2023 REGULATORY REQUIREMENTS AND WHAT THEY MEAN FOR YOU

International Comfort Products®

A Carrier Company

TIME FOR A NEW CHANGE

As the innovative leader in building comfort and the inventor of modern air conditioning, ICP has thrived by continuously looking for the next advancement in comfort technology. That's why we are always prepared when it's time to meet new, federally mandated minimum efficiency standards.*

WHY THE CHANGE

Every six years the Department of Energy (DOE) reanalyzes the effects of energy usage, sets minimum efficiency requirements and manages the testing standards by which those efficiencies are measured. In 2018 the DOE started the first phase of their six-year plan requiring a 13% increase in energy efficiency for commercial packaged air conditioners, heat pumps and split systems. The second phase of this plan will start in 2023.

2023 MINIMUM EFFICIENCY CHANGE

Starting on January 1, 2023 all commercial air conditioning and heat pump equipment from 65,000 btu/h to 760,000 btu/h will require and additional 15% efficiency increase from the existing ratings set in 2018. Combined with the efficiency requirements implemented in 2018 this will result in a 30% increase over the six-year period.

Additionally, all gas fired commercial air conditioners will be required to meet an 81% gas efficiency rating

In 2023, there will not be any changes to the testing procedures mandated for commercial air conditioners and heat pumps great than 65,000 btu/h.

2023 SINGLE PHASE COMMERCIAL – SEER2, EER2 AND HSPF2

The DOE has also reanalyzed and adjusted the minimum efficiencies of single-phase air conditioners and heat pumps, 5 tons or less. Single phase and residential products will also be required to comply with a new testing procedure for developing efficiency ratings. Compared to today's test procedure, the external static pressure used when testing will be increased by up to 5X to better reflect field conditions.

Since the new testing requirements are more stringent and reduce the resulting efficiency rating, in 2023, there will be new metrics and nomenclature — SEER2, EER2 and HSPF2. On the same system, compared to SEER ratings, the new SEER2 ratings will be lower and the minimum efficiencies will be reduced to account for the more difficult test procedure.

DOE ENFORCEMENT FOR THE MANUFACTURE

After January 1, 2023, ICP will no longer manufacture any rooftop units that are not compliant with the new DOE energy efficiency mandates. According to 10CFR part 431.97, compliance is only on the date of manufacture — this means any three-phase product produced on 12/31/2022 or earlier is still able to be sold after the compliance date.

Please refer to the residential DOE 2023 regulatory brochure for more details on single phase requirements and enforcement.

*www.energy.gov

COMMERCIAL PACKAGED AIR CONDITIONER AND HEAT PUMP RATINGS

The new 2023 minimum efficiency standards for packaged air commercial air conditioners and heat pumps will increase the minimum efficiency by 15% over the January 1, 2018 efficiency standards. This second phase of regulatory increases will bring the total efficiency of these air conditioning system up by 30% from 2015.

Packaged Air Conditioning Units – Air Cooled Direct Expansion			
Equipment Type		**Existing January 1, 2018**	**New January 1, 2023**
Small Commercial Packaged AC's (≥ 65,000 Btu/h < 135,000 Btu/h)	Electric Resistance or No Heating	12.9 IEER	14.8 IEER
	All Other Types of Heating	12.7 IEER	14.6 IEER
Large Commercial Packaged AC's (≥ 135,000 Btu/h < 240,000 Btu/h)	Electric Resistance or No Heating	12.4 IEER	14.2 IEER
	All Other Types of Heating	12.2 IEER	14.0 IEER
Very Large Commercial Packaged AC's (≥ 240,000 Btu/h < 760,000 Btu/h)	Electric Resistance or No Heating	11.6 IEER	13.2 IEER
	All Other Types of Heating	11.4 IEER	13.0 IEER

Packaged Air Conditioning Units – Air Cooled Heat Pumps			
Equipment Type		**Existing January 1, 2018**	**New January 1, 2023**
Small Commercial Packaged AC's (≥ 65,000 Btu/h < 135,000 Btu/h)	Electric Resistance or No Heating	12.2 IEER, 3.3 COP	14.1 IEER, 3.4 COP
	All Other Types of Heating	12.0 IEER, 3.3 COP	13.9 IEER, 3.4 COP
Large Commercial Packaged AC's (≥ 135,000 Btu/h < 240,000 Btu/h)	Electric Resistance or No Heating	11.6 IEER, 3.2 COP	13.5 IEER, 3.3 COP
	All Other Types of Heating	11.4 IEER, 3.2 COP	13.3 IEER, 3.3 COP
Very Large Commercial Packaged AC's (≥ 240,000 Btu/h < 760,000Btu/h)	Electric Resistance or No Heating	10.6 IEER	NA

3 to 5 Tons Packaged Air Conditioning Units – Air Cooled DX and Heat Pumps			
Equipment Type		**Three Phase***	**Single Phase**
Small Commercial Packaged AC's (< 65,000 Btu/h)	All Heat Types	14 SEER, 8.0 HSPF	13.4 SEER2, 6.7 HSPF2

*Three phase 3-5 ton models have the same efficiency as existing models today. There is no change for SEER or HSPF for three phase models, only single phase is moving to SEER2 and HSPF2. Please refer to the residential DOE 2023 regulatory brochure for more details on SEER2 and HSPF2.

COMMERCIAL PACKAGED AIR CONDITIONER AND HEAT PUMP RATINGS

The new 2023 minimum efficiency standards for split air commercial air conditioners and heat pumps will increase the minimum efficiency by 15% over the January 1, 2018 efficiency standards. This second phase of regulatory increases will bring the total efficiency of these air conditioning system up by 30% from 2015.

