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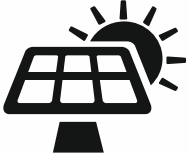
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 WATERKOTTE


Industrial Line Air Kaskade 5040.6 - air to water





 

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Product fiche requirements for heat pump space heaters and heat pump combination heaters (in accordance with EU regulation no. 811/2013)

Supplier's name	Waterkotte GmbH, Gewerkestr. 15, 44628 Herne, Germany									
Model(s):	1	Industrial Line Air Kaskade 5016.6								
	2	Industrial Line Air Kaskade 5024.6								
	3	Industrial Line Air Kaskade 5032.6								
	4	Industrial Line Air Kaskade 5040.6								
	5	Industrial Line Air Kaskade 5048.6								
	6	Industrial Line Air Kaskade 5056.6								
	7	Industrial Line Air Kaskade 5064.6								
	8	Industrial Line Air Kaskade 5072.6								
	9	Industrial Line Air Kaskade 5080.6								

Item	Symbol	Unit	1	2	3	4	5	6	7	8	9
Medium temperature / Low temperature			55°C / 35°C	55°C / 35°C	55°C / 35°C	55°C / 35°C	55°C / 35°C	55°C / 35°C	55°C / 35°C	55°C / 35°C	55°C / 35°C
Seasonal space heating energy efficiency class of the model	-	-	A++/A+++	A++/A+++	A++/A+++	A++/A+++	A++/A+++	A++/A+++	A++/A+++	A++/A+++	A++/A+++
Declared load profile for water heating	-	-	-	-	-	-	-	-	-	-	-
Water heating energy efficiency class	-	-	-	-	-	-	-	-	-	-	-
Rated heat output, including the rated heat output of any supplementary heater under average climate conditions	P _{rated}	kW	15 / 14	22 / 22	29 / 29	36 / 36	44 / 43	51 / 50	58 / 57	66 / 65	73 / 72
Seasonal space heating energy efficiency under average climate conditions	η _s	%	137 / 189	137 / 189	137 / 189	137 / 189	137 / 189	137 / 189	137 / 189	137 / 189	137 / 189
Space heating, annual energy consumption under average climate conditions	Q _{HE}	kWh	8670 / 6181	13005 / 9272	17340 / 12362	21675 / 15453	26010 / 18543	30345 / 21634	34680 / 24724	39015 / 27815	43350 / 30905
Water heating energy efficiency	η _{wh}	%	-	-	-	-	-	-	-	-	-
Water heating, the annual electricity consumption	AEC	kWh	-	-	-	-	-	-	-	-	-
Sound power level L _{WA} , indoors	L _{WA}	dB(A)	39	39	39	40	40	40	41	41	41

Any specific precautions that shall be taken when the heater is assembled, installed or maintained: see installation manual

Alle beim Zusammenbau, der Installation oder Wartung des Raumheizgerätes zu treffenden besonderen Vorkehrungen: siehe Installationsanleitung

Les éventuelles précautions particulières qui doivent être prises lors du montage, de l'installation ou de l'entretien du dispositif de chauffage des locaux: voir manuel d'installation

Rated heat output, including the rated heat output of any supplementary heater under colder climate conditions	P _{rated}	kW	16/18	24/26	32/35	40/44	48/53	56/62	64/70	72/79	80/88
Rated heat output, including the rated heat output of any supplementary heater under warmer climate conditions	P _{rated}	kW	14/15	21/23	28/31	36/38	43/46	50/54	57/61	64/69	71/77
Seasonal space heating energy efficiency under colder climate conditions	η _s	%	107/153	107/153	107/153	107/153	107/153	107/153	107/153	107/153	107/153
Seasonal space heating energy efficiency under warmer climate conditions	η _s	%	155/244	155/244	155/244	155/244	155/244	155/244	155/244	155/244	155/244
Space heating, annual energy consumption under colder climate conditions	Q _{HE}	kWh	14462/11150	21693/16725	28924/22300	36155/27875	43386/33450	50617/39025	57848/44600	65079/50175	72310/55750
Space heating, annual energy consumption under warmer climate conditions	Q _{HE}	kWh	4816/3320	7224/4980	9632/6640	12040/8300	14448/9960	16856/11620	19264/13280	21672/14940	24080/16600
Sound power level L _{WA} , outdoors	L _{WA}	dB(A)	64	65	66	67	68	69	69	70	70

