GB0624
06.11

Tellus-Opus

Circular diffuser for open installation

- Front with adjustable Opus nozzles
- Excellent induction
- Adjustable slot height
- Box lined with Ecoson attenuation material

TROX® TECHNIK

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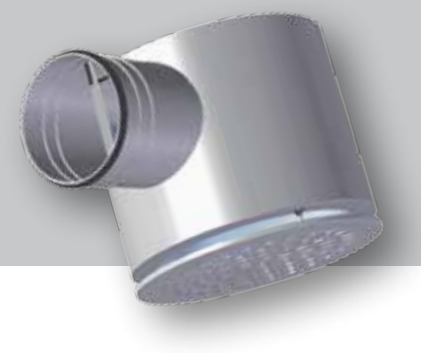
Tellus-Opus



APPLICATION

Tellus-Opus is a circular supply diffuser with adjustable nozzles for open installation. The diffuser is also available with pass-through function. With its adjustable Opus-nozzle solution, the flow pattern can be regulated and set as required.

DESIGN

Tellus-Opus features a removable front panel with Opus nozzles and adjustable slot height. Rotational pattern is supplied as standard. Other flow patterns are available on request. The box is insulated with Ecoson and is equipped with a measuring outlet and removable airflow adjustment damper. Also available as a pass-trough unit as shown in fig.2.

MATERIALS AND SURFACE COATING

The diffuser is made of steel and comes in a RAL 9010 finish. Black RAL 9005 and aluminium RAL 9006 are available on request. Other colours can be supplied, but without the nozzle-adjustment option. Opus-nozzles are in ABS plastic. The box is internally lined with Ecoson fibre-free insulation, and the connection collar is fitted with an EPDM rubber gasket.

QUICK SELECTION

Tellus-Opus	[m³/h]		
Dim.	25 dB(A)	30 dB(A)	35 dB(A)
125	94	130	184
160	155	216	288
200	252	342	443
250	378	511	666

Table 1: The table shows air flow rates at given sound power levels and 50 Pa total pressure loss.

ORDER CODE, Tellus-Opus

Tellus-Opus - 125 / 0 / 0

Product
Dimension: Ø125 - Ø250

SL = Special finish
D = Pass-through connection, dim. 200 and 250 only.

Example:
Tellus-Opus -125 / 0 / 0
Explanation:

Tellus-Opus supply diffuser, dimension Ø125.

DIMENSIONS AND WEIGHT, Tellus-Opus

Dim.	D	DA	H	L	S	Weight [kg]
125	124	282	210	140	13/29	3,1
160	159	380	262	170	13/29	4,3
200	199	413	322	210	15/28	6,7
250	249	524	397	240	13/28	10,2

