

Testing basis

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<u>Login</u> Summary of VWL 45/7.2 AS 230V S3 / VWL 65/7.2 AS230V S3 Reg. No. 011-1W0553 Certificate Holder Name Vaillant Deutschland GmbH & Co KG Address Berghauser Straße 40 Zip 42859 Remscheid Country Germany City Certification Body DIN CERTCO Gesellschaft für Konformitätsbewertung mbH Subtype title VWL 45/7.2 AS 230V S3 / VWL 65/7.2 AS230V S3 Heat Pump Type Outdoor Air/Water Refrigerant R32 Mass of Refrigerant 1 kg Certification Date 26.09.2022

European KEYMARK Scheme for Heat Pumps Rev. 10 (as of 2022-06)



Model: VWL 45/7.2 AS 230V S3 + VWL 107/7.2 IS

| Configure model | | |
|-------------------------------------|--|--|
| Model name | VWL 45/7.2 AS 230V S3 + VWL 107/7.2 IS | |
| Application | Heating (medium temp) | |
| Units | Indoor + Outdoor | |
| Climate Zone | Colder Climate + Warmer Climate | |
| Reversibility | Yes | |
| Cooling mode application (optional) | +7°C/12°C and +18°C/+23°C | |

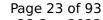
| General Data | | |
|--------------|-------------|--|
| Power supply | 1x230V 50Hz | |

Heating

| EN 14511-2 | | | |
|-------------|-----------------|--------------------|--|
| | Low temperature | Medium temperature | |
| Heat output | 4.21 kW | 4.32 kW | |
| El input | 0.79 kW | 1.48 kW | |
| СОР | 5.31 | 2.91 | |

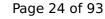
| EN 14511-4 | | |
|--|--------|--|
| Shutting off the heat transfer medium flow | passed | |
| Complete power supply failure | passed | |
| Defrost test | passed | |
| Starting and operating test | passed | |

Cooling





| EN 14511-2 | | | |
|------------------|------------|-------------|--|
| | +7°C/+12°C | +18°C/+23°C | |
| El input | 1.21 kW | 0.81 kW | |
| Cooling capacity | 3.61 | 4.00 | |
| EER | 2.97 | 4.96 | |





| Time illustration was gener | +7°C/+12°C | +18°C/+23°C |
|-------------------------------|------------|-------------|
| Pdesignc | 3.61 kW | 3.84 kW |
| SEER | 4.85 | 7.34 |
| Pdc Tj = 35°C | 3.61 kW | 3.84 kW |
| EER Tj = 35°C | 2.97 | 5.07 |
| Cdc Tj = 35 °C | 1.000 | 1.000 |
| Pdc Tj = 30°C | 2.45 kW | 3.18 kW |
| EER Tj = 30°C | 4.08 | 6.80 |
| Cdc Tj = 30 °C | 1.000 | 0.970 |
| Pdc Tj = 25°C | 2.48 kW | 3.45 kW |
| EER Tj = 25°C | 5.66 | 8.94 |
| Cdc Tj = 25 °C | 0.967 | 0.963 |
| Pdc Tj = 20°C | 2.85 kW | 3.63 kW |
| EER Tj = 20°C | 8.15 | 11.65 |
| Cdc Tj = 20 °C | 0.959 | 0.954 |
| Poff | 12 W | 12 W |
| РТО | 6 W | 6 W |
| PSB | 12 W | 12 W |
| PCK | o w | 0 W |
| Annual energy consumption Qce | 446 kWh | 314 kWh |

Warmer Climate



| EN 12102-1 | | |
|---------------------------|-----------------|--------------------|
| | Low temperature | Medium temperature |
| Sound power level indoor | 41 dB(A) | 41 dB(A) |
| Sound power level outdoor | 63 dB(A) | 63 dB(A) |

| EN 14825 | | |
|-------------------------|-----------------|--------------------|
| | Low temperature | Medium temperature |
| η_{s} | 225 % | 156 % |
| Prated | 4.42 kW | 4.27 kW |
| SCOP | 5.71 | 3.97 |
| Tbiv | 2 °C | 2 °C |
| TOL | 2 °C | 2 °C |
| Pdh Tj = +2°C | 4.42 kW | 4.27 kW |
| COP Tj = +2°C | 3.49 | 2.17 |
| Cdh Tj = +2 °C | 1.00 | 1.00 |
| Pdh Tj = $+7^{\circ}$ C | 2.57 kW | 2.75 kW |
| $COPTj = +7^{\circ}C$ | 5.53 | 3.54 |
| Cdh Tj = +7 °C | 1.00 | 0.99 |
| Pdh Tj = 12°C | 2.76 kW | 2.61 kW |
| COP Tj = 12°C | 6.45 | 4.89 |
| Cdh Tj = +12 °C | 0.99 | 0.99 |