55°C
Information requirements for heat pump space heaters and heat pump combination heaters (in accordance with EU regulation no. 813/2013)

Model(s):	1	Industrial Line Air Kaskade 5016.6
	2	Industrial Line Air Kaskade 5024.6
	3	Industrial Line Air Kaskade 5032.6
	4	Industrial Line Air Kaskade 5040.6
	5	Industrial Line Air Kaskade 5048.6
	6	Industrial Line Air Kaskade 5056.6
	7	Industrial Line Air Kaskade 5064.6
	8	Industrial Line Air Kaskade 5072.6
	9	Industrial Line Air Kaskade 5080.6

	1	2	3	4	5	6	7	8	9
Air-to-water heat pump	yes	yes	yes	yes	yes	yes	yes	yes	yes
Water-to-water heat pump	-	-	-	-	-	-	-	-	-
Brine-to-water heat pump	-	-	-	-	-	-	-	-	-
Low-temperature heat pump	-	-	-	-	-	-	-	-	-
Equipped with a supplementary heater	-	-	-	-	-	-	-	-	-
Heat pump combination heater	-	-	-	-	-	-	-	-	-

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low-temperature heat pumps, parameters shall be declared for low-temperature application.

Parameters shall be declared for average climate conditions.

Item	Symbol	Unit	1	2	3	4	5	6	7	8	9
Rated heat output (*)	P _{rated}	kW	15	22	29	36	44	51	58	66	73
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j											
T _j = -7 °C	P _{dh}	kW	13,0	19,4	25,9	32,4	38,9	45,3	51,8	58,3	64,8
T _j = +2 °C	P _{dh}	kW	7,9	11,8	15,8	19,7	23,7	27,6	31,6	35,5	39,5
T _j = +7 °C	P _{dh}	kW	6,0	9,0	12,0	15,0	18,0	21,0	24,0	27,0	30,0
T _j = +12 °C	P _{dh}	kW	3,8	5,7	7,6	9,5	11,4	13,2	15,1	17,0	18,9
T _j = bivalent temperature	P _{dh}	kW	13,0	19,4	25,9	32,4	38,9	45,3	51,8	58,3	64,8
T _j = operation limit temperature	P _{dh}	kW	11,2	16,7	22,3	27,9	33,5	39,1	44,7	50,2	55,8
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	P _{dh}	kW	-	-	-	-	-	-	-	-	-
Bivalent temperature	T _{low}	°C	-7	-7	-7	-7	-7	-7	-7	-7	-7
Cycling interval capacity for heating	P _{psych}	kW	-	-	-	-	-	-	-	-	-
Degradation co-efficient (**)	C _{dh}	-	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
Seasonal space heating energy efficiency	η _s	%	137	137	137	137	137	137	137	137	137
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j											
T _j = -7 °C	COP _d	-	2,20	2,20	2,20	2,20	2,20	2,20	2,20	2,20	2,20
T _j = +2 °C	COP _d	-	3,37	3,37	3,37	3,37	3,37	3,37	3,37	3,37	3,37
T _j = +7 °C	COP _d	-	4,41	4,41	4,41	4,41	4,41	4,41	4,41	4,41	4,41
T _j = +12 °C	COP _d	-	6,66	6,66	6,66	6,66	6,66	6,66	6,66	6,66	6,66
T _j = bivalent temperature	COP _d	-	2,20	2,20	2,20	2,20	2,20	2,20	2,20	2,20	2,20
T _j = operation limit temperature	COP _d	-	1,93	1,93	1,93	1,93	1,93	1,93	1,93	1,93	1,93
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	COP _d	-	-	-	-	-	-	-	-	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	°C	-10	-10	-10	-10	-10	-10	-10	-10	-10
Cycling interval efficiency	COP _{psc}	-	-	-	-	-	-	-	-	-	-
Heating water operating limit temperature	WTOL	°C	58	58	58	58	58	58	58	58	58
Power consumption in modes other than active mode											
Off mode	P _{OFF}	kW	0,011	0,016	0,021	0,026	0,032	0,037	0,042	0,047	0,053
Thermostat-off mode	P _{TO}	kW	0,020	0,030	0,040	0,050	0,060	0,070	0,080	0,090	0,100
Standby mode	P _{SB}	kW	0,020	0,029	0,039	0,049	0,059	0,069	0,078	0,088	0,098
Crankcase heater mode	P _{CK}	kW	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Supplementary heater											
Rated heat output (*)	P _{sup}	kW	3,43	5,15	6,86	8,58	10,29	12,01	13,72	15,44	17,15
Type of energy input			electricity	electricity	electricity	electricity	electricity	electricity	electricity	electricity	electricity
Other items											
Capacity control	fixed/variable		variable	variable	variable	variable	variable	variable	variable	variable	variable
Sound power level, indoors/ outdoors	L _{WA}	dB(A)	39 / 64	39 / 65	39 / 66	40 / 67	40 / 68	40 / 69	41 / 69	41 / 70	41 / 70
Emissions of nitrogen oxides	NO _x	mg/kWh	-	-	-	-	-	-	-	-	-
For air-to-water heat pumps: Rated air flow rate, outdoors		m ³ /h	4000	6000	8000	10000	12000	14000	16000	18000	20000
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger		m ³ /h	-	-	-	-	-	-	-	-	-
For heat pump combination heater:											
Declared load profile											
Daily electricity consumption	Q _{elec}	kWh	-	-	-	-	-	-	-	-	-
Water heating energy efficiency											
Daily fuel consumption	Q _{fuel}	kWh	-	-	-	-	-	-	-	-	-
Contact details	Waterkotte GmbH, Gewerkestr. 15, 44628 Herne, Germany										

