

Supply air diffuser for ceilings with rotatable nozzles

DRT  
DRTI



*The TLR connection box is an optional accessory for DRT and DRTI and can be ordered separately*

## Description

The DRT/DRTI ceiling diffusers with circular duct connection and rotatable nozzles are best suited for comfort ventilation of offices, schools, department stores, hospitals, etc.

DRT/DRTI operates with a draft-free air distribution, at a low noise level.

The performance data of the DRT and DRTI is the same, they only differ in their sizes. While the external dimensions of the DRT changes by connection sizes, the external dimensions of the DRTI are the same across all sizes: 595x595mm.

The simple rotation of the aerodynamically designed polypropylene nozzles results in a flexible air distribution, from horizontal to a vertical mode. The adjustment of the nozzles is possible even after installing the diffuser.

Unless otherwise specified, the diffuser is delivered with nozzles positioned in a rotating pattern.

In case of cooling the recommended maximum temperature difference between the temperature of the room and that of the supplied air is 10°C.

## Standard sizes

DRT: 125, 160, 200

DRTI: 125, 160, 200, 250, 315, 400

## Airflow rates

60 - 900 m<sup>3</sup>/h (15-250 l/s), see the diagrams below for further information.

## Main features

- aesthetic appearance
- draught-free, silent operation
- 360° rotatable nozzles, that can be adjusted after installation, too
- excellent ventilation efficiency both for cooling and heating
- stable airflow even at lower air volume

## Material

**DRT:** The front panel is made of galvanized steel sheet. The frame is made of aluminum. The unit is powder coated in RAL 9003 white colour. The nozzles are made of Polypropylene.

**DRTI:** The front panel and up to size 200 the frame is made of galvanized steel sheet, frames bigger than 200 are made of aluminum. The unit is powder coated in RAL 9003 white colour.

## Optional accessories

### TLR commissioning box:

The TLR standard commissioning box is primarily suitable for mounting and regulating supply air diffusers in a ceiling installation. The TLR plenum box is recommended for applications, where there is a requirement for a low noise level performance. The commissioning box is made of galvanized sheet steel and sound-reducing glass-wool laminated glass fibre insulation. A rubber sealing is added onto the connection spigot.

### TK commissioning box:

As an option DRT and DRTI is also available with TK, a connection box which has a removable commissioning damper with measurement tubes for the exact calculation of the airflow. This feature simplifies the controlling and commissioning of the airflow at any time. TK also includes internal sound insulation with optimal sound attenuation qualities. TK is primarily suitable for mounting and regulating supply air diffusers in a ceiling installation.

