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**

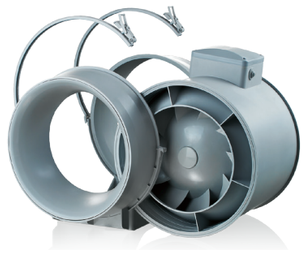
Application

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

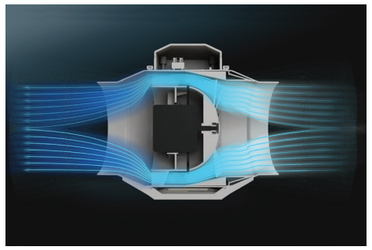


the spigots by means of special clamps with latches. This makes the fan maintenance fast and easy. The fan maintenance does not require total disassembling. Just pull out the central block from the casing and perform required servicing. All the models may be equipped with a regulated timer with turn-off 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** – adjustable timer from 2 to 30 minutes. **U** – speed controller with electronic thermostat and temperature sensor integrated into the air duct. Equipped with power cord and IEC C14 electric plug. Temperature-based operation logic. **Un** – speed controller with electronic thermostat and external temperature sensor fixed on 4 m cable. Equipped with power cord and IEC C14 electric plug. Temperature-based operation logic. **U1** – speed controller with electronic thermostat and temperature sensor integrated into the air duct. Equipped with power cord and IEC C14 electric plug. Timer-based operation logic. **U1n** – speed controller with electronic thermostat and external temperature sensor fixed on 4 m cable. Equipped with power cord and IEC C14 electric plug. Timer-based operation logic. **R** – power cord with IEC C14 electric plug. **V** – threeposition speed switch (for TT PRO series fans only). **P** – built-in smooth speed controller and power cord with IEC C14 electric plug.

ErP data	
Overall efficiency	η, [%]
Measurement category	MC
Efficiency category	EC
Efficiency grade	N
Variable speed drive	VSD
Power	[kW]
Current	[A]
Air flow	[m³/h]
Static pressure	[Pa]
Speed	[n/min⁻¹]
Specific ratio	SR

Accessories

page 368 page 376 page 378 page 382 page 394 page 430 page 434 page 443 page 461 page 465 page 466

Speed control

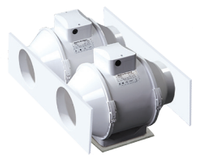
TT fan with a three–position speed switch

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;

The fan case is equipped with a flat mounting plate to attach the fan to the wall. The mounting box may

TTS kit for series connection

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.

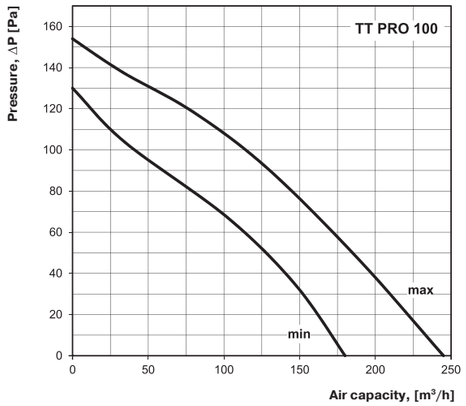
The fan with the electronic module of the temperature sensor and the speed controller is used for automatic speed control (air capacity regulation) depending on the air temperature in the ventilation duct or inside a room.

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

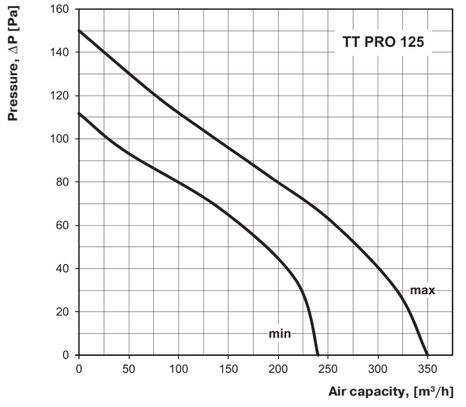
Set the desired air temperature (set point of the thermostat) with the thermostat control knob. Set the required minimum impeller speed (air flow) with the speed control knob. The motor switches to maximum speed (maximum air flow) as the temperature reaches and exceeds the set temperature set point. 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.

