

**State of California  
Office of Administrative Law**

In re:  
California Energy Commission

Regulatory Action:

Title 20, California Code of Regulations

Amend sections: 1601, 1602, 1603, 1604,  
1065, 1605.1, 1605.2,  
1605.3, 1606, 1607, 1608,  
1609

NOTICE OF APPROVAL OF REGULATORY  
ACTION

Government Code Section 11349.3

OAL Matter Number: 2024-0606-01

OAL Matter Type: Regular (S)

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This rulemaking action by the California Energy Commission amends appliance efficiency regulations to update provisions to reflect current federal law, revise the data submittal requirements, and update product compliance review and administrative proceeding procedures.

OAL approves this regulatory action pursuant to section 11349.3 of the Government Code. This regulatory action becomes effective on July 18, 2024 pursuant to Government Code section 11343.4(b)(3).

Date: July 18, 2024



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Nicole C. Carrillo  
Senior Attorney

For: Kenneth J. Pogue  
Director

Original: Drew Bohan, Executive Director  
Copy: Carlos Baez

# REGULAR

(See instructions on reverse)

For use by Secretary of State only

STD. 400 (REV. 10/2019)

OAL FILE NUMBERS	NOTICE FILE NUMBER <b>Z-2023-1113-03</b>	REGULATORY ACTION NUMBER <b>2024-0606-015</b>	EMERGENCY NUMBER
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OFFICE OF ADMINISTRATIVE LAW	
<b>Electronic Submission</b>	
RECEIVED DATE 11/13/2023	PUBLICATION DATE 11/24/2023
NOTICE	REGULATIONS

**ENDORSED FILED**  
in the office of the Secretary of State of the State of California

*JK* JUL 18 2024  
1:34 pm  
By \_\_\_\_\_  
Deputy Secretary of State

AGENCY WITH RULEMAKING AUTHORITY California Energy Commission	AGENCY FILE NUMBER (If any) 22-AAER-04
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### A. PUBLICATION OF NOTICE (Complete for publication in Notice Register)

1. SUBJECT OF NOTICE Federal and Administrative Updates	TITLE(S) 20	FIRST SECTION AFFECTED 1601	2. REQUESTED PUBLICATION DATE November 24, 2023
3. NOTICE TYPE <input checked="" type="checkbox"/> Notice re Proposed Regulatory Action <input type="checkbox"/> Other	4. AGENCY CONTACT PERSON corrine fishman	TELEPHONE NUMBER 916-805-7452	FAX NUMBER (Optional)
OAL USE ONLY <input type="checkbox"/> Approved as Submitted <input type="checkbox"/> Approved as Modified <input type="checkbox"/> Disapproved/Withdrawn	NOTICE REGISTER NUMBER 2023, 47-2	PUBLICATION DATE 11-24-23	

### B. SUBMISSION OF REGULATIONS (Complete when submitting regulations)

1a. SUBJECT OF REGULATION(S) Federal and Administrative Updates	1b. ALL PREVIOUS RELATED OAL REGULATORY ACTION NUMBER(S)
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2. SPECIFY CALIFORNIA CODE OF REGULATIONS TITLE(S) AND SECTION(S) (Including title 26, if toxics related)	
SECTION(S) AFFECTED (List all section number(s) individually. Attach additional sheet if needed.)	ADOPT AMEND 1601, 1602, 1603, 1604, 1605, 1605.1, 1605.2, 1605.3, 1606, 1607, 1608, 1609 REPEAL
TITLE(S) 20	

3. TYPE OF FILING
<input checked="" type="checkbox"/> Regular Rulemaking (Gov. Code §11346) <input type="checkbox"/> Resubmission of disapproved or withdrawn nonemergency filing (Gov. Code §§11349.3, 11349.4) <input type="checkbox"/> Emergency (Gov. Code, §11346.1(b)) <input type="checkbox"/> Certificate of Compliance: The agency officer named below certifies that this agency complied with the provisions of Gov. Code §§11346.2-11347.3 either before the emergency regulation was adopted or within the time period required by statute. <input type="checkbox"/> Resubmission of disapproved or withdrawn emergency filing (Gov. Code, §11346.1) <input type="checkbox"/> Emergency Readopt (Gov. Code, §11346.1(h)) <input type="checkbox"/> File & Print <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Changes Without Regulatory Effect (Cal. Code Regs., title 1, §100) <input type="checkbox"/> Print Only

4. ALL BEGINNING AND ENDING DATES OF AVAILABILITY OF MODIFIED REGULATIONS AND/OR MATERIAL ADDED TO THE RULEMAKING FILE (Cal. Code Regs. title 1, §44 and Gov. Code §11347.1)  
March 8 through March 24, 2024

5. EFFECTIVE DATE OF CHANGES (Gov. Code, §§ 11343.4, 11346.1(d); Cal. Code Regs., title 1, §100)
<input type="checkbox"/> Effective January 1, April 1, July 1, or October 1 (Gov. Code §11343.4(a)) <input checked="" type="checkbox"/> Effective on filing with Secretary of State <input type="checkbox"/> \$100 Changes Without Regulatory Effect <input type="checkbox"/> Effective other (Specify) _____

6. CHECK IF THESE REGULATIONS REQUIRE NOTICE TO, OR REVIEW, CONSULTATION, APPROVAL OR CONCURRENCE BY, ANOTHER AGENCY OR ENTITY
<input type="checkbox"/> Department of Finance (Form STD. 399) (SAM §6660) <input type="checkbox"/> Fair Political Practices Commission <input type="checkbox"/> State Fire Marshal <input type="checkbox"/> Other (Specify) _____ <i>per agency request</i>

7. CONTACT PERSON <b>Carlos Baez</b>	TELEPHONE NUMBER (916) 232-9030	FAX NUMBER (Optional)	E-MAIL ADDRESS (Optional) Carlos.baez@energy.ca.gov
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8. I certify that the attached copy of the regulation(s) is a true and correct copy of the regulation(s) identified on this form, that the information specified on this form is true and correct, and that I am the head of the agency taking this action, or a designee of the head of the agency, and am authorized to make this certification.

SIGNATURE OF AGENCY HEAD OR DESIGNEE <i>Drew Bohan</i>	DATE 7/18/24
TYPED NAME AND TITLE OF SIGNATORY Drew Bohan, Executive Director	

For use by Office of Administrative Law (OAL) only

**ENDORSED APPROVED**

JUL 18 2024

Office of Administrative Law

# Final Regulatory Language

## California Code of Regulations

### Title 20. Public Utilities and Energy

#### Division 2. State Energy Resources Conservation and Development Commission

#### Chapter 4. Energy Conservation

#### Article 4. Appliance Efficiency Regulations

#### Sections 1601-1609

The new language appears as a single underline (example) and deletions appear as a single strikeout (~~example~~). Existing language appears as plain text. Three dots or “...” represents the substance of the regulations that exists between the proposed language and current language.

### Section 1601. Scope.

This Article applies to the following types of new appliances, if they are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the state and those designed and sold exclusively for use in recreational vehicles, or other mobile equipment. Unless otherwise specified, each provision applies only to units manufactured on or after the effective date of the provision.

NOTE: For the applicability of these regulations to appliances installed in new building construction, see sections 110.0 and 110.1 of part 6 of Title 24 of the California Code of Regulations.

...[skipping the rest of section 1601]

Note: Authority cited: Sections 25213, 25218(e), 25401.9, 25402(a)-25402(c), and 25960, Public Resources Code; and sections 16, 26, and 30, Governor’s Exec. Order No. B-29-15 (April 1, 2015).

Reference: Sections 25216.5(d), 25401.9, 25402(a)-25402(c), 25402.5.4, 25402.11 and 25960, Public Resources Code; and Section 16, Governor’s Exec. Order No. B-29-15 (April 1, 2015).

### Section 1602. Definitions.

#### (a) General.

In this Article the following definitions apply. If a term is not defined here, the applicable definition in NAECA, EAct, the EAct 2005, EISA, or the test methods listed in section 1604 of this Article shall apply where it is reasonable to do so.

...[skipping “AC” through “AHRI”]

“Alternative efficiency determination method (AEDM)” means an alternative method for determining energy efficiency or energy use applicable to the basic model, in accordance with the requirements of 10 C.F.R. section 429.70.

**[...skipping “ANSI” through “Directory”]**

“Distributor” means a person (other than a manufacturer or retailer) to whom an appliance is delivered or sold for purposes of distribution in commerce, or the fulfillment of sales, in California.

**...[skipping “EISA” through “IEC”]**

“Importer” means a person who imports appliances or causes appliances to be imported into California from another state or country for retail sales.

**...[skipping “ISO” through “Performance standard”]**

“Person” has the same meaning as Public Resources Code section 25116.

**...[skipping “Pin-based” through “Recreational vehicle”]**

“Retailer” means a person or entity that sells appliances to the public for use or consumption rather than for resale.

“RPM” means revolutions per minute.

“Secretary” means the Secretary of the United States Department of Energy (U.S. DOE).

“Sold or offered for sale in California” means any sale of or offer to sell an appliance for end use in the state, regardless of the seller’s physical location, and includes, without limitation, internet, telephone, and mail order transactions. For purposes of this Article, the Uniform Commercial Code—Sales (Division 2 (commencing with Section 2101) of the Commercial Code) does not define “sold or offered for sale” or determine where sales or offers for sale occur.

**...[skipping the rest of (a)]**

**...[skipping (b)]**

**(c) Air Conditioners, Air Filters, and Heat Pump Water-Heating Packages.**

**...[skipping “Air conditioner” through “Basic model” of federally regulated computer room air conditioners]**

“Basic model” of federally regulated direct expansion-dedicated outdoor air systems means all units manufactured by one manufacturer, having the same primary energy

source (e.g., electric or gas), within a single equipment class; with the same or comparably performing compressor(s), heat exchangers, ventilation energy recovery system(s) (if present), and air moving system(s) that have a common "nominal" moisture removal capacity.

**...[skipping "Basic model" of federally regulated packaged terminal air conditioner (PTAC) or packaged terminal heat pump (PTHP) through "Central air-conditioning heat pump" that is a federally regulated consumer product]**

"Coefficient of Performance (COP)" of a federally regulated consumer products means the ratio of the average rate of space heating delivered to the average rate of electrical energy consumed by the heat pump. ~~These Determine these rate quantities must be determined from a single test or, if derived via interpolation, must be determined~~ determine at a single set of operating conditions. COP is a dimensionless quantity. When determined for a ducted coil-only system, COP must be calculated using the default values for heat output and power input of a fan motor specified in sections 3.7 and 3.9.1 of 10 C.F.R. section 430.23(m) (Appendix M1 to subpart B of part 430). ~~include sections 3.7 and 3.9.1 of 10 C.F.R. section 430.23(m) (Appendix M to subpart B of part 430): default values for the heat output and power input of a fan motor.~~

"Coefficient of Performance (COP)" of federally regulated commercial and industrial equipment means the ratio of the produced cooling effect of an air conditioner or heat pump (or its produced heating effect, depending on the mode of operation) to its net work input, when both the cooling (or heating) effect and the net work input are expressed in identical units of measurement, as determined using the applicable test method in section 1604(b) or 1604(c) of this Article.

**...[skipping "Commercial package air-conditioning and heating equipment" through "Cooling capacity"]**

"Direct expansion-dedicated outdoor air system (DX-DOAS)" means a unitary dedicated outdoor air system that is capable of dehumidifying air to a 55°F dew point—when operating under Standard Rating Condition A as specified in 10 C.F.R. section 431.92 with a barometric pressure of 29.92 in Hg—for any part of the range of airflow rates advertised in manufacturer materials, and has a moisture removal capacity of less than 324 lb/h.

**...[skipping "Double-duct air conditioner or heat pump" through "Electronic air cleaner"]**

"Energy Efficiency Ratio (EER)" of a federally regulated consumer product means the ratio of the average rate of space cooling delivered to the average rate of electrical energy consumed by the central air conditioner or heat pump. These rate quantities must be determined from a single test or, if derived via interpolation, must be determined at a single set of operating conditions. EER is expressed in units of Btu/watt-hour, as determined using 10 C.F.R. section 430.23(m) (Appendix M to subpart

~~B of part 430)the applicable test method in section 1604(c) of this Article. When determined for a ducted coil-only central system, EER must include the section 3.3 and 3.5.1 default values for the heat output and power input of a fan motor found in 10 C.F.R. section 430.23(m) (Appendix M to subpart B of part 430).~~

“Energy Efficiency Ratio (EER)” of federally regulated commercial and industrial equipment means the ratio of the produced cooling effect of an air conditioner or heat pump to its net work input, expressed in Btu/watt-hour.

“Energy efficiency ratio 2 (EER2)” of a federally regulated consumer product means the ratio of the average rate of space cooling delivered to the average rate of electrical energy consumed by the air conditioner or heat pump. Determine these rate quantities from a single test or, if derived via interpolation, determine at a single set of operating conditions. EER2 is expressed in units of Btu/watt-hour, as determined using 10 C.F.R. section 430.23(m) (Appendix M1 to subpart B of part 430). When determined for a ducted coil-only central system, EER2 must include the section 3.3 and 3.5.1 default values for the heat output and power input of a fan motor found in 10 C.F.R. section 430.23(m) (Appendix M1 to subpart B of part 430).

**...[skipping “Evaporatively cooled air conditioner” through “Heat recovery”]**

“Heating Seasonal Performance Factor (HSPF)” of a federally regulated consumer product means the total space heating required during the heating season, expressed in Btu's, divided by the total electrical energy consumed by the heat pump system during the same season, expressed in watt-hours, as determined using 10 C.F.R. section 430.23(m) (Appendix M to subpart B of part 430)~~the applicable test method in section 1604(c) of this Article.~~ The HSPF used to evaluate compliance with 10 C.F.R. 430.32(c) is based on Region IV, the minimum standardized design heating requirement, and the sampling plan stated in 10 C.F.R. section 429.16(a).

“Heating Seasonal Performance Factor (HSPF)” of federally regulated commercial and industrial equipment means the total heating output of a central air-conditioning heat pump during its normal annual usage period for heating, expressed in Btu's and divided by the total electric power input, expressed in watt-hours, during the same period.

“Heating seasonal performance factor 2 (HSPF2)” of a federally regulated consumer product means the total space heating required during the heating season, expressed in Btu, divided by the total electrical energy consumed by the heat pump system during the same season, expressed in watt-hours. The HSPF2 used to evaluate compliance with 10 C.F.R. section 430.32(c) is based on Region IV and the sampling plan stated in 10 C.F.R. section 429.16(a). HSPF2 is determined using 10 C.F.R. section 430.23(m) (Appendix M1 to subpart B of part 430).

**...[skipping “Indoor fan electrical input” through “Initial resistance” of an air filter]**

"Integrated Energy Efficiency Ratio (IEER)" of federally regulated commercial equipment means a weighted average calculation of mechanical cooling EERs determined for four load levels and corresponding rating conditions, as measured in 10 C.F.R. part 431, Appendix A of subpart F, expressed in Btu/watt-hour.

"Integrated seasonal coefficient of performance 2 (ISCOP2)" of federally regulated commercial and industrial equipment means a seasonal weighted-average heating efficiency for heat pump dedicated outdoor air systems, expressed in W/W, as measured in 10 C.F.R. section 431, Appendix B of subpart F.

"Integrated seasonal moisture removal efficiency 2 (ISMRE2)" of federally regulated commercial and industrial equipment means a seasonal weighted average dehumidification efficiency for dedicated outdoor air systems, expressed in lbs. of moisture/kWh, as measured in 10 C.F.R. section 431, Appendix B of subpart F.

...[skipping "**Large commercial package air-conditioning and heating equipment**" through "**Room air conditioner**"]

"Seasonal Energy Efficiency Ratio (SEER)" of a federally regulated consumer product means the total heat removed from the conditioned space during the annual cooling season, expressed in Btu's, divided by the total electrical energy consumed by the central air conditioner or heat pump during the same season, expressed in watt-hours, as determined using 10 C.F.R. section 430.23(m) (Appendix M to subpart B of part 430)~~the applicable test method in section 1604(e) of this Article.~~

"Seasonal Energy Efficiency Ratio (SEER)" of federally regulated commercial and industrial equipment means the total cooling output of a central air conditioner or central air-conditioning heat pump, expressed in Btu's, during its normal annual usage period for cooling and divided by the total electric power input, expressed in watt-hours, during the same period.

"Seasonal energy efficiency ratio 2 (SEER2)" of a federally regulated consumer product means the total heat removed from the conditioned space during the annual cooling season, expressed in Btu's, divided by the total electrical energy consumed by the central air conditioner or heat pump during the same season, expressed in watt-hours, as determined using 10 C.F.R. section 430.23(m) (Appendix M1 to subpart B of part 430).

"Sensible coefficient of performance" (SCOP)" means the net sensible cooling capacity in watts divided by the total power input in watts (excluding reheaters and humidifiers).

...[skipping "**Single package central air conditioner**" through "**Unitary air conditioner**"]

"Unitary dedicated outdoor air system (DOAS)" means a category of small, large, or very large commercial package air-conditioning and heating equipment that is capable of providing ventilation and conditioning of 100% outdoor air and is marketed in

materials (including but not limited to, specification sheets, insert sheets, and online materials) as having such capability.

...[skipping the rest of (c)]

**(d) Portable Air Conditioners, Evaporative Coolers, Ceiling Fans, Ceiling Fan Light Kits, Whole House Fans, Residential Exhaust Fans, Dehumidifiers, Residential Furnace Fans, and Commercial and Industrial Fans or Blowers.**

...[skipping “Adjusted cooling capacity at 83°F conditions” through “Centrifugal unhooded fan”]

“Circulating fan” means a fan that has no provision for connection to ducting or separation of the fan inlet from its outlet using a pressure boundary, operates against zero external static pressure loss, and is not a jet fan, a fan that is not a ceiling fan that is used to move air within a space, that has no provision for connection to ducting or separation of the fan inlet from its outlet. The fan is designed to be used for the general circulation of air.

“Combined energy efficiency ratio (CEER)” of a single-duct or dual-duct portable air conditioner means the energy efficiency of a portable air conditioner in Btu per watt-hours (Btu/Wh), as determined using the test method specified in section 1604(d) of this Article.

“Commercial and industrial fan or blower” means a rotary-bladed machine used to convert electrical or mechanical power to air power, with an energy output limited to 25 kilojoule per kilogram (kJ/kg) of air. A commercial and industrial fan or blower has a rated fan shaft power greater than or equal to 1 horsepower, or, for fans without a rated shaft input power, an electrical input power greater than or equal to ~~1-0.89~~ kilowatt (kW); and a fan output power, static air power or total air power, less than or equal to 150 horsepower as prescribed in paragraph(a)(4)(ii) of 10 C.F.R. section 431.174. They consist of an impeller, a shaft, bearings, and a structure or housing. It may include a transmission, driver, and/or controller at the time of sale.

- (1) Commercial and industrial fans and blowers do not include:
  - (A) a radial housed unshrouded fan with blade diameter at tip less than 30 inches or a blade width of less than 3 inches; safety fans as defined in Section 4602(d) of this Article;
  - (B) a safety fan; ceiling fans as defined in 10 CFR 430.2;
  - (C) an induced flow fan; circulating fans;
  - (D) a jet fan; induced flow fans;
  - (E) a cross-flow fan; jet fans;
  - (F) a fan manufactured exclusively to be powered by internal combustion engines; cross-flow fans;
  - (G) a fan that creates a vacuum of 30 inches water gauge or greater; embedded fans as defined in ANSI/AMCA 214-21, including embedded fans sold exclusively for replacement of another embedded fan;



- (H) a fan that is designed and marketed to operate at or above 482°F (250°C); fans mounted in or on motor vehicles or other mobile equipment;
- (I) a fan and blower embedded in the equipment listed in paragraph (a)(3) of 10 C.F.R. section 431.174; and fans that create a vacuum of 30 in. water gauge or greater;
- (J) a fan and blower embedded in equipment other than the equipment listed in paragraph (a)(3) of 10 C.F.R. section 431.174, that meets the following criteria:
  - (i) the fan or blower is available only as part of a manufactured assembly that includes functions other than air movement or as a replacement part for that assembly, and
  - (ii) the fan or blower is not subject to federal efficiency standards, air curtain unit as defined in Section 1602(d) of this Article; and
- (K) ~~a fan that is designed and marketed to operate at or above 482 degrees Fahrenheit (250 degrees Celsius).~~

“Cooling efficiency ratio (CER)” means the efficiency of a spot air conditioner obtained by dividing the sum of the cooling capacity and the fan electrical input, both in Btu per hour by the total electrical input in watts, all as determined using the test method specified in ~~S~~section 1604(d) of this Article.

...[skipping “Cross-flow fan” through “Fan array”]

“Fan ~~E~~electrical ~~P~~power” or “FEP” means the electrical power required to operate a fan, including any motor controllers at a given duty point. It is calculated in the test method in section 1604(d)(2) of this Article.

“Fan ~~E~~energy ~~I~~index” or “FEI” means the ratio of the electrical input power of a reference fan to the electrical input power of the actual fan as calculated under the test method in section 1604(d)(2) of this Article.

“Fan flow angle” means the angle of the centerline of the air-conducting surface of a fan blade measured at the midpoint of its trailing edge with the centerline of the rotation axis, in a plane through the rotation axis and the midpoint of the trailing edge.

“Fan output power” means the power delivered to air by the fan; it is proportional to the product of the fan airflow rate, the fan total pressure and the compressibility coefficient ~~as determined in accordance with the test procedure specified in section 1604(d)(2) of this Article.~~

“Fan series” means a group of fan models that are geometrically similar per the proportionally and dimensional requirement explained in Annex K of the test method in section 1604(d)(2) of this Article.

...[skipping “Fan shaft power” through “High speed” of a ceiling fan]

“High-speed small-diameter (HSSD) ceiling fan” means a small-diameter ceiling fan that is not a very-small-diameter ceiling fan, highly decorative ceiling fan or belt-driven ceiling fan and that has a blade thickness of less than 3.2 mm at the edge or a maximum tip speed greater than the applicable limit specified in Table D-1. has a represented value of blade edge thickness, as determined in 10 C.F.R. section 429.32(a)(3)(iii), of less than 3.2 mm or a maximum represented value of tip speed, as determined in 10 C.F.R. 429.32(a)(3)(v), greater than the applicable limit specified in Table D-1.

**Table D-1  
High-Speed Small-Diameter Ceiling Fan Blade and Tip Speed Criteria**

<b>Airflow Direction</b>	<b>Thickness (t) of Edges of Blades</b>		<b>Tip Speed Threshold</b>	
	<b>Mm</b>	<b>Inch</b>	<b>m/s</b>	<b>Feet per minute</b>
Downward only	4.8 > t ≥ 3.2	$\frac{3}{16} > t \geq \frac{1}{8}$	16.3	3,200
Downward only	t ≥ 4.8	t ≥ $\frac{3}{16}$	20.3	4,000
Reversible	4.8 > t ≥ 3.2	$\frac{3}{16} > t \geq \frac{1}{8}$	12.2	2,400
Reversible	t ≥ 4.8	t ≥ $\frac{3}{16}$	16.3	3,200

“Highly decorative ceiling fan” means a ceiling fan with a maximum rotational speed of 90 RPM and less than 1,840 CFM airflow at high speed, as determined by sections 3 and 4 of 10 C.F.R. section 430.23(w) (Appendix U to Subpart B of part 430). maximum represented value of blade revolutions per minute (RPM), as determined in 10 C.F.R. section 429.32(a)(3)(ii), of 90 RPM, and a represented value of airflow at high speed, as determined in 10 C.F.R. section 429.32(a)(3)(vi), of less than 1,840 CFM.

“Housing” means any component or components of the fan that direct airflow into or away from the impeller and/or provide protection to the internal components. It may serve as the structure of the fan.

“Hugger ceiling fan” means a low-speed small-diameter ceiling fan that is not a very-small-diameter ceiling fan, highly decorative ceiling fan or belt-driven ceiling fan; for which the lowest point on the fan blades is less than or equal to 10 inches from the ceiling, and for which the represented value of the distance between the ceiling and the lowest point on the fan blades, as determined in 10 C.F.R section 429.32(a)(3)(iv), is less than or equal to 10 inches.

...[skipping “Impeller” through “Lamp lumens” of a ceiling fan light kit]

“Large-diameter ceiling fan” means a ceiling fan that is greater than seven feet in diameter. is not a highly-decorative ceiling fan or belt-driven ceiling fan and has a represented value of blade span, as determined in 10 C.F.R. section 429.32(a)(3)(i), greater than seven feet.

“Low-profile ceiling fan” means a ceiling fan where the motor mounts directly to the ceiling and that cannot be mounted using a down-rod.

“Low speed” of a ceiling fan means the lowest available ceiling fan speed, i.e., the fan speed corresponding to the minimum, non-zero, blade RPM.

“Low-speed small-diameter (LSSD) ceiling fan” means a small-diameter ceiling fan that has a blade thickness greater than or equal to 3.2 mm at the edge and a maximum tip speed less than or equal to the applicable limit specified in Table D-2, represented value of blade edge thickness, as determined in 10 C.F.R. section 429.32(a)(3)(iii), greater than or equal to 3.2 mm and a maximum represented value of tip speed, as determined in 10 C.F.R. section 429.32(a)(3)(v), less than or equal to the applicable limit specified in Table D-2.

**Table D-2  
Low-Speed Small-Diameter Ceiling Fan Blade and Tip Speed Criteria**

<b>Airflow Direction</b>	<b>Thickness (t) of Edges of Blades</b>		<b>Tip speed threshold</b>	
	<b>Mm</b>	<b>Inch</b>	<b>m/s</b>	<b>Feet per minute</b>
Reversible	4.8 > t ≥ 3.2	<sup>3</sup> / <sub>16</sub> > t ≥ <sup>1</sup> / <sub>8</sub>	12.2	2,400
Reversible	t ≥ 4.8	t ≥ <sup>3</sup> / <sub>16</sub>	16.3	3,200

“Maximum airflow” means the maximum reported value for airflow in cubic feet per minute at standard air density that meets or exceeds the required minimum FEI ≥ 1.00 for at least one duty point. Maximum airflow is represented as Point 1 in figures H.1 through H.4 in Annex H of the test procedure in section 1604(d)(2).

“Maximum fan speed” means the maximum reported value for fan speed in revolutions per minute that meets or exceeds the minimum FEI ≥ 1.00 for at least one duty point. The maximum fan speed is represented as Point 3 in figures H.1 through H.4. in Annex H of the test procedure listed in section 1604(d)(2).

“Maximum pressure” means the maximum reported value for total or static fan pressure in inches water gauge at standard air density that meets or exceeds the minimum FEI ≥ 1.00 for at least one duty point. The maximum pressure is represented as Point 2 in figures H.1 through H.4 in Annex H of the test procedure in 1604(d)(2).

...[skipping “Mixed-flow fan” through “Residential exhaust fan”]

“Safety fan” means:

- (1) a reversible axial fan in cylindrical housing that is designed and marketed for use in ducted tunnel ventilation that will reverse operations under an emergency ventilation condition;
- (2) a fan for use in explosive atmospheres tested and marked according to ISO 80079-36:2016, Explosive atmospheres – Part 36: Non-electrical equipment for explosive atmospheres – Basic method and requirements;
- (3) an electric-motor-driven-Positive Pressure Ventilator as defined AMCA 240-15;  
or

- (4) fans complying with ANSI/UL 705 (August 23, 2021) Standard for Safety for Power Ventilators and listed as "Power Ventilators for Smoke Control Systems";  
or  
(5) a laboratory exhaust fan designed and marketed specifically for exhausting contaminated air vertically away from a building using high-velocity discharge.

"Seasonally adjusted cooling capacity (SACC)" of a single-duct or dual-duct portable air conditioner means the amount of cooling, measured in Btu/h, provided to the indoor conditioned space, as determined using the test method specified in section 1604(d) of this Article.

"Series calculated fan" means the fan models for which the performance data was calculated based on a series tested fan from the same fan series ~~using the allowable fan laws listed in the test method in section 1604(d)(2) of this Article.~~

"Series tested fan" means the fan model tested in a laboratory to provide performance data for a fan series ~~as explained in the test method in section 1604(d)(2) of this Article.~~

"Single-duct portable air conditioner" means a portable air conditioner that draws all of the condenser inlet air from the conditioned space without the means of a duct, and discharges the condenser outlet air outside the conditioned space through a single duct attached to an adjustable window bracket.

"Small-diameter ceiling fan" means a ceiling fan ~~that is less than or equal to seven feet in diameter.~~ has a represented value of blade span, as determined in 10 C.F.R. section 429.32(a)(3)(i), less than or equal to seven feet.

"Spot air conditioner" means a portable air conditioner that discharges cool air into a space and discharges rejected heat back into that space, where there is no physical boundary separating the discharges.

"Standard ceiling fan" means a low-speed small-diameter ceiling fan that is not a very-small-diameter ceiling fan, highly decorative ceiling fan or belt-driven ceiling fan; ~~for which the lowest point on fan blades is greater than 10 inches from the ceiling, and for which the represented value of the distance between the ceiling and the lowest point on the fan blades, as determined in 10 C.F.R. section 429.32(a)(3)(iv), is greater than 10 inches.~~

"System efficacy per lamp ballast platform" of a ceiling fan light kit means the ratio of measured lamp lumens expressed in lumens and measured input power expressed in watts.

"Total airflow" of a ceiling fan means the sum of the product of airflow and hours of operation at all tested speeds. For multi-head fans, this includes the airflow from all fan heads.

“Very small-diameter (VSD) ceiling fan” means a small-diameter ceiling fan that is not a highly decorative ceiling fan or belt-driven ceiling fan; and has one or more fan heads, each of which has a blade span of 18 inches or less. represented value of blade span, as determined in 10 C.F.R. section 429.32(a)(3)(i), of 18 inches or less. Only VSD fans that also meet the definition of an LSSD fan are required to be tested for purposes of determining compliance with energy efficiency standards established by DOE and for other representations of energy efficiency.

...[skipping the rest of (d)]

**(e) Gas and Oil Space Heating Products Heaters and Electric Residential Boilers.**

...[skipping “Annual fuel utilization efficiency (AFUE)” through “Combined annual efficiency (CAE)”]

“Combustion efficiency for a commercial packaged boiler” means the efficiency descriptor for packaged boilers, determined using test procedures prescribed under 10 C.F.R. section 431.86 and is equal to 100 percent minus percent flue loss (percent flue loss is based on input fuel energy).

