ARNU183CFU2, and ARNU243CFU2, with nominally rated capacities of 7,500, 9,600, 12,300, 15,400, 19,100, and 24,200 Btu/h, respectively.

Vertical Air Handler: ARNU183NJA2, ARNU243NJA2, ARNU303NJA2, ARNU363NJA2, ARNU423NKA2, ARNU483NKA2, and ARNU543NKA2, with nominally rated capacities of 18,000, 24,000, 30,000, 36,000, 42,100, 48,000 and 54,000 Btu/h, respectively.

(3) Alternate test procedure.
(A) LG shall be required to test the equipment with cooling capacities of 300,000 Btu/h and below listed in paragraph (2) above according to the test procedure prescribed in ANSI/AHRI 1230–2010.
(B) LG shall be required to test the equipment listed in paragraph (2) above with cooling capacities above 300,000 Btu/h according to the test procedures for commercial central air conditioners and heat pumps prescribed by DOE at 10 CFR 431.96, except that LG shall test each model of outdoor unit with two or more combinations of indoor units. The first system combination shall be tested using only non-ducted indoor units that meet the definition of a tested combination, as set forth in paragraph C. The second system combination shall be tested using only ducted indoor units that meet the definition of a tested combination, as set forth in paragraph C. LG shall make representations concerning the Multi V SYNC II and Multi V Water II VRF multi-split heat pump equipment covered in this waiver according to the provisions of subparagraph (D).
(C) Tested combination. The term tested combination means a sample basic model comprised of units that are production units, or are representative of production units, of the basic model being tested. For the purposes of this waiver, the tested combination shall have the following features:
(1) The basic model of a variable refrigerant flow system used as a tested combination shall consist of one outdoor unit, one or more compressors, that is matched with between two and five indoor units. (For systems with nominal cooling capacities greater than 150,000 Btu/h, as many as eight indoor units may be used, so as to be able to test non-ducted indoor unit combinations). For multi-split systems, each of these indoor units shall be designed for individual operation.
(2) The indoor units shall—
(i) Represent the highest sales model family or another indoor model family if the highest sales model family does not provide sufficient capacity (see ii);
(ii) Together, have a nominal cooling capacity that is between 95% and 105% of the nominal cooling capacity of the outdoor unit;
(iii) Not, individually, have a nominal cooling capacity that is greater than 50% of the nominal cooling capacity of the outdoor unit;
(iv) Operate at fan speeds that are consistent with the manufacturer’s specifications; and
(v) Be subject to the same minimum external static pressure requirement while being configurable to produce the same static pressure at the exit of each outlet plenum when manifolded as per section 2.4.1 of 10 CFR Part 430, subpart B, appendix M.
(D) Representations. In making representations about the energy efficiency of its Multi V SYNC II and Multi V Water II VRF multi-split commercial heat pumps, for compliance, marketing, or other purposes, LG must fairly disclose the results of testing under the DOE test procedure in a manner consistent with the provisions outlined below:
(i) For Multi V SYNC II and Multi V Water II VRF multi-split combinations tested in accordance with this alternate test procedure, LG may make representations based on those test results.
(ii) For Multi V SYNC II and Multi V Water II VRF multi-split combinations that are not tested, LG may make representations based on the testing results for the tested combination and that are consistent with one of the following methods:
(a) Rating of non-tested combinations according to an alternative rating method approved by DOE.
(b) Rating of non-tested combinations having the same outdoor unit and all non-ducted indoor units shall be set equal to the rating of the tested system having all non-ducted indoor units.
(c) Rating of non-tested combinations having the same outdoor unit and all ducted indoor units shall be set equal to the rating of the tested system having all ducted indoor units. To be considered a ducted unit, the indoor unit must be intended to be connected with ductwork and have a rated external static pressure capability greater than zero (0).
(d) Rating of non-tested combinations having the same outdoor unit and a mix of non-ducted and ducted indoor units shall be set equal to the average of the ratings for the two required tested combinations.
(4) This waiver shall remain in effect from the date this Decision and Order is issued, consistent with the provisions of 10 CFR 431.401(g).
(5) This waiver is issued on the condition that the statements, representations, and documentary materials provided by the petitioner are valid. DOE may revoke or modify the waiver at any time if it determines that the factual basis underlying the petition for waiver is incorrect, or the results from the alternate test procedure are unrepresentative of the basic models’ true energy consumption characteristics.
(6) This waiver applies only to those basic models set out in LG’s petition for waiver.
(7) Grant of this waiver does not release a petitioner from the certification requirements set forth at 10 CFR part 429.
Issued in Washington, DC, on October 18, 2011.
Kathleen B. Hogan, Deputy Assistant Secretary, Energy Efficiency and Renewable Energy.