VENTS TT PRO



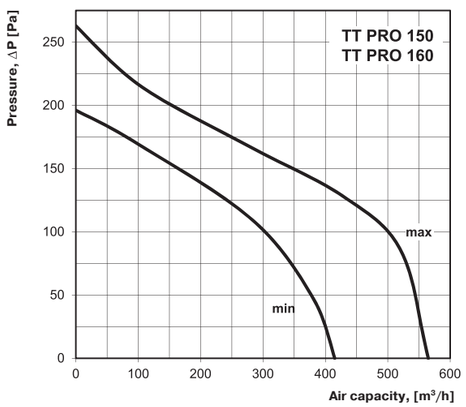
Sound-power level, A - weighted	Hz	general	Octave frequency band, Hz								Sound pressure level at 3 meters, A-filter applied	Sound pressure level at 1 meters, A-filter applied
			63	125	250	500	1000	2000	4000	8000	LpA, 3m [dB(A)]	LpA, 1m [dB(A)]
Min speed												
L_{WA} to inlet	dB(A)	54	19	35	50	49	44	37	25	17	33	43
L_{WA} to outlet	dB(A)	53	17	34	50	49	43	36	24	17	32	42
L_{WA} to environment	dB(A)	47	14	29	43	43	39	33	22	15	27	37
Max speed												
L_{WA} to inlet	dB(A)	59	24	34	53	54	53	48	37	26	38	48
L_{WA} to outlet	dB(A)	57	23	33	52	52	52	47	37	26	37	47
L_{WA} to environment	dB(A)	52	18	29	46	48	47	43	33	23	32	42

VENTS TT PRO



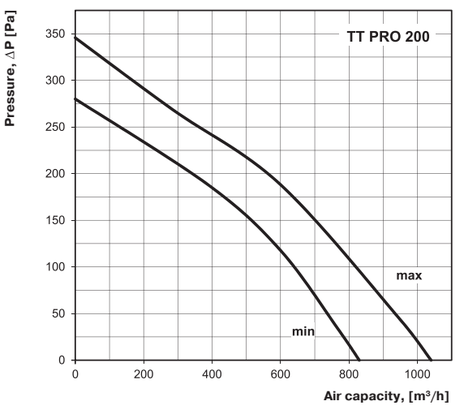
Sound-power level, A - weighted	Hz	general	Octave frequency band, Hz								Sound pressure level at 3 meters, A-filter applied	Sound pressure level at 1 meters, A-filter applied
			63	125	250	500	1000	2000	4000	8000	LpA, 3m [dB(A)]	LpA, 1m [dB(A)]
Min speed												
L_{WA} to inlet	dB(A)	54	26	38	52	50	44	38	27	17	34	44
L_{WA} to outlet	dB(A)	54	25	37	51	49	43	38	28	18	33	43
L_{WA} to environment	dB(A)	49	21	32	46	45	40	35	25	16	29	39
Max speed												
L_{WA} to inlet	dB(A)	60	20	31	57	51	51	50	39	27	39	49
L_{WA} to outlet	dB(A)	59	20	31	56	51	51	49	39	26	38	48
L_{WA} to environment	dB(A)	54	16	27	51	46	47	45	36	24	34	44

VENTS TT PRO



Sound-power level, A - weighted	Hz	general	Octave frequency band, Hz								Sound pressure level at 3 meters, A-filter applied	Sound pressure level at 1 meters, A-filter applied
			63	125	250	500	1000	2000	4000	8000	LpA, 3m [dB(A)]	LpA, 1m [dB(A)]
Min speed												
L_{WA} to inlet	dB(A)	64	26	38	63	55	56	51	41	27	44	54
L_{WA} to outlet	dB(A)	64	25	37	62	54	55	50	40	27	43	53
L_{WA} to environment	dB(A)	54	18	30	52	46	47	43	35	23	34	44
Max speed												
L_{WA} to inlet	dB(A)	75	33	44	71	67	65	70	56	42	54	64
L_{WA} to outlet	dB(A)	74	32	43	70	65	64	70	54	42	54	64
L_{WA} to environment	dB(A)	64	24	35	59	56	55	60	47	35	43	53

