

Summary of	Vitocal 100-S/111-S 8kW 230V	Reg. No.	011-1W0402	
Certificate Holder				
Name	Viessmann Wärmepumpen GmbH			
Address	Viessmannstr. 1 Zip 35107			
City	Allendorf/Eder	Country	Germany	
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH			
Name of testing laboratory	Heat Pump Test Center WPZ			
Subtype title	Vitocal 100-S/111-S 8kW 230V			
Heat Pump Type	Outdoor Air/Water			
Refrigerant	R32			
Mass Of Refrigerant	1.6 kg			
Certification Date	02.11.2020			
Testing basis	HP KEYMARK certification scheme rules rev. 7			



Model: Vitocal 100-S AWB-M 101.B08

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2			
	Low temperature	Medium temperature	
Heat output	8.13 kW	9.67 kW	
El input	1.74 kW	3.61 kW	
СОР	4.66	2.69	
Indoor water flow rate	0.70 m³/h	0.70 m³/h	

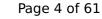
EN 14511-4		
Shutting off the heat transfer medium flow	passed	
Complete power supply failure	passed	
Defrost test	passed	
Starting and operating test	passed	

Average Climate



EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

	EN 1482	5	
		Low temperature	Medium temperature
Pdesignh	6.70 kW		
η_{s}	176 %	125 %	
Prated	6.40 kW	6.70 kW	-
SCOP	4.46	3.20	
Tbiv	-8 °C	-7 °C	
TOL	-20 °C	-20 °C	
Pdh Tj = -7°C	6.24 kW	5.93 kW	
COP Tj = -7°C	2.74	1.95	
Cdh	0.99	0.99	
Pdh Tj = +2°C	4.25 kW	3.60 kW	
COP Tj = +2°C	4.25	2.90	
Cdh	0.99	0.99	
Pdh Tj = +7°C	5.09 kW	6.94 kW	
COP Tj = +7°C	6.19	4.93	





Cdh 0.99 0.99
Pdh Tj = 12° C 5.96 kW 6.69 kW
COP Tj = 12°C 8.88 7.34
Cdh 0.99 0.99
Pdh Tj = Tbiv 5.91 kW 5.93 kW
COP Tj = Tbiv 2.63 1.95
Pdh Tj = TOL 4.99 kW 4.74 kW
COP Tj = TOL 2.19 1.56
Cdh 0.99 0.99
WTOL 55 °C 55 °C
Poff 15 W 15 W
PTO 0 W 0 W
PSB 0 W 0 W
PCK 0 W 0 W
Supplementary Heater: Type of energy input electrical electrical
Supplementary Heater: PSUP 1.41 kW 1.96 kW
Backup Heater 0.00 kW
Annual energy consumption Qhe 13206 kWh 13788 kWh

Warmer Climate



EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	238 %	159 %
Prated	8.80 kW	8.40 kW
SCOP	6.03	4.06
Tbiv	2 °C	2 °C
TOL	-20 °C	-20 °C
Pdh Tj = +2°C	8.77 kW	8.37 kW
COP Tj = +2°C	3.40	2.28
Cdh	0.99	0.99
Pdh Tj = +7°C	7.53 kW	6.67 kW
COP Tj = +7°C	5.36	3.38
Cdh	0.99	0.99
Pdh Tj = 12°C	5.90 kW	5.38 kW
COP Tj = 12°C	8.09	5.62
Cdh	0.99	0.99





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Pdh Tj = Tbiv	8.77 kW	8.37 kW
COP Tj = Tbiv	3.40	2.28
Pdh Tj = TOL	8.77 kW	8.37 kW
COP Tj = TOL	3.40	2.28
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
РТО	o w	o w
PSB	o w	o w
PCK	o w	o w
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	11720 kWh	11186 kWh

Colder Climate

EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	41 dB(A)	41 dB(A)	
Sound power level outdoor	64 dB(A)	64 dB(A)	

EN 14825		
	Low temperature	Medium temperature





η_{s}	141 %	98 %
Prated	6.80 kW	6.10 kW
SCOP	3.60	2.53
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	4.69 kW	4.20 kW
COP Tj = -7°C	2.97	2.09
Cdh	0.99	0.99
Pdh Tj = +2°C	4.16 kW	3.65 kW
COP Tj = +2°C	4.61	3.18
Cdh	0.99	0.99
Pdh Tj = +7°C	5.14 kW	4.78 kW
COP Tj = +7°C	6.68	5.03
Cdh	0.99	0.99
Pdh Tj = 12°C	6.00 kW	5.75 kW
COP Tj = 12°C	8.83	7.30
Cdh	0.99	0.99
Pdh Tj = Tbiv	5.52 kW	4.95 kW
COP Tj = Tbiv	2.13	1.47
Pdh Tj = TOL	3.30 kW	1.06 kW



COP Tj = TOL	1.21	0.32
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
PTO	0 W	0 W
PSB	0 W	0 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	6.77 kW	6.07 kW
Annual energy consumption Qhe	16466 kWh	14650 kWh



Model: Vitocal 100-S AWB-M-E 101.B08

General Data		
Power supply	1x230V 50Hz	

Heating

EN 14511-2			
	Low temperature	Medium temperature	
Heat output	8.13 kW	9.67 kW	
El input	1.74 kW	3.61 kW	
СОР	4.66	2.69	
Indoor water flow rate	0.70 m³/h	0.70 m³/h	

EN 14511-4		
Shutting off the heat transfer medium flow	passed	
Complete power supply failure	passed	
Defrost test	passed	
Starting and operating test	passed	

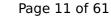
Average Climate



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EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