DEPARTMENT OF ENERGY
Office of Energy Efficiency and Renewable Energy
[Case No. CAC–037]
Decision and Order Amending Waivers Granted to Mitsubishi Electric & Electronics USA, Inc. From the Department of Energy Commercial Package Air Conditioner and Heat Pump Test Procedures


ACTION: Decision and Order.

SUMMARY: This notice publishes the U.S. Department of Energy’s (DOE) Decision and Order in Case No. CAC–037, which amends the current waivers applicable to Mitsubishi’s S&L Class and WR2 and WY Series products to require the use of Air-conditioning, Heating and Refrigeration Institute 1230 (AHRI) as the alternative test procedure.

DATES: This Decision and Order is effective October 24, 2011.


and reports from manufacturers (42 U.S.C. 6316). With respect to test procedures, Part C authorizes the Secretary of Energy (the Secretary) to prescribe test procedures that are reasonably designed to produce results that measure energy efficiency, energy use, and estimated annual operating costs, and that are not unduly burdensome to conduct. (42 U.S.C. 6314(a)(2))

For commercial package air-conditioning and heating equipment, EPCA provides that “the test procedures shall be those generally accepted industry testing procedures or rating procedures developed or recognized by the Air-Conditioning and Refrigeration Institute [ARI] or by the American Society of Heating, Refrigerating and Air-Conditioning Engineers [ASHRAE], as referenced in ASHRAE/IES Standard 90.1 and in effect on June 30, 1992.” (42 U.S.C. 6314(a)(4)(A)) Under 42 U.S.C. 6314(a)(4)(B), if the industry test procedure for commercial package air-conditioning and heating equipment is amended, EPCA directs the Secretary to amend the corresponding DOE test procedure unless the Secretary determines, by rule and based on clear and convincing evidence, that such a modified test procedure does not meet the statutory criteria set forth in 42 U.S.C. 6314(a)(2) and (3).

On December 8, 2006, DOE published a final rule adopting test procedures for commercial package air-conditioning and heating equipment, effective January 8, 2007. 71 FR 71340. Table 1 to Title 10 of the Code of Federal Regulations (10 CFR) 431.96 directs manufacturers of commercial package air-conditioning and heating equipment to use the appropriate procedure when measuring energy efficiency of this equipment. For small commercial packaged water-source heat pumps with capacities less than 135,000 Btu/h, ISO Standard 13256-1 (1998) is the applicable test procedure. For commercial package air-source equipment with capacities between 65,000 and 760,000 Btu/h, ARI Standard 340/360-2004 is the applicable test procedure.

DOE’s regulations for covered products and equipment permit a person to seek a waiver from the test procedure requirements for covered commercial equipment if at least one of the following conditions is met: (1) the petitioner’s basic model contains one or more design characteristics that prevent testing according to the prescribed test procedures; or (2) the prescribed test procedures may evaluate the basic model in a manner so unrepresentative of its true energy consumption as to provide materially inaccurate comparative data. 10 CFR 431.401(a)(1). Petitioners must include in their petition any alternate test procedures known to the petitioner to evaluate the basic model in a manner representative of its energy consumption. 10 CFR 431.401(b)(1)(iii). The Assistant Secretary for Energy Efficiency and Renewable Energy (Assistant Secretary) may grant a waiver subject to conditions, including adherence to alternate test procedures. 10 CFR 431.401(f)(4). Waivers remain in effect according to the provisions of 10 CFR 431.401(g).

