 l/s). Within this operating range, the throw varies between A and B (1.4 and 1.7 m in this example).
3. The maximum flow rate allowing flow control at 30 Pa is 52 l/s. Flow rates higher than this give an increase in the pressure drop at maximum slot.

Example – OPTIMIX VAV

Office 12 - 40 l/s



Sound data

Sound power level L_w

RA(P,O)B-	Sound level correction K (dB)							
	63	125	250	500	1000	2000	4000	8000
100-b-c	15	9	5	3	-3	-8	-13	-14
125-b-c	16	10	4	4	-4	-8	-12	-14
160-b-c	17	10	4	4	-3	-11	-14	-15
200-b-c	11	6	4	5	-3	-13	-18	-15
250-b-c	12	6	3	5	-3	-11	-16	-15
Tolerance ±	6	3	2	2	2	2	2	3

The sound power levels for different octave bands are obtained by adding together the total sound pressure level L_{p10A} , dB(A), and the correction K_{oct} (see tables above) according to the following formula:

$$L_w = L_{p10A} + K_{oct}$$

The correction K_{oct} is the average value in the operating range of the device.

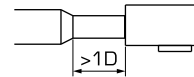
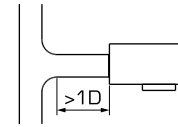
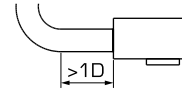
Sound attenuation ΔL

RA(P,O)B-	Sound attenuation (dB)							
	63	125	250	500	1000	2000	4000	8000
100-b-c	15	6	9	15	13	14	13	16
125-b-c	20	12	12	18	15	15	13	15
160-b-c	18	11	10	15	14	14	13	15
200-b-c	13	5	9	14	14	15	14	16
250-b-c	12	7	9	15	13	14	14	16
Tolerance ±	6	3	2	2	2	2	2	3

The average attenuation ΔL from duct to room includes the orifice attenuation of the connecting duct in ceiling-mounted applications.

For more technical details, please refer to the ExSelAir product selection program.

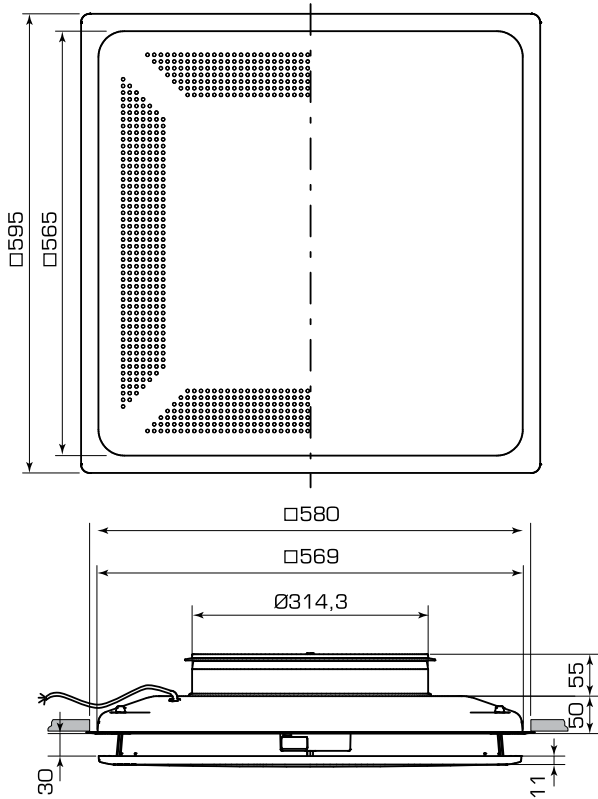
Safety distances



For more information (wiring, Modbus registers etc.) see Optimix control equipment.

Dimensions and weights

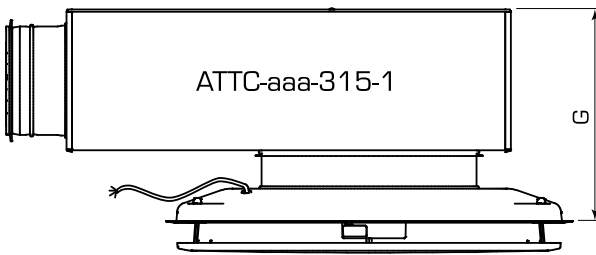
Active diffuser RAPH, RAOH



Size	ØD1 mm	ØD2 mm	H2 mm	L mm	B mm	K mm	Weight kg
100-315	99.3	315	205	650	480	207	4.9
125-315	124.3	315	205	650	480	207	4.8
160-315	159.3	315	205	650	480	207	4.9
200-315	199.3	315	245	650	480	207	5.4
250-315	249.3	315	295	700	570	225	6.9

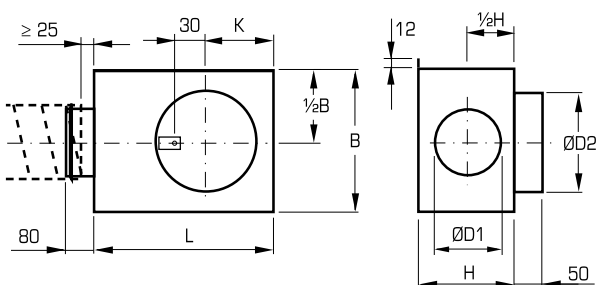
RA(P,O)H	Penetration (mm)	Weight (kg)
315	580x580	5.8

Active supply air unit RA(P,O)B



RA(P,O)B	Gmin (mm)	Gmax (mm)
100-b-c	310	340
125-b-c	310	340
160-b-c	310	340
200-b-c	350	380
250-b-c	400	430

Plenum box ATTC



Execution and function, material

Execution and function

OPTIMIX RA(O,P)B is a quiet, ceiling-mounted active supply air unit with two alternative functions. It can be used either to provide constant throw at varying air flow rates (OPTIMIX L02) or to control the flow rate (OPTIMIX VAV). OPTIMIX RA(O,P)B includes an active supply air diffuser RA(O,P)H and an insulated plenum box ATTC. The OPTIMIX active supply air unit enables a draught-free supply of air at varying air flow rates.

