



MASS ENERGY



TFD

CLIMA

35 - 85

DYNAMIC FLOW TECHNOLOGY
CLIMA

INTELLIGENT USE OF ENERGY



TFD

C L I M A

35 - 85

DYNAMIC FLOW TECHNOLOGY CLIMA

An air handling unit with fresh air supply and an integrated hydronic battery that, connected to the heating/cooling system of the building, allows dehumidification (in summer) and integration (in summer and winter), optimizing overall comfort.



Countercurrent heat recovery unit, with efficiency >85%



345 m³/h flow rate with 100 Pa of useful pressure in ventilation mode

835 m³/h flow rate with 100 Pa of useful pressure in ventilation + recirculation mode

760 m³/h flow rate with 100 Pa of useful pressure in recirculation mode



Dehumidification and integration through a hydronic battery



Recovery bypass damper (for free-cooling/free-heating) and integrated circulation damper



Low consumption EC fan with backward centrifugal blades



F7 filter (ePM1 70%) with low load loss, both for air extraction and renewal



Self-supporting structure in pre-painted sheet metal; thermal/acoustic insulation in polyethylene foam th. 10mm



Remote LCD display with integrated temperature, humidity and CO₂ sensors



Unit operated through remote contacts, remote display or via ModBus protocol on RS485



Rated voltage: 230 V 1F 50-60 Hz

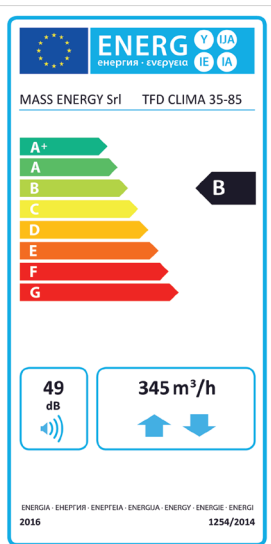


Max absorption: 2.2A 260W

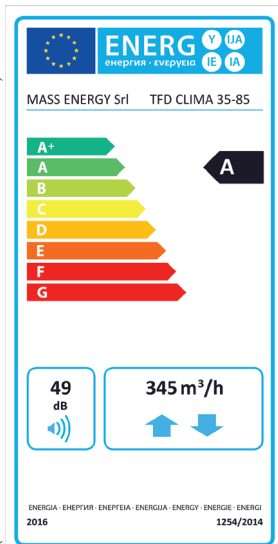


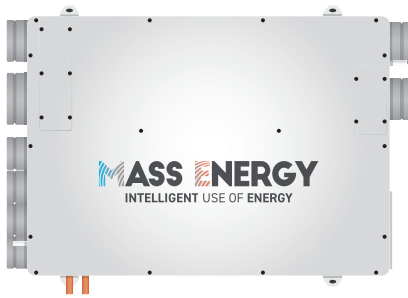
Operating conditions: room temperature between 10°C and 40°C, humidity <80%

Energy label
(manual control or timer control)

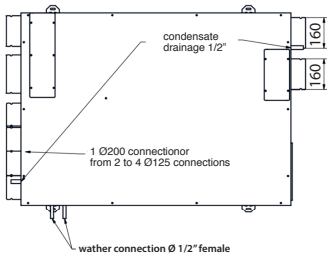
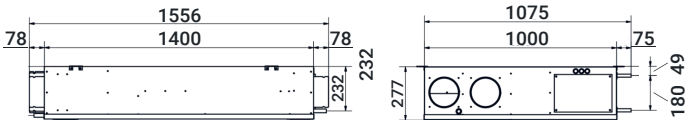


Energy label
(centralized environmental control or local environmental control)





DIMENSIONS



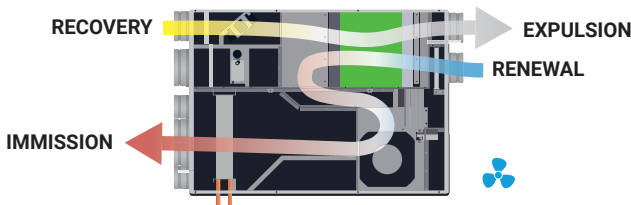
Overall dimensions excluding ducts and condensate drainage (l x w x h):
1450x1000x270 mm

