

# Domestic Residential Range

## WATER VERSION

**TEON Domestic Residential** range in **Water** version (water-water) consists of water-water monobloc natural heat generators, for the production of heating and domestic hot water (DHW), having the option of reversibility for the summer cooling operation.

**T10** and **T30** models are single-stage, capable of delivering:

- high temperature hot water (min 30°C – max 80°C);
- chilled water at low temperature (min 5°C) – only in the “**RT**” models.

The compressors used are of alternative type with high energy efficiency. They are developed and optimized for applications with R600a refrigerant, they minimize electrical absorption, vibrations and noise.

The heat exchangers are made of 316 AISI stainless steel plates, brazed, with counter-current heat exchange and AISI 304 stainless steel connections. They are characterized by high thermal efficiency with at the same time strong turbulence and lower risk of formation of fouling and deposits. Inside the supporting structure with perimeter paneling, the main components of the machine are placed. Inside the supporting structure with perimeter paneling, the main components of the machine are placed:

- Compressor
- Expansion valve
- Evaporator
- Condenser
- Economizer
- Measurement and control components
- Piping and various components online
- Machine edge

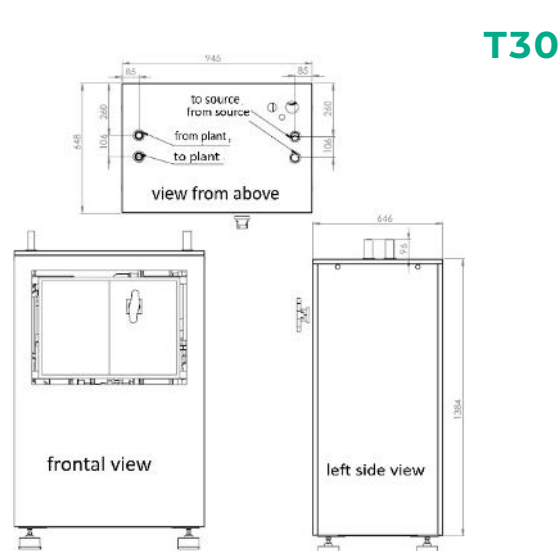
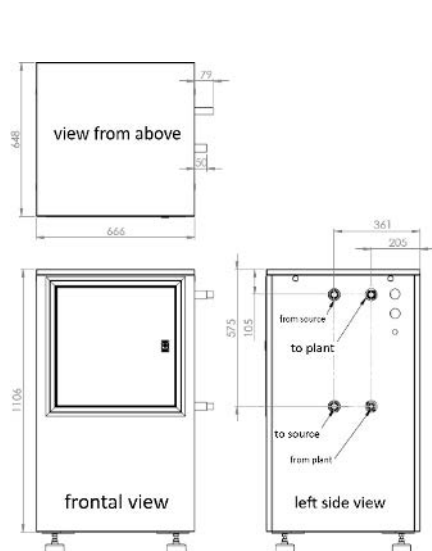


**WATER  
BLAZE**<sup>®</sup>  
TECHNOLOGY

*TEON's WATER BLAZE technology introduces a pushed sub-cooling into the traditional thermodynamic cycle of heat pumps, thanks to which more thermal power is recovered from the natural source to be transferred to the heating system. This results in the overall efficiency maximization. This is done by splitting the isoenthalpic curve into two distinct transformations, one at constant pressure and one at constant temperature, which take place in a recuperator and in a lamination valve respectively*

