



HVAC MEASURES

This Equipment Catalog describes the eligibility requirements and rebate amounts for qualifying equipment under SRP's FY10 PowerWise Standard Business Solutions program. It also includes instructions on how to complete the Rebate Application and information regarding any required additional documentation. SRP's PowerWise Standard Business Solutions provides rebates for many types of energy efficient technologies. Please read the following sections carefully to ensure that you purchase and install qualifying equipment.

In order to be eligible for rebates through the PowerWise Standard Business Solutions program all equipment must meet the following requirements:

- Equipment must be purchased on or after May 1, 2009.
- Equipment must be new and installed in a manner that meets or exceeds code regulations.
- Replaced equipment must be disposed of in accordance with local, state, or federal codes and regulations and cannot be re-installed elsewhere.

Pre-qualification of eligible measures under the PowerWise Standard Business Solutions program is not required **except** for Retrofit Lighting Equipment and occupancy sensors. Additional eligibility and submittal requirements for HVAC technologies are outlined in this Equipment Catalog.

Rebates for additional measures may be available. For more information about PowerWise Standard Business Solutions, eligibility requirements, rebate levels, other SRP energy efficiency programs, or general inquiries, contact a participating SRP Alliance Contractor. You can also visit the program's Web site at srpnet.com/powerwisebiz, email us at PowerWiseStandardBusinessSolutions@srpnet.com, or contact the PowerWise Business Solutions hotline at 602-236-3054.

UNITARY AIR CONDITIONERS AND HEAT PUMPS (AIR-COOLED)

Measure Description: The PowerWise Standard Business Solutions program offers rebates for air-cooled unitary HVAC equipment based on the ARI certified efficiency levels at Standard Rating Conditions. The eligibility requirements and rebate levels are described below.

Applicability: New construction and retrofit installations are eligible.

Equipment Eligibility: Unitary air conditioners and heat pumps will be eligible for rebates if they are air-cooled units that meet or exceed all of the efficiency ratings shown in Table H-1 for air conditioning units and Table H-2 for heat pump units at ARI Standard Rating Conditions. Heat Pumps must meet both the cooling mode and heating mode efficiency requirements to qualify for per ton cooling efficiency rebates. Equipment must have an efficiency rating by ARI and use a minimum ozone-depleting refrigerant. Window and room air conditioners are *not* eligible for rebates.

Rebates: The rebate for air-cooled unitary air conditioners and heat pumps will be paid on a tiered efficiency structure according to the ARI-rated cooling capacity of the installed equipment. Rebates will be paid for the highest efficiency tier for which the unit qualifies. The rebate levels are as follows:

- Tier 1: \$75 per ton of cooling capacity.
- Tier 2: \$100 per ton of cooling capacity.

- Items to submit with Rebate Application:**
1. Dated sales receipt/invoice
 2. Manufacturers specification sheets documenting efficiency or unit ARI reference number(s)

Instructions for Rebate Worksheet: On the Rebate Application note the “Efficiency” as the ARI SEER/IPLV, EER and HSPF/COP values, and the “Measure Size” as the ARI-rated cooling capacity at Standard Test Conditions in tons (1 ton = 12,000 Btu/h).

Table H-1. Eligibility Requirements for Air-Cooled Unitary Air Conditioners

AC Size	System Type	Equipment Code	Tier 1 \$75/ton	Tier 2 \$100/ton
<65,000 Btu/h (single phase)	Split System	AC1SS65	14.5 SEER 12.0 EER	15.0 SEER 12.5 EER
	Single Package	AC1SP65	14.0 SEER 11.0 EER	14.0 SEER 12.0 EER
<65,000 Btu/h (three phase)	Split System	AC3SS65	14.0 SEER 12.0 EER	15.0 SEER 12.5 EER
	Single Package	AC3SP65	14.0 SEER 11.6 EER	15.0 SEER 12.0 EER
≥65,000 Btu/h and <135,000 Btu/h	Split System and Single Package	AC135	11.5 SEER 11.9 IPLV	12.0 EER 12.4 IPLV
≥135,000 Btu/h and <240,000 Btu/h	Split System and Single Package	AC240	11.5 EER 11.9 IPLV	12.0 EER 12.4 IPLV
≥240,000 Btu/h and <760,000 Btu/h	Split System and Single Package	AC760	10.5 EER 10.9 IPLV	10.8 EER 12.0 IPLV
≥760,000 Btu/h	Split System and Single Package	ACL	9.7 EER 11.0 IPLV	10.2 EER 11.0 IPLV