	EN 14825		
		Low temperature	Medium temperature
Pdesignh	6.70 kW		
η_{s}	176 %	125 %	
Prated	6.40 kW	6.70 kW	
SCOP	4.46	3.20	
Tbiv	-8 °C	-7 °C	
TOL	-20 °C	-20 °C	
Pdh Tj = -7°C	6.24 kW	5.93 kW	
COP Tj = -7°C	2.74	1.95	
Cdh	0.99	0.99	
Pdh Tj = +2°C	4.25 kW	3.60 kW	
COP Tj = +2°C	4.25	2.90	
Cdh	0.99	0.99	
Pdh Tj = +7°C	5.09 kW	6.94 kW	
COP Tj = +7°C	6.19	4.93	





Cdh	0.99	0.99
Pdh Tj = 12°C	5.96 kW	6.69 kW
COP Tj = 12°C	8.88	7.34
Cdh	0.99	0.99
Pdh Tj = Tbiv	5.91 kW	5.93 kW
COP Tj = Tbiv	2.63	1.95
Pdh Tj = TOL	4.99 kW	4.74 kW
COP Tj = TOL	2.19	1.56
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
РТО	o w	0 W
PSB	o w	0 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	1.41 kW	1.96 kW
Backup Heater	0.00 kW	
Annual energy consumption Qhe	13206 kWh	13788 kWh

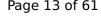
Warmer Climate



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EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	238 %	159 %
Prated	8.80 kW	8.40 kW
SCOP	6.03	4.06
Tbiv	2 °C	2 °C
TOL	-20 °C	-20 °C
Pdh Tj = +2°C	8.77 kW	8.37 kW
COP Tj = +2°C	3.40	2.28
Cdh	0.99	0.99
Pdh Tj = +7°C	7.53 kW	6.67 kW
COP Tj = +7°C	5.36	3.38
Cdh	0.99	0.99
Pdh Tj = 12°C	5.90 kW	5.38 kW
COP Tj = 12°C	8.09	5.62
Cdh	0.99	0.99





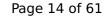
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Pdh Tj = Tbiv	8.77 kW	8.37 kW
COP Tj = Tbiv	3.40	2.28
Pdh Tj = TOL	8.77 kW	8.37 kW
COP Tj = TOL	3.40	2.28
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
РТО	o w	o w
PSB	o w	o w
PCK	o w	o w
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	11720 kWh	11186 kWh

Colder Climate

EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	41 dB(A)	41 dB(A)	
Sound power level outdoor	64 dB(A)	64 dB(A)	

EN 14825		
	Low temperature	Medium temperature





η_{s}	141 %	98 %
Prated	6.80 kW	6.10 kW
SCOP	3.60	2.53
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	4.69 kW	4.20 kW
COP Tj = -7°C	2.97	2.09
Cdh	0.99	0.99
Pdh Tj = +2°C	4.16 kW	3.65 kW
COP Tj = +2°C	4.61	3.18
Cdh	0.99	0.99
Pdh Tj = +7°C	5.14 kW	4.78 kW
COP Tj = +7°C	6.68	5.03
Cdh	0.99	0.99
Pdh Tj = 12°C	6.00 kW	5.75 kW
COP Tj = 12°C	8.83	7.30
Cdh	0.99	0.99
Pdh Tj = Tbiv	5.52 kW	4.95 kW
COP Tj = Tbiv	2.13	1.47
Pdh Tj = TOL	3.30 kW	1.06 kW



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COP Tj = TOL	1.21	0.32
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
PTO	0 W	0 W
PSB	0 W	0 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	6.77 kW	6.07 kW
Annual energy consumption Qhe	16466 kWh	14650 kWh



Model: Vitocal 100-S AWB-M-E-AC 101.B08

General Data		
Power supply	1x230V 50Hz	

Heating

EN 14511-2			
	Low temperature	Medium temperature	
Heat output	8.13 kW	9.67 kW	
El input	1.74 kW	3.61 kW	
СОР	4.66	2.69	
Indoor water flow rate	0.70 m³/h	0.70 m³/h	

EN 14511-4		
Shutting off the heat transfer medium flow	passed	
Complete power supply failure	passed	
Defrost test	passed	
Starting and operating test	passed	

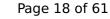
Average Climate



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EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	41 dB(A)	41 dB(A)	
Sound power level outdoor	64 dB(A)	64 dB(A)	

EN 14825			
		Low temperature	Medium temperature
Pdesignh	6.70 kW		_
η_{s}	176 %	125 %	
Prated	6.40 kW	6.70 kW	
SCOP	4.46	3.20	
Tbiv	-8 °C	-7 °C	
TOL	-20 °C	-20 °C	
Pdh Tj = -7° C	6.24 kW	5.93 kW	
COP Tj = -7°C	2.74	1.95	
Cdh	0.99	0.99	
Pdh Tj = $+2^{\circ}$ C	4.25 kW	3.60 kW	
COP Tj = +2°C	4.25	2.90	
Cdh	0.99	0.99	
Pdh Tj = +7°C	5.09 kW	6.94 kW	
COP Tj = +7°C	6.19	4.93	





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Cdh	0.99	0.99
Pdh Tj = 12°C	5.96 kW	6.69 kW
COP Tj = 12°C	8.88	7.34
Cdh	0.99	0.99
Pdh Tj = Tbiv	5.91 kW	5.93 kW
COP Tj = Tbiv	2.63	1.95
Pdh Tj = TOL	4.99 kW	4.74 kW
COP Tj = TOL	2.19	1.56
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
РТО	o w	0 W
PSB	o w	o w
PCK	0 W	o w
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	1.41 kW	1.96 kW
Backup Heater	0.00 kW	
Annual energy consumption Qhe	13206 kWh	13788 kWh