OPTIMIX L02 is a function for keeping the desired throw unchanged at varying flow rates. The desired throw can be easily set directly on the actuator and is kept constant over the operating range regardless of variation in the air flow rate. The actuator provides a real-time throw display. Diffusion directions are easy to adjust. The operation is based on a vertically adjustable regulation plate that is automatically controlled by an actuator (Fig.1). The air slot is made bigger or smaller as required to keep the throw constant at varying air flow rates. When the flow rate increases, the slot is made bigger to decrease the velocity at which air is discharged from the diffuser. When the flow rate decreases, the slot is made smaller to increase the discharge velocity. L02 function can be used only with the analog actuator.

OPTIMIX VAV is a function for controlling the air volume. It can be used to provide either varying or constant flow rates. The operation is based on a vertically adjustable regulation plate that is automatically controlled by an actuator. When using the VAV function, the air slot is made bigger as the flow rate increases and is made smaller as the flow rate decreases. The throw varies according to the flow rate. VAV function can be used with either analog or Modbus actuator.

The actuator has two setting screws that can be turned with a screwdriver. The one on the right is used to select the desired function, while the one on the left is for settings (Fig.2). Every product comes with simple instructions for making the settings. For more detailed description of the actuator see Optimix control equipment.

The plenum box ATTC has a combined measurement and adjustment device with very low noise generation. The measurement and adjustment device as well as the insulation profiles (polyester fibre) can be easily dismantled for inspection and cleaning. The air tightness class of the plenum box is C.

Material and surface finish

Both the diffuser and the plenum box are made from steel sheet. The regulating parts inside the diffuser are plastic.

The diffuser is powder-coated for a high surface finish and good impact and scratch resistance.

Standard colour RAL 9010. Other colours and CleanVent coating are available on special order.

Installation, adjustment and maintenance

Detailed instructions for installation, adjustment and maintenance can be found in our technical instructions that are delivered with every product. The product also comes with instructions for making the settings.

The instructions are also available on the Internet at www.flaktwoods.com.

Technical data and dimensioning

For complete dimensioning details, please refer to the Fläkt Woods product selection program ExSelAir.

The program can be found on the Internet at www.flaktwoods.com

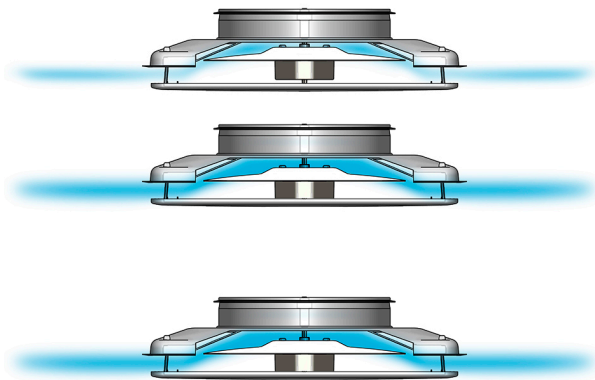


Figure 1: A vertically adjustable, motorised regulation plate is used for controlling the flow rate so that constant throw is automatically maintained.



Figure 2: Adjustment is quick and easy. Depending on the function the real-time display shows either air throw length in metres or air flow in litres in second.

Product code

Active supply air unit
(bundle code) **RA(O,P)B-aaa-b-c**
 (includes diffuser and plenum box)

Execution (O, P)

O = unperforated

P = perforated

Size (aaa)

100, 125, 160, 200, 250 (duct connection)

Finish (b)

1 = RAL 9010

3 = RAL 9010 + CleanVent coating

5 = special colour

Actuator (c)

1 = Analog Gruner 309VM

5 = Modbus Gruner 309VM-MB

Active diffuser **RA(O,P)H-aaa-b-c**

Execution (O, P)

O = unperforated

P = perforated

Size (aaa)

315 (diffuser connection)

Finish (b)

1 = RAL 9010

3 = RAL 9010 + CleanVent coating

5 = special colour

Actuator (c)

1 = Analog Gruner 309VM

5 = Modbus Gruner 309VM-MB

NB! With Modbus actuator only VAV function can be used/chosen.

Plenum box **ATTC-aaa-315-1**

Duct connection in mm (aaa)

Diffuser connection in mm (315)

Type (1)

1 = insulated

Order example

Bundle code is RAOB-200-1-1.

Size indication in the code refers to the size of the supply air duct.

Diffuser and plenum box are ordered separately:

Active diffuser **RAOH-315-1-1**

finish RAL 9010 (-1-)

analog actuator (-1)

Plenum box **ATTC-200-315-1**

duct size (200)

diffuser size (315)

plenum box type (1)

(insulated in the example above)

Accessories

Strips for setting of
diffusion pattern (kit) **RAHZ-1**

Includes three strips for setting the diffusion pattern