

# Renewable Energy Solutions From MIBEC LTD

Eco - Combi Range

Specifications



**ECO-COMBI 1**  
 MULTI-HEAT ENERGY BUFFER ECO-COMBI 1 WITH STAINLESS STEEL 316L D.H.W.  
 CORRUGATED PIPE



Capacity	ECO-COMBI 1		Heating water volume	DHW volume	DHW corrugated pipe surface	Weight
[liters]	ART. NR.		[lt]	[lt]	[m <sup>2</sup> ]	[Kg]
600	3270162286001		527	31	5,3	95
800	3270162286002		770	33,4	5,8	116
1000	3270162286003		897	45,5	7,8	167
1250	3270162286004		1200	45,5	7,8	180
1500	3270162286005		1372	55,3	9,5	235
2000	3270162286006		1885	72,2	12,3	343

BUFFER		CORRUGATED D.H.W. STAINLESS STEEL PIPE
Pmax	Tmax	Pmax
3 bar	99°C	6 bar



**Application**

Production and Storage of heating water instant production of sanitary water. Used to improve reaction flexibility of pellets, stoves and burners.

**Technical descriptions**

Eco Combi 1 can be used in

- Heating system with a biomass generator as energy source, combining the possibility to produce hot water for sanitary use. In such case, storage heating volume allows the generator to regularly work, limiting number of stops due to the inadequate energy request of the heating system. Moreover, it limits the emission of smoke and the creation of corrosive condensate (smokes side), being a thermal range that will increase the working comfort results.
- Sanitary hot water production systems for domestic and sanitary use where heating water is stored. In this system, the high potentiality of the Eco Combi allows to obtain a good production of hot sanitary water even if temperatures of the primary system

are not so high (i.e using heating pumps as primary source and solar source as support)

Being connected to the heating system the buffer tank doesn't need any anti-corrosion treatment, therefore it is in carbon steel, the internal corrugated coil is in stainless steel 316L and it is suitable for drinking water in accordance with D.M. n.174 del 06.04.04

The particular shape of the internal exchanger is avoiding any problem relating to the storage of sanitary hot water (less, stagnation, bacterium etc) and ensure high heating exchange performances.

In fact, as the internal exchanger is made by a continuous conduction of spiral pipes, the renewed water is ensured on each delivery.

**Material**

Buffer in carbon steel, raw inside, painted outside.  
 D.H.W. corrugated coil in stainless steel 316L.

**Insulation**

100 mm soft polyester fibre with high Thermal insulation with

Thermal conductivity: 0.035 W/mK. Fire resistance class B-s2d0 according to EN 13501.

Grey PVC external lining complete with top and flange cover.

**External lining**

SCAI grey RAL 9006. Top and flange cover.