On December 15, 2009, DOE granted Mitsubishi waivers from the DOE commercial air conditioner and heat pump test procedures for Mitsubishi’s CITY MULTI WR2 and WY Series equipment and its CITY MULTI S&L Class equipment. 74 FR 66311; 74 FR 66315. On July 11, 2011, DOE granted Mitsubishi a waiver for additional indoor units. 76 FR 40714. On August 11, 2011, Mitsubishi requested that DOE amend its orders granting test procedure waivers for these products to allow Mitsubishi to test and rate its WR2 and WY Series products, and those S&L Class systems that have capacities less than or equal to 300,000 Btu/h, according to the American National Standards Institute (ANSI)/Air-Conditioning, Heating and Refrigeration Institute (AHRI) Standard 1230–2010: Performance Rating of Variable Refrigerant Flow (VRF) Multi-Split Air-Conditioning and Heat Pump Equipment (AHRI 1230). Mitsubishi also requested that DOE amend the definition of “tested combination” in the current alternate test procedure to allow for the use of up to 12 indoor units in the configuration of a basic model. The alternate test procedure does not apply to Mitsubishi as it is currently permitted to use specifies a maximum of eight indoor units for testing.

### Assertions and Determinations

**Mitsubishi’s Petition for Waiver Amendment**

Mitsubishi’s S&L Class and WR2 and WY Series products are part of Mitsubishi’s CITY MULTI Variable Refrigerant Flow (VRF) line of multi-split central air conditioners and heat pumps. As explained in Mitsubishi’s waivers for the WR2 and WY Series and the S&L Class products, these systems cannot be tested according to the prescribed test procedures for commercial products. Specifically, they contain one or more design characteristic that prevents testing according to the test procedures.
According to DOE’s grant of the December 2009 and July 2011 waivers, Mitsubishi is not required to test or rate the products listed in the waivers based on the current DOE test procedure. Instead, Mitsubishi is required to test and rate these products according to the alternate test procedure set forth in the waivers.

The alternate test procedure prescribed in the December 2009 and July 2011 waivers was first prescribed in 2007, in response to two other petitions for waiver from Mitsubishi. DOE specified alternate test procedures for representing the energy efficiency of Mitsubishi’s R410A and R22 CITY MULTI multi-split products. The alternate test procedure was published on April 9, 2007. 72 FR 17528, 72 FR 17533. Since then, DOE has prescribed the same alternate test procedure for other manufacturers of multi-split products.

After DOE granted a waiver to Mitsubishi’s CITY MULTI products, the Air-Conditioning and Refrigeration Institute (ARI) (now AHRI) formed a committee to develop a general testing protocol for VRF systems. The committee developed AHRI 1230, which has been incorporated into ASHRAE 90.1–2010. AHRI 1230 establishes a test procedure for VRF multi-split air conditioners and heat pumps. The test procedure covers matched VRF systems with cooling and heating capacities for outdoor units between 12,000 Btu/h and 300,000 Btu/h. DOE is assessing AHRI 1230 with respect to the requirements of EPCA, makes specifications for test procedures, and will make a preliminary determination regarding AHRI 1230 in a future rulemaking.

AHRI 1230 is very similar to the alternate test procedure in the commercial multi-split waivers that DOE previously granted to Mitsubishi and other manufacturers, but contains minor differences in the definition of tested combination, the testing of ducted versus non-ducted indoor units, and the line lengths. These differences are discussed below.

First, the definition of “tested combination” in AHRI 1230 and the alternate test procedure prescribed by DOE in the earlier multi-split waivers are identical in all relevant respects, except that AHRI 1230 allows the use of up to 12 indoor units, as opposed to eight in the earlier alternate test procedure.

Second, ANSI/AHRI 1230–2010 requires an additional test. The earlier alternate test procedure provides for efficiency ratings of non-tested combination in one of two ways: (1) at an energy efficiency level determined using a DOE-approved alternative rating method; or (2) at the efficiency level of the tested combination utilizing the same outdoor unit. In AHRI 1230, similar to the residential test procedure set forth in 10 CFR part 430, subpart B, appendix M, multi-split manufacturers must also test two or more combinations of indoor units with each outdoor unit. The first system combination is tested using only non-ducted indoor units that meet the definition of a tested combination. The rating given to any untested multi-split system combination having the same outdoor unit and all non-ducted indoor units is set equal to the rating of the tested system having all non-ducted indoor units. The second system combination is tested using only ducted indoor units that meet the definition of a tested combination. The rating given to any untested multi-split system combination having the same outdoor unit and all ducted indoor units is set equal to the rating of the tested system having all ducted indoor units. The rating given to any untested multi-split system combination having the same outdoor unit and a mix of non-ducted and ducted indoor units is set equal to the average of the ratings for the two required tested combinations.

