

XVane-Series

XVane Rooftop Units

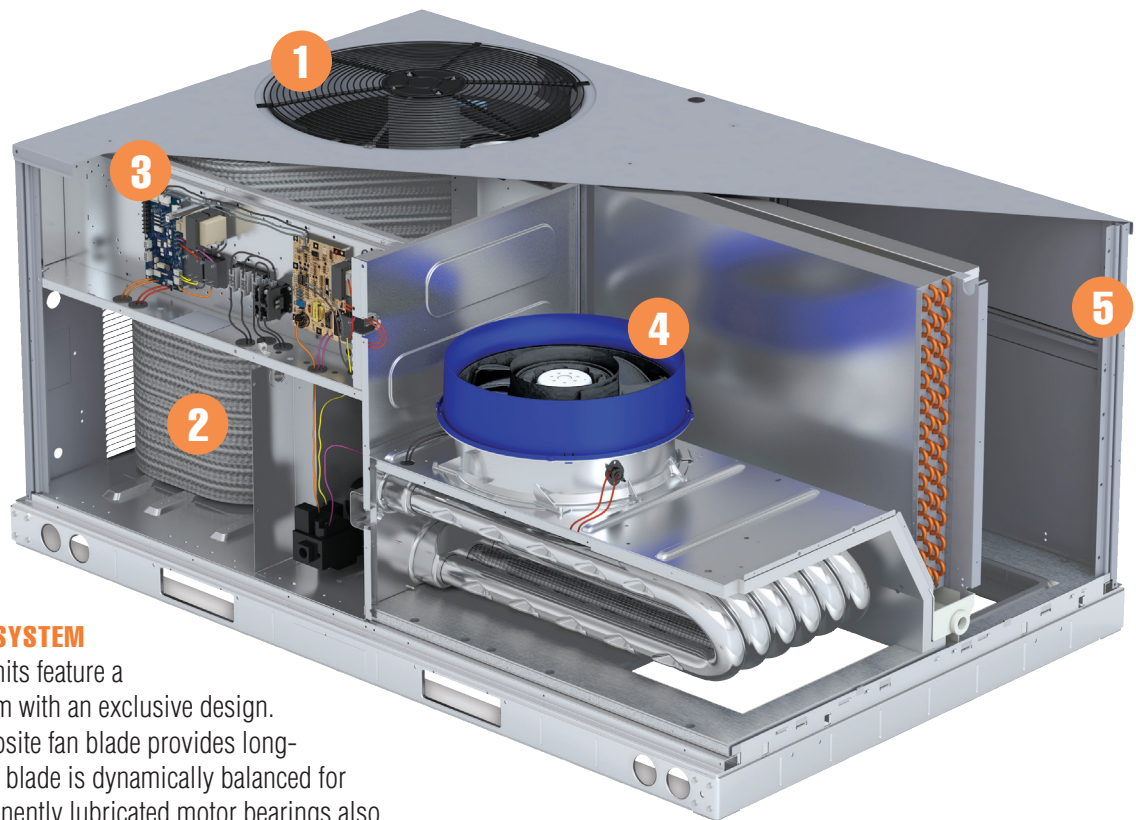
Humidity Control | Cooling Capacity | 3 - 6 tons

Product Data



Commercial Rooftop Units with XVane Fan

Commercial packaged rooftops with XVane Fans are designed to enhance performance and efficiency while cutting back on maintenance and installation costs. The industry's first beltless direct-drive vane axial fan for rooftop units is just one of many technological advances that make these new rooftops simpler and more efficient. Other improvements include a new intuitive control board and coil technology, new outdoor fan design, tool-less filter access doors and more.



1. NEW OUTDOOR FAN SYSTEM

Commercial rooftop units feature a new outdoor fan system with an exclusive design. Its high-density composite fan blade provides long-lasting quality, and the blade is dynamically balanced for quiet operation. Permanently lubricated motor bearings also provide lower maintenance costs.

2. UNIT COIL DESIGN

Commercial units operate using a time-tested round tube plate fin condenser coil design. In addition to their proven reliability, the 5/16" copper tube and aluminum fin condenser coils help raise efficiency and reduce the refrigerant charge.

3. NEW UNIT CONTROL BOARD

A new control board makes unit fan setup and service easier. The board offers dedicated indoor fan setups with a large field wiring terminal connection, an intuitive speed dial and switch operation. It's so simple that no special training is required for operation.

4. NEW INDOOR **XVane™** Fan

This patent-pending XVane Fan technology replaces traditional belt drive fans with a simpler, more compact design that's the first of its kind in the industry for this type of equipment. It delivers quiet operation and reduced operating costs through features including a direct-drive ECM motor and dynamically balanced blade fan.

5. TOOL-LESS FILTER ACCESS DOOR

As part of our commitment to designing for simplified maintenance, Commercial has equipped these units with filter access doors that can be opened without tools. This allows quick and easy access to service, check and change filters.

XVANE FAN, AN INDUSTRY FIRST IN ROOFTOP UNITS

XVane Fans replace belt drive designs with an all-new vane axial indoor fan. This patent-pending technology delivers a simpler, more compact design that you have to see to believe. Features like a direct-drive ECM motor improve efficiency in airflow systems while a dynamically balanced blade provides reliable performance. Additionally, a simplified design helps reduce installation and maintenance costs.



75% fewer
moving parts



Intuitive fan speed
adjustment controls



Up to 40% more
energy efficient



No belts or
pulleys



No shaft or
shaft bearings

PERFECT DESIGN AND FIT

We've revolutionized the category by making several innovative changes to our rooftop units. But what we didn't change is just as important. In terms of footprint, we built on an original, using the same Commercial unit design that's been trusted for years. This makes for hassle-free replacement of existing units and keeps installation costs down.

Same Efficient Unit Design



EFFICIENCY ACROSS MODELS

Commercial rooftop units are available in multiple efficiency levels, so you can choose the right option available for varying customer needs and budgets. While efficiency ratings vary, rooftop units are an average of 40 percent more efficient than models built 17 years ago – ensuring reduced operating costs regardless of the selected unit.

Packaged Rooftops Units with X^oVane™ Fan



Standard Efficiency

ELECTRIC HEAT/ELECTRIC COOLING & COOLING ONLY MODELS – RAV

Nominal Cooling Ton Size	Cooling Stages	AHRI Efficiency (SEER) IEER	Dimensions (in) L x W x H	Electrical Heat Nominal KW Range	Approx. Unit Weight (lbs)
3	1	(14.0)	74 x 47 x 33	4.0 to 15.0	437
4	1	(14.0)	74 x 47 x 33	4.0 to 21.0	498
5	1	(14.0)	74 x 47 x 33	6.5 to 24.0	511
6	2	15.2	74 x 47 x 41	6.5 to 24.0	562

High-Efficiency

ELECTRIC HEAT/ELECTRIC COOLING & COOLING ONLY MODELS – HIGH EFFICIENT RAW

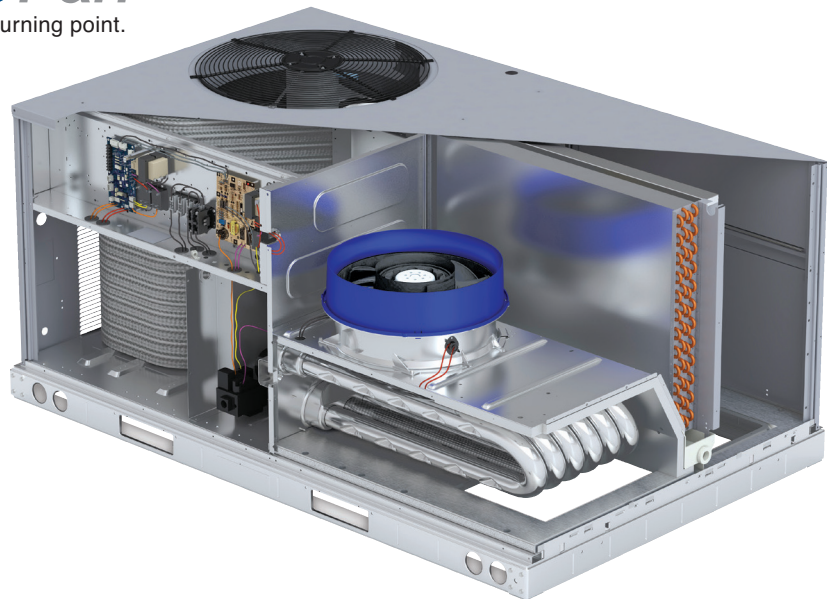
Nominal Cooling Ton Size	Cooling Stages	AHRI Efficiency (SEER)	Dimensions (in) L x W x H	Electrical Heat Nominal KW Range	Approx. Unit Weight (lbs)
3	2	(16.0)	74 x 47 x 33	4.0 to 15.0	468
4	2	(16.0)	74 x 47 x 33	4.0 to 21.0	510
5	2	(16.0)	74 x 47 x 41	6.5 to 24.0	555

Full Range of Pre-Certified, Factory-Installed Options

- Temperature Sensing EconoMi\$er with Relief
- Enthalpy Sensing EconoMi\$er with Relief
- Hot Gas Re-Heat
- Multiple Gas Heat Sizes
- Stainless Steel Gas Heat Exchangers
- Return Air Smoke Detector
- Supply Air Smoke Detector
- CO₂ Sensor
- Condensate Overflow Switch
- Multiple Static Fan Capabilities
- Thru-the-Base Utility Connections
- Non-Fused Disconnect Switch
- Hinged Access Panels
- Unpowered Convenience Outlet
- Powered Convenience Outlet
- Coated Coils:
 - Pre-Coat
 - E-Coat
 - Copper/Copper
- Electrical Mechanical Controls
- Extended Warranty Protection Plans

A full range of pre-engineered field installed accessories are also available.

XoVane™ Fan
It's not just a fan, it's a turning point.