 (*) For heat pump space heaters and heat pump combination heaters, the rated heat output P_{rated} is equal to the design load for heating P_{design}, and the rated heat output of a supplementary heater P_{sup} is equal to the supplementary capacity for heating sup(T_j).

 (**) If C_{dh} is not determined by measurement then the default degradation coefficient is C_{dh} = 0,9.

35°C
Information requirements for heat pump space heaters and heat pump combination heaters (in accordance with EU regulation no. 813/2013)

Model(s):	1	Industrial Line Air Kaskade 5016.6
	2	Industrial Line Air Kaskade 5024.6
	3	Industrial Line Air Kaskade 5032.6
	4	Industrial Line Air Kaskade 5040.6
	5	Industrial Line Air Kaskade 5048.6
	6	Industrial Line Air Kaskade 5056.6
	7	Industrial Line Air Kaskade 5064.6
	8	Industrial Line Air Kaskade 5072.6
	9	Industrial Line Air Kaskade 5080.6

	1	2	3	4	5	6	7	8	9
Air-to-water heat pump	yes	yes	yes	yes	yes	yes	yes	yes	yes
Water-to-water heat pump	-	-	-	-	-	-	-	-	-
Brine-to-water heat pump	-	-	-	-	-	-	-	-	-
Low-temperature heat pump	-	-	-	-	-	-	-	-	-
Equipped with a supplementary heater	-	-	-	-	-	-	-	-	-
Heat pump combination heater	-	-	-	-	-	-	-	-	-

Parameters shall be declared for **low-temperature application**, except for low-temperature heat pumps. For low-temperature heat pumps, parameters shall be declared for low-temperature application.
Parameters shall be declared for **average climate conditions**.