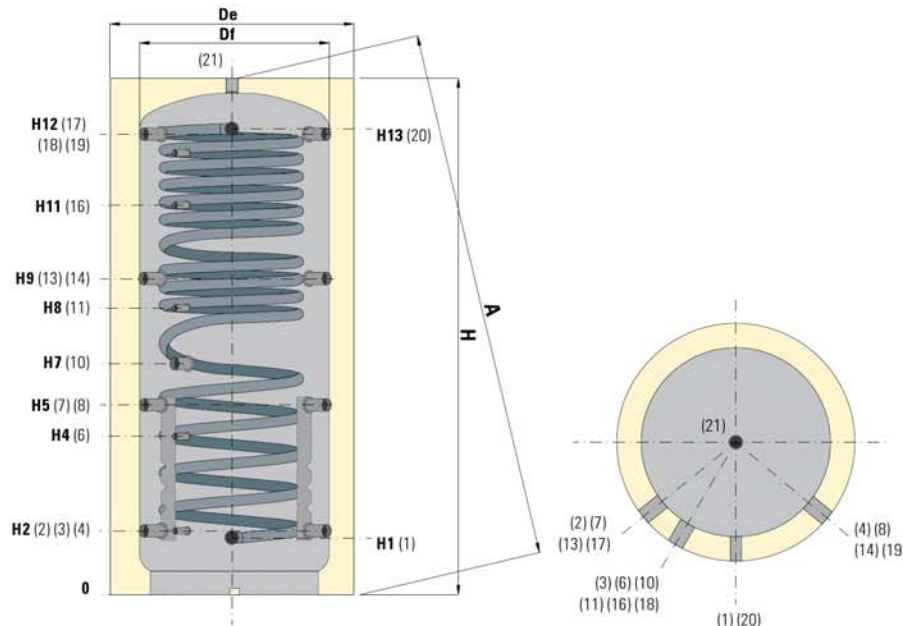
**Heat exchangers:**

1 D.H.W. corrugated coil in stainless steel 316L.

**Warranty**

Buffer 2 years  
 Stainless steel coil : 5 Years  
 See general sales terms and conditions

Accessories for circulation kit are available – see page 74



CONNECTIONS	
1	Domestic Cold Water Circuit Inlet 1" Gas M
2 - 4	Heating return/To Generator 1" 1/2 Gas F
3	Connection for instrumentation 1/2" Gas F
6	
7 - 8	Heating return/To Generator 1" 1/2 Gas F
10	Connection for electrical immersion 1" 1/2 Gas F
11	Connection for instrumentation 1/2" Gas F
13 - 14	Heating return/To Generator / Heating delivery 1" 1/2 Gas F
16	Connection for instrumentation 1/2" Gas F
17 - 19	Heating delivery/From Generator 1" 1/2 Gas F
21	
18	Connection for instrumentation 1/2" Gas F
20	Domestic Hot Water Circuit Outlet 1" Gas M

Capacity	Df	De	H	A	H1	H2	H4	H5	H7	H8	H9	H11	H12	H13
[liters]	[mm]													
600	650	850	1920	1945	230	247	582	695	915	1060	1144	1382	1593	1610
800	790	990	1890	1925	248	265	584	690	823	988	1115	1332	1541	1558
1000	790	990	2180	2210	248	265	656	787	1013	1188	1309	1588	1831	1843
1250	900	1100	2252	2292	296	313	705	835	986	1168	1357	1586	1879	1896
1500	950	1150	2300	2345	296	313	736	845	1061	1286	1377	1653	1909	1921
2000	1100	1300	2370	2430	330	347	770	879	1060	1300	1411	1687	1943	1955

P.E.D. product planned and produced in conformity to the article 3.3 of directive 92/23/CEE

# ECO-COMBI 2

MULTI-HEAT ENERGY BUFFER ECO-COMBI 2 WITH 1 FIX COILS AND STAINLESS STEEL 316L D.H.W. CORRUGATED PIPE



Capacity	ECO-COMBI 2		Heating water volume	DHW volume	DHW Corrugated pipe surface	Fix coil volume	Fix coil surface	Weight
[liters]	ART. NR.		[lt]	[lt]	[m <sup>2</sup> ]	[lt]	[m <sup>2</sup> ]	[Kg]
600	3270162286101		511	31	5,3	13	2	118
800	3270162286102		750	33,4	5,8	16,3	2,5	142
1000	3270162286103		872	45,5	7,8	20,7	3,1	202
1250	3270162286104		1174	45,5	7,8	20,7	3,4	216
1500	3270162286105		1341	55,3	9,5	25,3	3,8	278
2000	3270162286106		1848	72,2	12,3	29,6	4,5	394



**PROMPT DELIVERY**  
Grey highlighted products are dispatched in 1-5 working days. (Delivery time excluded)



BUFFER		CORRUGATED D.H.W. STAINLESS STEEL PIPE	FIX COIL	
Pmax	Tmax	Pmax	Pmax	Tmax
3 bar	99°C	6 bar	12 bar	110°C

### Application

Production and Storage of hot water (heating) instant production of sanitary water. Used to improve reaction flexibility of pellets, stoves and burners.