Warmer Climate



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EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	41 dB(A)	41 dB(A)	
Sound power level outdoor	64 dB(A)	64 dB(A)	

EN 14825		
	Low temperature	Medium temperature
η_{s}	238 %	159 %
Prated	8.80 kW	8.40 kW
SCOP	6.03	4.06
Tbiv	2 °C	2 °C
TOL	-20 °C	-20 °C
Pdh Tj = +2°C	8.77 kW	8.37 kW
COP Tj = +2°C	3.40	2.28
Cdh	0.99	0.99
Pdh Tj = +7°C	7.53 kW	6.67 kW
COP Tj = +7°C	5.36	3.38
Cdh	0.99	0.99
Pdh Tj = 12°C	5.90 kW	5.38 kW
COP Tj = 12°C	8.09	5.62
Cdh	0.99	0.99





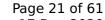
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Pdh Tj = Tbiv	8.77 kW	8.37 kW
COP Tj = Tbiv	3.40	2.28
Pdh Tj = TOL	8.77 kW	8.37 kW
COP Tj = TOL	3.40	2.28
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
РТО	o w	o w
PSB	o w	0 W
PCK	o w	o w
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	11720 kWh	11186 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 1	4825	
	Low temperature	Medium temperature





η_{s}	141 %	98 %
Prated	6.80 kW	6.10 kW
SCOP	3.60	2.53
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	4.69 kW	4.20 kW
COP Tj = -7°C	2.97	2.09
Cdh	0.99	0.99
Pdh Tj = +2°C	4.16 kW	3.65 kW
COP Tj = +2°C	4.61	3.18
Cdh	0.99	0.99
Pdh Tj = +7°C	5.14 kW	4.78 kW
COP Tj = +7°C	6.68	5.03
Cdh	0.99	0.99
Pdh Tj = 12°C	6.00 kW	5.75 kW
COP Tj = 12°C	8.83	7.30
Cdh	0.99	0.99
Pdh Tj = Tbiv	5.52 kW	4.95 kW
COP Tj = Tbiv	2.13	1.47
Pdh Tj = TOL	3.30 kW	1.06 kW



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COP Tj = TOL	1.21	0.32
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
РТО	o w	0 W
PSB	0 W	0 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	6.77 kW	6.07 kW
Annual energy consumption Qhe	16466 kWh	14650 kWh



Model: Vitocal 100-S AWB-M-E-AC 101.B08 F

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	8.13 kW	9.67 kW
El input	1.74 kW	3.61 kW
СОР	4.66	2.69
Indoor water flow rate	0.70 m³/h	0.70 m³/h

EN 14511-4		
Shutting off the heat transfer medium flow	passed	
Complete power supply failure	passed	
Defrost test	passed	
Starting and operating test	passed	

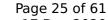
Average Climate



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EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825			
		Low temperature	Medium temperature
Pdesignh	6.70 kW		
η_{S}	176 %	125 %	
Prated	6.40 kW	6.70 kW	
SCOP	4.46	3.20	
Tbiv	-8 °C	-7 °C	
TOL	-20 °C	-20 °C	
Pdh Tj = -7°C	6.24 kW	5.93 kW	
COP Tj = -7°C	2.74	1.95	
Cdh	0.99	0.99	
Pdh Tj = +2°C	4.25 kW	3.60 kW	
$COP Tj = +2^{\circ}C$	4.25	2.90	
Cdh	0.99	0.99	
Pdh Tj = +7°C	5.09 kW	6.94 kW	
$COP Tj = +7^{\circ}C$	6.19	4.93	
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Cdh	0.99	0.99
Pdh Tj = 12°C	5.96 kW	6.69 kW
COP Tj = 12°C	8.88	7.34
Cdh	0.99	0.99
Pdh Tj = Tbiv	5.91 kW	5.93 kW
COP Tj = Tbiv	2.63	1.95
Pdh Tj = TOL	4.99 kW	4.74 kW
COP Tj = TOL	2.19	1.56
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
РТО	o w	0 W
PSB	o w	0 W
PCK	0 W	o w
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	1.41 kW	1.96 kW
Backup Heater	0.00 kW	
Annual energy consumption Qhe	13206 kWh	13788 kWh

Warmer Climate



 $$\operatorname{\textit{Page}}\xspace$ 26 of 61 This information was generated by the HP KEYMARK database on 17 Dec 2020

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	238 %	159 %
Prated	8.80 kW	8.40 kW
SCOP	6.03	4.06
Tbiv	2 °C	2 °C
TOL	-20 °C	-20 °C
Pdh Tj = +2°C	8.77 kW	8.37 kW
COP Tj = +2°C	3.40	2.28
Cdh	0.99	0.99
Pdh Tj = +7°C	7.53 kW	6.67 kW
COP Tj = +7°C	5.36	3.38
Cdh	0.99	0.99
Pdh Tj = 12°C	5.90 kW	5.38 kW
COP Tj = 12°C	8.09	5.62
Cdh	0.99	0.99



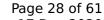


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Pdh Tj = Tbiv	8.77 kW	8.37 kW
COP Tj = Tbiv	3.40	2.28
Pdh Tj = TOL	8.77 kW	8.37 kW
COP Tj = TOL	3.40	2.28
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
РТО	o w	o w
PSB	o w	o w
PCK	o w	o w
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	11720 kWh	11186 kWh

Colder Climate

EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	41 dB(A)	41 dB(A)	
Sound power level outdoor	64 dB(A)	64 dB(A)	

