# VAV Variable Air Volume

Unique ventilation products - made in Scandinavia





A partner to rely on



## – A partner to rely on!

TROX Auranor Norway is located about 10 km. north of Brandbu in Oppland County, and is the base production plant and sales headquarters for air distribution products in the Nordic market. The company was founded in 1974 and relocated to its present location in 1978. In 2005 Auranor became a part of the German company TROX GmbH. TROX Auranor has 145 employees, and the turnover is MNOK 215. In addition to the production and the head sales office in Brandbu, there are sales offices in Oslo, Trondheim, Stavanger and Bergen.

The production is based on the "Just in Time"-philosophy, and an efficient flow of components and material trough the production system. This is a strong competetive advantage along with our delivery times, and the good product quality apply to the costumer-specified products on the same basis as the standard product line.

The product spectre today ranges from air distribution products, and a complete range of products for variable air flow control (VAV), water based Climate Control System for indoor room comfort, Fire and Smoke Protection products for HVAC systems. The main costumer marked is various kinds of office bulidings, hotels, educational buildings and industrial plants.



## Tellus-LØV VAV



#### **APPLICATION**

Tellus-LØV VAV is a circular supply diffuser for open installation with VAV function. It has excellent induction and is suitable for both constant and variable air flow rate.

#### **FUNCTION**

Tellus-LØV VAV has a built-in VAV regulator for demand control of air flow. The damper solution will choke the pressure at high flow rates and maintain a low sound level. This may reduce the need for additional dampers and sound attenuators in a duct system. Tellus-LØV VAV is supplied with Belimo MP-Bus. For communication with Modbus, LON, KNX and BACnet, a Belimo UK 24-Gateway can be utilised.

#### Measurement deviation for the area

10-20% of nominal: ±25% 20-40% of nominal: <±10% 40-100% of nominal: <±4 %

In order to sustain the product's measurement accuracy, straight ducting of min. 5 x  $\emptyset D$  is recommended.

#### **DESIGN**

Tellus-LØV VAV is designed as a complete measurement and regulating unit for demand control of air flow in the ventilation system. The measuring station measures the differential pressure via a sensor integrated into the unit. The unit is equipped with a CHV-VAV-MP regulator from Belimo. The regulator specifications are provided in the table below. Tellus-LØV VAV has a removable front plate with LØV perforation. Tellus-LØV VAV is available in both high-profile and low-profile design.

Actuator	CHV-VAV-MP
Operating voltage	AC 24 V 50/60 Hz, DC 24 V
Power consumption	1.5W
Dim. power	2.5 VA

Table 1, Technical specification, Belimo CHV-VAV-MP regulator

#### **REGULATION RANGE, TELLUS-LØV VAV**

Tellus-LØV VAV	(m3/h)					
ØD.	Minimum	Maximum				
125	26	265				
160	43	434				
200	70	700				
250	106	1060				

Table 3, Regulation range for VAV, air flow rate in m³/h. See calculation diagram for sound power and pressure loss.

#### QUICK SELECTION, TELLUS-LØV VAV

	(Open) m3/h								
Dim.	25 dB(A)	30 dB(A)	35 dB(A)						
125	163	197	239						
160	306	375	461						
200	388	465	557						
250	441	541	663						

	(75 Pa) m3/h								
Dim.	25 dB(A)	30 dB(A)	35 dB(A)						
125	115	170	234						
160	252	332	440						
200	260	396	550						
250	370	475	641						

Table 2

## **DIMENSIONS AND WEIGHT, TELLUS-LØV VAV**

Dim.	D	DA	Н	S	Weight [kg]
125	124	380	210	15/29	7.5
160	159	380	262	15/29	8
200	199	380	322	15/29	9
250	249	416	397	13/28/38	11