Item	Symbol	Unit	1	2	3	4	5	6	7	8	9
Rated heat output (*)	P_{rated}	kW	14	22	29	36	43	50	58	65	72
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T_o											
$T_i = -7\text{ °C}$	Pdh	kW	12,7	19,1	25,5	31,8	38,2	44,6	50,9	57,3	63,6
$T_i = +2\text{ °C}$	Pdh	kW	7,8	11,6	15,5	19,4	23,3	27,1	31,0	34,9	38,8
$T_i = +7\text{ °C}$	Pdh	kW	6,6	9,9	13,2	16,5	19,8	23,1	26,4	29,7	33,0
$T_i = +12\text{ °C}$	Pdh	kW	4,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0
$T_i =$ bivalent temperature	Pdh	kW	12,7	19,1	25,5	31,8	38,2	44,6	50,9	57,3	63,6
$T_i =$ operation limit temperature	Pdh	kW	14,1	21,2	28,3	35,4	42,4	49,5	56,6	63,7	70,7
For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if $TOL < -20\text{ °C}$)	Pdh	kW	-	-	-	-	-	-	-	-	-
Bivalent temperature	T_{biv}	°C	-7	-7	-7	-7	-7	-7	-7	-7	-7
Cycling interval capacity for heating	P _{cyc}	kW	-	-	-	-	-	-	-	-	-
Degradation co-efficient (**)	Cdh	-	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
Seasonal space heating energy efficiency	η_s	%	189	189	189	189	189	189	189	189	189
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T_o											
$T_i = -7\text{ °C}$	COPd	-	2,80	2,80	2,80	2,80	2,80	2,80	2,80	2,80	2,80
$T_i = +2\text{ °C}$	COPd	-	4,78	4,78	4,78	4,78	4,78	4,78	4,78	4,78	4,78
$T_i = +7\text{ °C}$	COPd	-	6,12	6,12	6,12	6,12	6,12	6,12	6,12	6,12	6,12
$T_i = +12\text{ °C}$	COPd	-	8,59	8,59	8,59	8,59	8,59	8,59	8,59	8,59	8,59
$T_i =$ bivalent temperature	COPd	-	2,80	2,80	2,80	2,80	2,80	2,80	2,80	2,80	2,80
$T_i =$ operation limit temperature	COPd	-	2,80	2,80	2,80	2,80	2,80	2,80	2,80	2,80	2,80
For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if $TOL < -20\text{ °C}$)	COPd	-	-	-	-	-	-	-	-	-	-
For air-to-water heat pumps: Operation limit temperature	TOL	°C	-10	-10	-10	-10	-10	-10	-10	-10	-10
Cycling interval efficiency	COP _{cyc}	-	-	-	-	-	-	-	-	-	-
Heating water operating limit temperature	WTOL	°C	58	58	58	58	58	58	58	58	58
Power consumption in modes other than active mode											
Off mode	P_{OFF}	kW	0,011	0,016	0,021	0,026	0,032	0,037	0,042	0,047	0,053
Thermostat-off mode	P_{TO}	kW	0,020	0,030	0,040	0,050	0,060	0,06965	0,0796	0,08955	0,0995
Standby mode	P_{SB}	kW	0,020	0,029	0,039	0,049	0,059	0,0686	0,0784	0,0882	0,098
Crankcase heater mode	P_{CK}	kW	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Supplementary heater											
Rated heat output (*)	P_{sup}	kW	0,25	0,38	0,50	0,63	0,75	0,88	1,00	1,13	1,25
Type of energy input			electricity	electricity	electricity	electricity	electricity	electricity	electricity	electricity	electricity
Other items											
Capacity control	fixed/variable		variable	variable	variable	variable	variable	variable	variable	variable	variable
Sound power level, indoors/ outdoors	L_{WA}	dB(A)	39 / 64	39 / 65	39 / 66	40 / 67	40 / 68	40 / 69	41 / 69	41 / 70	41 / 70
Emissions of nitrogen oxides	NO_x	mg/kWh	-	-	-	-	-	-	-	-	-
For air-to-water heat pumps: Rated air flow rate, outdoors		m^3/h	4000	6000	8000	10000	12000	14000	16000	18000	20000
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger		m^3/h	-	-	-	-	-	-	-	-	-
For heat pump combination heater:											
Declared load profile											
Daily electricity consumption	Q_{elec}	kWh	-	-	-	-	-	-	-	-	-
Water heating energy efficiency											
Daily fuel consumption	Q_{fuel}	kWh	-	-	-	-	-	-	-	-	-
Contact details	Waterkotte GmbH, Gewerkenstr. 15, 44628 Herne, Germany										

