dal 1968

Pacetti

SCAMBIATORI - BOLLITORI - SERBATOI

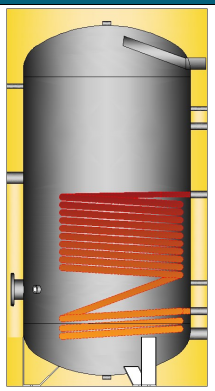
BMN-V

DHW CALORIFIER
WITH SINGLE OR TWIN BUILT-IN SPIRAL COILS

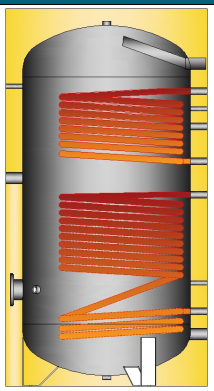
Cooke Industries - Phone: +64 9 579 2185 Email: sales@cookeindustries.co.nz Web: www.cookeindustries.co.nz

Water heaters for DHW production and storage designed for connection to solar systems and other energy sources, if any. **BMN-V** range tanks are made of glass-enameled steel according to DIN 4753.3 and are equipped with fixed spiral coils to get the highest heating exchange surface in relation to the storage capacity.
The **BMN1-V** model is equipped with a single spiral coil which allows the discontinuous energy supplied by the solar panels to be exploited in the best possible manner.
The **BMN2-V** model is equipped with a single spiral coil to be connected to the solar panels and a second spiral coil to be connected to an additional energy source, either conventional or renewable type, serving as a booster when the solar energy source is available or as a single supply during the periods in which the solar energy source is unable to satisfy the request.
Thermal insulation ensures minimum heat loss, keeping the temperature of the water stored inside the tank constant. This results in a reduced number of start-ups of heating generators connected, leading to operating costs reduction and increased reliability. Insulations are factory made: the external cladding can be choosen between PVC –suitable for indoor installation only– and embossed aluminium sheet –suitable for indoor and outdoor insallation.

CONSTRUCTION



BMN1-V



BMN2-V

	BMN1-V	BMN2-V
TANK MATERIAL	Carbon steel	Carbon steel
SPIRAL COIL MATERIAL	Carbon steel	Carbon steel
STEEL TREATMENT: • INTERNAL SURFACE - TANK • EXTERNAL SURFACE - COIL	Glass-enamelling (acc. to DIN 4753.3)	Glass-enamelling (acc. to DIN 4753.3)
STEEL TREATMENT: • EXTERNAL SURFACE - TANK	Anti-rust primer	Anti-rust primer
CAPACITY	150÷2000 L	200÷2000 L
VERSION	Vertical	Vertical
CONNECTION TYPE	Threaded	Threaded
INSULATION | 150÷500 L	**Hard foam polyurethane** 75mm injected	**Hard foam polyurethane** 75mm injected
INSULATION | 800÷2000 L	**PLFH** 100 mm High density eco-friendly polyester fiber	**PLFH** 100 mm High density eco-friendly polyester fiber
CLADDING	Light grey PVC RAL7035	Light grey PVC RAL7035
ANODE TYPE	MAGNESIUM	MAGNESIUM
ACCESSORIES (factory fitted)	Thermometer / Adjustable feet 150÷500 L	Thermometer / Adjustable feet 150÷500 L

Energy efficiency class - Regulation 812/2013 & 814/2013 | European Directive 2009/125/CE

				Capacity– L	150	200	300	500	800	1000	1500	2000
	Energy efficiency class				A	B	B	B	C	C	C	C
BMN1-V	Standing loss	S	W		40	50	65	77	128	138	165	187
	Storage volume	V	litri		152	205	299	492	762	884	1462	1993
	Energy efficiency class					B	B	B	C	C	C	C
BMN2-V	Standing loss	S	W			51	65	77	128	139	165	187
	Storage volume	V	litri			198	294	487	755	875	1450	1980

STANDARD WORKING CONDITIONS

	Capacity– L	150	200	300	500	800	1000	1500	2000
Tank working pressure	bar	ATM÷8	ATM÷8	ATM÷8	ATM÷8	ATM÷10	ATM÷10	ATM÷10	ATM÷10
Coils working pressure	bar	ATM÷10	ATM÷10	ATM÷10	ATM÷10	ATM÷10	ATM÷10	ATM÷10	ATM÷10
Tank working temperature	°C	AMB÷95	AMB÷95	AMB÷95	AMB÷95	AMB÷95	AMB÷95	AMB÷95	AMB÷95
Coils working temperature	°C	AMB÷110	AMB÷110	AMB÷110	AMB÷110	AMB÷110	AMB÷110	AMB÷110	AMB÷110