Table 2

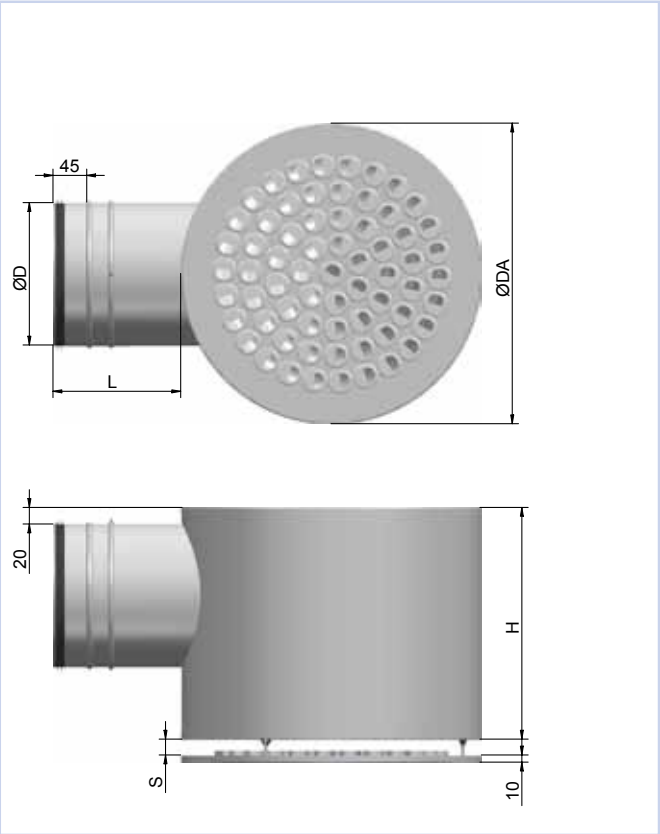


Fig. 1

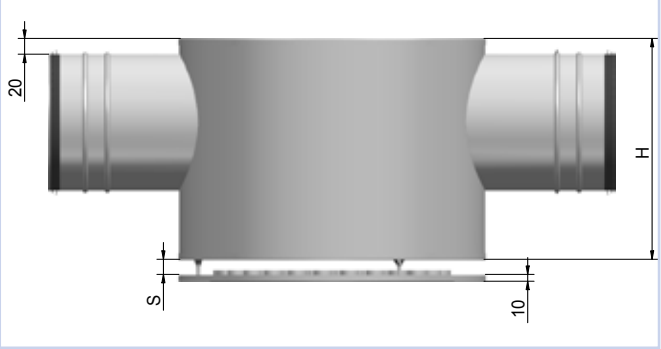


Fig. 2

Tellus-Opus

ACOUSTIC DATA

The diagrams provide a summary of the A-weighted sound power level from diffuser, L_{WA}. Correction factors in table 4, page 5, are used to calculate emitted sound power level at the respective frequencies, $L_W = L_{WA} + KO$. A room with absorption equivalent to 10m^2 Sabine will have a sound pressure level which is 4 dB below the sound power level emitted.
Installation directly in bend will result in a 2-3dB sound level increase compared to 6xØD-length duct end.
All diagrams assume maximum slot height.

Example:
Office premises require an air supply of 75 l/s, and for this purpose a Tellus-Opus 160 is used. Room attenuation is 6 dB, and the diffuser's damper is to be chocked 20 Pa. According to diagram 2, L_{WA} = 28 dB(A) with damper open and 17 Pa total pressure loss.

We aim to find:
a) Emitted sound power level from diffuser at 250 Hz, damper open.
b) A-weighted sound pressure level in the room with damper open.
c) A-weighted sound pressure level in the room with damper chocked.
d) Emitted sound power level from diffuser at 250 Hz, damper chocked.

a) According to table 4, the correction factor at 250 Hz is +5dB, and L_W at 250 Hz is thus: $L_W + KO = 28 + 5 =$ 33 dB
b) A room attenuation equivalent to 6 dB provides a sound pressure level in the room of: 28 - 6 = 22 dB(A)
c) With 20 Pa chocking we reach 37 Pa, and the diagram shows a 4 dB increase in L_{WA}. The sound pressure level is thus: 22 - 4 = 26 dB(A)
d) According to table 4, the correction factor for 250 Hz is -1 with damper closed and +5 with damper open. The factor to be used for our working point position is thus +3. Emitted sound power level: $L_W = L_{WA} + KO = 26 + 3 =$ 29 dB(A)