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output P_{rated} is equal to the design load for heating P_{design} , and the rated heat output of a supplementary heater P_{sup} is equal to the supplementary
(**) If Cdh is not determined by measurement then the default degradation coefficient is $Cdh = 0,9$.

Any specific precautions that shall be taken when the heater is assembled, installed or maintained: see installation manuel
Information relevant for disassembly, recycling and/or disposal at end-of-life: see installation manuel

Alle beim Zusammenbau, der Installation oder Wartung des Raumheizgerätes zu treffenden besonderen Vorkehrungen: siehe Installationsanleitung
Sachdienliche Angaben für das Zerlegen, die Wiederverwendung und/oder die Entsorgung nach der endgültigen Außerbetriebstellung: siehe Installationsanleitung

Les éventuelles précautions particulières qui doivent être prises lors du montage, de l'installation ou de l'entretien du dispositif de chauffage des locaux: voir manuel d'installation
Informations utiles pour le démontage, le recyclage et/ou l'élimination à la fin du cycle de vie de l'appareil: voir manuel d'installation

Product fiche for temperature controls (in accordance with EU regulation no. 811/2013)

Supplier's name			Waterkotte GmbH, Gewerkestr. 15, 44628 Herne, Germany											
Supplier's model identifier:			1	WWPR Inverter RS	WWPR for Inverter heat pump with room sensor									
			2	WWPR Inverter	WWPR for Inverter heat pump without room sensor									
			3	WWPR ON/OFF RS	WWPR for brine or water to water heat pump with room sensor									
			4	WWPR ON/OFF	WWPR for brine or water to water heat pump without room sensor									
			5	WWPR2/EasyCon Inverter RS	WWPR2/EasyCon for inverter heat pump with room sensor									
			6	WWPR2/EasyCon Inverter	WWPR2/EasyCon for inverter heat pump without room sensor									
			7	WWPR2/EasyCon ON/OFF RS	WWPR2/EasyCon for brine or water to water heat pump with room sensor									
			8	WWPR2/EasyCon ON/OFF	WWPR2/EasyCon for brine or water to water heat pump without room sensor									
			9	EasyCon 2.0 Inverter RS	EasyCon 2.0 for Inverter heat pump with room sensor									
			10	EasyCon 2.0 Inverter	EasyCon 2.0 for Inverter heat pump without room sensor									
			11	Basic Pro 2.0 Inverter RS	Basic Pro 2.0 for inverter heat pump with room sensor									
			12	Basic Pro 2.0 Inverter	Basic Pro 2.0 for inverter heat pump without room sensor									
			1	2	3	4	5	6	7	8	9	10	11	12
Item	Symbol	Unit												
Class of the temperature control	-	-	VI	II	VII	III	VI	II	VII	III	VI	II	VI	II
Contribution of the temperature control to seasonal space heating energy efficiency in %	-	%	4,0	2,0	3,5	1,5	4,0	2,0	3,5	1,5	4,0	2,0	4,0	2,0

Produktdatenblatt des Temperaturreglers (in Übereinstimmung mit EU-Verordnung no. 811/2013)

