

TOSHIBA Leading Innovation >>>



“ Do you want a versatile solution to make significant savings? ”



ESTIA



TOSHIBA AIR CONDITIONING > RESIDENTIAL HEATING > AIR-TO-WATER HEAT PUMP > **ESTIA**

**whatever
you need**

Toshiba ESTIA air-to-water heat pumps are the ideal compact solution for delivering the right temperature. An advanced heating and cooling system of the future, all whilst respecting the environment and ensuring significant energy savings.

➤ THE LATEST HEAT PUMP TECHNOLOGY FROM TOSHIBA

• Energy savings and protection of the environment

The European Union commitment to a 20% reduction in CO₂ emissions by 2020 has highlighted heating and domestic hot water production as a way of meeting this target. Air-to-water heat pumps are considered renewable energy technology, the ideal solutions for space heating, hot water production, and cooling in warmer months — all whilst respecting the environment and ensuring significant energy savings for the end user.

• Best-in class performances even at very low ambient temperature

Both versions of the ESTIA offer outstanding levels of performance, even when outdoor temperatures are very low. This new technology allows the ESTIA to offer greater energy savings, with one of the best part load energy efficiency levels offered on the heat pump market.



ESTIA Split 4 - 16kW



ESTIA Monobloc 17 - 21kW

Created by TOSHIBA - Inverter technology		Created by TOSHIBA - Inverter technology	
A++ COP 4.90 @ +7°C COP 3.01 @ -7°C	Heating operation down to -25°C	A+ COP 4.10 @ +7°C COP 2.51 @ -7°C	Heating operation down to -20°C
Domestic sanitary hot water + 40°C to + 75°C	Group control (up to 8 units)	Direct hot water production up to 60°C	Group control (up to 4 units)



• ESTIA for innovation, control and excellence

The ESTIA can be connected to either a traditional room thermostat, or the latest generation of connected home thermostat in the market, enabling it to be controlled remotely by smartphone, tablet or PC.

• Highly adaptable and flexible

The ESTIA is able to either replace or complement a traditional boiler, and is perfect both for new-builds (standard version) and for renovation projects (powerful version).



➤ REDUCE CO₂ EMISSIONS, CONTROL YOUR COMFORT, AND ENHANCE YOUR SAVINGS

• Full line up from 4 to 20kW

Available as a Split from 4 to 16kW and Monobloc from 16 to 21kW, both offering best in class performance, the ESTIA meets all your needs. Toshiba Inverter technology maintains the indoor environment at precisely the temperature you choose, regulating the heating and cooling capacity at all times by adjusting the compressor speed to demand.

• ESTIA Split hydro unit

The very compact ESTIA hydro unit integrates advanced water temperature control to allow optimised distribution to any types of emitters. ESTIA provides space heating and cooling for one or two zones, and domestic hot water production. A back-up heater (3.6 or 9kW) provides further support for hot water production in extreme outdoor conditions.

• ESTIA Split outdoor unit

The ESTIA Split is a compact, high performance heating and cooling solution, available in Standard and Powerful versions from 4.5 to 16kW, with a brand new 4.5kW standard model, demonstrating outstanding performances in the most compact chassis on the market.

• Domestic hot water tank

The ESTIA tank is a compact stainless steel insulated tank producing domestic hot water for sanitary use. The performance of the overall system is also maximised thanks to the integrated coaxial heat exchanger which uses hot water produced by the heat pump (whenever energy efficient and possible). With the optimised control logic, whenever additional hot water is needed, an internal electric heater is activated. This solution reduces running costs and guarantees a hot water at a constant temperature level.

> FULL FLEXIBILITY

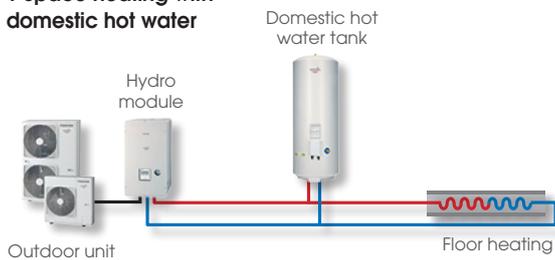
• One system, multiple solutions

The ESTIA Split air-to-water system can be used in new build projects as well as in domestic renovation projects. The ESTIA air-to-water heat pump system can be used with different types of heating/cooling emitters including existing low temperature radiators, under floor heating and fan coil units.