“Combustion efficiency” of a commercial packaged boiler is a measurement of how much of the fuel input energy is converted to useful heat in combustion and is calculated as 100-percent minus percent losses due to dry flue gas, incomplete combustion, and moisture formed by combustion of hydrogen, as determined using the test procedure specified in section 1604(e) of this Article.

“Combustion efficiency” of a space heater” means a measure of the percentage of heat from the combustion of gas or oil that is transferred to the space being heated or lost as jacket loss, as determined using the applicable test method in section 1604(e) of this Article.

...[skipping “Commercial packaged boiler” through “Duct furnace”]

“Electric boiler” that is a federally regulated consumer product means an electrically powered furnace designed to supply low pressure steam or hot water for space heating application. A low pressure steam boiler operates at or below 15 pounds per square inch gauge (psig) steam pressure; a hot water boiler operates at or below 160 psig water pressure and 250°F water temperature.

...[skipping “Energy consumption during standby” through “Floor-mounted unit heater”]

“Furnace” that is a federally regulated consumer product means a product which utilizes only single-phase electric current, or single-phase electric current or DC current in conjunction with natural gas, propane, or home heating oil, and which:

(1) is designed to be the principal heating source for the living space of a residence;

- (2) is not contained within the same cabinet with a central air conditioner whose rated cooling capacity is above 65,000 Btu per hour;
- (3) is an electric central furnace, electric boiler, forced-air central furnace, gravity central furnace, or low-pressure steam or hot water boiler; and
- (4) has a heat input rate of less than 300,000 Btu per hour for electric boilers and low-pressure steam or hot water boilers and less than 225,000 Btu per hour for forced-air central furnaces, gravity central furnaces, and electric central furnaces.

**...[skipping “Gravity type gas space heater” through “Low intensity infrared heater”]**

“Low pressure steam or hot water boiler” that is a federally regulated consumer product means an electric, gas or oil burning furnace designed to supply low pressure steam or hot water for space heating application. A low pressure steam boiler operates at or below 15 pounds psig steam pressure; a hot water boiler operates at or below 160 psig water pressure and 250°F. water temperature.

**...[skipping “Low static unit heater” through “Steam boiler”]**

“Thermal efficiency” of a commercial packaged boiler means the ratio of the heat absorbed by the water or the water and steam to the higher heating value in the fuel burned and is determined using the test procedure specified in section 1604(e) of this Article.

“Thermal efficiency” of a space heater means a measure of the percentage of heat from the combustion of gas or oil that is transferred to the space being heated, or in the case of a boiler, to the hot water or steam, as determined using the applicable test methods in section 1604(e) of this Article. Thermal efficiency of a commercial warm air furnace equals 100 percent minus percent flue loss, as determined using test procedures prescribed under 10 C.F.R. section 431.76.

~~“Unit heater” means a self-contained, automatically controlled, vented fan-type gas space heater designed to be installed without ducts, within the heated space.~~

“Unit heater” that is federally regulated commercial or industrial equipment means a self-contained fan-type heater designed to be installed within the heated space. “Unit heater” does not include a warm air furnace.

**...[skipping “Unvented gas space heater” through “Vented gas space heater”]**

~~“Vented home heating equipment” or “vented heater” means a class of home heating equipment, not including furnaces, designed to furnish warmed air to the living space of a residence, directly from the device, without duct connections (except that boots not to exceed 10 inches beyond the casing may be permitted and includes: vented wall furnace, vented floor furnace, and vented room heater.~~

“Vented home heating equipment” or “vented heater” that is a federally regulated consumer product means a class of home heating equipment, not including furnaces, designed to furnish heated air to a space proximate to such heater, directly from the heater, without inlet duct connections (except that boots not to exceed 10 inches beyond the casing may be permitted), and with exhaust venting, and includes: vented wall furnace, vented floor furnace, and vented room heater.

“Vented oil space heater” means an oil space heater designed to be used with a vent.

“Vented room heater” means a self-contained, free standing, non-recessed, vented heater for furnishing heated warmed air to the space in which it is installed. The vented room heater supplies heated air circulated by gravity or by a fan directly into the space to be heated through openings in the casing.

“Vented wall furnace” means a self-contained vented heater complete with grilles or the equivalent, designed for incorporation in, or permanent attachment to, a wall of a residence and furnishing heated air circulated by gravity or by a fan directly into the space to be heated through openings in the casing.

“Wall furnace” means a wall-mounted, self-contained space heater without ducts that exceed 10 inches.

“Warm air furnace” that is federally regulated commercial and industrial equipment means a self-contained oil-fired or gas-fired furnace designed to supply heated air through ducts to spaces that require it and includes combination warm air furnace/electric air conditioning units but does not include unit heaters and duct furnaces.

“Water boiler” means a boiler that supplies hot water.

[end of (e)]

...[skipping (f) and (g)]

#### **(h) Plumbing Fittings.**

“Basic model” of a federally regulated commercial pre-rinse spray valve means all spray settings of a given class manufactured by one manufacturer, which have essentially identical physical and functional (or hydraulic) characteristics that affect water consumption or water efficiency.

“Commercial pre-rinse spray valve” means a handheld device that has a release-to-close valve and is suitable for removing food residue from food service items before cleaning them in commercial dishwashing or ware washing equipment. The Department of Energy may determine that a device is suitable for removing food residue from food

service items before cleaning them in commercial dishwashing or ware washing equipment based on any or all of the following:

- (1) equipment design and representations (for example, whether equipment is represented as being capable of rinsing dishes as compared to equipment that is represented exclusively for washing walls and floors or animal washing);
- (2) channels of marketing and sales (for example, whether equipment is marketed or sold through outlets that market or sell to food service entities);
- (3) actual sales (including whether the end-users are restaurants or commercial or institutional kitchens, even if those sales are indirectly through an entity such as a distributor).

...[skipping “Faucet” through “Metering faucet”]

“ozf” means ounce-force.

...[skipping “Plumbing fitting” through “Showerhead-tub spout diverter combination”]

“Spray force” of a commercial pre-rinse spray valve means the amount of force exerted onto the spray disc, measured in ounce-force (ozf).

...[skipping the rest of (h)]

...[skipping (i) and (j)]

(k) Lamps.

~~(1) General Service Lamps Sold Before January 1, 2020, and All Other Lamps.~~

...[skipping “Appliance Lamp” through “Bipin lamp”]

“Black light lamp” means a lamp that is designed and marketed as a black light lamp and is an ultraviolet lamp with the highest radiant power peaks in the UV-A band (315 to 400 nm) of the electromagnetic spectrum.

~~“Black Light Lamp” means a lamp that emits radiant energy in the UV-A band (315-400 nm) and is designated and marketed as a “black light”. The designation shall be on the lamp packaging, and marketing materials shall identify the lamp as a black light lamp.~~

...[skipping “BPAR incandescent reflector lamp” through “BR40”]

“Bug lamp” means a lamp that is designed and marketed as a bug lamp, has radiant power peaks above 550 nm on the electromagnetic spectrum, and has a visible yellow coating.



~~“Bug Lamp” means a lamp that contains a filter to suppress the blue and green portions of the visible spectrum and is designated and marketed as a “bug light”. The designation shall be on the lamp packaging, and marketing materials shall identify the lamp as being a bug lamp.~~

**...[skipping “Center beam candle power” through “Colored incandescent lamp”]**

“Colored lamp” means a colored fluorescent lamp, a colored incandescent lamp, or a lamp designed and marketed as a colored lamp with either of the following characteristics (if multiple modes of operation are possible [such as variable CCT], either of the below characteristics must be maintained throughout all modes of operation):

- (1) a CRI less than 40, as determined according to the method set forth in CIE Publication 13.3; or
- (2) a CCT less than 2,500K or greater than 7,000K.

“Connected LED lamp” means an LED lamp capable of changing its lumen output or spectral power distribution in response to an external control signal other than a change in RMS AC supply voltage or a 0-10 volt DC control signal. Connected LED lamp includes lamps that can be controlled wirelessly and through power line carrier digital communication.

“Design voltage” with respect to an incandescent lamp means:

- (1) the voltage marked as the intended operating voltage;
- (2) the mid-point of the voltage range if the lamp is marked with a voltage range; or
- (3) 120 V if the lamp is not marked with a voltage or voltage range.

“Designed and marketed”, when used with respect to lamps, means exclusively designed to fulfill the indicated application and, when distributed in commerce, designated and marketed solely for that application, with the designation prominently displayed on the packaging and all publicly available documents (e.g., product literature, catalogs, and packaging labels).

**...[skipping “Directional lamp” through “Federally regulated general service fluorescent lamp”]**

~~“Federally regulated general service incandescent lamp” means a standard incandescent or halogen-type lamp that:~~

- ~~(1) is intended for general service applications;~~
- ~~(2) has a medium screw base~~
- ~~(3) has a lumen range of not less than 310 lumens and not more than 2,600 lumens;~~  
~~and~~
- ~~(4) is capable of being operated at a voltage range at least partially within 110 and 130 volts; but does not include the following incandescent lamps:~~
  - ~~(A) An appliance lamp.~~

- (B) A black-light lamp.
- (C) A bug lamp.
- (D) A colored lamp.
- (E) An infrared lamp.
- (F) A left-hand thread lamp.
- (G) A marine lamp.
- (H) A marine signal service lamp.
- (I) A mine service lamp.
- (J) A plant light lamp.
- (K) A reflector lamp.
- (L) A rough service lamp.
- (M) A shatter-resistant lamp (including a shatter-proof lamp and a shatter-protected lamp).
- (N) A sign service lamp.
- (O) A silver bowl lamp.
- (P) A showcase lamp.
- (Q) A 3-way incandescent lamp.
- (R) A traffic signal lamp.
- (S) A vibration service lamp.
- (T) A G shape lamp (as defined in ANSI C78.20-2003 and C79.1-2002) with a diameter of five inches or more.
- (U) A T shape lamp (as defined in ANSI C78.20-2003 and C79.1-2002) and that uses not more than 40 watts or has a length of more than 10 inches.
- (V) A B, BA, CA, F, G16 1/2, G-25, G30, S, or M-14 lamp (as defined in ANSI C79.1-2002 and ANSI C78.20-2003) of 40 watts or less.

"Federally regulated general service lamp" includes:

- (1) general service incandescent lamps;
- (2) compact fluorescent lamps;
- (3) general service light-emitting diode (LED or OLED) lamps; and
- (4) any other lamps that the Secretary determines are used to satisfy lighting applications traditionally served by general service incandescent lamps; but does not include any:
  - (A) lighting application or bulb shape excluded from the definition of "federally-regulated general service incandescent lamp;" or;
  - (B) general service fluorescent lamp or incandescent reflector lamp.

...[skipping "Federally regulated incandescent reflector lamp" through "Frost type lamp"]

“General service incandescent lamp” means a standard incandescent or halogen type lamp that is intended for general service applications; has a medium screw base; has a lumen range of not less than 310 lumens and not more than 2,600 lumens or, in the case of a modified spectrum lamp, not less than 232 lumens and not more than 1,950 lumens; and is capable of being operated at a voltage range at least partially within 110 and 130 volts; however this definition does not apply to the following incandescent lamps—

- (1) an appliance lamp;
- (2) a black light lamp;
- (3) a bug lamp;
- (4) a colored lamp;
- (5) a G shape lamp with a diameter of 5 inches or more as defined in ANSI C79.1-2002;
- (6) an infrared lamp;
- (7) a left-hand thread lamp;
- (8) a marine lamp;
- (9) a marine signal service lamp;
- (10) a mine service lamp;
- (11) a plant light lamp;
- (12) an R20 short lamp;
- (13) a sign service lamp;
- (14) a silver bowl lamp;
- (15) a showcase lamp; and
- (16) a traffic signal lamp.

“General service lamp” means a lamp that has an ANSI base; is able to operate at a voltage of 12 volts or 24 volts, at or between 100 to 130 volts, at or between 220 to 240 volts, or of 277 volts for integrated lamps, or is able to operate at any voltage for non-integrated lamps; has an initial lumen output of greater than or equal to 310 lumens (or 232 lumens for modified spectrum general service incandescent lamps) and less than or equal to 3,300 lumens; is not a light fixture; is not an LED downlight retrofit kit; and is used in general lighting applications. General service lamps include, but are not limited to, general service incandescent lamps, compact fluorescent lamps, general service light-emitting diode lamps, and general service organic light-emitting diode lamps. General service lamps do not include:

- (1) appliance lamps;
- (2) black light lamps;
- (3) bug lamps;
- (4) colored lamps;
- (5) G shape lamps with a diameter of 5 inches or more as defined in ANSI C79.1-2002;

- (6) general service fluorescent lamps;
- (7) high intensity discharge lamps;
- (8) infrared lamps;
- (9) J, JC, JCD, JCS, JCV, JCX, JD, JS, and JT shape lamps that do not have Edison screw bases;
- (10) lamps that have a wedge base or pefocus base;
- (11) left-hand thread lamps;
- (12) marine lamps;
- (13) marine signal service lamps;
- (14) mine service lamps;
- (15) MR shape lamps that have a first number symbol equal to 16 (diameter equal to 2 inches) as defined in ANSI C79.1-2002, operate at 12 volts, and have a lumen output greater than or equal to 800;
- (16) other fluorescent lamps;
- (17) plant light lamps;
- (18) R20 short lamps;
- (19) reflector lamps that have a first number symbol less than 16 (diameter less than 2 inches) as defined in ANSI C79.1-2002 and that do not have E26/E24, E26d, E26/50x39, E26/53x39, E29/28, E29/53x39, E39, E39d, EP39, or EX39 bases;
- (20) S shape or G shape lamps that have a first number symbol less than or equal to 12.5 (diameter less than or equal to 1.5625 inches) as defined in ANSI C79.1-2002;
- (21) sign service lamps;
- (22) silver bowl lamps;
- (23) showcase lamps;
- (24) specialty MR lamps;
- (25) T shape lamps that have a first number symbol less than or equal to 8 (diameter less than or equal to 1 inch) as defined in ANSI C79.1-2002, nominal overall length less than 12 inches, and that are not compact fluorescent lamps;
- (26) traffic signal lamps.

“General service light-emitting diode (LED) lamp” means an integrated or non-integrated LED lamp designed for use in general lighting applications and that uses light-emitting diodes as the primary source of light.

“General service organic light-emitting diode (OLED) lamp” means an integrated or non-integrated OLED lamp designed for use in general lighting applications and that uses organic light-emitting diodes as the primary source of light.

“Incandescent lamp” means a glass enclosure in which light is produced by a filament of conducting material heated by an electric current.

“Infrared lamp” means a lamp that is designed and marketed as an infrared lamp; has its highest radiant power peaks in the infrared region of the electromagnetic spectrum (770 nm to 1 mm); has a rated wattage of 125 watts or greater; and which has a primary purpose of providing heat.

~~“Infrared lamp” means a lamp that radiates predominately in the infrared region of the electromagnetic spectrum, and where visible radiation is not of principal interest. The designation shall be on the lamp packaging, and marketing materials shall identify the lamp as being an infrared lamp.~~

“Initial performance values” means the photometric and electrical characteristics of the lamp at the end of 100 hours of operation.

“Integrated compact fluorescent lamp” means an integrally ballasted compact fluorescent lamp that contains all components necessary for the starting and stable operation of the lamp, contains an ANSI standard base, does not include any replaceable or interchangeable parts, and is capable of being connected directly to a branch circuit through a corresponding ANSI standard lamp-holder (socket).

“Integrated lamp” means a lamp that contains all components necessary for the starting and stable operation of the lamp, does not include any replaceable or interchangeable parts, and is connected directly to a branch circuit through an ANSI base and corresponding ANSI standard lamp-holder (socket).

**...[skipping “Intermediate base incandescent lamp” through “Lamp electrical power input”]**

“LED downlight retrofit kit” means a product designed and marketed to install into an existing downlight, replacing the existing light source and related electrical components, typically employing an ANSI standard lamp base, either integrated or connected to the downlight retrofit by wire leads, and is a retrofit kit. LED downlight retrofit kit does not include integrated lamps or non-integrated lamps.

“Left-hand thread lamp” means a lamp with direction of threads on the lamp base oriented in the left-hand direction.

~~“Left-handed thread lamp” means a lamp on which the base screws into a lamp socket in a counter-clockwise direction, and screws out of a lamp socket in a clockwise direction.~~

“Lifetime of a compact fluorescent lamp” means the length of operating time between first use and failure of 50 percent of the sample units, determined in accordance with the test procedures described in section 3.3 of Appendix W to subpart B of 10 C.F.R. part 430.

“Light fixture” means a complete lighting unit consisting of light source(s) and ballast(s) or driver(s) (when applicable) together with the parts designed to distribute the light, to position and protect the light source, and to connect the light source(s) to the power supply.

“Lumen maintenance” means the lumen output measured at a given time in the life of the lamp and expressed as a percentage of the measured initial lumen output.

“Lumen output” means the total luminous flux produced by the lamp at full output, measured in lumens.

“Marine lamp” means a lamp that is designed and marketed for use on boats and can operate at or between 12 volts and 13.5 volts.

~~“Marine Lamp” means a lamp specifically designed to operate in a marine application. The designation shall be on the lamp packaging, and marketing materials shall identify the lamp as being a marine lamp or similar designation.~~

“Marine signal service lamp” means a lamp that is designed and marketed for marine signal service applications.

~~“Marine Signal Lamp” means a lamp specifically designed to provide signals to marine vessels for seaway safety. The designation shall be on the lamp packaging, and marketing materials shall identify the lamp as being a marine signal lamp or similar designation.~~

**...[skipping “Medium base compact fluorescent lamp” and “Medium screw base”]**

“Mine service lamp” means a lamp that is designed and marketed for mine service applications.

~~“Mine service lamp” means a lamp specifically designed for use in mine applications. The designation shall be on the lamp packaging, and marketing materials shall identify the lamp as being a mine service lamp or similar designation.~~

**...[skipping “Modified spectrum” and “Nominal lamp wattage”]**

“Non-integrated lamp” means a lamp that is not an integrated lamp.

“Organic light-emitting diode (OLED)” means a thin-film light-emitting device that typically consists of a series of organic layers between two electrical contacts (electrodes).

“Other fluorescent lamp” means low pressure mercury electric-discharge sources in which a fluorescing coating transforms some of the ultraviolet energy generated by the mercury discharge into light and include circline lamps and include double-ended lamps

with the following characteristics: Lengths from one to eight feet; designed for cold temperature applications; designed for use in reprographic equipment; designed to produce radiation in the ultra-violet region of the spectrum; impact-resistant; reflectorized or aperture; or a CRI of 87 or greater.

“Pin base lamp” means a lamp that uses a base type designated as a single pin base or multiple pin base system.

“Plant light lamp” means a lamp that is designed to promote plant growth by emitting its highest radiant power peaks in the regions of the electromagnetic spectrum that promote photosynthesis: Blue (440 nm to 490 nm) and/or red (620 to 740 nm), and is designed and marketed for plant growing applications.

~~“Plant Light Lamp” means a lamp that contains a filter to suppress yellow and green portions of the spectrum and is designated and marketed as a “plant light”. The designation shall be on the lamp packaging, and marketing materials shall identify the lamp as being a plant light.~~

**...[skipping “Power” through “Rated wattage”]**

“Reflector lamp” means a lamp that has an R, PAR, BPAR, BR, ER, MR, or similar bulb shape as defined in ANSI C78.20-2003 and ANSI C79.1-2002 and is used to provide directional light.

~~“Reflector lamp” means a lamp that has a reflective coating applied directly to part of the bulb surface and that reflects light in a forward direction away from the lamp base. The designation shall be on the lamp packaging, and marketing materials shall identify the lamp as being a reflector lamp or similar designation.~~

**...[skipping “Residential straight-shaped lamp” through “Shatter-resistant lamp, shatter-proof lamp, or shatter-protected lamp”]**

“Showcase lamp” means a lamp that has a T shape as specified in ANSI C78.20-2003 and ANSI C79.1-2002, is designed and marketed as a showcase lamp, and has a maximum rated wattage of 75 watts.

~~“Showcase lamp” means a lamp that has a tubular bulb with a conventional screw base. The longer lamps have filaments with supports similar to linear incandescent lamps. The designation shall be on the lamp packaging, and marketing materials shall identify the lamp as being a showcase lamp.~~

“Sign service lamp” means a vacuum type or gas-filled lamp that has sufficiently low bulb temperature to permit exposed outdoor use on high-speed flashing circuits, is designed and marketed as a sign service lamp, and has a maximum rated wattage of 15 watts.

~~“Sign service lamp” means a lamp of the vacuum-type or gas-filled with sufficiently low bulb temperature to permit exposed outdoor use on high-speed flashing circuits. The designation shall be on the lamp packaging, and marketing materials shall identify the lamp as being a sign service lamp.~~

“Silver bowl lamp” means a lamp that has an opaque reflective coating applied directly to part of the bulb surface that reflects light toward the lamp base and that is designed and marketed as a silver bowl lamp.

~~“Silver Bowl lamp” means a lamp that has a reflective coating applied directly to part of the bulb surface and that reflects light in a backward direction toward the lamp base. The designation shall be on the lamp packaging, and marketing materials shall identify the lamp as being a silver bowl lamp or similar designation.~~

~~...[skipping “Slimline lamp” through “Specialty application mercury vapor lamp ballast”]~~

“Specialty multifaceted reflector (MR) lamp” means a lamp that has an MR shape as defined in ANSI C79.1-2002, a diameter of less than or equal to 2.25 inches, a lifetime of less than or equal to 300 hours, and that is designed and marketed for a specialty application.

~~...[skipping “State-regulated Light Emitting Diode (LED) lamp” through “3-way incandescent lamp”]~~

“Traffic signal lamp” means a lamp that is designed and marketed for traffic signal applications and has a lifetime of 8,000 hours or greater.

~~...[skipping “U-shaped lamp” through “Voltage range”]~~

## ~~(2) General Service Lamps Sold On or After January 1, 2020.~~

~~“Black light lamp” means a lamp that is designed and marketed as a black light lamp and is an ultraviolet lamp with the highest radiant power peaks in the UV-A band (315 to 400 nm) of the electromagnetic spectrum.~~

~~“Bug lamp” means a lamp that is designed and marketed as a bug lamp, has radiant power peaks above 550 nm on the electromagnetic spectrum, and has a visible yellow coating.~~

~~“Colored lamp” means a colored fluorescent lamp, a colored incandescent lamp, or a lamp designed and marketed as a colored lamp with either of the following characteristics (if multiple modes of operation are possible [such as variable CCT], either of the below characteristics must be maintained throughout all modes of operation):~~



- (1) A CRI less than 40, as determined according to the method set forth in CIE Publication 13.3; or
- (2) A CCT less than 2,500K or greater than 7,000K.

~~“Designed and marketed” means exclusively designed to fulfill the indicated application and, when distributed in commerce, designated and marketed solely for that application, with the designation prominently displayed on the packaging and all publicly available documents (e.g., product literature, catalogs, and packaging labels).~~

~~“General service incandescent lamp” means a standard incandescent or halogen type lamp that is intended for general service applications; has a medium screw base; has a lumen range of not less than 310 lumens and not more than 2,600 lumens or, in the case of a modified spectrum lamp, not less than 232 lumens and not more than 1,950 lumens; and is capable of being operated at a voltage range at least partially within 110 and 130 volts; however this definition does not apply to the following incandescent lamps—~~

- ~~(1) An appliance lamp;~~
- ~~(2) A black light lamp;~~
- ~~(3) A bug lamp;~~
- ~~(4) A colored lamp;~~
- ~~(5) A G shape lamp with a diameter of 5 inches or more as defined in ANSI C79.1-2002;~~
- ~~(6) An infrared lamp;~~
- ~~(7) A left-hand thread lamp;~~
- ~~(8) A marine lamp;~~
- ~~(9) A marine signal service lamp;~~
- ~~(10) A mine service lamp;~~
- ~~(11) A plant light lamp;~~
- ~~(12) An R20 short lamp;~~
- ~~(13) A sign service lamp;~~
- ~~(14) A silver bowl lamp;~~
- ~~(15) A showcase lamp; and~~
- ~~(16) A traffic signal lamp.~~

~~“General service lamp” means a lamp that has an ANSI base; is able to operate at a voltage of 12 volts or 24 volts, at or between 100 to 130 volts, at or between 220 to 240 volts, or of 277 volts for integrated lamps, or is able to operate at any voltage for non-integrated lamps; has an initial lumen output of greater than or equal to 310 lumens (or 232 lumens for modified spectrum general service incandescent lamps) and less than or equal to 3,300 lumens; is not a light fixture; is not an LED downlight retrofit kit; and is used in general lighting applications. General service lamps include, but are not limited to, general service incandescent lamps, compact fluorescent lamps, general service~~

light-emitting diode lamps, and general service organic light-emitting diode lamps.  
General service lamps do not include:

- (1) Appliance lamps;
- (2) Black light lamps;
- (3) Bug lamps;
- (4) Colored lamps;
- (5) G shape lamps with a diameter of 5 inches or more as defined in ANSI C79.1-2002;
- (6) General service fluorescent lamps;
- (7) High intensity discharge lamps;
- (8) Infrared lamps;
- (9) J, JC, JCD, JCS, JCV, JCX, JD, JS, and JT shape lamps that do not have Edison screw bases;
- (10) Lamps that have a wedge base or prefocus base;
- (11) Left-hand thread lamps;
- (12) Marine lamps;
- (13) Marine signal service lamps;
- (14) Mine service lamps;
- (15) MR shape lamps that have a first number symbol equal to 16 (diameter equal to 2 inches) as defined in ANSI C79.1-2002, operate at 12 volts, and have a lumen output greater than or equal to 800;
- (16) Other fluorescent lamps;
- (17) Plant light lamps;
- (18) R20 short lamps;
- (19) Reflector lamps that have a first number symbol less than 16 (diameter less than 2 inches) as defined in ANSI C79.1-2002 and that do not have E26/E24, E26d, E26/50x39, E26/53x39, E29/28, E29/53x39, E39, E39d, EP39, or EX39 bases;
- (20) S shape or G shape lamps that have a first number symbol less than or equal to 12.5 (diameter less than or equal to 1.5625 inches) as defined in ANSI C79.1-2002;
- (21) Sign service lamps;
- (22) Silver bowl lamps;
- (23) Showcase lamps;
- (24) Specialty MR lamps;
- (25) T shape lamps that have a first number symbol less than or equal to 8 (diameter less than or equal to 1 inch) as defined in ANSI C79.1-2002, nominal overall length less than 12 inches, and that are not compact fluorescent lamps;
- (26) Traffic signal lamps.

"General service light-emitting diode (LED) lamp" means an integrated or non-integrated LED lamp designed for use in general lighting applications and that uses light-emitting diodes as the primary source of light.

~~“General service organic light-emitting diode (OLED) lamp” means an integrated or non-integrated OLED lamp designed for use in general lighting applications and that uses organic light-emitting diodes as the primary source of light.~~

~~“Infrared lamp” means a lamp that is designed and marketed as an infrared lamp; has its highest radiant power peaks in the infrared region of the electromagnetic spectrum (770 nm to 1 mm); has a rated wattage of 125 watts or greater; and which has a primary purpose of providing heat.~~

~~“Integrated lamp” means a lamp that contains all components necessary for the starting and stable operation of the lamp, does not include any replaceable or interchangeable parts, and is connected directly to a branch circuit through an ANSI base and corresponding ANSI standard lamp holder (socket).~~

~~“LED downlight retrofit kit” means a product designed and marketed to install into an existing downlight, replacing the existing light source and related electrical components, typically employing an ANSI standard lamp base, either integrated or connected to the downlight retrofit by wire leads, and is a retrofit kit. LED downlight retrofit kit does not include integrated lamps or non-integrated lamps.~~

~~“Left-hand thread lamp” means a lamp with direction of threads on the lamp base oriented in the left-hand direction.~~

~~“Light fixture” means a complete lighting unit consisting of light source(s) and ballast(s) or driver(s) (when applicable) together with the parts designed to distribute the light, to position and protect the light source, and to connect the light source(s) to the power supply.~~

~~“Marine lamp” means a lamp that is designed and marketed for use on boats and can operate at or between 12 volts and 13.5 volts.~~

~~“Marine signal service lamp” means a lamp that is designed and marketed for marine signal service applications.~~

~~“Mine service lamp” means a lamp that is designed and marketed for mine service applications.~~

~~“Non-integrated lamp” means a lamp that is not an integrated lamp.~~

~~“Other fluorescent lamp” means low pressure mercury electric discharge sources in which a fluorescing coating transforms some of the ultraviolet energy generated by the mercury discharge into light and include circline lamps and include double-ended lamps with the following characteristics: Lengths from one to eight feet; designed for cold temperature applications; designed for use in reprographic equipment; designed to~~

produce radiation in the ultra-violet region of the spectrum; impact-resistant; reflectorized or aperture; or a CRI of 87 or greater.

"Pin base lamp" means a lamp that uses a base type designated as a single pin base or multiple pin base system.

"Plant light lamp" means a lamp that is designed to promote plant growth by emitting its highest radiant power peaks in the regions of the electromagnetic spectrum that promote photosynthesis: Blue (440 nm to 490 nm) and/or red (620 to 740 nm), and is designed and marketed for plant growing applications.

"Reflector lamp" means a lamp that has an R, PAR, BPAR, BR, ER, MR, or similar bulb shape as defined in ANSI C78.20-2003 and ANSI C79.1-2002 and is used to provide directional light.

"Showcase lamp" means a lamp that has a T shape as specified in ANSI C78.20-2003 and ANSI C79.1-2002, is designed and marketed as a showcase lamp, and has a maximum rated wattage of 75 watts.

"Sign service lamp" means a vacuum type or gas-filled lamp that has sufficiently low bulb temperature to permit exposed outdoor use on high-speed flashing circuits, is designed and marketed as a sign service lamp, and has a maximum rated wattage of 15 watts.

"Silver bowl lamp" means a lamp that has an opaque reflective coating applied directly to part of the bulb surface that reflects light toward the lamp base and that is designed and marketed as a silver bowl lamp.