XVane-Series

XVane Rooftop Units

Humidity Control | Cooling Capacity | 3 - 6 tons

Standard Efficiency - Product Data



SINGLE PACKAGE ROOFTOP UNITS WITH XVANE FAN TECHNOLOGY: GAS HEATING/ELECTRIC COOLING (RGV) AND ELECTRIC COOLING/OPTIONAL ELECTRIC HEAT (RAV) 3 – 6 TON

The new 3 to 6 Ton RGV/RAV series rooftop units (RTU) with XVane Fan Technology provides value added benefits never seen in this type of equipment before. New major design features include:

- Patent pending, the industry's first beltless direct-drive vane axial fan for rooftop units with electric commutated variable speed motor.
- Reliable fixed speed scroll compressor on 3-5 ton sizes and 2 stage scroll technology on 6 ton sizes.
- Upgraded unit control board with intuitive indoor fan adjustment.
- Reliable copper tube / aluminum fin condenser coil with $\frac{5}{16}$ -in. tubing to help reduce refrigerant charge versus prior designs.
- New outdoor fan system with rugged, lightweight high impact composite fan blade.



RGV/RAV036-072

XVane Fan™

Installation ease

All RGV/RAV units are field convertible to horizontal air flow, which makes it easy to adjust to unexpected job site complications. RGV/RAV rooftop units up to 6 tons are specifically designed to fit on our existing roof curbs dating back to 1989 for worry-free original fit. Also, our large control box gives you room to work and room to mount accessory controls. Intuitive controls make setting up the required fan speed simple and accurate. Access to the blower section is no longer needed with the new design.

Easy to maintain

With the new Vane Axial fan and direct drive ECM motor, there is no longer a need to adjust belts or pulleys as in past designs. This frees up maintenance and installation time.

Easy access handles provide quick and easy access to all normally serviced components. Our “no-strip” screw system has superior holding power and guides screws into position while preventing the screw from stripping the unit's metal.

Sloped, corrosion resistant composite drain pan sheds water and won't rust.

RGV units are designed with a naturally draining heat exchanger. Unlike positive pressure heat exchangers, this does not need to be periodically, manually drained. This saves labor and maintenance expense.

Easy to use

The newly re-designed Unit Control Board puts all connections and troubleshooting points in one convenient place. Most low voltage connections are made to the same board for easy access. Setting up the fan is made simple by an intuitive switch and rotary dial arrangement. RGV/RAV rooftops have high and low pressure switches, a filter drier, and 2-in. filters standard.

XVane Fan Technology

Direct drive X-Vane Fan Technology indoor fan system uses vane axial fan design and electrically commutated motors. This new Vane Axial design over past belt drive systems has 75% fewer moving parts, uses up to 40% less energy and has no fan belts, blower bearings, or shaft.

Design features include:

- Single-stage units deliver SEERs up to 14.0 and EERs up to 11.8. Two-stage units deliver IEERs up to 15.2 and EERs up to 11.2.
- All models are capable of either vertical or horizontal airflow.
- RGV/RAV rooftop units (RTU) were designed by customers for customers. With “no-strip” screw collars, handled access panels, and more the unit is easy to install, easy to maintain, and easy to use. Your new 3 to 6 ton RGV/RAV rooftop unit (RTU) provides optimum comfort and control from a packaged rooftop.

Features/Benefits

Value-added features include:

- Optional Hot Gas Re-Heat dehumidification system for improved part load humidity performance
- R-410A refrigerant
- Single point gas and electrical connections
- 3 to 5 ton models use fixed refrigerant metering devices and 6 ton models use a TXV
- Scroll compressors with internal line-break overload protection

Operating efficiency and flexibility

The RGV/RAV rooftops exceed ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) 90.1-2016, IECC¹ (International Energy Conservation Code) IECC-2018 minimum efficiency requirements.

Field convertible airflow

All RGV/RAV 3 to 6 ton units are field-convertible to horizontal airflow, which makes it easy to adjust to unexpected job site complications.

Comfort control

Our patented Hot Gas Re-Heat dehumidification system is an all-inclusive factory-installed option on gas heating/electric cooling and electric cooling/electric heat models. This system provides reliable, flexible operation to meet indoor part load sensible and latent requirements.

¹ IECC is a registered trademark of the International Code Council, Inc.

UNIT PERFORMANCE DATA — Single Stage Cooling /Single Circuit

UNIT	Nom. Tons	COOLING				GAS HEATING		Unit Dimensions H x W x L	Shipping Weight lb. [kg]
		Net. Cap (Btuh)	EER	SEER	IEER w/ 2-Speed Indoor Fan Motor	Input Cap. (Btuh) Stage 2	Thermal Efficiency (%)		
RGV036*^DA0AAA	3	34,400	11.5	14.0	N/A	65,000 - 90,000	80 - 82	33 3/8" x 46 5/8" x 74 3/8"	522 [237]
RGV048*^DA0AAA	4	47,000	11.6	14.0	N/A	65,000 - 130,000	80 - 82	33 3/8" x 46 5/8" x 74 3/8"	583 [265]
RGV060*^DA0AAA	5	58,500	11.0	14.0	N/A	65,000 - 130,000	80 - 82	33 3/8" x 46 5/8" x 74 3/8"	596 [271]

UNIT PERFORMANCE DATA — Two Stage Cooling /Single Circuit

UNIT	Nom. Tons	COOLING				GAS HEATING		Unit Dimensions H x W x L	Shipping Weight lb. [kg]
		Net. Cap (Btuh)	EER	SEER	IEER w/ 2-Speed Indoor Fan Motor	Input Cap. (Btuh) Stage 2	Thermal Efficiency (%)		
RGV072*^DA0AAA	6	70,000	11.0	N/A	15.0	67,000 - 150,000	80 - 81	41 3/8" x 46 5/8" x 74 3/8"	647 [294]

UNIT PERFORMANCE DATA — Single Stage Cooling /Single Circuit

UNIT	Nom. Tons	COOLING					Unit Dimensions H x W x L	Shipping Weight lb. [kg]
		Net. Cap (Btuh)	EER	SEER	Total Power (kW)	IEER w/ 2-Speed Indoor Fan Motor		
RAV036*0DA0AAA	3	34,400	11.7	14.0	2.9	N/A	33 3/8" x 46 5/8" x 74 3/8"	477 [217]
RAV048*0DA0AAA	4	47,000	11.8	14.0	4.0	N/A	33 3/8" x 46 5/8" x 74 3/8"	538 [244]
RAV060*0DA0AAA	5	58,500	11.2	14.0	5.2	N/A	33 3/8" x 46 5/8" x 74 3/8"	551 [250]

UNIT PERFORMANCE DATA — Two Stage Cooling /Single Circuit

UNIT	Nom. Tons	COOLING					Unit Dimensions H x W x L	Shipping Weight lb. [kg]
		Net. Cap (Btuh)	EER	SEER	Total Power (kW)	IEER w/ 2-Speed Indoor Fan Motor		
RAV072*0DA0AAA	6	70,000	11.2	N/A	5.7	15.2	41 3/8" x 46 5/8" x 74 3/8"	602 [273]

* Indicates Unit voltage: K = 208/230-1-60, H = 208/230-3-60, L = 460-3-60, S = 575-3-60

^ See model nomenclature listing for gas heating options.

NOTE: BASE MODEL NUMBERS LISTED. SEE MODEL NOMENCLATURE LISTING FOR ADDITIONAL OPTIONS

Model number nomenclature

RGV MODEL NUMBER NOMENCLATURE

MODEL SERIES	R	G	V	0	6	0	L	D	D	A	0	A	A	A
Position Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14
R = Rooftop														
G = Gas Heat / Electric Cooling	Type													
V = 14 SEER (036-060), 15 IEER (072)	Standard Efficiency													
036 = 36,000 BTUH = 3 Tons 048 = 48,000 BTUH = 4 Tons 060 = 60,000 BTUH = 5 Tons 072 = 72,000 BTUH = 6 Tons	Nominal Cooling Capacity													
K = 208/230-1-60 H = 208/230-3-60 L = 460-3-60 S = 575-3-60	Voltage													
D = Low Heat E = Medium Heat F = High Heat L = Low NOx, Low Heat S = Low Heat, Stainless Steel Heat Exchanger R = Medium Heat, Stainless Steel Heat Exchanger T = High Heat, Stainless Steel Heat Exchanger	Heating Capacity ¹													
D = Direct Drive X-Vane™ Fan – Standard Static E = Direct Drive X-Vane Fan – High Static F = Direct Drive X-Vane Fan – Medium Static G = Direct Drive X-Vane Fan – High Static with Hot Gas Re-Heat ²	Motor Option (Indoor Fan)													
A = None B = Economizer with Barometric relief, OA Temp sensor E = Economizer with Barometric relief + CO ₂ sensor, OA Temp sensor H = Economizer with Barometric relief, enthalpy sensor L = Economizer with Barometric relief + CO ₂ sensor, enthalpy sensor P = 2-Position Damper (036-060 models only) U = Temp Ultra Low Leak Economizer with Barometric relief W = Enthalpy Ultra Low Leak Economizer with Barometric relief	Outdoor Air Options / Control ³													
0A = No Options 4B = Non Fused Disconnect Switch AA = Hinged Access Panels AT = Un-Powered Convenience Outlet BB = Powered Convenience Outlet BP = Return Air Smoke Detector BR = Supply Air Smoke Detector CJ = Condensate Overflow Switch	Factory Installed Options ⁴													
A = Aluminum / Copper Cond & Evap Coil B = Precoat Alum/Copper Cond with Alum / Copper Evap (3 phase only) C = E-Coated Alum/Copper Cond with Alum / Copper Evap (3 phase only) D = E-Coated Alum / Copper Cond & Evap (3 phase only) E = Copper/Copper Cond & Alum/Copper Evap (3 phase only) F = Copper/Copper Cond & Evap (3 phase only)	Condenser / Evaporator Coil Configuration													
A = Economizer control (W7212) for EconoMiZer® IV (036-060 models) B = Economizer control (W7220) for EconoMiZer X (036-072 models)	Economizer Control													

NOTE: Factory-installed options are NOT available on single phase models. This includes economizers and 2-position damper.

¹See Specification Sheet for actual heating capacities.

²Hot Gas Re-Heat system includes Low Ambient controller.

³See Specification Sheet for details.

⁴Combinations of factory-installed options are available, see Specifications Sheet for details.