VENTS TT PRO



Sound-power level, A - weighted	Hz	general	Octave frequency band, Hz								Sound pressure level at 3 meters, A-filter applied	Sound pressure level at 1 meters, A-filter applied
			63	125	250	500	1000	2000	4000	8000	LpA, 3m [dB(A)]	LpA, 1m [dB(A)]
Min speed												
L_{WA} to inlet	dB(A)	73	36	49	64	65	69	67	56	42	52	62
L_{WA} to outlet	dB(A)	71	35	47	63	64	67	66	56	42	51	61
L_{WA} to environment	dB(A)	60	24	36	50	52	55	54	46	34	39	49
Max speed												
L_{WA} to inlet	dB(A)	78	38	50	69	70	74	73	65	51	57	67
L_{WA} to outlet	dB(A)	77	36	49	68	69	72	72	63	49	56	66
L_{WA} to environment	dB(A)	65	26	38	55	57	60	60	53	41	44	54

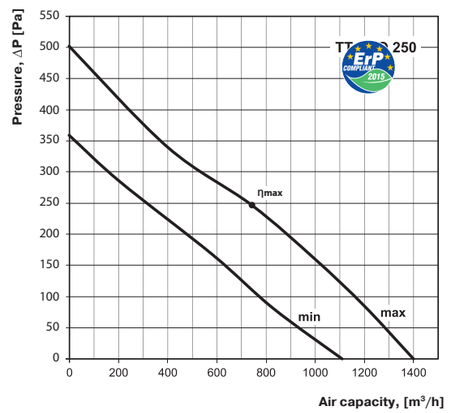
Technical data:

	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
Max. air capacity [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
Max. transported air temperature [°C]	60		60		60	
Protection rating	IP X4		IP X4		IP X4	

	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
Max. air capacity [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
Max. transported air temperature [°C]	60		60		60	
Protection rating	IP X4		IP X4		IP X4	

* Compliant to the ErP-regulation (EC) 327/2011, the power consumption at optimum efficiency is < 125W.

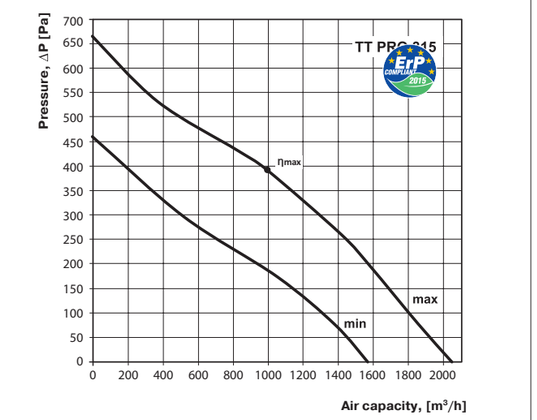
VENTS TT PRO



Sound-power level, A - weighted	Hz	general	Octave frequency band, Hz								Sound pressure level at 3 meters, A-filter applied	Sound pressure level at 1 meters, A-filter applied
			63	125	250	500	1000	2000	4000	8000	LpA, 3m [dB(A)]	LpA, 1m [dB(A)]
Min speed												
L_{WA} to inlet	dB(A)	78	46	53	71	73	74	68	57	45	58	68
L_{WA} to outlet	dB(A)	78	45	52	71	73	73	68	56	44	57	67
L_{WA} to environment	dB(A)	68	36	43	60	62	64	59	49	38	47	57
Max speed												
L_{WA} to inlet	dB(A)	88	51	58	73	85	82	78	67	55	67	77
L_{WA} to outlet	dB(A)	87	50	57	72	84	81	77	66	54	66	76
L_{WA} to environment	dB(A)	76	41	48	62	73	70	67	58	47	55	65

η_t [%]	MC	EC	N	VSD	[kW]	[A]	[m^3/h]	[Pa]	[RPM]	SR
30.6	A	Static	49.2	No	0.171	0.79	742	247	2465	1