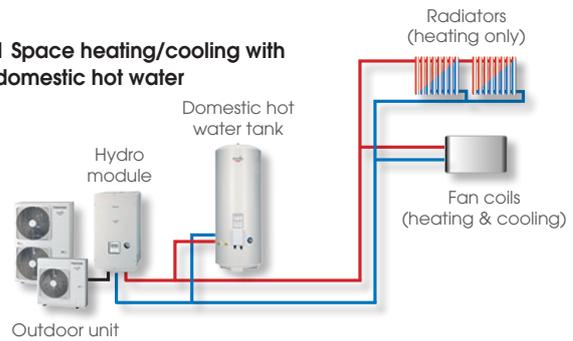
In existing dwellings already equipped with traditional gas or fuel boilers, Toshiba ESTIA air-to-water heat pump systems can be combined with these to cover all year-round heating needs. The boiler can then be used as a backup only, during the coldest of winter days. The Toshiba smart control balances the energy sources exclusively and efficiently leading to reduced energy consumption and heating costs to the end user.

For new houses or refurbishment projects ESTIA heat pumps offer a variety of combinations. Some examples are shown below:

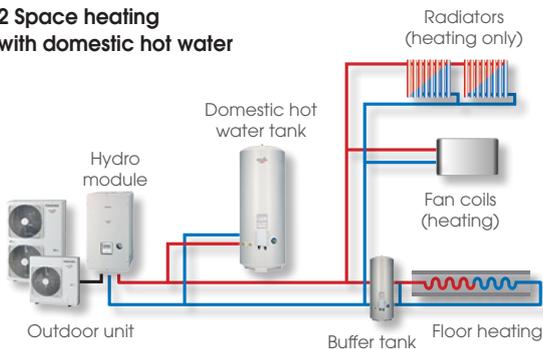
1 Space heating with domestic hot water



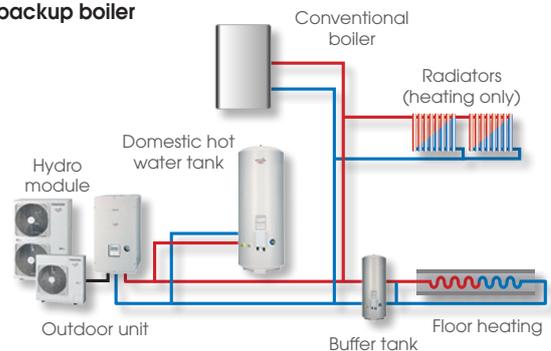
1 Space heating/cooling with domestic hot water



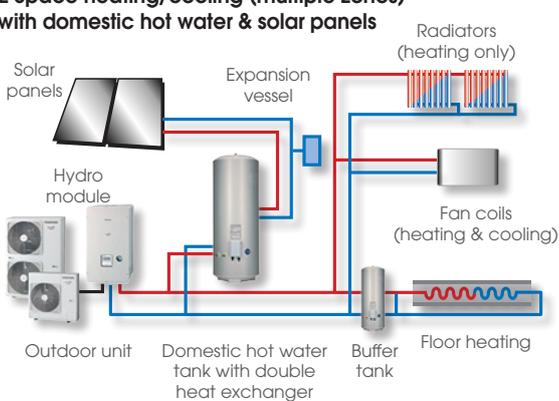
2 Space heating with domestic hot water



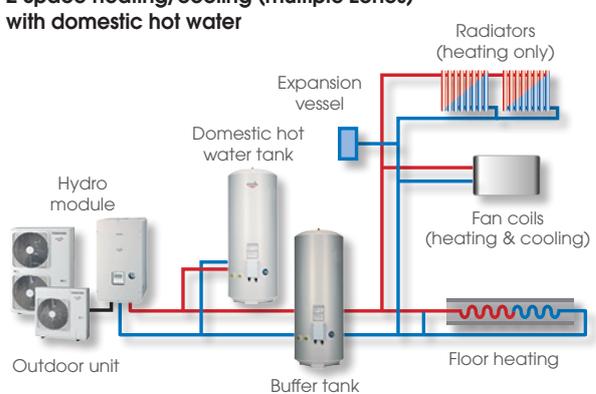
2 Space heating with domestic hot water & backup boiler