Table 4

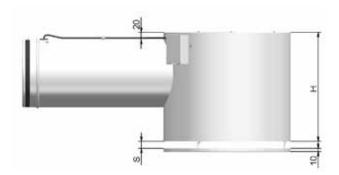


Figure 1. Dimensioned sketch, Tellus-LØV-H VAV

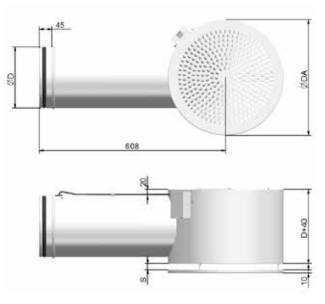


Figure 2. Dimensioned sketch, Tellus-LØV-L VAV

## **DIFFUSION PATTERN TELLUS-LØV VAV**

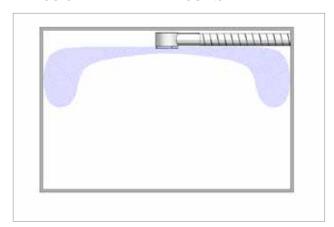


Figure 3, diffusion pattern Tellus-LØV VAV

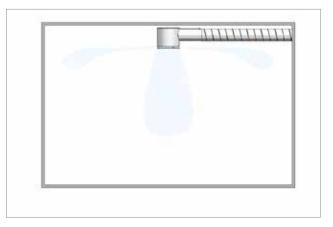


Figure 4, diffusion pattern Tellus-LØV VAV centred

#### THROW LENGTH TELLUS-LØV VAV

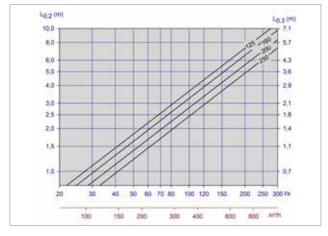


Diagram 5, Throw length - Tellus-LØV VAV

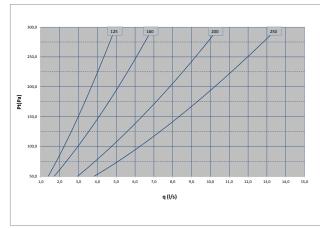


Figure 5, leakage amount with closed damper Tellus-LØV VAV

## **INSTALLATION**

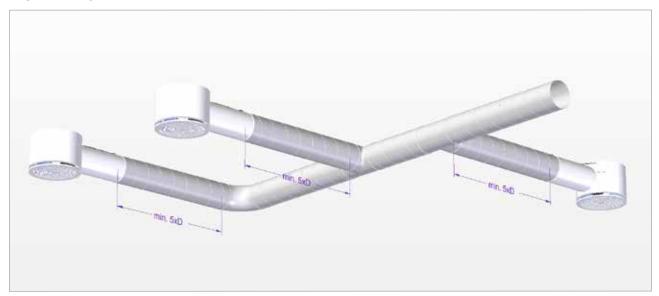


Figure 6, Tellus-LØV VAV installation

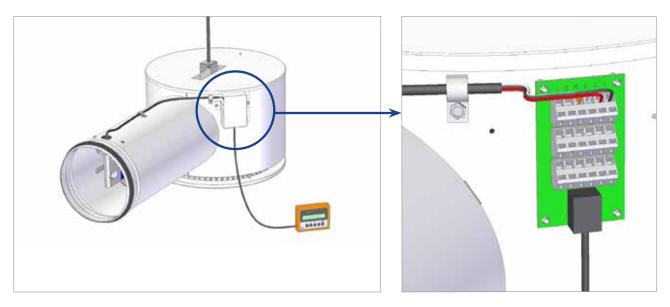


Figure 7, Tellus-LØV VAV installation. The diffuser can be suspended using a threaded rod in the fastening bracket at the top of the chamber.

Quick connection for power and bus communication via terminal blocks (1, 2, 3, 5). RJ 12 plug for simple adjustment of actuator via ZTH.

## **Sirius**



#### **APPLICATION**

Sirius is a diffuser unit with VAV function, and is used as volume flow controller and diffuser in ventilation systems to enable air flow rates to be set as per requirements. Orion-LØV offers excellent induction, and is ideal for variable air flow rates.

Actuator	LHV-D3-MP/MOD/LON
Operating voltage	AC 24 V 50/60 Hz, DC 24 V
Power drain	2,5W
Dim. effect	4.5VA (max.8 A @5 ms)

Table 1, Technical specification, Belimo VAV controller

## **FUNCTION**

Sirius has a built-in VAV controller for adjustment of air flow rates according to requirements. The damper solution will choke the pressure at high flow rates and will maintain a low sound level. This may reduce the need for additional dampers and sound attenuators in a duct system. Sirius is delivered with Belimo MP-bus, LON, Modbus or Belimo KNX for direct BUS communication to SD systems.

### **Deviation for working range**

10 - 20% of Vnom:±25%

20 - 40%: of Vnom <±10%

40 - 100%: of Vnom <±4%

## Deviation for warding years

If T-pipes are used, a spacing of at least  $5 \times \emptyset D$  is recommended in order to maintain the measurement accuracy.

#### **DESIGN**

Sirius is a complete measuring and control unit where the air flow rates in ventilation systems can be set as required. At the measuring station, the differential pressure is measured by using measuring rods integrated in the unit. Sirius is equipped with LHV.D3 VAV controller from Belimo. Controller specifications are provided in the table below. Full technical documentation can be downloaded from www.belimo.eu. Orion-LØV features a removable front panel with LØV perforation, and is suitable for a range of ceiling systems.

## QUICK SELECTION, ORION-LØV WITH SIRIUS

	(Open) m3/h								
Dim.	25 dB(A)	30 dB(A)	35 dB(A)						
125	155	184	220						
160	256	310	374						
200	374	446	529						
250	526	626	749						

	(75Pa) m³/h								
Sirius dim.	25dB(A)	30dB(A)	35dB(A)						
125	144	184	220						
160	234	295	374						
200	367	443	529						
250	342	569	734						

Table 2: Quick selection, Orion-LØV with Sirius

Sirius	(m³/h						
ØD	Minimum	Maximum					
125	26	265					
160	43	434					
200	70	700					
250	106	1060					

Table 3: Adjustment range for VAV controller, air flow rate in m3/h. See calculation diagram for sound power level and pressure drop.

