

Subtype M thermal N series 8 10 kW

Certificate Holder	Enpal Dragon GmbH
Address	Koppenstraße 8
ZIP	10243
City	Berlin
Country	DE
Certification Body	ICIM S.p.A.
Subtype title	M thermal N series 8 10 kW
Registration number	ICIM-PDC-000265
Heat Pump Type	Outdoor Air/Water
Refrigerant	R290
Mass of Refrigerant	1.1 kg
Certification Date	29.08.2024
Testing basis	V12

Model EODU-V8-M1-AW-9E

Model name	EODU-V8-M1-AW-9E
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Colder, Warmer
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	3x400V 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
Starting and operating test	passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	8.0 kW	8.0 kW
El input	1.52 kW	2.39 kW
COP	5.25	3.35

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	53 dB(A)	53 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	211 %	159 %
Prated	7.9 kW	8.2 kW
SCOP	5.35	4.05
Tbiv	-7 °C	-7 °C
TOL	-10.00 °C	-10.00 °C
Pdh Tj = -7°C	6.99 kW	7.26 kW
COP Tj = -7°C	3.30	2.46
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.51 kW	4.51 kW
COP Tj = +2°C	5.30	4.02
Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	3.88 kW	3.72 kW
COP Tj = +7°C	6.87	5.27

Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	4.52 kW	4.40 kW
COP Tj = 12°C	9.03	6.90
Cdh Tj = +12 °C	0.97	0.97
Pdh Tj = Tbiv	6.99 kW	7.26 kW
COP Tj = Tbiv	3.30	2.46
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.90 kW	8.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.85	2.11
WTOL	80.00 °C	80.00 °C
Poff	11.00 W	11.00 W
PTO	16.00 W	16.00 W
PSB	11.00 W	11.00 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	3051 kWh	4168 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	53 dB(A)	53 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	180 %	135 %
Prated	8.0 kW	7.6 kW
SCOP	4.58	3.45
Tbiv	-15.00 °C	-15.00 °C
TOL	-22.00 °C	-22.00 °C
Pdh Tj = -7°C	4.98 kW	4.76 kW
COP Tj = -7°C	3.78	2.84
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	3.29 kW	2.99 kW
COP Tj = +2°C	5.79	4.16
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	3.84 kW	3.68 kW
COP Tj = +7°C	7.13	5.49
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	4.52 kW	4.32 kW
COP Tj = 12°C	8.78	7.12
Cdh Tj = +12 °C	0.97	0.97
Pdh Tj = Tbiv	6.53 kW	6.20 kW
COP Tj = Tbiv	2.65	2.08
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.16 kW	5.76 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.05	1.58
WTOL	80.00 °C	80.00 °C
Poff	11.00 W	11.00 W
PTO	16 W	16 W
PSB	11.00 W	11.00 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.84 kW	1.84 kW
Annual energy consumption Qhe	4291.00 kWh	5429.00 kWh
Pdh Tj = -15°C (if TOL	6.53	6.20
COP Tj = -15°C (if TOL	2.65	2.08
Cdh Tj = -15 °C	0.99	0.99

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	53 dB(A)	53 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η_s	273.00 %	191.00 %
Prated	8.1 kW	8.4 kW
SCOP	6.90	4.85
Tbiv	7.00 °C	7.00 °C
TOL	2.00 °C	2.00 °C
Pdh Tj = +2°C	8.02 kW	8.20 kW
COP Tj = +2°C	3.83	2.59
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	5.21 kW	5.40 kW
COP Tj = +7°C	6.26	4.17
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	4.50 kW	4.28 kW
COP Tj = 12°C	8.69	6.41
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	5.21 kW	5.40 kW
COP Tj = Tbiv	6.26	4.17
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.02 kW	8.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.83	2.59
WTOL	80.00 °C	80.00 °C
Poff	11.00 W	11.00 W
PTO	16.00 W	16.00 W
PSB	11 W	11 W
PCK	0.00 W	0.00 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.08 kW	0.20 kW
Annual energy consumption Q _{he}	1566.00 kWh	2309.00 kWh