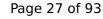




| | <u> </u> | <u> </u> |
|---|-------------|-------------|
| Pdh Tj = Tbiv | 4.42 kW | 4.27 kW |
| COP Tj = Tbiv | 3.49 | 2.17 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 4.42 kW | 4.27 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.49 | 2.17 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 1.00 | 1.00 |
| WTOL | 60 °C | 60 °C |
| Poff | 12 W | 12 W |
| РТО | 6 W | 6 W |
| PSB | 12 W | 12 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 0.00 kW | 0.00 kW |
| Annual energy consumption Qhe | 1033 kWh | 1438 kWh |

Colder Climate

| EN 12102-1 | | | |
|---------------------------|-----------------|--------------------|--|
| | Low temperature | Medium temperature | |
| Sound power level indoor | 41 dB(A) | 41 dB(A) | |
| Sound power level outdoor | 63 dB(A) | 63 dB(A) | |





| | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| η_{s} | 145 % | 102 % |
| Prated | 4.12 kW | 3.68 kW |
| SCOP | 3.71 | 2.63 |
| Tbiv | -15 °C | -15 °C |
| TOL | -20 °C | -15 °C |
| Pdh Tj = -7°C | 2.58 kW | 2.26 kW |
| COP Tj = -7°C | 2.88 | 1.97 |
| Cdh Tj = -7 °C | 0.99 | 1.00 |
| Pdh Tj = +2°C | 2.20 kW | 2.09 kW |
| COP Tj = +2°C | 4.80 | 3.58 |
| Cdh Tj = +2 °C | 0.99 | 0.99 |
| Pdh Tj = +7°C | 2.74 kW | 2.72 kW |
| $COP Tj = +7^{\circ}C$ | 6.40 | 4.79 |
| Cdh Tj = +7 °C | 0.99 | 0.99 |
| Pdh Tj = 12°C | 2.80 kW | 2.69 kW |
| COP Tj = 12°C | 6.64 | 5.61 |
| Cdh Tj = +12 °C | 0.99 | 0.99 |
| Pdh Tj = Tbiv | 3.36 kW | 3.00 kW |
| COP Tj = Tbiv | 2.20 | 1.58 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 2.72 kW | 3.00 kW |





| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 1.74 | 1.58 |
|---|-------------|-------------|
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 1.00 | 1.00 |
| WTOL | 60 °C | 60 °C |
| Poff | 12 W | 12 W |
| РТО | 6 W | 6 W |
| PSB | 12 W | 12 W |
| PCK | o w | o w |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 4.12 kW | 3.68 kW |
| Annual energy consumption Qhe | 2742 kWh | 3440 kWh |
| Pdh Tj = -15°C (if TOL<-20°C) | 3.36 | 3.00 |
| COP Tj = -15°C (if TOL $<$ -20°C) | 2.20 | 1.58 |
| Cdh Tj = -15 °C | 1.00 | 1.00 |
| | | |

Average Climate

| EN 12102-1 | | | |
|---------------------------|-----------------|--------------------|--|
| | Low temperature | Medium temperature | |
| Sound power level indoor | 41 dB(A) | 41 dB(A) | |
| Sound power level outdoor | 63 dB(A) | 63 dB(A) | |





| | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| η_{s} | 182 % | 133 % |
| Prated | 4.75 kW | 5.09 kW |
| SCOP | 4.62 | 3.41 |
| Tbiv | -7 °C | -7 °C |
| TOL | -10 °C | -10 °C |
| Pdh Tj = -7°C | 4.20 kW | 4.50 kW |
| COP Tj = -7°C | 3.08 | 2.19 |
| Cdh Tj = -7 °C | 1.00 | 1.00 |
| Pdh Tj = +2°C | 2.66 kW | 2.76 kW |
| COP Tj = +2°C | 4.51 | 3.35 |
| Cdh Tj = +2 °C | 0.99 | 0.99 |
| Pdh Tj = +7°C | 2.72 kW | 2.46 kW |
| $COP Tj = +7^{\circ}C$ | 6.19 | 4.45 |
| Cdh Tj = +7 °C | 0.99 | 0.99 |
| Pdh Tj = 12°C | 3.01 kW | 2.65 kW |
| COP Tj = 12°C | 6.46 | 5.38 |
| Cdh Tj = +12 °C | 0.99 | 0.99 |
| Pdh Tj = Tbiv | 4.20 kW | 4.50 kW |
| COP Tj = Tbiv | 3.08 | 2.19 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 3.67 kW | 3.37 kW |
| | | |



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| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.54 | 1.60 |
|---|-------------|-------------|
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 1.00 | 1.00 |
| WTOL | 60 °C | 60 °C |
| Poff | 12 W | 12 W |
| PTO | 6 W | 6 W |
| PSB | 12 W | 12 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 1.08 kW | 1.71 kW |
| Annual energy consumption Qhe | 2126 kWh | 3084 kWh |



Model: VWL 45/7.2 AS 230V S3 + VWL 107/7.2 IS S1

| Configure model | | |
|-------------------------------------|---|--|
| Model name | VWL 45/7.2 AS 230V S3 + VWL 107/7.2 IS S1 | |
| Application | Heating (medium temp) | |
| Units | Indoor + Outdoor | |
| Climate Zone | Warmer Climate | |
| Reversibility Yes | | |
| Cooling mode application (optional) | +7°C/12°C and +18°C/+23°C | |

| General Data | | |
|--------------|-------------|--|
| Power supply | 1x230V 50Hz | |

Heating

| EN 14511-2 | | | |
|-------------|-----------------|--------------------|--|
| | Low temperature | Medium temperature | |
| Heat output | 4.21 kW | 4.32 kW | |
| El input | 0.79 kW | 1.48 kW | |
| СОР | 5.31 | 2.91 | |

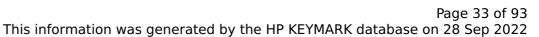
| EN 14511-4 | | |
|--|--------|--|
| Shutting off the heat transfer medium flow | passed | |
| Complete power supply failure | passed | |
| Defrost test | passed | |
| Starting and operating test | passed | |

Cooling





| EN 14511-2 | | | |
|------------------|------------|-------------|--|
| | +7°C/+12°C | +18°C/+23°C | |
| El input | 1.21 kW | 0.81 kW | |
| Cooling capacity | 3.61 | 4.00 | |
| EER | 2.97 | 4.96 | |





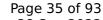
| | +7°C/+12°C | +18°C/+23°C |
|-------------------------------|------------|-------------|
| Pdesignc | 3.61 kW | 3.84 kW |
| SEER | 4.85 | 7.34 |
| Pdc Tj = 35°C | 3.61 kW | 3.84 kW |
| EER Tj = 35°C | 2.97 | 5.07 |
| Cdc Tj = 35 °C | 1.000 | 1.000 |
| Pdc Tj = 30°C | 2.45 kW | 3.18 kW |
| EER Tj = 30°C | 4.08 | 6.80 |
| Cdc Tj = 30 °C | 1.000 | 0.970 |
| Pdc Tj = 25°C | 2.48 kW | 3.45 kW |
| EER Tj = 25°C | 5.66 | 8.94 |
| Cdc Tj = 25 °C | 0.967 | 0.963 |
| Pdc Tj = 20°C | 2.85 kW | 3.63 kW |
| EER Tj = 20°C | 8.15 | 11.65 |
| Cdc Tj = 20 °C | 0.959 | 0.954 |
| Poff | 12 W | 12 W |
| РТО | 6 W | 6 W |
| PSB | 12 W | 12 W |
| PCK | 0 W | 0 W |
| Annual energy consumption Qce | 446 kWh | 314 kWh |