Pipe nominal diameter:
3x Ø160 mm + 1x Ø200 mm +
(1x Ø200 o 2/3/4x Ø125 mm)

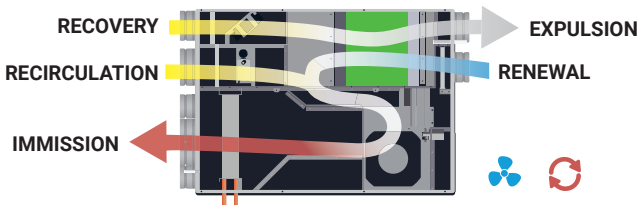
Weight:
60 kg

FLows AND METHODS

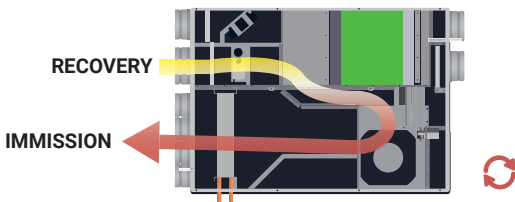
VENTILATION MODE FLOWS



VENTILATION + RECIRCULATION MODE FLOWS (dehumidification/integration)



RECIRCULATION MODE FLOWS (dehumidification/integration)





PRODUCT SHEET

According to Regulations (UE) n° 1253/2014 and n°1254/2014



TFD

CLIMA

Brand Supplier MASS ENERGY S.r.l.

MASS ENERGY S.r.l.

Model identifier		TFD CLIMA 35-85			
Specific energy consumption in kWh (m ² . a) for each climate zone and SEC class	cold climate	-67.2 kWh/m ² .a	-68.9 kWh/m ² .a	-72.0 kWh/m ² .a	-77.6 kWh/m ² .a
	mild climate	-31.7 kWh/m ² .a	-33.1 kWh/m ² .a	-35.6 kWh/m ² .a	-40.0 kWh/m ² .a
	hot climate	-8.8 kWh/m ² .a	-9.9 kWh/m ² .a	-12.1 kWh/m ² .a	-15.9 kWh/m ² .a
Energy class		B	B	A	A
Product type		TFD CLIMA bidirectional	TFD CLIMA bidirectional	TFD CLIMA bidirectional	TFD CLIMA bidirectional
Type of motorisation		Variable speed	Variable speed	Variable speed	Variable speed
Heat recovery system		countercurrent recovery	countercurrent recovery	countercurrent recovery	countercurrent recovery
Thermal efficiency of heat recovery*		80.3%	80.3%	80.3%	80.3%
Peak flow rate (m ³ /h)*		345 m ³ /h	345 m ³ /h	345 m ³ /h	345 m ³ /h
Electrical power absorbed at peak flow rate (W)*		185 W	185 W	185 W	185 W
Sound power level (Lwa in dB(A))		49 dB(A)	49 dB(A)	49 dB(A)	49 dB(A)
Flow rate reference (m ³ /s)*		0.067 m ³ /s	0.067 m ³ /s	0.067 m ³ /s	0.067 m ³ /s
Pressure difference (Pa)*		50 Pa	50 Pa	50 Pa	50 Pa
Specific absorbed power (W/(m ³ /h))		0.34 W/(m ³ /h)	0.34 W/(m ³ /h)	0.34 W/(m ³ /h)	0.34 W/(m ³ /h)
Type of control		manual control	control with timer	centralized environmental control	local environmental control
Control coefficient		1.00	0.95	0.85	0.65
Cooling rate (%)	internal	3.7 %	3.7 %	3.7 %	3.7 %
	external	2.9 %	2.9 %	2.9 %	2.9 %
	recycling	not applicable	not applicable	not applicable	not applicable
Mixing rate (%)		not applicable	not applicable	not applicable	not applicable
Location and description of the visual warning signal for the filters		Alarm displayed on the control unit and or on the remote display, as well as signalling via ModBus and configurable alarm contact.			
Installation for new air immission		not applicable	not applicable	not applicable	not applicable
Internet address with preassembly and disassembly instructions		www.massenergy.it	www.massenergy.it	www.massenergy.it	www.massenergy.it
Sensitivity of air flow to pressure changes at + 20Pa and - 20 Pa (%)		not applicable	not applicable	not applicable	not applicable
Internal / external air seal (m ³ /h)		not applicable	not applicable	not applicable	not applicable
Annual electricity consumption (AEC) specific for a house of 100m ² (kWh of electricity / a)**	cold climate	1004.3 kWh elet./a	963.1 kWh elettr./a	887.1 kWh elettr./a	760.4 kWh elettr./a
	mild climate	467.2 kWh elettr./a	426.1 kWh elettr./a	350.1 kWh elettr./a	223.4 kWh elettr./a
	hot climate	422.2 kWh elettr./a	381.1 kWh elettr./a	305.1 kWh elettr./a	178.4 kWh elettr./a
Annual heating savings specific for a house of 100m ² (kWh primary energy /a)**	cold climate	8359.0 kWh en.prim./a	8420.4 kWh en.prim./a	8543.1 kWh en.prim./a	8788.6 kWh en.prim./a
	mild climate	4272.9 kWh en.prim./a	4304.3 kWh en.prim./a	4367.1 kWh en.prim./a	4492.6 kWh en.prim./a
	hot climate	1932.2 kWh en.prim./a	1946.4 kWh en.prim./a	1974.7 kWh en.prim./a	2031.5 kWh en.prim./a

