INLINE MIXED-FLOW FANS

VENTS TT PRO
VENTS TT

VENTS

2013

Fresh air in your house!

Series
VENTS TT PRO

Inline mixed-flow fans with the air capacity up to **2050 m³/h**

Series
VENTS TT

Inline mixed-flow fans with the air capacity up to **1850 m³/h**

Application

The **VENTS TT** and **VENTS TT PRO** fans are featured with wide capabilities and high performance of axial and centrifugal fans and are specifically designed for supply and exhaust ventilation of premises requiring high pressure, powerful air flow and low noise level. The fans are compatible with round air ducts from Ø 100 to 315 mm. Exhaust ventilation systems based on the VENTS TT fans are the best solution for ventilation of bathrooms and kitchens and other humid premises as well for ventilation of flats, cottages, shops, cafes, etc.

Design

The fan casing is made of high quality and durable materials: ABS plastic for the VENTS TT series or low-flammable polypropylene for the VENTS TT PRO series.

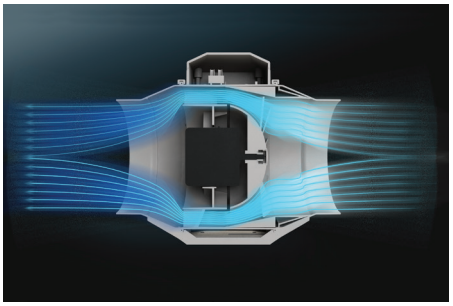
The removable impeller and motor block with a terminal box is fixed to the casing assembled with the

spigots by means of special clamps with latches. This makes the fan maintenance fast and easy. The fan maintenance does not require total disassembling. Just pull out the central block from the casing and perform required servicing. All the models may be equipped with a regulated timer with turn-off delay adjustable from 2 to 30 min.

TT PRO design features:

The inlet spigot is equipped with a collector to enable smooth air inlet to the fan. The hemispheric impeller shape and specially profiled blades increase the air flow circular velocity and provide higher pressure and capacity as compared to standard axial fans.

The diffuser, the specially profiled impeller and the directing vanes at outlet from the fan casing distribute air flow in such a way as to attain the best combination of high performance, enhanced pressure and low noise.



Motor

The models of VENTS TT series are equipped with a single-phase motor and are available in single- or two-speed modifications. Some dimension types are available with a more powerful motor (VENTS TT...S).

The models of VENTS TT PRO series are equipped with single-phased double-speed motors with low energy demand.

The motors have thermal overheating protection to prevent the motor overload. The ball bearings extend the motor service life up to 40 000 hrs. at non-stop operation. The motor has IP X4 ingress protection rating.

Designation key:

Series	Air duct diameter	Options
VENTS TT PRO **VENTS TT**	100; 125; 150; 160; 200; 250; 315	**S** – high-powered motor; **T** – timer; **U** – electronic module with temperature-based operating logic and the temperature sensor integrated into the air duct; **Un** – electronic module with temperature-based operating logic and the external temperature sensor; **U1** – electronic module with timer-based operating logic and the temperature sensor integrated into the air duct; **U1n** – electronic module with timer-based operating logic and the external temperature sensor; **P** – power cord with a plug; **V** – three-position switch; **P** – built-in speed controller.

Speed control

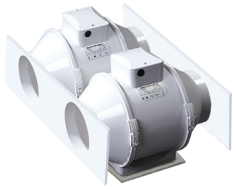
TT fan with a three-position speed switch

The double-speed motors are controlled with a built-in switch (V option) or an external switch for multi-speed fans (available upon separate order).
An integrated speed controller (option P), an external TRIAC or autotransformer speed controller (available upon separate order) are used for smooth speed control when connected to the maximum speed terminal.

TT fan with a built-in speed controller

Mounting

The fans are suitable for mounting at any angle and point of the system. Several fans may be installed inside one system. Several fans may be installed inside one system:
– **parallel** mounting to increase air flow;



TTP kit for parallel connection

– **in series mounting** to increase operating pressure;

TTS kit for series connection

The fan case is equipped with a flat mounting plate to attach the fan to the wall. The mounting box may be installed in any position to facilitate mounting and wiring.

The fan with electronic module of the temperature sensor and speed controller (U option).