EN 14825		
	Low temperature	Medium temperature





η_{s}	141 %	98 %
Prated	6.80 kW	6.10 kW
SCOP	3.60	2.53
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	4.69 kW	4.20 kW
COP Tj = -7°C	2.97	2.09
Cdh	0.99	0.99
Pdh Tj = +2°C	4.16 kW	3.65 kW
COP Tj = +2°C	4.61	3.18
Cdh	0.99	0.99
Pdh Tj = +7°C	5.14 kW	4.78 kW
COP Tj = +7°C	6.68	5.03
Cdh	0.99	0.99
Pdh Tj = 12°C	6.00 kW	5.75 kW
COP Tj = 12°C	8.83	7.30
Cdh	0.99	0.99
Pdh Tj = Tbiv	5.52 kW	4.95 kW
COP Tj = Tbiv	2.13	1.47
Pdh Tj = TOL	3.30 kW	1.06 kW



$$\operatorname{\textit{Page}}\xspace$ 29 of 61 This information was generated by the HP KEYMARK database on 17 Dec 2020

COP Tj = TOL	1.21	0.32
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
PTO	0 W	0 W
PSB	o w	o w
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	6.77 kW	6.07 kW
Annual energy consumption Qhe	16466 kWh	14650 kWh



Model: Vitocal 111-S AWBT-M-AC 111.B08

General Data		
Power supply 1x230V 50Hz		

Heating

EN 14511-2			
	Low temperature	Medium temperature	
Heat output	8.13 kW	9.67 kW	
El input	1.74 kW	3.61 kW	
СОР	4.66	2.69	
Indoor water flow rate	0.70 m³/h	0.70 m³/h	

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

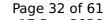
Average Climate



 $$\operatorname{\textit{Page}}\ 31$$ of 61 This information was generated by the HP KEYMARK database on 17 Dec 2020

EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	41 dB(A)	41 dB(A)	
Sound power level outdoor	64 dB(A)	64 dB(A)	

	EN 1482	5	
		Low temperature	Medium temperature
Pdesignh	6.70 kW		
η_{s}	176 %	125 %	
Prated	6.40 kW	6.70 kW	
SCOP	4.46	3.20	
Tbiv	-8 °C	-7 °C	
TOL	-20 °C	-20 °C	
Pdh Tj = -7°C	6.24 kW	5.93 kW	
COP Tj = -7°C	2.74	1.95	
Cdh	0.99	0.99	
Pdh Tj = +2°C	4.25 kW	3.60 kW	
COP Tj = +2°C	4.25	2.90	
Cdh	0.99	0.99	
Pdh Tj = +7°C	5.09 kW	6.94 kW	
COP Tj = +7°C	6.19	4.93	





Cdh 0.99 0.99 Pdh Tj = 12°C 5.96 kW 6.69 kW COP Tj = 12°C 8.88 7.34 Cdh 0.99 0.99 Pdh Tj = Tbiv 5.91 kW 5.93 kW COP Tj = Tbiv 2.63 1.95 Pdh Tj = TOL 4.99 kW 4.74 kW COP Tj = TOL 2.19 1.56 Cdh 0.99 0.99 WTOL 55 °C 55 °C Poff 15 W 15 W PTO 0 W 0 W PSB 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW 13788 kWh			
COP Tj = 12°C	Cdh	0.99	0.99
Cdh 0.99 0.99 Pdh Tj = Tbiv 5.91 kW 5.93 kW COP Tj = Tbiv 2.63 1.95 Pdh Tj = TOL 4.99 kW 4.74 kW COP Tj = TOL 2.19 1.56 Cdh 0.99 0.99 WTOL 55 °C 55 °C Poff 15 W 15 W PTO 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	Pdh Tj = 12°C	5.96 kW	6.69 kW
Pdh Tj = Tbiv 5.91 kW 5.93 kW COP Tj = Tbiv 2.63 1.95 Pdh Tj = TOL 4.99 kW 4.74 kW COP Tj = TOL 2.19 1.56 Cdh 0.99 0.99 WTOL 55 °C 55 °C Poff 15 W 15 W PTO 0 W 0 W PSB 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	COP Tj = 12°C	8.88	7.34
COP Tj = Tbiv 2.63 1.95 Pdh Tj = TOL 4.99 kW 4.74 kW COP Tj = TOL 2.19 1.56 Cdh 0.99 0.99 WTOL 55 °C 55 °C Poff 15 W 15 W PTO 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	Cdh	0.99	0.99
Pdh Tj = TOL 4.99 kW 4.74 kW COP Tj = TOL 2.19 1.56 Cdh 0.99 0.99 WTOL 55 °C 55 °C Poff 15 W 15 W PTO 0 W 0 W PSB 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	Pdh Tj = Tbiv	5.91 kW	5.93 kW
COP Tj = TOL 2.19 1.56 Cdh 0.99 0.99 WTOL 55 °C 55 °C Poff 15 W 15 W PTO 0 W 0 W PSB 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	COP Tj = Tbiv	2.63	1.95
Cdh 0.99 0.99 WTOL 55 °C 55 °C Poff 15 W 15 W PTO 0 W 0 W PSB 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	Pdh Tj = TOL	4.99 kW	4.74 kW
WTOL 55 °C 55 °C Poff 15 W 15 W PTO 0 W 0 W PSB 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	COP Tj = TOL	2.19	1.56
Poff 15 W 15 W PTO 0 W 0 W PSB 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	Cdh	0.99	0.99
PTO 0 W 0 W PSB 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	WTOL	55 °C	55 °C
PSB 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	Poff	15 W	15 W
PCK 0 W 0 W Supplementary Heater: Type of energy input electrical electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	РТО	0 W	0 W
Supplementary Heater: Type of energy input electrical electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	PSB	0 W	0 W
Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	PCK	o w	0 W
Backup Heater 0.00 kW	Supplementary Heater: Type of energy input	electrical	electrical
	Supplementary Heater: PSUP	1.41 kW	1.96 kW
Annual energy consumption Qhe 13206 kWh 13788 kWh	Backup Heater	0.00 kW	
	Annual energy consumption Qhe	13206 kWh	13788 kWh

