PRODUCT FICHE ACCORDING TO COMMISSION DELEGATED REGULATIONS (EU) 811/2013 OF 18TH FEBRUARY 2013 AND (EU) 813/2013 OF 2ND AUGUST 2013

Model		Hitachi RASM-2VRE/Firebird Enviroair 4.3 kW						
Type of heat source		Air-to-water						
Low-temperature heat pump		No						
Equipped with supplementary heater		No						
Heat pump combination heater		Yes						
Climate condition		Average						
Temperature application		Low temperature (35°C)						
Applied standards EN14511, EN14825 (Space Heating), EN16147 (DHW), EN12102								
Rated Heat Output (1)	**P_{rated}**	**4.0**	**kW**		**Seasonal space heating energy efficiency**	**η_s**	**181**	**%**
Declared capacity for part load at outdoor temperature Tj					**Declared coefficient of performance for part load at outdoor temperature Tj**			
Tj = -7°C (A Condition)	Pdh	3.54	kW		Tj = -7°C (A Condition)	COPd	3.2	kW
Tj = +2°C (B Condition)	Pdh	2.35	kW		Tj = +2°C (B Condition)	COPd	4.80	kW
Tj = +7°C (C Condition)	Pdh	3.00	kW		Tj = +7°C (C Condition)	COPd	6.2	kW
Tj = +12°C (D Condition)	Pdh	3.05	kW		Tj = +12°C (D Condition)	COPd	8.3	kW
Tj = biv	Pdh	3.54	kW		Tj = biv	COPd	3.20	kW
Tj = TOL (E Condition)	Pdh	4.0	kW		Tj = TOL (E Condition)	COPd	2.75	kW
Tj = -15°C (if TOL < -20°C)	Pdh		kW		Tj = -15°C (if TOL < -20°C)	COPd		kW
Bivalent temperature	T_{biv}	-7	°C		Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	P_{cych}		kW		Cycling interval efficiency	COP_{cyc}		-
Degradation co-efficient (2)	Cdh	0.90	-		Heating water operating limit	WTOL	55	°C
Power consumption in modes other than active mode					**Supplementary heater**			
Off mode	P_{OFF}	0.012	kW		Rated heat output			
Thermostat-off mode	P_{TO}	0.000	kW					
Standby mode	P_{SB}	0.012	kW		Type of energy input			
Crankcase heater mode	P_{CK}	0.000	kW					
Other items								
Capacity control		Variable			Rated air flow rate, outdoors			m^3/h
Sound power level, indoors/outdoors	L_{WA}	37/61	dB		Rated water flow rate, indoor heat exchanger			m^3/h
Annual energy consumption	Q_{HE}	1798	kWh		Rated brine or water flow rate, outdoor heat exchanger			m^3/h
For heat pump combination heater								
Declared load profile		L			Water heating energy efficiency	η_{WH}	100	%
Capacity of heat pump	P_{rated}	3.330	kW		Reference hot water temperature	Θ_{WH}	50	°C
Daily electricity consumption	Q_{elec}		kWh		Vol. of DHW accounted for in test		232.34	Litres
Annual electricity consumption	AEC		kWh		Standby heat loss / day		1.61	kWhr
Contact Details:	Firebird Heating Solutions Ltd., Údarás Industrial Estate, Baile Mhic Íre, Co. Cork, P12 HK51							

(1) For heat pumps space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).

(2) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0.9.

PRODUCT FICHE ACCORDING TO COMMISSION DELEGATED REGULATIONS (EU) 811/2013 OF 18TH FEBRUARY 2013 AND (EU) 813/2013 OF 2ND AUGUST 2013

Model		Hitachi RASM-3VRE/ Firebird Enviroair 4.3 kW						
Type of heat source		Air-to-water						
Low-temperature heat pump		No						
Equipped with supplementary heater		No						
Heat pump combination heater		Yes						
Climate condition		Average						
Temperature application		Medium temperature (55°C)						
Applied standards EN14511, EN14825 (Space Heating), EN16147 (DHW), EN12102								
Rated Heat Output (1)	**P_{rated}**	**4.0**	**kW**		**Seasonal space heating energy efficiency**	**η_s**	**133**	**%**
Declared capacity for part load at outdoor temperature Tj					**Declared coefficient of performance for part load at outdoor temperature Tj**			
Tj = -7°C (A Condition)	Pdh	3.50	kW		Tj = -7°C (A Condition)	COPd	2.13	kW
Tj = +2°C (B Condition)	Pdh	2.10	kW		Tj = +2°C (B Condition)	COPd	3.35	kW
Tj = +7°C (C Condition)	Pdh	2.43	kW		Tj = +7°C (C Condition)	COPd	5.15	kW
Tj = +12°C (D Condition)	Pdh	2.80	kW		Tj = +12°C (D Condition)	COPd	6.80	kW
Tj = biv	Pdh	3.50	kW		Tj = biv	COPd	2.13	kW
Tj = TOL (E Condition)	Pdh	3.10	kW		Tj = TOL (E Condition)	COPd	1.90	kW
Tj = -15°C (if TOL < -20°C)	Pdh		kW		Tj = -15°C (if TOL < -20°C)	COPd		kW
Bivalent temperature	T_{biv}	-7	°C		Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	P_{cych}		kW		Cycling interval efficiency	COP_{cyc}		-
Degradation co-efficient	Cdh	0.9	-		Heating water operating limit	WTOL	55	°C
Power consumption in modes other than active mode					**Supplementary heater**			
Off mode	P_{OFF}	0.012	kW		Rated heat output			
Thermostat-off mode	P_{TO}	0.000	kW					
Standby mode	P_{SB}	0.012	kW		Type of energy input			
Crankcase heater mode	P_{CK}	0.000	kW					
Other items								
Capacity control		Variable			Rated air flow rate, outdoors			m^3/h
Sound power level, indoors/outdoors	L_{WA}	37/61	dB		Rated water flow rate, indoor heat exchanger			m^3/h
Annual energy consumption	Q_{HE}	2401	kWh		Rated brine or water flow rate, outdoor heat exchanger			m^3/h
For heat pump combination heater								
Declared load profile		L			Water heating energy efficiency	η_{WH}	100	%
Capacity of heat pump	P_{rated}	3.330	kW		Reference hot water temperature	Θ_{WH}	50	°C
Daily electricity consumption	Q_{elec}		kWh		Vol. of DHW accounted for in test		232.34	Litres
Annual electricity consumption	AEC		kWh		Standby heat loss / day		1.61	kWhr
Contact Details:	Firebird Heating Solutions Ltd., Údarás Industrial Estate, Baile Mhic Íre, Co. Cork, P12 HK51							

(1) For heat pumps space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(2) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0.9.