2 Space heating/cooling (multiple zones) with domestic hot water & solar panels



2 Space heating/cooling (multiple zones) with domestic hot water



• Easy to install

Quick and easy to install, the hydro module unit can be placed safely in the most suitable place within the house. There is no need for chimney or underground captors which requires additional works on site. The compact outdoor unit can be placed anywhere outside the house, or on a balcony, thanks to extensive piping options.

➤ PLUG & PLAY SOLUTION

• Maximise your control

The new large screen remote controller is simple, intuitive and easy to use. It boasts a stylish design, a backlight, new icons, and a choice of multiple languages. Simple to set up as a second remote, it makes the system a true plug & play solution. The built-in software regulates the water temperature, and optimises the system's energy consumption.

This weekly timer controls the distribution of hot water for up to two zones and to the domestic hot water tank. With up to 10 actions programmable per day for each day (and night) of the week, you really have total control.



In addition to managing operating parameters for two zones in heating mode, the following functions are also available:



Night mode,
automatically reducing the water temperature at night



Quiet mode,
preventing nuisance noise at night, by reducing the sound level of the outdoor unit down to -7 dB(A)



Boost function,
whenever you need domestic hot water quickly



Anti-bacteria control,
regularly increases the temperature in the domestic hot water tank to 75°C for 30 minutes



Frost protection,
ensuring a minimum temperature is maintained at all times to prevent freezing

➤ SAVINGS IN ACTION

• Incentives

Every country to pursue European regulations encourages the heat pump. Grants of tax rebates are calculated using the nominal COP (Coefficient Of Performance) as a reference, with annual efficiency gradually becoming part of the equation. The installation of an ESTIA air-to-water heat pump system, with its best in class nominal COP and with the inverter technology and the DC twin rotary compressor ensuring outstandingly high part load COP, is guaranteed to meet most local government requirements.



➤ ESTIA MONOBLOC 17 - 21Kw

This extension of the ESTIA range is ideal for large heating and cooling applications. This flexible solution allows up to 4 units to be connected in master/slave group control. It is able to connect to a number of BMS communications protocols while the various pump available can significantly reduce the installation time (fixed or variable speed pumps, expansion vessels etc.).

• Compact by definition

With the ESTIA Monobloc, all hydraulic components are combined inside the outdoor unit offering one very compact solution. Available in 17 and 21kW models, the ESTIA Monobloc provides space heating and direct production of hot water. The ESTIA Monobloc has the additional advantage of providing cooling in the warmer season.



High performance

The ESTIA can produce hot water at 60°C, even when outdoor temperatures drop to -10°C, making it a very versatile system.

• Range of hydro module combinations available

A range of hydro module combinations are available, with either a variable speed pump for new buildings or a fixed speed pump for renovation projects with available external static pressure up to 150 kPa, or no pump (for renovation projects where a pump is already installed on-site).

• Large screen remote control

Designed to be intuitive and easy for both end users and installers to use, the stylish, simple design of this remote makes it ideal for installation inside the house. Monobloc outdoor is compatible with most standard communication protocols (JBUS, MODBUS, BACnet and LON). The flexible configuration allows the remote controller to measure room air temperature or system water temperature.



• Direct production of domestic hot water

The installer can choose to set a constant hot water temperature setpoint or use the heating auto curve control allowing the target hot water temperature to be automatically set, based on the outdoor conditions, optimizing the system's energy consumption.