Third, the alternate test procedure and AHRI 1230 require the use of different line lengths for the cooling refrigerant line when performing efficiency testing. AHRI 1230 requires longer line lengths depending on the type and capacity of the connected indoor units.

As DOE continues to evaluate AHRI 1230, DOE has granted manufacturers’ request to use AHRI 1230 as the alternate test procedure for testing and rating their commercial multi-split products subject to a waiver of DOE’s test procedures. DOE prescribed AHRI 1230 as the alternate test procedure for those Daikin AC (Americas) Inc. (“Daikin”) commercial multi-split products that have cooling capacities less than or equal to 300,000 Btu/h, and for Carrier Corporation’s (“Carrier”) commercial multi-split products. 76 FR 34685 (June 14, 2011); 76 FR 31951 (June 2, 2011).

Consistent with the requests of these other manufacturers, Mitsubishi requested that DOE permit it to use AHRI 1230 as the alternate test procedure to test and rate its WR2 and WY Series units and those S&L Class systems that have capacities less than or equal to 300,000 Btu/h. AHRI 1230 covers multi-split products with cooling and heating capacities for outdoor units from 13,000 Btu/h to 300,000 Btu/h. The outdoor units of Mitsubishi’s WR2 and WY Series products fall within that range. Thus, similar to DOE’s decision in the Daikin and Carrier waivers, Mitsubishi requested that DOE prescribe AHRI 1230 as the alternate test procedure for Mitsubishi’s WR2 and WY Series products.

Mitsubishi’s S&L Class product line includes outdoor units with individual capacities from 65,000 to 144,000 Btu/h, which can be combined into systems with capacities from 130,000 to 480,000 Btu/h. Although the individual capacities of these outdoor units fall within AHRI 1230’s capacity range, some of the combinations of outdoor units have capacities that are greater than the capacity range for AHRI 1230. Thus, similar to DOE’s decision in the Daikin waiver, Mitsubishi requested that DOE prescribe AHRI 1230 as the alternate test procedure for those S&L Class products that have capacities less than or equal to 300,000 Btu/h. For those S&L Class system that have capacities greater than 300,000 Btu/h, Mitsubishi will continue to use the alternate test procedure specified in the S&L Class waiver.

DOE has determined that use of AHRI 1230 is appropriate for Mitsubishi’s WR2 and WY Series products and its S&L Class products for the reasons set forth below.

As discussed above, AHRI 1230 requires longer line lengths for the cooling refrigerant line during testing, depending on the type and capacity of the connected indoor units. This difference affects the resulting energy efficiency determination. Testing according to AHRI 1230’s requirements provides a more conservative estimate of energy consumption because it results in a slightly lower efficiency rating than testing according to the alternate test procedure.

In addition, the definition of “tested combination” in AHRI 1230 is more appropriate for these Mitsubishi products than the definition in the current alternate test procedure. As defined in the current alternate test procedures for Mitsubishi’s products, the “tested combination” of a VRF system is defined as one outdoor unit matched with between two and eight indoor units. The indoor units must represent the highest sales model family, and, together, must have a nominal cooling capacity that is between 95% and 105% of the nominal cooling capacity of the outdoor unit. Due to the relative size of some of Mitsubishi’s outdoor units and indoor units, permitting the matching of up to only eight indoor units may not be sufficient to comply with the requirement that the indoor units must have a combined capacity that is
shall make representations concerning “tested combination” in the current alternate test procedure to make it identical to the definition in AHRI 1230 for those units with capacities greater than 300,000 Btu/h that are outside the scope of AHRI 1230.