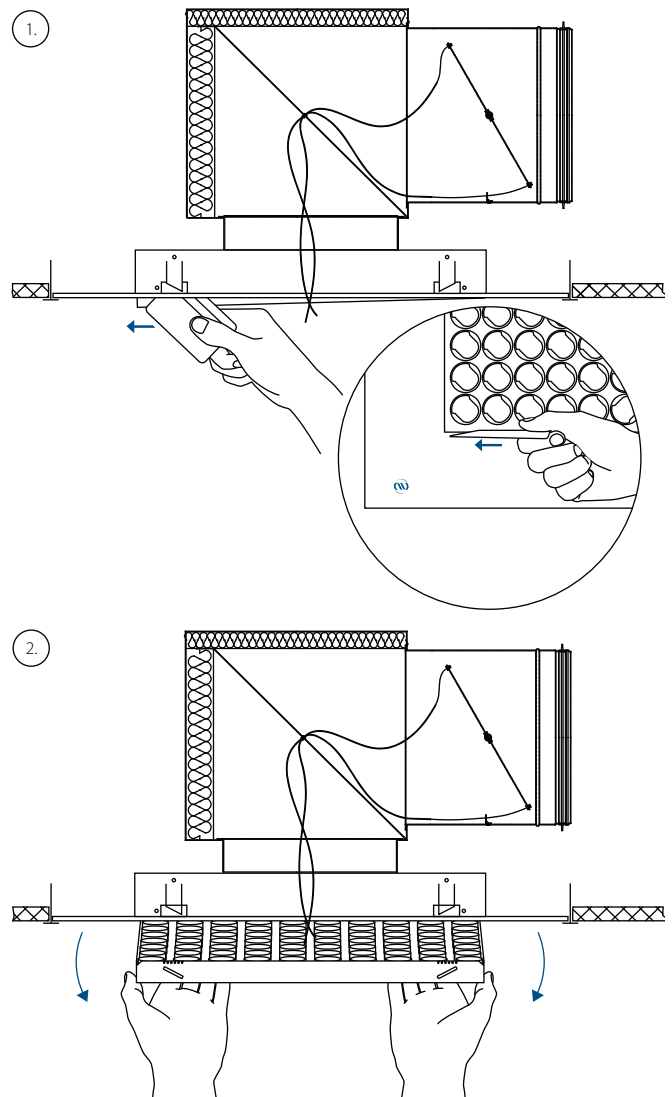
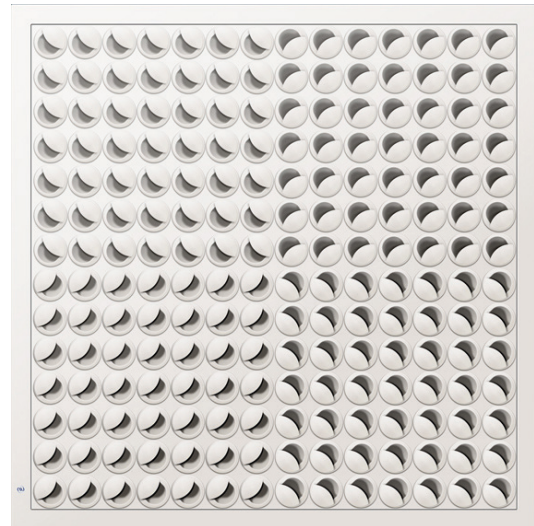
The commissioning box is recommended for applications where a low installation height is required. TK is available with 1- or 2-step dimension change between the air duct and the diffuser box connection. For further information about TK please contact Airvent.

## Mounting

Both the DRT and the DRTI can be connected directly to the plenum box with the help of two screws.

The screws connecting the diffuser and the plenum box can either be screwed in from the outside or without having to damage the gypsum ceiling, by opening the front of the diffuser. For the latter, the connection spigot has pre-drilled holes.

To open the front, swipe a plastic card in the small gap (where the Airvent logo can be found) between the frame and the front with the nozzles (Figure 1). By swiping the card, the lock releases, so the front can be opened or removed (Figure 2.) thus making the installation of the diffuser or setting the plenum box easier.

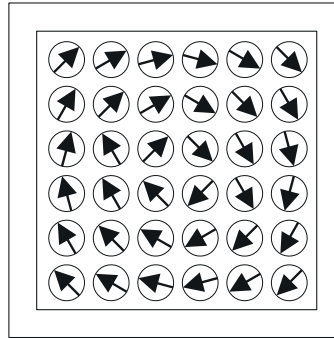


*The front diffuser plate design is only an illustration.*

## Nozzle positions

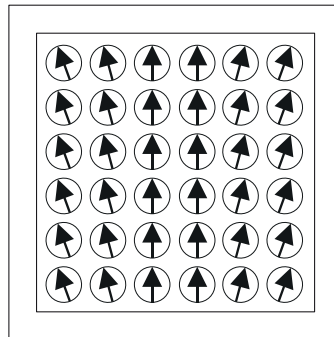
### Standard positioning of the nozzles

Unless otherwise specified, the diffuser is delivered with nozzles positioned in a rotating pattern.