Commercial Split Air Conditioning Units – Air Cooled Direct Expansion			
Equipment Type		**Existing January 1, 2018**	New January 1, 2023
Small Commercial Split AC's (≥ 65,000 Btu/h < 135,000 Btu/h)	Electric Resistance or No Heating	12.9 IEER	14.8 IEER
	All Other Types of Heating	12.7 IEER	14.6 IEER
Large Commercial Split AC's (≥ 135,000 Btu/h < 240,000 Btu/h)	Electric Resistance or No Heating	12.4 IEER	14.2 IEER
	All Other Types of Heating	12.2 IEER	14.0 IEER
Very Large Commercial Split AC's (≥ 240,000 Btu/h < 760,000000 Btu/h)	Electric Resistance or No Heating	11.6 IEER	13.2 IEER
	All Other Types of Heating	11.4 IEER	13.0 IEER

Commercial Split Air Conditioning Units – Air Cooled Heat Pumps			
Equipment Type		**Existing January 1, 2018**	**New January 1, 2023**
Small Commercial Split AC's (≥ 65,000 Btu/h < 135,000 Btu/h)	Electric Resistance or No Heating	12.2 IEER, 3.3 COP	14.1 IEER, 3.4 COP
	All Other Types of Heating	12.0 IEER, 3.3 COP	13.9 IEER, 3.4 COP
Large Commercial Split AC's (≥ 135,000 Btu/h < 240,000 Btu/h)	Electric Resistance or No Heating	11.6 IEER, 3.2 COP	13.5 IEER, 3.3 COP
	All Other Types of Heating	11.4 IEER, 3.2 COP	13.3 IEER, 3.3 COP
Very Large Commercial Split AC's (≥ 240,000 Btu/h < 760,000000 Btu/h)	Electric Resistance or No Heating	10.6 IEER, 3.2 COP	12.5 IEER, 3.2 COP
	All Other Types of Heating	10.4 IEER, 3.2 COP	12.3 IEER, 3.2 COP

WHAT IT ALL MEANS

Breaking down the numbers, the 2023 efficiency standards represent a 15% energy efficiency increase from current standards, across the board. Many of our current products already meet or exceed the minimum efficiency standards set for 2023. We have been working for several years in anticipation of these changes and are ready to increase the efficiency of our remaining product lines before the new standards take effect on January 1, 2023.

X-VANE™ TECHNOLOGY

As we continue to look for measured improvements in the energy efficiency and performance of our heating and cooling systems leading up to 2023, we continue to expand our X-Vane technology across our product lines.

Currently the X-Vane direct drive vane axial fan systems with EC motors only exist on our 3–6 ton, small rooftop units. This technology will soon be available on all small and medium light commercial rooftop units up to 27.5 tons. X-vane Technology has been designed to improve performance and efficiency while decreasing maintenance and installation costs.

Most notable of X-Vane Technology's many features is the exclusive beltless direct-drive vane axial fan system an industry first for rooftop units. This patent-pending technology replaces traditional belts and pulleys with a simpler, more compact design, all with 75 percent fewer moving parts. The outdoor fan system's high-density composite blade fan is also an exclusive design. Other technological advances that differentiate these units include: a new control board and coil technology, increased factory options and a tool-less filter access door.

- Units with X-Vane Technology are up to 60 percent more efficient than RTUs of 17 years ago, and 40% more efficient than traditional forward curve fans today. This ensures lower operating costs while increasing the opportunity for utility rebates.
- 75% fewer moving parts compared to traditional fans. No fan belts, pullies, shafts and bearings.
- Maintaining our historical footprints while increasing energy efficiency, allows for faster, easier, and less costly replacement opportunities
- In addition, optional SystemVu controls bring the benefits of smarter diagnostics by providing ongoing, real-time information to help ensure the efficient operation and optimum performance of the unit.

SPLIT SYSTEM WITH X-VANE FANS

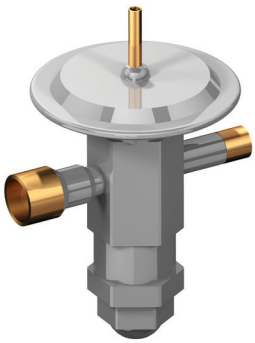
ICP is expanding the use of the highly efficient X-vane direct drive fan system into the Commercial Split System market. All 6 to 10 ton split system air handlers will soon be available with direct drive van axial fans. All of the same efficiencies and convenience of the X-vane fan system apply to the 40RU product line.

MULTISTAGE – SINGLE CIRCUIT DESIGN

ICP rooftop units will continue to utilize a single circuit Multistage compression system across our product lines that is designed to increase energy efficiency and heat transfer rates across the condenser coil. Using the full surface of the condenser coil throughout full load or part load conditions allows our units to achieve greater cooling efficiencies without the need to increase the footprint of the unit.

THERMAL EXPANSION VALVES - TXVS

The use of Thermal Expansion Valves will take over for the older style fixed orifice metering devices in our light commercial 6 to 27.5 tons rooftop units. A TXV is capable of operating more efficiently at part load conditions compared to a fixed orifice system due to its ability to precisely control the rate of refrigerant flow based on the temperatures and load of the system.



While a fixed orifice metering device will always deliver a fixed amount of refrigerant regardless of system load, a smart system using a TXV can avoid operating with improper refrigerant levels and reduce the amount of resulting temperature swings. TXV's will not only greatly impact energy efficiency of the system but also increase the durability of the refrigeration system as well as occupant comfort.

International Comfort Products

A Carrier Company

icp.usa

©2022 Carrier. All Rights Reserved.Cat. No. 04-811-90045

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice or without incurring obligations.
All trademarks and service marks referred herein are property of their respective owners