For the reasons discussed above, and because DOE’s prescribed AHRI 1230 as the alternate test procedure in waivers granted to Carrier and Daikin, DOE determined that allowing Mitsubishi to use AHRI 1230 instead of the alternate test procedure provided in the WR2 and WY Series Waiver and the S&L Class Waiver is in the public interest.

Conclusion

After careful consideration of all the materials submitted by Mitsubishi, it is ordered that:

(A)(1) Mitsubishi is not required to test the following equipment with cooling capacities of 300,000 Btu/h and below according to the test procedure for commercial package air conditioners and heat pumps prescribed by DOE at 10 CFR 431.96 (ARI Standard 340/360–2004 (incorporated by reference in 10 CFR 431.95(b)(2)-(3))), but instead shall use as the alternate test procedure ANSI/AHRI 1230–2010:

(a) Equipment listed in the WR2 and WY Series waiver granted December 15, 2009 (74 FR 66311);

(b) Equipment listed in the S&L Class waiver granted December 15, 2009 (74 FR 66315); and

(c) Basic models of CITY MULTI WR2 and WY Series and CITY MULTI S&L Class equipment listed in the waiver granted July 11, 2011 (76 FR 40714).

(B) Mitsubishi shall be required to test the following equipment with cooling capacities above 300,000 Btu/h according to the test procedures for central air conditioners and heat pumps prescribed by DOE at 10 CFR 431.96, except that Mitsubishi shall test each model of outdoor unit with two or more combinations of indoor units. The first system combination shall be tested using only non-ducted indoor units that meet the definition of a tested combination as set forth in subparagraph (B). The second system combination shall be tested using only ducted indoor units that meet the definition of a tested combination as set forth in subparagraph (B). Mitsubishi shall make representations concerning the products covered in this waiver according to the provisions of subparagraph (C):

(a) Equipment listed in the WR2 and WY Series waiver granted December 15, 2009 (74 FR 66311);

(b) Equipment listed in the S&L Class waiver granted December 15, 2009 (74 FR 66315); and

(c) Basic models of CITY MULTI WR2 and WY Series and CITY MULTI S&L Class equipment listed in the waiver granted July 11, 2011 (76 FR 40714).

(B) Tested combination. The term “tested combination” means a sample basic model comprised of units that are production units, or are representative of production units, of the basic model being tested. For the purposes of this waiver, the tested combination shall have the following features: The basic model of a variable refrigerant flow system (“VRF system”) used as a tested combination shall consist of an outdoor unit (an outdoor unit can include multiple outdoor units that have been manifolded into a single refrigeration system, with a specific model number) that is matched with between 2 and 12 indoor units; for multi-split systems, each of these indoor units shall be designed for individual operation.

(C) Representations. In making representations about the energy efficiency of its S&L Class and WR2 and WY Series multi-split products, for compliance, marketing, or other purposes, Mitsubishi must fairly disclose the results of testing under the DOE test procedure in a manner consistent with the provisions outlined below:

(i) For multi-split combinations tested in accordance with this alternate test procedure, Mitsubishi may make representations based on those test results.

(ii) For multi-split combinations that are not tested, Mitsubishi may make representations based on the testing results for the tested combination and that are consistent with one of the following methods:

(a) Rating of non-tested combinations according to an alternative rating method approved by DOE; or

(b) Rating of non-tested combinations having the same outdoor unit and all non-ducted indoor units shall be set equal to the rating of the tested system having all non-ducted indoor units.

(c) Rating of non-tested combinations having the same outdoor unit and all ducted indoor units shall be set equal to the rating of the tested system having all ducted indoor units. To be considered a ducted unit, the indoor unit must be intended to be connected with ductwork and have a rated external static pressure capability greater than zero (0).

(d) Rating of non-tested combinations having the same outdoor unit and a mix of non-ducted and ducted indoor units shall be set equal to the average of the ratings for the two required tested combinations.

(D) This waiver amendment shall remain in effect from the date this Decision and Order is issued, consistent with the provisions of 10 CFR 431.401(g).

Issued in Washington, DC, on October 18, 2011.

Kathleen B. Hogan, Deputy Assistant Secretary for Energy Efficiency, Energy Efficiency and Renewable Energy.