"Specialty multifaceted reflector (MR) lamp" means a lamp that has an MR shape as defined in ANSI C79.1-2002, a diameter of less than or equal to 2.25 inches, a lifetime of less than or equal to 300 hours, and that is designed and marketed for a specialty application.

"Traffic signal lamp" means a lamp that is designed and marketed for traffic signal applications and has a lifetime of 8,000 hours or greater.

[end of (k)]

...[skipping (l) through (p)]

#### **(q) Clothes Dryers.**

"Automatic termination control" means a dryer control system with a sensor which monitors either the dryer load temperature or its moisture content and with a controller which automatically terminates the drying process. A mark or detent which indicates a preferred automatic termination control setting must be present if the dryer is to be

~~classified as having an "automatic termination control". A mark is a visible single control setting on one or more dryer controls.~~

**...[skipping "Clothes dryer" through "Standard clothes dryer"]**

"Vented clothes dryer" means a clothes dryer that exhausts the evaporated moisture from the cabinet.

"Ventless clothes dryer" means a clothes dryer that uses a closed-loop system with an internal condenser to remove the evaporated moisture from the heated air. The moist air is not discharged from the cabinet.

**(r) Cooking Products and Food Service Equipment.**

**...[skipping "Built-in microwave oven" through "Cook-and-hold"]**

"Cooking products" means consumer products that are used as the major household cooking appliances. They are designed to cook or heat different types of food by one or more of the following sources of heat: gas, electricity, or microwave energy. Each product may consist of a horizontal cooking top containing one or more surface units and/or one or more heating compartments. ~~They must be one of the following classes: conventional ranges, conventional cooking tops, conventional ovens, microwave ovens, microwave/conventional ranges, and other cooking products.~~

**...[skipping the rest of (r)]**

**(s) Electric Motors and Compressors.**

**...[skipping "Accreditation" through "Air-over electric motor"]**

~~"Alternative efficiency determination method" or AEDM, means, with respect to an electric motor or a small electric motor, a method of calculating the total power loss and average full load efficiency.~~

~~"Alternative efficiency determination method" or AEDM, means, with respect to a state-regulated compressor, a method of calculating the package isentropic efficiency, package specific power, pressure ratio at full-load operating pressure, full-load actual volume flow rate, or full-load operating pressure.~~

**...[skipping "Ancillary equipment" through "Basic model" of a federally regulated small electric motor]**

"Basic model" of a ~~state-regulated~~ compressor means all units of a class of compressors manufactured by one manufacturer, having the same primary energy source, the same compressor motor nominal horsepower, and essentially identical electrical, physical, and functional (or pneumatic) characteristics that affect energy consumption and energy efficiency.

...[skipping “Brushless electric motor” through “Enclosed motor”]

“Federally regulated compressor” means commercial and industrial equipment that meets all of the following criteria:

- (1) is an air compressor,
- (2) is a rotary compressor,
- (3) is not a liquid-ring compressor,
- (4) is driven by a brushless electric motor,
- (5) is a lubricated compressor,
- (6) has a full-load operating pressure greater than or equal to 75 pounds per square inch gauge (psig) and less than or equal to 200 psig,
- (7) is not designed and tested to the requirements of The American Petroleum Institute Standard 619, “Rotary-Type Positive-Displacement Compressors for Petroleum, Petrochemical, and Natural Gas Industries,”
- (8) has full-load actual volume flow rate greater than or equal to 35 cubic feet per minute (cfm), or is sold or offered for sale with a compressor motor nominal horsepower greater than or equal to 10 horsepower (hp),
- (9) has a full-load actual volume flow rate less than or equal to 1,250 cfm, or is sold or offered for sale with a compressor motor nominal horsepower less than or equal to 200 hp,
- (10) is driven by a three-phase electric motor,
- (11) is manufactured alone or as a component of another piece of equipment; and
- (12) is one of the equipment classes listed in Table S-5.

...[skipping “Fire pump electric motor” through “Special purpose motor”]

“State-regulated compressor” means commercial and industrial equipment that meets all of the following criteria:

- (1) is an air compressor,
- (2) is a rotary compressor,
- (3) is not a liquid-ring compressor,
- (4) is driven by a brushless electric motor,
- (5) is a lubricated compressor,
- (6) has a full-load operating pressure greater than or equal to 75 pounds per square inch gauge (psig) and less than or equal to 200 psig,
- (7) is not designed and tested to the requirements of The American Petroleum Institute Standard 619, “Rotary-Type Positive-Displacement Compressors for Petroleum, Petrochemical, and Natural Gas Industries,”
- (8) has full-load actual volume flow rate greater than or equal to 35 cubic feet per minute (cfm), or is sold or offered for sale with a compressor motor nominal horsepower greater than or equal to 10 horsepower (hp),

- (9) has a full-load actual volume flow rate less than or equal to 1,250 cfm, or is sold or offered for sale with a compressor motor nominal horsepower less than or equal to 200 hp,
- (10) is driven by a three-phase electric motor,
- (11) is manufactured alone or as a component of another piece of equipment; and
- (12) is one of the equipment classes listed in ~~Table S-5~~ Table S-6.

"Total power loss" means that portion of the energy used by an electric motor not converted to rotational mechanical power, expressed in percent.

"Variable-speed compressor" means an air compressor that is capable of adjusting the speed of the driver continuously over the driver operating speed range in response to incremental changes in the required compressor actual volume flow rate.

**[end of (s)]**

**...[skipping (t)]**

**(u) External Power Supplies.**

**...[skipping "Active mode" through "External power supply design family"]**

"Federally regulated external power supply" means an external power supply circuit that is used to convert household electric current into DC current or lower-voltage AC current to operate a consumer product. However, the term does not include any "commercial and industrial power supply" as defined in 10 C.F.R. section 430.2, or a power supply circuit, driver, or device that is designed exclusively to be connected to, and power:

- (1) light-emitting diodes providing illumination;
- (2) organic light-emitting diodes providing illumination; or
- (3) ceiling fans using direct current motors.

**...[skipping the rest of (u)]**

**(v) Computers, Computer Monitors, Televisions, Signage Displays, and Consumer Audio and Video Equipment.**

**...[skipping "Add-in card" through "Audio standby-passive mode"]**

~~"Automatic brightness control" means an integrated control system that automatically adjusts the brightness of a television based upon ambient lighting conditions.~~

"Automatic brightness control" means a feature that senses ambient light conditions and changes display brightness accordingly, possibly reducing power consumption.

**...[skipping "Basic model" of a computer through "First discrete GPU"]**

~~“Forced menu” means a menu which requires the selection of a display mode by a user upon their first use after the manufacture of the television.~~

“Forced menu” means configuration selections required of the user when a television set is turned on for the first time that force the user to make set-up configuration decisions when prompted.

...[skipping the rest of (v)]

**(w) Battery Chargers and Battery Charger Systems.**

...[skipping “24 hour charge and maintenance energy” through “Federally regulated uninterruptible power supply (UPS)”]

“Fixed-location wireless charger” means a federally regulated inductive wireless battery charger that incorporates a physical receiver locating feature (e.g., by physical peg, cradle, locking mechanism, magnet, etc.) to repeatably align or orient the position of the receiver with respect to the transmitter.

...[skipping “Inductive charger system” through “No battery mode”]

“Open-placement wireless charger” means a federally regulated inductive wireless charger that does not incorporate a physical receiver locating feature (e.g., by a physical peg, cradle, locking mechanism, magnet etc.) to repeatably align or orient the position of the receiver with respect to the transmitter.

...[skipping “Power conversion efficiency” through “State-regulated battery charger system (BCS)”]

“Voltage and frequency dependent UPS or VFD UPS” means a federally regulated UPS that produces an AC output where the output voltage and frequency are dependent on the input voltage and frequency. This UPS architecture does not provide corrective functions like those in voltage independent and voltage and frequency independent systems.

Note: VFD input dependency may be verified by performing the AC input failure test specified in 10 C.F.R. section 430.23(aa) 2.27.1. (Appendix Y to subpart B of part 430 2.27.1.) and observing that, at a minimum, the UPS switches from normal mode of operation to battery power while the input is interrupted.

“Voltage and frequency independent UPS or VFI UPS” means a federally regulated UPS where the device remains in normal mode producing an AC output voltage and frequency that is independent of input voltage and frequency variations and protects the load against adverse effects from such variations without depleting the stored energy source.



Note: VFI input dependency may be verified by performing the steady state input voltage tolerance test and the input frequency tolerance test specified in 10 C.F.R. section 430.23(aa) 2.27.2. (Appendix Y to subpart B of part 430 2.27.2.) and observing that, at a minimum, the UPS produces an output voltage and frequency within the specified output range when the input voltage is varied by  $\pm 10\%$  of the rated input voltage and the input frequency is varied by  $\pm 2\%$  of the rated input frequency.

"Voltage independent UPS or VI UPS" means a federally regulated UPS that produces an AC output within a specific tolerance band that is independent of under-voltage or over-voltage variations in the input voltage without depleting the stored energy source. The output frequency of a VI UPS is dependent on the input frequency, similar to a voltage and frequency dependent system.

Note: VI input dependency may be verified by performing the steady state input voltage tolerance test specified in 10 C.F.R. section 430.23(aa) 2.27.3. (Appendix Y to subpart B of part 430 2.27.3.) and ensuring that the UPS remains in normal mode with the output voltage within the specified output range when the input voltage is varied by  $\pm 10\%$  of the rated input voltage.

"Wireless charger" means a federally regulated battery charger that can charge batteries inductively.

[end of (w)]

...[skipping (x)]

The following documents are incorporated by reference in section 1602.

<i>Number</i>	<i>Title</i>
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#### **FEDERAL STATUTES AND REGULATIONS**

C.F.R., Title 10, sections 429.14(d), 429.16(a), 429.32(a), and 429.61(d), and 429.70

C.F.R., Title 10, section 430.2

C.F.R., Title 10, sections 431.25, 431.92, 431.174, 431.192, 431.344, 431.442, and 431.446

C.F.R., Title 10, part 430, subpart B

C.F.R., Title 10, part 431, subparts A through Y

Copies available from: SUPERINTENDENT OF DOCUMENTS  
U.S. GOVERNMENT PRINTING OFFICE  
WASHINGTON, DC 20402  
[www.ecfr.gov](http://www.ecfr.gov)

...[skipping ADOBE SYSTEMS INCORPORATED]

**AIR MOVEMENT AND CONTROL ASSOCIATION INTERNATIONAL (AMCA)**

ANSI/AMCA Standard 214-21 — Test Procedure for Calculating Fan Energy Index (FEI) for Commercial and Industrial Fans and Blowers (Approved by ANSI on March 1, 2021)

ANSI/AMCA Standard 240-15 Laboratory Methods of Testing Positive Pressure Ventilators for Aerodynamic Performance Rating

**AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)**

...[skipping ANSI/ASHRAE Standard 52.2- 2017 through ANSI C82.6-2005]

ANSI Z21.50 — Vented Gas Fireplaces

ANSI Z21.88 — Vented Gas Fireplace Heaters

Copies available from: AMERICAN NATIONAL STANDARDS INSTITUTE  
1819 L STREET, NW, 6<sup>TH</sup> FLOOR  
WASHINGTON, DC 20036  
www.ansi.org  
Phone: (202) 293-8020  
FAX: (202) 293-9287

**AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)**

ASTM C177-13 — Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus

ASTM C518-15 — Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus

ASTM Standard E 1084-86 — Standard Test Method for Solar Transmittance (Terrestrial) (Reapproved 2009) of Sheet Materials Using Sunlight

Copies available from: ASTM  
100 Barr Harbor Drive  
West Conshohocken, PA 19428-2959  
www.astm.org  
Phone: (610) 832-9555  
FAX: (610) 832-9555

...{skipping ASSOCIATION OF HOME APPLIANCES MANUFACTURERS (AHAM)}

**ASTM INTERNATIONAL**

ASTM C177-13 Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by

Means of the Guarded-Hot-Plate Apparatus

ASTM C518-15                      Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus

ASTM Standard E 1084-86        Standard Test Method for Solar Transmittance (Terrestrial) (Reapproved 2009)  
of Sheet Materials Using Sunlight

Copies available from:            ASTM  
100 Barr Harbor Drive  
West Conshohocken, PA 19428-2959  
www.astm.org  
Phone: 1-877-909-2786

**...[skipping the rest of section 1602]**

Note: Authority cited: Sections 25213, 25218(e), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Sections 16, 26 and 30, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Reference: Sections 25216.5(d), 25401.9, 25402(a)-25402(c), 25402.5.4, 25402.11, and 25960, Public Resources Code; and Section 16, Governor's Exec. Order No. B-29-15 (April 1, 2015).

## Section 1602.1 Rules Of Construction.

[No Changes]

## Section 1603. Testing: All Appliances

### (a) Testing Requirements.

The manufacturer shall cause the testing of units of each basic model of appliance within the scope of section 1601 of this Article, using the applicable test method listed in section 1604 of this Article unless otherwise provided in subsection (c) of this section. If the manufacturer of the basic model does not participate in an approved industry certification program for the basic model, or does not apply such a program to test all units under this Article, the testing shall be at a laboratory that the Executive Director determines, ~~under section 1608(i) of this Article, that:~~

- (1) has conducted tests using the applicable test method within the previous 12 months;
- (2) agrees to and does interpret and apply the applicable test method set forth in section 1604 of this Article precisely as written;
  - (A) for laboratories testing federally regulated appliances and equipment, agrees to and does interpret and apply any applicable provisions of 10 C.F.R. section 429, subpart C;
- (3) has, and keeps properly calibrated and maintained, all equipment, material, and facilities necessary to apply the applicable test method precisely as written;
- (4) agrees to and does maintain copies of all test reports, and provides any such report to the Executive Director on request, for all basic models that are still in commercial production; and
  - (A) if an alternate efficiency determination method (AEDM) is used in lieu of testing, agrees to and does maintain copies of all records required to be maintained by 10 C.F.R. section 429.71, and provides any such records to the Executive Director on request, for all basic models that are still in commercial production; and
- (5) agrees to and does allow the Executive Director to witness any test of such an appliance on request, up to once per calendar year for each basic model.

### (b) Approved Industry Certification Programs.

- (1) An "approved industry certification program" is an appliance certification program that has successfully applied through MAEDbS to become an approved industry certification program; and that the Executive Director has determined:
  - (A) is operated by an appliance manufacturer trade association or other entity approved as an approved industry certification program by the Executive Director;

(B) is accredited by ANSI or ISO, or has received from a nationally recognized entity an approval that provides substantially similar guarantees of substantive and procedural reliability and accuracy; and

(C) provides:

1. an internet-accessible listing of appropriate energy performance information that is updated at least every 6 months;
2. testing of appliances according to applicable test methods and accurate reporting of test results;
3. listings that:
  - a. include no appliance not meeting an applicable federal standard,
  - b. clearly and distinctly indicate which appliances meet the applicable federal standard but do not meet an applicable California standard, which shall be identified, and
  - c. where there is no federal standard, clearly and distinctly indicate which appliances do not meet an applicable California standard which shall be identified; and
- ~~4.(D)~~ verification of manufacturer-submitted data;
- ~~5.(E)~~ an appropriate procedure for program participants to challenge listed information; and
- ~~6.(F)~~ compatibility with the MAEDbS described in section 1606(c) of this Article.

(2) The Executive Director shall, within 30 days of receiving a written request by an entity administering an appliance certification program, determine whether the program meets the criteria in section 1603(b)(1) of this Article. If the Executive Director determines that the program meets all the criteria, they shall designate the program as an approved industry certification program. The Executive Director shall periodically publish a list of all approved industry certification programs.

(3) ~~The~~ Upon request or on their own initiative, the Executive Director may shall, ~~within 30 days of receiving a written request, determine review~~ whether an approved industry certification program continues to meet the criteria in section 1603(b)(1) of this Article. If the Executive Director determines that the program meets all the criteria, the program shall remain on the list of approved industry certification programs published under section 1603(b)(2) of this Article. If the Executive Director determines that the program does not meet all the criteria, they shall remove the program from the list, and the program shall no longer be an approved industry certification program.

**(c) Appliances for Which There Is a Waiver of the Federal Test Method.**

...[skipping (c)(1) and (c)(2)(A)-(B)]

(3) For appliances meeting section 1603(c)(2) of this Article, the ~~The~~ manufacturer of the basic model shall petition for and obtain a specification from the Executive

Director before submitting a statement for the basic model pursuant to section 1606(a) of this Article.

The following documents are incorporated by reference in section 1603.

*Number* *Title*

**FEDERAL STATUTES AND REGULATIONS**

C.F.R., Title 10, part 429, subpart C  
C.F.R., Title 10, part 429.71

Copies available from: SUPERINTENDENT OF DOCUMENTS  
 U.S. GOVERNMENT PRINTING OFFICE  
 WASHINGTON, DC 20402  
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Note: Authority cited: Sections 25213, 25218(e), 25402(a)-(c), and 25960, Public Resources Code.  
 Reference: Sections 25216.5(d), 25402(a)-(c), and 25960, Public Resources Code.

**Section 1604. Test Methods for Specific Appliances.**

...[skipping (a) and (b)]

**(c) Central Air Conditioners, Air Filters, and Heat Pump Water-Heating Packages.**

- (1) The test methods for central air conditioners are shown in Table C-1 and include but not limited to provisions on alternative efficiency determination method (AEDM) and additional testing requirements concerning selection of models to be tested if an AEDM is to be applied, in 10 C.F.R. sections 429.12, 429.16, and 429.70.
- (2) For each basic model of central air conditioner and heat pump, test the individual model and combination as required in 10 C.F.R. section 429.16(b)(2).

**Table C-1  
 Central Air Conditioner Test Methods**

<i>Appliance</i>	<i>Test Method</i>
Computer Room Air Conditioners	
evaporatively cooled	ANSI/ASHRAE 127-2001
air-cooled, glycol-cooled, water-cooled	10 C.F.R. sections 431.95 and 431.96
Other electric-powered unitary air-conditioners and electric-powered heat pumps	

air-cooled air conditioners and air-source heat pumps	
< 65,000 Btu/hr, single-phase	10 C.F.R. section 430.23(m) (Appendix M to subpart B of part 430) <u>(for models manufactured before January 1, 2023, only)</u>
	<u>10 C.F.R. section 430.23(m) (Appendix M1 to subpart B of part 430) (for models manufactured on or after January 1, 2023, only)</u>
< 65,000 Btu/hr, three-phase	10 C.F.R. sections 431.95 and 431.96
≥ 65,000 and < 760,000 Btu/hr	10 C.F.R. sections 431.95 and 431.96
evaporatively cooled air conditioners < 240,000 Btu/hr	10 C.F.R. sections 431.95 and 431.96
water-cooled air conditioners and water-source heat pumps	
< 240,000 Btu/hr	10 C.F.R. sections 431.95 and 431.96
ground water-source heat pumps	ARI/ISO-13256-1:1998
ground-source closed-loop heat pumps	ARI/ISO-13256-1:1998
Variable Refrigerant Flow Multi-split Systems	10 C.F.R. sections 431.95 and 431.96
Single Package Vertical Air Conditioners and Single Package Vertical Heat Pumps	10 C.F.R. sections 431.95 and 431.96
Gas-fired air conditioners and gas-fired heat pumps	ANSI Z21.40.4-1996 as modified by CEC, Efficiency Calculation Method for Gas-Fired Heat Pumps as a New Compliance Option (1996)

(3) **Air Filters.** The test methods for air filters manufactured on or after July 1, 2024, are shown in Table C-2-Air Filters.

...[skipping the rest of (c)]

(d) **Portable Air Conditioners, Evaporative Coolers, Ceiling Fans, Ceiling Fan Light Kits, Whole House Fans, Residential Exhaust Fans, Dehumidifiers, Residential Furnace Fans, and Commercial and Industrial Fans and Blowers.**

(1) The test methods for portable air conditioners, evaporative coolers, ceiling fans, ceiling fan light kits, whole house fans, residential exhaust fans, dehumidifiers, and residential furnace fans, and commercial and industrial fans and blowers are shown in Table D-3.



**Table D-3  
Testing Requirements for the following Appliances**

<b>Appliance</b>	<b>Test Method</b>
Spot Air Conditioners	ANSI/ASHRAE 128-2001
Single-Duct and Dual-Duct Portable Air Conditioners	10 C.F.R. section 430.23(dd) (Appendix CC to subpart B of part 430)
Ceiling Fans <sup>1</sup>	10 C.F.R. section 430.23(w) (Appendix U to subpart B of part 430)
Ceiling Fan Light Kits	10 C.F.R. section 430.23(x) (Appendix V to subpart B of part 430)
Evaporative Coolers <sup>2</sup>	ANSI/ASHRAE 133-2008 for packaged direct evaporative coolers and packaged indirect/direct evaporative coolers; ANSI/ASHRAE 143-2007 for packaged indirect evaporative coolers
Whole House Fans	HVI-Publication 916 29 September 2015 HVI Airflow Test Procedure, as specified in section 5.2.  Use setups for whole house comfort ventilators.
Dehumidifiers	10 C.F.R. section 430.23(z) (Appendix X to subpart B of part 430, active mode portion only)
Portable Dehumidifiers and Whole-Home Dehumidifiers Manufactured On or After June 13, 2019	10 C.F.R. section 430.23(z) (Appendix X1 to subpart B of part 430)
Residential Exhaust Fans	HVI-Publication 916 29 September 2015 HVI Airflow Test Procedure, as specified in section 5.2.
Residential Furnace Fans	10 C.F.R. section 430.23(cc) (Appendix AA to subpart B of part 430)
<u>Commercial and Industrial Fans and Blowers</u>	<u>10 C.F.R. section 431.174 (Appendix A to Subpart J of Part 431)<sup>3</sup></u>
<sup>1</sup> <u>Very small-diameter ceiling fans are not required to be tested, unless those fans also meet the definition of "low-speed small-diameter ceiling fan" found in section 1602(d) of this Article.</u> <sup>2</sup> <u>Not including evaporative coolers whose fans or blowers are within the scope of the testing requirements for commercial and industrial fans and blowers.</u> <sup>3</sup> <u>Including but not limited to provisions on alternative efficiency determination method (AEDM) and additional testing requirements concerning selection of models to be tested if an AEDM is to be applied, in 10 C.F.R. sections 429.69 and 429.70.</u>	

(2) ~~Commercial and Industrial Fans and Blowers.~~ The test method for Commercial and Industrial Fans or Blowers is ANSI/AMCA Standard 214-21 Test Procedure for Calculating Fan Energy Index (FEI) for Commercial and Industrial Fans and Blowers with the following additions:

(A) ~~lab reports and calculated results used for certification and marking shall be maintained by the manufacturer per the requirements of Annex J of ANSI/AMCA~~

Standard 214-21. Records shall be retained per the requirements of section 1608(e)(1) of this Article.

**(e) Gas and Oil Space Heating Products Heaters and Electric Residential Boilers.**

- (1) **Space Heating Products Gas Space Heaters and Oil Space Heaters.** The test methods for space heating products gas space heaters and oil space heaters are shown in Table E-1.
- (2) **Natural Gas and LPG Space Heaters.** Gas space heaters intended for use either with natural gas or LPG may be tested with natural gas and the results applied to both fuel types.
- (3) **Combination Space-Heating and Water-Heating Appliances.** The test method for combination space-heating and water-heating appliances is ANSI/ASHRAE 124-2007.

**Table E-1**  
**Space Heating Product Gas and Oil Space Heater Test Methods**

<i>Appliance</i>	<i>Test Method</i>
Central furnaces < 225,000 Btu/hr, single phase  < 225,000 Btu/hr, three phase  ≥ 225,000 Btu/hr	10 C.F.R. section 430.23(n) (Appendix N to subpart B of part 430)  10 C.F.R. section 430.23(n) (Appendix N to subpart B of part 430) or 10 C.F.R. sections 431.75 and 431.76 (at manufacturer's option)  10 C.F.R. sections 431.75 and 431.76
<u>Infrared gas space heaters</u> patio heaters ——high-intensity infrared heaters ——low-intensity infrared heaters	ASTM F2644-07 ANSI Z83.19-2001 ANSI Z83.20-2001
Gas duct furnaces	ANSI Z83.8-2002
Boilers  < 300,000 Btu/hr  ≥ 300,000 Btu/hr	10 C.F.R. section 430.23(n) (Appendix N to subpart B of part 430)  10 C.F.R. sections 431.85 and 431.86
<u>Vented home heating equipment</u> wall furnaces, floor furnaces, and room heaters	10 C.F.R. section 430.23(o) (Appendix O to subpart B of part 430)

[end of (e)]

...[skipping (f) and (g)]

**(h) Plumbing Fittings.**

- (1) **Commercial Pre-Rinse Spray Valves.** The test method for commercial pre-rinse spray valves is 10 C.F.R. sections 431.263 and 431.264.
- (2) **Showerheads.** The test methods for showerheads are:
  - (A) Maximum flow rate test. The test method for determining maximum flow rate of a showerhead is 10 C.F.R. section 430.23(t) (Appendix S to subpart B of part 430).
  - (B) Minimum flow rate test. The test method for determining minimum flow rates of a showerhead is as stated in ASME A112.18.1-20122018 / CSA B125.1-20122018, Section 5.12.
  - (C) Showerheads with multiple nozzles. Showerheads with multiple nozzles shall be tested with all nozzles in use at the same time.

...[skipping the rest of (h)]

...[skipping (i) through (o)]

**(p) Clothes Washers.**

- (1) **Clothes Washers That Are Consumer Products.** The test method for clothes washers that are consumer products is 10 C.F.R. section 430.23(j) (Appendix J2 to subpart B of part 430). Manufacturers must use the results of testing under the test method for clothes washers that are consumer products on or after July 1, 2022, using either 10 C.F.R. section 430.23(j) (Appendix J to subpart B of part 430) or 10 C.F.R. section 430.23(j) (Appendix J2 to subpart B of part 430), as appropriate under federal law.
- (2) **Commercial Clothes Washers.** The test method for commercial clothes washers is 10 C.F.R. section 431.154.
  - (A) ~~Testing Before January 1, 2018.~~ The test method for commercial clothes washers before January 1, 2018 is 10 C.F.R. section 430.23(j) (Appendix J1 to subpart B of part 430).
  - (B) ~~Testing On or After January 1, 2018.~~ The test method for commercial clothes washers on or after January 1, 2018 is 10 C.F.R. section 430.23(j) (Appendix J2 to subpart B of part 430).

**(q) Clothes Dryers.**

The test methods for clothes dryers are 10 C.F.R. section 430.23(d) (Appendix D1 or Appendix D2 to subpart B of part 430). Manufacturers must use a single appendix for all representations, including certifications of compliance, and may not use appendix D1 for certain representations and appendix D2 for other representations.

**(r) Cooking Products and Food Service Equipment.**

The test methods for cooking products and food service equipment that are consumer products, commercial hot food holding cabinets, commercial convection ovens and commercial range tops are shown in Table R-1.

**Table R-1  
Cooking Product and Food Service Equipment Test Methods**

<b>Appliance</b>	<b>Test Method</b>
<del>Microwave ovens</del> Cooking products that are consumer products	10 C.F.R. section 430.23(i) (Appendix I to subpart B of part 430)
<del>Conventional cooktops and</del> <del>Combined cooking products</del>	10 C.F.R. section 430.23(i) (Appendix I <del>1</del> to subpart B of part 430)
Commercial hot food holding cabinets	ANSI/ASTM F2140-01 (Test for idle energy rate-dry test) and US EPA's Energy Star Guidelines, "Measuring Interior Volume" (Test for interior volume)
Commercial convection ovens	ANSI/ASTM F1496-99 (Test for energy input rate and idle energy consumption only)
Commercial range tops	ANSI/ASTM F1521-96 (Test for cooking energy efficiency only)

**(s) Electric Motors and Compressors.**

- (1) **Electric Motors, Except Small Electric Motors.** The test methods for electric motors are 10 C.F.R. sections 431.15, 431.16, 431.17, and 431.18, ~~431.19, 431.20, and 431.21~~, including but not limited to provisions on testing laboratories, recognition of accreditation bodies, and recognition of certification programs.
- (2) **Small Electric Motors.** The test methods for small electric motors are 10 C.F.R. sections 431.443, 431.444 and 431.445, including but not limited to provisions on alternative efficiency determination method (AEDM) and additional testing requirements concerning selection of models to be tested if an AEDM is to be applied.
- (3) **Compressors.** The test method for ~~state-regulated~~ compressors is 10 C.F.R. section 431.344 (Appendix A to Subpart T of 10 C.F.R., § 431), including but not limited to provisions on alternative efficiency determination method (AEDM) and additional testing requirements concerning selection of models to be tested if an AEDM is to be applied, in 10 C.F.R. section 429.63 and 10 C.F.R. section 429.70.

[end of (s)]

...[skipping (t) and (u)]

**(v) Computers, Computer Monitors, Televisions, Signage Displays, and Consumer Audio and Video Equipment.**

(1) **Consumer Audio and Video Equipment.** The test method for standby-passive mode consumer audio and video equipment is International Electrotechnical Commission (IEC) 62087:2002(E) – “Methods of Measurement for the Power Consumption of Audio, Video, and Related Equipment.”

(2) **Televisions and Signage Displays.**

(A) The test method for televisions manufactured on or after April 24, 2014, and prior to September 11, 2023, is 10 C.F.R. section 430.23(h) (Appendix H to subpart B of part 430) as it appeared in 10 C.F.R. section 430 edition revised as of January 1, 2023.

(B) The test method for televisions within the scope of 10 C.F.R. section 430 and manufactured on or after September 11, 2023, is 10 C.F.R. section 430.23(h) (Appendix H to subpart B of part 430).

(C) The test method for signage displays or televisions outside the scope of 10 C.F.R. section 430, and manufactured on or after April 24, 2014, is 10 C.F.R. section 430.23(h) (Appendix H to subpart B of part 430) as it appeared in 10 C.F.R. section 430 edition revised as of January 1, 2023 (January 1, 2014).