## TECHNICAL DATA

PERFORMANCE	U.M.	T10			T30		
<b>HEATING (T models)</b>							
Thermal Power	[kW]	12,1	11,8	9,8	34,7	33,4	27,3
Electric Power	[kW]	1,9	2,8	3,3	5,7	7,9	8,8
COP	[-]	6,38	4,27	3,00	6,09	4,22	3,12
Inlet water temperature from source	[°C]	10	15	15	10	15	15
Outlet water temperature to source	[°C]	7	10	10	7	10	10
Inlet water temperature from plant	[°C]	30	50	70	30	50	70
Outlet water temperature to plant	[°C]	35	60	80	35	60	80
Water flow on the source side	[l/s]	0,81	0,43	0,31	2,31	1,22	0,89
Water flow on the plant side	[l/s]	0,58	0,28	0,23	1,66	0,80	0,65
Refrigerant charge (R600a)	[kg]		0,9			2,5	
<b>COOLING (RT models)</b>							
Refrigeration Power	[kW]		9,7			28,4	
Electric Power	[kW]		1,9			5,7	
EER	[-]		5,15			4,99	
Outlet water temperature to source	[°C]		20			20	
Inlet water temperature from source	[°C]		15			15	
Outlet water temperature to plant	[°C]		7			7	
Inlet water temperature from plant	[°C]		12			12	
Water flow on the source side	[l/s]		0,55			1,63	
Water flow on the plant side	[l/s]		0,46			1,36	
Refrigerant charge (R600a)	[kg]		1,2			3,1	



NOTE: For both **T10** and **T30**, the following clearances apply: front and rear 500 mm, side left and right 600 mm and top 500 mm.

TECHNICAL DATA	U.M.	T10	T30
Max nominal electric current	[A]	6,2	15,3
Sound pressure level 1 m (*) (w.o. Acoustic Insulation optional)	[dB(A)]	55	58
Sound pressure level 5 m (*) (w.o. Acoustic Insulation optional)	[dB(A)]	41	44
Sound pressure level 10 m (*) (w.o. Acoustic Insulation optional)	[dB(A)]	35	38
Water circuit load loss on evaporator side	[kPa]	12	10
Water circuit load loss on condenser side	[kPa]	20	48
Power supply	[V/-/Hz]	400/3/50+N (220 V)	400/3/50+N (220 V)
Compressors type	[-]	Alternativo	Alternativo
Partialization (with partialization optional)	[-]	-	75
SIZES AND WEIGHTS	U.M.	T10	T30
Dimensions (L x P x H) (**)	[mm]	666 x 648 x 1106	945 x 648 x 1384
Empty weight	[kg]	280	460
Operating weight	[kg]	300	500
Diameter source side hydraulic connections ( <b>T</b> and <b>RT</b> )	[-]	G 1"	G 1 1/4"
Diameter plant side hydraulic connections ( <b>T</b> )	[-]	G 3/4"	G 1"
Diameter plant side hydraulic connections ( <b>RT</b> )	[-]	G 1"	G 1 1/4"
SAFETY	U.M.	T10	T30
Maximum pressure of the refrigerant	[bar]	14	14
F-GAS license need for maintenance	[-]	NO	NO

(\*) The data reported are from free-field measurements.

(\*\*) The quoted height does not take into account the anti-vibration mounts, which would increase the total height by between 60 mm and 110 mm.

# Domestic Residential Range

## GROUND VERSION

**TEON Domestic Residential** range in **Ground** version in operation with closed-circuit probes consists of ground-water monobloc natural heat generators, for the production of heating and domestic hot water (DHW), having the option of reversibility for the summer cooling operation.

**T10** and **T30** models are single-stage, capable of delivering:

- high temperature hot water (min 30°C – max 80°C);
- chilled water at low temperature (min 5°C) – only in the “**RT**” models.

The compressors used are of alternative type with high energy efficiency. They are developed and optimized for applications with R600a refrigerant, they minimize electrical absorption, vibrations and noise.

The heat exchangers are made of 316 AISI stainless steel plates, brazed, with counter-current heat exchange and AISI 304 stainless steel connections. They are characterized by high thermal efficiency with at the same time strong turbulence and lower risk of formation of fouling and deposits. Inside the supporting structure with perimeter paneling, the main components of the machine are placed.