Name des Lieferanten			Waterkotte GmbH, Gewerkestr. 15, 44628 Herne, Germany											
Modellkennung des Lieferanten:			1	WWPR Inverter RS	WWPR für Inverter WP mit Raumfühler									
			2	WWPR Inverter	WWPR für Inverter WP ohne Raumfühler									
			3	WWPR ON/OFF RS	WWPR für Sole/Wasser o. Wasser/Wasser WP mit Raumfühler									
			4	WWPR ON/OFF	WWPR für Sole/Wasser o. Wasser/Wasser WP ohne Raumfühler									
			5	WWPR2/EasyCon Inverter RS	WWPR2 für Inverter WP mit Raumfühler									
			6	WWPR2/EasyCon Inverter	WWPR2 für Inverter WP ohne Raumfühler									
			7	WWPR2/EasyCon ON/OFF RS	WWPR2 für Sole/Wasser o. Wasser/Wasser WP mit Raumfühler									
			8	WWPR2/EasyCon ON/OFF	WWPR2 für Sole/Wasser o. Wasser/Wasser WP ohne Raumfühler									
			9	EasyCon 2.0 Inverter RS	EasyCon 2.0 für Inverter WP mit Raumfühler									
			10	EasyCon 2.0 Inverter	EasyCon 2.0 für Inverter WP ohne Raumfühler									
			11	Basic Pro 2.0 Inverter RS	Basic Pro 2.0 für Inverter WP mit Raumfühler									
			12	Basic Pro 2.0 Inverter	Basic Pro 2.0 für Inverter WP ohne Raumfühler									
			1	2	3	4	5	6	7	8	9	10	11	12
Angabe	Symbol	Einheit												
Klasse des Temperaturreglers	-	-	VI	II	VII	III	VI	II	VII	III	VI	II	VI	II
Beitrag des Temperaturreglers zur jahreszeitbedingten Raumheizungs-Energieeffizienz in %	-	%	4,0	2,0	3,5	1,5	4,0	2,0	3,5	1,5	4,0	2,0	4,0	2,0

Fiche de produit relative au régulateur de température (conformément à la réglementation de l'UE no. 811/2013)

Nom du fournisseur			Waterkotte GmbH, Gewerkestr. 15, 44628 Herne, Germany											
Référence du modèle donnée par le fournisseur:			1	WWPR Inverter RS	WWPR pour PAC Inverter avec capteur d'ambiance									
			2	WWPR Inverter	WWPR pour PAC Inverter sans capteur d'ambiance									
			3	WWPR ON/OFF RS	WWPR pour PAC eau glycolée/eau ou eau/eau avec capteur d'ambiance									
			4	WWPR ON/OFF	WWPR pour PAC eau glycolée/eau ou eau/eau sans capteur d'ambiance									
			5	WWPR2/EasyCon Inverter RS	WWPR2 pour PAC Inverter avec capteur d'ambiance									
			6	WWPR2/EasyCon Inverter	WWPR2 pour PAC Inverter sans capteur d'ambiance									
			7	WWPR2/EasyCon ON/OFF RS	WWPR2 pour PAC eau glycolée/eau ou eau/eau avec capteur d'ambiance									
			8	WWPR2/EasyCon ON/OFF	WWPR2 pour PAC eau glycolée/eau ou eau/eau sans capteur d'ambiance									
			9	EasyCon 2.0 Inverter RS	EasyCon 2.0 pour PAC Inverter avec capteur d'ambiance									
			10	EasyCon 2.0 Inverter	EasyCon 2.0 pour PAC Inverter sans capteur d'ambiance									
			11	Basic Pro 2.0 Inverter RS	Basic Pro 2.0 pour PAC Inverter avec capteur d'ambiance									
			12	Basic Pro 2.0 Inverter	Basic Pro 2.0 pour PAC Inverter sans capteur d'ambiance									
			1	2	3	4	5	6	7	8	9	10	11	12
Caractéristique	Symbole	Unité												
Classe du régulateur de température	-	-	VI	II	VII	III	VI	II	VII	III	VI	II	VI	II
Contribution du régulateur de température à l'efficacité énergétique saisonnière pour le chauffage des locaux, en %	-	%	4,0	2,0	3,5	1,5	4,0	2,0	3,5	1,5	4,0	2,0	4,0	2,0