...[skipping the rest of (v)]

**(w) Battery Chargers and Battery Charger Systems.**

(1) **Test Method for Federally Regulated Battery Chargers and Federally Regulated Uninterruptible Power Supplies.** ~~The test method for federally regulated battery chargers and federally regulated uninterruptible power supplies is 10 C.F.R. section 430.23(aa) (Appendix Y to subpart B of part 430). Manufacturers must use the results of testing under the test method for federally regulated battery chargers and federally regulated uninterruptible power supplies, using either 10 C.F.R. section 430.23(aa) (Appendix Y to subpart B of part 430) or 10 C.F.R. section 430.23(aa) (Appendix Y1 to subpart B of part 430), as appropriate under federal law.~~

(2) **Test Method for Small Battery Charger Systems.** The test method for small battery charger systems that are not federally regulated battery chargers, federally regulated uninterruptible power supplies, battery backups, or non-federally regulated uninterruptible power supplies is 10 C.F.R. section 430.23(aa) (Appendix Y to subpart B of part 430) (Jan. 1, 2017).

(A) Multi-port battery charger systems shall be tested for 24-hour efficiency and maintenance mode with a battery in each port.

(B) For single port small battery charger systems, the highest 24-hour charge and maintenance energy, maintenance mode, and no battery mode results of the test procedure shall be used for purposes of reporting and determining compliance with section 1605.3(w)(2), ~~Table W-3~~ Table W-4 of this Article.

(C) For purposes of computing the small battery charger system standard, the number of ports included in a multi-port charger system shall be equal to the

number ports that are separately controlled. For example, a multi-port charger system that charges eight batteries by using two charge controllers that charge four batteries in parallel would use two for "N" as described in section 1605.3(w)(2), ~~Table W-3~~Table W-4 of this Article.

...[skipping the rest of (w)]

...[skipping (x)]

The following documents are incorporated by reference in section 1604.

...[skipping CALIFORNIA ENERGY COMMISSION TEST METHODS]

#### FEDERAL TEST METHODS

C.F.R., Title 10, sections 429.12, 429.16, 429.56, 429.63, 429.69, and 429.70

C.F.R., Title 10, section 430.23, and 10 C.F.R. Appendixes A, B, C1, D1, D2, E, F, H, I, I1, ~~J1~~, J, J2, M, M1, N, O, P, Q, R, S, T, U, V, W, X, S1, Y, Y1, Z, AA, BB, CC, and DD of subpart B of part 430

C.F.R., Title 10, sections 431.15, 431.16, 431.17, 431.18, 431.19, 431.20, and 431.21

C.F.R., Title 10, sections 431.63 and 431.64

C.F.R., Title 10, sections 431.75 and 431.76

C.F.R., Title 10, sections 431.85 and 431.86

C.F.R., Title 10, sections 431.95 and 431.96

C.F.R., Title 10, sections 431.105 and 431.106

C.F.R., Title 10, sections 431.133 and 431.134

C.F.R., Title 10, section 431.154

C.F.R., Title 10, section 431.174, Appendix A to Subpart J of 10 C.F.R., § 431

C.F.R., Title 10, section 431.193

C.F.R., Title 10, section 431.204(b)

C.F.R., Title 10, section 431.224

C.F.R., Title 10, sections 431.263 and 431.264

C.F.R., Title 10, sections 431.293 and 431.294

C.F.R., Title 10, sections 431.303 and 431.304

C.F.R., Title 10, section 431.344, Appendix A to Subpart T of 10 C.F.R., § 431

C.F.R., Title 10, sections 431.443, 431.444, and 431.445

C.F.R., Title 10, section 431.464(a) Appendix A to Subpart Y of 10 C.F.R., § 431

C.F.R., Title 10, section 431.464(b), Appendix C to Subpart Y of 10 C.F.R., § 431

C.F.R., Title 10, section 431 subpart G

Copies available from:

SUPERINTENDENT OF DOCUMENTS  
U.S. GOVERNMENT PRINTING OFFICE  
WASHINGTON, DC 20402  
[www.ecfr.gov](http://www.ecfr.gov)

...[skipping UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA) and AIR-CONDITIONING, HEATING, AND REFRIGERATION INSTITUTE (AHRI)]

**AIR MOVEMENT AND CONTROL ASSOCIATION INTERNATIONAL, INC (AMCA)**

ANSI/AMCA Standard 214-21 — Test Procedure for Calculating Fan Energy Index (FEI) for Commercial and Industrial Fans and Blowers (Approved by ANSI on March 1, 2021)

...[skipping AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)]

**AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)**

ASME A112.19.2/CSA B45.1-2013 Ceramic Plumbing Fixtures  
ASME A112.18.1-2012 & 2018/ Plumbing Supply Fittings  
CSA B125.1-2012 & 2018

Copies available from: ASME HEADQUARTERS  
TWO PARK AVENUE  
NEW YORK, NY 10016-5990  
www.asme.org  
PHONE: 800-843-2763 (U.S./CANADA)  
001-800-843-2763 (MEXICO)  
973-882-1170 (OUTSIDE NORTH AMERICA)  
EMAIL: CustomerCare@asme.org

**AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)**

ANSI/ASTM F1496-99 — Standard Test Method for Performance of Convection Ovens  
ANSI/ASTM F1521-96 — Standard Test Methods for Performance of Range Tops  
ANSI/ASTM F2140-01 — Standard Test Method for the Performance of Hot Food Holding Cabinets  
ANSI/ASTM F2143-01 — Standard Test Method for the Performance of Refrigerated Buffet and Preparation Tables  
ASTM F2644-07 — Standard Test Method for Performance of Commercial Patio Heaters

Copies available from: ASTM  
100 BARR HARBOR DRIVE  
WEST CONSHOHOCKEN, PA 19428-2959  
www.astm.org  
PHONE: (610) 832-9585  
FAX: (610) 832-9555

...[skipping AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)]

## **ASTM INTERNATIONAL**

<u>ANSI/ASTM F1496-99</u>	<u>Standard Test Method for Performance of Convection Ovens</u>
<u>ANSI/ASTM F1521-96</u>	<u>Standard Test Methods for Performance of Range Tops</u>
<u>ANSI/ASTM F2140-01</u>	<u>Standard Test Method for the Performance of Hot Food</u>
<u>Holding</u>	<u>Cabinets</u>
<u>ANSI/ASTM F2143-01</u>	<u>Standard Test Method for the Performance of Refrigerated</u>
<u>Buffet and</u>	<u>Preparation Tables</u>
<u>ASTM F2644-07</u>	<u>Standard Test Method for Performance of Commercial Patio</u>
	<u>Heaters</u>

Copies available from: ASTM  
100 Barr Harbor Drive  
West Conshohocken, PA 19428-2959  
www.astm.org  
Phone: 1-877-909-2786

**...[skipping CANADIAN STANDARDS ASSOCIATION (CSA) through HOME VENTILATING INSTITUTE (HVI)]**

## **HYDRAULIC INSTITUTE (HI)**

ANSI/HI 1.6-2000 Centrifugal Pump Tests

Copies available from: HYDRAULIC INSTITUTE  
6 CAMPUS DR., FIRST FLOOR NORTH  
PARSIPPANY, NJ 07054-4405  
http://www.pumps.org/  
www.hydraulicinstitute.com  
PHONE: (973) 267-9700  
FAX: (973) 267-9055

## **ILLUMINATING ENGINEERING SOCIETY (IES)**

**...[skipping the rest of section 1604]**

Note: Authority cited: Sections 25213, 25218(e), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Sections 16, 26 and 30, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Reference: Sections 25216.5(d), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Section 16, Governor's Exec. Order No. B-29-15 (April 1, 2015).

## **Section 1605. Energy Performance, Energy Design, Water Performance, and Water Design Standards: In General.**

**...[skipping (a) and (b)]**



(c) **California Standards for Non-Federally Regulated Appliances ~~Applicable to Sale and Installation~~**. Section 1605.3 of this Article contains standards that are exclusively California standards. They are applicable as state law to the sale or offering for sale of appliances in California. No appliance may be sold or offered for sale in California unless the appliance complies with the applicable standard in section 1605.3 of this Article as determined using the applicable test method listed in section 1604 of this Article (and with all the other requirements of this Article).

...[skipping the rest of section 1605]

Note: Authority cited: Sections 25213, 25218(e), 25402(a)-(c), and 25960, Public Resources Code.

Reference: Sections 25216.5(d), 25402(a)-(c), and 25960, Public Resources Code.

**Section 1605.1. Federal and State Standards for Federally Regulated Appliances.**

...[skipping (a)]

**(b) Room Air Conditioners, Room Air-Conditioning Heat Pumps, Packaged Terminal Air Conditioners, and Packaged Terminal Heat Pumps.**

**(1) Room Air Conditioners and Room Air-Conditioning Heat Pumps.**

The combined EER of room air conditioners and room air-conditioning heat pumps that are manufactured on or after June 1, 2014 shall be not less than the applicable values shown in Table B-2. The EER of room air conditioners and room air-conditioning heat pumps that are labeled for use at more than one voltage shall be not less than the applicable values shown in Table B-2 at each of the labeled voltages.

**Table B-2  
Standards for Room Air Conditioners and Room Air-Conditioning Heat Pumps  
Manufactured On or After June 1, 2014**

<i>Appliance</i>	<i>Louvered Sides</i>	<i>Cooling Capacity (Btu/hr)</i>	<i>Minimum Combined EER</i>
Room Air Conditioner	Yes	< 6,000	11.0
Room Air Conditioner	Yes	≥ 6,000 – ≤ 7,999	11.0
Room Air Conditioner	Yes	≥ 8,000 – ≤ 13,999	10.9
Room Air Conditioner	Yes	≥ 14,000 – ≤ 19,999	10.7
Room Air Conditioner	Yes	≥ 20,000 – ≤ 27,999	9.4
Room Air Conditioner	Yes	≥ 28,000	9.0
Room Air Conditioner	No	< 6,000	10.0
Room Air Conditioner	No	≥ 6,000 – ≤ 7,999	10.0
Room Air Conditioner	No	≥ 8,000 – ≤ 10,999	9.6
Room Air Conditioner	No	≥ 11,000 – ≤ 13,999	9.5
Room Air Conditioner	No	≥ 14,000 – ≤ 19,999	9.3
Room Air Conditioner	No	≥ 20,000	9.4
Room Air Conditioning Heat Pump	Yes	< 20,000	9.8
Room Air Conditioning Heat Pump	Yes	≥ 20,000	9.3
Room Air Conditioning Heat Pump	No	< 14,000	9.3
Room Air Conditioning Heat Pump	No	≥ 14,000	8.7
Casement-Only Room Air Conditioner	Either	Any	9.5
Casement-Slider Room Air Conditioner	Either	Any	10.4

...[skipping the rest of (b)]

**(c) Central Air Conditioners, Air Filters, and Heat Pump Water-Heating Packages.**

- (1) **Central Air Conditioners.** The EER, IEER, SEER, COP, HSPF, and SCOP, ISCOP2, and ISMRE2, as applicable, of all central air conditioners, including computer room air conditioners, shall be not less than the applicable values shown in Tables C-3, C-4, C-5, C-6, C-7, C-8, and C-9, C-10, and C-11.
- (A) **Evaporatively Cooled Computer Room Air Conditioners.** See section 1605.3(c) of this Article for energy efficiency standards for evaporatively cooled computer room air conditioners.

**Table C-3  
Standards for Single Phase Air-Cooled Air Conditioners with Cooling Capacity Less than 65,000 Btu per Hour and Single Phase Air-Source Heat Pumps with Cooling Capacity Less than 65,000 Btu per Hour, Not Subject to EPA Act, Manufactured on or After January 1, 2015, but Before January 1, 2023**

<b>Product Class</b>	<b>Minimum Efficiency Effective January 1, 2015</b>			
	<b>Minimum SEER</b>	<b>Minimum HSPF</b>	<b>Minimum EER</b>	<b>Average Off-Mode Power Consumption <math>P_{w,off}</math> (watts)</b>
Split system air conditioners with rated cooling capacity < 45,000 Btu/hour <sup>1</sup>	14.0 <u>13.0</u>	—	12.2	30
Split system air conditioners with rated cooling capacity ≥ 45,000 Btu/hour <sup>1</sup>	14.0 <u>13.0</u>	—	11.7	30
Split system heat pumps with rated cooling capacity < 45,000 Btu/hour <sup>1</sup>	14.0	8.2	—	33
Split system heat pumps with rated cooling capacity ≥ 45,000 Btu/hour <sup>1</sup>			—	33
Single package air conditioners <sup>1</sup>	14.0	—	11.0	30
Single package heat pumps	14.0	8.0	—	33
Space constrained air conditioners—split system	12.0	—	—	30
Space constrained heat pumps—split system	12.0	7.4	—	33
Space constrained air conditioners—single package	12.0	—	—	30
Space constrained heat pumps—single package	12.0	7.4	—	33
Small duct, high velocity air conditioner systems	12.0	<u>—7.2</u>	—	30
Small duct, high velocity heat pump systems	12.0	7.2	—	30

<sup>1</sup> Minimum SEER of 14.0 required for units installed on or after January 1, 2015, but before January 1, 2023, in the states of Alabama, Arkansas, Delaware, Florida, Georgia, Hawaii, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, or Virginia, or in the District of Columbia See 10 C.F.R. section 430.32(c) for less stringent federal standards applicable to these units that are manufactured on or after January 1, 2015 and installed in states other than Arizona, California, Nevada, or New Mexico.

**Table C-4**  
**Standards for Air Conditioners and Heat Pumps That Are Consumer Products,**  
**Manufactured on or After January 1, 2023**

<b><u>Product Class</u></b>	<b><u>Minimum SEER<sup>2</sup></u></b>	<b><u>Minimum HSPF<sup>2</sup></u></b>	<b><u>Minimum EER<sup>2</sup><sup>1</sup></u></b>	<b><u>Maximum Average Off-Mode Power Consumption P<sub>w,off</sub> (watts)<sup>2</sup></u></b>
<u>Split system air conditioners with certified cooling capacity &lt; 45,000 Btu/hour</u>	<u>13.4/14.3*</u>	=	<u>11.7/9.8**</u>	<u>30</u>
<u>Split system air conditioners with certified cooling capacity ≥ 45,000 Btu/hour</u>	<u>13.4/13.8*</u>	=	<u>11.2/9.8***</u>	<u>30</u>
<u>Split system heat pumps</u>	<u>14.3</u>	<u>7.5</u>		<u>33</u>
<u>Single package air conditioners</u>	<u>13.4</u>	=	<u>10.6</u>	<u>30</u>
<u>Single package heat pumps</u>	<u>13.4</u>	<u>6.7</u>	=	<u>33</u>
<u>Small duct, high velocity air conditioner systems</u>	<u>12.0</u>	<u>6.1</u>	=	<u>30</u>
<u>Small duct, high velocity heat pump systems</u>	<u>12.0</u>	<u>6.1</u>	=	<u>30</u>
<u>Space constrained air conditioners</u>	<u>11.7</u>	=	=	<u>30</u>
<u>Space constrained heat pumps</u>	<u>11.9</u>	<u>6.3</u>	=	<u>33</u>

<sup>1</sup> Minimum EER2 standards for units that are installed in the Southwest (Arizona, California, Nevada, or New Mexico).

<sup>2</sup> Maximum Average Off-Mode Power Consumption standard applies to units manufactured on or after January 1, 2015.

\* The higher minimum SEER2 standard applies to units that are installed in the Southwest. See 10 C.F.R. section 430.32(c) for less stringent federal standards applicable to these units that are manufactured on or after January 1, 2023, and installed in states other than the Southwest.

\*\* The 11.7 EER2 standard applies to products with a certified SEER2 less than 15.2. The 9.8 EER2 standard applies to products with a certified SEER2 greater than or equal to 15.2.

\*\*\* The 11.2 EER2 standard applies to products with a certified SEER2 less than 15.2. The 9.8 EER2 standard applies to products with a certified SEER2 greater than or equal to 15.2.

**EXCEPTION to Section 1605.1(c)(1) Table C-4C-5 of this Article:** The standards shown in Table C-4C-5 do not apply to single package vertical air conditioners and single package vertical heat pumps (see Table C-6C-7), packaged terminal air conditioners and packaged terminal heat pumps (see Tables B-3 and B-4), computer room air conditioners (see Table C-7C-8), variable refrigerant flow multi-split air conditioners and heat pumps (see Table C-8C-9), and double-duct air-cooled commercial package air conditioning and heating equipment (see Table C-9C-10).

**Table C-4C-5**

**Standards for Commercial Package Air-Conditioning and Heating Equipment (Air-Cooled)  
Air Conditioners and Air-Source Heat Pumps Subject to EPA Act  
(Standards Effective January 1, 2010 do not apply to Single Package Vertical Air  
Conditioners)**

<i>Equipment Type</i>	<i>Cooling Capacity</i>	<i>Sub-category</i>	<i>Heating Type*</i>	<i>Efficiency Levels</i>	<i>Compliance date: Equipment manufactured starting on</i>
Small Commercial Package Air-Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Split-System)	< 65,000 Btu/h	AC	All	SEER = 13.0	June 16, 2008
		HP		SEER = 14.0 HSPF = 8.2	January 1, 2017
Small Commercial Package Air-Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Single-Package)	< 65,000Btu/h	AC	All	SEER = 14.0	January 1, 2017
		HP		SEER = 14.0 HSPF = 8.0	January 1, 2017
Small Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled)	≥ 65,000 Btu/h and < 135,000 Btu/h	AC	E-N	EER = 11.2	January 1, 2010 <sup>1</sup>
				IEER = 12.9	January 1, 2018 <sup>2</sup>
				IEER = 14.8	January 1, 2023
			A-O	EER = 11.0	January 1, 2010 <sup>1</sup>
				IEER = 12.7	January 1, 2018 <sup>2</sup>
				IEER = 14.6	January 1, 2023
		HP	E-N	EER = 11.0 COP = 3.3	January 1, 2010 <sup>1</sup>
				IEER = 12.2 COP = 3.3	January 1, 2018 <sup>2</sup>
				IEER = 14.1 COP = 3.4	January 1, 2023
			A-O	EER = 10.8 COP = 3.3	January 1, 2010 <sup>1</sup>
				IEER = 12.0 COP = 3.3	January 1, 2018 <sup>2</sup>
				IEER = 13.9 COP = 3.4	January 1, 2023

Table C-4C-5 (cont'd)

<i>Equipment Type</i>	<i>Cooling Capacity</i>	<i>Sub-category</i>	<i>Heating Type*</i>	<i>Efficiency Levels</i>	<i>Compliance date: Equipment manufactured starting on</i>
Large Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled)	≥ 135,000 Btu/h and < 240,000 Btu/h	AC	E-N	EER = 11.0	January 1, 2010 <sup>1</sup>
				IEER = 12.4	January 1, 2018 <sup>2</sup>
				IEER = 14.2	January 1, 2023
			A-O	EER = 10.8	January 1, 2010 <sup>1</sup>
				IEER = 12.2	January 1, 2018 <sup>2</sup>
				IEER = 14.0	January 1, 2023
		HP	E-N	EER = 10.6 COP = 3.2	January 1, 2010 <sup>1</sup>
				IEER = 11.6 COP = 3.2	January 1, 2018 <sup>2</sup>
				IEER = 13.5 COP = 3.3	January 1, 2023
			A-O	EER = 10.4 COP = 3.2	January 1, 2010 <sup>1</sup>
				IEER = 11.4 COP = 3.3	January 1, 2018 <sup>2</sup>
				IEER = 13.3 COP = 3.4	January 1, 2023
Very Large Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled)	≥ 240,000 Btu/h and < 760,000 Btu/h	AC	E-N	EER = 10.0	January 1, 2010 <sup>1</sup>
				IEER = 11.6	January 1, 2018 <sup>2</sup>
				IEER = 13.2	January 1, 2023
			A-O	EER = 9.8	January 1, 2010 <sup>1</sup>
				IEER = 11.4	January 1, 2018 <sup>2</sup>
				IEER = 13.0	January 1, 2023
		HP	E-N	EER = 9.5 COP = 3.2	January 1, 2010 <sup>1</sup>
				IEER = 10.6 COP = 3.2 <sup>3</sup>	January 1, 2018 <sup>2</sup>
				IEER = 12.5	January 1, 2023
			A-O	EER = 9.3 COP = 3.2	January 1, 2010 <sup>1</sup>
				IEER = 10.4 COP = 3.2 <sup>3</sup>	January 1, 2018 <sup>2</sup>
				IEER = 12.3	January 1, 2023

<sup>1</sup> And manufactured before January 1, 2018.  
<sup>2</sup> And manufactured before January 1, 2023.  
<sup>3</sup> COP standard remains in effect on and after January 1, 2023.  
\* E-N = Electric Resistance Heating or No Heating  
A-O = All Other Types of Heating

**Table C-5C-6**

**Standards for Commercial Package Air Conditioning and Heating Equipment (Water-Cooled) Air Conditioners, Commercial Package Air Conditioning and Heating Equipment (Evaporatively Cooled) Air Conditioners, and Small Commercial Package Water-Source Heat Pumps**

...[skipping table contents]

**Table C-6C-7**

**Standards for Single Package Vertical Air Conditioners and Single Package Vertical Heat Pumps Manufactured on or After January 1, 2010**

...[skipping table contents]

**Table C-7C-8**

**Standards for Computer Room Air Conditioners**

...[skipping table contents]

**Table C-8C-9**

**Standards for Variable Refrigerant Flow Multi-Split Air Conditioners and Heat Pumps**

...[skipping table contents]

**Table C-9C-10**

**Standards for Double-Duct Commercial Packaged Air Conditioning and Heating Equipment Manufactured on or After January 1, 2010**

...[skipping table contents]

**Table C-11**

**Standards for Direct Expansion-Dedicated Outdoor Air Systems Manufactured on or After May 1, 2024**

<b><u>Subcategory</u></b>	<b><u>Minimum Efficiency Level</u></b>
<b><u>(AC)—Air-cooled without ventilation energy recovery systems</u></b>	<b><u>ISMRE2 = 3.8</u></b>
<b><u>(AC w/VERS)—Air-cooled with ventilation energy recovery systems</u></b>	<b><u>ISMRE2 = 5.0</u></b>
<b><u>(ASHP)—Air-source heat pumps without ventilation energy recovery systems</u></b>	<b><u>ISMRE2 = 3.8</u> <u>ISCOP2 = 2.05</u></b>
<b><u>(ASHP w/VERS)—Air-source heat pumps with ventilation energy recovery systems</u></b>	<b><u>ISMRE2 = 5.0</u> <u>ISCOP2 = 3.20</u></b>



<u>(WC)—Water-cooled without ventilation energy recovery systems</u>	<u>ISMRE2 = 4.7</u>
<u>(WC w/VERS)—Water-cooled with ventilation energy recovery systems</u>	<u>ISMRE2 = 5.1</u>
<u>(WSHP)—Water-source heat pumps without ventilation energy recovery systems</u>	<u>ISMRE2 = 3.8</u> <u>ISCOP2 = 2.13</u>
<u>(WSHP w/VERS)—Water-source heat pumps with ventilation energy recovery systems</u>	<u>ISMRE2 = 4.6</u> <u>ISCOP2 = 4.04</u>

...[skipping the rest of (c)]

**(d) Portable Air Conditioners, Evaporative Coolers, Ceiling Fans, Ceiling Fan Light Kits, Whole House Fans, Residential Exhaust Fans, Dehumidifiers, and Residential Furnace Fans, and Commercial and Industrial Fans and Blowers.**

**(1) Ceiling Fans.**

- (A) All C ceiling fans manufactured on or after January 1, 2007 shall have the following features:
1. Fan speed controls separate from any lighting controls;
  2. Adjustable speed controls (either more than 1 speed or variable speed);
  3. The capability of reversible fan action, except for:
    - a. Fans sold for industrial applications;
    - b. Fans sold for outdoor applications; and
    - c. Cases in which safety standards would be violated by the use of the reversible mode.
- (B) Ceiling fans manufactured on or after January 21, 2020 shall meet the requirements shown in Table D-4.

**Table D-4  
Standards for Ceiling Fans Manufactured On or After January 21, 2020**

<b><i>Ceiling Fan Type</i></b>	<b><i>Minimum Efficiency (CFM/Watts)<sup>1</sup></i></b>
Very small-diameter (VSD)	D ≤ 12 inches: 21 D > 12 inches: 3.16 D - 17.04
Standard	0.65 D + 38.03
Hugger	0.29 D + 34.46
High-speed small-diameter (HSSD)	4.16 D + 0.02
Large-diameter	0.91 D - 30.00
<sup>1</sup> D is the ceiling fan's blade span, in inches.	

**(C) Large-Diameter Ceiling Fans.** Large-diameter ceiling fans manufactured on or after January 21, 2020, shall have a CFEI greater than or equal to:

1. 1.00 at high speed; and
2. 1.31 at 40 percent speed or the nearest speed that is not less than 40 percent speed.

...[skipping the rest of (d)(1)]

...[skipping (d)(2) through (d)(4)]

(5) **Portable Air Conditioners.** See section 1605.3(d) of this Article for energy efficiency standards for portable air conditioners.

**(A) Federally Regulated Portable Air Conditioners.** Single-duct and dual-duct federally regulated portable air conditioners manufactured on or after January 10, 2025, must have a combined energy efficiency ratio (CEER) in Btu/Wh no less than SACC: Seasonally adjusted cooling capacity in Btu/h, as determined in accordance with the test procedure in section 1604(d) of this Article.

$$\underline{CEER = 1.04 \times \frac{SACC}{(3.7117 \times SACC^{0.6384})}}$$

**(B) State-Regulated Portable Air Conditioners.** See section 1605.3(d) of this Article for energy efficiency standards for state-regulated portable air conditioners manufactured on or after February 1, 2020, but before January 10, 2025.

(6) There are no energy efficiency standards or energy design standards for spot air conditioners, evaporative coolers, whole house fans, or residential exhaust fans, or commercial and industrial fans and blowers.

**(e) ~~Gas and Oil Space Heating Products Heaters and Electric Residential Boilers.~~**

(1) **~~Gas Vented Home Heating Equipment Gas Wall Furnaces, Gas Floor Furnaces, and Gas Room Heaters.~~** The AFUE of gas vented home heating equipment gas wall furnaces, gas floor furnaces, and gas room heaters manufactured on or after the effective dates shown shall be not less than the applicable values shown in Table E-2.

Table E-2

Standards for Gas Vented Home Heating Equipment Manufactured on or After April 16, 2013 ~~Gas Wall Furnaces, Floor Furnaces, and Room Heaters~~

<i>Appliance Product Class</i>	<i>Design Type</i>	<i>Capacity (Btu per hour)</i>	<i>Minimum AFUE (%) Effective On or After April 16, 2013</i>
Wall furnace	Fan	≤ 42,000	75
Wall furnace	Fan	> 42,000	76
Wall furnace	Gravity	≤ 27,000	65
Wall furnace	Gravity	> 27,000 and ≤ 46,000	66
Wall furnace	Gravity	> 46,000	67
Floor furnace	All	≤ 37,000	57
Floor furnace	All	> 37,000	58
Room heater	All	≤ 20,000	61
Room heater	All	> 20,000 and ≤ 27,000	66
Room heater	All	> 27,000 and ≤ 46,000	67
Room heater	All	> 46,000	68

(2) ~~Central Gas Furnaces, Central Gas Boilers, Central Oil Furnaces, Central Oil Boilers, and Electric Residential Boilers.~~ The AFUE, thermal efficiency, and combustion efficiency, as applicable, of central gas furnaces, central gas boilers, central oil furnaces, and central oil boilers manufactured on or after the effective dates shown shall meet all applicable requirements shown in Tables E-3, E-4, E-5, and E-6. Electric hot water residential boilers manufactured on or after September 1, 2012 shall meet the design standard shown in Table E-3.

Central Furnaces and Boilers. Central furnaces and boilers manufactured on or after the effective dates shown shall meet all applicable requirements shown in Tables E-3, E-4, E-5, and E-6.

Table E-3

Standards for ~~Gas and Oil-Fired Central Boilers~~ Residential Boilers < 300,000 Btu/hour Input and Electric Residential Boilers

...[skipping table contents]

(A) **Automatic Means for Adjusting Water Temperature.** The automatic means for adjusting the temperature design, shown as footnote 2 in Table E-3 immediately above, means:

...[skipping (e)(2)(A)1. through (e)(2)(A)4.]

(B) **EXCEPTION to section 1605.1(e)(2) of this Article:** A boiler that is manufactured to operate without any need for electricity or any electric connection, electric gauges, electric pumps, electric wires, or electric devices shall not be required to meet the efficiency standards or design standard that take effect for models manufactured on or after September 1, 2012. Boilers described in this EXCEPTION are required to meet the efficiency standards in effect prior to September 1, 2012, as applicable.

**Table E-4**

**Standards for Gas- and Oil-Fired Commercial Packaged Boilers  $\geq$  300,000 Btu/hour Input**

Appliance	Type	Rated Input (Btu/hr)	Minimum Efficiency (%)		
			Combustion Efficiency %	Thermal Efficiency%	
				March 2, 2012	March 2, 2012 through March 1, 2022
Hot Water Boilers	Gas-fired	$\geq$ 300,000 and $\leq$ 2,500,000	—	80	80
		$>$ 2,500,000	82	—	—
	Oil-fired	$\geq$ 300,000 and $\leq$ 2,500,000	—	82	82
		$>$ 2,500,000	84	—	—
Steam Boilers	Gas-fired, except natural draft	$\geq$ 300,000 and $\leq$ 2,500,000	—	79	79
		$>$ 2,500,000	—	79	79
	Gas-fired, natural draft	$\geq$ 300,000 and $\leq$ 2,500,000	—	77	79
		$>$ 2,500,000	—	77	79
	Oil-fired	$\geq$ 300,000 and $\leq$ 2,500,000	—	81	81
		$>$ 2,500,000	—	81	81

**Table E-5**

**Standards for Commercial Gas- and Oil-Fired Central Warm Air Furnaces**

Appliance	Rated Input (Btu/hr)	Minimum Thermal Efficiency	
		January 1, 1994	January 1, 2023
Gas central warm air furnaces	$\geq$ 225,000	80	81
Oil central warm air furnaces	$\geq$ 225,000	81	82

**Table E-6**

**Standards for Residential Central Furnaces Gas- and Oil-Fired Central Furnaces Less Than 225,000 Btu/hour Input And Residential Electric Furnaces**

...[skipping table contents]

- ~~(3) **Infrared Gas Space Heaters.** There is no energy efficiency standard or energy design standard for infrared gas space heaters.~~
- ~~(3)(4) **Unit Heaters.** Unit heaters manufactured on or after August 8, 2008 shall:~~
- ~~(A) Be equipped with an intermittent ignition device; and~~
  - ~~(B) Have power venting or an automatic flue damper. An automatic vent damper is an acceptable alternative to an automatic flue damper for those unit heaters where combustion air is drawn from the conditioned space.~~
- ~~(4) **Duct Furnaces.** See section 1605.3(e) of this Article for energy efficiency and energy design standards for duct furnaces.~~
- ~~(5) **Other Gas and Oil Space Heaters Combination Space-Heating and Water-Heating Appliances.** See section 1605.3(e) of this Article for standards requirements for boilers, central furnaces, combination space-heating and water-heating appliances, and duct furnaces that are not federally regulated consumer products or federally regulated commercial and industrial equipment.~~
- ~~(6) There are no energy efficiency standards or energy design standards for infrared gas space heaters.~~

**(f) Water Heaters.**

...[skipping (f)(1) and (f)(2)]

- (3) Water Heaters Regulated Under 10 C.F.R. section 431.110.** Water heaters regulated under 10 C.F.R. section 431.110 must meet the values shown in Tables F-4 and F-5, as applicable.
- (A) Commercial Storage Water Heaters, Instantaneous Water Heaters, and Hot Water Supply Boilers (Excluding Residential-Duty Commercial Water Heaters).** Each commercial storage water heater, instantaneous water heater, and hot water supply boiler (excluding residential-duty commercial water heaters) must meet the applicable energy conservation standard level(s) as specified in Table F-4.
- 1. Packaged Boiler Exclusion.** Any packaged boiler that provides service water that meets the definition of "commercial packaged boiler" in section 1602(e) of this Article, but does not meet the definition of "hot water supply boiler" in section 1602(f) of this Article, must meet the requirements that apply to it under section 1605.1(e) of this Article.