Table H-2. Eligibility Requirements for Air-Cooled Unitary Heat Pumps

AC Size	System Type	Equipment Code	Tier 1 \$75/ton	Tier 2 \$100/ton
<65,000 Btu/h (single phase)	Split System	HP1SS65	14.5 SEER 12.0 EER 8.2 HSPF	14.5 SEER 12.0 EER 8.5 HSPF
	Single Package	HP1SP65	14.0 SEER 11.0 EER 8.0 HSPF	14.0 SEER 12.0 EER 8.0 HSPF
<65,000 Btu/h (three phase)	Split System	HP3SS65	14.0 SEER 12.0 EER 8.5 HSPF	15.0 SEER 12.5 EER 9.0 HSPF
	Single Package	HP3SP65	14.0 SEER 11.6 EER 8.0 HSPF	15.0 SEER 12.0 EER 8.5 HSPF
≥65,000 Btu/h and <135,000 Btu/h	Split System and Single Package	HP135	11.5 EER 11.9 IPLV 3.4 COP ¹ 2.4 COP ²	12.0 EER 12.4 IPLV 3.4 COP ¹ 2.4 COP ²
≥135,000 Btu/h and <240,000 Btu/h	Split System and Single Package	HP240	11.5 EER 11.9 IPLV 3.2 COP ¹ 2.1 COP ²	12.0 EER 12.4 IPLV 3.2 COP ¹ 2.1 COP ²
≥240,000 Btu/h and <760,000 Btu/h	Split System and Single Package	HP760	10.5 EER 10.9 IPLV 3.2 COP ¹ 2.1 COP ²	10.8 EER 12.0 IPLV 3.2 COP ¹ 2.1 COP ²

¹ At 47°F db/43°F wb outside air

² At 17°F db/15°F wb outside air

UNITARY AIR CONDITIONERS AND HEAT PUMPS (WATER-COOLED)

Measure Description: The PowerWise Standard Business Solutions program offers rebates for water-cooled unitary HVAC equipment based on the ARI certified efficiency levels at Standard Rating Conditions. The eligibility requirements and rebate levels are described below.

Applicability: New construction and retrofit installations are eligible.

Equipment Eligibility: Unitary air conditioners and heat pumps will be eligible for rebates if they are water-cooled units that meet or exceed all of the efficiency ratings shown in Table H-3 at ARI Standard Rating Conditions. Heat Pumps must meet both the cooling mode and heating mode efficiency requirements to qualify for per ton cooling efficiency rebates. Equipment must have an efficiency rating by ARI and use a minimum ozone-depleting refrigerant. Window and room air conditioners are *not* eligible for rebates.

Rebates: The rebate for water-cooled unitary air conditioners and heat pumps is \$75.00 per ton of ARI-rated cooling capacity of the installed equipment.

- Items to submit with Rebate Application:**
1. Dated sales receipt/invoice
 2. Manufacturers specification sheets documenting efficiency or unit ARI reference number(s)

Instructions for Rebate Worksheet: On the Rebate Application note the “Efficiency” as the ARI EER and COP values, and the “Measure Size” as the ARI-rated cooling capacity at Standard Test Conditions in tons (1 ton = 12,000 Btu/h).