Warmer Climate



 $$\operatorname{\textit{Page}}\xspace$ 33 of 61 This information was generated by the HP KEYMARK database on 17 Dec 2020

EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	41 dB(A)	41 dB(A)	
Sound power level outdoor	64 dB(A)	64 dB(A)	

EN 14825		
	Low temperature	Medium temperature
η_{s}	238 %	159 %
Prated	8.80 kW	8.40 kW
SCOP	6.03	4.06
Tbiv	2 °C	2 °C
TOL	-20 °C	-20 °C
Pdh Tj = +2°C	8.77 kW	8.37 kW
COP Tj = +2°C	3.40	2.28
Cdh	0.99	0.99
Pdh Tj = +7°C	7.53 kW	6.67 kW
COP Tj = +7°C	5.36	3.38
Cdh	0.99	0.99
Pdh Tj = 12°C	5.90 kW	5.38 kW
COP Tj = 12°C	8.09	5.62
Cdh	0.99	0.99



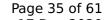


	T	
Pdh Tj = Tbiv	8.77 kW	8.37 kW
COP Tj = Tbiv	3.40	2.28
Pdh Tj = TOL	8.77 kW	8.37 kW
COP Tj = TOL	3.40	2.28
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
РТО	o w	o w
PSB	o w	o w
PCK	o w	o w
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	11720 kWh	11186 kWh

Colder Climate

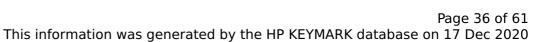
EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825		
	Low temperature	Medium temperature





η_{s}	141 %	98 %
Prated	6.80 kW	6.10 kW
SCOP	3.60	2.53
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	4.69 kW	4.20 kW
COP Tj = -7°C	2.97	2.09
Cdh	0.99	0.99
Pdh Tj = +2°C	4.16 kW	3.65 kW
COP Tj = +2°C	4.61	3.18
Cdh	0.99	0.99
Pdh Tj = +7°C	5.14 kW	4.78 kW
COP Tj = +7°C	6.68	5.03
Cdh	0.99	0.99
Pdh Tj = 12°C	6.00 kW	5.75 kW
COP Tj = 12°C	8.83	7.30
Cdh	0.99	0.99
Pdh Tj = Tbiv	5.52 kW	4.95 kW
COP Tj = Tbiv	2.13	1.47
Pdh Tj = TOL	3.30 kW	1.06 kW



COP Tj = TOL	1.21	0.32
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
PTO	0 W	0 W
PSB	o w	0 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	6.77 kW	6.07 kW
Annual energy consumption Qhe	16466 kWh	14650 kWh

Domestic Hot Water (DHW)

CEN heat pump KEYMARK

Average Climate



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EN 16147			
		Average climate	
Declared load profile	XL	XL	
Efficiency ηDHW	125 %	125 %	
СОР	2.97	2.97	
Heating up time	1:22 h:min	1:22 h:min	
Standby power input	26.0 W	26.0 W	
Reference hot water temperature	23.1 °C	23.1 °C	
Mixed water at 40°C	291	291	

Warmer Climate



Model: Vitocal 111-S AWBT-M-E 111.B08

General Data		
Power supply	1x230V 50Hz	

Heating

EN 14511-2				
	Low temperature	Medium temperature		
Heat output	8.13 kW	9.67 kW		
El input	1.74 kW	3.61 kW		
СОР	4.66	2.69		
Indoor water flow rate	0.70 m³/h	0.70 m³/h		

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed



EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	41 dB(A)	41 dB(A)	
Sound power level outdoor	64 dB(A)	64 dB(A)	

	EN 1482	5	
		Low temperature	Medium temperature
Pdesignh	6.70 kW		
η_{s}	176 %	125 %	
Prated	6.40 kW	6.70 kW	
SCOP	4.46	3.20	
Tbiv	-8 °C	-7 °C	
TOL	-20 °C	-20 °C	
Pdh Tj = -7°C	6.24 kW	5.93 kW	
COP Tj = -7°C	2.74	1.95	
Cdh	0.99	0.99	
Pdh Tj = +2°C	4.25 kW	3.60 kW	
COP Tj = +2°C	4.25	2.90	
Cdh	0.99	0.99	
Pdh Tj = +7°C	5.09 kW	6.94 kW	
COP Tj = +7°C	6.19	4.93	