TREAT YOURSELF TO JAPANESE QUALITY

Innovation, efficiency, high reliability, energy savings, respect for the environment... These powerful values are at the heart of everything we do at Toshiba. For over 50 years, Toshiba has been providing its clients with the guaranteed precision and expertise of flawless Japanese quality. Toshiba products are designed to perform, and engineered to perfection.

The Toshiba twin-rotary compressor uses Toshiba advanced technology to ensure best in class performance with low energy consumption. Compared to other multi split systems, this reduce significant cost savings.



ESTIA MONOBLOC 17 - 21kW Performance data

		RUA-CP1701H8	RUA-CP2101H8
Seasonal space heating energy efficiency low temperature			
Energy efficiency class - Low temperature		A+	A+
Seasonal space heating energy efficiency (ηs)	%	144%	140%
SCOP	kW/kW	3.68	3.56
Nominal heating capacity Air +7°C Water 35°C	kW	17.1	21.1
COP	W/W	4.1	4.1
Nominal heating capacity Air +7°C Water 45°C	kW	16.2	20.0
COP	W/W	3.4	3.3
Seasonal space heating energy efficiency mid temperature			
Energy efficiency class - Low temperature		A+	A+
Seasonal space heating energy efficiency (ηs)	%	118	111
SCOP	kW/kW	3.03	2.85
Nominal heating capacity Air +7°C Water 55°C	kW	15.3	19.1
COP	W/W	2.7	2.7
Leaving water temperature	°C	20 ~ 60°C	20 ~ 58°C
Nominal cooling capacity Air +35°C Water 7°C-12°C	kW	14.9	18.6
EER	W/W	3.0	3.1
Leaving water temperature	°C	5 ~ 18°C	5 ~ 18°C

ESTIA MONOBLOC 17 - 21kW Physical data outdoor

Monobloc unit		RUA-CP1701H8	RUA-CP2101H8
Dimensions (HxWxD)	mm	1141x584x1579	1141x584x1579
Weight ⁽¹⁾	kg	191	199
Sound power level ⁽²⁾	dB(A)	71	74
Sound pressure level @10m ⁽³⁾	dB(A)	40	43
Compressor type		DC Twin rotary	DC Twin rotary
Refrigerant		R410A	R410A
Refrigerant charge ⁽¹⁾	kg	8	8
Water connections with hydronic module (inlet - outlet)	inch	1 1/4 - 1	1 1/4 - 1
Water connections without hydronic module (inlet - outlet)	inch	1 - 1	1 - 1
Expansion tank volume	l	8	8
Max water side operating pressure without hydronic module	kPa	1000	1000
Max water side operating pressure with hydronic module ⁽⁴⁾	kPa	300	300
Available static pressure with fixed speed pump	kPa	60-190	60-190
Available static pressure with variable speed pump (100%)	kPa	30-105	40-105
Power supply	V-ph-Hz	360/440-3-50	360/440-3-50

¹ In accordance with standard EN 14511-3:2013

² In accordance with standard EN 14825:2013, Average climate.

⁽¹⁾ Values are guidelines only. Refer to the unit nameplate.

⁽²⁾ In dB ref=10-12 W, (A) weighting. Declared dual number noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). Measured in accordance with ISO 9614-1 and certified by Eurovent.

⁽³⁾ In dB ref 20 μPa, (A) weighting. Declared dual number noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). For information, calculated from the sound power level Lw(A).

⁽⁴⁾ Min. water-side operating pressure with fixed speed hydronic module is 50 kPa and with variable speed hydronic module is 40 kPa. Part load performances ηs & SCOP are including variable speed pump option.