RAV MODEL NUMBER NOMENCLATURE

MODEL SERIES	R	A	V	0	6	0	L	0	D	A	0	A	A	A
Position Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14
R = Rooftop														
A = Electric/Electric, Cooling Only	Type													
V = 14 SEER (036-060) 15 IEER (072)	Standard Efficiency													
036 = 36,000 BTUH = 3 Tons 048 = 48,000 BTUH = 4 Tons 060 = 60,000 BTUH = 5 Tons 072 = 72,000 BTUH = 6 Tons	Nominal Cooling Capacity													
K = 208/230-1-60 H = 208/230-3-60 L = 460-3-60 S = 575-3-60	Voltage													
0 = No Heat	Heating Capacity ¹													
D = Direct Drive X-Vane™ Fan – Standard Static E = Direct Drive X-Vane Fan – High Static F = Direct Drive X-Vane Fan – Medium Static G = Direct Drive X-Vane Fan – High Static with Hot Gas Re-Heat ²	Motor Option (Indoor Fan)													
A = None B = Economizer with Barometric relief, OA Temp sensor E = Economizer with Barometric relief + CO ₂ sensor, OA Temp sensor H = Economizer with Barometric relief, enthalpy sensor L = Economizer with Barometric relief + CO ₂ sensor, enthalpy sensor P = 2-Position Damper (036-060 models only) U = Temp Ultra Low Leak Economizer with Barometric relief W = Enthalpy Ultra Low Leak Economizer with Barometric relief	Outdoor Air Options / Control ³													
0A = No Options 4B = Non Fused Disconnect Switch AA = Hinged Access Panels AT = Un-Powered Convenience Outlet BB = Powered Convenience Outlet BP = Return Air Smoke Detector BR = Supply Air Smoke Detector CJ = Condensate Overflow Switch	Factory Installed Options ⁴													
A = Aluminum / Copper Cond and Evap Coil B = Precoat Alum/Copper Cond with Alum / Copper Evap (3 phase only) C = E-Coated Alum/Copper Cond with Alum / Copper Evap (3 phase only) D = E-Coated Alum / Copper Cond and Evap (3 phase only) E = Copper/Copper Cond and Alum/Copper Evap (3 phase only) F = Copper/Copper Cond and Evap (3 phase only)	Condenser / Evaporator Coil Configuration													
A = Economizer control (W7212) for EconoMiZer® IV (036-060 models) B = Economizer control (W7220) for EconoMiZer X (036-072 models)	Economizer Control													

NOTE: On single phase (K voltage code) models the following are not available as factory-installed options:

- Coated or copper fin coils
- Economizers and 2-position damper
- Powered convenience outlet

¹See Specification Sheet for actual heating capacities.

²Hot Gas Re-Heat system includes Low Ambient controller.

³See Specification Sheet for details.

⁴Combinations of factory-installed options are available, see Specifications Sheet for details.

Capacity ratings

RGV AHRI RATINGS

RGV UNIT	COOLING STAGES	NOMINAL CAPACITY (TONS)	NET COOLING CAPACITY (MBH)	TOTAL POWER (kW)	SEER	EER	IEER WITH 2-SPEED INDOOR FAN MOTOR
RGV036	1	3	34.5	3.0	14.0	11.5	N/A
RGV048	1	4	47.0	4.1	14.0	11.6	N/A
RGV060	1	5	58.5	5.3	14.0	11.0	N/A
RGV072	2	6	70.0	6.4	N/A	11.0	15.0

LEGEND

AHRI — Air-Conditioning, Heating and Refrigeration Institute
EER — Energy Efficiency Ratio
IEER — Integrated Energy Efficiency Ratio
SEER — Integrated Energy Efficiency Ratio

NOTES:

1. Rated in accordance with AHRI Standards 210/240 (036-060 size) and 340/360 (072 size).
2. Rating are based on:
Cooling Standard: 80°F (27°C) db, 67°F (19°C) wb indoor air temperature and 95°F (35°C) db outdoor air temperature.
IEER Standard: A measure that expresses cooling part-load EER efficiency for commercial unitary air-conditioning and heat pump equipment on the basis of weighted operation at various load capacities.
3. All RGV units comply with ASHRAE 90.1-2016 (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) and DOE-2018 (Department of Energy) Energy Standard for minimum SEER and EER requirements.
4. RGV units comply with US Energy Policy Act (2005). To evaluate code compliance requirements, refer to state and local codes.



RAV AHRI RATINGS

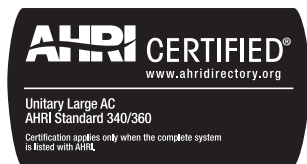
RAV UNIT	COOLING STAGES	NOMINAL CAPACITY (TONS)	NET COOLING CAPACITY (MBH)	TOTAL POWER (kW)	SEER	EER	IEER WITH 2-SPEED INDOOR FAN MOTOR
RAV036	1	3	34.4	2.9	14.0	11.7	N/A
RAV048	1	4	47.0	4.0	14.0	11.8	N/A
RAV060	1	5	58.5	5.2	14.0	11.2	N/A
RAV072	2	6	70.0	6.3	N/A	11.2	15.2

LEGEND

AHRI — Air-Conditioning, Heating and Refrigeration Institute
EER — Energy Efficiency Ratio
IEER — Integrated Energy Efficiency Ratio
SEER — Integrated Energy Efficiency Ratio

NOTES:

1. Rated in accordance with AHRI Standards 210/240 (036-060 size) and 340/360 (072 size).
2. Rating are based on:
Cooling Standard: 80°F (27°C) db, 67°F (19°C) wb indoor air temperature and 95°F (35°C) db outdoor air temperature.
IEER Standard: A measure that expresses cooling part-load EER efficiency for commercial unitary air-conditioning and heat pump equipment on the basis of weighted operation at various load capacities.
3. All RAV units comply with ASHRAE 90.1-2016 (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) and DOE-2018 (Department of Energy) Energy Standard for minimum SEER and EER requirements.
4. RAV units comply with US Energy Policy Act (2005). To evaluate code compliance requirements, refer to state and local codes.



SOUND RATINGS TABLE

RGV/RAV UNIT	COOLING STAGES	OUTDOOR SOUND (dB) AT 60 Hz								
		A-WEIGHTED	63	125	250	500	1000	2000	4000	8000
036	1	79	85.6	84.7	80.5	76.0	72.4	68.0	62.8	59.3
048	1	79	85.6	84.7	80.5	76.0	72.4	68.0	62.8	59.3
060	1	79	85.6	84.7	80.5	76.0	72.4	68.0	62.8	59.3
072	2	79	85.6	84.7	80.5	76.0	72.4	68.0	62.8	59.3

LEGEND

dB — Decibel

NOTES:

1. Outdoor sound data is measured in accordance with AHRI.
2. Measurements are expressed in terms of sound power. Do not compare these values to sound pressure values because sound

pressure depends on specific environmental factors which normally do not match individual applications. Sound power values are independent of the environment and therefore more accurate.

3. A-weighted sound ratings filter out very high and very low frequencies, to better approximate the response of “average” human ear. A-weighted measurements for ICP units are taken in accordance with AHRI.

MINIMUM - MAXIMUM AIRFLOW RATINGS (CFM) — NATURAL GAS AND PROPANE

UNIT	HEAT LEVEL	VOLTAGE	COOLING				HEATING*	
			MINIMUM AIRFLOW CFM	MINIMUM 2-SPEED AIRFLOW (LOW SPEED)	MINIMUM 2-SPEED AIRFLOW (HIGH SPEED)	MAXIMUM AIRFLOW CFM	MINIMUM AIRFLOW CFM	MAXIMUM AIRFLOW CFM
RGV036	LOW	1 PHASE	900	N/A	N/A	1500	890	1950
	MED						800	1520
	HIGH						N/A	N/A
RGV048	LOW	1 PHASE	1200	N/A	N/A	2000	890	2440
	MED						1050	2280
	HIGH						1220	2170
RGV060	LOW	1 PHASE	1500	N/A	N/A	2500	890	3250
	MED						1050	2730
	HIGH						1220	2790
RGV036	LOW	3 PHASE	900	N/A	N/A	1500	910	2010
	MED						960	1160
	HIGH						N/A	N/A
RGV048	LOW	3 PHASE	1200	N/A	N/A	2000	910	2010
	MED						1250	2330
	HIGH						1390	2220
RGV060	LOW	3 PHASE	1500	N/A	N/A	2500	910	2510
	MED						1250	2720
	HIGH						1390	2780
RGV072	LOW	3 PHASE	1800	1200	1800	3000	910	3350
	MED						1250	3260
	HIGH						1390	3170

*Heating rating values are identical for aluminum heat exchangers and stainless steel heat exchangers.

MINIMUM - MAXIMUM AIRFLOW RATINGS (CFM) — COOLING UNITS AND ACCESSORY ELECTRIC HEAT

UNIT	COOLING				ELECTRIC HEAT*	
	MINIMUM AIRFLOW CFM	MINIMUM 2- SPEED AIRFLOW (LOW SPEED)	MINIMUM 2- SPEED AIRFLOW (HIGH SPEED)	MAXIMUM AIRFLOW CFM	MINIMUM AIRFLOW CFM	MAXIMUM AIRFLOW CFM
RAV036	900	N/A	N/A	1500	900	1500
RAV048	1200	N/A	N/A	2000	1200	2000
RAV060	1500	N/A	N/A	2500	1500	2500
RAV072	1800	1200	1800	3000	1800	3000

*Electric heat modules are available as field-installed accessories for RAV units.