VENTS TT PRO

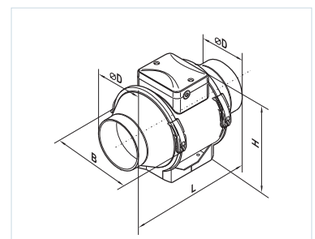


Sound-power level, A - weighted	Hz	general	Octave frequency band, Hz								Sound pressure level at 3 meters, A-filter applied	Sound pressure level at 1 meters, A-filter applied
			63	125	250	500	1000	2000	4000	8000	LpA, 3m [dB(A)]	LpA, 1m [dB(A)]
Min speed												
L_{WA} to inlet	dB(A)	80	35	50	69	76	77	72	61	47	60	70
L_{WA} to outlet	dB(A)	79	34	49	68	75	75	71	60	46	59	69
L_{WA} to environment	dB(A)	69	27	40	58	64	66	62	53	40	49	59
Max speed												
L_{WA} to inlet	dB(A)	86	39	55	72	80	82	78	69	54	65	75
L_{WA} to outlet	dB(A)	85	38	55	71	79	81	78	68	53	64	74
L_{WA} to environment	dB(A)	74	29	45	61	68	70	67	59	46	53	63

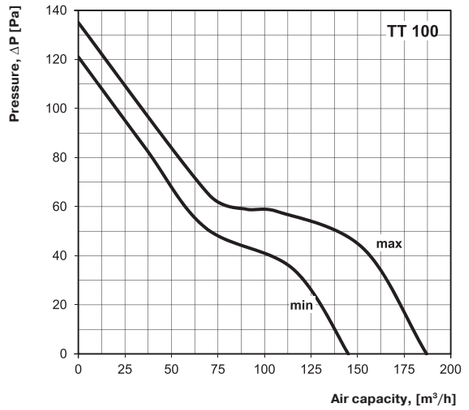
η_t [%]	MC	EC	N	VSD	[kW]	[A]	[m^3/h]	[Pa]	[RPM]	SR
34.4	A	Static	50	No	0.322	1.45	996	392	2380	1

Fan overall dimensions:

Type	Dimensions [mm]				Weight [kg]
	ØD	B	H	L	
TT PRO 100	97	195.8	226	302.5	1.75
TT PRO 125	123	195.6	226	258.5	2.15
TT PRO 150	148	220.1	247	289	2.3
TT PRO 160	158	220.1	247	289	3.25
TT PRO 200	199	239	261	295.5	3.95
TT PRO 250	247	287	323	383	7.8
TT PRO 315	310	362	408	445	11.95