Table H-3. Eligibility Requirements for Water-Cooled Unitary Equipment

Equipment Type	System Type	Equipment Code	Minimum Efficiency Levels
Water and evaporative cooled Unitary AC units	Split System and Single Package	ACWC	14.0 EER
Water-source heat pumps	Split System and Single Package	HPWS	14.0 EER ¹ 4.6 COP ²

¹ At 85°F entering water

² At 70°F entering water

WATER CHILLING EQUIPMENT

Measure Description: Water chilling equipment (e.g. chillers) is commonly used to provide cooling for a variety of building types and process loads. Chillers come in many different types (centrifugal, rotary, screw, scroll, and reciprocating) and typically reject heat either through air-cooled or water-cooled condensers. High efficiency chillers can yield significant energy cost savings compared to standard efficiency units.

Applicability: New construction and retrofit installations are eligible.

Equipment Eligibility: Water chilling equipment must:

1. Exceed the minimum efficiency requirements per Table H-4 below as rated in accordance with ARI Standard 550/590
2. Not be a backup service unit
3. Reflect Variable Frequency Drives (VFD) installed on the chiller compressor in the IPLV rating, if applicable
4. Not serve cooling loads more than 20% process related
5. Be purchased and installed, and meet all other program terms and conditions

- Items to submit with Rebate Application:**
1. Dated sales receipt/invoice
 2. Manufacturer’s equipment specification sheet showing the unit’s COP and IPLV ratings at ARI rated conditions

Instructions for Rebate Application: In the Rebate Application mark the “System Parameters” as the chiller type and heat rejection method (e.g. water-cooled centrifugal), “Efficiency” as the ARI-rated COP and IPLV (including impacts of compressor VFD if applicable) and the “Measure Size” as the ARI-rated cooling capacity at Standard Test Conditions in tons (1 ton = 12,000 Btu/hr).

Measure Rebate: Equipment that meets or exceeds the minimum IPLV efficiency requirements shown in Table H-4 will be paid an equipment rebate of \$10/ton, plus an efficiency rebate of \$350/ton per kW/ton unit increase in IPLV efficiency using the following equation:

$$\text{Water Chilling Rebate} = (\text{Tons} * \$10/\text{ton}) + (\text{Tons} * \$350 * (\text{Minimum IPLV} - \text{Chiller IPLV}))$$

For example, the rebate for 200 ton air-cooled chiller with an IPLV rating of 1.00 kW/ton is:

$$(200 \text{ tons} * \$10/\text{ton}) + (200 \text{ tons} * \$350/(\text{kW}/\text{ton}) * (1.12 \text{ kW}/\text{ton} - 1.00 \text{ kW}/\text{ton})) = \$10,400$$

Table H-4. Water Chiller Unit Efficiency Requirements

Compressor Type	Heat Rejection	Size Category (tons)	Equip. Code	Minimum IPLV Efficiency (kW/ton)
All	Air Cooled	All	HALLAA	1.12
Reciprocating	Water Cooled	<150	HRECWS	0.68
Reciprocating	Water Cooled	≥150 & <300	HRECWM	0.68
Reciprocating	Water Cooled	≥300	HRECWL	0.68
Rotary, Screw, Scroll	Water Cooled	<150	HRSSWS	0.66
Rotary, Screw, Scroll	Water Cooled	≥150 & <300	HRSSWM	0.61
Rotary, Screw, Scroll	Water Cooled	≥300	HRSSWL	0.55
Centrifugal	Water Cooled	<150	HCENWS	0.65
Centrifugal	Water Cooled	≥150 & <300	HCENWM	0.58
Centrifugal	Water Cooled	≥300	HCENWL	0.53

PACKAGED TERMINAL UNITS

Measure Description: Package Terminal Air-Conditioners and Heat Pumps (PTAC and PTHP) are often used to provide cooling and heating in the hospitality industry. A PTAC is defined in ARI Standard 310/380-2004 as "... a wall sleeve and a separate un-encased combination of heating and cooling assemblies specified by the manufacturer and intended for mounting through the wall. It includes refrigeration components, separable outdoor louvers, forced ventilation, and heating availability by purchaser's choice of, at least, hot water, steam, or electrical resistance heat." PTHPs are defined similarly as "... a separate un-encased refrigeration system installed in a cabinet having a function and configuration similar to that of a packaged terminal air-conditioner. It uses reverse cycle refrigeration as its prime heat source and should have other supplementary heat source(s) available to purchasers with the choice of, at least, hot water, steam, or electrical resistance heat."