## DIMENSIONS AND WEIGHT, ORION-LØV WITH SIRIUS

Dim.	D	DA	В	н	L	L1	Weight Sirius [kg]	Weight Sirius with valvel [kg]
125-200	124	202	325	175	645	386	8	12
160-250	159	252	360	210	645	402	9	13
200-315	199	317	400	240	645	435	10,5	14,5
250-400	249	402	450	290	645	392	12	16

Table 4

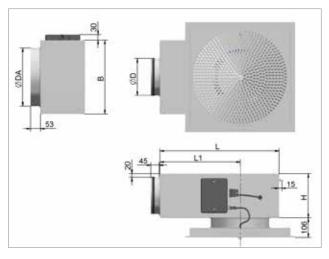


Fig. 1: Dimensions, Orion-LØV with Sirius

## QUICK SELECTION, ORION-LØV WITH SIRIUS

	KO [dB]															
		Right pressure drop line (open)								Lef	t pressu	re drop l	ine (hea	vily chol	ked)	
Dim.	63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k
125	4	-1	-2	-1	-6	-11	-15	-11	2	-3	-4	-9	-6	-6	-8	-9
160	2	1	0	-1	-8	-13	-13	-9	1	-1	-3	-6	-4	-11	-11	-9
200	2	1	-2	-1	-6	-12	-14	-10	1	0	-3	-5	-5	-9	-9	-9
250	3	2	-1	-1	-7	-13	-13	-10	2	2	-1	-3	-6	-11	-10	-9

Table 5: Correction factor, Orion-LØV with Sirius

## **THROW LENGTH**

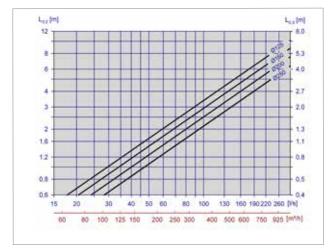


Diagram 5, Orion-LØV with Sirius throw length

### **FLOW PATTERN**

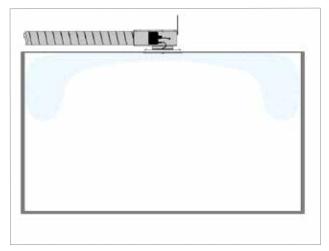


Fig 2: Flow pattern, Orion LØV

Orion-LØV with Sirius	Attenuation [dB]											
ØD	63	125	250	500	1k	2k	4k	8k				
125	14	11	12	12	18	11	14	15				
160	12	9	12	11	16	10	14	15				
200	10	8	11	12	15	12	12	14				
250	8	7	11	12	13	13	13	14				

Table 6: Static sound attenuation, Orion-Opus with Sirius

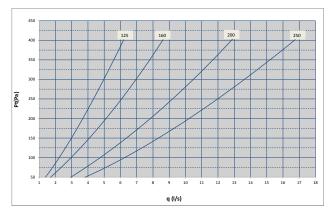


Fig. 3: Sirius, leakage at closed damper

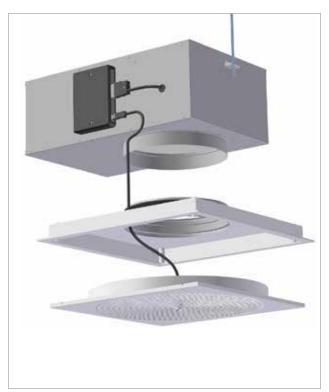


Fig. 4: Installation

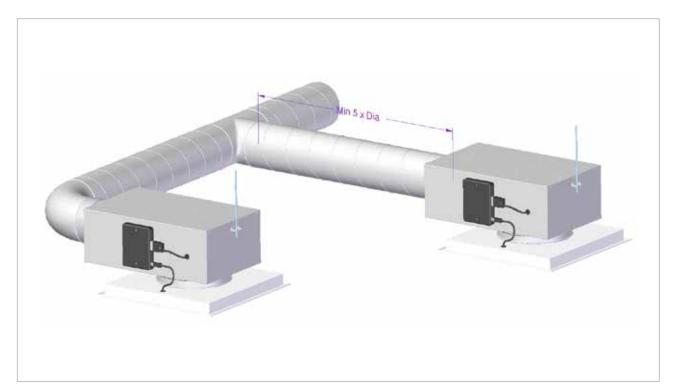
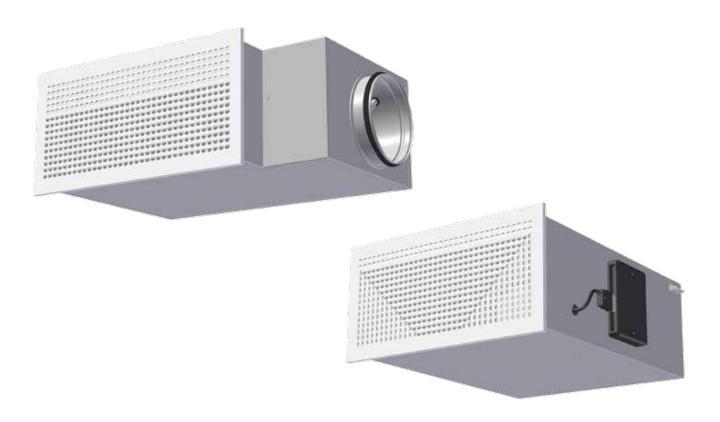


Fig. 5: Installation

## Pegasus



#### **APPLICATION**

Pegasus is a wall diffuser unit with VAV function. It is used as a volume flow controller unit in demand controlled ventilation systems. Pegasus has very good induction, making it ideal for variable air flow rates.