Pdh Tj = 12°C 5.96 kW 6.69 kW COP Tj = 12°C 8.88 7.34 Cdh 0.99 0.99 Pdh Tj = Tbiv 5.91 kW 5.93 kW COP Tj = Tbiv 2.63 1.95 Pdh Tj = TOL 4.99 kW 4.74 kW COP Tj = TOL 2.19 1.56 Cdh 0.99 0.99 WTOL 55 °C 55 °C Poff 15 W 15 W PTO 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW			· · · · · · · · · · · · · · · · · · ·
COP Tj = 12°C	Cdh	0.99	0.99
Cdh 0.99 0.99 Pdh Tj = Tbiv 5.91 kW 5.93 kW COP Tj = Tbiv 2.63 1.95 Pdh Tj = TOL 4.99 kW 4.74 kW COP Tj = TOL 2.19 1.56 Cdh 0.99 0.99 WTOL 55 °C 55 °C Poff 15 W 15 W PTO 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	Pdh Tj = 12°C	5.96 kW	6.69 kW
Pdh Tj = Tbiv 5.91 kW 5.93 kW COP Tj = Tbiv 2.63 1.95 Pdh Tj = TOL 4.99 kW 4.74 kW COP Tj = TOL 2.19 1.56 Cdh 0.99 0.99 WTOL 55 °C 55 °C Poff 15 W 15 W PTO 0 W 0 W PSB 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	COP Tj = 12°C	8.88	7.34
COP Tj = Tbiv 2.63 1.95 Pdh Tj = TOL 4.99 kW 4.74 kW COP Tj = TOL 2.19 1.56 Cdh 0.99 0.99 WTOL 55 °C 55 °C Poff 15 W 15 W PTO 0 W 0 W PSB 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	Cdh	0.99	0.99
Pdh Tj = TOL 4.99 kW 4.74 kW COP Tj = TOL 2.19 1.56 Cdh 0.99 0.99 WTOL 55 °C 55 °C Poff 15 W 15 W PTO 0 W 0 W PSB 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	Pdh Tj = Tbiv	5.91 kW	5.93 kW
COP Tj = TOL 2.19 1.56 Cdh 0.99 0.99 WTOL 55 °C 55 °C Poff 15 W 15 W PTO 0 W 0 W PSB 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	COP Tj = Tbiv	2.63	1.95
Cdh 0.99 0.99 WTOL 55 °C 55 °C Poff 15 W 15 W PTO 0 W 0 W PSB 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	Pdh Tj = TOL	4.99 kW	4.74 kW
WTOL 55 °C 55 °C Poff 15 W 15 W PTO 0 W 0 W PSB 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	COP Tj = TOL	2.19	1.56
Poff 15 W 15 W PTO 0 W 0 W PSB 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	Cdh	0.99	0.99
PTO 0 W 0 W PSB 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	WTOL	55 °C	55 °C
PSB 0 W 0 W PCK 0 W 0 W Supplementary Heater: Type of energy input electrical electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	Poff	15 W	15 W
PCK 0 W 0 W Supplementary Heater: Type of energy input electrical electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	РТО	o w	0 W
Supplementary Heater: Type of energy input electrical electrical Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	PSB	o w	o w
Supplementary Heater: PSUP 1.41 kW 1.96 kW Backup Heater 0.00 kW	PCK	0 W	0 W
Backup Heater 0.00 kW	Supplementary Heater: Type of energy input	electrical	electrical
	Supplementary Heater: PSUP	1.41 kW	1.96 kW
Annual energy consumption Qhe 13206 kWh 13788 kWh	Backup Heater	0.00 kW	
	Annual energy consumption Qhe	13206 kWh	13788 kWh

Warmer Climate



 $$\operatorname{\textit{Page}}\xspace$ 41 of 61 This information was generated by the HP KEYMARK database on 17 Dec 2020

EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	41 dB(A)	41 dB(A)	
Sound power level outdoor	64 dB(A)	64 dB(A)	

EN 14825		
	Low temperature	Medium temperature
η_{s}	238 %	159 %
Prated	8.80 kW	8.40 kW
SCOP	6.03	4.06
Tbiv	2 °C	2 °C
TOL	-20 °C	-20 °C
Pdh Tj = +2°C	8.77 kW	8.37 kW
COP Tj = +2°C	3.40	2.28
Cdh	0.99	0.99
Pdh Tj = +7°C	7.53 kW	6.67 kW
COP Tj = +7°C	5.36	3.38
Cdh	0.99	0.99
Pdh Tj = 12°C	5.90 kW	5.38 kW
COP Tj = 12°C	8.09	5.62
Cdh	0.99	0.99





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Pdh Tj = Tbiv	8.77 kW	8.37 kW
COP Tj = Tbiv	3.40	2.28
Pdh Tj = TOL	8.77 kW	8.37 kW
COP Tj = TOL	3.40	2.28
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
РТО	o w	o w
PSB	o w	o w
PCK	o w	o w
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	11720 kWh	11186 kWh

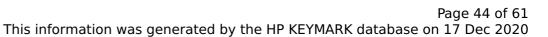
EN 12102-1				
	Low temperature	Medium temperature		
Sound power level indoor	41 dB(A)	41 dB(A)		
Sound power level outdoor	64 dB(A)	64 dB(A)		

EN 1	4825	
	Low temperature	Medium temperature





η_{s}	141 %	98 %
Prated	6.80 kW	6.10 kW
SCOP	3.60	2.53
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	4.69 kW	4.20 kW
COP Tj = -7°C	2.97	2.09
Cdh	0.99	0.99
Pdh Tj = +2°C	4.16 kW	3.65 kW
COP Tj = +2°C	4.61	3.18
Cdh	0.99	0.99
Pdh Tj = +7°C	5.14 kW	4.78 kW
COP Tj = +7°C	6.68	5.03
Cdh	0.99	0.99
Pdh Tj = 12°C	6.00 kW	5.75 kW
COP Tj = 12°C	8.83	7.30
Cdh	0.99	0.99
Pdh Tj = Tbiv	5.52 kW	4.95 kW
COP Tj = Tbiv	2.13	1.47
Pdh Tj = TOL	3.30 kW	1.06 kW





