Model(s):	NIBE F1145-17 (+ VPB 500)
Type of heat source/sink:	Brine-to-water
Low-temperature heat pump:	No
Equipped with supplementary heater:	Yes
Heat pump combination heater:	Yes
Climate condition:	Average
Temperature application:	Medium temperature (55 °C)
Applied standards: EN14825 and EN16147	



Ti = +2 °C	Temperature application:			Medium te	emperature (55 °C)			
Prated   20,0   kW   efficiency   Pis   137	Applied standards: EN14825 and EN1614	7						
Declared capacity for part load at outdoor temperature $T_1$ : $T_1 = -7  ^{\circ}C$ Pdh 16,0 kW $T_2 = -7  ^{\circ}C$ COPd 3,25 $T_3 = +2  ^{\circ}C$ Pdh 16,2 kW $T_3 = -7  ^{\circ}C$ COPd 3,70 $T_3 = -7  ^{\circ}C$ COPd 4,16 $T_3 = -7  ^{\circ}C$ COPd 3,95 $T_3 = -7  ^{\circ}C$ (if $TOL < -20  ^{\circ}C$ ) COPd 3,98 $T_3 = -7  ^{\circ}C$ (if $TOL < -20  ^{\circ}C$ ) COPd 3,98 $T_3 = -7  ^{\circ}C$ (if $TOL < -20  ^{\circ}C$ ) COPd 3,98 $T_3 = -7  ^{\circ}C$ (if $TOL < -20  ^{\circ}C$ ) COPd 3,98 $T_3 = -7  ^{\circ}C$ (if $TOL < -20  ^{\circ}C$ ) COPd 3,98 $T_3 = -7  ^{\circ}C$ (if $TOL < -20  ^{\circ}C$ ) COPd 4,16 $T_3 = -7  ^{\circ}C$ (if $TOL < -20  ^{\circ}C$ ) COPd 4,16 $T_3 = -7  ^{\circ}C$ (if $TOL < -20  ^{\circ}C$ ) COPd 3,98 $T_3 = -7  ^{\circ}C$ (if $TOL < -20  ^{\circ}C$ ) COPd 4,16 $T_3 = -7  ^{\circ}C$ (if $TOL < -20  ^{\circ}C$ ) COPd 4,16 $T_3 = -7  ^{\circ}C$ (if $TOL < -20  ^{\circ}C$ ) COPd 4,10 $T_3 = -7  ^{\circ}C$ (if $TOL < -20  ^{\circ}C$ ) COPd 4,10 $T_3 = -7  ^{\circ}C$ (if $TOL < -20  ^{\circ}C$ ) COPd 4,10 $T_3 = -7  ^{\circ}C$ (if $TOL < -20 $					Seasonal space heating energy			
Tj = -7 °C	Rated heat output	Prated	20,0	kW	efficiency	$\eta_{\text{s}}$	137	%
Tj = -7 °C	Declared capacity for part load at outdoor tem	perature Ti			Declared coefficient of performance for pa	rt load at outdoo	or temperatu	re Ti
Tj = +7 °C		1	16,0	kW				kW
Tj = +12 °C Pdh 16,9 kW Tj = biv Pdh 16,1 kW Tj = biv Pdh 16,1 kW Tj = biv COPd 3,35 Tj = TOL COPd 16,0 kW Tj = -15 °C (if TOL < -20 °C) Pdh kW Tj = -15 °C (if TOL < -20 °C) Pdh kW Tj = -15 °C (if TOL < -20 °C) Pdh kW Tj = -15 °C (if TOL < -20 °C) Pdh kW Tj = -15 °C (if TOL < -20 °C) Pdh kW Tj = -15 °C (if TOL < -20 °C) Pdh kW Tj = -15 °C (if TOL < -20 °C) Pdh kW Tj = -15 °C (if TOL < -20 °C) Pdh kW Tj = -15 °C (if TOL < -20 °C) Pdh kW Tj = -15 °C (if TOL < -20 °C) Pdh kW Park to peration limit temperature Population co-efficient Population co-efficient Population in modes other than active mode Power consumption in modes other than active mode Population in mod	Tj = +2 °C	Pdh	16,2	kW	Tj = +2 °C	COPd	3,70	kW
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Tj = +7 °C	Pdh	16,6	kW	Tj = +7 °C	COPd	3,95	kW
Tj = TOL Tj = -15 °C (if TOL < -20 °C) Pdh NW Tj = -15 °C (if TOL < -20 °C) Pdh NW Bivalent temperature T <sub>biv</sub> Peych Degradation co-efficient Cdh O,99 Power consumption in modes other than active mode Off mode Pore Off mode Pro Other items Capacity control Capa	Tj = +12 °C	Pdh	16,9	kW	Tj = +12 °C	COPd	4,16	kW
Tj = -15 °C (if TOL < -20 °C)  Pdh  RW  Bivalent temperature  Cycling interval capacity for heating Pcych Degradation co-efficient  Cdh 0,99  -  Rated heat output  Pype of energy input  Capacity control  Fixed  Capacity control  Capacity control  Capacity control  Annual energy consumption  Capacity consump	Tj = biv	Pdh	16,1	kW	Tj = biv	COPd	3,35	kW
Bivalent temperature	Tj = TOL	Pdh	16,0	kW	Tj = TOL	COPd	3,08	kW
Cycling interval capacity for heating Pcych Degradation co-efficient Cdh 0,99 - Cdh 0,99	Tj = -15 °C (if TOL < -20 °C)	Pdh		kW	Tj = -15 °C (if TOL < -20 °C)	COPd		kW
Cycling interval capacity for heating Pcych Degradation co-efficient Cdh 0,99 - Cdh 0,99	Bivalent temperature	This	-4.8	°C	Operation limit temperature	TOL	-10	°C
Degradation co-efficient  Cdh 0,99 - Heating water operating limit WTOL 65  Supplementary heater  Supplementary heater  Supplementary heater  Supplementary heater  Supplementary heater  Supplementary heater  Rated heat output Psup 4,0  Type of energy input Electric  Rated air flow rate, outdoors  Rated water flow rate, indoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Declared load profile  XXL  Water heating energy efficiency  Daily fuel consumption  AFC  Daily fuel consumption  AFC  Annual fuel consumption  AFC	•	4	,-	k\M		COPCVC		_