#### **FUNCTION**

Pegasus has a built-in VAV controller for the demand controlled adjustment of air flow rates. The damper solution will choke the pressure at high flow rates and maintain a low sound level. This may reduce the need for additional dampers and sound attenuators in a duct system. Pegasus is supplied with Belimo MP-Bus, LON, Modbus or Belimo KNX for direct BUS communication with SD systems.

### **DESIGN**

Pegasus is a complete measuring and control unit for the demand control of air flow rates in ventilation systems. The measuring station measures the differential pressure using measuring rods integrated into the unit. The unit is equipped with an LHV-D3 VAV controller from Belimo. The controller's specifications are provided in the table below. Full technical documentation can be downloaded from www.belimo.eu. Pegasus has a removable front panel with a choice of LØV or Opus design. LØV has two different designs, long (L) or short (K) throw length. If the Opus design with turnable plastic nozzles is selected, (V) is the designation for the variable throw length.

Actuator	LHV-D3-MP/MOD/LON
Operating voltage	AC 24 V 50/60 Hz, DC 24 V
Power consumption	2.5 W
Dim. power	4.5 VA (max. 8 A @5 ms)

Table 1, Technical specification, Belimo VAV controller

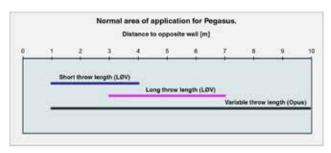


Figure 1

## QUICK SELECTION PEGASUS LØV-B-K/L

Pegasus LØV-B-K/L	m³/h (open)					
Dim.	25 dB(A)	30 dB(A)	35 dB(A)			
125	158	194	241			
160	277	335	403			
200	331	396	475			
250	594	706	832			

## QUICK SELECTION PEGASUS LØV-B-K/L

Pegasus LØV-B-K/L	m³/h (75 Pa)					
Dim.	25 dB(A)	30 dB(A)	35 dB(A)			
125	169	202	245			
160	248	324	378			
200	331	403	475			
250	497	648	792			

## QUICK SELECTION PEGASUS LØV-S-K/L

Pegasus LØV-S-K/L	m³/h (open)				
Dim.	25 dB(A)	30 dB(A)	35 dB(A)		
125	169	205	252		
160	274	335	407		
200	342	410	490		
250	518	630	763		

## QUICK SELECTION PEGASUS LØV-S-K/L

Pegasus LØV-S-K/L	m³/h (75 Pa)				
Dim.	25 dB(A)	30 dB(A)	35 dB(A)		
125	166	209	234		
160	238	320	396		
200	288	385	486		
250	439	630	738		

#### QUICK SELECTION PEGASUS OPUS-B

Pegasus Opus-B	m³/h (open)				
Dim.	25 dB(A)	30 dB(A)	35 dB(A)		
125	140	173	212		
160	234	284	342		
200	266	335	425		
250	497	605	731		

#### **QUICK SELECTION PEGASUS OPUS-B**

Pegasus Opus-B		m³/h (75 Pa)				
Dim.	25 dB(A)	30 dB(A)	35 dB(A)			
125	140	169	212			
160	212	270	338			
200	292	349	428			
250	371	580	724			

## **QUICK SELECTION PEGASUS OPUS-S**

Pegasus Opus-S	m³/h (open)					
Dim.	25 dB(A)	30 dB(A)	35 dB(A)			
125	137	173	216			
160	230	281	342			
200	281	349	432			
250	536	626	727			

Table 2,	Quick	selection	table	Pegasus
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## **QUICK SELECTION PEGASUS OPUS-S**

Pegasus Opus-S	m³/h (75 Pa)				
Dim.	25 dB(A)	30 dB(A)	35 dB(A)		
125	133	173	212		
160	202	270	335		
200	277	353	432		
250	396	565	716		

#### **REGULATION RANGE, PEGASUS**

Pegasus	(m³/h)				
Dim.	Minimum	Maximum			
125	26	265			
160	43	434			
200	70	700			
250	106	1060			

Table 3, Adjustment range for VAV, air flow rate in m³/h. See calculation diagram for sound power level and pressure drop

## **DIMENSIONS AND WEIGHT, PEGASUS**

Dim.	D	BF	HF	ВК	BK2	HK	DB	DS	Α	В	Weight [kg]
125	124	510	205	470	700	173	700	407	82	145	11
160	159	560	255	520	700	223	700	442	100	163	13
200	199	580	295	540	700	263	700	482	120	183	14.5
250	249	840	367	800	800	337	725	532	145	208	19