The ideal solution for ventilation of the premises with high demands to permanent indoor temperature level, e.g. greenhouses.
The fan with the electronic module of the temperature sensor and the speed controller is used for automatic speed control (air capacity regulation) depending on the air temperature in the ventilation duct or inside a room.
The electronic module of the front panel incorporates:
– the speed control knob for the setting the impeller speed;
– the thermostat control knob for setting the temperature set point.
– thermostat LED light.
Two modifications are possible:
– temperature sensor integrated inside a fan duct (U/U1 option);

– external temperature sensor fixed on 4 m power cable (Un / U1n option).

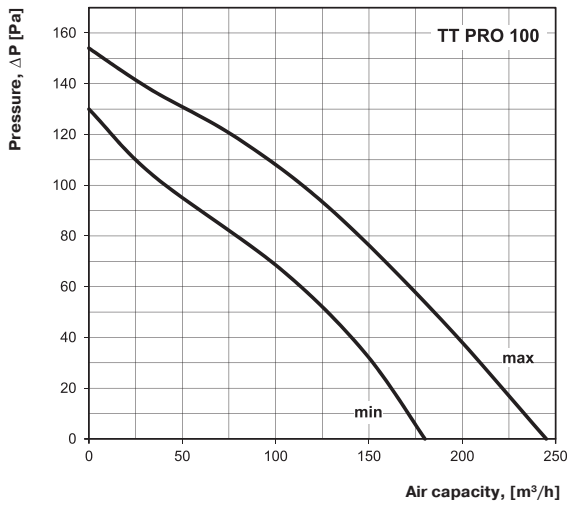
Operating logic of the fan with the electronic module of the temperature sensor and speed controller

Set the desired air temperature (set point of the thermostat) with the thermostat control knob. Set the required minimum impeller speed (air flow) with the speed control knob. The motor switches to maximum speed (maximum air flow) as the temperature reaches and exceeds the set temperature set point. The motor switches to the pre-set speed as the temperature drops down below the set temperature point.
To avoid the frequent motor switching, e.g. when the temperature in the supply air duct is equal to the threshold value, the switching delay time is activated.
There are two switch delay patterns for various cases:
1. The temperature sensor-based switch delay (U option): the motor switches to higher speed as the air temperature exceeds 2 °C above the set thermostat set point. The motor revers to the pre-set lower speed as the air temperature drops below the thermostat set point.
This pattern is used to keep air temperature to within 2 °C. In this case the fan switches are rare.
2. The timer-based switch delay (U1 option): as the air temperature exceeds the set thermostat set point, the motor switches to higher speed and the switch delay timer is activated for 5 min. The motor reverts to lower speed as the air temperature drops down below the thermostat set point and only after the timer countdown.
This pattern is used for exact air temperature control. The fan changes its speed more often as compared to the temperature sensor-based switch delay, however the minimum timer interval is 5 minutes.

Technical data:

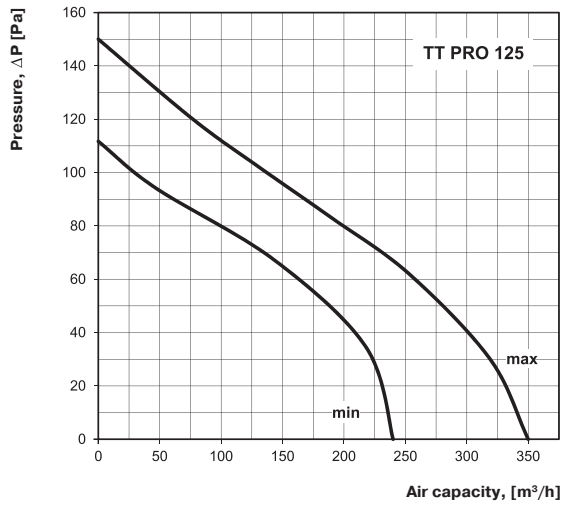
	TT PRO 100		TT PRO 125		TT PRO 150 / TT PRO 160	
Speed	min	max	min	max	min	max
Voltage [V / 50 / 60 Hz]	1~ 230		1~ 230		1~ 230	
Power [W]	23	25	25	30	42	50
Current [A]	0,10	0,11	0,11	0,13	0,19	0,22
Maximum air flow [m^3/h]	180	245	240	350	415	565
RPM [min^{-1}]	2050	2620	1630	2300	1940	2620
Noise level at 3 m [dBA]	27	32	29	34	37	46
Maximum operating temperature [°C]	60		60		60	
Protection rating	IP X4		IP X4		IP X4	