### Technical descriptions

Eco Combi 2 can be used in

- Heating system 2 generators as energy source (biomass and solar thermal) , combining the possibility to produce hot water for sanitary use. In such case , storage heating volume allows the generator to regularly work , limiting number of stops due to the inadequate energy request of the heating system. Moreover, it limits the emission of smoke and the creation of corrosive condensate (smokes side), being a thermal range that will increase the working comfort results.
- Sanitary hot water production systems for domestic and sanitary use where heating water is stored. In this system , the high potentiality of the Eco Combi allows to obtain a good production of hot sanitary water even if temperatures of the primary system

are not so high (i.e using heating pumps as primary source and solar source as support)

Being connected to the heating system the buffer tank doesn't need any anti-corrosion treatment, therefore it is in carbon steel, the internal corrugated coil is in stainless steel 316L and it is suitable for drinking water in accordance with D.M. n.174 del 06.04.04

The particular shape of the internal exchanger is avoiding any problem relating to the storage of sanitary hot water (less stagnation, bacterium etc ) and ensure high heating exchange performances.

In fact , as the internal exchanger is made by a continuous conduction of spiral pipes , the renewed water is ensured on each delivery.

### Material

Buffer in carbon steel , raw inside, painted outside .  
D.H.W. corrugated coil in stainless steel 316L

### Insulation

100 mm soft polyester fibre with high Thermal insulation with

Thermal conductivity: 0.035 W/mK. Fire resistance class B-s2d0 according to EN 13501.

### External lining

Grey PVC external lining complete with top cover.

### Heat exchangers:

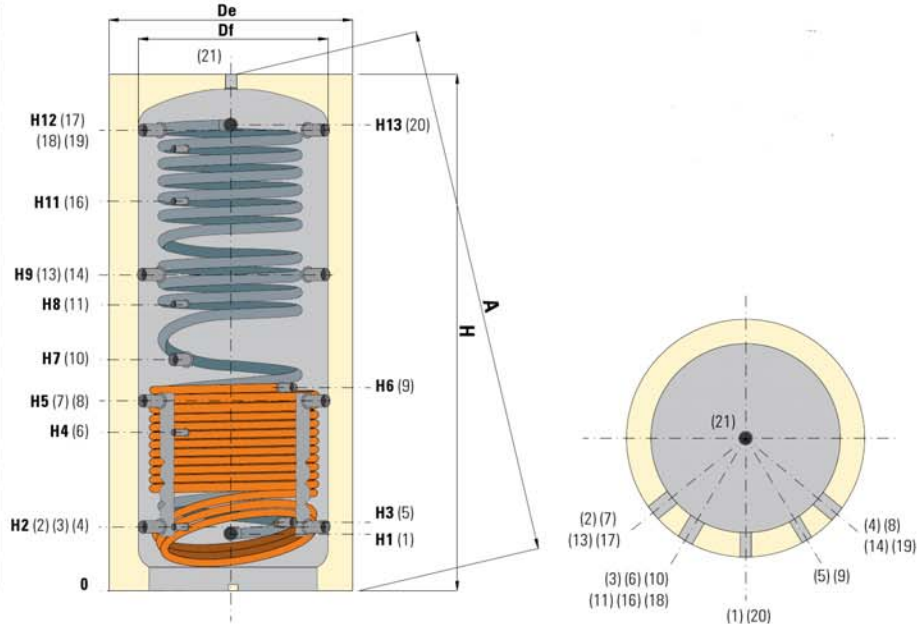
- 1 carbon steel fix coil for primary water.
- 1 D.H.W. corrugated coil in stainless steel 316L.