Inside the supporting structure with perimeter paneling, the main components of the machine are placed:

- Compressor
- Expansion valve
- Evaporator
- Condenser
- Economizer
- Measurement and control components
- Piping and various components online
- Machine edge

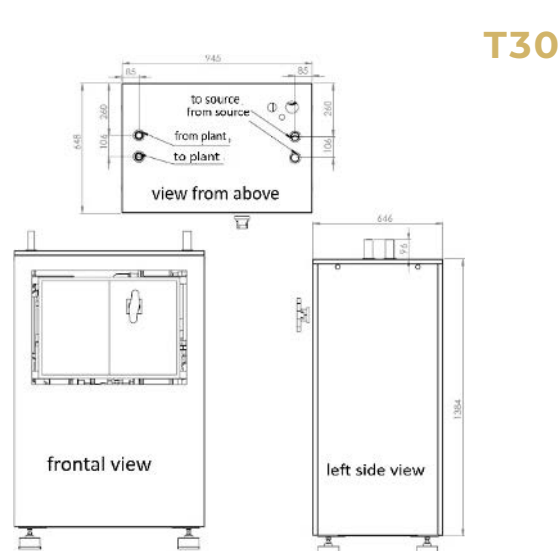
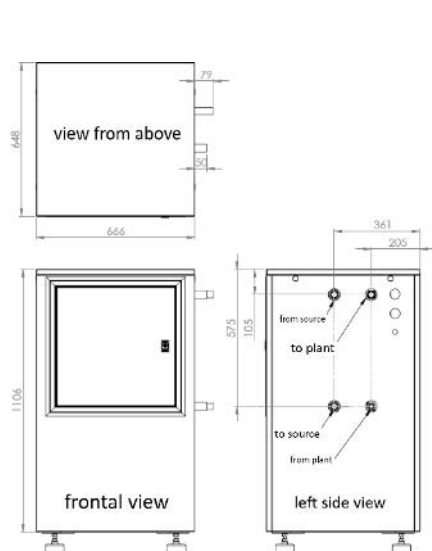


**WATER  
BLAZE**<sup>®</sup>  
TECHNOLOGY

*TEON's WATER BLAZE technology introduces a pushed sub-cooling into the traditional thermodynamic cycle of heat pumps, thanks to which more thermal power is recovered from the natural source to be transferred to the heating system. This results in the overall efficiency maximization. This is done by splitting the isoenthalpic curve into two distinct transformations, one at constant pressure and one at constant temperature, which take place in a recuperator and in a lamination valve respectively*

## TECHNICAL DATA

EFFICIENZA E PRESTAZIONI	U.M.	T10			T30		
<b>HEATING (T models)</b>							
Thermal Power	[kW]	8,6	9,6	7,9	24,4	26,9	21,7
Electric Power	[kW]	1,7	2,5	2,9	4,9	7,00	7,5
COP	[-]	4,94	3,77	2,70	4,99	3,86	2,89
Inlet water temperature from source	[°C]	0	7	7	0	7	7
Outlet water temperature to source	[°C]	-3	4	4	-3	4	4
Inlet water temperature from plant	[°C]	30	50	70	30	50	70
Outlet water temperature to plant	[°C]	35	60	80	35	60	80
Water flow on the source side	[l/s]	0,55	0,56	0,40	1,56	1,59	1,13
Water flow on the plant side	[l/s]	0,41	0,23	0,19	1,17	0,64	0,52
Refrigerant charge (R600a)	[kg]		0,9			2,5	
<b>COOLING (RT models)</b>							
Refrigeration Power	[kW]		9,7			28,4	
Electric Power	[kW]		1,9			5,7	
EER	[-]		5,15			4,99	
Outlet water temperature to source	[°C]		20			20	
Inlet water temperature from source	[°C]		15			15	
Outlet water temperature to plant	[°C]		7			7	
Inlet water temperature from plant	[°C]		12			12	
Water flow on the source side	[l/s]		0,6			1,6	
Water flow on the plant side	[l/s]		0,46			1,36	
Refrigerant charge (R600a)	[kg]		1,2			3,1	



NOTE: For both **T10** and **T30**, the following clearances apply: front and rear 500 mm, side left and right 600 mm and top 500 mm.