COP Tj = TOL	1.21	0.32
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
PTO	0 W	0 W
PSB	o w	0 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	6.77 kW	6.07 kW
Annual energy consumption Qhe	16466 kWh	14650 kWh

Domestic Hot Water (DHW)



EN 16147				
		Average climate		
Declared load profile	XL	XL		
Efficiency ηDHW	125 %	125 %		
СОР	2.97	2.97		
Heating up time	1:22 h:min	1:22 h:min		
Standby power input	26.0 W	26.0 W		
Reference hot water temperature	23.1 °C	23.1 °C		
Mixed water at 40°C	291	291 l		

Warmer Climate



Model: Vitocal 111-S AWBT-M-E-AC 111.B08

General Data		
Power supply	1x230V 50Hz	

Heating

EN 14511-2			
	Low temperature	Medium temperature	
Heat output	8.13 kW	9.67 kW	
El input	1.74 kW	3.61 kW	
СОР	4.66	2.69	
Indoor water flow rate	0.70 m³/h	0.70 m³/h	

EN 14511-4		
Shutting off the heat transfer medium flow	nassod	
Shutting on the heat transfer medium now	passed	
Complete power supply failure	passed	
Defrost test	passed	
Starting and operating test	passed	



 $$\operatorname{\textit{Page}}\xspace$ 47 of 61 This information was generated by the HP KEYMARK database on 17 Dec 2020

EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	41 dB(A)	41 dB(A)	
Sound power level outdoor	64 dB(A)	64 dB(A)	

EN 14825			
		Low temperature	Medium temperature
Pdesignh	6.70 kW		
η_{S}	176 %	125 %	
Prated	6.40 kW	6.70 kW	-
SCOP	4.46	3.20	
Tbiv	-8 °C	-7 °C	
TOL	-20 °C	-20 °C	
Pdh Tj = -7°C	6.24 kW	5.93 kW	
COP Tj = -7°C	2.74	1.95	
Cdh	0.99	0.99	
Pdh Tj = +2°C	4.25 kW	3.60 kW	
$COP Tj = +2^{\circ}C$	4.25	2.90	
Cdh	0.99	0.99	
Pdh Tj = +7°C	5.09 kW	6.94 kW	
$COP Tj = +7^{\circ}C$	6.19	4.93	
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Cdh	0.99	0.99
Pdh Tj = 12°C	5.96 kW	6.69 kW
COP Tj = 12°C	8.88	7.34
Cdh	0.99	0.99
Pdh Tj = Tbiv	5.91 kW	5.93 kW
COP Tj = Tbiv	2.63	1.95
Pdh Tj = TOL	4.99 kW	4.74 kW
COP Tj = TOL	2.19	1.56
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
РТО	0 W	0 W
PSB	0 W	0 W
PCK	0 W	o w
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	1.41 kW	1.96 kW
Backup Heater	0.00 kW	
Annual energy consumption Qhe	13206 kWh	13788 kWh

Warmer Climate



 $$\operatorname{\textit{Page}}$$ 49 of 61 This information was generated by the HP KEYMARK database on 17 Dec 2020

EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	41 dB(A)	41 dB(A)	
Sound power level outdoor	64 dB(A)	64 dB(A)	

EN 14825		
	Low temperature	Medium temperature
η_{s}	238 %	159 %
Prated	8.80 kW	8.40 kW
SCOP	6.03	4.06
Tbiv	2 °C	2 °C
TOL	-20 °C	-20 °C
Pdh Tj = +2°C	8.77 kW	8.37 kW
COP Tj = +2°C	3.40	2.28
Cdh	0.99	0.99
Pdh Tj = +7°C	7.53 kW	6.67 kW
COP Tj = +7°C	5.36	3.38
Cdh	0.99	0.99
Pdh Tj = 12°C	5.90 kW	5.38 kW
COP Tj = 12°C	8.09	5.62
Cdh	0.99	0.99

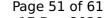




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Pdh Tj = Tbiv	8.77 kW	8.37 kW
COP Tj = Tbiv	3.40	2.28
Pdh Tj = TOL	8.77 kW	8.37 kW
COP Tj = TOL	3.40	2.28
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
РТО	o w	o w
PSB	o w	o w
PCK	o w	o w
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	11720 kWh	11186 kWh

EN 12102-1			
Low temperature Medium temperature			
Sound power level indoor	41 dB(A)	41 dB(A)	
Sound power level outdoor	64 dB(A)	64 dB(A)	

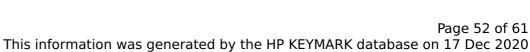
EN 1	4825	
	Low temperature	Medium temperature





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η_{s}	141 %	98 %
Prated	6.80 kW	6.10 kW
SCOP	3.60	2.53
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	4.69 kW	4.20 kW
COP Tj = -7°C	2.97	2.09
Cdh	0.99	0.99
Pdh Tj = +2°C	4.16 kW	3.65 kW
COP Tj = +2°C	4.61	3.18
Cdh	0.99	0.99
Pdh Tj = +7°C	5.14 kW	4.78 kW
COP Tj = +7°C	6.68	5.03
Cdh	0.99	0.99
Pdh Tj = 12°C	6.00 kW	5.75 kW
COP Tj = 12°C	8.83	7.30
Cdh	0.99	0.99
Pdh Tj = Tbiv	5.52 kW	4.95 kW
COP Tj = Tbiv	2.13	1.47
Pdh Tj = TOL	3.30 kW	1.06 kW



COP Tj = TOL	1.21	0.32
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
РТО	0 W	0 W
PSB	o w	0 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	6.77 kW	6.07 kW
Annual energy consumption Qhe	16466 kWh	14650 kWh