### Warranty

Buffer 2 years  
Stainless steel coil : 5 Years  
See general sales terms and conditions

Accessories for circulation kit are available – see page 74

CONNECTIONS	
1	Domestic Cold Water Circuit Inlet 1" Gas M
2 - 4	Heating return/To Generator 1"1/2 Gas F
3	Connection for instrumentation 1/2" Gas F
5	Fix lower heat exchanger outlet 1" Gas F
6	Connection for instrumentation 1/2" Gas F
7-8	Heating return/To Generator 1"1/2 Gas F
9	Fix lower heat exchanger inlet 1" Gas F
10	Connection for electrical immersion 1" 1/2 Gas F
11	Connection for instrumentation 1/2" Gas F
13-14	Heating return/To Generator / Heating delivery 1"1/2 Gas F
16	Connection for instrumentation 1/2" Gas F
17-19-21	Heating delivery/From Generator 1"1/2 Gas F
18	Connection for instrumentation 1/2" Gas F
20	Domestic Hot Water Circuit Outlet 1" Gas M



Capacity	Df	De	H	A	H1	H2	H3	H4	H5	H6	H7	H8	H9	H11	H12	H13
[liters]	[mm]															
600	650	850	1920	1945	230	247	260	582	695	855	915	1060	1144	1382	1593	1610
800	790	990	1890	1925	248	265	278	584	690	762	823	988	1115	1332	1541	1558
1000	790	990	2180	2210	248	265	284	656	787	953	1013	1188	1309	1588	1831	1843
1250	900	1100	2252	2292	296	313	326	705	835	884	986	1168	1357	1586	1879	1896
1500	950	1150	2300	2345	296	313	336	736	845	1006	1061	1286	1377	1653	1909	1921
2000	1100	1300	2370	2430	330	347	370	770	879	1001	1060	1300	1411	1687	1943	1955

# ECO-COMBI 3

MULTI-HEAT ENERGY BUFFER ECO-COMBI 3 WITH 2 FIX COILS AND STAINLESS STEEL 316L D.H.W. CORRUGATED PIPE



Capacity	ECO-COMBI 3		Net volume storage	DHW volume	DHW Corrugated pipe surface	Lower Fix coil volume	Lower Fix coil surface	Upper Fix coil volume	Upper Fix coil surface	Weight
[liters]	ART. NR.		[lt]	[lt]	[m <sup>2</sup> ]	[lt]	[m <sup>2</sup> ]	[lt]	[m <sup>2</sup> ]	[Kg]
600	3270162286201		503	31	5,3	13	2	8	1,25	132
800	3270162286202		738	33,4	5,8	16,3	2,5	11,8	1,8	165
1000	3270162286203		855	45,5	7,8	20,7	3,1	16,3	2,5	231
1250	3270162286204		1131	45,5	7,8	20,7	3,4	16,3	2,5	244
1500	3270162286205		1324	55,3	9,5	25,3	3,8	16,8	2,8	307
2000	3270162286206		1829	72,2	12,3	29,6	4,5	19,1	2,8	427

BUFFER		CORRUGATED D.H.W. STAINLESS STEEL PIPE	FIX COIL	
Pmax	Tmax	Pmax	Pmax	Tmax
3 bar	99°C	6 bar	12 bar	110°C



**PROMPT DELIVERY**  
Grey highlighted products are dispatched in 1-5 working days. (Delivery time excluded)

### Application

Production and Storage of hot water (heating) instant production of sanitary water. Used to improve reaction flexibility of pellets, stoves and burners.

### Technical descriptions

Eco Combi 3 can be used in

- Heating system with 3 generators as energy source (biomass, solar thermal and traditional boiler), combining the possibility to produce hot water for sanitary use. In such case, storage heating volume allows the generator to regularly work, limiting number of stops due to the inadequate energy request of the heating system. Moreover, it limits the emission of smoke and the creation of corrosive condensate (smokes side), being a thermal range that will increase the working comfort results.
- Sanitary hot water production systems for domestic and sanitary use where heating water is stored. In this system, the high potentiality of the Eco Combi allows to obtain a good production of hot sanitary water even if temperatures of the primary system

are not so high (i.e using heating pumps as primary source and solar source as support)

Being connected to the heating system the buffer tank doesn't need any anti-corrosion treatment, therefore it is in carbon steel, the internal corrugated coil is in stainless steel 316L and it is suitable for drinking water in accordance with D.M. n.174 del 06.04.04

The particular shape of the internal exchanger is avoiding any problem relating to the storage of sanitary hot water (less, stagnation, bacterium etc) and ensure high heating exchange performances.