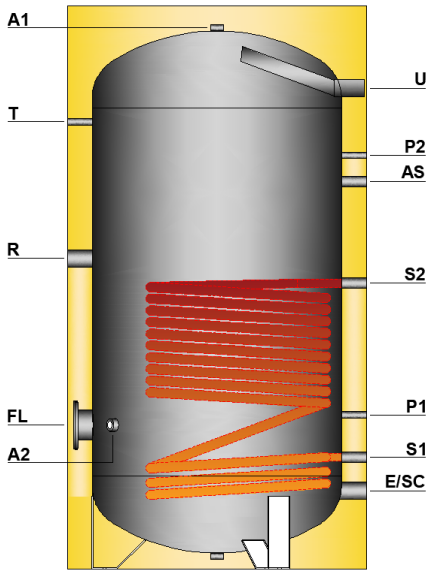
REGULATORY COMPLIANCE

ErP - Reg. 812/2013 & Reg. 814/2013 | European Directive 2009/125/CE

European Pressure Equipment Directive (PED) 2014/68/EU | SEP (Sound Engineering Practice) - exclusion from CE marking - Art. 4.3

D.M. 174/04 or Reg. (CE) 1935/04 | Compatible with potable water

DHW CALORIFIER WITH SINGLE OR DOUBLE BUILT-IN SPIRAL COILS

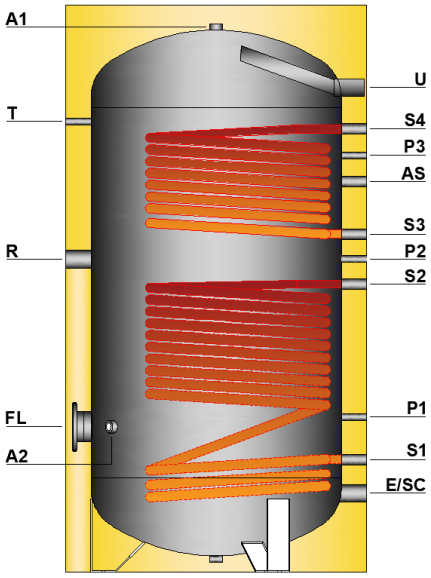


GENERAL CHARACTERISTICS - SINGLE COIL - BMN1-V

		Capacity - L	150	200	300	500	800	1000	1500	2000
DIMENSIONS										
Diameter without insulation		mm	450	500	550	650	800	800	1000	1200
Diameter with insulation		mm	610	650	700	805*	1000	1000	1200	1400
Maximum height		mm	1220	1320	1550	1805	1854	2104	2265	2245
Overturning height with | without insulation		mm	1360	1470	1700	1970	2100 | 1850	2300 | 2100	2550 | 2250	2650 | 2300
CONNECTIONS										
E/SC	Cold water inlet / Drain	mm | Ø	96 | ¾"	132 | 1"	135 | 1"	143 | 1"	235 | 1"¼	235| 1"¼	315 | 2"	445| 2"
U	Hot water outlet	mm | Ø	1062 | ¾"	1177| 1"	1395| 1"	1633| 1"	1575 | 1"¼	1825| 1"¼	1935 | 2"	1815| 2"
R	Immersion electric heater	mm | Ø	726 | 1"½	808 | 1"½	1005 | 1"½	1096 | 1"½	985 | 2"	1165 | 2"	1250 | 2"	1240 | 2"
P1	Sensor	mm | Ø	322|12,4mm	443|12,4mm	525|12,4mm	536|12,4mm	440 | ½"	440 | ½"	620 | ½"	740 | ½"
P2	Sensor	mm | Ø	782|12,4mm	838|12,4mm	1045|12,4mm	1143|12,4mm	1360 | ½"	1575 | ½"	1665 | ½"	1605 | ½"
AS	Spare / Recirculation	mm | Ø	592 | ¾"	608 | ¾"	815 | ¾"	913 | ¾"	1250 | 1"	1465 | 1"	1560 | 1"	1505 | 1"
T	Thermometer	mm | Ø	949|12,4mm	1058|12,4mm	1247|12,4mm	1472|12,4mm	1464 | ½"	1715 | ½"	1800 | ½"	1710 | ½"
A1	Anode	Ø mm	2"	2"	2"	2"	1"¼	1"¼	1"¼	1"¼
A2	Anode	mm | Ø	-	-	-	-	395 | 1"¼	395 | 1"¼	580 | 1"¼	685| 1"¼
S1	Spiral coil primary outlet	mm | Ø	214 | 1"	268 | 1"	325 | 1"	373 | 1"	335 | 1"	335 | 1"	450 | 1"	560 | 1"
S2	Spiral coil primary inlet	mm | Ø	684 | 1"	758 | 1"	965 | 1"	1063 | 1"	920 | 1"	1090 | 1"	1150 | 1"	1175 | 1"
FL	Inspection opening	mm	276	320	349	377	395	395	580	685
		Ø mm	120×184	120×184	120×184	120×184	120×184	120×184	120×184	220×300
SPIRAL COIL PERFORMANCE										
Spiral coil surface area		**m²**	**0,9**	**1,1**	**1,5**	**2**	**2,4**	**2,7**	**3,6**	**4,2**
Spiral coil output (Primary 90/55°C - Secondary 10/45°C)		kW	41	50	66	89	91	102	160	187
DHW continuous flow 10/45°C		l/h	996	1231	1628	2184	2233	2513	3939	4587
WEIGHT										
Empty weight		kg	53	66	86	142	216	245	380	493

*The insulation pf the 500 L tank is provided with opposing chamfers to enable it to pass through 800 mm wide doors.