**Table F-4**  
**Standards for Water Heaters Regulated Under 10 C.F.R. Section 431.110(a)**  
**(Excluding Residential-Duty Commercial Water Heaters)**

<b>Equipment Category</b>	<b>Size</b>	<b>Energy Conservation Standards <sup>a</sup></b>	
		<b>Maximum standby loss <sup>c</sup> (equipment manufactured on and after October 29, 2003) <sup>b</sup></b>	<b>Minimum thermal efficiency (equipment manufactured on and after October 9, 2015) <sup>b</sup> (%)</b>
Electric storage water heaters	All	$0.30 + 27/V_m$ (%/hr)	N/A
Gas-fired storage water heaters	$\leq 155,000$ Btu/hr	$Q/800 + 110(V_r)^{1/2}$ (Btu/hr)	80
	$> 155,000$ Btu/hr	$Q/800 + 110(V_r)^{1/2}$ (Btu/hr)	80
Oil-fired storage water heaters	$\leq 155,000$ Btu/hr	$Q/800 + 110(V_r)^{1/2}$ (Btu/hr)	80
	$> 155,000$ Btu/hr	$Q/800 + 110(V_r)^{1/2}$ (Btu/hr)	80
Gas-fired instantaneous water heaters and hot water supply boilers	$< 10$ gallons	N/A	80
	$\geq 10$ gallons	$Q/800 + 110(V_r)^{1/2}$ (Btu/hr)	80
Oil-fired instantaneous water heaters and hot water supply boilers	$< 10$ gallons	N/A	80
	$\geq 10$ gallons	$Q/800 + 110(V_r)^{1/2}$ (Btu/hr)	78

<sup>a</sup>  $V_m$  is the measured storage volume (in gallons), and  $V_r$  is the rated volume (in gallons). Q is the nameplate input rate in Btu/hr.

<sup>b</sup> For hot water supply boilers with a capacity of less than 10 gallons: (1) The standards are mandatory for products manufactured on and after October 21, 2005; and (2) products manufactured prior to that date, and on or after October 23, 2003, must meet either the standards listed in Table F-4 or the applicable standards in section 1605.1(e) Table E-4 of this Article for a "commercial packaged boiler."

<sup>c</sup> Water heaters and hot water supply boilers having more than 140 gallons of storage capacity need not meet the standby loss requirement if: (1) The tank surface area is thermally insulated to R-12.5 or more; (2) a standing pilot light is not used; and (3) for gas or oil-fired storage water heaters, they have a fire damper or fan-assisted combustion.

...[skipping the rest of (f)]

...[skipping (g)]

**(h) Plumbing Fittings.**

...[skipping (h)(1) through (h)(3)]

**(4) Commercial Pre-rinse Spray Valves.**

- (A) The flow rate of commercial pre-rinse spray valves manufactured on or after January 1, 2006 and before January 28, 2019 shall be equal to or less than 1.6 gpm at 60 psi.
- (B) The flow rate of commercial pre-rinse spray valves manufactured on or after January 28, 2019 shall be equal to or less than the values shown in Table H-2.

**Table H-2  
Standards for Commercial Pre-rinse Spray Valves  
Manufactured On or After January 28, 2019**

<i>Product Class (spray force in ounce force (ozf))</i>	<i>Maximum Flow Rate (gpm)</i>
Product Class 1 ( $\leq 5.0$ ozf)	1.00
Product Class 2 ( $> 5.0$ ozf and $\leq 8.0$ ozf)	1.20
Product Class 3 ( $> 8.0$ ozf)	1.28

(C) See section 1605.3(h) of this Article for design standards for commercial pre-rinse spray valves.

- (5) **Showerheads, lavatory faucets, kitchen faucets, aerators, and public lavatory faucets.** See section 1605.3(h) of this Article for standards for all showerheads, lavatory faucets, kitchen faucets, aerators, and public lavatory faucets sold or offered for sale in California.

[end of (h)]

...[skipping (i) and (j)]

**(k) Lamps.**

- (1) **Federally Regulated General Service Fluorescent Lamps.**

Each of the following federally regulated general service fluorescent lamps manufactured on or after the effective dates shown shall meet or exceed the lamp efficacy standards shown in Table K-2.

**Table K-2  
Standards for Federally Regulated General Service Fluorescent Lamps  
Manufactured On or After July 15, 2012**

...[skipping table contents]

- ~~(2) Incandescent Reflector Lamps.~~

~~(A) The average lamp efficacy of federally regulated incandescent reflector lamps with a rated lamp wattage between 40-205 watts, and manufactured on or after July 15, 2012, and sold before January 1, 2020, shall be not less than the applicable values shown in Table K-3.~~

**EXCEPTION to Section 1605.1(k)(2)(A) of this Article.** The standards specified in Table K-3 shall not apply to the following types of incandescent reflector lamps:

- (1) Lamps rated at 50 watts or less that are ER30, BR30, BR40, or ER40;
- (2) Lamps rated at 65 watts that are BR30, BR40, or ER40 lamps; or
- (3) R20 incandescent reflector lamps rated 45 watts or less.

**Table K-3**  
**Standards for Federally Regulated Incandescent Reflector Lamps**  
**Manufactured On or After July 15, 2012, and Sold Before January 1, 2020**

<b>Lamp Spectrum</b>	<b>Lamp Diameter (inches)</b>	<b>Rated Voltage</b>	<b>Minimum Average Lamp Efficacy (LPW)<sup>1</sup></b>
Standard Spectrum	> 2.5	≥ 125	6.8 x P <sup>0.27</sup>
		< 125	5.9 x P <sup>0.27</sup>
	≤ 2.5	≥ 125	5.7 x P <sup>0.27</sup>
		< 125	5.0 x P <sup>0.27</sup>
Modified Spectrum	> 2.5	≥ 125	5.8 x P <sup>0.27</sup>
		< 125	5.0 x P <sup>0.27</sup>
	≤ 2.5	≥ 125	4.9 x P <sup>0.27</sup>
		< 125	4.2 x P <sup>0.27</sup>

<sup>1</sup>P = Rated Lamp Wattage, in Watts

(B) See sections 1605.1(k)(6) and 1605.3(k)(1)(B) of this Article for energy efficiency standards for incandescent reflector lamps that are general service lamps and sold on or after January 1, 2020.

**(3) Medium Base Compact Fluorescent Lamps.**

(A) A bare or covered lamp (no reflector) medium base compact fluorescent lamp manufactured on or after January 1, 2006, and sold before January 1, 2020, shall meet the requirements set forth in Table K-4.

**Table K-4**  
**Standards for Medium Base Compact Fluorescent Lamps Manufactured On or After**  
**January 1, 2006, and Sold Before January 1, 2020**

<b>Factor</b>	<b>Requirements</b>
<b>Labeled Wattage (Watts) and Configuration<sup>1</sup></b>	<b>Measured Initial Lamp Efficacy: lumens/watt must be at least:<sup>2</sup></b>
<i>Bare Lamp:</i>	
—— Labeled Wattage < 15	45.0
—— Labeled Wattage ≥ 15	60.0
<i>Covered Lamp (no reflector)</i>	
—— Labeled Wattage < 15	40.0
—— 15 ≥ Labeled Wattage < 19	48.0
—— 19 ≥ Labeled Wattage < 25	50.0
—— Labeled Wattage ≥ 25	55.0
Lumen Maintenance at 1,000-hours	≥90%
Lumen Maintenance at 40% of Lifetime <sup>2</sup>	80%



Rapid Cycle Stress Test	Each lamp must be cycled once for every two hours of lifetime. <sup>2</sup> At least 5 lamps must meet or exceed the minimum number of cycles.
Lifetime <sup>2</sup>	≥6,000
<sup>1</sup> Use labeled wattage to determine the appropriate efficacy requirements in this table; do not use measured wattage for this purpose.	
<sup>2</sup> Lifetime refers to lifetime of a compact fluorescent lamp as defined in section 1602(k) of this Article.	

(B) See sections 1605.1(k)(6) and 1605.3(k)(1)(B) of this Article for energy efficiency standards for compact fluorescent lamps that are general service lamps and sold on or after January 1, 2020.

**(4) General Service Incandescent Lamps and Modified Spectrum General Service Incandescent Lamps.**

(A) The energy consumption rate of federally regulated general service incandescent lamps and modified spectrum general service incandescent lamps, manufactured on or after the effective dates shown and sold before January 1, 2020, shall be no greater than the maximum rated wattage shown in Tables K-5 and K-6.

1. These standards apply to each lamp that:

- a. is intended for a general service or general illumination application (whether incandescent or not);
- b. has a medium screw base or any other screw base not defined in ANSI C81.61-2006; and
- c. is capable of being operated at a voltage at least partially within the range of 110 to 130 volts.

2. Each lamp described in section 1605.1(k)(4)(A)1. of this Article shall have a color rendering index that is greater than or equal to:

- a. 80 for nonmodified spectrum lamps; or
- b. 75 for modified spectrum lamps.

**Table K-5**

**Standards for Federally Regulated General Service Incandescent Lamps Manufactured On or After the Effective Date Shown Below, and Sold Before January 1, 2020**

<i>Rated Lumen Ranges</i>	<i>Maximum Rate Wattage</i>	<i>Minimum Rate Lifetime</i>	<i>Effective Date</i>
1490-2600	72	1,000 hours	January 1, 2012
1050—1489	53	1,000 hours	January 1, 2013
750—1049	43	1,000 hours	January 1, 2014

310—749	29	1,000 hours	January 1, 2014
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**Table K-6**

**Standards for Federally Regulated Modified Spectrum General Service Incandescent Lamps Manufactured On or After the Effective Date Shown Below, and Sold Before January 1, 2020**

<i>Rated Lumen Ranges</i>	<i>Maximum Rate Wattage</i>	<i>Minimum Rate Lifetime</i>	<i>Effective Date</i>
1118-1950	72	1,000 hours	January 1, 2012
788-1117	53	1,000 hours	January 1, 2013
563-787	43	1,000 hours	January 1, 2014
232-562	29	1,000 hours	January 1, 2014

(B) See sections 1605.1(k)(6) and 1605.3(k)(1)(B) of this Article for energy efficiency standards for general service incandescent lamps that are general service lamps and sold on or after January 1, 2020.

**(5) Candelabra Base Incandescent Lamps and Intermediate Base Incandescent Lamps.**

(A) The energy consumption rate of federally regulated candelabra base incandescent lamps and intermediate base incandescent lamps, manufactured on or after January 1, 2012, and sold before January 1, 2020, shall be no greater than the maximum rated wattage shown in Tables K-7.

**Table K-7**

**Standards for Federally Regulated Candelabra Base Incandescent Lamps and Intermediate Base Incandescent Lamps Manufactured On or After January 1, 2012, and Sold Before January 1, 2020**

<i>Lamp Base Type</i>	<i>Maximum Rated Wattage</i>
Candelabra	60
Intermediate	40

(B) See sections 1605.1(k)(6) and 1605.3(k)(1)(B) of this Article for energy efficiency standards for candelabra base incandescent lamps and intermediate base incandescent lamps that are general service lamps and sold on or after January 1, 2020.

(6)(2) **General Service Lamps.** General service lamps sold on or after January 1, 2020, shall have a minimum lamp efficacy of 45 lumens per watt. See section 1605.3(k) of this Article for energy efficiency standards for general service lamps.

(3) **State-Regulated LED Lamps.** See section 1605.3(k) of this Article for energy efficiency and energy design standards for state-regulated LED lamps.

(4) **State-Regulated Small Diameter Directional Lamps.** See section 1605.3(k) of this Article for energy efficiency and energy design standards for state-regulated small diameter directional lamps.

(5) **GU24 Base Lamps.** See section 1605.3(k) of this Article for energy design standards for GU24 base lamps.

[end of (k)]

...[skipping (l) through (r)]

(s) **Electric Motors and Compressors.**

...[skipping (s)(1) through (s)(6)]

(7) **Compressors.** See section 1605.3(s) of this Article for energy efficiency standards for state-regulated compressors.

(A) **Federally Regulated Compressors.** Federally regulated compressors manufactured on or after January 10, 2025, shall meet the applicable energy efficiency standards in Table S-5.

**Table S-5**  
**Standards for Federally Regulated Compressors Manufactured on or After January 10, 2025**

<u>Equipment Class</u>	<u>Minimum Package Isentropic Efficiency<sup>t</sup></u>	<u><math>\eta_{Regr}</math></u> <u>(package isentropic efficiency reference curve)</u>	<u>d</u> <u>(Percentage Loss Reduction)</u>
<u>Rotary, lubricated, air-cooled, fixed-speed compressor</u>	$\eta_{Regr} + (1 - \eta_{Regr}) * \left(\frac{d}{100}\right)$	$\frac{-0.00928 * \ln^2(.4719 * V_1) + 0.13911 * \ln(.4719 * V_1) + 0.27110}{}$	<u>-15</u>
<u>Rotary, lubricated, air-cooled, variable-speed compressor</u>	$\eta_{Regr} + (1 - \eta_{Regr}) * \left(\frac{d}{100}\right)$	$\frac{-0.01549 * \ln^2(.4719 * V_1) + 0.21573 * \ln(.4719 * V_1) + 0.00905}{}$	<u>-10</u>
<u>Rotary, lubricated, liquid-cooled, fixed-speed compressor</u>	$\frac{.02349 + \eta_{Regr} + (1 - \eta_{Regr}) * \left(\frac{d}{100}\right)}{}$	$\frac{-0.00928 * \ln^2(.4719 * V_1) + 0.13911 * \ln(.4719 * V_1) + 0.27110}{}$	<u>-15</u>
<u>Rotary, lubricated, liquid-cooled, variable-speed compressor</u>	$\frac{.02349 + \eta_{Regr} + (1 - \eta_{Regr}) * \left(\frac{d}{100}\right)}{}$	$\frac{-0.01549 * \ln^2(.4719 * V_1) + 0.21573 * \ln(.4719 * V_1) + 0.00905}{}$	<u>-15</u>

Where  $V_1$  is the full-load actual volume flow rate of the compressor, in cubic feet per minute, as determined in accordance with the test procedure in section 1604(s) of this Article.

† For “fixed-speed compressor” equipment classes, the relevant Package Isentropic Efficiency is Full-load Package Isentropic Efficiency. For “Variable-speed compressor” equipment classes, the relevant Package Isentropic Efficiency is Part-load Package Isentropic Efficiency. Both Full- and Part-Load Package Isentropic Efficiency are determined in accordance with the test procedure in section 1604(s) of this Article.

**(B) State-Regulated Compressors.** See section 1605.3(s) of this Article for energy efficiency standards for state-regulated compressors manufactured on or after January 1, 2022, but prior to January 10, 2025.

[end of (s)]

...[skipping (t) through (v)]

**(w) Battery Chargers and Battery Charger Systems.**

**(1) Federally Regulated Battery Chargers Manufactured on or after June 13, 2018.**

Federally regulated battery chargers manufactured on or after June 13, 2018 must have a unit energy consumption (UEC) less than or equal to the prescribed “Maximum UEC” standard when using the equations for the appropriate product class and corresponding rated battery energy as shown in Table W-1:

**Table W-1  
Standards for Federally Regulated Battery Chargers  
Manufactured on or after June 13, 2018**

<b>Product Class</b>	<b>Product Class Description</b>	<b>Rated Battery Energy (<math>E_{batt}^{**}</math>)</b>	<b>Special characteristic or battery voltage</b>	<b>Maximum UEC (kWh/yr) (as a function of <math>E_{batt}^{**}</math>)</b>
1	Low-Energy	$\leq 5$ Wh	Inductive Connection*	3.04
2	Low-Energy, Low-Voltage	$< 100$ Wh	$< 4$ V	$0.1440 * E_{batt} + 2.95$
3	Low-Energy, Medium-Voltage	$< 10$ Wh	$\geq 4$ V and $\leq 10$ V	1.42 kWh/year
		$\geq 10$ Wh		$0.0255 * E_{batt} + 1.16$
3	Low-Energy, Medium-Voltage	$< 100$ Wh	$\geq 4$ V and $\leq 10$ V	For $E_{batt} < 10$ Wh, 1.42 kWh/yr. For $E_{batt} \geq 10$ Wh, $0.0255 * E_{batt} + 1.16$
4	Low-Energy High-Voltage	$< 100$ Wh	$> 10$ V	$0.11 * E_{batt} + 3.18$

5	Medium-Energy Low-Voltage	$\geq 100 \text{ Wh}$ and $\leq 3000 \text{ Wh}$	$< 20 \text{ V}$	$0.0257 * E_{\text{batt}} + 0.815$
6	Medium-Energy High-Voltage	$\geq 100 \text{ Wh}$ and $\leq 3000 \text{ Wh}$	$\geq 20 \text{ V}$	$0.0778 * E_{\text{batt}} + 2.4$
7	High-Energy	$> 3000 \text{ Wh}$		$0.0502 * E_{\text{batt}} + 4.53$

\*Inductive connection and designed for use in a wet environment (e.g. electric toothbrushes).  
\*\* $E_{\text{batt}}$  = Rated battery energy as determined in 10 C.F.R. part 429.39(a).

**EXCEPTIONS to Battery Charger Standards in section 1605.1(w)(1) of this Article.** A battery charger shall not be subject to the standards in section 1605.1(w)(1) of this Article if it is a device that requires Federal Food and Drug Administration (FDA) listing and approval as a life-sustaining or life-supporting device in accordance with section 513 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 360(c)).

**(2) Federally Regulated Uninterruptible Power Supplies (UPSs) Manufactured on and after January 10, 2022.** Federally regulated uninterruptible power supplies manufactured on or after January 10, 2022, that utilize a NEMA 1-15P or 5-15P input plug and have an AC output shall have an average load adjusted efficiency that meets or exceeds the values shown in Table W-2 based on the rated output power ( $P_{\text{rated}}$ ) of the UPS.

**Table W-2**  
**Standards for Federally Regulated Uninterruptible Power Supplies (UPS)**  
**Manufactured on or after January 10, 2022**

<b><u>Battery charger product class</u></b>	<b><u>Rated output power</u></b>	<b><u>Minimum efficiency</u></b>
<b><u>10a (VFD UPSs)</u></b>	$0 \text{ W} < P_{\text{rated}} \leq 300 \text{ W}$	$-1.20\text{E-}06 * P_{\text{rated}}^2 + 7.17\text{E-}04 * P_{\text{rated}} + 0.862.$
	$300 \text{ W} < P_{\text{rated}} \leq 700 \text{ W}$	$-7.85\text{E-}08 * P_{\text{rated}}^2 + 1.01\text{E-}04 * P_{\text{rated}} + 0.946.$
	$P_{\text{rated}} > 700 \text{ W}$	$-7.23\text{E-}09 * P_{\text{rated}}^2 + 7.52\text{E-}06 * P_{\text{rated}} + 0.977.$
<b><u>10b (VI UPSs)</u></b>	$0 \text{ W} < P_{\text{rated}} \leq 300 \text{ W}$	$-1.20\text{E-}06 * P_{\text{rated}}^2 + 7.19\text{E-}04 * P_{\text{rated}} + 0.863.$
	$300 \text{ W} < P_{\text{rated}} \leq 700 \text{ W}$	$-7.67\text{E-}08 * P_{\text{rated}}^2 + 1.05\text{E-}04 * P_{\text{rated}} + 0.947.$
	$P_{\text{rated}} > 700 \text{ W}$	$-4.62\text{E-}09 * P_{\text{rated}}^2 + 8.54\text{E-}06 * P_{\text{rated}} + 0.979.$
<b><u>10c (VFI UPSs)</u></b>	$0 \text{ W} < P_{\text{rated}} \leq 300 \text{ W}$	$-3.13\text{E-}06 * P_{\text{rated}}^2 + 1.96\text{E-}03 * P_{\text{rated}} + 0.543.$
	$300 \text{ W} < P_{\text{rated}} \leq 700 \text{ W}$	$-2.60\text{E-}07 * P_{\text{rated}}^2 + 3.65\text{E-}04 * P_{\text{rated}} + 0.764.$
	$P_{\text{rated}} > 700 \text{ W}$	$-1.70\text{E-}08 * P_{\text{rated}}^2 + 3.85\text{E-}05 * P_{\text{rated}} + 0.876.$

~~(3)~~(2) See section 1605.3(w) of this Article for energy efficiency standards for battery charger systems.

**(x) Landscape Irrigation Equipment.**

See section 1605.3(x) of this Article for water efficiency standards for landscape irrigation equipment.

The following documents are incorporated by reference in section 1605.1.

*Number*

*Title*

...[skipping FEDERAL STATUTES AND REGULATIONS through AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)]

**ILLUMINATING ENGINEERING SOCIETY (IES)**

...[skipping the rest of section 1605.1]

Note: Authority cited: Sections 25213, 25218(e), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Sections 16, 26, and 30, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Reference: Sections 25216.5(d), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Section 16, Governor's Exec. Order No. B-29-15 (April 1, 2015).

## Section 1605.2. State Standards for Federally Regulated Appliances.

...[skipping (a) through (c)]

- (d) **Portable Air Conditioners, Evaporative Coolers, Ceiling Fans, Ceiling Fan Light Kits, Whole House Fans, Residential Exhaust Fans, Dehumidifiers, and Residential Furnace Fans, and Commercial and Industrial Fans and Blowers.**

...[skipping (d)(1)]

(2) **Portable Air Conditioners.**

(A) See section 1605.1(d) of this Article for energy efficiency standards for federally regulated portable air conditioners.

(B) See section 1605.3(d) of this Article for energy efficiency standards for state-regulated portable air conditioners.

- (3) There are no energy efficiency standards or energy design standards for spot air conditioners, evaporative coolers, whole house fans, or residential exhaust fans, or commercial and industrial fans and blowers.

(e) **~~Gas and Oil Space Heating Products Heaters and Electric Residential Boilers.~~**

(1) ~~**Gas and Oil Space Heaters.**~~ See sections 1605.1(e) and 1605.3(e) of this Article for energy efficiency standards for gas and oil space heaters, including but not limited to furnaces and boilers space heating products, including but not limited to central furnaces, boilers, duct furnaces, unit heaters, and vented home heating equipment.

(2) **Combination Space-Heating and Water-Heating Appliances.** See section 1605.3(e) of this Article for energy efficiency standards for combination space-heating and water-heating appliances.

...[skipping (f) through (j)]

(k) **Lamps.**

~~See sections 1605.1(k) and 1605.3(k) of this Article for energy efficiency standards for lamps.~~

(1) **Federally Regulated General Service Fluorescent Lamps.** See section 1605.1(k) of this Article for energy efficiency standards for federally regulated general service lamps.

(2) **General Service Lamps.** See section 1605.3(k) of this Article for energy efficiency standards for general service lamps.

(3) **State-Regulated LED Lamps.** See section 1605.3(k) of this Article for energy efficiency and energy design standards for state-regulated LED lamps.

(4) **State-Regulated Small Diameter Directional Lamps.** See section 1605.3(k) of this Article for energy efficiency and energy design standards for state-regulated small diameter directional lamps.

(5) **GU24 Base Lamps.** See section 1605.3(k) of this Article for energy design standards for GU24 base lamps.

...[skipping (l) through (r)]

**(s) Electric Motors and Compressors.**

(1) **Electric Motors.** See section 1605.1(s) of this Article for energy efficiency standards for electric motors that are federally regulated commercial and industrial equipment.

(2) **Compressors.**

(A) See section 1605.1(s) of this Article for energy efficiency standards for federally regulated compressors.

(B) See section 1605.3(s) of this Article for energy efficiency standards for state-regulated compressors.

...[skipping (t) through (v)]

**(w) Battery Chargers and Battery Charger Systems.**

(1) **Federally Regulated Battery Chargers and Federally Regulated Uninterruptible Power Supplies.** See section 1605.1(w) of this Article for energy efficiency standards for federally regulated battery chargers and federally regulated uninterruptible power supplies.

(2) **State-Regulated Battery Charger Systems.** See section 1605.3(w) of this Article for energy efficiency standards for battery charger systems.

**(x) Landscape Irrigation Equipment.**

See section 1605.3(x) of this Article for water efficiency standards for landscape irrigation equipment.

Note: Authority cited: Sections 25213, 25218(e), 25401.9, 25402(a)-25402(c), and 25960, Public Resources Code; and sections 16, 26, and 30, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Reference: Sections 25216.5(d), 25401.9, 25402(a)-25402(c), and 25960, Public Resources Code; and Section 16, Governor's Exec. Order No. B-29-15 (April 1, 2015).

**Section 1605.3. State Standards for Non-Federally Regulated Appliances.**

...[skipping (a) and (b)]

**(c) Central Air Conditioners, Air Filters, and Heat Pump Water-Heating Packages.**

(1) **Energy Efficiency Standards for Ground Water-Source Heat Pumps and Ground-Source Closed-Loop Heat Pumps.** The EER and COP for ground water-source heat pumps and ground-source closed-loop heat pumps manufactured on or



after October 29, 2003, shall be not less than the applicable values shown in Table C-40C-12.

**Table C-40C-12**  
**Standards for Ground Water-Source and Ground-Source Heat Pumps**

...[skipping table contents]

- (2) **Energy Efficiency Standards for Computer Room Air Conditioners.** The EER of evaporatively cooled computer room air conditioners manufactured on or after October 29, 2006, shall be not less than the applicable values shown in Table C-44C-13.
- (A) **Computer Room Air Conditioners.** See section 1605.1(c) of this Article for energy efficiency standards for air-cooled computer room air conditioners, glycol-cooled computer room air conditioners, and water-cooled computer room air conditioners.

**Table C-44C-13**  
**Standards for Evaporatively Cooled Computer Room Air Conditioners**

...[skipping table contents]

...[skipping the rest of (c)]

**(d) Portable Air Conditioners, Evaporative Coolers, Ceiling Fans, Ceiling Fan Light Kits, Whole House Fans, Residential Exhaust Fans, Dehumidifiers, and Residential Furnace Fans, and Commercial and Industrial Fans and Blowers.**

- (1) ~~Energy Efficiency Standards for Portable Air Conditioners.~~
- (A) State-Regulated Portable Air Conditioners. The combined energy efficiency ratio (CEER) of single-duct and dual-duct state-regulated portable air conditioners manufactured on or after February 1, 2020, but before January 10, 2025, shall not be less than the value calculated in the following equation, where SACC is the seasonally adjusted cooling capacity of a portable air conditioner:

$$CEER = 1.04 \times \frac{SACC}{(3.7117 \times SACC^{0.6384})}$$

(B) Federally Regulated Portable Air Conditioners. See section 1605.1(d) of this Article for energy efficiency standards for federally regulated portable air conditioners manufactured on or after January 10, 2025.

- (2) **Dehumidifiers and Residential Furnace Fans.** See section 1605.1(d) of this Article for energy efficiency standards for dehumidifiers and residential furnace fans.

- (3) **Ceiling Fans and Ceiling Fan Light Kits.** See section 1605.1(d) of this Article for energy efficiency and energy design standards for ceiling fans and ceiling fan light kits.
- (4) There are no energy efficiency standards or energy design standards for spot air conditioners, evaporative coolers, whole house fans, or residential exhaust fans, or commercial and industrial fans and blowers.

**(e) Gas and Oil Space Heating Products Heaters and Electric Residential Boilers.**

**(1) Boilers, Central Furnaces, and Duct Furnaces.**

**(A) Duct Furnaces.**

1. The energy efficiency standards for duct furnaces are shown in Table E-7. The efficiency of boilers, central furnaces, and duct furnaces, shall be no less than, and the standby loss shall be not greater than, the applicable values shown in Tables E-7, E-8, and E-9.

**Table E-7  
Standards for Boilers**

<i>Appliance</i>	<i>Output (Btu/hr)</i>	<i>Standards</i>		
		<i>Minimum AFUE %</i>	<i>Minimum Combustion Efficiency % *</i>	<i>Maximum Standby Loss (watts)</i>
Gas steam boilers with 3-phase electrical supply	< 300,000	75	—	—
All other boilers with 3-phase electrical supply	< 300,000	80	—	—
Natural gas, non-packaged boilers	≥ 300,000	—	80	147
LPG Non-packaged boilers	≥ 300,000	—	80	352
Oil, non-packaged boilers	≥ 300,000	—	83	—

\*At both maximum and minimum rated capacity, as provided and allowed by the controls.