Table 4

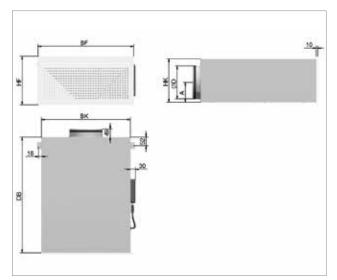


Figure 2, Dimensioned sketch Pegasus-B

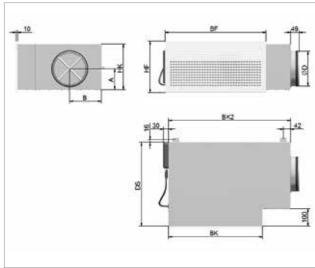


Figure 3, Dimensioned sketch Pegasus-S

#### **THROW LENGTH**

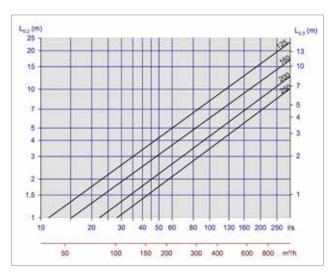


Diagram 17, Throw length Pegasus-LØV-K

## **DISTRIBUTION PATTERN**

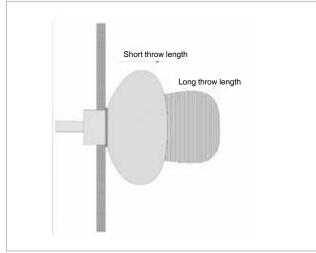


Figure 5, Example of flow pattern

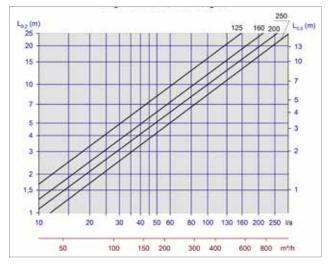


Diagram 18, Throw length Pegasus-LØV-L

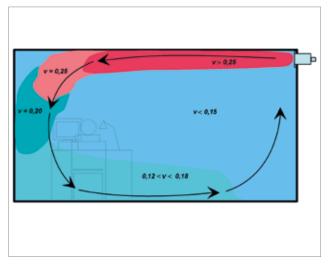


Figure 6, Example of velocity distribution

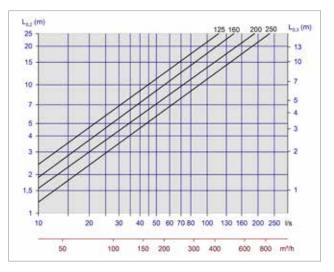


Diagram 19, Throw length Pegasus-Opus

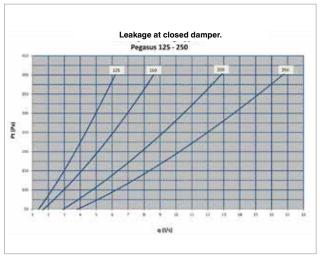


Figure 7, Leakage amount Pegasus

#### **MOUNTING**

Pegasus is installed as a rear diffuser in the rear of the unit using a suspension bracket and a threaded rod or strap, see figures 8 and 9. The plenum box is installed in the cutout and screwed to the studding. The adjustable installation frame is then pushed in and screwed to the plenum box. Finally, the front is pressed into position.

#### **ADJUSTMENT**

Pegasus uses Belimo PC-tool or ZTH-GEN to make the necessary settings.

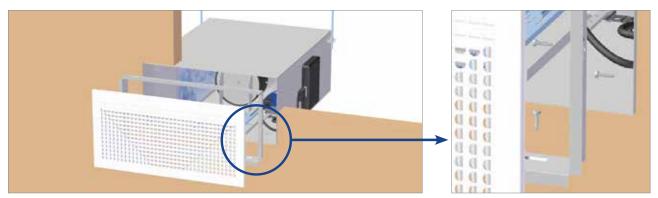


Figure 8, Pegasus-B installation

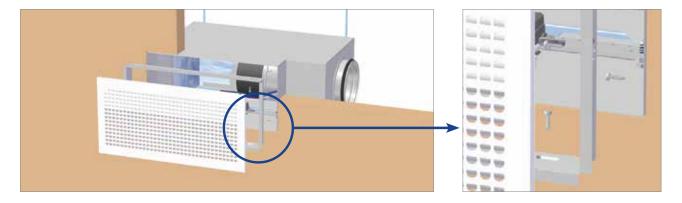
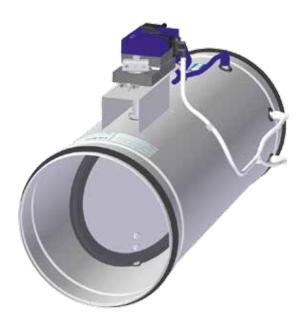


Figure 9, Pegasus-S installation

## Leo



#### **APPLICATION**

Leo is a volume flow controller which works independently of the duct pressure. It is the desired air flow rate at choked damper that determines the duct pressure required for the applicable unit/string. The VAV unit is based on dynamic measurement of volume flows, and controls the damper position to maintain the air flow rate required. When a change in duct pressure occurs, such as when other volume flow controllers on the branch open or close, the unit will compensate by adjusting the damper until the correct volume flow has been restored. The required air flow rate can, for example, be provided as a 0-10V signal from room thermostat / CO² sensor in the occupied zone covered by the unit.