TECHNICAL DATA	U.M.	T10	T30
Max nominal electric current	[A]	6,2	15,3
Sound pressure level 1 m (*) (w.o. Acoustic Insulation optional)	[dB(A)]	55	58
Sound pressure level 5 m (*) (w.o. Acoustic Insulation optional)	[dB(A)]	41	44
Sound pressure level 10 m (*) (w.o. Acoustic Insulation optional)	[dB(A)]	35	38
Water circuit load loss on evaporator side	[kPa]	12	10
Water circuit load loss on condenser side	[kPa]	20	48
Power supply	[V/-/Hz]	400/3/50+N (220 V)	400/3/50+N (220 V)
Compressors type	[-]	Alternativo	Alternativo
Partialization (with partialization optional)	[-]	-	75
SIZES AND WEIGHTS	U.M.	T10	T30
Dimensions (L x P x H (**))	[mm]	666 x 648 x 1106	945 x 648 x 1384
Empty weight	[kg]	280	460
Operating weight	[kg]	300	500
Diameter source side hydraulic connections ( <b>T</b> and <b>RT</b> )	[-]	G 1"	G 1 1/4"
Diameter plant side hydraulic connections ( <b>T</b> )	[-]	G 3/4"	G 1"
Diameter plant side hydraulic connections ( <b>RT</b> )	[-]	G 1"	G 1 1/4"
SAFETY	U.M.	T10	T30
Maximum pressure of the refrigerant	[bar]	14	14
F-GAS license need for maintenance	[-]	NO	NO

(\*) The data reported are from free-field measurements.

(\*\*) The quoted height does not take into account the anti-vibration mounts, which would increase the total height by between 60 mm and 110 mm.

# Domestic Residential Range

## AIR VERSION

**TEON Domestic Residential** range in **Air** version consists of natural monobloc air-water natural heat generators for the production of heating and domestic hot water (DHW), with the option of reversibility for summer cooling operation. The **T10** and **T30** models are single-stage, capable of delivering:

- high temperature hot water (min 30°C – max 80°C);
- chilled water at low temperature (min 5°C) – only in the “**RT**” models.

In the *Principal Unit* the compressors used are of the reciprocating type with high energy efficiency. They are developed and optimized for applications with R600a refrigerant, they minimize electrical absorption, vibrations and noise.

The heat exchangers are in AISI 316 stainless steel plates, brazed, with counter-current heat exchange and connections in AISI 304 stainless steel. They are characterized by high thermal efficiency with simultaneous strong turbulence and lower risk of scaling and deposits. Inside the supporting structure equipped with perimeter paneling, there are the main components of the machines: compressor, laminating valve, evaporator, condenser, economizer, measurement and control components, piping and various components in line, on the machine.

The *Outdoor Unit* is made with a galvanized iron frame and pre-painted aluminum and galvanized iron, epoxy powder coated and corrosion resistant. The fans that compose it are axials, three-phase powered, equipped with thermal protection, lubricated for life, statically and dynamically balanced with brushless EC / energy saving.

Inside the supporting structure with perimeter paneling, the main components of the machine are placed:

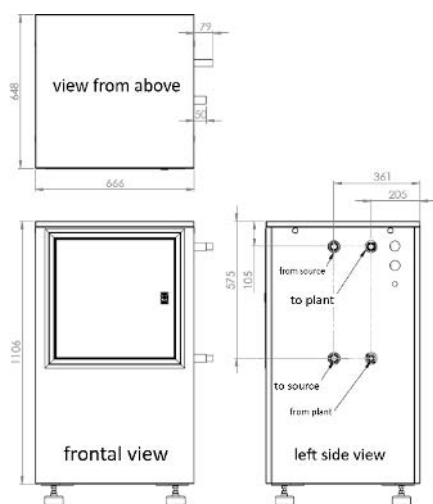
- Compressor
- Expansion valve
- Evaporator
- Condenser
- Economizer
- Measurement and control components
- Piping and various components online
- Machine edge



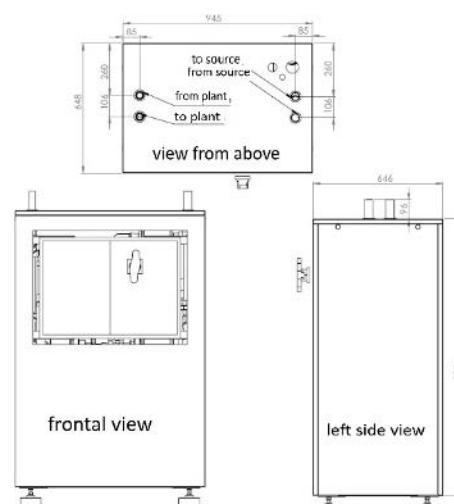
**WATER  
BLAZE**<sup>®</sup>  
TECHNOLOGY