VENTS TT PRO



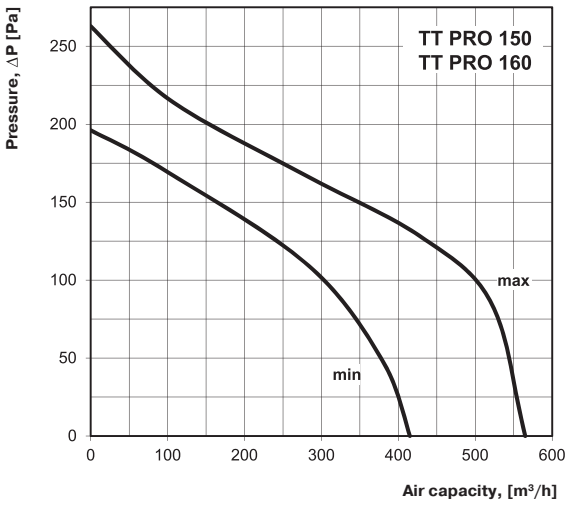
Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	47	23	21	37	41	44	42	37	27
L_{wA} to outlet	dBA	48	24	24	38	42	45	38	38	26
L_{wA} to environment	dBA	37	20	19	23	30	34	26	26	17

VENTS TT PRO



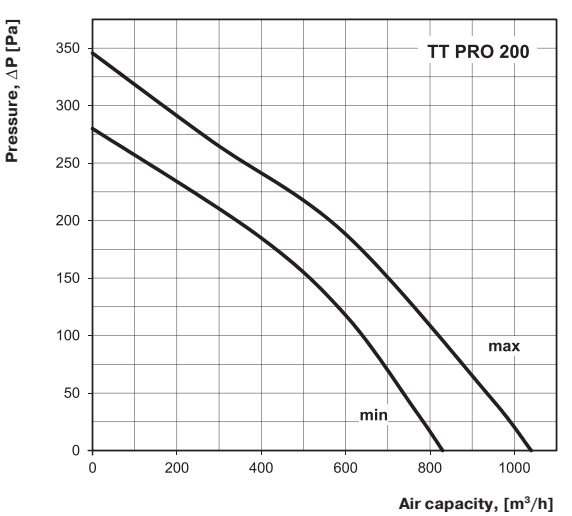
Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	51	25	24	41	47	49	50	39	32
L_{wA} to outlet	dBA	53	25	29	42	45	49	48	42	32
L_{wA} to environment	dBA	39	21	24	28	32	40	33	28	20

VENTS TT PRO



Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	67	38	40	52	57	57	63	55	42
L_{wA} to outlet	dBA	64	39	40	55	57	58	63	56	44
L_{wA} to environment	dBA	45	27	30	40	38	43	48	41	25