Minimum and maximum air flow rates can be set at the factory or during installation by using a service tool from Belimo. The VAV unit is designed to provide comfort ventilation at temperature conditions of between 0°C and 50°C and a relative humidity between 5% and 95% without condensation. A 4-conductor cable connects the controller to various control equipment in the room. Consistent use of a common reference system for all equipment is important. For the VAV controller, cable no. 1 is system-0. All control and measurement signals are linked up in accordance with this. Wiring diagram for Leo in combination with various room control equipment is available at our website. For energy-efficient operation, VAV systems are equipped with pressure sensors in the ductwork, which transmit control signals to branch dampers or to the fan frequency control. Please see schematic diagram in fig.1.

#### Explanation to fig. 1

- 1) Pressure sensor for fan control
- 2) VAV unit
- 3) Motorised damper with pressure control system
- 4) Pressure sensor
- 5) Fan

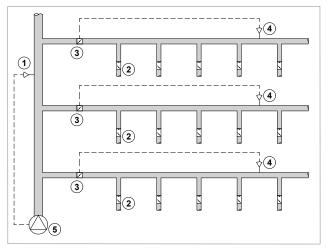


Fig. 1: Pressure conditions in VAV system

### **FUNCTION**

Leo will always adjust to the air flow rate consistent with the signal transmitted from the room control equipment. The VAV unit comprises an adjustable damper and measuring station for air flow rate, and the measurement principle is dynamic measurement of the air flow. In the damper motor's control unit, should the admission for the damper is regulated according to the desired should-value. Leo has an adjustment range shown in table 2.

Deviation for working range 10 - 20% of Vnom: ±25%

20 - 40%: <±10%

40 - 100%: <±4%

If T-pipes are used, a spacing of at least 5 x ØD is recommended in order to maintain the measurement accuracy.

#### **DESIGN**

Leo VAV is a complete measuring and control unit where the air flow rates in ventilation systems can be set as required. At the measuring station, the differential pressure is measured via measuring rod integrated in the unit. The unit is installation-friendly in terms of straight ducting, and can thus be mounted in most ductwork sections. It is fully compliant with air permeability class 4 for damper in closed position, and class C for leakage to the surroundings. Leo is equipped with VAV controller from Belimo or Siemens. Controller specifications are provided in the table below. Full technical documentation can be downloaded from our website www.trox.no

Belimo LMV/NMV-D3 is used as analog control or for MP-bus. Belimo LON or MOD-bus controller is also available. For KNX, Belimo LMV-D3-KNX and NMV-D3-KNX is available.

If additional protection against structure-borne noise is required, e.g. for open installation, the unit can be delivered with external insulation and casing. This will reduce the level of noise emitted from the actual unit at high choke pressure and high velocity past the damper. However, this should be followed up with additional protection against structure-borne noise from the duct at both sides of the unit. Please see acoustic datasection. The LEV sound attenuator is designed for VAV systems, and is available in 500mm and 1000mm lengths. LEV has a full attenuator cross-section, and this ensures a low-level pressure loss. It is insulated with mineral wool featuring a reinforced top layer to prevent fibres breaking away with the supply air. An extraction unit with mesh grille, ASN, in the same design as LEV is also available. Leo-D, LEV and ASN can

be delivered pre-assembled with ducting clips and are equipped with adjustable brackets from factory.

Leo	(m³/h)		
Dim.	Max [V <sub>nom</sub> ]	Min	
100	170	17	
125	265	26	
160	434	43	
200	700	70	
250	1060	106	
315	1750	175	
400	3619	361	
500	5655	565	
630	8973	897	

Table 2: The table shows max. and min. air volumes.

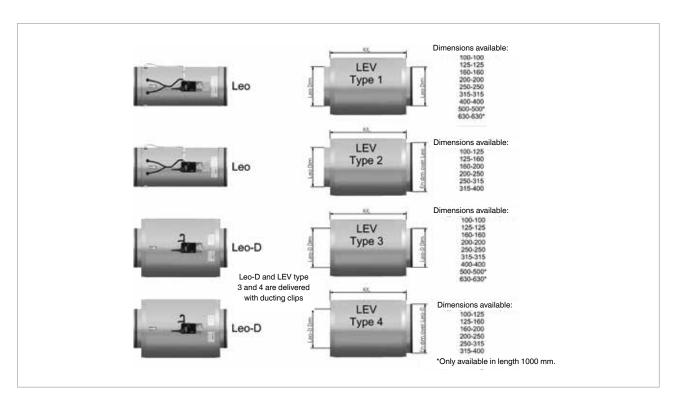


Fig. 2

## **DIMENSIONS AND WEIGHT**

Dim.	D	DA	В	L
100	99	102	220	400
125	124	127	245	400
160	159	162	280	400
200	199	202	320	400
250	249	252	370	600
315	314	317	435	600
400	399	402	520	600
500	499	502	620	705
630	629	632	750	835