Capacity ratings (cont)

HEAT RATING TABLE — NATURAL GAS AND PROPANE

RGV UNIT		GAS HEAT	AL/SS HEAT EXCHANGER		TEMPERATURE RISE (°F)	THERMAL EFFICIENCY (%)	AFUE EFFICIENCY (%)
			INPUT/OUTPUT STAGE 1 (MBH)	INPUT/OUTPUT STAGE 2 (MBH)			
SINGLE PHASE	036	LOW	—/—	65/53	25-55	81	81
		MED	—/—	90/73	45-85	82	81
		HIGH	—/—	—	—	—	—
	048	LOW	—/—	65/53	20-55	81	81
		MED	—/—	90/73	30-65	82	81
		HIGH	—/—	130/106	45-80	81	81
	060	LOW	—/—	65/53	15-55	81	81
		MED	—/—	90/73	25-65	82	81
		HIGH	—/—	130/106	35-80	81	81
THREE PHASE	036	LOW	—/—	67/54	25-55	81	N/A
		MED	82/65	110/93	50-85	80	N/A
		HIGH	—	—	—	—	—
	048	LOW	—/—	67/54	25-55	81	N/A
		MED	—/—	110/88	35-65	80	N/A
		HIGH	120/96	150/120	50-80	80	N/A
	060	LOW	—/—	67/54	20-55	81	N/A
		MED	—/—	110/88	30-65	80	N/A
		HIGH	120/96	150/120	40-80	80	N/A
	072	LOW	—/—	67/54	15-55	81	N/A
		MED	—/—	110/88	25-65	80	N/A
		HIGH	120/96	150/120	30-80	80	N/A

HEAT RATING TABLE — LOW NO_x

UNIT		GAS HEAT	LOW NO _x HEAT EXCHANGER		TEMP RISE (°F)	THERMAL EFFICIENCY (%)	AFUE (%)
			INPUT/OUTPUT STAGE 1 (MBH)	INPUT/OUTPUT STAGE 2 (MBH)			
SINGLE PHASE	036	LOW	—	60/49	20-50	82.0	81.3
	048	LOW	—	60/49	20-50	82.0	81.3
	060	LOW	—	60/49	15-50	82.0	81.3
THREE PHASE	036	LOW	—	60/49	20-50	82.0	81.3
	048	LOW	—	60/49	20-50	82.0	81.3
	060	LOW	—	60/49	15-50	82.0	81.3

LEGEND

AFUE — Annual Fuel Utilization Efficiency
MBH — Btuh in thousands

Physical data

RGV/RAV 3 TO 4 TON PHYSICAL DATA

RGV/RAV UNIT	RGV/RAV036**D/E/F		RGV/RAV036**G		RGV/RAV048**D/E/F		RGV/RAV048**G	
NOMINAL TONS	3				4			
BASE UNIT OPERATING WT (lb) RGV/RAV*	482/437				543/498			
REFRIGERATION SYSTEM								
No. Circuits/No. Compressors/Type	1 / 1/ Scroll							
R-410A charge A/B (lbs-oz)	4-6	—	—	9-14	—	—		
Hot Gas Re-Heat R-410A charge A/B (lbs-oz)	—	7.6	—	—	14-6	—		
Metering device	Acutrol							
Hot Gas Re-Heat metering device	—	TXV-Acutrol	—	—	TXV-Acutrol	—		
High-Pressure Trip/Reset (psig)	630/505							
Low-Pressure Trip/Reset (psig)	54/117	27/44	—	54/117	27/44	—		
EVAPORATOR COIL								
Material (Tube/Fin)	Cu/Al							
Coil Type	3/8-in. RTPF							
Rows/FPI	2/15	—	—	3/15	—	—		
Total Face Area (ft²)	5.5							
Condensate Drain Connection Size	3/4-in.							
CONDENSER COIL								
Material	Cu/Al							
Coil Type	5/16-in. RTPF							
Rows/FPI	1/18	—	—	2/18	—	—		
Total Face Area (ft²)	11.7	—	—	15.9	—	—		
HOT GAS RE-HEAT COIL								
Material	—	Cu/Al	—	—	Cu/Al	—		
Coil Type	—	3/8-in. RTPF	—	—	3/8-in. RTPF	—		
Rows/FPI	—	1/17	—	—	2/17	—		
Total Face Area (ft²)	—	4.1	—	—	4.1	—		
EVAPORATOR FAN AND MOTOR								
Standard Static 1 Phase								
Motor Qty/Drive Type	1/Direct	—	—	1/Direct	—	—		
Max Cont BHP	0.44	—	—	0.72	—	—		
RPM Range	189-1890	—	—	190-1900	—	—		
Fan Qty/Type	1/Vane Axial	—	—	1/Vane Axial	—	—		
Fan Diameter (in.)	16.6	—	—	16.6	—	—		
Medium Static 1 Phase								
Motor Qty/Drive Type	1/Direct	—	—	1/Direct	—	—		
Max Cont BHP	0.71	—	—	1.06	—	—		
RPM Range	219-2190	—	—	217-2170	—	—		
Fan Qty/Type	1/Vane Axial	—	—	1/Vane Axial	—	—		
Fan Diameter (in.)	16.6	—	—	16.6	—	—		
High Static 1 Phase								
Motor Qty/Drive Type	1/Direct	—	—	1/Direct	—	—		
Max Cont BHP	1.07	—	—	1.53	—	—		
RPM Range	249-2490	—	—	246-2460	—	—		
Fan Qty/Type	1/Vane Axial	—	—	1/Vane Axial	—	—		
Fan Diameter (in.)	16.6	—	—	16.6	—	—		
Standard Static 3 Phase								
Motor Qty/Drive Type	1/Direct							
Max Cont BHP	0.44	—	—	0.72	—	—		
RPM Range	189-1890	—	—	190-1900	—	—		
Fan Qty/Type	1/Vane Axial							
Fan Diameter (in.)	16.6							
Medium Static 3 Phase								
Motor Qty/Drive Type	1/Direct							
Max Cont BHP	0.71	—	—	1.06	—	—		
RPM Range	219-2190	—	—	217-2170	—	—		
Fan Qty/Type	1/Vane Axial							
Fan Diameter (in.)	16.6							
High Static 3 Phase								
Motor Qty/Drive Type	1/Direct							
Max Cont BHP	1.07	—	—	1.96	—	—		
RPM Range	249-2490	—	—	266-2660	—	—		
Fan Qty/Type	1/Vane Axial							
Fan Diameter (in.)	16.6							

Physical data (cont)

RGV/RAV 3 TO 4 TON PHYSICAL DATA (cont)

RGV/RAV UNIT	RGV/RAV036**D/E/F	RGV/RAV036**G	RGV/RAV048**D/E/F	RGV/RAV048**G
CONDENSER FAN AND MOTOR				
Qty / Motor Drive Type	1 / Direct			
Motor HP/RPM	1/4 / 1100	1/4 / 1100	1/4 / 1100	1/4 / 1100
Fan Diameter (in.)	23			
FILTERS				
RA Filter Qty / Size (in.)	2 / 16x25x2			
OA Inlet Screen Qty / Size (in.)	1 / 20x24x1			

* Base unit operating weight does not include weight of options.

RGV/RAV 5 TO 6 TON PHYSICAL DATA

RGV/RAV UNIT	RGV/RAV060**D/E/F		RGV/RAV060**G	RGV/RAV072**D/E/F		RGV/RAV072**G
NOMINAL TONS	5			6		
BASE UNIT OPERATING WT (lb) RGV/RAV*	556/511			607/562		
REFRIGERATION SYSTEM						
No. Circuits/No. Compressors/Type	1 / 1 / Scroll			1 / 1 / 2-Stage Scroll		
R-410A charge A/B (lbs-oz)	8-9	—		10-3	—	
Hot Gas Re-Heat R-410A charge A/B (lbs-oz)	—	15-0		—	20-8	
Metering device	Acutrol			TXV		
Hot Gas Re-Heat metering device	—	TXV-Acutrol		—	TXV	
High-Pressure Trip/Reset (psig)			630/505			
Low-Pressure Trip/Reset (psig)	54/117	27/44		54/117	27/44	
EVAPORATOR COIL						
Material (Tube/Fin)			Cu/Al			
Coil Type			3⁄8-in. RTPF			
Rows/FPI			4/15			
Total Face Area (ft²)	5.5			7.3		
Condensate Drain Connection Size			3⁄4-in.			
CONDENSER COIL						
Material			Cu/Al			
Coil Type			5⁄16-in. RTPF			
Rows/FPI			2/18			
Total Face Area (ft²)	15.9			15.0		
HOT GAS RE-HEAT COIL						
Material	—	Cu/Al		—	Cu/Al	
Coil Type	—	3⁄8-in. RTPF		—	3⁄8-in. RTPF	
Rows/FPI	—	2/17		—	2/17	
Total Face Area (ft²)	—	4.1		—	5.5	
EVAPORATOR FAN AND MOTOR						
Standard Static 1 Phase						
Motor Qty/Drive Type	1/Direct			—		
Max Cont BHP	1.06			—		
RPM Range	215-2150			—		
Fan Qty/Type	1/Vane Axial			—		
Fan Diameter (in.)	16.6			—		
Medium Static 1 Phase						
Motor Qty/Drive Type	1/Direct			—		
Max Cont BHP	1.44			—		
RPM Range	239-2390			—		
Fan Qty/Type	1/Vane Axial			—		
Fan Diameter (in.)	16.6			—		
Standard Static 3 Phase						
Motor Qty/Drive Type		1/Direct				
Max Cont BHP	1.06			1.31		
RPM Range	215-2150			230-2300		
Fan Qty/Type		1/Vane Axial				
Fan Diameter (in.)		16.6				
Medium Static 3 Phase						
Motor Qty/Drive Type		1/Direct				
Max Cont BHP	1.44			1.76		
RPM Range	239-2390			253-2530		
Fan Qty/Type		1/Vane Axial				
Fan Diameter (in.)		16.6				
High Static 3 Phase						
Motor Qty/Drive Type		1/Direct				
Max Cont BHP		2.43				
RPM Range		284-2836				
Fan Qty/Type		1/Vane Axial				
Fan Diameter (in.)		16.6				
CONDENSER FAN AND MOTOR						
Qty / Motor Drive Type			1 / Direct			
Motor HP/RPM	1⁄4 / 1100	1⁄4 / 1100		1⁄4 / 1100	1⁄4 / 1100	
Fan Diameter (in.)			23			
FILTERS						
RA Filter Qty / Size (in.)	2 / 16x25x2			4 / 16x16x2		
OA Inlet Screen Qty / Size (in.)			1 / 20x24x1			

Physical data (cont)