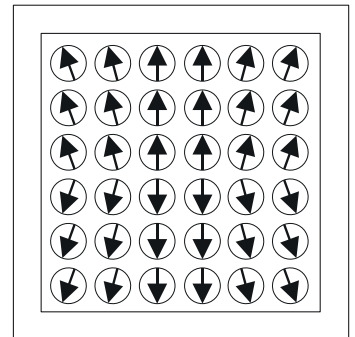


Standard nozzle positioning

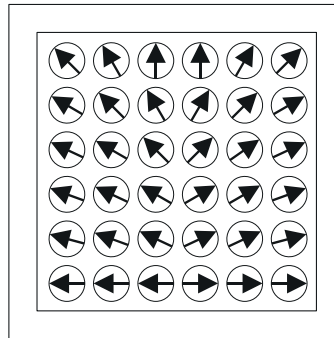
### Optional nozzles positions



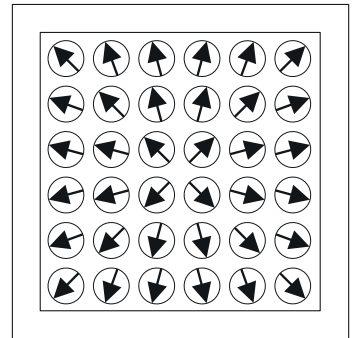
1-way air distribution



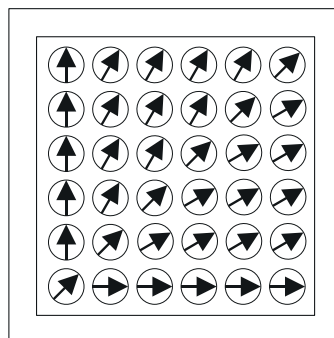
2-way air distribution



3-way air distribution



4-way air distribution



2-way air distribution,  
if mounted in a corner

Noise level data

T.1.

DRT-DRTI diffuser + TLR commissioning box  
Correction  $K_o$  dB

*DRT **DRTI	TLR	Medium frequency (Hz)							
		63	125	250	500	1000	2000	4000	8000
125	125	+4	+5	+5	+3	0	-12	-23	-34
160	160	+5	+6	+3	+2	+1	-10	-23	-33
200	200	+8	+6	+3	+2	+1	-10	-23	-35
250	250	+15	+5	+2	+3	0	-10	22	-37
315	315	+19	+7	+2	+3	0	-11	-23	-36
400	400	+24	+7	0	+1	0	-11	-23	-37

Tol.  $\pm 3$  dB  
\* DRT 125-200  
\*\* DRTI 125-400

T.2.

DRT-DRTI diffuser + TLR commissioning box  
Sound attenuation dB

*DRT **DRTI	TLR	Medium frequency (Hz)							
		63	125	250	500	1000	2000	4000	8000
125	125	+17	+10	+11	+13	+16	+19	+19	+19
160	160	+19	+10	+13	+15	+17	+17	+21	+21
200	200	+18	+8	+12	+15	+15	+17	+19	+21
250	250	+17	+9	+13	+16	+16	+17	+19	+20
315	315	+16	+7	+13	+14	+16	+15	+18	+20
400	400	+13	+7	+15	+13	+15	+14	+19	+21

Tol.  $\pm 3$  dB  
\* DRT 125-200  
\*\* DRTI 125-400

The soundlevel is applicable at an equivalent sound absorption area of 10 m<sup>2</sup>.

Sound power level:  $L_w$  [dB]

Sound pressure level:  $L_{pA}$  [dB(A)] (see diagram 1-6.)

Correction factor:  $K_o$  [dB]

Correction factor  $K_o$  [dB] from table 1.

$$L_w = L_{pA} + K_o$$

T.3.

Room volume capacity	Room type	Correction
25 m <sup>3</sup>	hard	+2 dB
25 m <sup>3</sup>	attenuated	-2 dB
150 m <sup>3</sup>	hard	-3 dB
150 m <sup>3</sup>	normal	-5 dB
150 m <sup>3</sup>	attenuated	-7 dB

The sound pressure level  $L_{pA}$  dB(A) applies to an equivalent surface of 10 m<sup>2</sup>, which corresponds to an attenuation of 4 dB in a 25 m<sup>3</sup> room with normal attenuation. Table 3: A few examples for sound corrections in different type of rooms.