ESTIA SPLIT 4.5 - 16kW Performance data - ESTIA S5 (1-PHASE)

ESTIA S5 (3-PHASE)

ESTIA S5 POWERFULL (1- PHASE)

Outdoor unit	HWS-	455H-E	805H-E	1105H-E	1405H-E	1105H8(R)-E	1405H8(R)-E	1605H8(R)-E	P805HR-E	P1105HR-E
Hydro unit combination	HWS-	455XWHM3-E	805XWH**E	1405XWH**E	1405XWH**E	1405XWH**E	1405XWH**E	1405XWH**E	P805XWH**E	P1105XWH**E
Seasonal space heating energy efficiency low temperature										
Energy efficiency class - Low temperature		A++	A++	A++	A++	A++	A++	A++	A++	A++
Seasonal space heating energy efficiency (η _s)		167%	161%	163%	159%	161%	157%	159%	157%	175%
SCOP		4.25	4.10	4.15	4.05	4.10	4.00	4.05	4.00	4.45
Under floor heating Air +7°C Water 35°C										
Max heating capacity	kW	6.83	8.52	14.63	14.73	16.74	15.77	16.76	16.92	18.05
Nominal heating capacity	kW	4.5	8	11.2	14	11.2	14	16	8.00	11.20
COP		4.9	4.46	4.88	4.5	4.8	4.44	4.3	4.76	4.88
Under floor heating Air -7°C Water 35°C										
Max heating capacity	kW	4.48	5.74	9.67	10.79	9.50	10.64	11.25	11.92	12.79
Heating capacity (1)	kW	4.18	5.00	8.04	8.63	8.04	8.64	9.05	9.38	9.74
COP		3.01	2.7	2.78	2.62	2.79	2.76	2.67	2.67	2.64
Under floor heating Air -15°C Water 35°C										
Max heating capacity	kW	3.61	4.47	7.52	8.34	7.29	8.16	8.63	9.37	11.23
Heating capacity (1)	kW	3.14	4.28	6.57	7.31	6.79	7.3	7.65	7.26	8.06
COP		2.45	2.68	2.5	2.47	2.63	2.6	2.52	2.18	2.18
Radiators heating Air +7°C Water 45°C										
Max heating capacity		6.42	8.13	13.62	13.93	14.26	15.07	15.77	14.00	14.74
Radiators heating Air -7°C Water 45°C										
Max heating capacity		4.37	5.55	9.16	9.17	9.59	10.12	10.64	10.16	10.61
Radiators heating Air -15°C Water 45°C										
Max heating capacity		2.84	4.31	7.12	7.37	7.03	7.75	8.15	8.04	8.13
Radiators heating Air -20°C Water 45°C										
Max heating capacity	kW	-	-	-	-	-	-	-	6.72	7.64
Seasonal space heating energy efficiency mid temperature										
Energy efficiency class - Medium temperature		A++	A++	A++	A++	A++	A++	A++	A++	A++
Seasonal space heating energy efficiency (η _s)		125%	127%	130%	129%	130%	129%	130%	125%	131%
SCOP		3.20	3.25	3.33	3.30	3.33	3.30	3.33	3.20	3.35
Radiators heating Air +7°C Water 55°C										
Max heating capacity	kW	6.25	7.93	10.98	12.56	11.67	13.64	14.12	11.08	11.43
Radiators heating Air -7°C Water 55°C										
Max heating capacity	kW	4.29	5.29	8.83	8.92	8.93	9.76	10.22	8.40	8.42
Nominal cooling capacity Air +35°C Water 7°C										
EER	W/W	3.08	3.10	3.07	2.89	3.07	2.89	2.71	3.66	3.00

Max heating capacities are shown at peak value during operation, at max compressor operating range in accordance with EN14511.

Nominal heating capacity are given at water delta T° 5°C and rated compressor operating frequency in accordance with EN14511.

(1) Heating capacity at -7°C shown at max compressor operating frequency in accordance with EN14511.

Energy efficiencies class & seasonal space heating energy efficiency (η_s) are provided for average climate conditions in accordance with EN14825.

