Subtype ETHER DUO 90 T - ETHER 90 T

Certificate Holder	Energy Efficiency Technologies
Address	157 Boulevard Victor Hugo
ZIP	92110
City	Clichy
Country	FR
Certification Body	ICIM S.p.A.
Subtype title	ETHER DUO 90 T - ETHER 90 T
Registration number	ICIM-PDC-000138
Heat Pump Type	Outdoor Air/Water
Refrigerant	R410A
Mass of Refrigerant	4.3 kg
Certification Date	21.03.2022

Model ETHER 90 T	
Model name	ETHER 90 T
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	3x230V 50Hz
Off-peak product	n/a

Outdoor Air/Water

EN 14511-4 | Heating

Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	8.65 kW	7.67 kW
El input	1.65 kW	2.39 kW
COP	5.25	3.21

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	62 dB(A)	62 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
Pdesignh	10.38 kW	9.38 kW
ηs	189 %	133 %
Prated	10.38 kW	9.38 kW
SCOP	4.80	3.40
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.18 kW	8.30 kW
COP Tj = -7°C	3.32	2.32
Pdh Tj = +2°C	5.60 kW	5.31 kW
COP Tj = +2°C	4.59	3.22
Pdh Tj = +7°C	3.64 kW	3.47 kW
COP Tj = +7°C	5.98	4.38
Pdh Tj = 12°C	4.44 kW	4.22 kW

COP Tj = 12°C	9.48	6.80
Pdh Tj = Tbiv	9.18 kW	8.30 kW
COP Tj = Tbiv	3.32	2.32
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.16 kW	9.73 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.78	1.73
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	60 °C	60 °C
Poff	18 W	18 W
PTO	19 W	19 W
PSB	18 W	18 W
PCK	18 W	18 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.22 kW	0.00 kW
Annual energy consumption Qhe	4468 kWh	5700 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	62 dB(A)	62 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
Pdesignh	14.97 kW	13.72 kW
ηs	150 %	106 %
Prated	14.97 kW	13.72 kW
SCOP	3.84	2.73
Tbiv	-7 °C	-7 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	9.06 kW	8.30 kW
COP Tj = -7°C	3.65	2.75
Pdh Tj = +2°C	5.53 kW	4.86 kW
COP Tj = +2°C	5.01	3.60
Pdh Tj = +7°C	3.71 kW	3.61 kW
COP Tj = +7°C	6.51	5.09
Pdh Tj = 12°C	4.44 kW	4.30 kW
COP Tj = 12°C	9.48	7.53
Pdh Tj = Tbiv	9.06 kW	8.30 kW
COP Tj = Tbiv	3.65	2.75
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.33 kW	2.07 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.17	0.54

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	60 °C	60 °C
Poff	18 W	18 W
PTO	19 W	19 W
PSB	18 W	18 W
PCK	18 W	18 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	6.00 kW	6.00 kW
Annual energy consumption Qhe	9620 kWh	12389 kWh

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	62 dB(A)	62 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
Pdesignh	6.86 kW	6.27 kW
ηs	245 %	153 %
Prated	6.86 kW	6.27 kW
SCOP	6.20	3.90
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	6.86 kW	6.27 kW
COP Tj = +2°C	4.10	2.45
Pdh Tj = +7°C	4.46 kW	4.05 kW
COP Tj = +7°C	5.44	3.19
Pdh Tj = 12°C	4.36 kW	4.11 kW
COP Tj = 12°C	8.44	5.72
Pdh Tj = Tbiv	6.86 kW	6.27 kW
COP Tj = Tbiv	4.10	2.45
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.86 kW	6.27 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.10	2.45
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	60 °C	60 °C
Poff	18 W	18 W
PTO	19 W	19 W
PSB	18 W	18 W
PCK	18 W	18 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW

Annual energy consumption Qhe	1477 kWh	2149 kWh

Model ETHER DUO 90 T	
Model name	ETHER DUO 90 T
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	3x230V 50Hz
Off-peak product	Yes

Outdoor Air/Water EN 16147 | Average Climate	
Declared load profile	XL
Efficiency ηDHW	106 %
COP	2.56
Heating up time	01:28 h:min
Standby power input	52.0 W
Reference hot water temperature	53.6 °C
Mixed water at 40°C	251 l

EN 16147 | Colder Climate	
Declared load profile	XL
Efficiency ηDHW	89 %
COP	2.15
Heating up time	01:49 h:min
Standby power input	57.0 W
Reference hot water temperature	53.6 °C
Mixed water at 40°C	250 l

EN 16147 | Warmer Climate	
Declared load profile	XL
Efficiency ηDHW	111 %
COP	2.70
Heating up time	01:16 h:min
Standby power input	39.0 W
Reference hot water temperature	53.2 °C
Mixed water at 40°C	248 l

EN 14511-4 | Heating	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	8.65 kW	7.67 kW
El input	1.65 kW	2.39 kW
COP	5.25	3.21

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
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EN 14825 | Average Climate

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COP Tj = +2°C	4.59	3.22
Pdh Tj = +7°C	3.64 kW	3.47 kW
COP Tj = +7°C	5.98	4.38
Pdh Tj = 12°C	4.44 kW	4.22 kW
COP Tj = 12°C	9.48	6.80
Pdh Tj = Tbiv	9.18 kW	8.30 kW
COP Tj = Tbiv	3.32	2.32
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.16 kW	9.73 kW
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WTOL	60 °C	60 °C
Poff	18 W	18 W
PTO	19 W	19 W
PSB	18 W	18 W
PCK	18 W	18 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.22 kW	0.00 kW
Annual energy consumption Qhe	4468 kWh	5700 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature

Sound power level indoor	43 dB(A)	43 dB(A)
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EN 14825 | Colder Climate

	Low temperature	Medium temperature
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COP Tj = -7°C	3.65	2.75
Pdh Tj = +2°C	5.53 kW	4.86 kW
COP Tj = +2°C	5.01	3.60
Pdh Tj = +7°C	3.71 kW	3.61 kW
COP Tj = +7°C	6.51	5.09
Pdh Tj = 12°C	4.44 kW	4.30 kW
COP Tj = 12°C	9.48	7.53
Pdh Tj = Tbiv	9.06 kW	8.30 kW
COP Tj = Tbiv	3.65	2.75
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.33 kW	2.07 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.17	0.54
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	60 °C	60 °C
Poff	18 W	18 W
PTO	19 W	19 W
PSB	18 W	18 W
PCK	18 W	18 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	6.00 kW	6.00 kW
Annual energy consumption Qhe	9620 kWh	12389 kWh

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	62 dB(A)	62 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
Pdesignh	6.86 kW	6.27 kW
ηs	245 %	153 %

Prated	6.86 kW	6.27 kW
SCOP	6.20	3.90
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	6.86 kW	6.27 kW
COP Tj = +2°C	4.10	2.45
Pdh Tj = +7°C	4.46 kW	4.05 kW
COP Tj = +7°C	5.44	3.19
Pdh Tj = 12°C	4.36 kW	4.11 kW
COP Tj = 12°C	8.44	5.72
Pdh Tj = Tbiv	6.86 kW	6.27 kW
COP Tj = Tbiv	4.10	2.45
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.86 kW	6.27 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.10	2.45
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	60 °C	60 °C
Poff	18 W	18 W
PTO	19 W	19 W
PSB	18 W	18 W
PCK	18 W	18 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	1477 kWh	2149 kWh