Table 3

Dim.	Leo	Leo-D	LEV-500	LEV-1000	ASN
100	1,6	3,2	3,3	5,8	1,5
125	1,8	3,5	3,8	6,6	1,8
160	2,1	4,1	4,5	7,8	2,1
200	2,5	4,9	5,3	9,0	2,5
250	3,8	8,0	6,4	11,0	3,1
315	4,8	9,8	7,2	12,4	3,9
400	6,0	12,0	9,6	15,6	5,0
500	9,7	23,0	-	18,8	6,5
630	12,5	28,0	-	23,1	8,7

Table 4

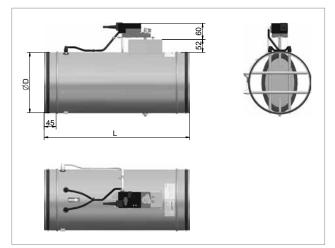


Fig. 3, Leo

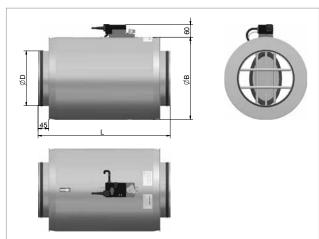


Fig. 4, Leo-D

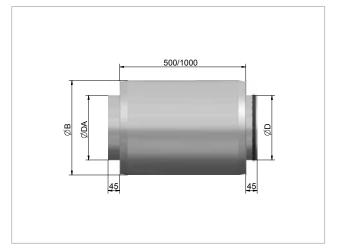


Fig. 5, LEV

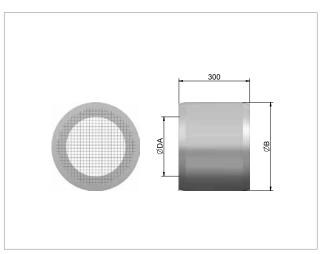


Fig. 6, ASN (extraction unit)

## STRUCTURE-BORNE NOISE

Diagram 26 shows the VAV unit's emitted structure-borne noise to the surroundings as a result of air flow rate and pressure loss over the damper (fig. 7). The noise level is shown as A-weighted sound power level from the VAV unit to the room, LWA. When high-level protection against structure-borne noise is required, such as for open installation and high choke pressure over the unit, use of Leo VAV in encased and insulated design as well as

measures in terms of the actual ductwork in front of and behind the unit is recommended. In order to protect against noise emission, the full length of the ductwork leading into the room must also be insulated or encased. By using ducting with double casing (fig. 8), a noise reduction of 6 -10 dB can be achieved.

Installation as shown in fig. 9 provides a noise reduction of  $3-6\ dB$ 

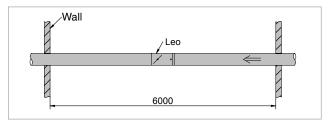


Fig. 7

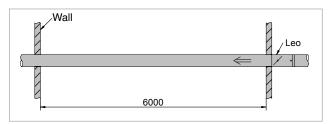


Fig. 9

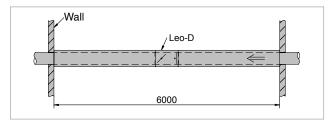


Fig. 8

#### **INSTALLATION**

In order to maintain the system's measurement accuracy, it is important to install units with spacing as shown in fig. 10. For installation of Leo, a service clearance in accordance with fig. 11 is recommended.

For extract air with silencer towards romside it is recommended 5xDia. as distance to Leo. (Nb. Use a muffler without center baffle or other restriction.)



Fig. 10: Installation

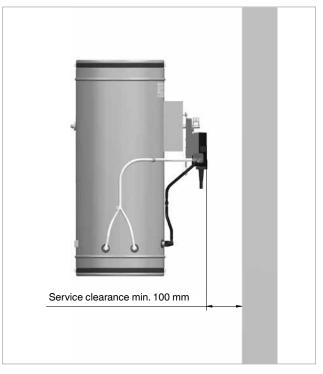


Fig. 11: Installation

## Orion-LØV



#### **APPLICATION**

Orion-LØV is a square supply diffuser for installation in modular ceiling systems. The unit offers excellent induction, and is suitable for both constant and variable air flow rates.

#### **DESIGN**

Orion-LØV features a removable front panel with LØV perforation. Rotational pattern is supplied as standard. The unit is equipped with a TA flange suitable for T-profile ceiling systems, but is also available with alternative flange designs, type: DC, DG, DS and EK (see fig. 2 and under order code).

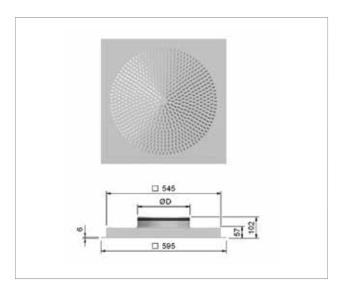
#### **MATERIALS AND SURFACE COATING**

The front panel, ceiling plate and valve body are in a steel design, and the valve body is equipped with EPDM rubber gasket. Corner connection points are in plastic, and are fitted with holding magnets. All internal and external valve elements are in a RAL 9003 - gloss 30 finish. Other colours are available on request.