Diagrams

The data of the diffusers shown are valid when assembled with TLR commissioning box

Diagram 1.

[Pa] DRT 125 / DRTI 125 + TLR 125

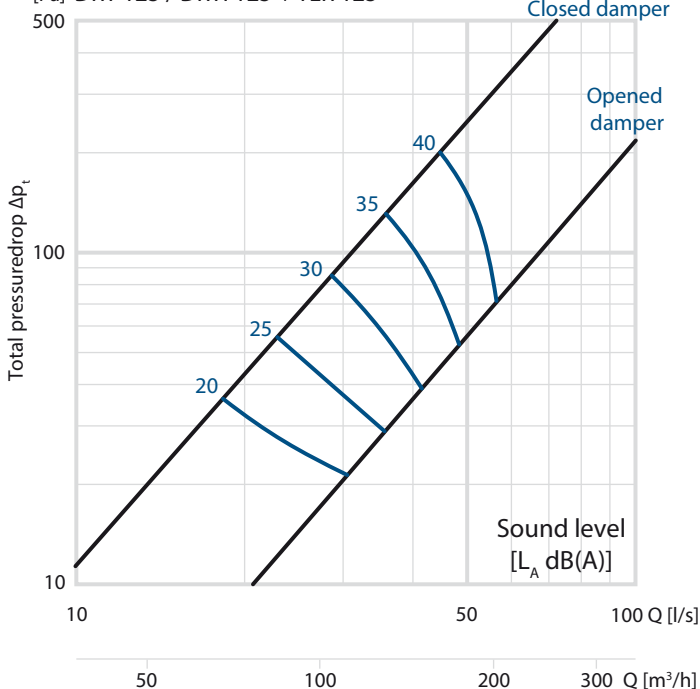
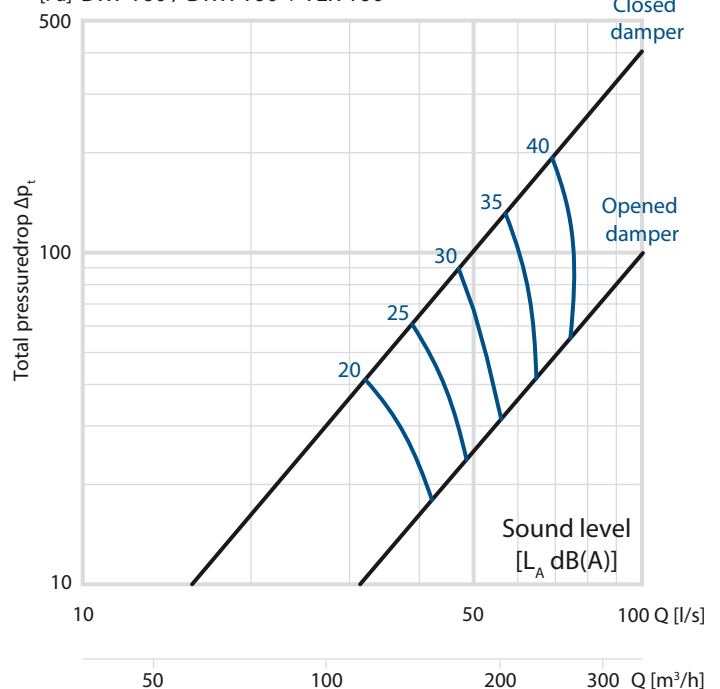


Diagram 2.