**Table E-8  
Standards for Central Furnaces**

<i>Appliance</i>	<i>Application</i>	<i>Minimum Efficiency %</i>
Central furnaces with 3-phase electrical supply < 225,000 Btu/hour	Mobile Home	75 AFUE
	All others	78 AFUE or 80 Thermal Efficiency (at manufacturer's option)

**Table E-9E-7  
Standards for Duct Furnaces**

<i>Appliance</i>	<i>Fuel</i>	<i>Standards</i>		
		<i>Minimum Thermal Efficiency %<sup>1</sup></i>		<i>Maximum Energy Consumption during standby (watts)</i>
		<i>At maximum rated capacity</i>	<i>At minimum rated capacity</i>	
Duct furnaces	Natural gas	80	75	10
Duct furnaces	LPG <sup>2</sup>	80	75	147

<sup>1</sup> As provided and allowed by the controls.  
<sup>2</sup> Designed expressly for use with LPG.

2.(B) Natural gas-fired unit duct furnaces manufactured on or after January 1, 2006, shall have either power venting or an automatic flue damper.

(B) Other furnaces. See section 1605.1(e) of this Article for furnaces that are federally regulated consumer products or federally regulated commercial and industrial equipment.

~~(C) See section 1605.1(e) of this Article for:~~

- ~~1. design standards for unit heaters manufactured on or after August 8, 2008;~~
- ~~2. efficiency standards for wall furnaces, floor furnaces, room heaters, gas and oil-fired central furnaces and residential electric furnaces that are federally regulated consumer products; and~~
- ~~3. efficiency standards and design standards for boilers that are federally regulated consumer products.~~

~~(2) Oil Wall Furnaces, Oil Floor Furnaces, and Infrared Gas Space Heaters.~~ There are no energy efficiency standards or energy design standards for oil wall furnaces, oil floor furnaces, or infrared gas space heaters.

(2)(3) Combination Space-Heating and Water-Heating Appliances.

- (A) If part of a combination space-heating and water-heating appliance is a water heater, that part shall comply with the applicable water heater standards in section 1605.1(f) of this Article.
- (B) If part of a combination space-heating and water-heating appliance is a furnace, boiler, or other space heater, that part shall comply with the applicable furnace, boiler, or other space heater standards in sections 1605.1(e) and 1605.3(e) of this Article.
- (C) Water heaters that are federally regulated appliances, and that are contained in combination space-heating and water-heating appliances that are federally regulated appliances, are required only to meet the standard for the applicable type of water heater, and are not required to meet any standard for space heaters.

- (3) **Boilers.** See section 1605.1(e) of this Article for energy efficiency and energy design standards for boilers.
- (4) **Unit Heaters.** See section 1605.1(e) of this Article for energy design standards for unit heaters.
- (5) **Vented Home Heating Equipment.** See section 1605.1(e) of this Article for energy efficiency standards for home heating equipment that are federally regulated consumer products.
- (6) There are no energy efficiency standards or energy design standards for infrared gas space heaters.
- (4) ~~**Other Gas and Oil Space Heaters.** See section 1605.1(e) of this Article for standards for gas and oil space heaters that are federally regulated.~~

[end of (e)]

...[skipping (f) and (g)]

**(h) Plumbing Fittings.**

...[skipping (h)(1) through (h)(3)]

**(4) Commercial Pre-rinse Spray Valves.**

(A) Commercial pre-rinse spray valves manufactured on or after January 1, 2006, shall have a minimum spray force of not less than 4.0 ounces-force (ozf) [113 grams-force (gf)].

(B) See section 1605.1(h) of this Article for water consumption standards for commercial pre-rinse spray valves.

(5) **Showerheads.** The flow rate of showerheads shall be not greater than the applicable values shown in Table H-5.

**Table H-5  
Standards for Showerheads**

...[skipping table contents]

(6) **Other Plumbing Fittings.** See section 1605.1(h) of this Article for water efficiency standards for plumbing fittings that are federally regulated.

[end of (h)]

...[skipping (i) and (j)]

**(k) Lamps.**

**(1) General Service Lamps.**

~~(A) General service lamps manufactured on or after January 1, 2018, and sold before January 1, 2020, shall meet the standards shown in Table K-8.~~

**Table K-8  
Standards for General Service Lamps**

<b><i>Lumen Ranges</i></b>	<b><i>Minimum Lamp Efficacy</i></b>	<b><i>Minimum Rated Lifetime</i></b>	<b><i>Effective Date</i></b>
310-2,600	45 lumens per watt	1,000 Hours	Manufactured on or after January 1, 2018, and sold before January 1, 2020

~~(B) General service lamps sold on or after January 1, 2020, shall have a minimum lamp efficacy of 45 lumens per watt.~~

**(2) State-Regulated LED Lamps.**

(A) State-regulated LED lamps with lumen output of 150 lumens or greater for E12 bases, or 200 lumens or greater for E17, E26, and GU24 bases, and manufactured on or after January 1, 2018, shall meet all of the standards shown in Table K-9K-3 and shall have the following:

...[skipping (k)(2)(A)1. through (k)(2)(A)7.]

(B) In addition to the requirements in section 1605.3(k)(2)(A) of this Article, state-regulated LED lamps manufactured on or after July 1, 2019, shall have a standby mode power of 0.2 watt or less.

**Table K-9K-3  
Standards for State-Regulated LED Lamps**

<b><i>Effective Date</i></b>	<b><i>Minimum Compliance Score</i></b>	<b><i>Minimum Efficacy Lumens Per Watt</i></b>
January 1, 2018	282	68
July 1, 2019	297	80

The compliance score shall be calculated as the sum of the efficacy and 2.3 times the CRI of a lamp.

...[skipping (k)(3) and (k)(4)]

- (5) **Federally Regulated General Service Fluorescent Lamps.** See section 1605.1(k) of this Article for energy efficiency standards for federally regulated lamps federally regulated general service fluorescent lamps.

[end of (k)]

...[skipping (l) through (r)]

**(s) Electric Motors and Compressors.**

- (1) **Electric Motors.** See section 1605.1(s) of this Article for energy efficiency standards for electric motors that are federally regulated commercial and industrial equipment.
- (2) **Compressors.**
- (A) **State-Regulated Compressors.** State-regulated compressors manufactured on or after January 1, 2022, but before January 10, 2025, shall meet the applicable performance values energy efficiency standards in Table S-5S-6.

**Table S-5S-6**

**Standards for State-Regulated Compressors Manufactured on or After January 1, 2022, but Before January 10, 2025**

...[skipping table contents]

- (B) **Federally Regulated Compressors.** See section 1605.1(s) of this Article for energy efficiency standards for federally regulated compressors manufactured on or after January 10, 2025.

[end of (s)]

...[skipping (t) and (u)]

**(v) Computers, Computer Monitors, Televisions, Signage Displays, and Consumer Audio and Video Equipment.**

...[skipping (v)(1)]

- (2) **Televisions and Signage Displays.** All televisions and signage displays manufactured on or after the effective dates shall meet the requirements shown in Table V-3.
- (3) **Televisions and Signage Displays Manufactured On or After January 1, 2011.** In addition, televisions and signage displays manufactured on or after January 1, 2011 shall meet the requirements shown in sections 1605.3(v)(3)(A), 1605.3(v)(3)(B), and 1605.3(v)(3)(C) of this Article.
- (A) A television or signage display shall automatically enter TV standby-passive mode or standby-active mode after a maximum of 15 minutes without video or audio input on the selected input mode.

- (B) A television or signage display shall enter TV standby-passive mode when turned off by remote or integrated button/switch.
- (C) The peak luminance of the product in "home" mode, or in the default mode as shipped, shall not be less than 65% of the peak luminance of the "retail" mode, or the brightest selectable preset mode, of the product.

**Table V-3  
Standards for Televisions and Signage Displays**

<b>Effective Date</b>	<b>Screen Size (area A in square inches)</b>	<b>Maximum TV and Signage Display Standby-passive Mode Power Usage (watts)</b>	<b>Maximum On Mode Power Usage (P in Watts)</b>	<b>Minimum Power Factor for (P ≥ 100W)</b>
January 1, 2006	All	3 W	No standard	No standard
January 1, 2013	A < 1400	1 W	$P \leq 0.12 \times A + 25$	0.9

**EXCEPTIONS 1 to Sections 1605.3(v)(2) and 1605.3(v)(3) of this Article:** The standards found in sections 1605.3(v)(2) and 1605.3(v)(3) of this Article do not apply to professional signage displays.

**EXCEPTION 2 to Sections 1605.3(v)(2) and 1605.3(v)(3) of this Article:** The standards found in sections 1605.3(v)(2) and 1605.3(v)(3) of this Article do not apply to televisions within the scope of 10 C.F.R. section 430 and manufactured on or after September 11, 2023.

...[skipping the rest of (v)]

**(w) Battery Chargers and Battery Charger Systems.**

- (1) **Energy Efficiency Standards for Large Battery Charger Systems.** Large battery charger systems manufactured on or after January 1, 2014, and that are not federally regulated battery chargers, shall meet the applicable performance values in Table W-2 Table W-3.

**Table W-2W-3  
Standards for Large Battery Charger Systems**

...[skipping table contents]

- (2) **Energy Efficiency Standards for Small Battery Charger Systems.** Except as provided in sections 1605.3(w)(3), 1605.3(w)(4), and 1605.3(w)(5) of this Article, the following small battery charger systems shall meet the applicable performance values in Table W-3 Table W-4:

- (A) consumer products that are manufactured on or after February 1, 2013 and before June 13, 2018; and
- (B) those that are not consumer products and are manufactured on or after January 1, 2017.

**EXCEPTION to Section 1605.3(w)(2) of this Article:** An à la carte charger that is:

- a. provided separately from and subsequent to the sale of small battery charger system manufactured before the effective date of the applicable standard in section 1605.3(w)(2) of this Article;
- b. necessary as a replacement for, or as a replacement component of, such small battery charger system;
- c. is provided by a manufacturer directly to a consumer or to a service or repair facility; and
- d. is manufactured no more than five years after the effective date in section 1605.3(w)(2) of this Article applicable to the particular small battery charger system for which the à la carte charger is intended as a replacement or replacement component,

shall not be required to meet the applicable standard in section 1605.3(w)(2) and ~~Table W-3~~Table W-4 of this Article.

**Table W-3**~~W-4~~  
**Standards for Small Battery Charger Systems**

...[skipping table contents]

- (3) **Inductive Charger Systems.** Inductive charger systems manufactured on or after February 1, 2013 and before June 13, 2018 and inductive charger systems that are not federally regulated battery chargers and manufactured on or after February 1, 2013, shall meet either the applicable performance standards in ~~Table W-3~~Table W-4 or shall use less than 1 watt in maintenance mode, less than 1 watt in no battery mode, and an average of 1 watt or less over the duration of the charge and maintenance mode test.
- (4) **Battery Backup and Non-Federally Regulated Uninterruptible Power Supplies.** Battery backup and non-federally regulated uninterruptible power supplies that are manufactured on or after:
  - (A) February 1, 2013, for consumer products; and
  - (B) January 1, 2017, for products that are not consumer productsshall consume no more than  $0.8 + 0.0021 \times E_b$  watts in maintenance mode where  $E_b$  is the battery capacity in watt-hours.
- (5) **Standards for Federally Regulated Battery Chargers and Federally Regulated Uninterruptible Power Supplies.** ~~Manufactured on or After June 13, 2018.~~ See section 1605.1(w) of this Article for standards for federally regulated battery chargers



manufactured on or after June 13, 2018, and for federally regulated uninterruptible power supplies manufactured on or after January 10, 2022.

**[end of (w)]**

**...[skipping (x)]**

The following documents are incorporated by reference in section 1605.3.

*Number*

*Title*

**...[skipping FEDERAL REQUIREMENTS through AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)]**

**AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)**

ASME A112.19.2/CSA B45.1-2013 Ceramic Plumbing Fixtures  
Waste Extraction Test (Section 7.10)

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**...[skipping the rest of section 1605.3]**

Note: Authority cited: Sections 25213, 25218(e), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Sections 16, 26, and 30, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Reference: Sections 25216.5(d), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Section 16, Governor's Exec. Order No. B-29-15 (April 1, 2015).

**Section 1606. Filing by Manufacturers; Listing of Appliances in the MAEDbS.**

**(a) Filing of Statements.**

Each manufacturer shall electronically file with the Executive Director through the MAEDbS a statement for each appliance that is sold or offered for sale in California. The statement shall contain all of the information described in paragraphs (2) through (4) of this subsection and shall meet all of the requirements of paragraph (1) of this subsection and all other applicable requirements in this Article.

The effective dates of this section shall be the same as the effective dates shown in section 1605.1, 1605.2 or 1605.3 of this Article for appliances for which there is an energy efficiency, energy consumption, energy design, water efficiency, water consumption, or water design standard in section 1605.1, 1605.2, or 1605.3 of this Article. For appliances with no energy efficiency, energy consumption, energy design, water efficiency, water consumption, or water design standard in section 1605.1, 1605.2, or 1605.3 of this Article, the effective date of this section shall be one year after they are added to section 1601 of this Article, unless a different effective date is specified.

**EXCEPTIONS to Section 1606(a) of this Article:** Section 1606(a) of this Article is not applicable to:

1. external power supplies,
2. small electric motors,
3. à la carte chargers meeting the EXCEPTION noted in section 1605.3(w)(2) of this Article, or
4. general service lamps, excluding state-regulated LED lamps and state-regulated small diameter directional lamps subject to the standards in section 1605.3(k) of this Article.
5. federally regulated consumer water heaters  $\geq 2$  and  $< 20$  gallons rated storage volume, or
6. single and dual duct portable air conditioners with variable speed motors.

...[skipping (a)(1) and (a)(2)]

**(3) Testing and Performance Information.**

- (A) A statement that the appliance has been tested in accordance with all applicable requirements of sections 1603 and 1604 of this Article. If section 1604 of this Article provides more than one test method that may be used, the manufacturer shall identify which method was used.

**EXCEPTION 1 to Section 1606(a)(3)(A) of this Article:**

For state-regulated compressor appliances for whom an alternative efficiency determination method (AEDM) was used to determine energy consumption or efficiency values consistent with 10 C.F.R. section 429.70, the manufacturer shall submit a statement that the appliance has been tested in accordance with all applicable requirements of sections 1603 and 1604 of this Article, or that the appliance has been rated according to an alternative efficiency determination method (AEDM) in accordance with all applicable requirements of section 1604(s) of this Article.

...[skipping the rest of the EXCEPTIONS]

...[skipping (a)(3)(B) through (a)(3)(D)]

**Table X  
Data Submittal Requirements**

<b>Appliance</b>	<b>Required Information</b>	<b>Permissible Possible Answers</b>
All Appliances	* Manufacturer's Name	
	* Brand Name	
	* Model Number	
	Date model to be displayed	
	Regulatory Status	Federally regulated consumer product, federally regulated commercial and industrial equipment, non-federally regulated, other

...[skipping A, B, and C "Air Filters manufactured on or after July 1, 2024"]

**Table X Continued - Data Submittal Requirements**

All Central Air Conditioners and Central Air-Conditioning Heat Pumps	*Coil Model Number with which Compressor was Tested (for split systems only)	-	-	-
-	-	-	-	-
-	-	-	*Type	Air conditioner, heat pump (heating and cooling), heat pump (heating only), heat pump (cooling only)
-	-	-	*Energy Source for Cooling	Electricity, natural gas
-	-	-	*Energy Source for Heating	Gas, oil, electric heat pump, electric resistance, heat pump and electric resistance, none
-	-	-	-	-
-	-	-	*AHRI Classification	-
-	-	-	-	-
-	-	-	*Voltage	-
-	-	-	-	-
-	-	-	*Electrical Phase	1, 3
-	-	-	-	-
-	-	-	Variable Refrigerant Flow	True, False

-	-	-	-	-
-	-	-	Heat Recovery (For Variable Refrigerant Flow models only)	-
-	-	-	-	-
-	-	-	Vertical Air Conditioner (for single package models only) (required on or after January 1, 2010)	True, False
-	-	-	-	-
-	-	-	Refrigerant Type 1,2	Ozone-depleting, non-ozone-depleting
-	-	-	-	-
-	-	-	Thermostatic Expansion Valve (for air-source or air-cooled models only)	True, False
-	-	-	-	-
-	-	-	Compressor Motor Design	Single-speed, dual-speed, multiple-speed, variable-speed
-	-	-	-	-
-	Air-Cooled, Single Package CAG <65,000 Btu/hour and	Seasonal Energy Efficiency Ratio (SEER) <sup>3</sup>	-	-
-	-	-	-	-
-	-	-	Cooling Capacity at 82°F <sup>3</sup>	-
-	-	-	-	-
-	-	-	Electrical Input at 82°F <sup>3</sup>	-
-	-	-	-	-
-	-	-	Degradation Coefficient at 82°F <sup>3</sup>	-
-	-	-	-	-
-	-	-	Cooling Capacity at 95°F	-
-	-	-	-	-
-	Air-Cooled, Split System CAG <65,000	Electrical Input at 95°F	-	-

-	Btu/hour	Energy Efficiency Rate (EER) at 95° F	-	-
-	-	-	-	-
-	-	-	Average Off-Mode Power Consumption (Watts)	-
-	-	-	-	-
-	-	-	Space-constrained Product	Space-constrained; variable speed mini-split; small duct, high velocity; not space-constrained
-	-	-	-	-
-	Air-Source, Single Package Heat Pumps <65,000 Btu/hour and	Seasonal Energy Efficiency Ratio (SEER)	-	-
-	-	-	-	-
-	-	-	Cooling Capacity at 82° F3	-
-	-	-	-	-
-	-	-	Electrical Input at 82° F3	-
-	-	-	-	-
-	-	-	Degradation Coefficient at 82° F3	-
-	-	-	-	-
-	-	-	Cooling Capacity at 95° F	-
-	-	-	-	-
-	Air-Source Split System Heat Pumps <65,000 Btu/hour	Electrical Input at 95° F	-	-
-	-	-	-	-
-	-	-	Energy Efficiency Ratio (EER) at 95° F	-
-	-	-	-	-
-	-	-	Average Off-Mode Power Consumption (Watts) (for models manufactured on or after January 1, 2015 only)	-
-	-	-	-	-

-	-	-	-	-
-	-	-	Heating Seasonal Performance Factor (HSPF) <sup>3</sup>	-
-	-	-	-	-
-	-	-	Heating Capacity	-
-	-	-	-	-
-	-	-	Electrical Input	-
-	-	-	-	-
-	-	-	Coefficient of Performance (COP) at 47° F (single package vertical heat pumps only)	-
-	-	-	-	-
-	-	-	Space-constrained Product	Space-constrained; variable speed mini-split; small duct, high velocity; not space-constrained
-	-	-	-	-
-	Air-Cooled, Single Package	Cooling Capacity at 95° F	-	-
-	CAC ≥ 65,000 and < 760,000 Btu/hour and	Electrical Input at 95° F	-	-
-	-	-	-	-
-	-	-	-	-
-	Air-Cooled Split System CAC ≥ 65,000 and < 760,000 Btu/hour	Energy Efficiency Ratio (EER) at 95° F (effective for models manufactured before January 1, 2018)	-	-
-	-	-	-	-
-	-	-	Integrated Energy Efficiency Ratio (IEER) (effective for models manufactured on or after January 1, 2018)	-
-	-	-	-	-
-	-	-	Integrated Part Load Value (IPLV) If Applicable	-
-	-	-	-	-

-	-	-	Heating System Type 1,2	Gas, oil, electric resistance, none
-	-	-	-	-
-	Air-Source, Single Package Heat	Cooling Capacity at 95°F	-	-
-	Pumps ≥ 65,000 Btu/hour and < 760,000 Btu/hour; and	Electrical Input at 95°F	-	-
-	-	Energy Efficiency Ratio (EER) at 95°F (effective for models manufactured before January 1, 2018)	-	-
-	Air-Source, Split-System Heat Pumps ≥ 65,000 and < 750,000 Btu/hour	Integrated Energy Efficiency Ratio (IEER) (effective for models manufactured on or after January 1, 2018)	-	-
-	-	-	-	-
-	-	-	Integrated Part Load Value (IPLV) If Applicable	-
-	-	-	-	-
-	-	-	Heating Capacity at 47°F	-
-	-	-	-	-
-	-	-	Electrical Input at 47°F	-
-	-	-	-	-
-	-	-	Coefficient of Performance (COP) at 47°F	-
-	-	-	-	-
-	-	-	Heating Capacity at 17°F	-
-	-	-	-	-
-	-	-	Electrical Input at 17°F	-
-	-	-	-	-
-	-	-	Coefficient of Performance (COP) at 17°F	-

-	-	-	-	-
-	Evaporatively Cooled Single Package CAC < 760,000 Btu/hour and	Cooling Capacity at 95° F	-	-
-	-	-	-	-
-	-	Electrical Input at 95° F	-	-
-	-	-	-	-
-	-	Energy Efficiency Ratio (EER) at 95° F	-	-
-	-	-	-	-
-	Evaporatively-Cooled Split System CAC < 760,000 Btu/hour	Integrated Part Load Value (IPLV) If Applicable	-	-
-	-	-	-	-
-	-	Heating System Type 1,2	Gas, oil electric resistance, none	-
-	-	-	-	-
-	Water-Cooled Single-Package CAC < 760,000 Btu/hour and	Compressor Electrical Input (for models ≥ 65,000 Btu/hour only)	-	-
-	-	-	-	-
-	-	Indoor Fan Electrical Input (for models ≥ 65,000 Btu/hour only) 3	-	-
-	-	-	-	-
-	Water-Cooled Split System CAC < 760,000 Btu/hour	Outdoor Fan Electrical Input (for models ≥ 65,000 Btu/hour only) 3	-	-
-	-	-	-	-
-	-	Cooling Capacity at 85° F Entering Water Temperature	-	-
-	-	-	-	-
-	-	Electrical Input at 85° F Entering Water Temperature	-	-
-	-	-	-	-



-	-	-	-	-
-	Air-Cooled, Single Package CAC ≥ 65,000 and < 760,000 Btu/hour and	Cooling Capacity at 95°F	-	-
-	-	Electrical Input at 95°F	-	-
-	-	-	-	-
-	Air-Cooled Split System CAC ≥ 65,000 and < 760,000 Btu/hour	Energy Efficiency Ratio (EER) at 95°F (effective for models manufactured before January 1, 2018)	-	-
-	-	-	-	-
-	-	-	Integrated Energy Efficiency Ratio (IEER) (effective for models manufactured on or after January 1, 2018)	-
-	-	-	-	-
-	-	-	Integrated Part Load Value (IPLV) If Applicable	-
-	-	-	-	-
-	-	-	Energy Efficiency Ratio (EER) at 85°F	-
-	-	-	-	-
-	-	-	Entering Water Temperature	-
-	-	-	-	-
-	-	-	Low Temperature EER at 70°F Entering Water Temperature (for models < 65,000 Btu/hour only)	-
-	-	-	-	-
-	-	-	Heating System Type <sup>1</sup>	Gas, oil electric resistance, none
-	-	-	-	-

-	Water-Source, Single Package Heat Pumps < 760,000 Btu/hour and	Compressor Electrical Input (for models ≥ 65,000 Btu/hour only)	-	-
-	-	-	-	-
-	-	Indoor Fan Electrical Input (for models ≥ 65,000 Btu/hour only)3	-	-
-	-	-	-	-
-	Water-Source Split System Heat Pumps < 760,000 Btu/hour	Outdoor Fan Electrical Input (for models ≥ 65,000 Btu/hour only)3	-	-
-	-	-	-	-
-	-	-	Cooling Capacity at 86° F Entering Water Temperature	-
-	-	-	-	-
-	-	-	Electrical Input at 86° F Entering Water Temperature	-
-	-	-	-	-
-	-	-	Energy Efficiency Ratio (EER) at 86° F Entering Water Temperature	-
-	-	-	-	-
-	-	-	Heating Capacity at 68° F Entering Water Temperature	-
-	-	-	-	-
-	-	-	Electrical Input at 68° F Entering Water Temperature	-
-	-	-	-	-
-	-	-	Coefficient of Performance (COP) at 68° F Entering Water Temperature	-
-	-	-	-	-

-	Ground Water-Source, Single Package Heat Pumps and	Compressor Electrical Input (for models $\geq$ 65,000 Btu/hour only)	-	-
-	-	-	-	-
-	-	Indoor Fan Electrical Input (for models $\geq$ 65,000 Btu/hour only) <sup>3</sup>	-	-
-	-	-	-	-
-	Ground Water-Source Split System Heat Pumps	Outdoor Fan Electrical Input (for models $\geq$ 65,000 Btu/hour only) <sup>3</sup>	-	-
-	-	-	-	-
-	-	Cooling Capacity at 59° F Entering Water Temperature (for all sizes, including but not limited to models $\geq$ 240,000 Btu/hour)	-	-
-	-	-	-	-
-	-	Electrical Input at 59° F Entering Water Temperature (for all sizes, including but not limited to models $\geq$ 240,000 Btu/hour)	-	-
-	-	-	-	-
-	Air-Cooled, Single Package CAC $\geq$ 65,000 and $<$ 760,000 Btu/hour and	Cooling Capacity at 95° F	-	-
-	-	Electrical Input at 95° F	-	-
-	-	-	-	-
-	Air-Cooled Split System CAC $\geq$ 65,000 and $<$ 760,000 Btu/hour	Energy Efficiency Ratio (EER) at 95° F (effective for models manufactured before January 1, 2018)	-	-
-	-	-	-	-

-	-	-	Integrated Energy Efficiency Ratio (IEER) (effective for models manufactured on or after January 1, 2018)	-
-	-	-	Integrated Part Load Value (IPLV) if Applicable	-
-	-	-	-	-
-	-	-	Energy Efficiency Ratio (EER) at 59°F Entering Water Temperature (for all sizes, including but not limited to models $\geq 240,000$ Btu/hour)	-
-	-	-	-	-
-	-	-	Heating Capacity at 50°F Entering Water Temperature (for all sizes, including but not limited to models $\geq 240,000$ Btu/hour)	-
-	-	-	-	-
-	-	-	Electrical Input at 50°F Entering Water Temperature (for all sizes, including but not limited to models $\geq 240,000$ Btu/hour)	-
-	-	-	-	-
-	-	-	Coefficient of Performance (COP) at 50°F Entering Water Temperature (for all sizes, including but not limited to models $\geq 240,000$ Btu/hour)	-
-	-	-	-	-
-	Ground-Source, Closed-Loop, Single Package Heat Pumps and	Compressor Electrical Input (for models $\geq 65,000$ Btu/hour only)	-	-

-	-	-	-	-
-	Ground-Source, Closed-Loop, Split System Heat Pumps	Indoor Fan Electrical Input (for models $\geq$ 65,000 Btu/hour only) <sup>3</sup>	-	-
-	-	-	-	-
-	-	-	Outdoor Fan Electrical Input (for models $\geq$ 65,000 Btu/hour only) <sup>3</sup>	-
-	-	-	-	-
-	-	-	Cooling Capacity at 77° F Entering Brine Temperature	-
-	-	-	-	-
-	-	-	Electrical Input at 77° F Entering Brine Temperature	-
-	-	-	-	-
-	-	-	Energy Efficiency Ratio (EER) at 77° F Entering Brine Temperature	-
-	-	-	-	-
-	-	-	Heating Capacity at 32° F Entering Brine Temperature	-
-	-	-	-	-
-	-	-	Electrical Input at 32° F Entering Brine Temperature	-
-	-	-	-	-
-	-	-	Coefficient of Performance (COP) at 32° F Entering Brine Temperature	-
-	-	-	-	-
-	Gas-Fired Air	Cooling Capacity- (cooling bin summary)	-	-
-	Conditioners and	-	-	-
-	Gas-Fired Heat Pumps	Gas Input While Cooling (cooling bin summary)	-	-
-	-	-	-	-

Electric Input While Cooling- (cooling bin summary)	-	-	-	-
-	-	-	-	-
-	-	-	Cooling COP- Gas	-
-	-	-	-	-
-	-	-	Cooling COP- Electric	-
-	-	-	-	-
-	-	-	Heating Output- (heating bin summary)	-
-	-	-	-	-
-	-	-	Gas Input While Heating- (heating bin summary)	-
-	-	-	-	-
-	-	-	Electric Input While Heating- (heating bin summary)	-
-	-	-	-	-
-	-	-	Heating COP- Gas	-
-	-	-	-	-
-	-	-	Heating COP- Electric	-

Table X Continued - Data Submittal Requirements

	<b>Appliance</b>	<b>Required Information</b>	<b>Permissible-Possible Answers</b>
C	Central Air Conditioners and Heat Pumps Other than Multi-Split Systems (tested under 10 C.F.R. section 430.23(m) (Appendix M1 to subpart B of part 430))	Individual Model Number Covered by Basic Model (outdoor unit or package unit)	
		Individual Model Number (indoor unit) (if applicable)	
		Individual Model Number (air mover or indoor unit if fan is part of indoor unit) (if applicable)	
		Product Group Code	
		Certification Is Based on a Waiver of DOE's Test Procedure Requirements	True, False
		Certification Is Based upon an Exception Relief from an Applicable Standard by DOE's Office of Hearing and Appeals	True, False
		Cooling Capacity (Btu/h)	
		Heating Capacity (Btu/h) (heat pumps only) (voluntary)	
		Seasonal Energy Efficiency Ratio 2 (SEER2) (Btu/Wh)	

	<u>Heating Seasonal Performance Factor 2 (HSPF2) (Btu/Wh) (heat pumps only)</u>	
	<u>Average Off Mode Power Consumption Rating is Based on Testing of This Combination</u>	<u>True, False</u>
	<u>Average Off Mode Power Consumption (watts)</u>	
	<u>Energy Efficiency Ratio 2 (EER2) (in Btu/Wh) (if applicable)</u>	
	<u>Coil System Type</u>	<u>Coil-Only, Blower Coil</u>
	<u>This is a Variable-Speed Compressor System</u>	<u>True, False</u>
	<u>Type of Air Conditioner or Heat Pump Used in Testing or Rating</u>	<u>Ceiling-Mount, Wall-Mount, Small-Duct High-Velocity (SDHV), Space Constrained, Mobile Home, Conventional</u>