TEON's *WATER BLAZE* technology introduces a pushed sub-cooling into the traditional thermodynamic cycle of heat pumps, thanks to which more thermal power is recovered from the natural source to be transferred to the heating system. This results in the overall efficiency maximization. This is done by splitting the isoenthalpic curve into two distinct transformations, one at constant pressure and one at constant temperature, which take place in a recuperator and in a lamination valve respectively

PERFORMANCE	U.M.	T10			T30		
<b>HEATING (T MODELS)</b>							
OPERATING CONDITIONS	A7/W35	A7/W50	A7/W80	A7/W35	A7/W50	A7/W80	
Thermal Power	[kW]	9	8,1	5,9	25,4	22,6	16
Electric Power	[kW]	2,2	2,8	3,2	6,2	7,00	7,5
COP	[-]	4,1	2,9	1,85	4,12	3,25	2,12
Water flow on the plant side	[l/s]	0,43	0,39	0,14	1,21	1,08	0,38
Refrigerant charge (R600a)	[kg]		0,9			2,5	
<b>COOLING (RT MODELS)</b>							
OPERATING CONDITIONS (UR 50%)		A35/W7			A35/W7		
Refrigeration Power	[kW]	10,5			29,7		
Electric Power	[kW]	2,1			6,5		
EER	[-]	4,93			4,59		
Water flow on the plant side	[l/s]	0,50			1,42		
Refrigerant charge (R600a)	[kg]	0,9			2,5		



T10



T30

NOTE: For both T10 and T30, the following clearances apply: front and rear 500 mm, side left and right 600 mm and top 500 mm.

TECHNICAL DATA	U.M.	T10	T30
<b>PRINCIPAL UNIT</b>			
Max nominal electric current	[A]	6,2	15,3
Sound pressure level 1 m (*) (w.o. Acoustic Insulation optional)	[dB(A)]	55	58
Sound pressure level 5 m (*) (w.o. Acoustic Insulation optional)	[dB(A)]	41	44
Sound pressure level 10 m (*) (w.o. Acoustic Insulation optional)	[dB(A)]	35	38
Water circuit load loss on condenser side	[kPa]	20,3	48
Power supply	[V~/Hz]	400/3/50+N	400/3/50+N
Compressors type	[-]	Alternativo	Alternativo
Partialization (with partialization optional)	[-]	NO	NO
<b>OUTDOOR UNIT</b>			
Number of fans	[-]	1	2
Water flow	[m <sup>3</sup> /h]	1,7	3,5
Max nominal electric current	[kW]	0,7	1,4
Sound pressure level 1 m (*)	[dB(A)]	66	69
Sound pressure level 5 m (*)	[dB(A)]	52	55
Sound pressure level 10 m (*)	[dB(A)]	46	49
<b>SIZES AND WEIGHTS</b>			
<b>PRINCIPAL UNIT</b>			
Dimensions (L x P x H) (**)	[mm]	666 x 648 x 1106	945 x 648 x 1384
Empty weight	[kg]	280	460
Operating weight	[kg]	300	500
Diameter source side hydraulic connections (T and RT)	[-]	G 1"	G 1 1/4"
Diameter plant side hydraulic connections (T)	[-]	G 3/4"	G 1"
Diameter plant side hydraulic connections (RT)	[-]	G 1"	G 1 1/4"
<b>OUTDOOR UNIT</b>			
Dimensions (L x P x H) (**)	[mm]	1130 x 870 x 992	2030 x 870 x 992
Empty weight	[kg]	84	146
Operating weight	[kg]	94	165
Diameter hydraulic connections	[-]	G 1"	G 1 1/2"
<b>SAFETY</b>			
Maximum pressure of the refrigerant	[bar]	14	14
F-GAS license need for maintenance	[-]	NO	NO

(\*) The data reported are from free-field measurements.

(\*\*) The quoted height does not take into account the anti-vibration mounts, which would increase the total height by between 60 mm and 110 mm.

**N.B.** Air-water heat pumps only work if the outside air temperature is 5°C or higher.