[Pa] DRT 160 / DRTI 160 + TLR 160

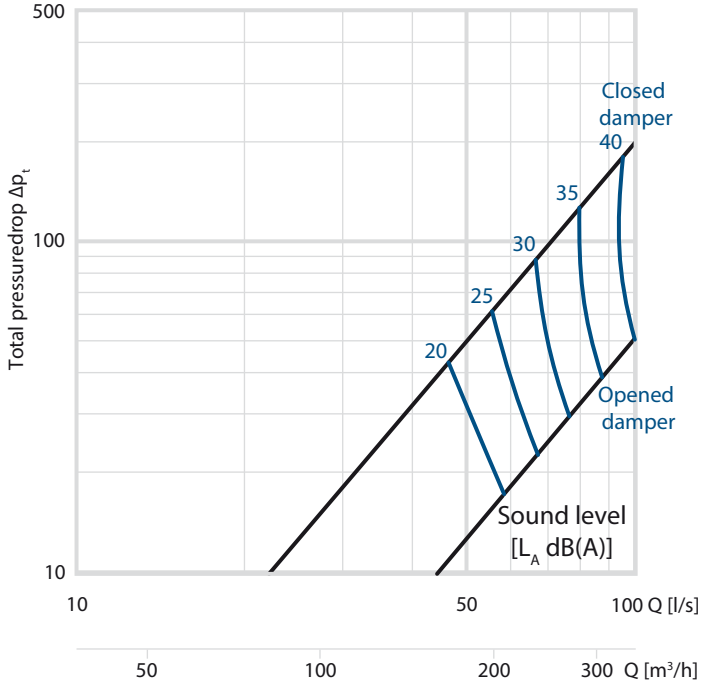


### Diagrams

The data of the diffusers shown are valid when assembled with TLR commissioning box