Table X Continued - Data Submittal Requirements

	<b>Appliance</b>	<b>Required Information</b>	<b>Permissible Possible Answers</b>
C	<u>Multi-Split System Central Air Conditioners and Heat Pumps (tested under 10 C.F.R. section 430.23(m) (Appendix M1 to subpart B of part 430))</u>	<u>Manufacturer (outdoor unit)</u>	
		<u>Brand Name (outdoor unit)</u>	
		<u>Individual Model Number Covered by Basic Model (outdoor unit)</u>	
		<u>Indoor Unit Manufacturer(s)</u>	
		<u>Indoor Unit Brand(s)</u>	
		<u>Indoor Unit Individual Model Number(s)</u>	
		<u>Air Mover Manufacturer(s) (if applicable)</u>	
		<u>Air Mover Brand(s) (if applicable)</u>	
		<u>Air Mover Individual Model Number(s) (if applicable)</u>	
		<u>Product Group Code</u>	
		<u>Certification is Based on a Waiver of DOE's Test Procedure Requirements</u>	True, False
		<u>Certification Is Based upon an Exception Relief from an Applicable Standard by DOE</u>	True, False
		<u>Cooling Capacity (Btu/h)</u>	
		<u>Heating Capacity (Btu/h) (heat pumps only) (voluntary)</u>	
		<u>Number of Indoor Units Tested with the Outdoor Unit</u>	
		<u>Seasonal Energy Efficiency Ratio 2 (SEER2) (Btu/Wh)</u>	
		<u>Type of Air Conditioner or Heat Pump Used in Testing or Rating</u>	<u>Ceiling-Mount, Wall-Mount, Low-Static, Mid-Static, Small Duct High Velocity, Space Constrained, Mobile Home, Conventional, Not Otherwise Listed</u>
		<u>Heating Seasonal Performance Factor 2 (HSPF2) (Btu/W-h) (heat pumps only)</u>	
		<u>Average Off Mode Power Consumption Rating is Based on Testing of This Combination</u>	True, False
		<u>Average Off Mode Power Consumption (Watts)</u>	
<u>Energy Efficiency Ratio 2 (EER2) (Btu/Wh) (if applicable)</u>			
<u>This is a Variable-Speed Compressor System</u>	True, False		



Table X Continued - Data Submittal Requirements

	<b>Appliance</b>	<b>Required Information</b>	<b>Permissible Possible Answers</b>
C	<u>Commercial Air Conditioners and Commercial Heat Pumps</u>	<u>Individual Model Number Covered by Basic Model</u>	
		<u>Certification Is Based Upon a Waiver of DOE's Test Procedure Requirements</u>	<u>True, False</u>
		<u>Seasonal Energy Efficiency Ratio (SEER) (Btu/Wh) (if applicable)</u>	
		<u>Energy Efficiency Ratio (EER) (Btu/Wh) (if applicable)</u>	
		<u>Integrated Energy Efficiency Ratio (IEER) (Btu/Wh) (if applicable)</u>	
		<u>Heating Seasonal Performance Factor (HSPF) (if applicable)</u>	
		<u>Coefficient of Performance (COP) (if applicable)</u>	
		<u>Rated Cooling Capacity (Btu/h)</u>	
		<u>Heating Type</u>	<u>Electric Resistance Heating or No Heating, Heating Types Other than Electric Resistance, or All</u>
	<u>Variable Refrigerant Flow Multi-Split Air Conditioners and Heat Pumps</u>	<u>Outdoor Unit Module 1 Model Number</u>	
		<u>Outdoor Unit Module 2 Model Number (if applicable)</u>	
		<u>Outdoor Unit Module 3 Model Number (if applicable)</u>	
		<u>Outdoor Unit Module 4 Model Number (if applicable)</u>	
		<u>Outdoor Unit Module 5 Model Number (if applicable)</u>	
		<u>Product Group Code</u>	
		<u>Rated Cooling Capacity (Btu/h)</u>	
		<u>Certification Is Based on a Waiver of DOE's Test Procedure Requirements</u>	<u>True, False</u>
		<u>Certification Is Based upon an Exception Relief from an Applicable Standard by DOE's Office of Hearing and Appeals</u>	<u>True, False</u>
		<u>Seasonal Energy Efficiency Ratio (SEER) (Btu/Wh) (if applicable)</u>	
		<u>Heating Seasonal Performance Factor (HSPF) (if applicable)</u>	
		<u>Integrated Energy Efficiency Ratio (IEER) (Btu/Wh) (if applicable)</u>	
		<u>Coefficient of Performance (if applicable)</u>	
		<u>Rated Heating Capacity (Btu/h) (if applicable)</u>	
		<u>Tested Combination</u>	<u>Non-Ducted, Ducted, Small Duct High-Velocity (SDHV), Non-Ducted/Ducted Mix, Non-ducted/Small Duct High-Velocity (SDHV) Mix, Ducted/Small Duct High-Velocity (SDHV) Mix</u>
<u>Indoor Units Identified in the Tested Combination</u>			

Table X Continued - Data Submittal Requirements

	<b>Appliance</b>	<b>Required Information</b>	<b>Permissible Possible Answers</b>
C	<u>Single Package Vertical Air Conditioners and Heat Pumps</u>	<u>Individual Model Number Covered by Basic Model</u>	
		<u>Sample Size (number of units tested)</u>	
		<u>Certification Is Based Upon a Waiver of DOE's Test Procedure Requirements</u>	True, False
		<u>Certification Is Based Upon an Exception Relief from an Applicable Standard by DOE's Office of Hearing and Appeals</u>	True, False
		<u>Energy Efficiency Ratio (EER) (Btu/W/h)</u>	
		<u>Coefficient of Performance (COP) (if applicable)</u>	
		<u>Rated Cooling Capacity (Btu/h)</u>	

Table X Continued - Data Submittal Requirements

	<b>Appliance</b>	<b>Required Information</b>	<b>Permissible Possible Answers</b>
C	<u>Computer Room Air Conditioners</u>	<u>Equipment Type</u>	Air-cooled, water-cooled, water-cooled with a fluid economizer, glycol-cooled, glycol-cooled with a fluid economizer, evaporatively-cooled; chilled-water-cooled
		<u>Air-Flow Direction</u>	Downflow, horizontal-flow, upflow
		<u>Net Sensible Cooling Capacity (air-cooled, water-cooled, glycol-cooled, chilled-water-cooled models only)</u>	
		<u>Downflow Unit Power Input (watts) (air-cooled, water-cooled, glycol-cooled, chilled-water-cooled models only)</u>	
		<u>Downflow Unit SCOP (air-cooled, water-cooled, glycol-cooled, chilled-water-cooled models only)</u>	
		<u>Upflow Unit Power Input (watts) (air-cooled, water-cooled, glycol-cooled, chilled-water-cooled models only)</u>	
		<u>Upflow Unit SCOP (air-cooled, water-cooled, glycol-cooled, chilled-water-cooled models only)</u>	
		<u>Cooling Capacity at 95°F (evaporatively cooled models only)</u>	
		<u>Electrical Input at 95°F (evaporatively cooled models only)</u>	
		<u>Energy Efficiency Ratio (EER) at 95°F (evaporatively cooled models only)</u>	
C	<u>Computer Room Air Conditioners</u>	<u>Individual Model Number Covered by Basic Model</u>	
		<u>Certification Is Based Upon a Waiver of DOE's Test Procedure Requirements</u>	True, False

	<u>Certification Is Based Upon an Exception Relief from an Applicable Standard by DOE's Office of Hearing and Appeals</u>	<u>True, False</u>
	<u>Sensible Coefficient of Performance (SCOP)</u>	
	<u>Net Sensible Cooling Capacity (Btu/h)</u>	
	<u>Net Cooling Capacity (Btu/h)</u>	
	<u>Rated Airflow (standard cubic feet per minute (SCFM))</u>	
	<u>Configuration</u>	<u>Upflow, Downflow</u>
	<u>Economizer Present</u>	<u>True, False</u>
	<u>Condenser Medium</u>	<u>Air, water, or glycol-cooled</u>

...[skipping the rest of C]

...[skipping D "Single-Duct and Dual-Duct Portable Air Conditioners" through D "Spot Air Conditioners"]

Table X Continued - Data Submittal Requirements

	<b>Appliance</b>	<b>Required Information</b>	<b>Permissible Possible Answers</b>
D	Evaporative Coolers (only those subject to the evaporative cooler testing requirements in section 1604(d) of this Article)	*Type	Direct, indirect, indirect/direct
		Evaporative Media Saturation Effectiveness (%) (for direct evaporative coolers only)	
		Media Type (for direct evaporative coolers only)	Expanded paper, woven plastic, aspen wood, rigid cellulose, other (specify).
		Cooling Effectiveness (for indirect evaporative coolers only)	
		Total Power (watts)	
		Airflow Rate (CFM)	
	Ceiling Fans	*Ceiling fan type (required for models manufactured on or after January 21, 2020 only)	High-speed small-diameter (HSSD), hugger, large diameter, standard, very small-diameter (VSD)
		Diameter (inches)	
		CFM (low, high)	
		Watts (low, high)	
		Efficacy (low, high) [CFM/watt] (required for models manufactured before January 21, 2020 only)	
		Efficiency (CFM/Watt) (required for models manufactured on or after January 21, 2020 only)	
		Fan speed controls separate from light controls	True, false
		Adjustable Speed Controls	(Specify) speed, variable
		Reversible Fan Action Capable	True, False, Exception [See section 1605.1(d)(1)(A)3. of this Article]
		Light Source Type	Compact fluorescent, incandescent, other, None
Standby Power (watts)			

\* "Identifier" information as described in section 1602(a) of this Article.

1 = Voluntary for federally regulated appliances

2 = Voluntary for state-regulated appliances

...[skipping D "Ceiling Fan Light Kits manufactured before January 21, 2020" through D "Residential Furnace Fans"]

**Table X Continued - Data Submittal Requirements**

<b>Appliance</b>	<b>Required Information</b>	<b>Permissible Possible Answers</b>
D Commercial and Industrial Fans and Blowers manufactured <u>on or after November 16, 2023</u> <u>April 29, 2024</u>	Fan type	Centrifugal housed, centrifugal inline, centrifugal unhoused, centrifugal PRV supply, centrifugal PRV exhaust, axial inline, axial PRV, inline mixed-flow, power roof/wall ventilators, axial panel, radial housed
	Fan impeller diameter (in.)	
	Type of Motor (if fans sold with a motor)	None, Single-phase induction, Polyphase induction, Synchronous DC (including ECM), Permanent magnet AC, or Other
	Motor nameplate horsepower (if fan sold with an induction motor) (hp)	
	Pressure type	S = Static pressure T = Total pressure
	Transmission type (if fan is sold with a transmission)	Direct, V-belt, synchronous-belt, flexible coupling, none
	Type of Controller (if fan sold with controller)	None, Variable frequency drive, or Other
	Maximum fan speed (RPM)	
	Airflow at maximum fan speed (CFM)	
	Pressure at maximum fan speed (inches water gauge)	
	FEP <sub>act</sub> at maximum fan speed (kW)	
	FEP <sub>ref</sub> at maximum fan speed (kW)	
	Maximum pressure (inches water gauge)	
	Airflow at maximum pressure (CFM)	
	Fan speed at maximum pressure (RPM)	
	FEP <sub>act</sub> at maximum pressure (kW)	
	FEP <sub>ref</sub> at maximum pressure (kW)	
	Maximum air flow (CFM)	
	Pressure at maximum airflow (inches water gauge)	
	Fan speed at maximum airflow (RPM)	
	FEP <sub>act</sub> at maximum airflow (kW)	
	FEP <sub>ref</sub> at maximum airflow (kW)	
	Is the model a Series tested fan?	Yes, No
Associated Series Tested Fan Model Number (if not a series tested fan)	Fan product line and model, (Field is N/A if it is a Series tested fan)	
Method used to determine FEP <sub>act</sub> of test method in section 1604(d)(2), (AMCA 214-21)	Section 6.1, 6.2, 6.3, 6.4, or 6.5 of the test method in section 1604(d)(2), (AMCA 214-21)	

[end of D]

...[skipping E “All Space Heaters” and E “Central Furnaces”]

Table X Continued - Data Submittal Requirements

	<b>Appliance</b>	<b>Required Information</b>	<b>Permissible Possible Answers</b>
E	<u>Vented Home Heating Equipment Room Heaters, Floor Furnaces, and Wall Furnaces</u>	*Type	Room heater (vented fan); room heater (gravity); floor furnace (fan); floor furnace (gravity); wall furnace (direct vent fan); wall furnace (direct vent gravity); wall furnace (vented fan); wall furnace (vented gravity)
		Annual Fuel Utilization Efficiency (AFUE)	
		Auxiliary Electric Power (for fan-type heaters only)	
		Average Annual Auxiliary Electrical Energy Consumption (for fan-type heaters only) <sup>1</sup>	

\* "Identifier" information as described in section 1602(a) of this Article.

1 = Voluntary for federally regulated appliances

2 = Voluntary for state-regulated appliances

...[skipping the rest of E]

...[skipping F through G]

Table X Continued - Data Submittal Requirements

	<i>Appliance</i>	<i>Required Information</i>	<i>Permissible Possible Answers</i>
H	Plumbing Fittings	*Type	Showerhead, lavatory faucet (independent or collective), public lavatory faucet, kitchen faucet, metering faucet (independent or collective), lavatory replacement aerator, kitchen replacement aerator, wash fountain, lift-type tub spout diverter, turn-type tub spout diverter, pull-type tub spout diverter, push-type tub spout diverter, push-type tub spout diverter
		Flow Rate	
		Pulsating (for showerheads only)	True, False
		Minimum Flow rate at 45 psi and 80 psi (for showerheads manufactured on or after July 1, 2016)	
		Minimum Flow rate at 20 psi (for showerheads manufactured on or after July 1, 2016)	
		Rim Space (for wash fountains only)	
		Tub Spout Leakage Rate When New	
		Tub Spout Leakage Rate After 15,000 Cycles	
	Commercial Pre-rinse Spray Valves	Product Class (required for models manufactured on or after January 28, 2019)	Product Class 1, Product Class 2, Product Class 3
		Flow Rate (gpm)	
		Spray force (ounce-force (ozf))	
I	Plumbing Fixtures	*Type	Blowout water closet, gravity tank type water closet, dual dual-flush water closet, electromechanical hydraulic water closet, flushometer tank water closet, prison-type urinal, prison-type water closet, flushometer valve water closet, trough-type urinal, wall-mounted urinal, waterless urinal, other type urinal, vacuum type water closet
		Water Consumption (dual-flush effective volume for dual-flush water closet)	
		Passes waste extraction test	True, False
		Waste extraction value	grams
		Trough Length (trough-type urinals only)	

\* "Identifier" information as described in section 1602(a) of this Article.

[end of I]

...[skipping J]

...[skipping K "Federally regulated general service fluorescent lamps"]

Table X Continued - Data Submittal Requirements

	<b>Appliance</b>	<b>Required Information</b>	<b>Permissible Possible Answers</b>
K	Federally regulated incandescent reflector lamps sold before January 1, 2020	Minimum Average Lamp Efficacy	
	Federally regulated Medium Screw Base Compact Fluorescent Lamps sold before January 1, 2020	Lamp Power (Watts)	
		Minimum Efficacy (LPW)	
		Lamp Configuration	Bare or Covered (no reflector)
		1,000 Hour Lumen Maintenance	True, False
		Lumen Maintenance Requirements	True, False
		Rapid Cycle Stress Test	True, False
	Federally regulated Medium Screw Base General Service Incandescent and OLED Lamps sold before January 1, 2020	Average Rated Lamp Life	True, False
		Type	General Service Incandescent, OLED
		Voltage Range	
		Rated Lumen Range	
		Maximum Rate Wattage	
		Minimum Rate Lifetime	
		Color Rendering Index	
		Minimum Efficacy (LPW) (required on or after January 1, 2018)	
	Modified Spectrum	True, False	
	Bulb Finish (incandescent only)	Clear, frost, soft white	
	ANSI-designated Bulb Shape	A15, A19, A21, A23, A25, PS25, PS30, BT14.5, BT15, CP19, TB19, CA22	
	Federally regulated Candelabra Base and Intermediate Base Incandescent Lamps sold before January 1, 2020	Base Type	Candelabra, intermediate
		Maximum Rated Wattage	
	Federally regulated Medium Screw Base Modified Spectrum General Service Incandescent Lamps sold before January 1, 2020	Type	
Rated Voltage			
Rated Lumen Range			
Maximum Rate Wattage			
Minimum Rate Lifetime			
	Color Rendering Index		

\* "Identifier" information as described in section 1602(a) of this Article.

...[skipping K "State-regulated small diameter directional lamps"]



Table X Continued - Data Submittal Requirements

	<b>Appliance</b>	<b>Required Information</b>	<b>Permissible Possible Answers</b>
K	State-regulated Light Emitting Diode (LED) lamps	*Base Type	E12, E17, E26, GU24, retrofit kit
		Lamp Shape	A, B, BA, C, CA, F, G, T, Other
		...[skipping the rest of "State-regulated Light Emitting Diode (LED) lamps"]	

[end of K]

...[skipping L though O]

Table X Continued - Data Submittal Requirements

	<b>Appliance</b>	<b>Required Information</b>	<b>Permissible Possible Answers</b>		
P	Clothes Washers that are consumer products	*Type	Front-loading, top loading		
		*Controls	Automatic, semi-automatic, other (specify)		
		*Axis	Horizontal, vertical		
		Suds-Saving	True, False		
		Combination Washer/Dryer <sup>1</sup>	True, False		
		Clothes Container Compartment Capacity			
		Power Consumption Per Cycle <sup>1</sup>			
		Water Consumption Per Cycle			
		Integrated Modified Energy Factor			
		Integrated Water Factor			
		Remaining Moisture Content			
		Corrected Remaining Moisture Content			
		Commercial Clothes Washers		*Type	Front-loading, top loading
				*Controls	Automatic, semi-automatic, other (specify)
*Axis	Horizontal, vertical				
Suds-Saving	True, False				
Combination Washer/Dryer	True, False				
Clothes Container Compartment Capacity					
Power Consumption Per Cycle					
Water Consumption Per Cycle					
Modified Energy Factor					
Water Factor (effective for models manufactured before January 1, 2018)					
Integrated Water Factor (effective for models manufactured on or after January 1, 2018)					
Remaining Moisture Content (required only on and after January 1, 2004)					
Corrected Remaining Moisture Content					

\* "Identifier" information as described in section 1602(a) of this Article.

[end of P]

...[skipping Q through U]

Table X Continued - Data Submittal Requirements

	<b>Appliance</b>	<b>Required Information</b>	<b>Permissible Possible Answers</b>
V	<u>Televisions and Signage Displays (manufactured prior to September 11, 2023, or not within the scope of 10 C.F.R. section 430)</u>	Type*	CRT, Plasma, LCD, DLP, Rear Projection, Laser, OLED, LCOS, LED, Other
		Viewable Screen Area	
		Screen Size	
		Automatic Brightness Control	True, False
		Automatic Brightness Control enabled	True, False
		Forced Menu	True, False
		Native Vertical Resolution	
		Aspect Ratio	
		Integrated Occupancy Sensor	True, False
		L <sub>home</sub>	
		L <sub>high</sub>	
		Luminance Ratio	
		TV Standby-Passive Mode Power (watts)	
		On Mode Power (watts)	
		Retail On Mode Power (watts)	
	Power Factor		
	<u>Televisions (manufactured on or after September 11, 2023, and within the scope of 10 C.F.R. section 430)</u>	Display Technology Type	OLED, Laser, LCoS, LCD (fluorescent backlight), LED (TN), LED (IPS/PLS), LED (VA), QLED, Mini-LED, Micro-LED, DLP, Plasma, CRT, Other
		Viewable Screen Area (total square inches)	
		Screen Size (diagonal inches)	
		Screen Resolution (horizontal pixel count)	
Screen Resolution (vertical pixel count)			
High Dynamic Range 10 (HDR10) Capable		True, False	
Automatic Brightness Control (ABC) Capable		True, False	
Quick Start Capable		True, False	
Quick Start Enabled by Default		True, False	
Internet Connection Capable		True, False	
Smart Wake Capable		True, False	
Default SDR PPS: ABC Enabled by Default		True, False	
Default SDR PPS: If ABC Enabled by Default, On Mode Power (watts) at the Default Backlight Level with ABC off			

	<u>Default SDR PPS: If ABC Enabled by Default, Dynamic Luminance (cd/m2) at the Default Backlight Level with ABC Off</u>	
	<u>Default SDR PPS: If ABC Enabled by Default, On Mode Power (watts) at Approximately 4, 17, 50, and 140 lux Ambient Light with ABC On</u>	
	<u>Default SDR PPS: If ABC Enabled by Default, Dynamic Luminance (cd/m2) at Approximately 4, 17, 50, and 140 lux Ambient Light with ABC On</u>	
	<u>Default SDR PPS: If ABC Not Enabled by Default, On Mode Power (watts) at Default Backlight Level, Minimum Backlight Level, and Approximately Halfway Between Minimum and Default Level with ABC Off</u>	
	<u>Default SDR PPS: If ABC Not Enabled by Default, Dynamic Luminance (cd/m2) at Default Backlight Level, Minimum Backlight Level, and Approximately Halfway Between Minimum and Default Level with ABC Off</u>	
	<u>Brightest SDR PPS: ABC Enabled by Default</u>	<u>True, False</u>
	<u>Brightest SDR PPS: If ABC Enabled by Default, On Mode Power (watts) at the Default Backlight Level with ABC Off</u>	
	<u>Brightest SDR PPS: If ABC Enabled by Default, Dynamic Luminance (cd/m2) at the Default Backlight Level with ABC Off</u>	
	<u>Brightest SDR PPS: If ABC Enabled by Default, On Mode Power (watts) at Approximately 4, 17, 50, and 140 lux Ambient Light with ABC On</u>	
	<u>Brightest SDR PPS: If ABC Enabled by Default, Dynamic Luminance (cd/m2) at Approximately 4, 17, 50, and 140 lux Ambient Light with ABC On</u>	
	<u>Brightest SDR PPS: If ABC Not Enabled by Default, On Mode Power (watts) at Default Backlight Level, Minimum Backlight Level, and Approximately Halfway Between Minimum and Default Level with ABC Off</u>	
	<u>Brightest SDR PPS: If ABC Not Enabled by Default, Dynamic Luminance (cd/m2) at Default Backlight Level, Minimum Backlight Level, and Approximately Halfway Between Minimum and Default Level with ABC Off</u>	
	<u>Default HDR PPS: ABC Enabled by Default</u>	<u>True, False</u>

	<u>Default HDR PPS: If ABC Enabled by Default, On Mode Power (watts) at the Default Backlight Level with ABC Off</u>	
	<u>Default HDR PPS: If ABC Enabled by Default, Dynamic Luminance (cd/m2) at the Default Backlight Level with ABC Off</u>	
	<u>Default HDR PPS: If ABC Enabled by Default, On Mode Power (watts) at Approximately 4, 17, 50, and 140 lux Ambient Light with ABC On</u>	
	<u>Default HDR PPS: If ABC Enabled by Default, Dynamic Luminance (cd/m2) at Approximately 4, 17, 50, and 140 lux Ambient Light with ABC On</u>	
	<u>Default HDR PPS: If ABC Not Enabled by Default, On Mode Power (watts) at Default Backlight Level, Minimum Backlight Level, and Approximately Halfway Between Minimum and Default Level with ABC Off</u>	
	<u>Default HDR PPS: If ABC Not Enabled by Default, Dynamic Luminance (cd/m2) at Default Backlight Level, Minimum Backlight Level, and Approximately Halfway Between Minimum and Default Level with ABC Off</u>	
	<u>Type of Standby Mode Tested</u>	<u>Standby with Smart Wake Enabled, Standby with Internet Connection, Standby without Internet Connection</u>
	<u>Power Consumption in Standby Mode (watts)</u>	
	<u>Average On Mode Power (watts)</u>	
	<u>Annual Energy Consumption (AEC) (kWh)</u>	

...[skipping the rest of V]

Table X Continued - Data Submittal Requirements

	<b>Appliance</b>	<b>Required Information</b>	<b>Permissible Possible Answers</b>
W	Small Battery Charger Systems	*Consumer Product Model Number	End use product model number (specify)
		Product Type	
		24-hour charge and maintenance energy	
		Battery maintenance mode power	
		No battery mode power	
		Battery capacity of tested battery (if more than 1 charger port report the total of all battery capacities connected during test)	
		Inductive charger systems	True, False
	<u>Use environment type (for inductive chargers only)</u>	<u>Dry, Wet, Both</u>	

	Number of charger ports	
	Compatible battery chemistries	
	Battery backup or uninterruptible power supply	True, False
	À la carte charger	True, False
	USB charger system	True, False
	Location of marking or labeling	Packaging, Product
	Battery Test Procedure Used	
	Consumer Product (T/F)	True, False

\* "Identifier" information as described in section 1602(a) of this Article.

...[skipping W "Large Battery Charger Systems"]

Table X Continued - Data Submittal Requirements

	<b>Appliance</b>	<b>Required Information</b>	<b>Permissible Possible Answers</b>
W	Federally Regulated Battery Chargers (manufactured on or after June 13, 2018)	Product Group Code	1, 2, 3, 4, 5, 6, 7
		<u>Wireless</u>	<u>True, False</u>
		<u>Battery Test Procedure Used</u>	
		Nameplate Battery Voltage of Test Battery in Volts (V)	
		Nameplate Battery Charge Capacity of Test Battery in Ampere-Hours (Ah)	
		Nameplate Battery Energy Capacity of Test Battery in Watt-Hours (Wh)	
		Maintenance Mode Power in Watts (Pm)	
		Standby Mode Power in Watts (Psb)	
		Off Mode Power in Watts (Poff)	
		Battery Discharge Energy in Watt-Hours (E <sub>batt</sub> )	
		24-Hour Energy Consumption in Watt-Hours (E <sub>24</sub> )	
		Duration of the Charge and Maintenance Mode Test in Hours (T <sub>cd</sub> )	
		Unit Energy Consumption (UEC) (kWh/yr)	
		Manufacturer of Test Battery	
		Model of Test Battery	
		Manufacturer of External Power Supply (If Applicable)	
		Model of External Power Supply (If Applicable)	
<u>Federally Regulated Uninterruptible Power Supplies</u>	<u>Individual Model Number Covered by Basic Model</u>		
	<u>Wireless</u>	<u>True, False</u>	
	<u>Battery Test Procedure Used</u>		
	<u>Certification is Based on a Waiver of DOE's Test Procedure Requirements</u>	<u>True, False</u>	
	<u>Certification is Based Upon an Exception Relief from an Applicable Standard by DOE's Office of Hearing and Appeals</u>	<u>True, False</u>	

	<u>Supported Input Dependency Mode (Lowest if Multi-Mode Model)</u>	VFD, VI, VFI
	<u>Highest Supported Input Dependency Mode (If Applicable)</u>	VI, VFD
	<u>Third Supported Input Dependency Mode (If Applicable)</u>	VI
	<u>Rated Input Voltage (volts)</u>	
	<u>Rated Output Voltage (volts)</u>	
	<u>Product Group Code</u>	
	<u>Active Power (watts) (Lowest if Multi-Mode Model)</u>	
	<u>Apparent Power in Volt-Amperes (VA) (Lowest if Multi-Mode Model)</u>	
	<u>Efficiency at 100%, 75%, and 50% of the Reference Test Load (Lowest if Multi-Mode Model)</u>	
	<u>Efficiency at 25% of the Reference Test Load (If Applicable) (Lowest if Multi-Mode Model)</u>	
	<u>Average Load Adjusted Efficiency (Lowest if Multi-Mode Model)</u>	
	<u>Product Group Code (Multi-Mode Models only)</u>	
	<u>Active Power (watts) (Highest Input Dependency Mode) (Multi-Mode Models only)</u>	
	<u>Apparent Power in Volt-Amperes (VA) (Highest Input Dependency Mode) (Multi-Mode Models only)</u>	
	<u>Efficiency at 100%, 75%, and 50% of the Reference Test Load (Highest Input Dependency Mode) (Multi-Mode Models only)</u>	
	<u>Efficiency at 25% of the Reference Test Load (Highest Input Dependency Mode) (Multi-Mode Models only) (If Applicable)</u>	
	<u>Average Load Adjusted Efficiency (Highest Input Dependency Mode) (Multi-Mode Models only)</u>	

...[skipping the rest of Table X]

**(4) Declaration.**

(A) Each statement shall include a declaration, executed under penalty of perjury of the laws of California, that

1. all the information provided in the statement is true, complete, accurate, and in compliance with all applicable provisions of this Article;
2. the requirements of section 1606(g) of this Article have been and are being complied with;

3. for appliances for which there is an energy efficiency, energy consumption, energy design, water efficiency, water consumption, or water design standard in section 1605.1, 1605.2, or 1605.3 of this Article, that the appliance complies with the applicable standards;
4. the appliance was tested under the applicable test method specified in section 1604 of this Article, and, for the following appliances, was tested as follows:

...[skipping (a)(4)(A)4.a. through (a)(4)(A)4.h.]

- i. for ~~state-regulated compressors~~ appliances that are rated using an alternative efficiency determination method (AEDM) in lieu of testing, that the represented value of efficiency, consumption, or other non-energy metrics for the basic model was determined through the alternative efficiency determination method specified in section 1604(s) of this Article.

...[skipping the rest of (a)(4)(A)]

...[skipping (a)(4)(B)]

(C) The declaration shall be submitted electronically through the MAEDbS and maintained by the Executive Director for a period of at least ten years, pursuant to the requirements in section ~~1606(j)~~ 1606(i) of this Article.

**(b) Review of Statements by the Executive Director.**

In this subsection, "manufacturer" also includes a third party filing a statement under section 1606(f) of this Article.

- (1) **Determination.** The Executive Director shall determine whether a statement is complete, accurate, and in compliance with all applicable provisions of this Article, and whether the appliance for which the statement was submitted complies with all applicable standards in sections 1605.1, 1605.2, and 1605.3 of this Article.
- (2) **Informing Manufacturer and Third Party of Determination.**
  - (A) The Executive Director shall inform the manufacturer's MAEDbS-designated contact person or the third party's MAEDbS-designated contact person, as described in section 1606(f) of this Article, of the determination within 30-calendar days after receipt by the Executive Director. Failure to meet this 30-day deadline does not constitute a determination that the statement is accurate and that the appliance complies.
  - (B) The Executive Director's determination shall be sent electronically through the MAEDbS to the manufacturer's MAEDbS-designated contact person.
- (3) **Nature of Determination.**
  - (A) **Statement is Incomplete.** If the Executive Director determines that a statement is not complete, or that the statement does not contain enough information to determine whether it is accurate or whether the appliance complies with an

applicable standard, the Executive Director shall return the statement through the MAEDbS to the manufacturer's MAEDbS-designated contact person with an explanation of its defects and a request for any necessary additional information. The manufacturer shall refile the statement through the MAEDbS with all information requested by the Executive Director. The Executive Director shall, to the extent practicable, review the refiled statement according to the time limits in section 1606(b)(2) of this Article.