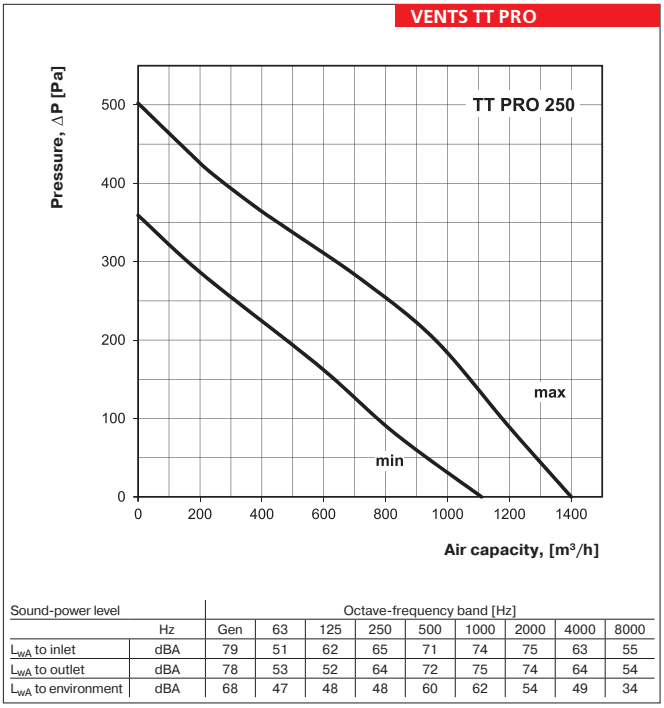
VENTS TT PRO



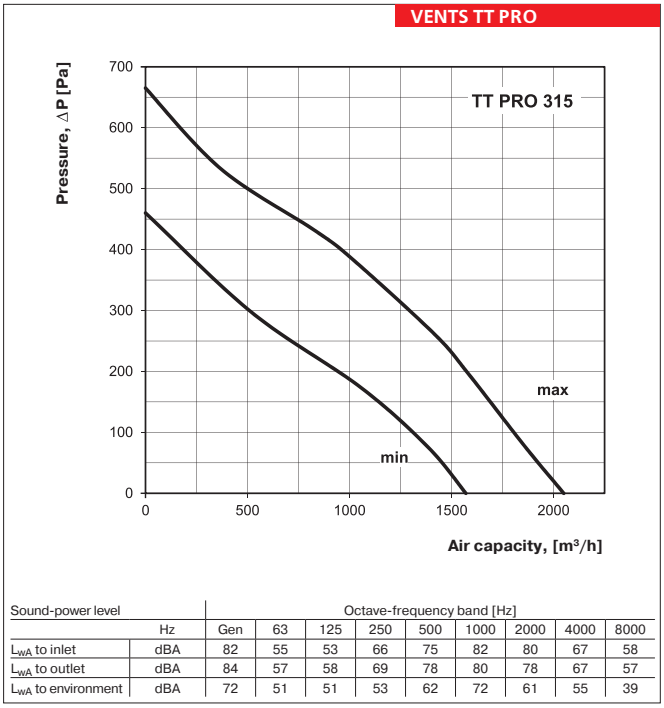
Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	75	51	51	60	69	69	76	66	57
L_{wA} to outlet	dBA	76	53	58	60	67	69	72	67	56
L_{wA} to environment	dBA	62	47	47	43	55	60	55	51	38

Technical data:

	TT PRO 200		TT PRO 250		TT PRO 315	
Speed	min	max	min	max	min	max
Voltage [V / 50 / 60 Hz]	1~ 230		1~ 230		1~ 230	
Power [W]	76	108	125	177	230	320
Current [A]	0,34	0,48	0,54	0,79	1,0	1,42
Maximum air flow [m^3/h]	830	1040	1110	1400	1570	2050
RPM [min^{-1}]	1915	2380	1955	2440	1890	2430
Noise level at 3 m [dBA]	45	52	47	55	49	58
Maximum operating temperature [°C]	60		60		60	
Protection rating	IP X4		IP X4		IP X4	



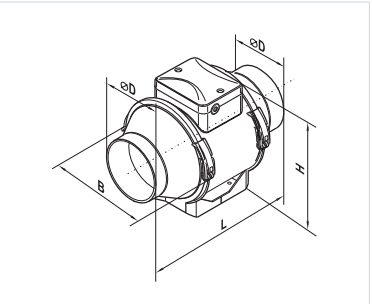
Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	79	51	62	65	71	74	75	63	55
L_{wA} to outlet	dBA	78	53	52	64	72	75	74	64	54
L_{wA} to environment	dBA	68	47	48	48	60	62	54	49	34



Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	82	55	53	66	75	82	80	67	58
L_{wA} to outlet	dBA	84	57	58	69	78	80	78	67	57
L_{wA} to environment	dBA	72	51	51	53	62	72	61	55	39

Fan overall dimensions:

Type	Dimensions [mm]				Mass [kg]
	ØD	B	H	L	
TT PRO 100	97	195,8	226	302,5	1,54
TT PRO 125	123	195,6	226	258,5	1,51
TT PRO 150	148	220,1	247	289	2,1
TT PRO 160	158	220,1	247	289	2,2
TT PRO 200	199	239	261	295,5	6,4
TT PRO 250	247	287	323	383	8,3
TT PRO 315	310	362	408	445	11,4



Technical data:

	TT 100		TT 125		TT 125 S	
Speed	min	max	min	max	min	max
Voltage [V / 50 / 60 Hz]	1~ 230		1~ 230		1~ 230	
Power [W]	21	33	23	37	28	54
Current [A]	0,11	0,21	0,18	0,27	0,12	0,16
Maximum air flow [m^3/h]	145	187	220	280	240	320
RPM [min^{-1}]	2180	2385	1950	2455	1850	2510
Noise level at 3 m [dBA]	27	36	28	37	31	42
Maximum operating temperature [°C]	60		60		60	
Protection rating	IP X4		IP X4		IP X4	