NOTE:
- All the measurements of the hydraulic connections are considered "from the ground"
- All the threads are female GAS type, unless otherwise specified.
- Tanks higher than 2200mm are packaged horizontally.



GENERAL CHARACTERISTICS - DOUBLE COIL - BMN2-V

	Capacity - L	200	300	500	800	1000	1500	2000
DIMENSIONS								
Diameter without insulation	mm	500	550	650	800	800	1000	1200
Diameter with insulation	mm	650	700	805*	1000	1000	1200	1400
Maximum height	mm	1320	1550	1805	1854	2104	2265	2245
Overturning height with | without insulation	mm	1470	1700	1970	2100 | 1850	2300 | 2100	2550 | 2250	2650 | 2300
CONNECTIONS								
E/SC Cold water inlet / Drain	mm | Ø	132 | 1"	135 | 1"	143 | 1"	235 | 1"¼	235| 1"¼	315 | 2"	445| 2"
U DHW outlet	mm | Ø	1177| 1"	1395| 1"	1633| 1"	1575 | 1"¼	1825| 1"¼	1935 | 2"	1815| 2"
R Immersion electric heater	mm | Ø	698 | 1"½	895 | 1"½	973 | 1"½	985 | 2"	1165 | 2"	1250 | 2"	1240 | 2"
P1 Sensor	mm | Ø	398 | ½"	445 | ½"	461 | ½"	440 | ½"	440 | ½"	620 | ½"	740 | ½"
P2 Sensor	mm | Ø	698 | ½"	892 | ½"	991 | ½"	985 | ½"	1165 | ½"	1250 | ½"	1240 | ½"
P3 Sensor	mm | Ø	908 | ½"	1078 | ½"	1198 | ½"	1360 | ½"	1575 | ½"	1665 | ½"	1605 | ½"
AS Spare / Recirculation	mm | Ø	558 | ¾"	730 | ¾"	796 | ¾"	1250 | 1"	1465 | 1"	1560 | 1"	1505 | 1"
T Thermometer	mm | Ø	1058|12,4mm	1247|12,4mm	1472|12,4mm	1464 | ½"	1715 | ½"	1800 | ½"	1710 | ½"
A1 Anode	Ø mm	2"	2"	2"	1"¼	1"¼	1"¼	1"¼
A2 Anode	mm | Ø	-	-	-	395 | 1"¼	395 | 1"¼	580 | 1"¼	685| 1"¼
S1 Lower spiral coil primary outlet	mm | Ø	268 | 1"	315 | 1"	346 | 1"	335 | 1"	335 | 1"	450 | 1"	560 | 1"
S2 Lower spiral coil primary inlet	mm | Ø	628 | 1"	820 | 1"	896 | 1"	920 | 1"	1090 | 1"	1150 | 1"	1175 | 1"
S3 Upper spiral coil primary outlet	mm | Ø	778 | 1"	963 | 1"	1088 | 1"	1075 | 1"	1245 | 1"	1350 | 1"	1305 | 1"
S4 Upper spiral coil primary inlet	mm | Ø	1038 | 1"	1238 | 1"	1363 | 1"	1464 | 1"	1685 | 1"	1665 | 1"	1705 | 1"
FL Inspection opening	mm	320	349	377	395	395	580	685
	Ø mm	120×184	120×184	120×184	120×184	120×184	120×184	220×300
SPIRAL COILS PERFORMANCES								
Lower spiral coil surface area	**m²**	**0,8**	**1,5**	**1,9**	**2,4**	**2,7**	**3,6**	**4,2**
Lower spiral coil output (Primary 90/55°C - Secondary 10/45°C)	kW	36	68	85	107	119	159	187
DHW continuous flow 10/45°C	l/h	865	1647	2077	2618	2941	3927	4593
Upper spiral coil surface area	**m²**	**0,6**	**1**	**1**	**1,5**	**1,8**	**2,4**	**2,7**
Upper spiral coil output (Primary 70/65°C - Secondary 10/45°C)	kW	21	34	34	50	60	80	91
DHW continuous flow 10/45°C	l/h	506	829	835	1228	1474	1965	2239
WEIGHT								
Empty weight	kg	69	93	154	237	271	416	523

*The insulation pf the 500 L tank is provided with opposing chamfers to enable it to pass through 800 mm wide doors.

NOTE:
- All the measurements of the hydraulic connections are considered "from the ground"
- All the threads are female GAS type, unless otherwise specified.
- Tanks higher than 2200mm are packaged horizontally.