In fact, as the internal exchanger is made by a continuous conduction of spiral pipes, the renewed water is ensured on each delivery.

### Material

Buffer in carbon steel, raw inside, painted outside.  
D.H.W. corrugated coil in stainless steel 316L

### Insulation

100 mm soft polyester fibre with high Thermal insulation with

Thermal conductivity: 0.035 W/mK. Fire resistance class B-s2d0 according to EN 13501.

### External lining

Grey PVC external lining complete with top cover.

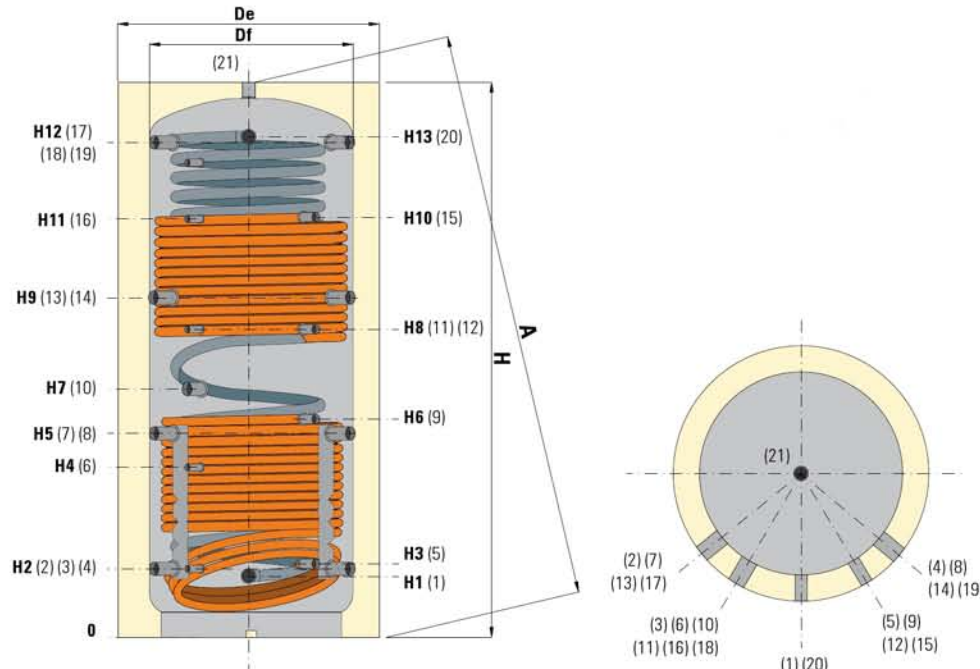
### Heat exchangers:

- 2 carbon steel fix coils for primary water.
- 1 D.H.W. corrugated coil in stainless steel 316L.

### Warranty

Buffer 2 years  
Stainless steel coil : 5 Years  
See general sales terms and conditions

Accessories for circulation kit are available – see page 74



CONNECTIONS	
1	Domestic Cold Water Circuit Inlet 1" Gas M
2 - 4	Heating return/To Generator 1 1/2" Gas F
3	Connection for instrumentation 1/2" Gas F
5	Fix lower heat exchanger outlet 1" Gas F
6	Connection for instrumentation 1/2" Gas F
7-8	Heating return/To Generator 1 1/2" Gas F
9	Fix lower heat exchanger inlet 1" Gas F
10	Connection for electrical immersion 1 1/2" Gas F
11	Connection for instrumentation 1/2" Gas F
12	Fix upper heat exchanger outlet 1" Gas F
13-14	Heating return/To Generator / Heating delivery 1 1/2" Gas F
15	Fix upper heat exchanger inlet 1" Gas F
16	Connection for instrumentation 1/2" Gas F
17-19-21	Heating delivery/From Generator 1 1/2" Gas F
18	Connection for instrumentation 1/2" Gas F
20	Domestic Hot Water Circuit Outlet 1" Gas M