CALCULATION DIAGRAMS

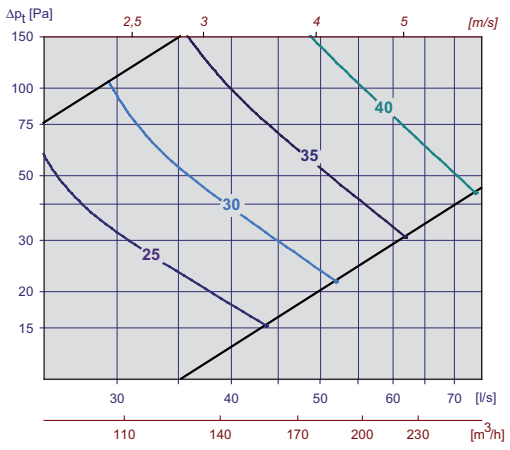


Diagram 1, Tellus-Opus Ø125

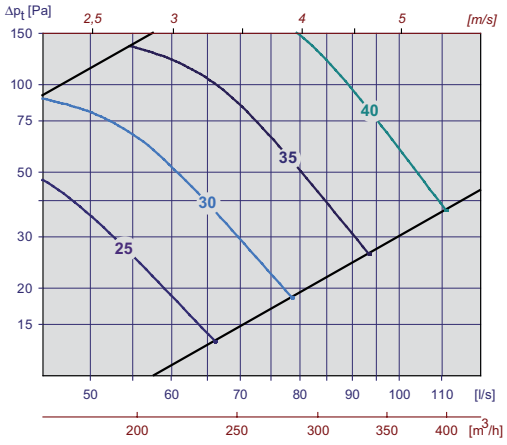


Diagram 2, Tellus-Opus Ø160

Tellus-Opus

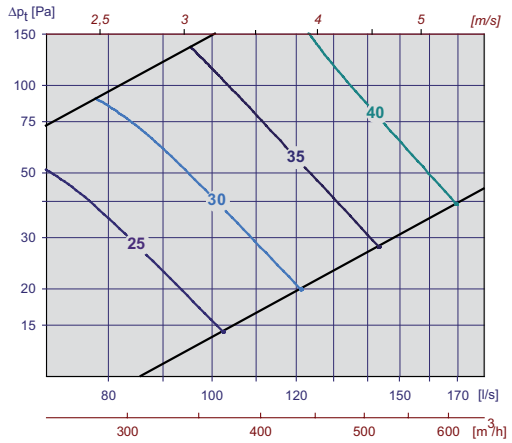


Diagram 3, Tellus-Opus Ø200

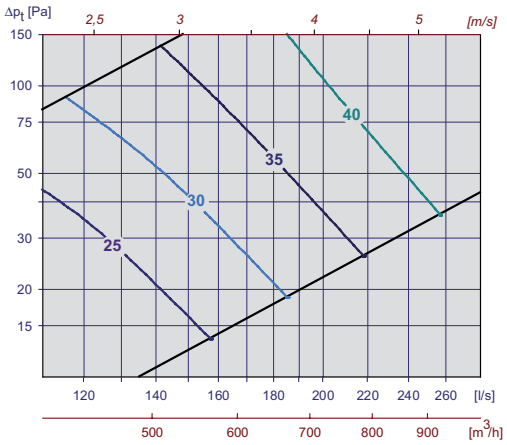


Diagram 4, Tellus-Opus Ø250

CALCULATION DIAGAM for Tellus-Opus-D with pass-through function

The diagrams show the total sound power level emitted by two units in a series where the first is a Tellus-Opus-D as shown in fig. 2, page 2. To ensure air flow rate consistency, the damper in the end unit has been chocked

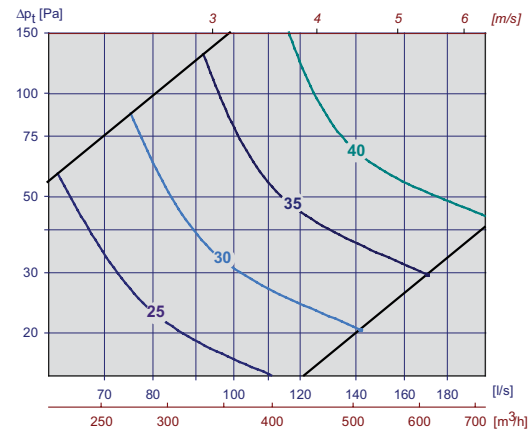
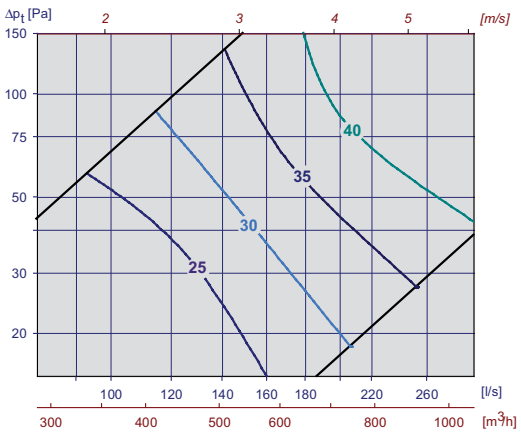


