



## Unit Description

The DeLonghi Professional BWR MTD2 ground source & geothermal heat pump ranges are able to provide heating or cooling and domestic hot water whilst providing a high level of specification with the benefit of value and efficiency.

- These units incorporate a built in heating system circulation pump, a built in source pump to function with horizontal or vertical collectors. Full control for hot water production including Y Plan valve operation is also incorporated along with full weather compensation options, also the units are able to function with any Heat Pump optimised thermal store or cylinder.
- The modulating source pump controls efficiency and maximises the performance on part loads by drawing the correct amount of source water through the unit to match the load requirement of the property at any time.
- This advanced control means that these units are able to operate with very low system volumes, a minimum open circuit volume of 3.5 litres per nominal kW of Heat Pump capacity is required which can remove the need for buffer tanks and secondary pumps hence reducing installation costs considerably.
- The high specification standard of the BWR/WWR MTD2 range provides a high specification unit with efficient performance in a practical and cost effective functional package.
- These DeLonghi Professional units are high specification heat pumps which are built to exacting standards with regard to efficiency and functionality. All the units are European manufactured and benefit from the DeLonghi Professional approach to product development and quality management providing the complete package that would be expected from a premier manufacturer.



\*(COP is shown without circulation pump input power. Please note that unlike most other heat pumps these units incorporate built in circulation pumps, therefore by not including the circulation pump input power we are able to provide a direct performance comparison with other units).

## Unit Summary

**MTD2 UNITS:** WW/WWR & BW/BWR

**CAPACITY:** 5kW-43kW

**POWER SUPPLY:** Single Phase & Three Phase models

These units provide heating and hot water up to 55°C with the option to also provide heating and cooling.

### HIGH EFFICIENCY & PERFORMANCE:

**COP 4.28 (428% efficient)**

BWR MTD2 source flow temperature 0°C/-3°C & output flow temp 35°C\*

**COP 5.52 (552% efficient)**

WWR MTD2 source flow temperature 5°C/10°C & output flow temp 35°C\*

\*Average COP for the BWR & WWR MTD2 ranges

NOTE: Actual system efficiency (COP) and annual performance will depend on the distribution/emitter system utilised. Care should be taken to ensure that the heat pump is installed in order to provide efficient operational performance.

### FEATURES & OPERATIONAL BENEFITS:

- MSC accredited heat pumps, certificate HP0005
- Full DHW and heating control
- Heating only or reversible Heat Pump
- Built in plant and circulation pump
- High value and high performance
- 55°C output temperature

Microgeneration scheme accreditation allows access to grant funding and also guarantees performance and manufacturing quality.



Certificate Number MSC HP0005  
Heat Pumps

# BWR-MTD2 Ground Source & Geothermal Heat Pumps

## Main Components

- Housing and base are made from hot-galvanized epoxy powder coated sheet metal
- Case panels are insulated within low noise material for further improvement of silence
- Hermetic scroll compressors with oil sump heater and electronic overheating protection with centralised manual reset
- The water circuit is complete with:
  - variable flow water pump (system side) & variable flow source pump
  - source side modulating valve for models WWR (water source units), this will switch off the water flow whenever the compressor is not in operation.
  - differential pressure switch on source side and system side
  - expansion vessel (Heat Pump circuit only)
  - safety valve
  - manual filling assembly
- pressure gauge
- manual air vent valve
- Heat exchangers on the system and source side are brazed plate models in AISI 316 stainless steel providing high efficiency and a low pressure drop, complete with vapour barrier closed-cell heat insulation
- Soft start for 230V/1/50Hz (45 amps)
- The electronic menu allows control of:
  - plant and Geothermal ground circuits (BWR) / modulating valve (WWR)
  - domestic hot water production by control of an external three-way valve (Y Plan)
  - a zone of direct heating
  - external heating source
  - weather compensation (sensor is accessory)

NB: Optional equipment includes a range of tanks & cylinders plus standard installation packs, see current price list or contact ICS HPT or your distributor for details.

BWR MTD2		0011ms	0025ms	0031ms	0041ms	0025t	0031t	0041t	0061t	0071t	0091t	0101t	0121t
Nominal Heating power	(1) kW	5.40	7.30	9.20	11.7	7.50	9.10	12.2	16	19.8	23	26.5	33.3
Total absorbed power	(2) kW	1.34	1.82	2.35	2.80	1.74	2.10	2.80	3.50	4.40	4.90	5.80	7.30
COP Eurovent		4.03	4	3.92	4.18	4.31	4.33	4.36	4.57	4.50	4.69	4.57	4.56
Cooling capacity	(3) kW	7.10	9.80	12	15.1	9.50	12	15.7	21.3	26.9	30.7	34.8	44.8
Total absorbed power	(2) kW	1.60	1.96	2.53	3.27	1.84	2.50	3.30	4.10	5.15	5.95	7	8.80
EER Eurovent		4.44	5	4.74	4.62	5.16	4.80	4.76	5.20	5.22	5.16	4.97	5.09
Heating capacity	(4)	5.20	7.10	9	11.3	7	8.70	11.8	15.2	18.8	21.8	25.1	31.9
Total absorbed power	(2) kW	1.70	2.30	3	3.60	2.20	2.70	3.70	4.40	5.60	6.20	7.40	9
COP Eurovent		3.06	3.09	3	3.14	3.18	3.22	3.19	3.45	3.36	3.52	3.39	3.54
Cooling capacity	(5) kW	5.20	7.20	8.80	11.3	7.30	8.90	11.8	15.7	19.8	22.9	26	33.4
Total absorbed power	(2) kW	1.53	2	2.60	3.20	1.90	2.41	3.19	4	5.10	5.80	6.80	8.40
EER Eurovent		3.40	3.60	3.38	3.53	3.84	3.69	3.70	3.93	3.88	3.95	3.82	3.98
ESEER		4.03	4.26	3.95	3.90	4.54	4.33	4.08	4.51	4.40	4.61	4.33	4.37
Compressor type		SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
No. Compressors	N.	1	1	1	1	1	1	1	1	1	1	1	1
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Plant side pump type	(6)	Ci	Ci	Ci	Ci	Ci	Ci	Ci	Ce	Ce	Ce	Ce	Ce
Source side pump type	(6)	Ci	Ci	Ci	Ce	Ci	Ci	Ce	Ce	Ce	Ce	Ce	Ce
Electrical power supply	V-Ph-Hz	230-1~50	230-1~50	230-1~50	230-1~50	400-3N~50	400-3N~50	400-3N~50	400-3N~50	400-3N~50	400-3N~50	400-3N~50	400-3N~50
Start-up current	A	26	37	44	59	35	48	64	75	95	111	118	140
Sound power	(7) dB(A)	52	53	53	58	52	52	58	59	66	66	70	70
Sound pressure level	(8) dB(A)	38	39	39	44	38	38	44	45	51	51	55	55
D	mm	680	680	680	680	680	680	680	680	680	680	680	680
H	mm	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105
W	mm	845	845	845	845	845	845	845	845	845	845	845	845
Operational weight	kg	188	190	195	210	190	195	210	225	240	245	250	270

