

Tower-H EC

Roof centrifugal fans with EC motor

Use

- Extract ventilation systems installed in various premises.
- Roof mounting.
- Any roof types or vertical ventilation shafts.
- For arranging energy-saving and controllable ventilation systems.



Air flow:
up to 11400 m³/h
3167 l/s



Power:
from 455 W



Noise level:
from 47 dBA



Design

- The casing is made of steel with a polymer atmospheric resistant coating.
- Horizontal air exhaust.
- The fan is equipped with a terminal box for connection to power mains.
- The fan is rated for continuous operation always connected to power mains.
- The impeller has a protecting grille.
- The upper cover is equipped with two eye bolts for easy fan lifting on the roof with hoisting mechanism.
- A connecting plate is provided to facilitate mounting to the roof surface or to the mounting frame.

Motor

- High-efficient direct current EC motor with external rotor and backward curved blades.
- EC technologies meet the latest requirements to arrange high-efficient energy saving ventilation.
- EC motors have energy demand by 50 % less as compared to standard motors and have efficiency up to 90 %.
- EC motors are featured with high performance, low noise level and well controllable total speed range.
- Overheating protection by built-in thermal switches with automatic restart.
- Dynamically balanced turbine.

Operation and speed control

- The fan is controlled with a 0-10 V external control signal, e.g. **CDT E/0-10** speed controller for EC motors.

- The fan capacity is regulated by various parameters, including temperature level, pressure, smoke, etc.
- EC motor changes its rotation speed synchronously with the fluctuation of the control parameter to ensure the best suitable air flow.
- The fan is compatible with 50 and 60 Hz power mains with the same maximum speed.
- The parameters may be set and controlled due to data exchange between a PC and the fan.
- The fans can be integrated into a unified decentralized computerized network to adjust ventilation system with respect to specific user's demands.

Mounting

- Roof mounting directly above a ventilation shaft or an air duct.
- The fan is attached to a square air duct or to the **MRDL/MRIDL** mounting frame (see accessories).
- The counterflange **FDL** mounted on the fan bottom (see accessories) is designed for the fan connection to a round air duct.
- The KDL backdraft dampers (see Accessories) are designed to prevent air back drafting when the fan is off.
- The VDL flexible connectors (see Accessories) are designed to absorb vibration from the fan to the air duct.
- External terminal box for connection to power mains.

Designation key

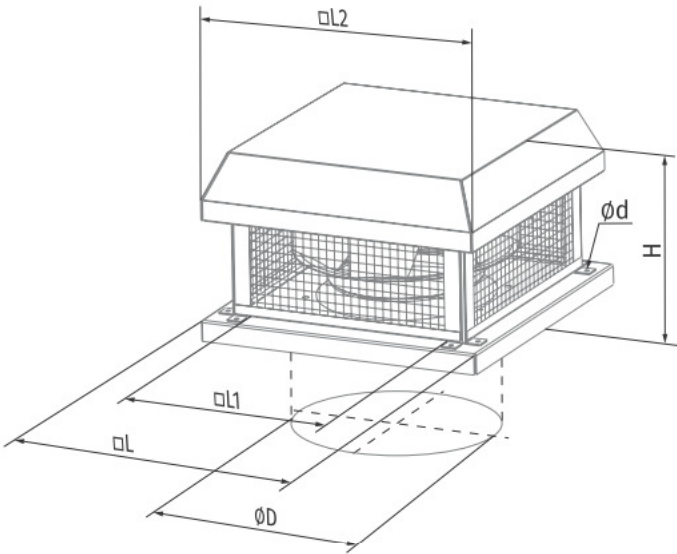
Series	Motor type	Turbine standard size	Casing material
Tower-H EC	EC: electronically commutated motor	220; 225; 250; 280; 310; 355; 400; 450; 500	– steel with poly- meric coating A: aluminum

Accessories

Backdraft damper	Flexible connector for roof fans	Counterflange	Mounting frame	Silencer	Silencer	Backdraft air damper	Air damper	Speed controller
KDL	VDL	FDL	MRDL/MRIDL	SD	SDF	VRV	VKA	CDT E/0-10

Overall dimensions [mm]