Power consumption in modes other than active mode  Off mode  Off mode  Poff Off mode Off mode  Poff Off mode Off mode Off mode Off mode Off mode Off wate hat output  Poff energy input  Electric  Poff energy input  Note of energy input  Poff energy input  Poff energy input  Note of energy input  Poff energy input  Note of energy input  Poff energy input  Note of energy inpu	· · · · · ·		0.99	-	_ ·		65	°C
Thermostat-off mode	•	T T			Psup	4.0	kW	
Standby mode	Thermostat-off mode					1 2 2 1	-,-	1
Crankcase heater mode  PCK 0,035 kW  Other items  Capacity control fixed  Sound power level, indoors/outdoors  Annual energy consumption  PCK 0,035 kW  Rated air flow rate, outdoors  Rated water flow rate, indoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, indoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, indoor heat exchanger  Rated brine or water flow rate, indoor heat exchanger  Rated brine or water flow rate, indoor heat exchanger  Rated brine or water flow rate, indoor heat exchanger  Rated brine or water flow rate, indoor heat exchanger  Rated brine or water flow rate, indoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, indoor heat exchanger  Rated brine or water flow rate, indoor heat exchanger  Rated brine or water flow rate, indoor heat exchanger  Rated brine or water flow rate, indoor heat exchanger  Rated brine or water flow rate, indoor heat exchanger  Rated brine or water flow rate, indoor heat exchanger  Rated brine or water flow rate, indoor heat exchanger  Rated brine or water flow rate, indoor				+	Type of energy input		Flootric	
Capacity control  Sound power level, indoors/outdoors  Annual energy consumption  Declared load profile  Daily electricity consumption  Annual electricity consumption  Annual electricity consumption  Annual electricity consumption  Fixed  Rated air flow rate, outdoors  Rated water flow rate, indoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  3,23  Mater heating energy efficiency  Daily fuel consumption  AFC  Annual fuel consumption  AFC					Type of effergy input	Electric		
Capacity control  Fixed  Sound power level, indoors/outdoors  Annual energy consumption  Capacity control  Fixed  Annual energy consumption  Capacity control  Fixed  Annual energy consumption  Capacity consumption  Capacity control  Fixed  Rated air flow rate, outdoors  Rated water flow rate, indoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated water flow rate, indoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated water flow rate, indoor heat exchanger  Rated brine or water flow rate, outdoors Rated water flow rate, indoor heat exchanger  Rated brine or water flow rate, outdoors Rated water flow rate, indoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoors Rated water flow rate, indoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated water flow rate, indoor heat exchanger  Rated water flow rate, indoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Britanian Annual flow rate, indoor heat exchanger  Rated brine or water flow rate, outdoor heat exchanger  Britanian Annual flow rate, indoor heat exchanger  Rated water flow rate, indoor heat exchanger  Britanian Annual flow rate, indoor heat exchanger  Britanian	Crankcase neater mode	P <sub>CK</sub>	0,035	KVV				
Sound power level, indoors/outdoors  L <sub>WA</sub> Annual energy consumption  Q <sub>HE</sub> 11407 kWh  Annual energy efficiency  Q <sub>HE</sub> Daily fuel consumption  Q <sub>HE</sub> Annual fuel consumption  AFC								
Sound power level, indoors/outdoors  L <sub>WA</sub> 43/-  Annual energy consumption  Q <sub>HE</sub> 11407 kWh  243/-  Annual energy consumption  Q <sub>HE</sub> 11407 kWh  Annual energy efficiency  Q <sub>HE</sub> 10,18 kWh  Annual fuel consumption  AFC  1,72 in Rated brine or water flow rate, outdoor heat exchanger  3,23 in Rated brine or water flow rate, outdoor heat exchanger  3,23 in Rated brine or water flow rate, outdoor heat exchanger  3,23 in Rated brine or water flow rate, outdoor heat exchanger  3,23 in Rated brine or water flow rate, outdoor heat exchanger  3,23 in Rated brine or water flow rate, outdoor heat exchanger  3,23 in Rated brine or water flow rate, outdoor heat exchanger  3,23 in Rated brine or water flow rate, outdoor heat exchanger  3,23 in Rated brine or water flow rate, outdoor heat exchanger  3,23 in Rated brine or water flow rate, outdoor heat exchanger  3,23 in Rated brine or water flow rate, outdoor heat exchanger  Annual electricity consumption heater:  Declared load profile  AXL  Daily fuel consumption  AFC	Capacity control	1	fixed		,			m³/h