BMN1-V | SOLAR COIL OUTPUT

Primary (90-55)°C | Secondary (10-45)°C

Tank capacity	Solar coil surface area	Max. output	Primary flow	SECONDARY (DHW) Continuous flow	Output first 10'	Output first 60'
L	m^2	kW	L/h	L/h	L	L
150	0,9	41	996	996	186	1164
200	1,1	50	1231	1231	265	1475
300	1,5	66	1628	1628	403	2003
500	2	89	2184	2184	592	2740
800	2,4	91	2233	2233	619	2815
1000	2,7	102	2513	2513	860	3331
1500	3,6	160	3939	3939	1352	5224
2000	4,2	187	4587	4587	1632	6142

Primary (80-55)°C | Secondary (10-45)°C

Tank capacity	Solar coil surface area	Max. output	Primary flow	SECONDARY (DHW) Continuous flow	Output first 10'	Output first 60'
L	m^2	kW	L/h	L/h	L	L
150	0,9	30	1045	746	181	915
200	1,1	37	1261	901	259	1145
300	1,5	50	1720	1229	395	1604
500	2	68	2314	1653	583	2209
800	2,4	80	2752	1966	615	2548
1000	2,7	90	3105	2218	855	3036
1500	3,6	120	4137	2955	1335	4240
2000	4,2	141	4840	3457	1613	5013

Primary (75-55)°C | Secondary (10-45)°C

Tank capacity	Solar coil surface area	Max. output	Primary flow	SECONDARY (DHW) Continuous flow	Output first 10'	Output first 60'
L	m^2	kW	L/h	L/h	L	L
150	0,9	26	1113	636	179	804
200	1,1	32	1341	766	257	1011
300	1,5	43	1849	1056	393	1431
500	2	57	2423	1384	579	1940
800	2,4	68	2924	1671	609	2252
1000	2,7	76	3284	1877	849	2695
1500	3,6	102	4396	2512	1328	3798
2000	4,2	119	5117	2924	1605	4479

Primary (70-50)°C | Secondary (10-45)°C

Tank capacity	Solar coil surface area	Max. output	Primary flow	SECONDARY (DHW) Continuous flow	Output first 10'	Output first 60'
L	m^2	kW	L/h	L/h	L	L
150	0,9	20	1161	497	177	666
200	1,1	24	1419	609	254	853
300	1,5	33	1893	811	389	1186
500	2	44	2554	1094	573	1650
800	2,4	54	3073	1317	604	1899
1000	2,7	61	3449	1478	843	2297
1500	3,6	80	4582	1964	1318	3249
2000	4,2	94	5378	2305	1594	3860

Primary (65-50)°C | Secondary (10-45)°C

Tank capacity	Solar coil surface area	Max. output	Primary flow	SECONDARY (DHW) Continuous flow	Output first 10'	Output first 60'
L	m^2	kW	L/h	L/h	L	L
150	0,9	17	968	415	176	584
200	1,1	21	1209	518	253	763
300	1,5	29	1663	713	388	1088
500	2	38	2189	938	571	1493
800	2,4	47	2660	1140	601	1722
1000	2,7	52	2963	1270	839	2088
1500	3,6	69	3963	1698	1314	2984
2000	4,2	81	4615	1978	1588	3533

Primary (65-45)°C | Secondary (10-45)°C

Tank capacity	Solar coil surface area	Max. output	Primary flow	SECONDARY (DHW) Continuous flow	Output first 10'	Output first 60'
L	m^2	kW	L/h	L/h	L	L
150	0,9	14	581	332	174	501
200	1,1	17	710	406	252	650
300	1,5	23	989	565	385	940
500	2	30	1290	737	568	1292
800	2,4	36	1548	884	596	1466
1000	2,7	41	1758	1005	835	1823
1500	3,6	55	2353	1345	1308	2631
2000	4,2	64	2739	1565	1582	3120

Primary (55-45)°C | Secondary (10-45)°C

Tank capacity	Solar coil surface area	Max. output	Primary flow	SECONDARY (DHW) Continuous flow	Output first 10'	Output first 60'
L	m^2	kW	L/h	L/h	L	L
150	0,9	11	968	277	173	446
200	1,1	13	1183	337	251	582
300	1,5	19	1634	466	383	841
500	2	26	2189	626	566	1181
800	2,4	31	2615	747	594	1329
1000	2,7	34	2919	834	832	1652
1500	3,6	45	3901	1114	1305	2400
2000	4,2	53	4515	1290	1577	2846

Primary (50-40)°C | Secondary (10-45)°C

Tank capacity	Solar coil surface area	Max. output	Primary flow	SECONDARY (DHW) Continuous flow	Output first 10'	Output first 60'
L	m^2	kW	L/h	L/h	L	L
150	0,9	8	677	194	172	362
200	1,1	10	788	225	248	469
300	1,5	13	1033	295	380	670
500	2	17	1408	402	562	958
800	2,4	19	1651	472	590	1054
1000	2,7	21	1857	531	827	1349
1500	3,6	29	2539	725	1298	2011
2000	4,2	34	2950	843	1570	2399