Type	ØD	Ød	H	L	L1	L2	Weight [kg]
Tower-H EC 250	285	11	289	435	330	411	16
Tower-H EC 280	285	11	264	435	330	431	16
Tower-H EC 310	285	11	272	435	330	431	19
Tower-H EC 355	438	11	326	595	450	558	38
Tower-H EC 400	438	11	357	595	450	558	81
Tower-H EC 450	438	11	407	665	535	637	82
Tower-H EC 500	438	11	437	665	535	637	81
Tower-H EC 560	605	14	487	940	750	912	98



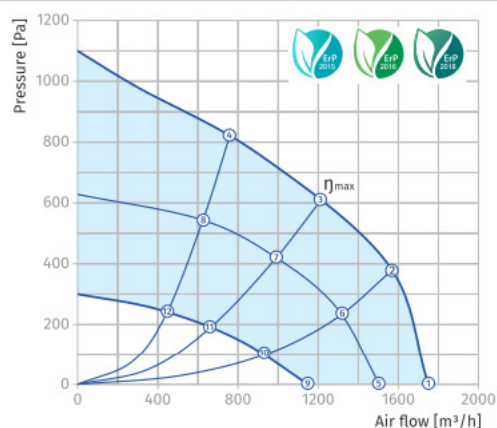
ErP Parameter	
Overall efficiency	η , [%]
Measurement category	MC
Efficiency category	EC
Efficiency grade	N
Variable speed drive	VSD
Power	[kW]
Current	[A]
Air flow	[m³/h]
Static pressure	[Pa]
Speed	[n/min']
Specific ratio	SR

Technical data

Parameters	Tower-H EC 250	Tower-H EC 280
Voltage [V / 50 / 60 Hz]	1 ~ 200-277	1 ~ 200-277
Power [kW]	0.485	0.455
Current [A]	3.0	2.8
Maximum air flow [m³/h (l/s)]	1750 (486)	2650 (736)
RPM [min⁻¹]	3580	2600
Sound pressure at 3 m [dBA]	47	47
Transported air temperature [°C]	-25...+60	-25...+40
SEC class	-	-
Ingress protection rating	IPX4	IPX4
Motor IP rating	IP54	IP54
ErP	2015, 2016, 2018	2015, 2016, 2018

TOWER-H EC 250

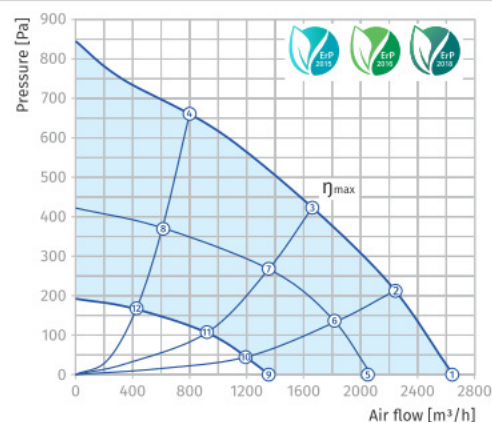
η, [%]	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
47.6	A	Static	61.4	Yes	0.485	3.0	1211	606	3460	1



Point	P [W]	Current [A]	N [min⁻¹]
1	380	2.30	3580
2	465	3.00	3460
3	485	3.00	3460
4	440	2.40	3520
5	193	1.20	2830
6	245	1.50	2830
7	260	1.60	2830
8	225	1.40	2830
9	80	0.50	2000
10	100	0.60	2000
11	106	0.70	2000
12	94	0.60	2000

TOWER-H EC 280

η, [%]	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
52.2	A	Static	66.5	Yes	0.425	2.6	1661	423	2660	1

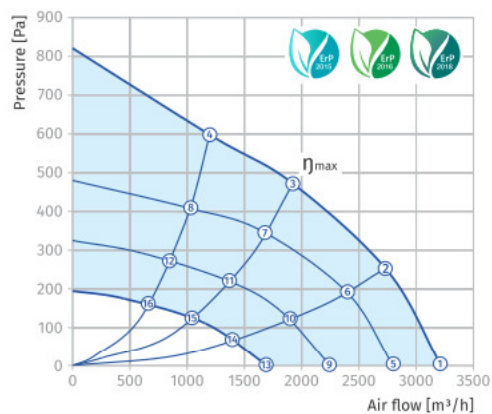


Point	P [W]	Current [A]	N [min⁻¹]
1	355	2.20	2760
2	400	2.50	2670
3	425	2.60	2660
4	386	2.30	2740
5	150	1.00	2050
6	206	1.10	2050
7	232	1.40	2050
8	196	1.20	2050
9	65	0.40	1460
10	80	0.50	1460
11	88	0.60	1460
12	70	0.50	1460