Diagram 5, Tellus-Opus-D-200 and Tellus-Opus-200



Tellus-Opus

Static sound attenuation incl. end reflection, Tellus-Opus

Tellus-Opus	Attenuation [dB]							
Dim.	63	125	250	500	1k	2k	4k	8k
125	20	11	7	13	14	12	14	12
160	20	8	9	12	12	10	9	7
200	18	5	9	12	12	11	13	11
250	14	8	11	12	12	13	16	16

Table 3

Correction factor [KO], Tellus-Opus

	KO [dB]															
Tellus-Opus	Damper closed								Damper open							
Dim.	63	125	250	500	1K	2K	4K	8K	63	125	250	500	1K	2K	4K	8K
125	0	-4	0	-5	-7	-10	-9	-6	1	2	5	-4	-7	-10	-19	-24
160	-6	-2	-1	-8	-10	-6	-7	-7	1	5	5	-5	-7	-13	-21	-24
200	-3	2	-0	-5	-8	-7	-9	-8	3	5	3	-3	-5	-12	-20	-23
250	-2	1	-5	-8	-9	-7	-7	-6	3	7	1	-2	-5	-12	-20	-24

Table 4

Correction factor [KO], Tellus-Opus-D

	KO [dB]															
Tellus-Opus-D	Damper closed								Damper open							
Dim.	63	125	250	500	1K	2K	4K	8K	63	125	250	500	1K	2K	4K	8K
200	1	0	-2	-3	-7	-7	-10	-9	2	4	0	-3	-5	-10	-20	-22
250	-1	-2	-5	-6	-9	-7	-7	-6	2	3	-2	-3	-4	-12	-21	-21

Table 5

THROW LENGTH

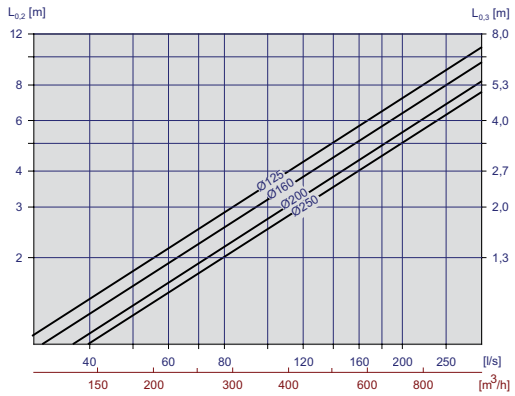


Diagram 7, throw length - Tellus-Opus

FLOW PATTERN

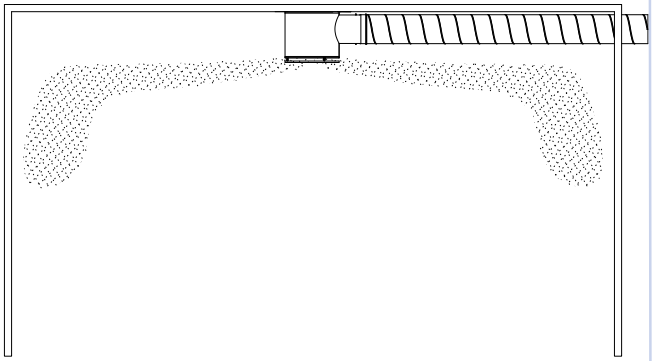


Fig. 3

Tellus-Opus

INSTALLATION

The diffuser is suspended by attaching the threaded rod to the screw socket on top of the box. This is an M8-threaded mounting point. Use of M6-treaded rod requires nut and washer inside the box.