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Units	Outdoor
Climate zone (for heating)	Colder, Warmer
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	3x400V 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
Starting and operating test	passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	9.5 kW	9.5 kW
El input	1.92 kW	2.97 kW
COP	4.95	3.20

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	54 dB(A)	54 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	210 %	157 %
Prated	9.8 kW	10.0 kW
SCOP	5.33	4.00
Tbiv	-7 °C	-7 °C
TOL	-10.00 °C	-10.00 °C
Pdh Tj = -7°C	8.67 kW	8.85 kW
COP Tj = -7°C	3.19	2.23
Cdh Tj = -7 °C	0.99	1.00
Pdh Tj = +2°C	5.50 kW	5.48 kW
COP Tj = +2°C	5.19	3.98
Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	3.93 kW	3.78 kW
COP Tj = +7°C	7.17	5.48

Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	4.53 kW	4.43 kW
COP Tj = 12°C	9.12	7.03
Cdh Tj = +12 °C	0.97	0.97
Pdh Tj = Tbiv	8.67 kW	8.85 kW
COP Tj = Tbiv	3.19	2.23
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.75 kW	8.98 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.65	2.06
WTOL	80.00 °C	80.00 °C
Poff	11.00 W	11.00 W
PTO	16.00 W	16.00 W
PSB	11.00 W	11.00 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.05 kW	1.02 kW
Annual energy consumption Qhe	3802 kWh	5148 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	54 dB(A)	54 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	178 %	136 %
Prated	9.9 kW	9.6 kW
SCOP	4.53	3.48
Tbiv	-15.00 °C	-15.00 °C
TOL	-22.00 °C	-22.00 °C
Pdh Tj = -7°C	6.07 kW	5.89 kW
COP Tj = -7°C	3.59	2.81
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	3.85 kW	3.58 kW
COP Tj = +2°C	5.92	4.41
Cdh Tj = +2 °C	0.98	0.98
Pdh Tj = +7°C	3.93 kW	3.69 kW
COP Tj = +7°C	7.32	5.61
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	4.54 kW	4.34 kW
COP Tj = 12°C	8.90	7.20
Cdh Tj = +12 °C	0.97	0.97
Pdh Tj = Tbiv	8.08 kW	7.83 kW
COP Tj = Tbiv	2.48	1.96
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.79 kW	6.26 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.00	1.55
WTOL	80.00 °C	80.00 °C
Poff	11.00 W	11.00 W
PTO	16 W	16 W
PSB	11.00 W	11.00 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.11 kW	3.34 kW
Annual energy consumption Qhe	5392.00 kWh	6773.00 kWh
Pdh Tj = -15°C (if TOL	8.08	7.83
COP Tj = -15°C (if TOL	2.48	1.96
Cdh Tj = -15 °C	1	1

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	54 dB(A)	54 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η_s	271 %	190 %
Prated	10.10 kW	10.20 kW
SCOP	6.85	4.83
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	10.00 kW	9.63 kW
COP Tj = +2°C	3.36	2.43
Cdh Tj = +2 °C	0.990	1.000
Pdh Tj = +7°C	6.50 kW	6.56 kW
COP Tj = +7°C	6.07	4.12
Cdh Tj = +7 °C	0.990	0.990
Pdh Tj = 12°C	4.52 kW	4.31 kW
COP Tj = 12°C	8.92	6.61
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	6.50 kW	6.56 kW
COP Tj = Tbiv	6.07	4.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.00 kW	9.63 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.36	2.43
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	80 °C	80 °C
Poff	11 W	11 W
PTO	16 W	16 W
PSB	11 W	11 W

PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.10 kW	0.57 kW
Annual energy consumption Q _{he}	1963 kWh	2812 kWh