Parameters	Tower-H EC 310	Tower-H EC 355
Voltage [V / 50 / 60 Hz]	1 ~ 200-277	3 ~ 380-480
Power [kW]	0.48	0.94
Current [A]	3.1	1.5
Maximum air flow [m³/h (l/s)]	3220 (895)	4500 (1250)
RPM [min⁻¹]	2300	2215
Sound pressure at 3 m [dBA]	48	51
Transported air temperature [°C]	-25...+60	-25...+60
SEC class	-	-
Ingress protection rating	IPX4	IPX4
Motor IP rating	IP54	IP54
ErP	2015, 2016, 2018	2015, 2016, 2018

TOWER-H EC 310

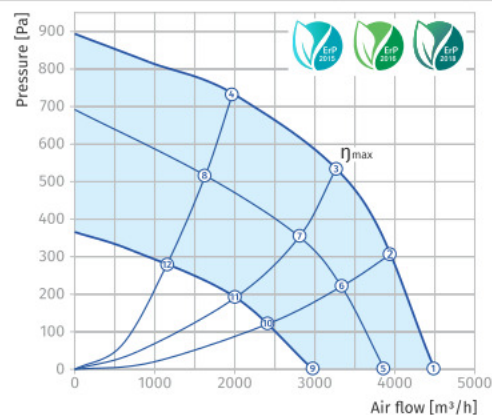
η, [%]	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
59.2	A	Static	73	Yes	0.480	3.1	1920	470	2170	1



Point	P [W]	Current [A]	N [min⁻¹]
1	370	2.35	2300
2	445	2.85	2215
3	480	3.10	2170
4	448	2.85	2220
5	210	1.30	1900
6	284	1.70	1900
7	312	1.80	1900
8	278	1.70	1900
9	124	0.80	1560
10	158	1.00	1560
11	175	1.10	1560
12	158	1.00	1560
13	57	0.40	1200
14	73	0.50	1200
15	80	0.50	1200
16	70	0.50	1200

TOWER-H EC 355

η, [%]	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
57.3	A	Static	68.1	Yes	0.940	1.5	3266	534	2215	1

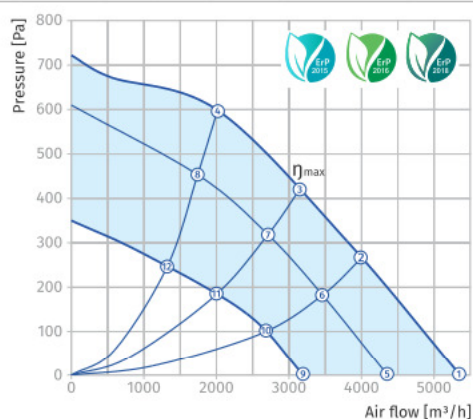


Point	P [W]	Current [A]	N [min⁻¹]
1	700	1.30	2205
2	880	1.40	2215
3	940	1.50	2215
4	850	1.40	2215
5	380	0.70	1825
6	470	0.90	1805
7	490	0.90	1790
8	460	0.90	1800
9	170	0.40	1335
10	200	0.40	1315
11	210	0.40	1315
12	190	0.40	1310

Parameters	Tower-H EC 400	Tower-H EC 450
Voltage [V / 50 / 60 Hz]	3 ~ 380-480	3 ~ 380-480
Power [kW]	0.77	1.01
Current [A]	1.3	1.6
Maximum air flow [m³/h (l/s)]	5360 (1489)	6700 (1861)
RPM [min⁻¹]	1755	1560
Sound pressure at 3 m [dBA]	53	55
Transported air temperature [°C]	-25...+60	-25...+60
SEC class	-	-
Ingress protection rating	IPX4	IPX4
Motor IP rating	IP54	IP54
ErP	2015, 2016, 2018	2015, 2016, 2018

TOWER-H EC 400

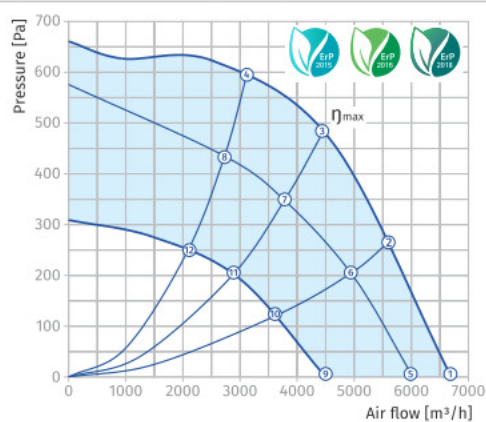
η, [%]	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
53.3	A	Static	65	Yes	0.770	1.3	3148	420	1760	1



