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|---|---|-------------------------|--------------------|
| <i>Test Report No.:</i> | NTRE20160400-1 | | |
| <i>Applicant Name:</i> | AS Wilfa, Industriveien 25, Postboks 146, Hagan 1481 Hagan, Norge/Norway | | |
| <i>Test item:</i> | Split Air Conditioner | | |
| <i>Identification:</i> | Lillehammer 9 | <i>Serial No.:</i> | Engineering sample |
| <i>Receipt No.:</i> | / | <i>Date of receipt:</i> | 2016.8.10 |
| <i>Test specification:</i> | NO 206/2012 NO 626/2011 EN 14825:2013 EN 14511-1,2,3,4:2013 | | |
| <i>Test Result:</i> | <i>The test items passed the test specification(s).</i> | | |
| Abbreviations: | <i>P(ass) = passed</i> <i>F(ail) = failed</i> <i>N/A = not applicable</i> <i>N/T =not tested</i> | | |
| <i>This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i> | | | |



Summary of testing

1. The appliance was tested according to EN 14511.
2. The SEER and SCOP were calculated according to EN14825.
3. All the models are indeticial with each other except the panels.All the tests were performedon the model Lillehammer 9 as representative.
4. The samples are engineering samples without serial numbers.

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|------------------------------------|---------------------------------------|
| Test item particulars | : |
| Class of temperature | T1 |
| Type | Split Air Conditioner |
| Degree of protection | Indoor unit:IPX0 Outdoor unit:IPX4 |
| Supply Connection..... | Type Y attachment |

Possible test case verdicts:

| | |
|--|---------|
| - test case does not apply to the test object..... | N/A |
| - test object does meet the requirement | P(Pass) |
| - test object does not meet the requirement | F(Fail) |

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|---------------------------------------|---------------------|
| Testing | : |
| Date of receipt of test item..... | 2016.8.10 |
| Date (s) of performance of tests..... | 2016.8.25-2016.8.30 |

General remarks

- This appliance is split type air conditioner, which consist of one outdoor unit and one indoor unit.
- The indoor unit is a wall mounted type air conditioner, which is usually not accessible (only for maintenance purpose). It will be mounted 2 meters above the floor.
- Cooling and heating modes are applied by reverse cycle method. In the heating mode, defrost operation may be applied.
- The indoor unit is equipped with an infrared wireless battery powered remote control unit.

Critical components:

| Model | Compressor model | Indoor fan motor | Outdoor fan motor |
|---------------|------------------|------------------|-------------------|
| Lillehammer 9 | QXA-A086zC190 | FN20J-PG | FW30J-ZL |



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| NO 626/2011 &EN 14511 and NO 206/2012 & EN 14825: 2013 | | | |
| Clause | Requirement - Test | Result - Remark | Verdict |

Test result of part load according to EN 14825:

Calculation of SEER in cooling mode:

| Full load (Pdesignc): 2600 W; Tdesignc: 35°C | | | | | |
|--|------------------|-------------------|-----------|------------|------|
| Test item | Indoor DB/WB(°C) | Outdoor DB/WB(°C) | Ptest (W) | Tested EER | Cd |
| A | 27/19 | 35/- | 2604 | 3.38 | 0,25 |
| B | | 30/- | 1794 | 4.89 | 0,25 |
| C | | 25/- | 1167 | 8.22 | 0,25 |
| D | | 20/- | 1210 | 11.00 | 0,25 |
| Psb= Poff = 0.496 W; Pck= 0 W; Pto= 4.15 W | | | | | |
| Test SEER | | | | 6.659 | |
| Declared SEER | | | | 6.1 | |
| Test SEER≥Declared SEER | | | | Pass | |
| The calculation method of SEER according to the clause 6 of EN14825:2013 | | | | | |
| According table 1 of NO 626/2011, the result efficiency classes: A++ | | | | | |