RGV 3 TO 5 TON GAS HEAT DATA — 1 PHASE UNITS

RGV UNIT	RGV036	RGV048	RGV060
GAS CONNECTION			
No. of Gas Valves		1	
Natural Gas Supply Line Pressure (in. wg)/(psig)		4-13 / 0.18-0.47	
Liquid Propane Supply Line Pressure (in. wg)/(psig)		11-13 / 0.40-0.47	
HEAT ANTICIPATOR SETTING (AMPS)			
First Stage		0.14	
Second Stage		0.14	
NATURAL GAS HEAT			
LOW			
No. of Stages / No. of Burners (total)		1 / 2	
Connection Size		1/2-in. NPT	
Rollout Switch Opens / Closes (°F)		195 / 115	
Temperature Rise (°F)	25-55	20-55	15-55
MEDIUM			
No. of Stages / No. of Burners (total)		1 / 3	
Connection Size		1/2-in. NPT	
Rollout Switch Opens / Closes (°F)		195 / 115	
Temperature Rise (°F)	45-85	30-65	25-65
HIGH			
No. of Stages / No. of Burners (total)	—	1 / 3	
Connection Size	—	1/2-in. NPT	
Rollout Switch Opens / Closes (°F)	—	195 / 115	
Temperature Rise (°F)	—	45-80	35-80
LIQUID PROPANE HEAT			
LOW			
No. of Stages / No. of Burners (total)		1 / 2	
Connection Size		1/2-in. NPT	
Rollout Switch Opens / Closes (°F)		195 / 115	
Temperature Rise (°F)	25-55	20-55	15-55
MEDIUM			
No. of Stages / No. of Burners (total)		1 / 3	
Connection Size		1/2-in. NPT	
Rollout Switch Opens / Closes (°F)		195 / 115	
Temperature Rise (°F)	45-85	30-65	25-65
HIGH			
No. of Stages / No. of Burners (total)	—	1 / 3	
Connection Size	—	1/2-in. NPT	
Rollout Switch Opens / Closes (°F)	—	195 / 115	
Temperature Rise (°F)	—	45-80	35-80
LOW NOx GAS HEAT			
LOW			
No. of Stages / No. of Burners (total)		1 / 2	
Connection Size		1/2-in. NPT	
Rollout Switch Opens / Closes (°F)		195 / 115	
Temperature Rise (°F)	20-50		15-50

LEGEND

BHP — Break Horsepower
FPI — Fins Per Inch
OA — Outdoor Air
RA — Return Air

* Base unit operating weight does not include weight of options.

RGV 3 TO 6 TON GAS HEAT DATA — 3 PHASE UNITS

RGV UNIT	RGV036	RGV048	RGV060	RGV072
GAS CONNECTION				
No. of Gas Valves	1			
Natural Gas Supply Line Pressure (in. wg)/(psig)	4-13 / 0.18-0.47			
Liquid Propane Supply Line Pressure (in. wg)/(psig)	11-13 / 0.40-0.47			
HEAT ANTICIPATOR SETTING (AMPS)				
First Stage	0.14			
Second Stage	0.14			
NATURAL GAS HEAT				
LOW				
No. of Stages / No. of Burners (total)	1 / 2			
Connection Size	1/2-in. NPT			
Rollout Switch Opens / Closes (°F)	195 / 115			
Temperature Rise (°F)	25-55		20-55	15-55
MEDIUM				
No. of Stages / No. of Burners (total)	2 / 3		1 / 3	
Connection Size		1/2-in. NPT		
Rollout Switch Opens / Closes (°F)		195 / 115		
Temperature Rise (°F)	50-85	35-65	30-65	25-65
HIGH				
No. of Stages / No. of Burners (total)	—		2 / 3	
Connection Size	—		1/2-in. NPT	
Rollout Switch Opens / Closes (°F)	—		195 / 115	
Temperature Rise (°F)	—	50-80	40-80	35-80
LIQUID PROPANE HEAT				
LOW				
No. of Stages / No. of Burners (total)	1 / 2			
Connection Size	1/2-in. NPT			
Rollout Switch Opens / Closes (°F)	195 / 115			
Temperature Rise (°F)	25-55		20-55	15-55
MEDIUM				
No. of Stages / No. of Burners (total)	2 / 3		1 / 3	
Connection Size		1/2-in. NPT		
Rollout Switch Opens / Closes (°F)		195 / 115		
Temperature Rise (°F)	50-85	35-65	30-65	25-65
HIGH				
No. of Stages / No. of Burners (total)	—		2 / 3	
Connection Size	—		1/2-in. NPT	
Rollout Switch Opens / Closes (°F)	—		195 / 115	
Temperature Rise (°F)	—	50-80	40-80	35-80
LOW NOx GAS HEAT				
LOW				
No. of Stages / No. of Burners (total)	1 / 2			
Connection Size	1/2-in. NPT			
Rollout Switch Opens / Closes (°F)	195 / 115			
Temperature Rise (°F)	20-50		15-50	—

Options and accessories

ITEM	OPTION*	ACCESSORY†
GAS HEAT (RGV units only)		
Low, Medium or High Gas Heat — Aluminized Heat Exchanger	X	
Low, Medium or High Gas Heat — Stainless Steel Heat Exchanger	X	
Propane Conversion Kit		X
High Altitude Conversion Kit		X
Flue Discharge Deflector		X
Flue Shield		X
ELECTRIC HEAT (RAV units only)		
Electric Resistance Heaters		X
Single Point Kits		X
CABINET		
Thru-the-Base electrical or gas-line connections	X	X
Hinged Access Panels	X	
COIL OPTIONS		
Cu/Cu indoor and/or outdoor coils ¹	X	
Pre-coated outdoor coils ¹	X	
Premium, E-coated outdoor coils ¹	X	
HUMIDITY CONTROL		
Hot Gas Re-Heat Dehumidification System ¹	X	
CONDENSER PROTECTION		
Condenser coil hail guard (louvered design) ¹	X	X
CONTROLS		
Thermostats, temperature sensors, and subbases		X
Smoke detector (supply and/or return air)	X	
Horn Strobe Annunciator ²		X
Time Guard II compressor delay control circuit		X
Phase Monitor		X
Condensate Overflow switch	X	X

ITEM	OPTION*	ACCESSORY†
ECONOMIZERS AND OUTDOOR AIR DAMPERS		
EconoMi\$er® IV for electro-mechanical controls - Non FDD (Standard air leak damper models) ^{1, 3, 8}	X	X
EconoMi\$er X for electro-mechanical controls, complies with FDD (Stan- dard and Ultra Low Leak damper models) ^{1, 3, 8}	X	X
Motorized 2-position outdoor-air damper ¹	X	X
Manual outdoor-air damper (25% and 50%)		X
Barometric relief ⁴	X	X
Power exhaust - prop design		X
ECONOMIZER SENSORS AND IAQ DEVICES		
Single dry bulb temperature sensors ⁵	X	X
Differential dry bulb temperature sensors ⁵		X
Single enthalpy sensors ⁵	X	X
Differential enthalpy sensors ⁵		X
CO ₂ sensor (wall, duct, or unit mounted) ⁵	X	X
INDOOR MOTOR AND DRIVE		
Multiple motor and drive packages	X	
LOW AMBIENT CONTROL		
Winter start kit ⁶		X
Low Ambient controller to -20°F (-29°C) ⁶		X
POWER OPTIONS		
Convenience outlet (powered) ¹	X	
Convenience outlet (unpowered)	X	
Non-fused disconnect ⁷	X	
ROOF CURBS		
Roof curb 14-in. (356 mm)		X
Roof curb 24-in. (610 mm)		X

* Factory-installed option.

† Field-installed accessory.

NOTES:

- Not available on single phase (-K voltage code) models. Use field-installed accessory where available.
- Requires a field-supplied 24V transformer for each application. See price pages for details.
- FDD (Fault Detection and Diagnostic) capability per California Title 24 section 120.2.
- Included with economizer.
- Sensors used to optimize economizer performance.
- See application data for assistance.
- Non-fused disconnect switch cannot be used when unit electrical rating exceeds:
208-230/1/60 and 208-230/3/60 = 80 amps (FLA).
480/3/60 and 575/3/60 = 80 amps (FLA).
- Available as a factory-installed option for 036-060 models only.

Factory-installed options

Economizer (dry-bulb or enthalpy)

Economizers save money. They bring in fresh, outside air for ventilation; and provide cool, outside air to cool your building. This is the preferred method of low-ambient cooling. When coupled to CO₂ sensors, economizers can provide even more savings by coupling the ventilation air to only that amount required.

Economizers are available, installed and tested by the factory, with either enthalpy or dry-bulb temperature inputs. Additional sensors are available as accessories to optimize the economizers. Economizers include a powered exhaust system to help equalize building pressures.

Economizers include gravity controlled barometric relief that helps equalize building pressure and ambient air pressures. This can be a cost effective solution to prevent building pressurization. Economizers are available in Ultra Low Leak and standard low leak versions. Economizers can be factory-installed or easily field-installed.

Unit mounted CO₂ sensor

The CO₂ sensor works with the economizer to intake only the correct amount of outside air for ventilation. As occupants fill your building, the CO₂ sensor detects their presence through increasing CO₂ levels, and opens the economizer appropriately. When the occupants leave, the CO₂ levels decrease, and the sensor appropriately closes the economizer. This intelligent control of the ventilation air, called demand controlled ventilation (DCV), reduces the overall load on the rooftop, saving money. It is also available as a field-installed accessory.

Smoke detector (supply and/or return air)

Trust the experts. Smoke detectors make your application safer and your job easier. ICP smoke detectors immediately shut down the rooftop unit when smoke is detected. They are available, installed by the factory, for supply air, return air, or both.

Optional Hot Gas Re-Heat dehumidification system

ICP's Hot Gas Re-Heat dehumidification system is an all-inclusive factory-installed option that can be ordered with any RGV/RAV036-072 rooftop unit, with the exception of single phase voltage (208-230/1/60) units.

This system expands the envelope of operation of ICP's rooftop products to provide unprecedented flexibility to meet year round comfort conditions.

The Hot Gas Re-Heat dehumidification system has a unique dual operational mode setting. The Hot Gas Re-Heat system provides greater dehumidification of the occupied space by two modes of dehumidification operations in addition to its normal design cooling mode.

The RGV/RAV036-072 rooftop, coupled with the Hot Gas Re-Heat system, is capable of operating in normal design cooling mode, sub-cooling mode, and hot gas reheat mode. Normal design cooling mode is when the unit will operate under its normal sequence of operation by cycling compressors to maintain comfort conditions.

Sub-cooling mode will operate to satisfy part load type conditions when the space requires combined sensible and a higher proportion of latent load control. Hot Gas

Reheat mode will operate when outdoor temperatures diminish and the need for latent capacity is required for sole humidity control. Hot Gas Reheat mode will provide neutral air for maximum dehumidification operation.

NOTE: Hot Gas Re-Heat system includes Low Ambient controller.

Thru-the-base connections

Thru-the-base connections, available as a factory option, are necessary to ensure proper connection and seal when routing wire and piping through the rooftop's base-pan and curb. These couplings eliminate roof penetration and should be considered for gas lines, main power lines, as well as control power.