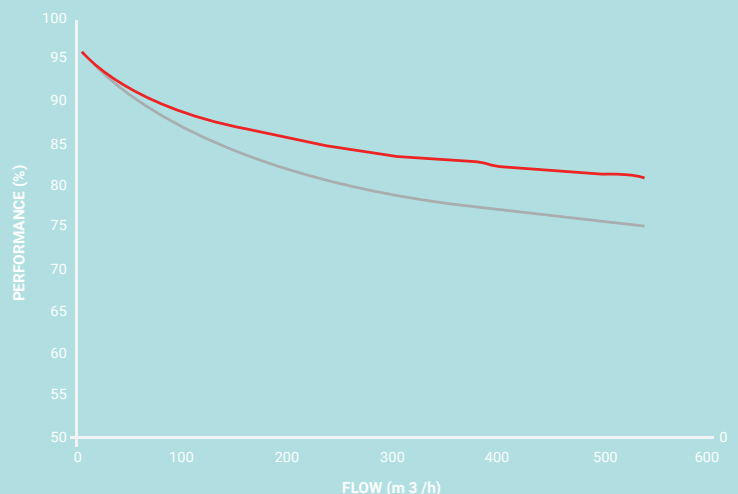
* as per regulation n° 1253/2014

** calculated as per regulation 1254/2014



THERMAL EFFICIENCY OF THE RECUPERATOR

- recuperator efficiency according to UNI308: external -5°C 80% UR -- internal 20°C 50%
- recuperator efficiency according to UE 1253/14: external 7°C -- internal 20°C (dry)





TECHNICAL DATA

VENTILATION MODE



Air flow intake	345	m ³ /h
of which in recirculation	0	m ³ /h
Delivery pressure	100	Pa
Air flow in expulsion	345	m ³ /h
Expulsion pressure	100	Pa
Fan calibration speed	100	%
Absorbed power	0.185	kW
Electricity	1.6	A

Dehumidification/integration MODE



Air flow intake	835	m ³ /h
of which in recirculation	600	m ³ /h
Delivery pressure	100	Pa
Air flow in expulsion	235	m ³ /h
Expulsion pressure	100	Pa
Fan calibration speed (immission/ejection)	100/75	%

COOLING AND DEHUMIDIFICATION

room temperature 26 °C and 60% U.R.
outdoor temperature 30 °C and 60% U.R.

