CEN heat pump
KEYMARK

Registration number 011-1W0905

Subtype NETSU AS-NET-IDU-160-3PH/AS-NET-ODU-12-3PH, NETSU AS-NET-IDU-160-3PH/AS-NET-ODU-14-3PH, NETSU AS-NET-IDU-160-3PH/AS-NET-ODU-16-3PH	
Certificate Holder	Ningbo AUX Electric Co., Ltd
Address	1166 Mingguang North Road
ZIP	315191
City	Ningbo Zhejiang
Country	CN
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	NETSU AS-NET-IDU-160-3PH/AS-NET-ODU-12-3PH, NETSU AS-NET-IDU-160-3PH/AS-NET-ODU-14-3PH, NETSU AS-NET-IDU-160-3PH/AS-NET-ODU-16-3PH
Registration number	011-1W0905
Heat Pump Type	Outdoor Air/Water
Refrigerant	R32
Mass of Refrigerant	1.84 kg
Certification Date	21.10.2024
Testing basis	HP KEYMARK certification scheme rules V14

Model NETSU AS-NET-IDU-160-3PH/AS-NET-ODU-12-3PH	
Model name	NETSU AS-NET-IDU-160-3PH/AS-NET-ODU-12-3PH
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer, Warmer Climate
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	12.20 kW	12.00 kW
El input	2.46 kW	3.86 kW
COP	4.96	3.11

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	190 %	136 %
Prated	12.20 kW	12.00 kW
SCOP	4.82	3.48
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.79 kW	10.62 kW
COP Tj = -7°C	3.02	2.11
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	6.57 kW	6.46 kW
COP Tj = +2°C	4.83	3.43
Cdh Tj = +2 °C	0.900	0.900

Pdh Tj = +7°C	4.22 kW	4.15 kW
COP Tj = +7°C	6.27	4.59
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	1.88 kW	1.85 kW
COP Tj = 12°C	9.38	6.90
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	10.79 kW	10.62 kW
COP Tj = Tbiv	3.02	2.11
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.10 kW	9.16 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.61	2.68
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.10 kW	2.84 kW
Annual energy consumption Qhe	5230 kWh	7131 kWh

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	245 %	171 %
Prated	11.10 kW	12.50 kW
SCOP	6.20	4.36
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	10.90 kW	12.30 kW
COP Tj = +2°C	3.59	2.31
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	7.14 kW	8.04 kW
COP Tj = +7°C	5.87	3.86
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.17 kW	3.57 kW
COP Tj = 12°C	7.94	5.70
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	7.14 kW	8.04 kW
COP Tj = Tbiv	5.87	3.86

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.90 kW	12.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.59	2.31
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.20 kW	0.20 kW
Annual energy consumption Qhe	2391 kWh	3831 kWh

Model NETSU AS-NET-IDU-160-3PH/AS-NET-ODU-14-3PH

Model name	NETSU AS-NET-IDU-160-3PH/AS-NET-ODU-14-3PH
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer, Warmer Climate
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	14.50 kW	14.00 kW
El input	3.08 kW	4.67 kW
COP	4.71	3.00

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	186 %	135 %
Prated	14.50 kW	14.00 kW
SCOP	4.72	3.45
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	12.83 kW	12.38 kW
COP Tj = -7°C	3.00	2.06
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	7.81 kW	7.54 kW
COP Tj = +2°C	4.74	3.50
Cdh Tj = +2 °C	0.900	0.900

Pdh Tj = +7°C	5.02 kW	4.85 kW
COP Tj = +7°C	5.92	4.33
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	2.23 kW	2.15 kW
COP Tj = 12°C	9.20	6.97
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	12.83 kW	12.38 kW
COP Tj = Tbiv	3.00	2.06
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.46 kW	10.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.73	1.80
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.04 kW	3.50 kW
Annual energy consumption Qhe	6352 kWh	8380 kWh

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	253 %	175 %
Prated	12.10 kW	13.70 kW
SCOP	6.39	4.45
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.00 kW	13.60 kW
COP Tj = +2°C	3.44	2.18
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	7.78 kW	8.83 kW
COP Tj = +7°C	5.84	3.91
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.75 kW	4.08 kW
COP Tj = 12°C	8.25	5.90
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	7.78 kW	8.83 kW
COP Tj = Tbiv	5.84	3.91

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.00 kW	13.60 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.44	2.18
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.10 kW	0.10 kW
Annual energy consumption Qhe	2529 kWh	4119 kWh

Model NETSU AS-NET-IDU-160-3PH/AS-NET-ODU-16-3PH	
Model name	NETSU AS-NET-IDU-160-3PH/AS-NET-ODU-16-3PH
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer, Warmer Climate
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	16.10 kW	16.10 kW
El input	3.57 kW	5.53 kW
COP	4.51	2.91

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	190 %	135 %
Prated	16.10 kW	14.00 kW
SCOP	4.83	3.45
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	14.24 kW	12.38 kW
COP Tj = -7°C	3.04	2.06
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	8.67 kW	7.54 kW
COP Tj = +2°C	4.70	3.50
Cdh Tj = +2 °C	0.900	0.900

Pdh Tj = +7°C	5.57 kW	4.85 kW
COP Tj = +7°C	6.62	4.33
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	2.48 kW	2.15 kW
COP Tj = 12°C	8.91	6.97
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	14.24 kW	12.38 kW
COP Tj = Tbiv	3.04	2.06
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.31 kW	10.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.67	1.80
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.79 kW	3.50 kW
Annual energy consumption Qhe	6892 kWh	8380 kWh

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	240 %	174 %
Prated	13.10 kW	13.80 kW
SCOP	6.07	4.35
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.97 kW	13.67 kW
COP Tj = +2°C	3.35	2.25
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	8.41 kW	8.87 kW
COP Tj = +7°C	5.36	3.84
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.87 kW	3.94 kW
COP Tj = 12°C	8.11	5.88
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	8.41 kW	8.87 kW
COP Tj = Tbiv	5.36	3.84

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.97 kW	13.67 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.35	2.25
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.13 kW	0.13 kW
Annual energy consumption Qhe	2884 kWh	4184 kWh