BMN2-V | LOWER COIL OUTPUT (SOLAR)

Primary (90-55)°C | Secondary (10-45)°C

Tank capacity	Solar coil surface area	Max. output	Primary flow	SECONDARY (DHW) Continuous flow	Output first 10'	Output first 60'
L	m²	kW	L/h	L/h	L	L
200	0,8	36	865	865	192	1043
300	1,5	68	1647	1647	477	2097
500	1,9	85	2077	2077	668	2711
800	2,4	107	2618	2618	625	3200
1000	2,7	119	2941	2941	867	3760
1500	3,6	159	3927	3927	1351	5213
2000	4,2	187	4593	4593	1632	6148

Primary (80-55)°C | Secondary (10-45)°C

Tank capacity	Solar coil surface area	Max. output	Primary flow	SECONDARY (DHW) Continuous flow	Output first 10'	Output first 60'
L	m²	kW	L/h	L/h	L	L
200	0,8	27	908	649	188	827
300	1,5	50	1721	1229	471	1679
500	1,9	63	2190	1564	660	2198
800	2,4	81	2774	1981	615	2563
1000	2,7	90	3096	2212	855	3030
1500	3,6	120	4137	2955	1335	4240
2000	4,2	141	4840	3457	1613	5013

Primary (75-55)°C | Secondary (10-45)°C

Tank capacity	Solar coil surface area	Max. output	Primary flow	SECONDARY (DHW) Continuous flow	Output first 10'	Output first 60'
L	m²	kW	L/h	L/h	L	L
200	0,8	22	964	550	187	728
300	1,5	44	1850	1056	468	1506
500	1,9	54	2328	1330	656	1963
800	2,4	68	2931	1675	609	2257
1000	2,7	77	3290	1879	849	2698
1500	3,6	102	4396	2512	1328	3798
2000	4,2	119	5117	2924	1605	4479

Primary (70-50)°C | Secondary (10-45)°C

Tank capacity	Solar coil surface area	Max. output	Primary flow	SECONDARY (DHW) Continuous flow	Output first 10'	Output first 60'
L	m²	kW	L/h	L/h	L	L
200	0,8	18	756	433	185	611
300	1,5	33	1419	812	464	1262
500	1,9	43	1838	1050	651	1683
800	2,4	54	2312	1321	604	1903
1000	2,7	61	2593	1482	843	2300
1500	3,6	80	3436	1964	1318	3249
2000	4,2	94	4034	2305	1594	3860

BMN2-V | UPPER COIL OUTPUT (additional heating source)

Primary (75-65)°C | Secondary (10-45)°C

Tank capacity	Upper coil surface area	Max. output	Primary flow	SECONDARY (DHW) Continuous flow
L	m²	kW	L/h	L/h
200	0,6	21	1742	506
300	1	34	2924	829
500	1	34	2924	835
800	1,5	50	4334	1228
1000	1,8	60	5201	1474
1500	2,4	80	6935	1965
2000	2,7	91	7818	2239

Primary (70-60)°C | Secondary (10-45)°C

Tank capacity	Upper coil surface area	Max. output	Primary flow	SECONDARY (DHW) Continuous flow
L	m²	kW	L/h	L/h
200	0,6	16	1419	405
300	1	28	2408	688
500	1	28	2408	688
800	1,5	27	2322	663
1000	1,8	32	2786	796
1500	2,4	43	3715	1061
2000	2,7	48	4179	1194