ESTIA SPLIT 4.5 - 16kW Physical data outdoor - ESTIA S5 (1-PHASE)

ESTIA S5 (3-PHASE)

ESTIA S5 POWERFULL (1-PHASE)

Outdoor unit	HWS-	455H-E	805H-E	1105H-E	1405H-E	1105H8-E	1405H8-E	1605H8-E	P805HR-E	P1105HR-E
Dimensions (HxWxD)	mm	630x800x300	890x900x320	1340x900x320						
Weight	kg	42	63	92	92	93	93	93	92	92
Sound pressure level (max)	dB(A)	48	49	49	51	49	51	52	49	49
Sound power level (max)	dB(A)	65	64	66	68	66	68	69	66	66
Compressor type		DC Twin rotary								
Refrigerant		R410A								
Refrigerant charge (1)	kg	1.15	1.80	2.70	2.70	2.70	2.70	2.70	2.70	2.70
Flare connections (gas-liquid)		4/8" - 2/8"	5/8" - 3/8"	5/8" - 3/8"	5/8" - 3/8"	5/8" - 3/8"	5/8" - 3/8"	5/8" - 3/8"	5/8" - 3/8"	5/8" - 3/8"
Minimum pipe length	m	5	5	5	5	5	5	5	5	5
Maximum pipe length	m	15	30	30	30	30	30	30	30	30
Maximum height difference	m	10	30	30	30	30	30	30	30	30
Chargeless pipe length	m	15	30	30	30	30	30	30	30	30
Operating range in space heating*	°C	-20-25	-20-25	-20-25	-20-25	-20-25	-20-25	-20-25	-25-25	-25-25
Operating range domestic hot water	°C	-20-43	-20-43	-20-43	-20-43	-20-43	-20-43	-20-43	-25-43	-25-43
Operating range in cooling	°C	10-43	10-43	10-43	10-43	10-43	10-43	10-43	10-43	10-43
Bottom tape heater power	W	-	-	-	-	75	75	75	75	75
Power supply	V-ph-Hz	220/230-1-50	220/230-1-50	220/230-1-50	220-230-1-50	380/400-3N-50	380/400-3N-50	380/400-3N-50	220/230-1-50	220/230-1-50

* Depending on the conditions only back-up heater operates. (1) Values are guidelines only. Refer to the unit nameplate.

ESTIA SPLIT 4.5 - 16kW Physical data hydro unit - ESTIA S5

ESTIA S5 POWERFULL

Hydro unit	HWS-	455XWHM3-E	805XWHM3-E	805XWHT6-E 805XWHT9-E	1405XWHM3-E	1405XWHT6-E 1405XWHT9-E	P805XWHM3-E	P805XWHT6-E P805XWHT9-E	P1105XWHM3-E	P1105XWHT6-E P1105XWHT9-E
To be used with size		45	80	80	110-140-160	110-140-160	80	80	110	110
Leaving water temperature heating	°C	20 ~ 55°C	20 ~ 55°C	20 ~ 55°C	20 ~ 55°C	20 ~ 55°C	20 ~ 60°C	20 ~ 60°C	20 ~ 60°C	20 ~ 60°C
Leaving water temperature cooling	°C	7 ~ 25°C	7 ~ 25°C	7 ~ 25°C	7 ~ 25°C	7 ~ 25°C	7 ~ 25°C	7 ~ 25°C	7 ~ 25°C	7 ~ 25°C
Dimensions (HxWxD)	mm	925x525x355	925x525x355	925x525x355	925x525x355	925x525x355	925x525x355	925x525x355	925x525x355	925x525x355
Weight	kg	49	49	49	52	52	49	49	52	52
Sound pressure level	dB(A)	27	27	27	29	29	27	27	29	29
Electric back up heater capacity	kW	3	03/06/09	6	3	6	3	6	3	6
Electric back up heater supply	V-ph-Hz	220-230-1-50	220-230-1-50	380-400-3N-50	220-230-1-50	380-400-3N-50	220-230-1-50	380-400-3N-50	220-230-1-50	380-400-3N-50
Maximum current	A	13	13	13x2 / 13x3	13	13x2 / 13x3	13	13x2 / 13x3	13	13x2 / 13x3



TOSHIBA Air Conditioning participates to the ECP program for European heat pumps. Check ongoing validity of certificate: www.eurovent-certification.com



Better Air Solutions