- (B) **Statement is Inaccurate or Appliance Does Not Comply.** If the Executive Director determines that the statement is inaccurate or that the appliance does not comply with an applicable standard, the Executive Director shall reject the statement and return it through the MAEDbS to the manufacturer's MAEDbS-designated contact person with an explanation of its defects. The manufacturer may submit a revised statement through the MAEDbS for the appliance at any time.
- (C) **Statement is Complete and Accurate and Appliance Complies.** If the Executive Director determines that the statement is complete and accurate and that the appliance complies with all applicable standards, the Executive Director shall immediately include the appliance in the MAEDbS and shall so inform the manufacturer's MAEDbS-designated contact person. ~~(section 1608(a) of this Article states that no appliance within the scope of these regulations may be sold or offered for sale in California unless the appliance is in the MAEDbS.)~~

**(c) Modernized Appliance Efficiency Database System of Appliance Models.**

- (1) **Creation of the MAEDbS.** The Executive Director shall maintain a database known as the Modernized Appliance Efficiency Database System (MAEDbS). The MAEDbS shall consist of two parts:

- (A) **"Approved MAEDbS."** The Approved MAEDbS shall contain, at least, information on all appliances that are currently in production, for which complete and accurate statements have been received pursuant to section 1606(a) of this Article, and that have not been removed from the MAEDbS pursuant to sections 1606(c)(3), 1606(d)-(e), or 1608(c)-(e) of this Article.

If basic models are certified using an alternate test procedure established pursuant to section 1603(c)(1) of this Article or for which the Executive Director has made a specification under either section 1603(c)(2)(A) or section 1603(c)(2)(B) of this Article, the Approved MAEDbS shall contain a second section which shall contain only those basic models for which certification to an applicable alternate test procedure is made.

...[skipping the rest of (c)(1)]

...[skipping (c)(2)]

- (3) **Confirmation of the MAEDbS Listings.** The Executive Director may, by electronically writing (either via e-mail or directly through the MAEDbS) to the most



recent electronic address filed pursuant to section 1606(a)(2)(B) of this Article, request each manufacturer of an appliance listed in the MAEDbS to confirm the validity, or to correct in compliance with this Article, all of the information in each of its MAEDbS listings. If within 30 calendar days of the electronic mailing there is no such reply, the appliance shall be removed from the Approved MAEDbS and moved into the Archived MAEDbS, and it may be presumed that the appliance is no longer in production.

(A) If the lack of compliance with any requirements of this Article is strictly limited to non-compliance with standards adopted since the most recent filing by the manufacturer, after initially notifying the manufacturer under the requirements found in section 1606(c)(3) of this Article, all affected models will be moved from the Approved MAEDbS to the Archived MAEDbS without providing any additional electronic notice to the manufacturer. ~~The effective date for moving such affected~~ Affected models shall be moved to the Archived MAEDbS no earlier than will be the effective date of the new standard.

**(d) Assessment of Completeness, Accuracy, and Compliance of Manufacturer Statements.**

(1) Notwithstanding any other provision of these regulations, the Executive Director may at any time challenge the completeness, accuracy, and compliance with the requirements of this Article, of any statement or confirmation filed pursuant to this Section. If the statement is incomplete or inaccurate, or if the Executive Director determines that the statement otherwise fails to comply with any of the requirements of this Article then they shall, ten working days after providing electronic notice via e-mail or directly through the MAEDbS to the person designated in section 1606(a)(2)(B) of this Article, remove the appliance from the MAEDbS described in section 1606(c) of this Article

(A) If the lack of compliance with any requirements of this Article is strictly limited to non-compliance with standards currently in effect, but not in effect when the statement was filed, all affected models will be moved from the Approved MAEDbS to the Archived MAEDbS without providing any advance electronic notice to the manufacturer. ~~The effective date for moving such affected~~ Affected models shall be moved to the Archived MAEDbS no earlier than will be the effective date of the new standard.

[end of (d)]

...[skipping (e) through (g)]

**(h) Trade Association Directories.**

(1) A paper or electronic directory, or a part thereof, published by an appliance trade association may be used for any purpose that the MAEDbS established pursuant to section 1606(c) of this Article is used for, if the Executive Director approves the directory, or part thereof, by determining and confirming that:

...[skipping (h)(1)(A) through (h)(1)(C)]

(D) for each appliance that is listed in a trade association directory, the directory includes all of the following information, where applicable to the appliance:

1. manufacturer
2. brand
3. model number as it appears on the appliance
4. type
5. fuel type
6. voltage
7. electrical phase
8. capacity or other size measurement
9. input
10. output
11. standby consumption, loss, or other similar measurement; and energy efficiency;
12. energy efficiency, energy consumption, water efficiency, or water consumption;

...[skipping the rest of (h)(1)]

(2) If the Executive Director at any time determines that an approved trade association directory does not comply with an applicable provision of this Article, or that any information in a trade association directory is substantially incomplete, inaccurate, or not in compliance with an applicable provision of this Article, then:

(A) upon written notice from the Executive Director the trade association shall immediately indicate in the directory, in a format approved by the Executive Director (including without limitation font, type size, and placement in the directory), that it is illegal in California to sell the appliance. In addition, the Executive Director shall remove the appliance from the Energy Commission's MAEDbS established under section 1606(c) of this Article or indicate in the MAEDbS that the appliance cannot legally be sold or offered for sale in California. ~~The appliance shall be removed from, or indicated in, the Energy Commission's MAEDbS and the trade association directory, for at least sixty days, until the end of a proceeding held to consider the matter pursuant to Sections 11445.10-11445.60 of the California Government Code (or, at the third party or affected manufacturer's option, pursuant to Sections 11425.10-11425.60 of the California Government Code); and~~

(B) the Executive Director may suspend or revoke the approval of the trade association directory; if approval is revoked, the trade association may not seek re-approval for two years after the revocation.



430) (Jan. 1, 2017)

Rendering Index (CRI), Power Factor, Time to Failure, and Standby Mode Power of Integrated Light-Emitting Diode (LED) Lamps

C.F.R., Title 10, section 430.23(m) Uniform Test Method for Measuring the Energy Consumption of (Appendix M1 to Subpart B of Part Central Air Conditioners and Heat Pumps 430)

C.F.R., Title 10, section 431.174 Uniform Test Method for the Measurement of Energy Consumption (Appendix A to Subpart J of Part of Fans and Blowers Other Than Air Circulating Fans 431)

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**AIR-CONDITIONING, HEATING, AND REFRIGERATION INSTITUTE (AHRI)**

AHRI Standard 680 (I-P)-2017 2017 Standard for Performance Rating of Residential Air Filter Equipment

**AIR MOVEMENT AND CONTROL ASSOCIATION INTERNATIONAL, INC (AMCA)**

ANSI/AMCA Standard 214-21 Test Procedure for Calculating Fan Energy Index (FEI) for Commercial and Industrial Fans and Blowers (Approved by ANSI on March 1, 2021)

**...[skipping the rest of section 1606]**

Note: Authority cited: Sections 25213, 25218(e), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Sections 16, 26, and 30, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Reference: Sections 25216.5(d), 25401.9, 25402(a)-25402(c), 25402.5.4 and 25960, Public Resources Code; and Section 16, Governor's Exec. Order No. B-29-15 (April 1, 2015).

**Section 1607. Marking of Appliances.**

...[skipping (a) through (c)]

**(d) Energy Performance Information.**

...[skipping (d)(1) through (d)(11)]

**(12) State-Regulated LED Lamps.** State-regulated LED lamps shall meet the criteria below before making any of the relevant claims in marketing materials, including retail packaging or on the lamp itself.

...[skipping (d)(12)(A) through (d)(12)(B)]

(C) If the manufacturer makes incandescent wattage equivalency claims for medium screwbase and GU24 base omnidirectional state-regulated LED lamps manufactured on or after January 1, 2018, the lamps shall have a minimum lumen output not less than the values shown in Table K-40K-4.

**Table K-40K-4  
Incandescent Wattage Equivalences for State-regulated LED Lamps**

<i>Incandescent wattage equivalence</i>	<i>Minimum Lumen Output</i>
40 W	310
60 W	750
75 W	1050
100 W	1490
150 W	2500

(D) A lamp manufactured on or after January 1, 2018 that is certified with a lumen output of less than 150 lumens for candelabra bases, or less than 200 lumens for other bases, shall be labeled on the ~~retain~~ retail packaging as "for decorative purposes."

~~(E) For lamps manufactured on or after February 1, 2017, if the manufacturer makes any marketing, label, or mark regarding a model's qualification for the California Quality LED Lamp Specification, the manufacturer shall certify that the lamp model meets each and every portion of the California Quality LED Lamp Specification.~~

[end of (d)(12)]

...[skipping (d)(13) through (d)(15)]

(16) **Commercial and Industrial Fans and Blowers.** Each commercial and industrial fan or blower, manufactured on or after ~~November 16, 2023~~ April 29, 2024, shall be marked, permanently and legibly on an accessible and conspicuous place on the unit, in characters no less than 1/4 inch in tabular form (as shown below):

(A) For Commercial and Industrial fans and blowers the label shall include the following information:

Fan Energy Index  $\geq 1.00$  Efficiency boundaries

- a. maximum air flow (CFM);
- b. maximum fan speed (RPM);
- c. maximum pressure (inches water gauge); and
- d. type of pressure ("static" or "total").

NOTE: Operation outside of these boundaries will result in an energy inefficient operation.

The following documents are incorporated by reference in section 1607.

<i>Number</i>	<i>Title</i>
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~~**CALIFORNIA ENERGY COMMISSION**~~

~~California Energy Commission Voluntary California Quality Light Emitting Diode (LED) Lamp Specification (December 2017)~~

Copies available from: ~~CALIFORNIA ENERGY COMMISSION  
ENERGY HOTLINE  
1516 NINTH STREET, MS-25  
SACRAMENTO, CALIFORNIA 95814  
PHONE: (916) 654-5106  
FAX: (916) 654-4304~~

...[skipping the rest of section 1607]

Note: Authority cited: Sections 25213, 25218(e), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code.

Reference: Sections 25216.5(d), 25401.9, 25402(a)-25402(c), and 25960, Public Resources Code.

**Section 1608. Compliance, Enforcement, and General Administrative Matters.**

**(a) General Requirements for the Sale or Installation of All Appliances.**

Any unit of any appliance within the scope of section 1601 of this Article may be sold or offered for sale in California only if:

- (1) the appliance appears in the most recent MAEDbS established pursuant to section 1606(c) of this Article, unless the only reason for the appliance's absence from the MAEDbS is its failure to comply with an applicable standard in section 1605.1 of this Article;
- (2) the manufacturer has:
  - (A) tested the appliance as required by sections 1603 and 1604 of this Article;
  - (B) marked the unit as required by section 1607 of this Article;
  - (C) for any appliance for which there is an applicable standard in section 1605.2 or 1605.3 of this Article, certified under section 1606(a) of this Article that the appliance complies with the standard;
- (3) the unit has the same components, design characteristics, and all other features that affect energy or water consumption or energy or water efficiency, as applicable, as the units that were tested under sections 1603 and 1604 of this Article and for which information was submitted under section 1606(a) of this Article; and
- (4) for any appliance for which there is an applicable standard in section 1605.2 or 1605.3 of this Article, the unit complies with the standard.

**EXCEPTIONS to Sections 1608(a)(1) and 1608(a)(2)(C) of this Article.** Sections 1608(a)(1) and 1608(a)(2)(C) of this Article are not applicable to:

1. external power supplies,
2. small electric motors,
3. à la carte chargers meeting the EXCEPTION noted in section 1605.3(w)(2) of this Article, ~~or~~
4. general service lamps, excluding state-regulated LED lamps and state-regulated small diameter directional lamps subject to the standards in section 1605.3(k) of this Article,
5. federally regulated consumer water heaters  $\geq 2$  and  $< 20$  gallons rated storage volume, or
6. single and dual duct portable air conditioners with variable speed motors.

**(b) Appliances Not in the MAEDbS.**

If the Executive Director determines that an appliance requiring certification that is not in the MAEDbS is being sold or offered for sale in California, they shall take appropriate legal action to restrain and discourage such ~~sale or offering act~~, including, but not limited to, any one or combination of the following: testing units of the appliance at the manufacturer's or the Energy Commission's cost, and seeking appropriate judicial action, notifying the manufacturer of the requirement to certify products to the MAEDbS, seeking information from the manufacturer on the volume of products previously sold in California, seeking to resolve prior noncompliant sales via settlement in accordance with section 1609(d) of this Article, issuing a Notice of Violation in accordance with section 1609(c) of this Article, and initiating administrative proceedings in accordance with section 1609(e) of this Article.

**(c) All Appliances: Submittal of Reports of Manufacturers' Certification Testing.**

- (1) For any appliance, the Executive Director or designee may at any time request from a manufacturer a copy of the test report that describes the results of the testing that was performed pursuant to section 1604 of this Article and that provides the basis for the information submitted under section 1606(a)(3)(C) of this Article. The request shall be sent to the e-mail address designated in section 1606(a)(2)(B) of this Article. ~~If the Executive Director includes with the request information that, in their opinion, constitutes substantial evidence that the appliance or the manufacturer is not in compliance with an applicable provision of this Article, or that the energy or water performance of the appliance is not as certified under section 1606(a)(3)(C) of this Article or is not as required by an applicable standard in section 1605.1, 1605.2, or 1605.3 of this Article, then the~~ The manufacturer shall provide a copy of the applicable test report to the Executive Director within 5 days of the manufacturer's receipt of the request, or at a mutually agreed upon date.
- (2) If the Executive Director does not receive the test report within the required or agreed upon time under subsection (c)(1) of this section, the Executive Director shall may remove the appliance from the MAEDbS.
- (3) If the test report indicates that the energy or water consumption of the appliance is greater than, or the energy or water efficiency of the appliance is less than, the consumption or efficiency certified by the manufacturer pursuant to section 1606(a)(3)(C) of this Article, the Executive Director shall, after providing electronic notice via e-mail or directly through the MAEDbS to the person designated in section 1606(a)(2)(B) of this Article, modify the listing of the appliance in the MAEDbS to reflect accurately the test report.
- (4) If the test report indicates that the appliance model does not comply with an applicable standard in section 1605.1, 1605.2, or 1605.3 of this Article, the Executive Director shall, ten days after providing electronic notice via e-mail or directly through the MAEDbS to the person designated in section 1606(a)(2)(B) of this Article, remove the model from the MAEDbS or archive the MAEDbS listing.

**~~(d) Inspection by the Executive Director of Appliances Subject to Energy Design and Water Design Standards, and Marking Requirements.~~**

- ~~(1) The Executive Director shall periodically inspect appliances sold or offered for sale in the state, to determine whether they conform with the applicable energy design and water design standards of sections 1605.1, 1605.2, and 1605.3 of this Article, and with the applicable marking requirements of section 1607 of this Article.~~
- ~~(2) Inspection of an appliance shall consist of inspection of one unit.  
(A) If the inspection indicates that the unit complies with the applicable energy or water design standards and marking requirements, the matter shall be closed.~~



(B) If the inspection indicates that the unit does not comply with an applicable energy or water design standard or as applicable marking requirement, the Energy Commission shall undertake a proceeding pursuant to Sections 11445.10-11445.60 of the California Government Code (or, at the manufacturer's option, pursuant to Sections 11425.10-11425.60 of the California Government Code). If the Energy Commission confirms the Executive Director's determination, then they shall remove the appliance from the MAEDbS.

**(e) Executive Director's Enforcement Testing of Appliances Subject to Energy Efficiency, Energy Consumption, Water Efficiency, and Water Consumption Standards.**

The Executive Director shall periodically cause, at laboratories meeting the criteria of section 1603(a) of this Article, the testing of appliance units sold or offered for sale in the state, to determine whether the appliances conform with the applicable standards in sections 1605.1, 1605.2, and 1605.3 of this Article, and to determine whether their performance is as reported or certified by the manufacturer pursuant to section 1606(a) of this Article. Testing shall be performed as follows:

(1) **Initial Test.** The Executive Director shall perform an initial test on one unit, using the applicable test procedure specified in section 1604 of this Article. Upon completion of the initial test, the Executive Director shall make a determination as follows:

(A) **Performance Is No Worse Than Required by Standards and Is No Worse Than as Certified by Manufacturer or Third-Party Certifier.** If the initial test result indicates that the energy and water consumption of the unit is no greater than, and the energy and water efficiency of the unit is no less than, the consumption or efficiency that is permitted and required by all applicable standards in section 1605.1, 1605.2, or 1605.3 of this Article, and that was certified by the manufacturer or third-party certifier pursuant to section 1606(a) of this Article, the matter shall be closed.

(B) **Performance Is Worse Than Required by Standard or Is Worse Than as Certified by Manufacturer or Third-Party Certifier.** If the initial test result indicates that the energy or water consumption of the unit is greater, or the energy or water efficiency of the unit is less, than the consumption or efficiency that is permitted or required by any applicable standard in section 1605.1, 1605.2, or 1605.3 of this Article, or that was certified by the manufacturer or third-party certifier pursuant to section 1606(a) of this Article, the Executive Director shall perform a second test on a second unit, using the applicable test procedure specified in section 1604 of this Article.

(2) **Second Test; Mean of Results.** If a second test is performed, the Executive Director shall calculate the mean of the results of the initial test and the second test. Upon completion of the second test, the Executive Director shall inform the manufacturer of the results and shall make a determination as follows:

- (A) ~~**Performance Is No Worse Than Required by Standards and Is No Worse Than as Certified by Manufacturer or Third-Party Certifier.**~~ If the two test results indicate that the mean energy and water consumption of the two units is no greater than, and the mean energy and water efficiency of the two units is no less than, the consumption and efficiency permitted or required by all applicable standards in section 1605.1, 1605.2, or 1605.3 of this Article, and that was certified by the manufacturer or third-party certifier pursuant to section 1606(a) of this Article, the matter shall be closed.
- (B) ~~**Performance is As Required by Standard but is Worse Than as Certified by Manufacturer or Third-Party Certifier.**~~ If the two test results indicate that the mean energy or water consumption of the two units is greater than, or the mean energy or water efficiency of the two units is less than, the consumption or efficiency that was certified by the manufacturer or third-party certifier pursuant to section 1606(a) of this Article, but that the mean result nevertheless complies with all applicable standards in section 1605.1, 1605.2, or 1605.3 of this Article, the Energy Commission shall undertake a proceeding pursuant to Sections 11445.10-11445.60 of the California Government Code (or, at the manufacturer's option, pursuant to Sections 11425.10-11425.60 of the California Government Code). If the Energy Commission determines that the two test results indicate that (1) the mean energy or water consumption of the two units is greater than, or the mean energy or water efficiency of the two units is less than, the consumption or efficiency as reported or certified by the manufacturer pursuant to section 1606(a) of this Article, and (2) the mean result nevertheless complies with all applicable standards in section 1605.1, 1605.2, or 1605.3 of this Article, then the Executive Director shall modify the listing of the appliance in the MAEDbS to reflect accurately the Energy Commission's determination.
- (C) ~~**Performance is Not As Required by Standard.**~~ If the two test results indicate that the mean energy or water consumption of the two units is greater than, or the mean energy or water efficiency of the two units is less than, any applicable standard in section 1605.1, 1605.2, or 1605.3 of this Article, the Energy Commission shall undertake a proceeding pursuant to Sections 11445.10-11445.60 of the California Government Code (or, at the manufacturer's option, Sections 11425.10-11425.60 of the California Government Code). If the Energy Commission determines that the mean energy or water consumption of the two units is greater than, or the mean energy or water efficiency of the two units is less than any applicable standard, the Executive Director shall remove the appliance from the MAEDbS established pursuant to section 1606(c) of this Article.
- (3) ~~**Optional Method of Determining Energy or Water Performance.**~~ If, at any time before an Energy Commission determination under section 1608(e)(2)(B) or 1608(e)(2)(C) of this Article, the manufacturer so chooses, instead of using the mean-of-two-units approach set forth in sections 1608(e)(1) and 1608(e)(2) of this Article, the Executive Director shall test the appliance using the sampling method set forth in 10 C.F.R. part 429 Appendix A (for consumer products and certain high-volume commercial equipment), Appendix B (for covered equipment

and certain low-volume covered products), or Appendix C (for distribution transformers) to subpart C of part 429 and shall make the determinations under sections 1608(e)(1) and 1608(e)(2) of this Article based on those test results. The manufacturer shall pay for all such testing.

**(f) Costs.**

Except as otherwise provided in this Article, all costs of initial tests showing results as described in section 1608(e)(1)(A) or section 1608(e)(2)(A) of this Article shall be borne by the Energy Commission. All costs of all other tests shall be paid by the manufacturer.

**(g) Federally Regulated Appliances.**

If:

(1) the appliance tested is a federally regulated consumer product or federally regulated commercial and industrial equipment; and

(2) either:

(A) the test results show that the appliance does not comply with an applicable federal standard or other applicable federal requirement; or

(B) the test results are at variance with the results reported by the manufacturer to the U.S. Department of Energy or the U.S. Federal Trade Commission; then, in addition to taking the applicable actions described in sections 1608(e)(1) and 1608(e)(2) of this Article, the Executive Director shall inform the appropriate federal agency.

**(d)(h) Forms and Formats Specified by Executive Director.**

The Executive Director may specify, and require the use of, any particular form or format for the submittal of any data, reports, or other information required by this Article, including but not limited to computer programs or formats.

**(e) Federal Preemption of State Specified Testing Requirements.**

In the event a federal test procedure referenced in section 1604 of this Article is amended, effective 180 days after the amended federal test procedure is published in the Federal Register, and until such time as this Article is updated to reflect such changes to preemptive federal law, attestation to the Energy Commission that the product has been tested in accordance with the amended federal test procedure shall be deemed compliance with section 1604 of this Article.

(1) If the changes to preemptive federal law preclude generating or filing any information required by section 1606(a)(3) of this Article, attestation to the Energy Commission that the product has been tested in accordance with the amended federal test procedure shall also be deemed compliance with any affected portions of section 1606(a)(3) of this Article.

### **(i) Executive Director Determinations.**

~~Whenever this Article refers to a finding, conclusion, or other determination by the Executive Director, any person seeking such a determination shall submit to the Executive Director a written request. Within 10 days of receipt of a request, the Executive Director shall either find the request is complete and so inform the applicant, or return the request to the applicant with a statement of what additional information is necessary to make it complete. Within 21 days of receipt of a complete request, the Executive Director shall make a determination, which shall be within the discretion of the Executive Director acting on the basis of the entire record, which shall be assembled and made publicly available by the Executive Director. Within 10 days of a determination, whether made in response to a request or made on the Executive Director's own initiative, any affected person, including but not limited to the person, if any, who made a request for the determination, may appeal the determination to the Energy Commission in writing. At the same time that the appeal is filed, the appellant shall file all the evidence the appellant wishes the Energy Commission to consider. The Energy Commission staff and any affected person shall file all the evidence they wish the Energy Commission to consider within 20 days after the appeal is filed. The Energy Commission shall hear and decide the appeal at the next regularly scheduled business meeting that is at least 30 days after the appeal is filed. At the hearing the Energy Commission may require the filed evidence to be presented under oath and may allow questions and cross-examination from participants.~~

**...[skipping the rest of section 1608]**

Note: Authority cited: Sections 25213, 25218(e), 25402(a)-(c) and 25960, Public Resources Code.

Reference: Sections 25216.5(d), 25402(a)-(c), 25402.11, and 25960, Public Resources Code.

## **Section 1609. Administrative Civil Penalties.**

### **(a) Violations Subject to Administrative Civil Penalties.**

- (1) Any person, including a retailer, manufacturer, contractor, importer or distributor, that sells or offers for sale an appliance in California, which is not listed in the MAEDbS, or does not meet marking requirements or standards, is in violation of section 1608(a)(1), 1608(a)(2), or 1608(a)(4) of this Article and may be subject to an administrative civil penalty for each unit of the appliance that was sold or is offered for sale in California.
- (2) Any person who manufactures, imports or distributes an appliance that is subsequently sold or offered for sale by another person for end use in California, when the manufacturer has not tested, marked or certified the appliance, in

violation of sections 1608(a)(2)(A), 1608(a)(2)(B), or 1608(a)(2)(C) of this Article, or when the appliance does not meet the efficiency standards referred to in sections 1608(a)(3) and 1608(a)(4) of this Article, may be subject to an administrative civil penalty for each unit of the appliance that was sold or is offered for sale, unless the manufacturer, distributor or importer can demonstrate both that the appliance was intended for shipment and use outside of California, and that the manufacturer, distributor or importer took reasonably prudent precautions to assure that the appliance would not be sold or offered for sale in California.

- (3) Any person who knowingly provides materially false information to the Energy Commission in a statement made pursuant to any provision of this Article that includes a declaration, executed under penalty of perjury, may be subject to an administrative civil penalty. This may be in addition to any administrative civil penalty assessed pursuant to sections 1609(a)(1) or 1609(a)(2) of this Article. The Energy Commission may consider the making of a false statement in a declaration submitted under penalty of perjury to be evidence of willfulness under ~~section 1609(b)(3)(E)~~ 1609(b)(3) of this Article.

**(b) Assessment of Administrative Civil Penalties.**

- (1) An administrative civil penalty of up to the maximum amount provided by Public Resources Code section 25402.11 ~~of the Public Resources Code~~ may be assessed for each unit of the appliance that was sold or is offered for sale in California in violation of section 1608(a) of this Article, pursuant to sections 1609(a)(1) or 1609(a)(2) of this Article, or for each false statement, pursuant to section 1609(a)(3) of this Article.
- (2) If more than one person is responsible for a sale or offer for sale in violation of section 1608(a) of this Article, the Energy Commission may apportion liability amongst the persons responsible for the violation.
- (3) In determining the amount of an administrative civil penalty for each violation, the Energy Commission shall consider the following factors set forth in Public Resources Code section 25402.11(a)(2):
  - ~~(A) The nature and seriousness of the violation.~~
  - ~~(B) The persistence of the violation, meaning a responsible person's history of past violations of this Article over the previous seven years.~~
  - ~~(C) The number of violations arising from the course of conduct that is the subject of the enforcement proceeding.~~
  - ~~(D) The length of time over which the violation occurred.~~
  - ~~(E) The willfulness of the persons responsible for the violation.~~
  - ~~(F) The harm to consumers and to the state that resulted from the amount of energy wasted due to the violation.~~
  - ~~(G) The number of persons responsible for the violation.~~
  - ~~(H) The efforts of the persons responsible for the violation to correct the violation prior to initiation of an enforcement action by the Energy Commission.~~

- (I) ~~The cooperation, by persons responsible for the violation, with the Energy Commission during its investigation.~~
- (J) ~~The assets, liabilities, and net worth of the persons responsible for the violation. This information will be considered to reduce the administrative civil penalty amount, should a responsible person or persons elect to provide asset, liability, and net worth documentation to the Executive Director to demonstrate that a reduction in a penalty amount is necessary to avoid an undue burden.~~

**(c) Notices of Violation.**

The Executive Director, or their designee, shall send a written Notice of Violation by certified mail (registered mail to non-U.S. destinations) or other means that provide actual notice to the person in violation of this Article. The Notice of Violation shall contain the following information:

- (1) The name and address of the person responsible for the violation;
- (2) A statement indicating the statute, regulation, order, or decision upon which the Notice of Violation is based, including any provisions relating to the assessment of administrative civil penalties;
- (3) A statement of facts upon which the Notice of Violation is based, including a description of the appliances or units of appliances at issue and a reference to model numbers.

**(d) Settlement.**

Consistent with ~~California Government Code Section 11415.60, the Energy Commission, or upon delegation, the Executive Director,~~ may at any time issue a decision by settlement with a responsible person. The settlement agreement may include appropriate sanctions and remedies to address violations and promote compliance.

**(e) Administrative Proceedings.**

- (1) No earlier than 30 days after issuing a Notice of Violation, the Executive Director may initiate an adjudicative proceeding to impose administrative civil penalties if the Executive Director determines that the responsible person has not made sufficient progress in addressing the violations identified in the Notice of Violation.
- (2) The proceeding shall be initiated by filing and serving ~~an accusation~~ a complaint as specified in ~~California Government Code Section 11505~~ California Code of Regulations, title 20, section 1233.1. The ~~accusation~~ complaint shall include an assessment of penalties based on the factors set forth in ~~subsection (b)(3),~~ Public Resources Code section 25402.11 and may include other information from the Notice of Violation.

- (3) The proceeding shall be conducted in a manner consistent with California Code of Regulations, title 20, section 1233.1. ~~Chapter 4.5 (commencing with Section 11400) and Chapter 5 (commencing with Section 11500) of part 1 of Division 3 of Title 2 of the California Government Code.~~
- (4) The proceeding shall be heard ~~by an administrative law judge pursuant to Government Code Section 11517(c), unless the Chair orders that the proceeding be heard directly by the Energy Commission as set forth in Public Resources Code sections 25210 and 25211, with the assistance of an Administrative Law Judge pursuant to California Government Code Section 11517(b).~~
- (5) After the hearing referenced in section 1609(e)(4) of this Article, the Energy Commission shall issue or adopt a decision on (1) whether a violation of this article has been committed, and (2) assessing appropriate penalties based on application of the factors set forth in Public Resources Code section 25402.11, section 1609(b)(3) of this Article.

**(f) Other Enforcement Procedures.**

The Executive Director, or their designee, and Energy Commission may take other such actions as are authorized by statute and Energy Commission regulations to address or prevent any act or omission addressed under this Article.

**(g) Judicial Review.**

An order of the Energy Commission imposing an administrative civil penalty shall be subject to judicial review pursuant to Public Resources Code Sections 25534.2(a) and 25534.2(b).

Note: Authority cited: Sections 25213, 25218, and 25402.11, Public Resources Code.  
Reference: Sections 25402 and 25402.11, Public Resources Code.