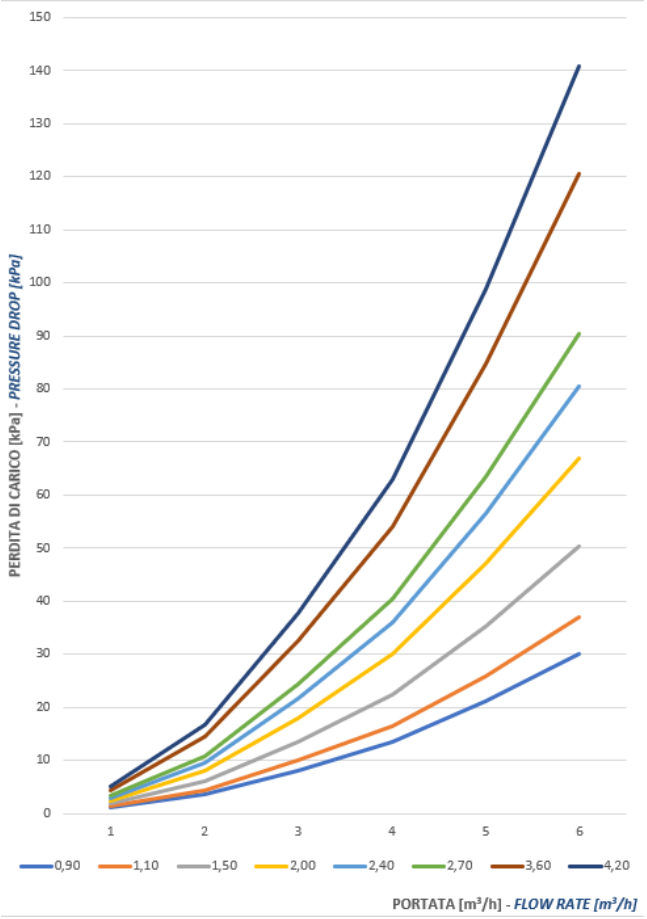
Primary (60-50)°C | Secondary (10-45)°C

Tank capacity	Upper coil surface area	Max. output	Primary flow	SECONDARY (DHW) Continuous flow
L	m²	kW	L/h	L/h
200	0,6	11	968	277
300	1	19	1634	466
500	1	19	1634	467
800	1,5	18	1600	457
1000	1,8	22	1920	548
1500	2,4	29	2560	731
2000	2,7	34	2864	818

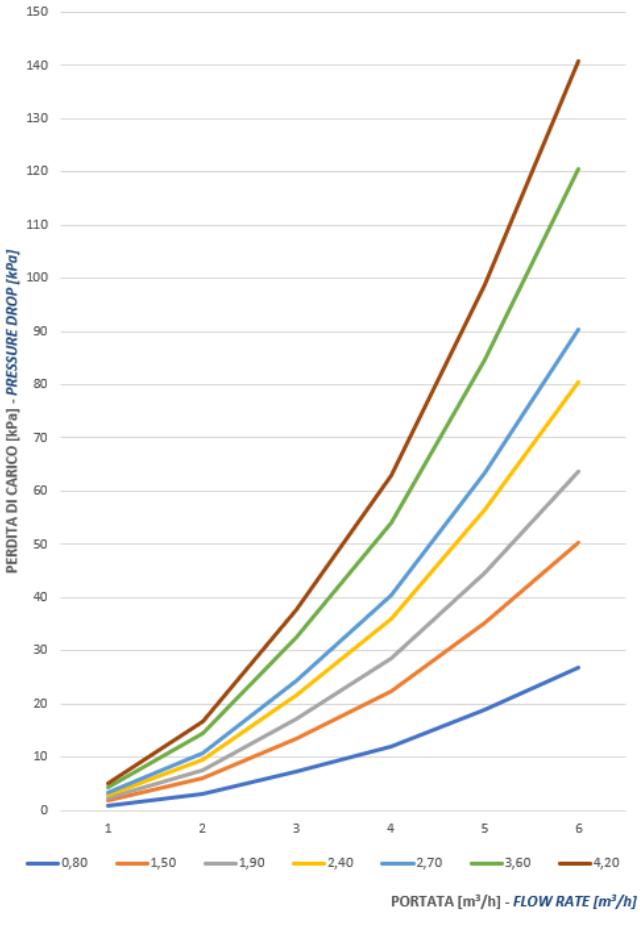
Primary (60-45)°C | Secondary (10-45)°C

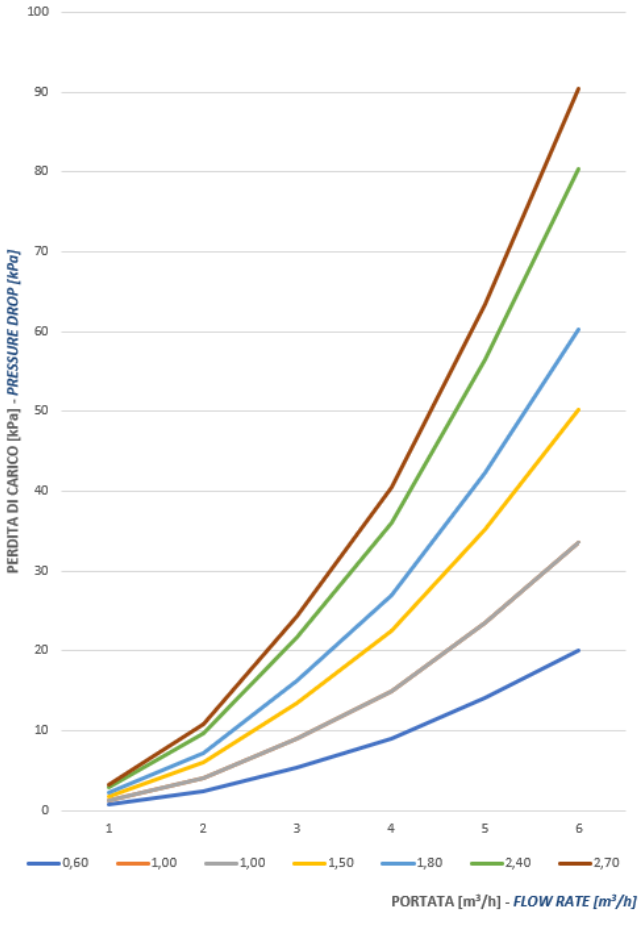
Tank capacity	Upper coil surface area	Max. output	Primary flow	SECONDARY (DHW) Continuous flow
L	m²	kW	L/h	L/h
200	0,6	9	516	221
300	1	15	860	369
500	1	15	860	369
800	1,5	14	826	354
1000	1,8	17	991	425
1500	2,4	23	1321	567
2000	2,7	26	1496	641