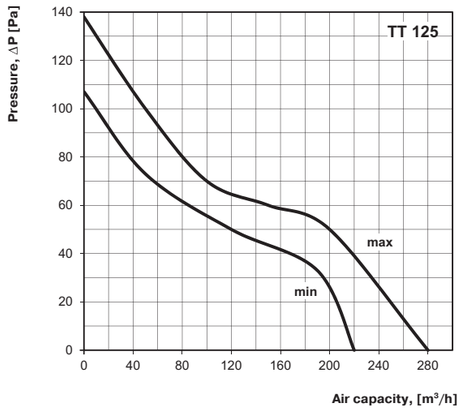


VENTS TT



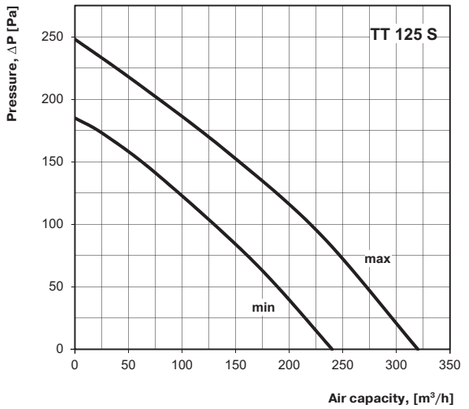
Sound-power level, A - weighted			Sound power level, A-filter applied									Sound pressure level at 3 meters, A-filter applied	Sound pressure level at 1 meters, A-filter applied
		general	Octave frequency band, Hz										
	Hz		63	125	250	500	1000	2000	4000	8000		LpA, 3m [dB(A)]	LpA, 1m [dB(A)]
Min speed													
L_{WA} to inlet	dB(A)	54	16	28	51	45	49	41	35	24		33	43
L_{WA} to outlet	dB(A)	53	15	27	50	44	48	40	35	23		32	42
L_{WA} to environment	dB(A)	48	11	23	44	40	43	36	31	21		27	37
Max speed													
L_{WA} to inlet	dB(A)	64	23	35	61	58	56	48	43	30		43	53
L_{WA} to outlet	dB(A)	63	22	34	60	57	55	48	42	29		42	52
L_{WA} to environment	dB(A)	56	17	29	53	51	50	43	38	26		36	46

VENTS TT



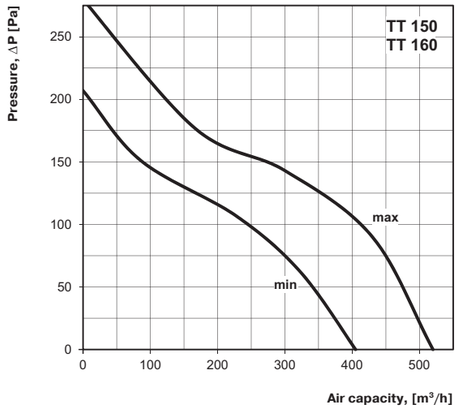
Sound-power level, A - weighted			Sound power level, A-filter applied									Sound pressure level at 3 meters, A-filter applied	Sound pressure level at 1 meters, A-filter applied
		general	Octave frequency band, Hz										
	Hz		63	125	250	500	1000	2000	4000	8000		LpA, 3m [dB(A)]	LpA, 1m [dB(A)]
Min speed													
L_{WA} to inlet	dB(A)	53	17	30	48	48	48	43	35	22		33	43
L_{WA} to outlet	dB(A)	52	16	29	47	47	47	43	34	21		32	42
L_{WA} to environment	dB(A)	49	13	26	43	44	44	40	32	20		28	38
Max speed													
L_{WA} to inlet	dB(A)	62	28	38	57	58	57	52	43	29		42	52
L_{WA} to outlet	dB(A)	61	27	37	55	57	56	51	42	29		41	51
L_{WA} to environment	dB(A)	58	23	33	51	53	52	48	40	27		37	47

VENTS TT



Sound-power level, A - weighted			Sound power level, A-filter applied									Sound pressure level at 3 meters, A-filter applied	Sound pressure level at 1 meters, A-filter applied
		general	Octave frequency band, Hz										
	Hz		63	125	250	500	1000	2000	4000	8000		LpA, 3m [dB(A)]	LpA, 1m [dB(A)]
Min speed													
L_{WA} to inlet	dB(A)	56	28	38	53	51	49	46	37	24		36	46
L_{WA} to outlet	dB(A)	55	27	37	52	50	48	45	37	23		35	45
L_{WA} to environment	dB(A)	52	23	33	47	46	44	42	34	21		31	41
Max speed													
L_{WA} to inlet	dB(A)	67	38	49	63	63	60	57	50	38		47	57
L_{WA} to outlet	dB(A)	66	38	48	61	62	59	56	48	37		46	56
L_{WA} to environment	dB(A)	63	34	45	58	58	56	53	46	35		42	52

VENTS TT



Sound-power level, A - weighted			Sound power level, A-filter applied									Sound pressure level at 3 meters, A-filter applied	Sound pressure level at 1 meters, A-filter applied
		general	Octave frequency band, Hz										
	Hz		63	125	250	500	1000	2000	4000	8000		LpA, 3m [dB(A)]	LpA, 1m [dB(A)]
Min speed													
L_{WA} to inlet	dB(A)	66	35	46	63	60	57	53	43	28		45	55
L_{WA} to outlet	dB(A)	65	34	45	62	59	56	53	43	28		44	54
L_{WA} to environment	dB(A)	54	24	35	50	49	47	44	36	23		34	44
Max speed													
L_{WA} to inlet	dB(A)	75	42	52	71	69	67	64	56	43		54	64
L_{WA} to outlet	dB(A)	74	41	50	70	69	66	63	56	42		53	63
L_{WA} to environment	dB(A)	64	32	41	59	58	57	54	48	36		43	53