Warmer Climate



| EN 12102-1 | | |
|---------------------------|-----------------|--------------------|
| | Low temperature | Medium temperature |
| Sound power level indoor | 38 dB(A) | 38 dB(A) |
| Sound power level outdoor | 63 dB(A) | 63 dB(A) |

| EN 14825 | | |
|-----------------|-----------------|--------------------|
| | Low temperature | Medium temperature |
| η_{s} | 225 % | 156 % |
| Prated | 4.42 kW | 4.39 kW |
| SCOP | 5.71 | 3.97 |
| Tbiv | 2 °C | 2 °C |
| TOL | 2 °C | 2 °C |
| Pdh Tj = +2°C | 4.42 kW | 4.39 kW |
| COP Tj = +2°C | 3.49 | 2.21 |
| Cdh Tj = +2 °C | 1.000 | 1.000 |
| Pdh Tj = +7°C | 2.57 kW | 2.75 kW |
| COP Tj = +7°C | 5.53 | 3.54 |
| Cdh Tj = +7 °C | 1.000 | 1.000 |
| Pdh Tj = 12°C | 2.76 kW | 2.61 kW |
| COP Tj = 12°C | 6.45 | 4.89 |
| Cdh Tj = +12 °C | 0.990 | 0.990 |

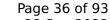




| Pdh Tj = Tbiv | 4.42 kW | 4.39 kW |
|---|----------|----------|
| COP Tj = Tbiv | 3.49 | 2.21 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 4.42 kW | 4.39 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.49 | 2.21 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 1.000 | 1.000 |
| WTOL | 60 °C | 60 °C |
| Poff | 12 W | 12 W |
| РТО | 6 W | 6 W |
| PSB | 12 W | 12 W |
| PCK | o w | o w |
| Supplementary Heater: Type of energy input | n/a | n/a |
| Supplementary Heater: PSUP | 0.00 kW | 0.00 kW |
| Annual energy consumption Qhe | 1033 kWh | 1477 kWh |

Average Climate

| EN 12102-1 | | | | |
|---------------------------|-----------------|--------------------|--|--|
| | Low temperature | Medium temperature | | |
| Sound power level indoor | 38 dB(A) | 38 dB(A) | | |
| Sound power level outdoor | 63 dB(A) | 63 dB(A) | | |





| | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| ης | 182 % | 134 % |
| Prated | 3.67 kW | 3.37 kW |
| SCOP | 4.63 | 3.41 |
| Tbiv | -10 °C | -10 °C |
| TOL | -10 °C | -10 °C |
| Pdh Tj = -7° C | 4.20 kW | 4.50 kW |
| COP Tj = -7° C | 3.08 | 2.19 |
| Cdh Tj = -7 °C | 1.000 | 1.000 |
| Pdh Tj = $+2$ °C | 2.66 kW | 2.76 kW |
| COP Tj = +2°C | 4.51 | 3.35 |
| Cdh Tj = +2 °C | 0.990 | 0.990 |
| Pdh Tj = $+7^{\circ}$ C | 2.72 kW | 2.46 kW |
| $COP Tj = +7^{\circ}C$ | 6.19 | 4.45 |
| Cdh Tj = +7 °C | 0.990 | 0.990 |
| Pdh Tj = 12°C | 3.01 kW | 2.65 kW |
| COP Tj = 12°C | 6.46 | 5.38 |
| Cdh Tj = +12 °C | 0.990 | 0.990 |
| Pdh Tj = Tbiv | 3.67 kW | 3.37 kW |
| COP Tj = Tbiv | 2.54 | 1.60 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 3.67 kW | 3.37 kW |



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This information was generated by the HP KEYMARK database on 28 Sep 2022

| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.54 | 1.60 |
|---|----------|----------|
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 1.000 | 1.000 |
| WTOL | 60 °C | 60 °C |
| Poff | 12 W | 12 W |
| РТО | 6 W | 6 W |
| PSB | 12 W | 12 W |
| PCK | o w | 0 W |
| Supplementary Heater: Type of energy input | n/a | n/a |
| Supplementary Heater: PSUP | 0.00 kW | 0.00 kW |
| Annual energy consumption Qhe | 1635 kWh | 2042 kWh |