BMN1-V | SPIRAL COIL PRESSURE DROP



BMN2-V | SPIRAL COILS PRESSURE DROP





HOW TO ORDER

1 → Single fixed coil
2 → Double fixed coil

8 → 8 bar
0 → 10 bar

T → Magnesium anode
E → Electronic anode

7 → Insulation thick 75 mm
0 → Insulation thick 100 mm

Tank capacity

BMN	1	-	V	0	V	T	7	/	0200

ACCESSORIES AND SPARE PARTS

ITEM	PART NUMBER
THERMOMETER Ø65mm | l=50 mm | *(0÷120)°C* | 150-500 L	*TERMOMETRO-D65_S*
THERMOMETER Ø65mm | l=150mm | *(0÷120)°C* | 800-2000 L	*TERMOMETRO-D65_L*
SENSOR POCKET Ø½" | l=150 mm | $Ø_{int}$ 10 mm | 800-2000 L	*POZZETTO_L*
THERMOSTAT Ø½" *(0÷90)°C*	*TERMOSTATO*
MAGNESIUM ANODE SET | 150 L	*KIT-ANOD_29*
MAGNESIUM ANODE SET | 200 L	*KIT-ANOD_30*
MAGNESIUM ANODE SET | 300÷500 L	*KIT-ANOD_31*
MAGNESIUM ANODE SET | 800÷1000 L	*KIT-ANOD_07*
MAGNESIUM ANODE SET | 1500 L	*KIT-ANOD_05*
MAGNESIUM ANODE SET | 2000 L	*KIT-ANOD_28*
ELECTRONIC ANODE SET | 150÷500 L	*ANODE012X380_P*
ELECTRONIC ANODE SET | 800-1000 L	*ANODE012X430_P*
ELECTRONIC ANODE SET | 1500-2000 L	*ANODE012X430X2_P*


THERMOMETER


SENSOR POCKET


THERMOSTAT


MAGNESIUM ANODE


ELECTRONIC ANODE

1-3 PHASE IMMERSION ELECTRIC HEATER - STAINLESS STEEL 316L
Threaded plug 1.1/2" (+ male/female brass adapter 1.1/2"-2" supplied as standard) | Plastic box IP54 | Volt 220/1 - 240/1 - 400/3

Capacity	Capacity/L Matching	Volt	Phase	Plug type	Length	2-THERMOSTAT Temperature adjusting & overheating protection
Watt	*L*	*V*	*no*		*mm*	*PART NO.*
2000	200÷2000	220/1 - 240/1	1	SHUKO	310	*RES020-L310-6-M-BT*
3000	200÷2000				350	*RES030-L350-6-M-BT*
5000	200÷2000				375	*RES050-L375-6-T-BT*
6000	200÷2000				435	*RES060-L435-6-T-BT*
9000	500÷2000	400/3	3	N/A	610	*RES090-L610-6-T-BT*
10000	800÷2000				670	*RES100-L670-6-T-BT*
12000	800÷2000				727	*RES120-L727-6-T-BT*
15000	800÷2000				870	*RES150-L870-6-T-BT*

ANTI-CORROSION PROTECTION STEEL TREATMENTS

PROTECTIVE TREATMENTS FOR CARBON STEEL TANKS

Glass-enamelling.

The glass-enamelling treatment is obtained with the application of one or two layers of enamel with characteristics of resistance to water and steam, which gives the treated product a high level of protection against the corrosion normally caused by the oxygen and the mineral salts dissolved in the water. The complete reliability of this type of treatment derives from its inorganic composition and from the link created between the enamel and the metallic surface.

After baking in an oven at about 850°C according to Bayer's method and DIN 4753.3 the enamel does not absorb water and does not conduct ions, allowing the 99.9% protection of the structure of the product. The remaining 0.01% (due to possible uncovered spots) is eliminated by inserting protective anticorrosive systems into the product such as the sacrificial magnesium anodes or the permanent electronic anodes.

CATHODIC PROTECTION

The corrosion of a metal structure occurs mainly in areas in which there is the passage of current (oxidation-reduction process) from the structure towards the outside (water or gas) causing a dissolution of the structure itself.

Cathodic protection by means of magnesium anodes.