Domestic Hot Water (DHW)

CEN heat pump KEYMARK



EN 16147		
		Average climate
Declared load profile	XL	XL
Efficiency ηDHW	125 %	125 %
СОР	2.97	2.97
Heating up time	1:22 h:min	1:22 h:min
Standby power input	26.0 W	26.0 W
Reference hot water temperature	23.1 °C	23.1 °C
Mixed water at 40°C	291	291 l

Warmer Climate

Model: Vitocal 111-S AWBT-M-E-AC 111.B08 F

General Data		
Power supply 1x230V 50Hz		

Heating

EN 14511-2			
Low temperature Medium temperature			
Heat output	8.13 kW	9.67 kW	
El input	1.74 kW	3.61 kW	
СОР	4.66	2.69	
Indoor water flow rate	0.70 m³/h	0.70 m³/h	

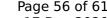
EN 14511-4		
Shutting off the heat transfer medium flow	passed	
Complete power supply failure	passed	
Defrost test	passed	
Starting and operating test	passed	



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EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	41 dB(A)	41 dB(A)	
Sound power level outdoor	64 dB(A)	64 dB(A)	

	EN 1482	5	
		Low temperature	Medium temperature
Pdesignh	6.70 kW		
η_{s}	176 %	125 %	
Prated	6.40 kW	6.70 kW	
SCOP	4.46	3.20	
Tbiv	-8 °C	-7 °C	
TOL	-20 °C	-20 °C	
Pdh Tj = -7°C	6.24 kW	5.93 kW	
COP Tj = -7°C	2.74	1.95	
Cdh	0.99	0.99	
Pdh Tj = +2°C	4.25 kW	3.60 kW	
COP Tj = +2°C	4.25	2.90	
Cdh	0.99	0.99	
Pdh Tj = +7°C	5.09 kW	6.94 kW	
COP Tj = +7°C	6.19	4.93	





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Tills illioitilation w	us generated	
Cdh	0.99	0.99
Pdh Tj = 12°C	5.96 kW	6.69 kW
COP Tj = 12°C	8.88	7.34
Cdh	0.99	0.99
Pdh Tj = Tbiv	5.91 kW	5.93 kW
COP Tj = Tbiv	2.63	1.95
Pdh Tj = TOL	4.99 kW	4.74 kW
COP Tj = TOL	2.19	1.56
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
РТО	0 W	0 W
PSB	0 W	0 W
PCK	0 W	o w
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	1.41 kW	1.96 kW
Backup Heater	0.00 kW	
Annual energy consumption Qhe	13206 kWh	13788 kWh

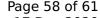
Warmer Climate



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EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	41 dB(A)	41 dB(A)	
Sound power level outdoor	64 dB(A)	64 dB(A)	

EN 14825		
	Low temperature	Medium temperature
η_{s}	238 %	159 %
Prated	8.80 kW	8.40 kW
SCOP	6.03	4.06
Tbiv	2 °C	2 °C
TOL	-20 °C	-20 °C
Pdh Tj = +2°C	8.77 kW	8.37 kW
COP Tj = +2°C	3.40	2.28
Cdh	0.99	0.99
Pdh Tj = +7°C	7.53 kW	6.67 kW
COP Tj = +7°C	5.36	3.38
Cdh	0.99	0.99
Pdh Tj = 12°C	5.90 kW	5.38 kW
COP Tj = 12°C	8.09	5.62
Cdh	0.99	0.99



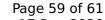


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Pdh Tj = Tbiv	8.77 kW	8.37 kW
COP Tj = Tbiv	3.40	2.28
Pdh Tj = TOL	8.77 kW	8.37 kW
COP Tj = TOL	3.40	2.28
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
РТО	o w	o w
PSB	o w	0 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	11720 kWh	11186 kWh

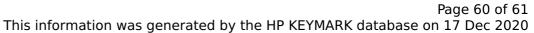
EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825		
	Low temperature	Medium temperature





n_s	141 %	98 %
Prated	6.80 kW	6.10 kW
SCOP	3.60	2.53
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	4.69 kW	4.20 kW
COP Tj = -7°C	2.97	2.09
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Pdh Tj = +2°C	4.16 kW	3.65 kW
COP Tj = +2°C	4.61	3.18
Cdh	0.99	0.99
Pdh Tj = +7°C	5.14 kW	4.78 kW
COP Tj = +7°C	6.68	5.03
Cdh	0.99	0.99
Pdh Tj = 12°C	6.00 kW	5.75 kW
COP Tj = 12°C	8.83	7.30
Cdh	0.99	0.99
Pdh Tj = Tbiv	5.52 kW	4.95 kW
COP Tj = Tbiv	2.13	1.47
Pdh Tj = TOL	3.30 kW	1.06 kW





COP Tj = TOL	1.21	0.32
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
PTO	0 W	0 W
PSB	0 W	0 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electrical	electrical
Supplementary Heater: PSUP	6.77 kW	6.07 kW
Annual energy consumption Qhe	16466 kWh	14650 kWh

Domestic Hot Water (DHW)



 $$\operatorname{Page}\ 61$$ of 61 This information was generated by the HP KEYMARK database on 17 Dec 2020

EN 16147		
		Average climate
Declared load profile	XL	XL
Efficiency ηDHW	125 %	125 %
СОР	2.97	2.97
Heating up time	1:22 h:min	1:22 h:min
Standby power input	26.0 W	26.0 W
Reference hot water temperature	23.1 °C	23.1 °C
Mixed water at 40°C	291	291 l

Warmer Climate