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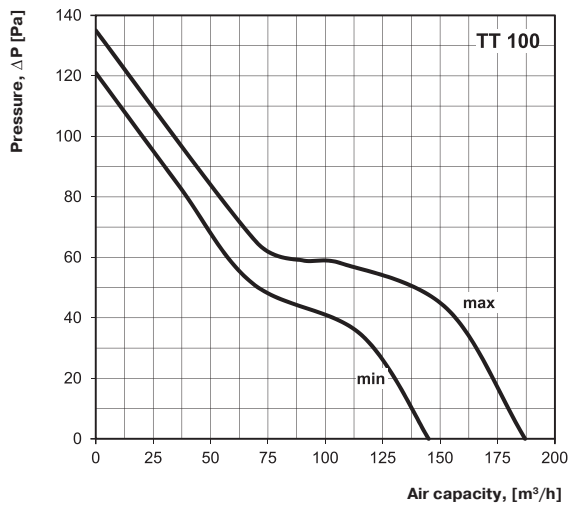
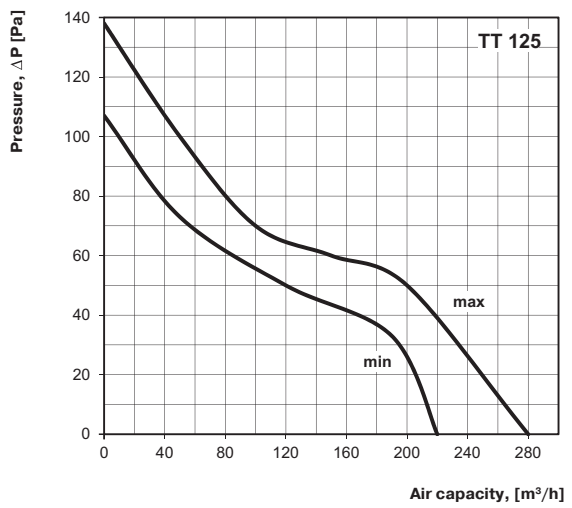


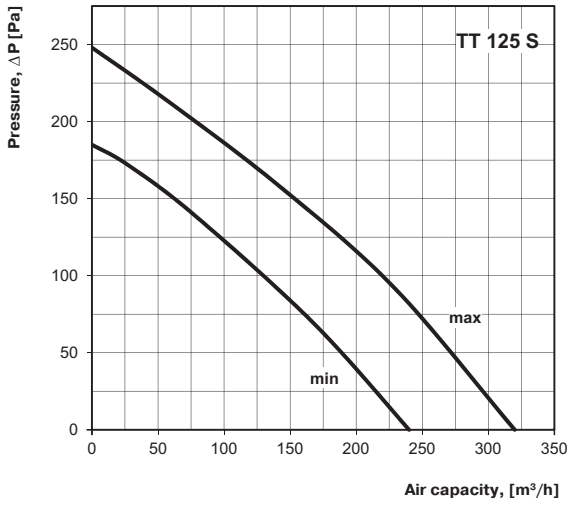
Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	53	26	23	41	46	50	47	41	31
L_{wA} to outlet	dBA	54	27	27	43	47	50	42	42	29
L_{wA} to environment	dBA	41	23	22	26	34	39	29	29	19

VENTS TT



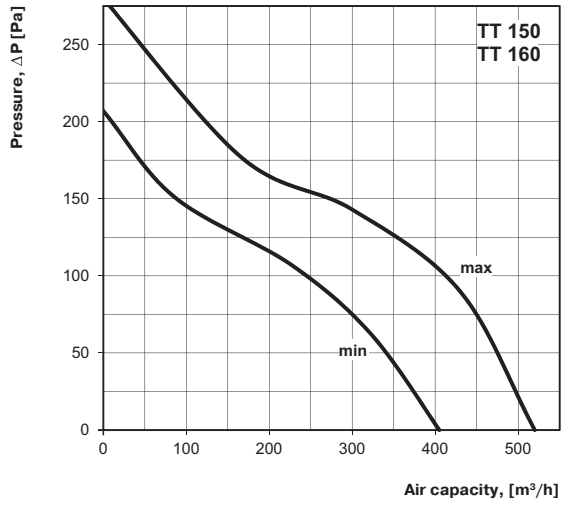
Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	57	28	27	45	52	54	55	43	35
L_{wA} to outlet	dBA	59	28	32	47	50	54	53	47	36
L_{wA} to environment	dBA	43	23	27	31	36	44	37	31	22