The application of sacrificial magnesium anodes is a simple and economic method to obtain a cathodic protection.
The sacrificial anode creates a situation similar to an electric battery, where the electrodes are represented by the anode and the metal structure to be protected.
Since the magnesium has a dissolution voltage which is much higher than that of other metals, the corrosion will only affect the anode, which will dissolve slowly, to the advantage of the metal structure to be protected.
Given the importance of the protection of the metal against corrosion, the wear of the anode is systematically controlled and it is immediately replaced if consumed.

Cathodic protection by means of electronic impressed current system.

As an alternative to the galvanic system (coupling of materials with different potentials) there is a protection method which consists in applying an equal and opposite continuous current to the metallic structure to be protected, neutralising the voltages formed inside the tank.
Thanks to the modern techniques there is an innovative electronic system of cathodic protection with continuous impressed current.
The main advantages are:

- active protection by means of impressed currents from the outside;
- excellent flexibility of operation in order to adhere to the changeable internal coating conditions and the mass of water;
- reduction of maintenance costs due to the permanent protection of the system.

INSULATION

Insulating material	Removable	Thickness	Density	Thermal conductivity coefficient at 45°C	Operating temperature	Fire reaction class Euroclass EN13501-1
PLFH High density polyester fibre	✓	100 mm	25 kg/m³	λ = 0,034 W/mK	Amb. / +99°C	B-s2, d0
Hard polyurethane injected	✗	55 mm	40÷42 kg/m³	λ = 0,019 W/mK	-10°C / +99°C	F

PLF – Polyester fibre

- 100% recyclable
- Environmentally compatible
- Lightweight
- Self-supporting
- Fire-retardant
- Rot-proof
- Cannot be attacked by mould, bacteria or rodents
- Hypoallergenic
- Water repellent

The raw materials consist of polyester fibres and heat-bonded co-polyester fibres, coming mainly from the recycling of plastic bottles obtained from urban waste collection.
It does not contain substances harmful to humans, may be handled and installed in complete safety, does not release powder, is hypoallergenic and cannot be attacked by microorganisms, mould and insects.
PLFH/PLF is a heat insulating product considered environmentally sustainable, even though it is not of natural origin: it is in fact recyclable and the quantity of embodied energy necessary to obtain it is extremely low.
The composition of the polyester fibre makes it an insulating material with an extremely low heat dispersion and its characteristics remain unaltered over time as it is not affected by humidity and its compact, flexible and resistant original structure is not modified.
Thanks to its characteristics, PLFH/PLF is an insulating material with the highest performance characteristics, which allows the requirements set by the severest technical standards to be satisfied, guaranteeing the maximum environmental compatibility for its entire life cycle.

Hard polyurethane

Thermal and anti-condensation insulation made of rigid closed cell polyurethane foam (PU), free from CFC and HCFC.
It is available in various thickness and can be injected directly to the walls of the tank to eliminate the possibility of formation of condensation and guarantee the minimum thermal dispersion, or pre-formed in removable half-shells to conserve the heat accumulated in the tank.
The extremely low thermal conductivity coefficient not only allows the limits specified by the ErP reference standard to be complied with, but actually to improve on them: the tanks of the new Q range, thanks to the careful study of the thicknesses and of the compounds, obtain the prestigious energy class “A” due to their limited heat dispersion values.

CLADDINGS

PVC

External cladding made of coloured PVC with hinge closing, suitable for installations in locations protected against adverse weather conditions. The standard colours of each product are indicated in their construction characteristics,
but different colours can be requested for each model as shown in the following table.
In the personalised TLR storage tanks the choice of the alternative colour is free of cost and does not incur any surcharge.

ITEM	*PART NUMBER*
PVC COVER YELLOW RAL1023	*COVER-RAL1023*
PVC COVER ORANGE RAL2004	*COVER-RAL2004*
PVC COVER RED RAL3000	*COVER-RAL3000*
PVC COVER BLUE RAL5015	*COVER-RAL5015*
PVC COVER WHITE RAL9016	*COVER-RAL9016*
PVC COVER LIGHT GREY RAL7035	*COVER-RAL7035*
PVC COVER DARK GREY RAL7024	*COVER-RAL7024*
PVC COVER BLACK RAL9004	*COVER-RAL9004*

ALUMINIUM

External cladding made of embossed aluminium sheeting suitable also for outdoor installations. The insulations made with this type of cladding consist of panels joined together by means of rivets and extruded aluminium slats
with an exclusive design, specifically designed to facilitate assembly even directly at the installation site.
The coverings and flange covers made of same material securely anchored to the insulation guarantee the same levels of quality in terms of duration and outside appearance and do not risk being damaged by the wind and adverse weather conditions.

www.pacetti.it

MADE IN ITALY

PACETTI S.r.l.
Via G. Marconi, 240/242
44122 - Ferrara - ITALY
Tel. +39 0532 774066
Fax +39 0532 773835
info@pacetti.it