Capacity	Df	De	H	A	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13
[liters]					[mm]												
600	650	850	1920	1945	230	247	260	582	695	855	915	1060	1144	1361	1382	1593	1610
800	790	990	1890	1925	248	265	278	584	690	762	823	988	1115	1302	1332	1541	1558
1000	790	990	2180	2210	248	265	284	656	787	953	1013	1188	1309	1661	1588	1831	1843
1250	900	1100	2252	2292	296	313	326	705	835	884	986	1168	1357	1641	1586	1879	1896
1500	950	1150	2300	2345	296	313	336	736	845	1006	1061	1286	1377	1673	1653	1909	1921
2000	1100	1300	2370	2430	330	347	370	770	879	1001	1060	1300	1411	1687	1687	1943	1955

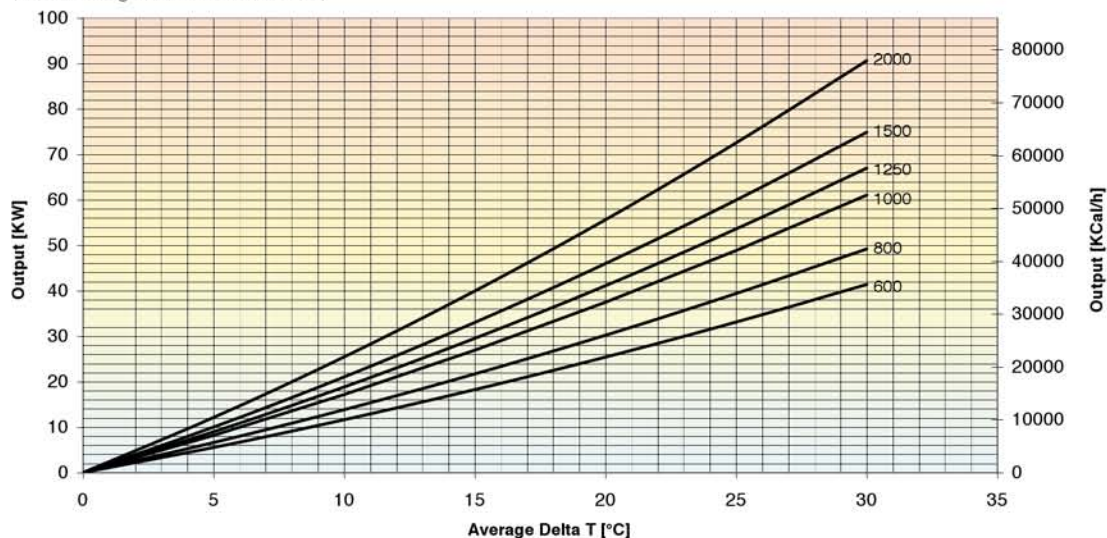
# ECO-COMBI 1 - 2 - 3 D.H.W. HEAT EXCHANGER TECHNICAL PERFORMANCES