Hinged access panels

Allows access to unit's major components with specifically designed hinged access panels. Panels are filter, control box access indoor fan motor access.

Cu/Cu (indoor) coils

Copper fins and copper tubes are mechanically bonded to copper tubes and copper tube sheets. A polymer strip prevents coil assembly from contacting the sheet metal coil pan to minimize potential for galvanic corrosion between coil and pan.

E-coated (outdoor and indoor) coils

A flexible epoxy polymer coating uniformly applied to all coil surface areas without material bridging between fins. Coating process shall ensure complete coil encapsulation of tubes, fins and headers.

Pre-coated outdoor coils

A durable epoxy-phenolic coating to provide protection in mildly corrosive coastal environments. The coating minimizes galvanic action between dissimilar metals. Coating is applied to the aluminum fin stock prior to the fin stamping process to create an inert barrier between the aluminum fin and copper tube.

Condenser coil hail guard

Sleek, louvered panels protect the condenser coil from hail damage, foreign objects, and incidental contact.

Single enthalpy sensor

Prevents the wheel from rotating if the outside air conditions are acceptable for free cooling. Both exhaust and supply blowers will remain on.

Stainless steel heat exchanger (RGV units only)

The stainless steel heat exchanger option provides the tubular heat exchanger be made out of a minimum 20 gage type 409 stainless steel for applications where the mixed air to the heat exchanger is expected to drop below 45°F (7°C). Stainless steel may be specified on applications where the presence of airborne contaminants require its use (applications such as paper mills) or in area with very high outdoor humidity that may result in severe condensation in the heat exchanger during cooling operation.

Convenience outlet (powered or un-powered)

Reduce service and/or installation costs by including a convenience outlet in your specification. ICP will install

Options and accessories (cont)

this service feature at our factory. Provides a convenient, 15 amp, 115v GFCI receptacle with “Wet in Use” cover. The “powered” option allows the installer to power the outlet from the line side of the disconnect or load side as required by code. The “unpowered” option is to be powered from a separate 115/120v power source.

The unpowered convenience outlet is available as a 15 amp factory-installed option or a 20 amp field-installed accessory.

Non-fused disconnect

This OSHA-compliant, factory-installed, safety switch allows a service technician to locally secure power to the rooftop. When selecting a factory-installed non-fused disconnect, note they are sized for the unit as ordered from the factory. The sizing of these do not accommodate field-installed items such as power exhaust devices, etc. If field installing electric heat with factory-installed non-fused disconnect switch, a single point kit may or may not be required.

Condensate overflow switch

This sensor and related controller monitors the condensate level in the drain pan and shuts down compression operation when overflow conditions occur. It includes:

- Indicator light – solid red (more than 10 seconds on water contact – compressors disabled), blinking red (sensor disconnected)
- 10 second delay to break – eliminates nuisance trips from splashing or waves in pan (sensor needs 10 seconds of constant water contact before tripping)
- Disables the compressor(s) operation when condensate plug is detected, but still allows fans to run for economizer.

Power exhaust with barometric relief

Superior internal building pressure control. This field-installed accessory may eliminate the need for costly, external pressure control fans.

Field-installed accessories

Condenser coil hail guard

Sleek, louvered panels protect the condenser coil from hail damage, foreign objects, and incidental contact. This can be purchased as a factory-installed option or as a field-installed accessory.

Differential enthalpy sensor

The differential enthalpy sensor is comprised of an outdoor and return air enthalpy sensors to provide differential enthalpy control. The sensor allows the unit to determine if outside air is suitable for free cooling.

Wall or duct mounted CO₂ sensor

The IAQ sensor shall be available in duct or wall mount. The sensor provides demand ventilation indoor air quality (IAQ) control.

Propane conversion kit (RGV units only)

Convert your gas heat rooftop from standard natural gas operation to propane using this field-installed kit.

High altitude conversion kit (RGV units only)

High altitudes have less oxygen, which affects the fuel/air mixture in heat exchangers. In order to maintain a proper fuel/air mixture, heat exchangers operating in altitudes above 2000 ft (610 m) require different orifices. To select the correct burner orifices or determine the heat capacity for a high altitude application, use either the selection software, or the unit's service manual. High altitudes have less oxygen, which means heat exchangers need less fuel. The new gas orifices in this field-installed kit make the necessary adjustment for high altitude applications. They restore the optimal fuel to air mixture and maintain healthy combustion on altitudes above 2000 ft (610 m).

NOTE: Typical natural gas heating value ranges from 975 to 1050 Btu/ft³ at sea level nationally. The heating value goes down approximately 1.7% per every thousand feet elevation. Standard factory orifices can typically be used up to 2000 ft (610 m) elevation without any operational issues.

Flue discharge deflector (RGV units only)

The flue discharge deflector is a useful accessory when flue gas recirculation is a concern. By venting the flue discharge upwards, the deflector minimizes the chance for a neighboring unit to intake the flue exhaust.

Phase monitor protection

The Phase Monitor Control will monitor the sequence of three phase electrical system to provide a phase reversal protection; and monitor the three phase voltage inputs to provide a phase loss protection for the three phase device. It will work on either a Delta or Wye power connection.

Winter start kit

The winter start kit by ICP extends the low ambient limit of your rooftop to 25°F (−4°C). The kit bypasses the low

pressure switch, preventing nuisance tripping of the low pressure switch. Other low ambient precautions may still be prudent.

Low ambient controller

The low ambient controller is a head pressure controller kit that is designed to maintain the unit's condenser head pressure during periods of low ambient cooling operation. This device should be used as an alternative to economizer free cooling when economizer usage is either not appropriate or desired. The low ambient controller will either cycle the outdoor fan motors or operate them at reduced speed to maintain the unit operation, depending on the model. This controller allows cooling operation down to −20°F (−29°C) ambient conditions.

Roof curb (14-in./356 mm or 24-in./610 mm)

Full perimeter roof curb with exhaust capability provides separate air streams for energy recovery from the exhaust air without supply air contamination.

Filter status indicator accessory

Monitors static pressure across supply and exhaust filters and provides indication when filters become clogged.

Power exhaust

Superior internal building pressure control. This field-installed accessory may eliminate the need for costly, external pressure control fans.

Manual OA Damper

Manual outdoor air dampers are an economical way to bring in ventilation air. The dampers are available in 25% and 50% versions.

NOTE: See application tip "ROOFTOP-18-01" prior to use of this damper on 072 size models.

Motorized 2-Position Damper

The ICP 2-position, motorized outdoor air damper admits up to 100% outside air. Using reliable, gear-driven technology, the 2-position damper opens to allow ventilation air and closes when the rooftop stops, stopping unwanted infiltration.

NOTE: See application tip "ROOFTOP-18-01" prior to use of this damper on 072 size models.

Electric Heaters

ICP offers a full-line of field-installed accessory heaters. The heaters are very easy to use, install and are all pre-engineered and certified.

Time Guard II control circuit

This accessory protects your compressor by preventing short-cycling in the event of some other failure, prevents the compressor from restarting for 30 seconds after stopping. Not required with authorized commercial thermostats.

Options and accessories (cont)

OPTIONS AND ACCESSORY WEIGHTS

OPTION / ACCESSORY NAME	RGV/RAV UNIT WEIGHT							
	036		048		060		072	
	lb	kg	lb	kg	lb	kg	lb	kg
Hot Gas Re-Heat System*	15	7	15	7	15	7	24	11
Power Exhaust - vertical	51	23	51	23	51	23	51	23
Power Exhaust - horizontal	39	18	39	18	39	18	39	18
EconoMi\$er® (X, IV)	35	16	35	16	35	16	35	16
2-Position Damper	39	18	39	18	39	18	58	26
Manual Damper	12	5	12	5	12	5	18	8
Medium Gas Heat (RGV units only)	9	4	9	4	9	4	15	7
High Gas Heat (RGV units only)	—	—	63	29	63	29	63	29
Hail Guard (louvered)	13	6	13	6	13	6	17	8
Cu/Cu Condenser Coil	37	17	74	34	74	34	95	43
Cu/Cu Condenser and Evaporator Coils	75	34	112	51	112	51	165	75
Roof Curb (14-in. curb)	95	43	95	43	95	43	95	43
Roof Curb (24-in. curb)	150	68	150	68	150	68	150	68
CO ₂ sensor	2	1	2	1	2	1	2	1
Flue Discharge Deflector	7	3	7	3	7	3	7	3
Optional Indoor Motor/Drive	10	5	10	5	10	5	15	7
Low Ambient Controller	9	4	9	4	9	4	9	4
Winter Start Kit	5	2	5	2	5	2	5	2
Return Air Smoke Detector	7	3	7	3	7	3	7	3
Supply Air Smoke Detector	7	3	7	3	7	3	7	3
Fan Filter Switch	2	1	2	1	2	1	2	1
Non-Fused Disconnect	15	7	15	7	15	7	15	7
Powered Convenience Outlet	36	16	36	16	36	16	36	16
Unpowered Convenience Outlet	4	2	4	2	4	2	4	2
Enthalpy Sensor	2	1	2	1	2	1	2	1
Differential Enthalpy Sensor	3	1	3	1	3	1	3	1

LEGEND

—Not Available

*For Hot Gas Re-Heat system, add Low Ambient controller weight.

NOTE: Where multiple variations are available, the heaviest combination is listed.

XVane-Series

XVane Rooftop Units

Humidity Control | Cooling Capacity | 3 - 5 tons

High Efficiency - Product Data



SINGLE PACKAGE ROOFTOP UNITS WITH XVANE FAN TECHNOLOGY: GAS HEATING/ELECTRIC COOLING (RGW) AND ELECTRIC COOLING/OPTIONAL ELECTRIC HEAT (RAW) 3 – 5 TON

The new 3 to 5 Ton RGW/RAW series rooftop units (RTU) with XVane Fan Technology provide value added benefits never seen in this type of equipment before. New major design features include:

- Patent pending, the industry's first beltless direct-drive vane axial fan for rooftop units with electric commutated variable speed motor.
- Reliable 2 stage scroll compressor on all sizes.
- Upgraded unit control board with intuitive indoor fan adjustment.
- Reliable copper tube / aluminum fin condenser coil with $\frac{5}{16}$ -in. tubing to help reduce refrigerant charge versus prior designs.
- New outdoor fan system with rugged, lightweight high impact composite fan blade.