Point	P [W]	Current [A]	N [min⁻¹]
1	630	1.10	1755
2	750	1.30	1760
3	770	1.30	1760
4	720	1.20	1760
5	400	0.80	1510
6	420	0.80	1470
7	430	0.80	1465
8	410	0.80	1485
9	170	0.40	1100
10	180	0.40	1090
11	180	0.40	1085
12	180	0.40	1095

TOWER-H EC 450

η, [%]	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
65.8	A	Static	76.2	Yes	1.010	1.6	4460	483	1555	1

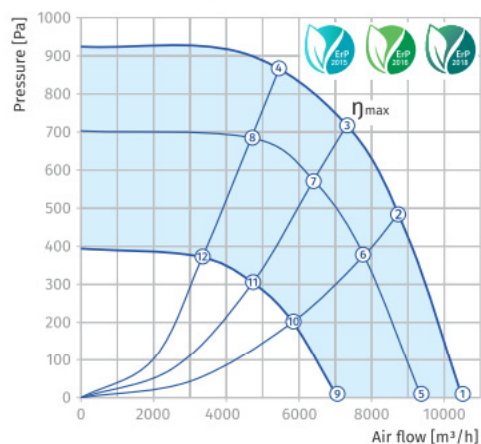


Point	P [W]	Current [A]	N [min⁻¹]
1	690	1.10	1560
2	910	1.50	1555
3	1010	1.60	1555
4	960	1.50	1560
5	430	0.80	1345
6	530	1.00	1315
7	580	1.00	1300
8	540	1.00	1315
9	190	0.40	985
10	220	0.50	970
11	250	0.50	965
12	230	0.50	970

Parameters	Tower-H EC 500	Tower-H EC 560
Voltage [V / 50 / 60 Hz]	3 ~ 380-480	3 ~ 380-480
Power [kW]	2.7	2.3
Current [A]	4.3	3.6
Maximum air flow [m³/h (l/s)]	10500 (2917)	11400 (3167)
RPM [min⁻¹]	1700	1350
Sound pressure at 3 m [dBA]	63	65
Transported air temperature [°C]	-25...+60	-25...+60
SEC class	-	-
Ingress protection rating	IPX4	IPX4
Motor IP rating	IP54	IP54
ErP	2015, 2016, 2018	2015, 2016, 2018

TOWER-H EC 500

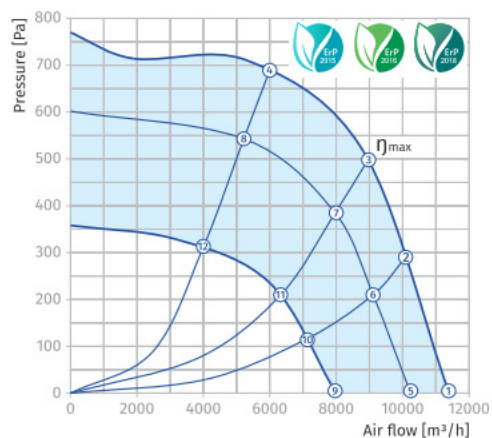
η, [%]	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
59.8	A	Static	65.8	Yes	2.650	4.1	7330	720	1700	1



Point	P [W]	Current [A]	N [min⁻¹]
1	1850	2.90	1700
2	2500	3.90	1700
3	2650	4.10	1700
4	2400	3.60	1700
5	1300	2.10	1500
6	1700	2.60	1500
7	1750	2.70	1500
8	1650	2.60	1500
9	570	1.10	1100
10	700	1.30	1100
11	750	1.30	1100
12	700	1.30	1100

TOWER-H EC 560

η, [%]	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
62.9	A	Static	69.9	Yes	2.150	3.4	8980	499	1350	1



Point	P [W]	Current [A]	N [min⁻¹]
1	1330	2.20	1350
2	1900	2.90	1350
3	2150	3.40	1350
4	2100	2.20	1350
5	900	1.60	1200
6	1300	2.10	1200
7	1550	2.50	1200
8	1430	2.30	1200
9	450	0.90	910
10	600	1.10	910
11	700	1.20	910
12	650	1.20	910