

## Subtype Hybrox 11

Certificate Holder	ait-deutschland GmbH
Address	Industriestr. 3
ZIP	95359
City	Kasendorf
Country	DE
Certification Body	BRE Global Limited
Subtype title	Hybrox 11
Registration number	041-K001-53
Heat Pump Type	Outdoor Air/Water
Refrigerant	R290
Mass of Refrigerant	1.6 kg
Certification Date	24.06.2024
Testing basis	Heat Pump Keymark Scheme Rules Rev 14
Testing laboratory	Fraunhofer ISE, DE

## Model alpha innotec Hybrox 11

Model name	alpha innotec Hybrox 11
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	n/a
Reversibility	Yes
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	3.45 kW	3.20 kW
El input	0.68 kW	1.06 kW
COP	5.04	3.03

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	49 dB(A)	49 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	197 %	152 %
Prated	10.50 kW	10.50 kW
SCOP	5.00	3.88
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.42 kW	8.85 kW
COP Tj = -7°C	3.07	2.35
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	5.72 kW	5.45 kW
COP Tj = +2°C	5.06	3.89
Cdh Tj = +2 °C	1.000	1.000
Pdh Tj = +7°C	3.70 kW	3.76 kW

COP Tj = +7°C	6.39	4.96
Cdh Tj = +7 °C	1.000	1.000
Pdh Tj = 12°C	4.13 kW	4.01 kW
COP Tj = 12°C	7.54	6.15
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	9.42 kW	8.85 kW
COP Tj = Tbiv	3.07	2.35
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.67 kW	8.12 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.83	2.12
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	78 °C	78 °C
Poff	13 W	13 W
PTO	18 W	15 W
PSB	13 W	13 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.83 kW	2.38 kW
Annual energy consumption Qhe	4336 kWh	5598 kWh

## Model NOVELAN Helox 11

Model name	NOVELAN Helox 11
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	n/a
Reversibility	Yes
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	3.45 kW	3.20 kW
El input	0.68 kW	1.06 kW
COP	5.04	3.03

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	49 dB(A)	49 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	197 %	152 %
Prated	10.50 kW	10.50 kW
SCOP	5.00	3.88
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.42 kW	8.85 kW
COP Tj = -7°C	3.07	2.35
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	5.72 kW	5.45 kW
COP Tj = +2°C	5.06	3.89
Cdh Tj = +2 °C	1.000	1.000
Pdh Tj = +7°C	3.70 kW	3.76 kW

COP Tj = +7°C	6.39	4.96
Cdh Tj = +7 °C	1.000	1.000
Pdh Tj = 12°C	4.13 kW	4.01 kW
COP Tj = 12°C	7.54	6.15
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	9.42 kW	8.85 kW
COP Tj = Tbiv	3.07	2.35
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.67 kW	8.12 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.83	2.12
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	78 °C	78 °C
Poff	13 W	13 W
PTO	18 W	15 W
PSB	13 W	13 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.83 kW	2.38 kW
Annual energy consumption Qhe	4336 kWh	5598 kWh