RGW/RAW036-060

XVane™ Fan

Installation ease

All RGW/RAW units are field convertible to horizontal air flow, which makes it easy to adjust to unexpected job site complications. RGW/RAW rooftop units up to 5 tons are specifically designed to fit on our existing roof curbs dating back to 1989 for worry-free original fit. Also, our large control box gives you room to work and room to mount accessory controls. Intuitive controls make setting up the required fan speed simple and accurate. Access to the blower section is no longer needed with the new design.

Easy to maintain

With the new Vane Axial fan and direct drive ECM motor, there is no longer a need to adjust belts or pulleys as in past designs. This frees up maintenance and installation time.

Easy access handles provide quick and easy access to all normally serviced components. Our “no-strip” screw system has superior holding power and guides screws into position while preventing the screw from stripping the unit's metal.

Sloped, corrosion resistant composite drain pan sheds water and won't rust.

RGW units are designed with a naturally draining heat exchanger, unlike positive pressure heat exchangers, does not need to be periodically, manually drained. This saves labor and maintenance expense.

Easy to use

The newly re-designed Unit Control Board puts all connections and troubleshooting points in one convenient place. Most low voltage connections are made to the same board for easy access. Setting up the fan is made simple by an intuitive switch and rotary dial arrangement. RGW/RAW rooftops have high and low pressure switches, a filter drier, and 2-in. filters standard.

XVane Fan Technology

Direct drive X-Vane Fan Technology indoor fan system uses vane axial fan design and electrically commutated motors. This new Vane Axial design over past belt drive systems has 75% fewer moving parts, uses up to 40% less energy and has no fan belts, blower bearings and shaft.

Design features include:

- Two-stage cooling capacity control delivers SEERs up to 16.0.
- All models are capable of either vertical or horizontal airflow.
- RGW/RAW rooftop units (RTU) were designed by customers for customers. With “no-strip” screw collars, handled access panels, and more the unit is easy to install, easy to maintain, and easy to use. Your new 3 to 5 ton RGW/RAW rooftop unit (RTU) provides optimum comfort and control from a packaged rooftop.

Features/Benefits

Value-added features include:

- Optional Hot Gas Re-Heat dehumidification system for improved part load humidity performance
- R-410A refrigerant
- Single point gas and electrical connections
- 3 to 5 ton models use fixed refrigerant metering devices and 6 ton models use a TXV
- Scroll compressors with internal line-break overload protection

Operating efficiency and flexibility

The RGW/RAW rooftops exceed ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) 90.1-2016, IECC¹ (International Energy Conservation Code) IECC-2018 minimum efficiency requirements.

Field convertible airflow

All RGW/RAW 3 to 5 ton units are field-convertible to horizontal airflow, which makes it easy to adjust to unexpected job site complications.

Comfort control

Our patented Hot Gas Re-Heat dehumidification system is an all-inclusive factory-installed option on gas heating/electric cooling and electric cooling/electric heat models. This system provides reliable, flexible operation to meet indoor part load sensible and latent requirements.

UNIT PERFORMANCE DATA — Two Stage Cooling /Single Circuit								
UNIT	Nom. Tons	COOLING			GAS HEATING		Unit Dimensions H x W x L	Shipping Weight lb. [kg]
		Net Cap. (Btuh)	EER	SEER	Input Cap. (Btuh) Stage 2	Thermal Efficiency (%)		
RGW036* [^] DD0AAB	3	35,200	12.0	16.0	65,000 - 90,000	80 - 82	33 3/8" x 46 5/8" x 74 3/8"	553 [251]
RGW048* [^] DD0AAB	4	47,000	12.0	16.0	65,000 - 130,000	80 - 82	33 3/8" x 46 5/8" x 74 3/8"	595 [270]
RGW060* [^] DD0AAB	5	60,000	12.0	16.0	65,000 - 130,000	80 - 82	41 3/8" x 46 5/8" x 74 3/8"	640 [291]

UNIT PERFORMANCE DATA — Two Stage Cooling /Single Circuit							
UNIT	Nom. Tons	COOLING				Unit Dimensions H x W x L	Shipping Weight lb. [kg]
		Net Cap. (Btuh)	EER	SEER	Total Power (kW)		
RAW036*0DD0AAB	3	35,200	12.2	16.0	2.9	33 3/8" x 46 5/8" x 74 3/8"	508 [231]
RAW048*0DD0AAB	4	47,000	12.2	16.0	3.9	33 3/8" x 46 5/8" x 74 3/8"	550 [250]
RAW060*0DD0AAB	5	60,000	12.2	16.0	4.09	41 3/8" x 46 5/8" x 74 3/8"	595 [270]

* Indicates Unit voltage: K = 208/230-1-60, H = 208/230-3-60, L = 460-3-60, S = 575-3-60

[^] See model nomenclature listing for gas heating options.

NOTE: BASE MODEL NUMBERS LISTED. SEE MODEL NOMENCLATURE LISTING FOR ADDITIONAL OPTIONS

Model number nomenclature

RGW MODEL NUMBER NOMENCLATURE

MODEL SERIES	R	G	W	0	6	0	L	D	D	A	0	A	A	A
Position Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14
R = Rooftop														
G = Gas Heat / Electric Cooling	Type													
W = 16 SEER Efficiency	High Efficiency													
036 = 36,000 BTUH = 3 Tons 048 = 48,000 BTUH = 4 Tons 060 = 60,000 BTUH = 5 Tons	Nominal Cooling Capacity													
K = 208/230-1-60 H = 208/230-3-60 L = 460-3-60 S = 575-3-60	Voltage													
D = Low Heat E = Medium Heat F = High Heat L = Low NOx, Low Heat	S = Low Heat, Stainless Steel Heat Exchanger R = Medium Heat, Stainless Steel Heat Exchanger T = High Heat, Stainless Steel Heat Exchanger Heating Capacity ¹													
D = Direct Drive X-Vane™ Fan – Standard Static E = Direct Drive X-Vane Fan – High Static F = Direct Drive X-Vane Fan – Medium Static G = Direct Drive X-Vane Fan – High Static with Hot Gas Re-Heat ²	Motor Option (Indoor Fan)													
A = None B = Economizer with Barometric relief, OA Temp sensor E = Economizer with Barometric relief + CO ₂ sensor, OA Temp sensor H = Economizer with Barometric relief, enthalpy sensor L = Economizer with Barometric relief + CO ₂ sensor, enthalpy sensor U = Temp Ultra Low Leak Economizer with Barometric relief W = Enthalpy Ultra Low Leak Economizer with Barometric relief	Outdoor Air Options / Control ³													
0A = No Options 4B = Non Fused Disconnect Switch AA = Hinged Access Panels AT = Un-Powered Convenience Outlet BB = Powered Convenience Outlet BP = Return Air Smoke Detector BR = Supply Air Smoke Detector CJ = Condensate Overflow Switch	Factory Installed Options ⁴													
A = Aluminum / Copper Cond & Evap Coil B = Precoat Alum/Copper Cond with Alum / Copper Evap (3 phase only) C = E-Coated Alum/Copper Cond with Alum / Copper Evap (3 phase only) D = E-Coated Alum / Copper Cond & Evap (3 phase only) E = Copper/Copper Cond & Alum/Copper Evap (3 phase only) F = Copper/Copper Cond & Evap (3 phase only)	Condenser / Evaporator Coil Configuration													
A = Economizer controls for (W7212) for EconoMiZer® IV and all others (except factory-installed EconoMiZer X) B = Economizer control (W7220) for EconoMiZer X	Economizer Control													

NOTE: Factory-installed options are NOT available on single phase models. This includes economizers.

¹See Specification Sheet for actual heating capacities.

²Hot Gas Re-Heat system includes Low Ambient controller.

³See Specification Sheet for details.

⁴Combinations of factory-installed options are available, see Specifications Sheet for details.

Model number nomenclature (cont)

RAW MODEL NUMBER NOMENCLATURE

MODEL SERIES	R	A	W	0	6	0	L	0	D	A	0	A	A	A
Position Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14
R = Rooftop														
A = Electric/Electric, Cooling Only	Type													
W = 16 SEER	High Efficiency													
036 = 36,000 BTUH = 3 Tons 048 = 48,000 BTUH = 4 Tons 060 = 60,000 BTUH = 5 Tons	Nominal Cooling Capacity													
K = 208/230-1-60 H = 208/230-3-60 L = 460-3-60 S = 575-3-60	Voltage													
0 = No Heat	Heating Capacity ¹													
D = Direct Drive X-Vane™ Fan – Standard Static E = Direct Drive X-Vane Fan – High Static F = Direct Drive X-Vane Fan – Medium Static G = Direct Drive X-Vane Fan – High Static with Hot Gas Re-Heat ²	Motor Option (Indoor Fan)													
A = None B = Economizer with Barometric relief, OA Temp sensor E = Economizer with Barometric relief + CO ₂ sensor, OA Temp sensor H = Economizer with Barometric relief, enthalpy sensor L = Economizer with Barometric relief + CO ₂ sensor, enthalpy sensor U = Temp Ultra Low Leak Economizer with Barometric relief W = Enthalpy Ultra Low Leak Economizer with Barometric relief	Outdoor Air Options / Control ³													
0A = No Options 4B = Non Fused Disconnect Switch AA = Hinged Access Panels AT = Un-Powered Convenience Outlet BB = Powered Convenience Outlet BP = Return Air Smoke Detector BR = Supply Air Smoke Detector CJ = Condensate Overflow Switch	Factory Installed Options ⁴													
A = Aluminum / Copper Cond and Evap Coil B = Precoat Alum/Copper Cond with Alum / Copper Evap (3 phase only) C = E-Coated Alum/Copper Cond with Alum / Copper Evap (3 phase only) D = E-Coated Alum / Copper Cond and Evap (3 phase only) E = Copper/Copper Cond and Alum/Copper Evap (3 phase only) F = Copper/Copper Cond and Evap (3 phase only)	Condenser / Evaporator Coil Configuration													
A = Economizer controls for (W7212) for EconoMiZer® IV and all others (except factory-installed EconoMiZer X) B = Economizer control (W7220) for EconoMiZer® X	Economizer Control													

NOTE: Factory-installed options are NOT available on single phase models. This includes economizers.

¹See Specification Sheet for actual heating capacities.

²Hot Gas Re-Heat system includes Low Ambient controller.

³See Specification Sheet for details.