Capacity	Heating Water Volume	DHW volume	DHW corrugated pipe surface	COMPLETE HEATED STORAGE VOLUME		UPPER PART HEATED STORAGE VOLUME	
				Max sanitary water produced from 10°C to 45°C with storage at 65°C and boiler on	Max sanitary water produced from 10°C to 45°C with storage at 65°C and boiler off	Max sanitary water produced from 10°C to 45°C with storage at 65°C and boiler on	Max sanitary water produced from 10°C to 45°C with storage at 65°C and boiler off
[lt]	[lt]	[lt]	[m <sup>2</sup> ]	[lt/min]	[lt]	[lt/min]	[lt]
600	503	31	5,3	34	10 lt/min: 400 lt	18	10 lt/min: 115 lt
					25 lt/min: 257 lt		25 lt/min: 85 lt
800	738	33,4	5,8	37	10 lt/min: 587 lt	23	10 lt/min: 218 lt
					25 lt/min: 377 lt		25 lt/min: 160 lt
1000	855	45,5	7,8	50	10 lt/min: 800 lt	27	10 lt/min: 294 lt
					25 lt/min: 541 lt		25 lt/min: 216 lt
1250	1131	45,5	7,8	50	10 lt/min: 922 lt	28	10 lt/min: 310 lt
					25 lt/min: 592 lt		25 lt/min: 230 lt
1500	1324	55,3	9,5	57	10 lt/min: 1194 lt	34	10 lt/min: 345 lt
					25 lt/min: 735 lt		25 lt/min: 258 lt
2000	1829	72,2	12,3	74	10 lt/min: 1657 lt	44	10 lt/min: 463 lt
					25 lt/min: 1142 lt		25 lt/min: 340 lt

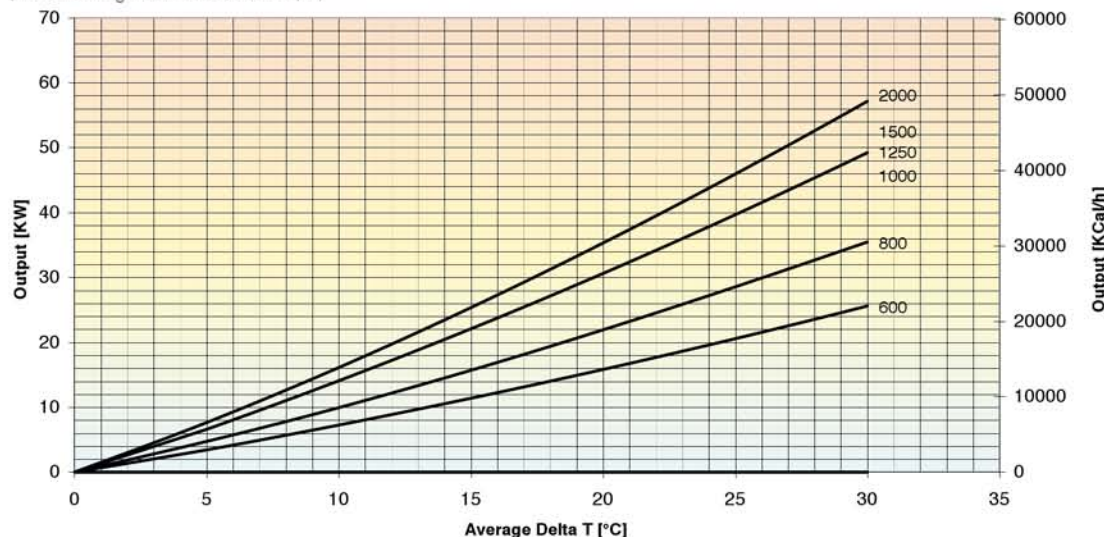
## POWERS OF FIXED HEAT EXCHANGER FOR ECO-COMBI 2 AND ECO-COMBI 3

Thermal output are given in both KW and kcal/h in terms of average temperature difference between primary and secondary circuit, all for a range of primary 3 m<sup>3</sup>/h. For example, a Eco Combi2 of 1000 liters Capacity with a water flow of 3 m<sup>3</sup>/h at 80 °C inlet and outlet at 70 °C, has on the storage of water an average temperature of 60 °C, the mean difference of temperature will be (80 +70) / 20-60 = 15 °C and therefore you can exchange up to approximately 29,9 KW.

Output of the lower heat exchangers **ECOCOMBI 2 AND 3** depending on the average DeltaT between primary and accumulation (considering flow rate at 3 m<sup>3</sup>/h)



Output of the upper heat exchangers **ECO COMBI 3** depending on the average Delta T between primary and accumulation (considering flow rate at 3 m<sup>3</sup>/h)



BUFFER TANKS