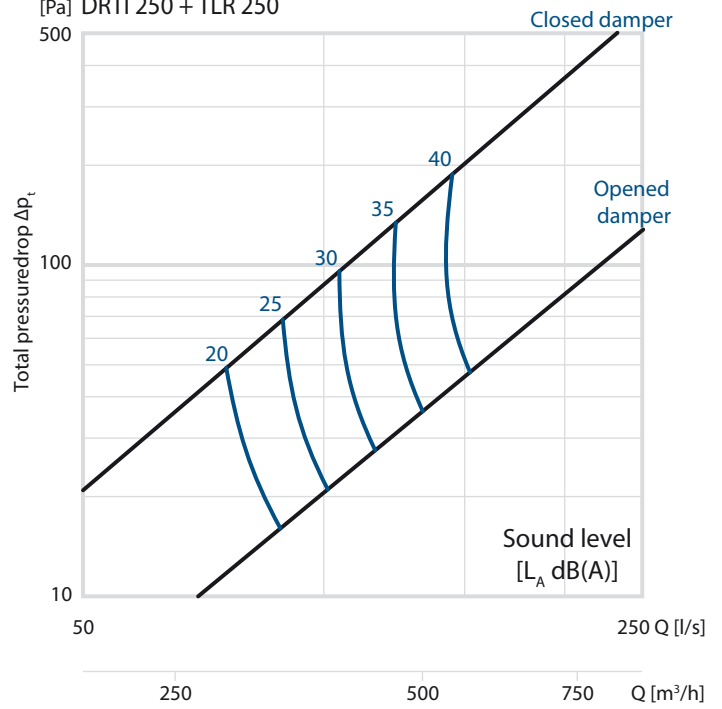
**Diagram 3.**

[Pa] DRT 200 / DRTI 200 + TLR 200



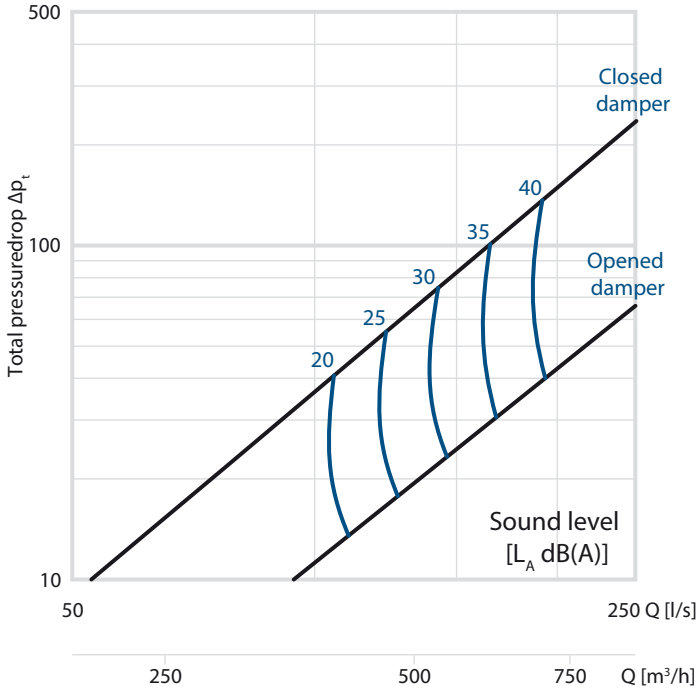
**Diagram 4.**

[Pa] DRTI 250 + TLR 250



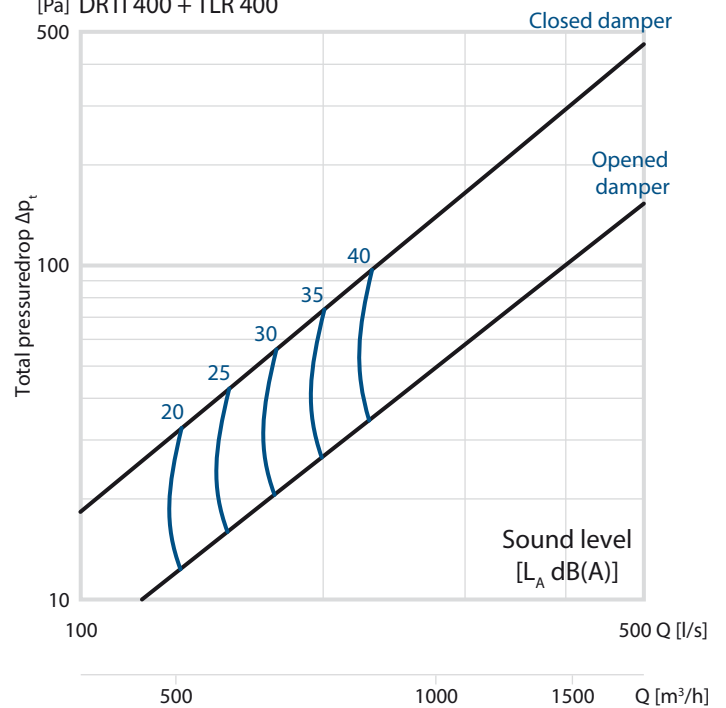
**Diagram 5.**

[Pa] DRTI 315 + TLR 315



**Diagram 6.**

[Pa] DRTI 400 + TLR 400



## Dimensions

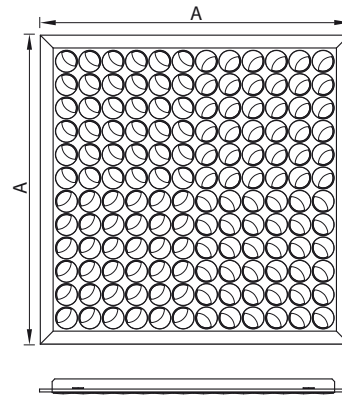
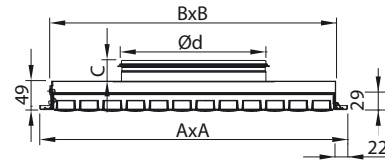
### T.4.

DRT square supply air ceiling diffusor

Size	A	B	C*	Ød	Weight/kg
125	369,5	329,2	35	125	1,86
160	369,5	329,2	35	160	1,85
200	445,5	405,2	35	200	2,55

The indicated sizes are shown in mm.