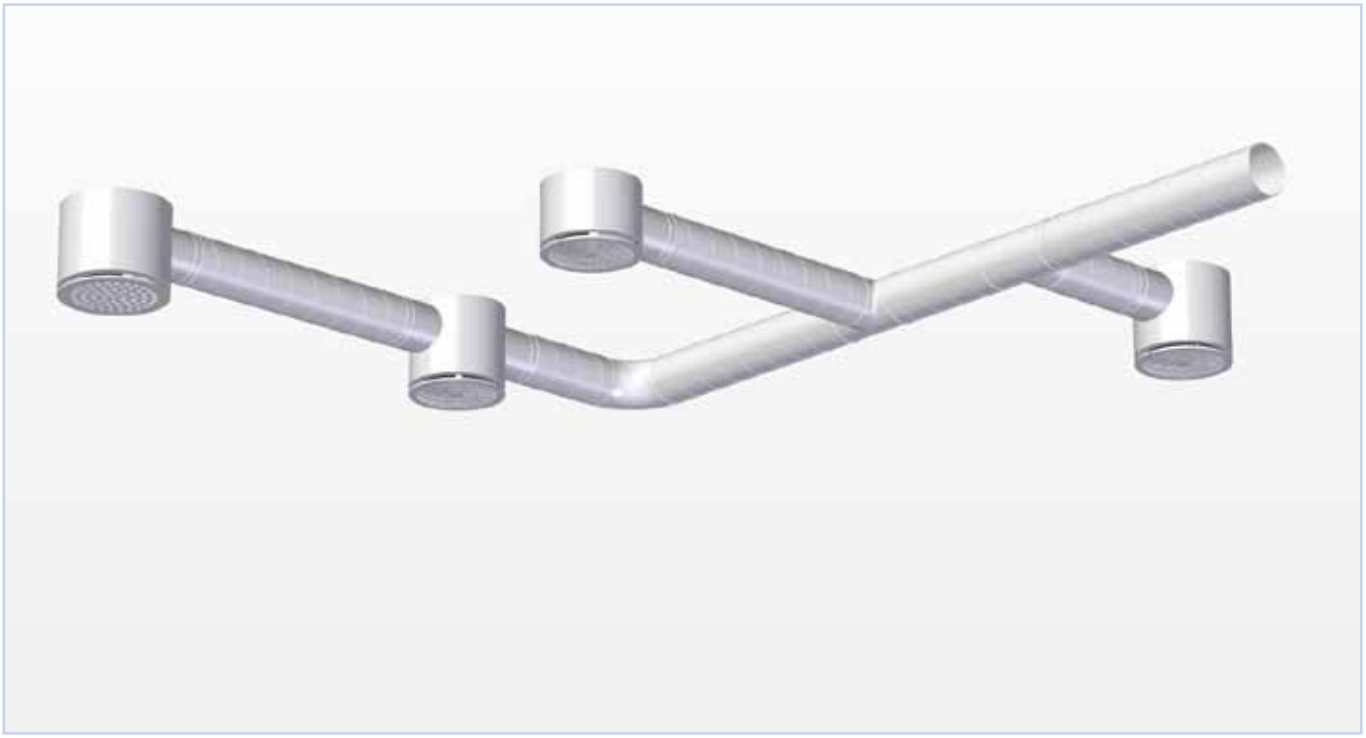


Fig. 4: Installation

MAINTENANCE

The diffuser can be cleaned by using a damp cloth. When cleaning the duct network, the diffuser front and damper are to be removed in order to gain access to the duct.

ENVIRONMENT

Enquiries regarding product declaration can be directed to our sales team, or information can be found at our website: www.trox.no

COMMISSIONING

During commissioning, the diffuser front must be fitted. Measuring tube and adjustment wire are pulled through the slot, and the damper is secured by using a clamping nut on the wire. Correction factors for calculation of air flow rates are provided on the label inside the diffuser, or can be found in our commissioning guide at our website: www.trox.no.

Tellus-Opus is developed and manufactured by:

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