Applicability: New construction and retrofit installations are eligible.

Equipment Eligibility: PTAC and PTHP units must have an ARI-certified efficiency(ies) that meets or exceeds the minimum requirements shown in Table H-5. Equipment must be purchased and installed, and meet all other program terms and conditions.

Items to submit with Rebate Application:

1. Dated sales receipt/invoice
2. Manufacturers specification sheets documenting unit ARI reference number(s) and efficiency(ies)

Instructions for Rebate Application: In the Rebate application mark the “Efficiency” as the ARI-rated EER (and COP for PTHP units) and the “Measure Size” as the ARI-rated cooling capacity at Standard Test Conditions in Btu/hr (1 ton = 12,000 Btu/hr).

Measure Rebate: Rebate amounts for qualifying measures are listed below in Table H-5.

Table H-5. PTAC and PTHP Efficiency Requirements and Rebates

Equipment Type	Size Category	Equip. Code	Minimum Efficiency Requirement	ARI Standard	Rebate (\$/ton)
Package Terminal Air Conditioners (PTAC)	≤ 8,000 Btu/hr	PTAC80	11.8 EER	310/380	\$50
	> 8,000 and ≤ 10,500 Btu/hr	PTAC105	11.4 EER		\$50
	> 10,500 and ≤ 13,500 Btu/hr	PTAC135	10.7 EER		\$50
	> 13,500 Btu/hr	PTACL	10.0 EER		\$50
Package Terminal Heat Pumps (PTHP)	≤ 8,000 Btu/hr	PTHP80	11.8 EER & 3.3 COP Heating	310/380	\$50
	> 8,000 and ≤ 10,500 Btu/hr	PTHP105	11.4 EER & 3.2 COP Heating		\$50
	> 10,500 and ≤ 13,500 Btu/hr	PTHP135	10.7 EER & 3.1 COP Heating		\$50
	> 13,500 Btu/hr	PTHPL	10.0 EER & 3.0 COP Heating		\$50

VARIABLE FREQUENCY DRIVES

Measure Description: Variable Frequency Drives (VFDs) are electronic controls that regulate motor speed and torque, resulting in reduced energy consumption under part load conditions.

Applicability:

For retrofit projects: For HVAC installations where a variable load is present, any throttling or bypass devices (such as inlet vanes), bypass dampers, three-way valves or throttling valves must be removed or permanently disabled to qualify for HVAC fan and pump VFD rebates. Savings will only be realized where a variable load is present. Rebates are not available for retrofits of existing VFDs.

For new construction projects: Rebates are not available where VFDs are required by ASHRAE 90-1 2004, which requires a VFD on HVAC fans ≥ 10 horsepower (where a variable flow system is required).

Equipment Eligibility: The rebates listed for this measure apply to fan and pump applications on HVAC distribution systems. The maximum fan or pump size is 100 hp. Equipment must be purchased and installed, and meet all other program terms and conditions.

VFDs larger than 100 hp or installed on non-HVAC equipment may be eligible for rebates under the PowerWise Custom Business Solutions program. For more information about this program, contact the Program Administrator **before** you purchase your equipment.

Items to submit with Rebate Application:

1. Dated sales receipt/invoice
2. Manufacturers specification sheets documenting efficiency or unit ARI reference number(s)

Instructions for Rebate Application: In the Rebate application mark the “Efficiency” as “NA” and the “Measure Size” as the nameplate motor size of the affected motor.

Measure Rebate: Rebate amount for qualifying measures are listed below in Table H-6.

Table H-6. Variable Frequency Drives (VFDs) Rebates

Equipment Code	Measure Description	Unit	Rebate
VDFD	HVAC Fan \leq 100 HP	HP	\$55/HP
VFDP	HVAC Pump \leq 100 HP	HP	\$55/HP