#### **QUICK SELECTION**

Orion-LØV	[m³/h]		
Dim.	25 dB (A)	30 dB (A)	35 dB (A)
125	106	125	147
160	181	211	246
200	237	278	326
250	347	403	468
315	472	551	644
400	620	757	925

Table 1: The table provides air flow rates at given sound power levels.



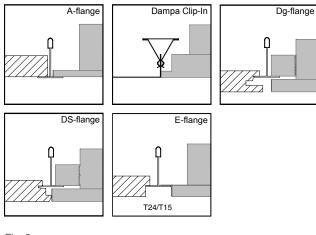


Fig. 2

## Orion-Opus



#### **APPLICATION**

Orion-Opus is a square supply diffuser for installation in modular ceiling systems. The unit offers excellent induction, and is suitable for both constant and variable air flow rates.

#### **DESIGN**

Orion-Opus features a removable front panel with Opus nozzles, and is available with 4 different nozzle settings: rotational, 1-way, 2-way 180° or 2-way 90°. Please see order code and fig.3. Furthermore, the unit is equipped with a TA flange suitable for T-profile ceiling systems, but is also available with alternative flange designs, type: DC, DG, DS and EK (see fig. 2 and order code).

#### MATERIALS AND SURFACE COATING

The front panel, ceiling plate and valve body are in a steel design, and the connection collar is fitted with an EPDM rubber gasket. Opus nozzles at the front and corner

connection points are in plastic. Connection points are fitted with holding magnets. All internal and external valve elements are in a RAL 9003 - gloss 30 finish. Other colours are available on request.

### **QUICK SELECTION**

Orion-Opus	[m³/h]		
Dim.	25 dB (A)	30 dB (A)	35 dB (A)
125	119	148	180
160	166	202	245
200	223	270	328
250	313	378	457
315	425	504	601
400	544	644	763

Table 1: The table provides air flow rates at given sound power levels.

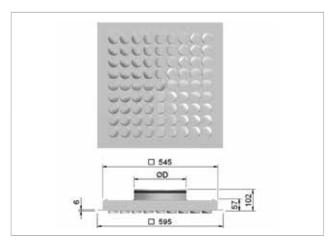


Fig. 1

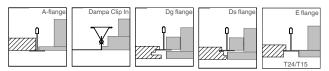


Fig. 2

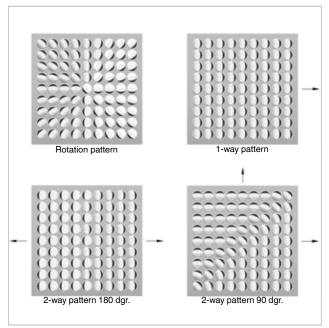
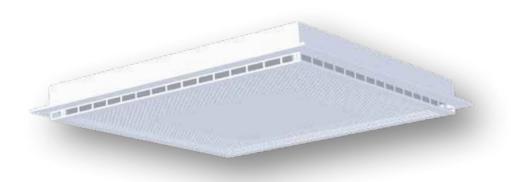


Fig. 3 Nozzle settings, Orion-Opus

## **Orion-PTV**



#### **APPLICATION**

Orion-PTV is a square supply diffuser for installation in modular ceiling systems. Orion-PTV is a high-capacity system with excellent induction, and is ideal for high air flow rates.

#### **DESIGN**

Orion-PTV features a removable front panel with perforated front and sides. The unit is equipped with a TA flange suitable for T-profile ceiling systems, but is also available with alternative flange designs, type: DC, DG, DS and EK (see fig. 2 and order code).

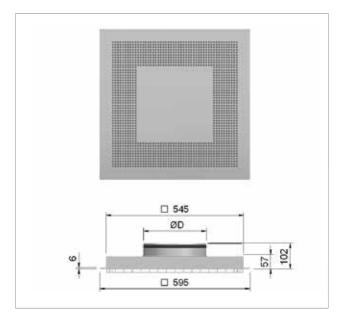
#### MATERIALS AND SURFACE COATING

The front panel, ceiling plate and valve body are in a steel design, and the connection collar is fitted with an EPDM rubber gasket. Corner connection points are in plastic, and are fitted with holding magnets. All internal and external valve elements are in a RAL 9003 - gloss 30 finish. Other colours are available on request.

#### **QUICK SELECTION**

Orion-PTV	[m³/h]		
Dim.	25 dB (A)	30 dB (A)	35 dB (A)
125	140	162	191
160	184	212	248
200	234	270	310
250	299	346	403
315	410	479	558
400	648	756	878

Table 1: Air flow rate at given sound power levels.



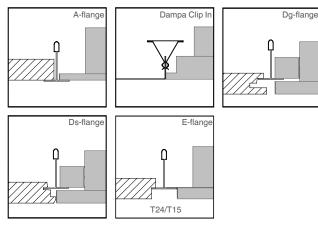


Fig. 2

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