\*C size tolerance: +5/-1



### T.5.

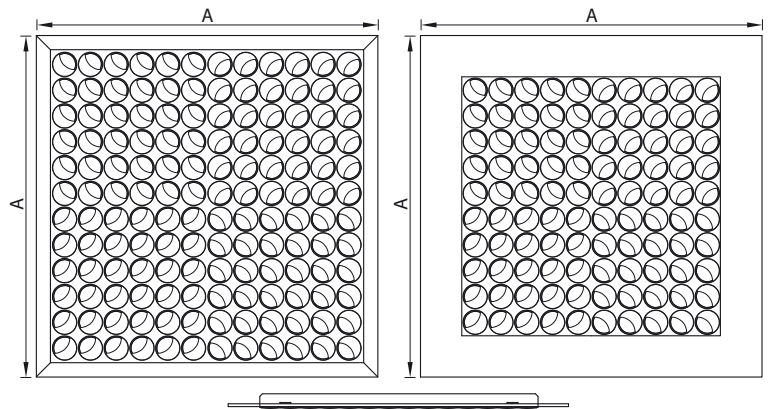
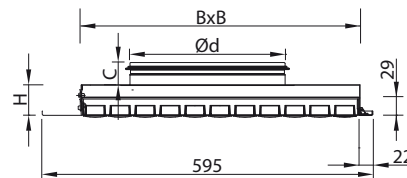
DRTI square supply air ceiling diffusor

Size	A	B	C*	H	Ød	Weight/kg
125	595	329,2	35	49	125	3,78
160	595	329,2	35	49	160	3,77
200	595	405,2	35	49	200	4,05
250	595	554,7	35	59	250	4,5
315	595	554,7	35	59	315	4,47
400	595	554,7	35	59	400	4,33

The indicated sizes are shown in mm.

The drawing on the left shows a DRTI with an aluminum frame and the one on the right with a galvanized steel frame.

\* C size tolerance: +5/-1



### T.6.

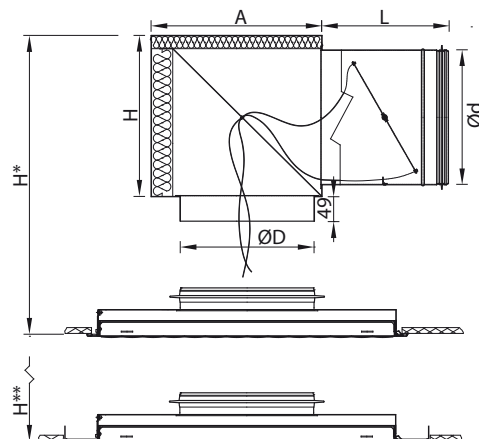
TLR commissioning box

Size	A	H	H*	H**	L	Ød	ØD	Weight/kg
125	190	170	259	266	150	125	125	1,8
160	270	220	309	316	175	160	160	3,0
200	300	250	339	346	220	200	200	4,0
250	350	300	389	396	300	250	250	5,6
315	400	375	464	471	300	315	315	9,0
400	480	460	549	556	400	400	400	13,2

The indicated sizes are shown in mm.

\* Minimum installation height of DRT in case of monolith plasterboard ceiling.

\*\* Minimum installation height of DRTI in case of modular false ceiling.



### Specification

Ordering code:	DRT	X	XXX
Product acronym:	DRT		
Gypsum ceiling:	-		
Standard modular ceilings:	I		
Diffuser size:	DRT	125	
		160	
		200	
		200	
	DRTI	125	
		160	
		200	
		250	
315			
400			
Example: DRT 125 DRTI 315			

### Specification

Ordering code:	TK	XXX-XXX
Product name (low installation height):	TK	
Plenum box size: (TK one step)	125-100	
	160-125	
	200-160	
	250-200	
	315-250	
Plenum box size: (TK two steps)	400-315	
	160-100	
	200-125	
	250-160	
	315-200	
400-250		
Example: TK 160-125 TK 400-250		

\* TK plenum box with special height is available in the following sizes:

- 1) If the connection spigot on the diffuser side is one size bigger than the air duct side:  
TK 125-100, 160-125, 200-160, 250-200, 315-250, 400-315
- 2) If the connection spigot on the diffuser side is two sizes bigger than the air duct side:  
TK 160-100, 200-125, 250-160, 315-200, 400-250

### Specification

Ordering code:	TLR	XXX
Product acronym:	TLR	
Plenum box size:	125	
	160	
	200	
	250	
	315	
	400	
Example: TLR 125		