Cooling power (recuperator + battery)	0.3 + 5.9	kW
Water temperature	7	°C
Water flow rate	1050	l/h
Pressure loss	16	kPa
Condensing capacity	4.0	l/h

HEATING

room temperature 20 °C and 50% U.R.
outdoor temperature -5 °C and 80% U.R.

Heating power (recuperator + battery)	1.7 + 5.8	kW
Water temperature	50	°C
Water flow rate	1020	l/h
Pressure loss	13	kPa
Absorbed power	0.23	kW
Electricity	2.0	A

Dehumidification/integration MODE



Air flow intake	760	m ³ /h
of which in recirculation	760	m ³ /h
Delivery pressure	100	Pa
Air flow in expulsion	0	m ³ /h
Expulsion pressure	0	Pa
Fan calibration speed (immission/ejection)	100/0	%

COOLING AND DEHUMIDIFICATION

room temperature 26 °C and 60% U.R.
outdoor temperature 30 °C and 60% U.R.

Cooling power (battery only)	5,4	kW
Water temperature	7	°C
Water flow rate	950	l/h
Pressure loss	14	kPa
Condensing capacity	3.8	l/h

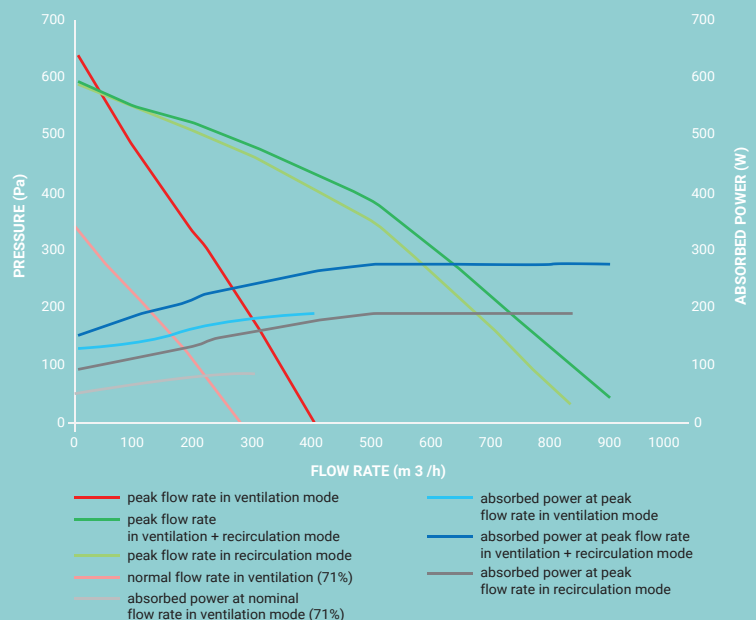
HEATING

room temperature 20 °C and 50% U.R.
outdoor temperature -5 °C and 80% U.R.

Heating power (battery only)	5.4	kW
Water temperature	50	°C
Water flow rate	920	l/h
Pressure loss	11	kPa
Absorbed power	0.19	kW
Electricity	1.6	A



AERAILIC PERFORMANCES





MASS ENERGY

INTELLIGENT USE OF ENERGY

DESIGN

REALIZATION

SUPPLY

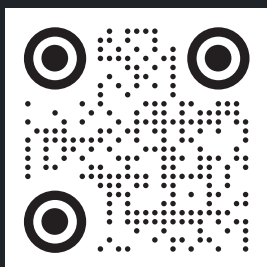
INSTALLATION

TESTING

AFTER SALES SERVICE



TURNKEY SUPPLY
FOR TAILOR-MADE SOLUTIONS



Piazza Sandro Pertini, 8
20060 Pessano con Bornago (MI)
Ph. +39 02 9504446/+39 347 290 8261

info@massenergy.it - www.massenergy.it