Calculation of SCOP in heating mode:

| Full load (Pdesignh): 2600 W ;Tdesignh: -10°C; Climate: Average ; Tbivalent: -10 °C; TOL: -25 °C | | | | | |
|---|---------------|-------------------|----------|------------|------|
| Test item | Indoor DB(°C) | Outdoor DB/WB(°C) | Ptest(W) | Tested COP | Cd |
| A | 20/- | -7/-8 | 2303 | 2.62 | 0,25 |
| B | | 2/1 | 1402 | 4.07 | 0,25 |
| C | | 7/6 | 969 | 5.02 | 0,25 |
| D | | 12/11 | 832 | 6.04 | 0,25 |
| E | | TOL | 2959 | 2.01 | 0,25 |
| F | | Tbivalent | 2959 | 2.01 | 0.25 |
| Psb= Poff = 0.496 W; Pck= 0 W; Pto= 9.764 W | | | | | |
| SCOP | | | | 4.026 | |
| Declared SCOP | | | | 4.0 | |
| SCOP≥Declared SCOP | | | | Pass | |
| The calculation method of SEER according to the clause 7 of EN14825:2013 | | | | | |
| According table 1 of NO 626/2011, the result efficiency classes: A+ | | | | | |



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|--|--------------------|-----------------|---------|
| NO 626/2011 &EN 14511 and NO 206/2012 & EN 14825: 2013 | | | |
| Clause | Requirement - Test | Result - Remark | Verdict |

Calculation of SCOP in heating mode:

| Full load (Pdesignh): 2600 W ;Tdesignh: -22°C; Climate: Colder ; Tbivalent: -15 °C; TOL: -25 °C | | | | | |
|--|---------------|-------------------|----------|------------|------|
| Test item | Indoor DB(°C) | Outdoor DB/WB(°C) | Ptest(W) | Tested COP | Cd |
| A | 20/- | -7/-8 | 1593 | 2.83 | 0,25 |
| B | | 2/1 | 972 | 3.97 | 0,25 |
| C | | 7/6 | 708 | 4.39 | 0,25 |
| D | | 12/11 | 832 | 6.04 | 0,25 |
| E | | TOL | 1974 | 2.01 | 0,25 |
| F | | Tbivalent | 2176 | 1.89 | 0.25 |
| G | | -15/- | / | / | / |
| Psb= Poff = 0.496 W; Pck= 0 W; Pto= 9.764 W | | | | | |
| SCOP | | | | 3.263 | |
| Declared SCOP | | | | 3.2 | |
| SCOP≥Declared SCOP | | | | Pass | |
| The calculation method of SEER according to the clause 7 of EN14825:2013 | | | | | |
| According table 1 of NO 626/2011, the result efficiency classes: B | | | | | |

Calculation of SCOP in heating mode:

| Full load (Pdesignh): 2800 W ;Tdesignh: 2°C; Climate: Warmer ; Tbivalent: 2 °C; TOL: -25 °C | | | | | |
|--|---------------|-------------------|----------|------------|------|
| Test item | Indoor DB(°C) | Outdoor DB/WB(°C) | Ptest(W) | Tested COP | Cd |
| A | 20/- | -- | -- | -- | 0,25 |
| B | | 2/1 | 2828 | 2.19 | 0,25 |
| C | | 7/6 | 1800 | 4.95 | 0,25 |
| D | | 12/11 | 832 | 6.04 | 0,25 |
| E | | TOL | 2828 | 2.19 | 0,25 |
| F | | Tbivalent | 2828 | 2.19 | 0.25 |
| Psb= Poff = 0.496 W; Pck= 0 W; Pto= 9.764 W | | | | | |
| SCOP | | | | 5.102 | |
| Declared SCOP | | | | 5.1 | |
| SCOP≥Declared SCOP | | | | Pass | |
| The calculation method of SEER according to the clause 7 of EN14825:2013 | | | | | |
| According table 1 of NO 626/2011, the result efficiency classes: A+++ | | | | | |