WWR MTD2		0011ms	0025ms	0031ms	0041ms	0025t	0031t	0041t	0061t	0071t	0091t	0101t	0121t
Nominal Heating power	(1) kW	7.20	9.70	12.1	15.3	9.80	12.1	15.9	21.1	26.2	30.5	35	43.8
Total absorbed power	(2) kW	1.40	1.81	2.30	2.88	1.73	2.17	2.90	3.70	4.60	5.20	6	7.60
COP Eurovent		5.14	5.36	5.26	5.31	5.66	5.58	5.48	5.70	5.70	5.87	5.83	5.76
Cooling capacity	(3) kW	7.10	9.80	12	15.1	9.50	12	15.7	21.3	26.9	30.7	34.8	44.8
Total absorbed power	(2) kW	1.60	1.96	2.53	3.27	1.80	2.50	3.30	4.10	5.20	6	7	8.80
EER Eurovent		4.44	5	4.74	4.62	5.28	4.80	4.76	5.20	5.17	5.12	4.97	5.09
Heating capacity	(4)	6.80	9.20	11.6	14.6	9.20	11.4	15.3	20	24.8	28.8	33	41.7
Total absorbed power	(2) kW	1.70	2.30	3	3.60	2.20	2.70	3.70	4.60	5.80	6.40	7.60	9.50
COP Eurovent		4	4	3.87	4.06	4.18	4.22	4.14	4.35	4.28	4.50	4.34	4.39
Cooling capacity	(5) kW	5.20	7.20	8.80	11.3	7.30	8.90	11.8	15.7	19.8	22.9	26	33.4
Total absorbed power	(2) kW	1.53	2	2.60	3.20	1.90	2.40	3.20	4	5.10	5.80	6.80	8.39
EER Eurovent		3.40	3.60	3.38	3.53	3.84	3.71	3.70	3.93	3.88	3.95	3.82	3.98
ESEER		4.03	4.26	3.95	3.90	4.54	4.33	4.08	4.51	4.40	4.61	4.33	4.37
Compressor type		SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
No. Compressors	N.	1	1	1	1	1	1	1	1	1	1	1	1
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Plant side pump type	(6)	Ci	Ci	Ci	Ci	Ci	Ci	Ci	Ce	Ce	Ce	Ce	Ce
Electrical power supply	V-Ph-Hz	230-1~50	230-1~50	230-1~50	230-1~50	400-3N~50	400-3N~50	400-3N~50	400-3N~50	400-3N~50	400-3N~50	400-3N~50	400-3N~50
Start-up current	A	26	37	44	59	35	48	64	75	95	111	118	140
Sound power	(7) dB(A)	52	53	53	58	52	52	58	59	66	66	70	70
Sound pressure level	(8) dB(A)	38	39	39	44	38	38	44	45	51	51	55	55
D	mm	680	680	680	680	680	680	680	680	680	680	680	680
H	mm	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105
W	mm	845	845	845	845	845	845	845	845	845	845	845	845
Operational weight	kg	188	190	195	210	190	195	210	225	240	245	250	270

### Note: BWR MTD2

1. Condenser water in-out 30/35°C (plant side), Evaporator water in-out 0/-3°C (source side)
2. According to Eurovent
3. Evaporator water in-out 23/18°C (plant side), Condenser water in-out 30/35°C (source side)
4. Condenser water in-out 40/45°C (plant side), Evaporator water in-out 0/-3°C (source side)
5. Evaporator water in-out 12/7°C (plant side), Condenser water in-out 30/35°C (source side)
6. Ci=Circulator; Ce=Centrifugal
7. Sound power level according to ISO 9614 and Eurovent 8/1
8. Average sound pressure level above one reflecting surface (Q=2) at 1 meter from the outside dimensions of the unit.

\*According to the Eurovent standard without circulation pump input power.

### Note: WWR MTD2

1. Evaporator water (in/out) = 12/7°C, condenser water (in/out) = 30/35°C, based on Eurovent Standard
2. Evaporator water (in/out), 10/5°C, condenser water (in/out) 40/45°C, based on Eurovent standard
3. Sound pressure measured at 1 m in open field conditions