VENTS TT



Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	60	31	34	49	51	57	60	46	38
L_{wA} to outlet	dBA	61	36	32	51	52	58	56	48	37
L_{wA} to environment	dBA	50	27	29	36	41	46	37	33	28

VENTS TT



Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	69	38	40	57	60	58	69	55	45
L_{wA} to outlet	dBA	68	42	44	58	61	62	64	55	45
L_{wA} to environment	dBA	53	36	37	41	46	52	49	39	24

Technical data:

	TT 150 / TT 160		TT 250	TT 315
Speed	min	max	-	-
Voltage [V / 50 / 60 Hz]	1~ 230		1~ 230	1~ 230
Power [W]	30	60	120	314
Current [A]	0,17	0,27	0,52	1,42
Maximum air flow [m^3/h]	405	520	950	1850
RPM [min^{-1}]	1680	2460	1840	2335
Noise level at 3 m [dBA]	33	44	45	48
Maximum operating temperature [°C]	60		60	60
Protection rating	IP X4		IP X4	IP X4

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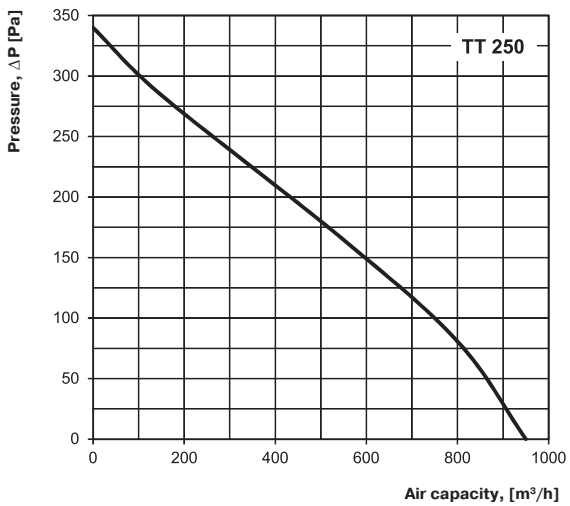
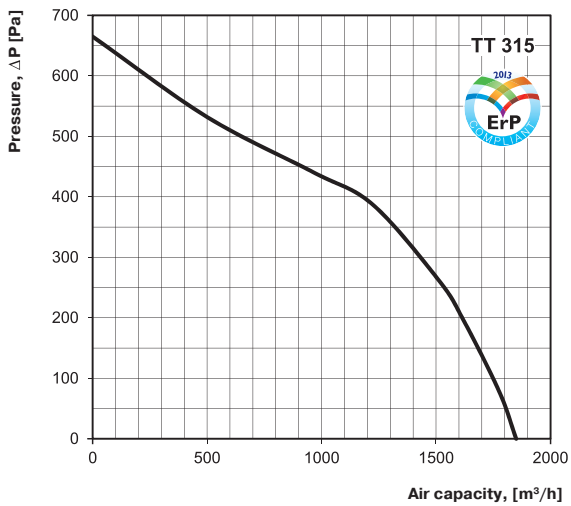


Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	73	42	49	58	65	64	70	57	49
L_{wA} to outlet	dBA	71	47	49	59	65	67	68	60	51
L_{wA} to environment	dBA	60	41	45	42	53	55	51	45	30

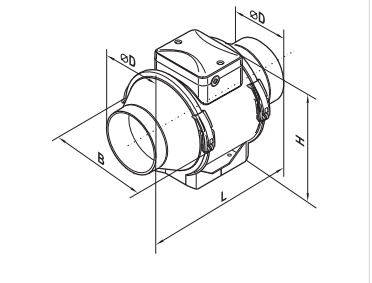
VENTS TT



Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	74	46	49	59	67	70	71	59	51
L_{wA} to outlet	dBA	74	50	51	61	68	70	70	60	51
L_{wA} to environment	dBA	63	44	46	45	55	60	53	48	33

Fan overall dimensions:

Type	Dimensions [mm]				Mass [kg]
	ØD	B	H	L	
TT 100	96	167	190	246	1,4
TT 125	123	167	190	246	1,4
TT 125 S	123	223	250	295	3,0
TT 150	146	223	250	295	3,0
TT 160	158	233	250	295	3,0
TT 250	247	287	323	383	6,9
TT 315	310	362	408	445	10,4



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