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| NO 626/2011 &EN 14511 and NO 206/2012 & EN 14825: 2013 | | | |
| Clause | Requirement - Test | Result - Remark | Verdict |

Appendix I: information according to clause 3 of NO 206/2012 ANNEX I , for air conditioners, except single duct and double duct air conditioners

| Function (indicate if present) | | | | Only for heating mode, if applicable | | | |
|--|----------|-------|------|---|--------|-------|------|
| Cooling | Y | | | Average(mandatory) | Y | | |
| Heating | Y | | | Warmer(if designed) | Y | | |
| | | | | Colder(if designed) | Y | | |
| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
| Design load | | | | Seasonal efficiency | | | |
| Cooling | Pdesignc | 2.6 | kW | Cooling | SEER | 6.1 | — |
| Heating/average | Pdesignh | 2.6 | kW | Heating/average | SCOP/A | 4.0 | — |
| Heating/warmer | Pdesignh | 2.8 | kW | Heating/warmer | SCOP/W | 5.1 | — |
| Heating/colder | Pdesignh | 2.6 | kW | Heating/colder | SCOP/C | 3.2 | — |
| Declared capacity (*) for cooling, at indoor temperature 27(19) °C and outdoor temperature Tj | | | | Declared energy efficiency ratio (*), at indoor temperature 27(19) °C and outdoor temperature Tj | | | |
| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
| Tj=35°C | Pdc | 2.60 | kW | Tj=35°C | EERd | 3.38 | — |
| Tj=30°C | Pdc | 1.79 | kW | Tj=30°C | EERd | 4.89 | — |
| Tj=25°C | Pdc | 1.16 | kW | Tj=25°C | EERd | 8.22 | — |
| Tj=20°C | Pdc | 1.21 | kW | Tj=20°C | EERd | 11.00 | — |
| Declared capacity (*) for heating/Average season, at indoor temperature 20 °C and outdoor temperature Tj | | | | Declared coefficient of performance(*)/Average season, at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj=-7°C | Pdh | 2.30 | kW | Tj=-7°C | COPd | 2.62 | — |
| Tj=2°C | Pdh | 1.40 | kW | Tj=2°C | COPd | 4.07 | — |
| Tj=7°C | Pdh | 0.96 | kW | Tj=7°C | COPd | 5.02 | — |
| Tj=12°C | Pdh | 0.83 | kW | Tj=12°C | COPd | 6.04 | — |
| Tj=operating limit | Pdh | 2.95 | kW | Tj=operating limit | COPd | 2.01 | — |
| Tj=bivalent temperature | Pdh | 2.95 | kW | Tj=bivalent temperature | COPd | 2.01 | — |