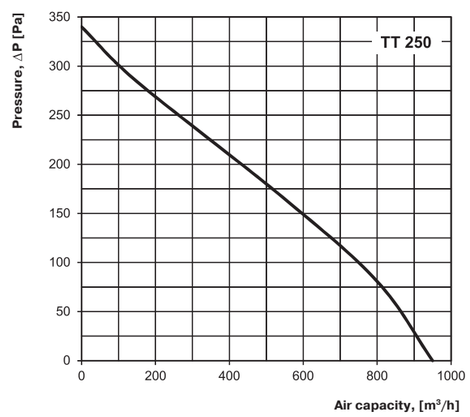
Technical data:

	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
Max. air capacity [m³/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
Max. transported air temperature [°C]	60		60		60	
Protection rating	IP X4		IP X4		IP X4	

	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
Max. air capacity [m³/h]	405	520	950	1850
RPM [min⁻¹]	1680	2460	1840	2335
Noise level at 3 m [dBA]	33	44	45	48
Max. transported air temperature [°C]	60		60	60
Protection rating	IP X4		IP X4	IP X4

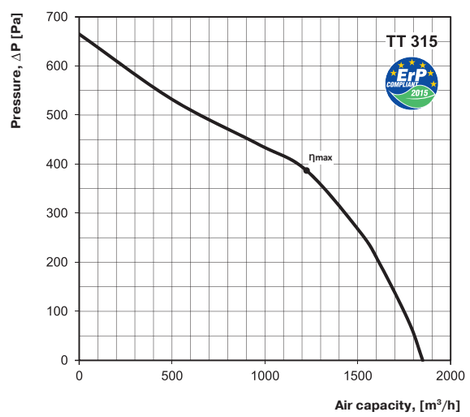
* Compliant to the ErP-regulation (EC) 327/2011, the power consumption at optimum efficiency is < 125W.

VENTS TT



Sound-power level, A - weighted			Sound power level, A-filter applied									Sound pressure level at 3 meters, A-filter applied	Sound pressure level at 1 meters, A-filter applied
		general	Octave frequency band, Hz										
	Hz		63	125	250	500	1000	2000	4000	8000		LpA, 3m [dB(A)]	LpA, 1m [dB(A)]
L_{WA} to inlet	dB(A)	78	46	53	71	73	74	68	57	45		58	68
L_{WA} to outlet	dB(A)	78	45	52	71	73	73	68	56	44		57	67
L_{WA} to environment	dB(A)	66	34	41	58	60	62	57	48	37		45	55

VENTS TT



Sound-power level, A - weighted			Sound power level, A-filter applied									Sound pressure level at 3 meters, A-filter applied	Sound pressure level at 1 meters, A-filter applied
		general	Octave frequency band, Hz										
	Hz		63	125	250	500	1000	2000	4000	8000		LpA, 3m [dB(A)]	LpA, 1m [dB(A)]
L_{WA} to inlet	dB(A)	80	35	49	68	75	76	72	61	46		59	69
L_{WA} to outlet	dB(A)	79	34	48	67	74	75	70	60	46		58	68
L_{WA} to environment	dB(A)	69	26	40	57	64	65	62	52	40		48	58

η_t [%]	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
41.7	A	Static	57.4	No	0.310	1.43	1224	387	2350	1

Fan overall dimensions:

Type	Dimensions [mm]				Weight [kg]
	ØD	B	H	L	
TT 100	96	167	190	246	1.45
TT 125	123	167	190	246	1.35
TT 125 S	123	223	250	295	3.14
TT 150	146	223	250	295	2.65
TT 160	158	233	250	295	2.65
TT 250	247	287	323	383	6.9
TT 315	310	362	408	445	10.35