Annual energy consumption  Q <sub>HE</sub> 11407 kWh  Rated brine or water flow rate, outdoor heat exchanger  3,23 In  For heat pump combination heater:  Declared load profile  XXL  Water heating energy efficiency  Daily electricity consumption  Q <sub>elec</sub> 10,18 kWh  Annual electricity consumption  AEC  2235 kWh  Rated brine or water flow rate, outdoor heat exchanger  3,23 In  Bally fuel consumption  Q <sub>fuel</sub> Annual fuel consumption  AFC			1		· · · · · · · · · · · · · · · · · · ·			2.0
Annual energy consumption    Q <sub>HE</sub>	Sound power level, indoors/outdoors	L <sub>WA</sub>	43/-	dB	S		1,72	m³/h
For heat pump combination heater:  Declared load profile  XXL  Daily electricity consumption  AEC  2235 kWh  Water heating energy efficiency  Daily fuel consumption  Q <sub>elec</sub> Annual fuel consumption  AFC					•			m3/h
Daily electricity consumption  AEC 2235 kWh  Water heating energy efficiency  Daily fuel consumption  AFC 2235 kWh  Queen Annual fuel consumption  AFC 486 Annual fuel consumption  AFC 487 Annual fuel consumption  AFC 487 Annual fuel consumption  AFC 487 Annual fuel consumption	Annual energy consumption	$Q_{HE}$	11407	kWh	outdoor heat exchanger		3,23	m³/h
Daily electricity consumption Q <sub>elec</sub> 10,18 kWh Annual electricity consumption AEC 2235 kWh  Annual fuel consumption AFC	For heat pump combination heater:							
Annual electricity consumption AEC 2235 kWh Annual fuel consumption AFC	Declared load profile	<u> </u>	XXL		Water heating energy efficiency	$\eta_{wh}$	96	%
Annual electricity consumption AEC 2235 kWh Annual fuel consumption AFC	Daily electricity consumption	Q <sub>oloc</sub>	10.18	kWh	Daily fuel consumption	Q <sub>fuol</sub>		kWh
								GJ
Approved by:				1	r r r r r r r r r r r r r r r r r r r			
Contact details © NIBE Energy Systems - Box 14 - Hannabadsvägen 5 - 28521 Markaryd - Sweden		⊕ NIRE E	normy Syste	me - Roy	14 - Hannahadsvägen F - 29521 Mark	and Swa	lon	

Supplier's name:	NI	BE	
Model:	NIBE F1145-17 (+VPB 500)		
Temperature application	35	55	°C
Declared load profile for water heating	XXL		
Seasonal space heating energy efficiency class, average climate:	A++	A++	
Water heating energy efficiency class, average climate:		<b>A</b>	
Rated heat output, average climate:	20	20	kW
Annual energy consumption for space heating, average climate	9474	11407	kWh
Annual electricity consumption for water heating, average climate	2235		kWh
Seasonal space heating energy efficiency, average climate:	166	137	%
Water heating energy efficiency, average climate:	96		%
Sound power level LWA indoors	43		dB
Rated heat output, cold climate:	20 20		kW
Rated heat output, warm climate:	20	20	kW
Annual energy consumption for space heating, cold climate	11047 13300		kWh
Annual electricity consumption for water heating, cold climate	2235		kWh
Annual energy consumption for space heating, warm climate	6224	7404	kWh
Annual electricity consumption for water heating, warm climate	2235		kWh
Seasonal space heating energy efficiency, cold climate:	171	140	%
Water heating energy efficiency, cold climate:	96		%
Seasonal space heating energy efficiency, warm climate:	164	136	%
Water heating energy efficiency, warm climate:	96		%
Sound power level LWA outdoors		-	dB

## Data for package fiche

Controller class	V		
Controler contribution to efficiency	3	%	
Seasonal space heating energy efficiency of package, average climate:	170	140	%
Seasonal space heating energy efficiency class for package, average climate:	A++	A++	%
Seasonal space heating energy efficiency of package, cold climate:	174	144	%
Seasonal space heating energy efficiency of package, warm climate:	167	140	%