| NO 626/2011 &EN 14511 and NO 206/2012 & EN 14825: 2013 | | | | | | | |
|---|--------------------|-------|------|--|--------|-------|---------|
| Clause | Requirement - Test | | | Result - Remark | | | Verdict |
| Function (indicate if present) | | | | Only for heating mode, if applicable | | | |
| Cooling | Y | | | Average(mandatory) | Y | | |
| Heating | Y | | | Warmer(if designed) | Y | | |
| | | | | Colder(if designed) | Y | | |
| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
| Declared capacity (*) for heating/Warmer season, at indoor temperature 20 °C and outdoor temperature Tj | | | | Declared coefficient of performance(*)/Warmer season, at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj=2°C | Pdh | 2.82 | kW | Tj=2°C | COPd | 2.19 | — |
| Tj=7°C | Pdh | 1.80 | kW | Tj=7°C | COPd | 4.95 | — |
| Tj=12°C | Pdh | 0.83 | kW | Tj=12°C | COPd | 6.04 | — |
| Tj=operating limit | Pdh | 2.82 | kW | Tj=operating limit | COPd | 2.19 | — |
| Tj=bivalent temperature | Pdh | 2.82 | kW | Tj=bivalent temperature | COPd | 2.19 | — |
| Declared capacity (*) for heating/Colder season, at indoor temperature 20 °C and outdoor temperature Tj | | | | Declared coefficient of performance(*)/Colder season, at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj=-7°C | Pdh | 1.59 | kW | Tj=-7°C | COPd | 2.83 | — |
| Tj=2°C | Pdh | 0.97 | kW | Tj=2°C | COPd | 3.97 | — |
| Tj=7°C | Pdh | 0.70 | kW | Tj=7°C | C-OPd | 4.39 | — |
| Tj=12°C | Pdh | 0.83 | kW | Tj=12°C | COPd | 6.04 | — |
| Tj=operating limit | Pdh | 1.97 | kW | Tj=operating limit | COPd | 2.01 | — |
| Tj=bivalent temperature | Pdh | 2.17 | kW | Tj=bivalent temperature | COPd | 1.89 | — |
| Tj=-15°C | Pdh | -- | kW | Tj=-15°C | COPd | -- | — |
| Bivalent temperature | | | | Operating limit temperature | | | |
| Heating/Average | Tbiv | -10 | °C | Heating/Average | Tol | -25 | °C |
| Heating/Warmer | Tbiv | 2 | °C | Heating/Warmer | Tol | -25 | °C |
| Heating/Colder | Tbiv | -15 | °C | Heating/Colder | Tol | -25 | °C |
| Cycling interval capacity | | | | Cycling interval efficiency | | | |
| for cooling | Pcycc | x,x | kW | for cooling | EERcyc | x,x | — |
| for heating | Pcyhc | x,x | kW | for heating | COPcyc | x,x | — |
| Degradation co-efficient cooling (**) | Cdc | x,x | — | Degradation co-efficient heating (**) | Cdh | x,x | — |



| NO 626/2011 &EN 14511 and NO 206/2012 & EN 14825: 2013 | | | | | | | |
|--|--------------------|-----------------|---|--------------------------------------|-----------------|------------|-----------------------|
| Clause | Requirement - Test | | | Result - Remark | | | Verdict |
| Function (indicate if present) | | | | Only for heating mode, if applicable | | | |
| Cooling | Y | | | Average(mandatory) | Y | | |
| Heating | Y | | | Warmer(if designed) | Y | | |
| | | | | Colder(if designed) | Y | | |
| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
| Electric power input in power modes other than 'active mode' | | | | Annual electricity consumption | | | |
| Off mode | P _{OFF} | 0.000496 | kW | Cooling | Q _{CE} | 149 | kWh/a |
| Standby mode | P _{SB} | 0.000496 | kW | Heating/Average | Q _{HE} | 910 | kWh/a |
| Thermostat-off mode | P _{TO} | 0.00415/0.00976 | kW | Heating/Warmer | Q _{HE} | 769 | kWh/a |
| Crankcase heater mode | P _{CK} | 0 | kW | Heating/Colder | Q _{HE} | 1706 | kWh/a |
| Capacity control (indicate one of three options) | | | | Other items | | | |
| fixed | N | | | Sound power level (indoor/outdoor) | L _{WA} | 55/61 | dB(A) |
| staged | N | | | Global warming potential | GWP | 2087.5 | kgCO ₂ eq. |
| variable | Y | | | Rated air flow (indoor/outdoor) | — | (560/1600) | m ³ /h |
| Contact details for obtaining more information | | | AS Wilfa, Industriveien 25, Postboks 146, Hagan 1481 Hagan, Norge/Norway | | | | |
| <p>(*) For staged capacity units, two values divided by a slash ('/') will be declared in each box in the section 'Declared capacity of the unit' and 'declared EER/COP' of the unit.</p> <p>(**) If default Cd = 0,25 is chosen then (results from) cycling tests are not required. Otherwise either the heating or cooling cycling test value is required.</p> <p>For units with capacity control marked 'staged', two values for the highest and lowest, noted 'hi/lo' divided by a slash ('/') will be declared in each box under 'Declared capacity'.</p> | | | | | | | |

--End of report--