⁴Combinations of factory-installed options are available, see Specifications Sheet for details.

Capacity ratings

RGW AHRI RATINGS

RGW UNIT	COOLING STAGES	NOMINAL CAPACITY (TONS)	NET COOLING CAPACITY (MBH)	TOTAL POWER (kW)	SEER	EER
RGW036	2	3	35.2	2.9	16.0	12.0
RGW048	2	4	47.0	3.9	16.0	12.0
RGW060	2	5	60.0	5.0	16.0	12.0

LEGEND

AHRI — Air-Conditioning, Heating and Refrigeration Institute
EER — Energy Efficiency Ratio
IEER — Integrated Energy Efficiency Ratio
SEER — Seasonal Energy Efficiency Ratio

NOTES:

1. Rated in accordance with AHRI Standards 210/240.
2. Rating are based on:
Cooling Standard: 80°F (27°C) db, 67°F (19°C) wb indoor air temperature and 95°F (35°C) db outdoor air temperature.
3. All RGW units comply with ASHRAE 90.1-2016 (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) and DOE-2018 (Department of Energy) Energy Standard for minimum SEER and EER requirements.
4. RGW units comply with US Energy Policy Act (2005). To evaluate code compliance requirements, refer to state and local codes.



RAW AHRI RATINGS

RAW UNIT	COOLING STAGES	NOMINAL CAPACITY (TONS)	NET COOLING CAPACITY (MBH)	TOTAL POWER (kW)	SEER	EER
RAW036	2	3	35.2	2.9	16.0	12.2
RAW048	2	4	47.0	3.9	16.0	12.2
RAW060	2	5	60.0	4.9	16.0	12.2

LEGEND

AHRI — Air-Conditioning, Heating and Refrigeration Institute
EER — Energy Efficiency Ratio
IEER — Integrated Energy Efficiency Ratio
SEER — Seasonal Energy Efficiency Ratio

NOTES:

1. Rated in accordance with AHRI Standards 210/240.
2. Rating are based on:
Cooling Standard: 80°F (27°C) db, 67°F (19°C) wb indoor air temperature and 95°F (35°C) db outdoor air temperature.
3. All RAW units comply with ASHRAE 90.1-2016 (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) and DOE-2018 (Department of Energy) Energy Standard for minimum SEER and EER requirements.
4. RAW units comply with US Energy Policy Act (2005). To evaluate code compliance requirements, refer to state and local codes.



Capacity ratings (cont)

SOUND RATINGS TABLE

RGW/RAW UNIT	COOLING STAGES	OUTDOOR SOUND (dB) AT 60 Hz								
		A-WEIGHTED	63	125	250	500	1000	2000	4000	8000
036	2	79	85.6	84.7	80.5	76.0	72.4	68.0	62.8	59.3
048	2	79	85.6	84.7	80.5	76.0	72.4	68.0	62.8	59.3
060	2	79	85.6	84.7	80.5	76.0	72.4	68.0	62.8	59.3

LEGEND

dB — Decibel

NOTES:

1. Outdoor sound data is measured in accordance with AHRI.
2. Measurements are expressed in terms of sound power. Do not compare these values to sound pressure values because sound pressure depends on specific environmental factors which normally do not match individual applications. Sound power values are independent of the environment and therefore more accurate.

3. A-weighted sound ratings filter out very high and very low frequencies, to better approximate the response of “average” human ear. A-weighted measurements for ICP units are taken in accordance with AHRI.

MINIMUM - MAXIMUM AIRFLOW RATINGS (CFM) — NATURAL GAS AND PROPANE

UNIT	HEAT LEVEL	VOLTAGE	COOLING				HEATING*	
			MINIMUM AIRFLOW CFM	MINIMUM 2- SPEED AIRFLOW (LOW SPEED)	MINIMUM 2- SPEED AIRFLOW (HIGH SPEED)	MAXIMUM AIRFLOW CFM	MINIMUM AIRFLOW CFM	MAXIMUM AIRFLOW CFM
RGW036	LOW	1 PHASE	900	675	900	1500	890	1950
	MED						800	1520
	HIGH						N/A	N/A
RGW048	LOW	1 PHASE	1200	900	1200	2000	890	2440
	MED						1050	2280
	HIGH						1220	2170
RGW060	LOW	1 PHASE	1500	1125	1500	2500	890	3250
	MED						1050	2730
	HIGH						1220	2790
RGW036	LOW	3 PHASE	900	675	900	1500	910	2010
	MED						960	1160
	HIGH						N/A	N/A
RGW048	LOW	3 PHASE	1200	900	1200	2000	910	2010
	MED						1250	2330
	HIGH						1390	2220
RGW060	LOW	3 PHASE	1500	1125	1500	2500	910	2510
	MED						1250	2720
	HIGH						1390	2780

*Heating rating values are identical for aluminum heat exchangers and stainless steel heat exchangers.

MINIMUM - MAXIMUM AIRFLOW RATINGS (CFM) — COOLING UNITS AND ACCESSORY ELECTRIC HEAT

UNIT	COOLING				ELECTRIC HEAT*	
	MINIMUM AIRFLOW CFM	MINIMUM 2-SPEED AIRFLOW (LOW SPEED)	MINIMUM 2-SPEED AIRFLOW (HIGH SPEED)	MAXIMUM AIRFLOW CFM	MINIMUM AIRFLOW CFM	MAXIMUM AIRFLOW CFM
RAW036	900	675	900	1500	900	1500
RAW048	1200	900	1200	2000	1200	2000
RAW060	1500	1125	1500	2500	1500	2500

*Electric heat modules are available as field-installed accessories for RAW units.

HEAT RATING TABLE — NATURAL GAS AND PROPANE

RGW UNIT		GAS HEAT	AL/SS HEAT EXCHANGER		TEMPERATURE RISE (°F)	THERMAL EFFICIENCY (%)	AFUE EFFICIENCY (%)
			INPUT/OUTPUT STAGE 1 (MBH)	INPUT/OUTPUT STAGE 2 (MBH)			
SINGLE PHASE	036	LOW	—/—	65/53	25-55	81	81
		MED	—/—	90/73	45-85	82	81
		HIGH	—/—	—	—	—	—
	048	LOW	—/—	65/53	20-55	81	81
		MED	—/—	90/73	30-65	82	81
		HIGH	—/—	130/106	45-80	81	81
	060	LOW	—/—	65/53	15-55	81	81
		MED	—/—	90/73	25-65	82	81
		HIGH	—/—	130/106	35-80	81	81
THREE PHASE	036	LOW	50/40	67/54	25-55	81	N/A
		MED	82/65	110/93	50-85	80	N/A
		HIGH	—	—	—	—	—
	048	LOW	50/40	67/54	25-55	81	N/A
		MED	82/65	110/88	35-65	80	N/A
		HIGH	120/96	150/120	50-80	80	N/A
	060	LOW	50/40	67/54	20-55	81	N/A
		MED	82/65	110/88	30-65	80	N/A
		HIGH	120/96	150/120	40-80	80	N/A

HEAT RATING TABLE – LOW NOx

RGW UNIT		GAS HEAT	AL/SS HEAT EXCHANGER		TEMPERATURE RISE (°F)	THERMAL EFFICIENCY (%)	AFUE EFFICIENCY (%)
			INPUT/OUTPUT STAGE 1 (MBH)	INPUT/OUTPUT STAGE 2 (MBH)			
SINGLE PHASE	036	LOW	—	60 / 49	20 - 50	81%	81%
	048	LOW	—	60 / 49	20 - 50	81%	81%
	060	LOW	—	60 / 49	15 - 50	81%	81%
THREE PHASE	036	LOW	—	60 / 49	20 - 50	81%	—
	048	LOW	—	60 / 49	20 - 50	81%	—
	060	LOW	—	60 / 49	15 - 50	81%	—

Physical data

RGW/RAW 3 TO 5 TON PHYSICAL DATA

RGW/RAW UNIT	RGW/RAW036 **D/E/F	RGW/RAW036 **G	RGW/RAW048 **D/E/F	RGW/RAW048 **G	RGW/RAW060 **D/E/F	RGW/RAW060 **G
NOMINAL TONS	3		4		5	
BASE UNIT OPERATING WT (lb) RGW/RAW	513/468		555/510		600/555	
REFRIGERATION SYSTEM						
No. Circuits/No. Compressors/Type	1 / 1 / 2-Stage Scroll					
R-410A charge A/B (lbs-oz)	8-4	—	8-11	—	11-0	—
Hot Gas Re-Heat R-410A charge A/B (lbs-oz)	—	8-3	—	14-8	—	18-0
Metering device	TXV					
Hot Gas Re-Heat metering device	—	TXV	—	TXV	—	TXV
High-Pressure Trip/Reset (psig)	630/505					
Low-Pressure Trip/Reset (psig)	54/117	27/44	54/117	27/44	54/117	27/44
EVAPORATOR COIL						
Material (Tube/Fin)	Cu/Al					
Coil Type	3/8-in. RTPF					
Rows/FPI	2/15				4/15	
Total Face Area (ft²)	5.5				7.3	
Condensate Drain Connection Size	3/4-in.					
CONDENSER COIL						
Material	Cu/Al					
Coil Type	5/16-in. RTPF					
Rows/FPI	2/18					
Total Face Area (ft²)	14.6		15.9		20.5	
HOT GAS RE-HEAT COIL						
Material	—	Cu/Al	—	Cu/Al	—	Cu/Al
Coil Type	—	3/8-in. RTPF	—	3/8-in. RTPF	—	3/8-in. RTPF
Rows/FPI	—	1/17	—	2/17	—	2/17
Total Face Area (ft²)	—	4.1	—	4.1	—	5.5
EVAPORATOR FAN AND MOTOR						
Standard Static 1 Phase						
Motor Qty/Drive Type	1/Direct	—	1/Direct	—	1/Direct	—
Max Cont BHP	0.44	—	0.72	—	1.06	—
RPM Range	189-1890	—	190-1900	—	215-2150	—
Fan Qty/Type	1/Vane Axial	—	1/Vane Axial	—	1/Vane Axial	—
Fan Diameter (in.)	16.6	—	16.6	—	16.6	—
Medium Static 1 Phase						
Motor Qty/Drive Type	1/Direct	—	1/Direct	—	1/Direct	—
Max Cont BHP	0.71	—	1.06	—	1.44	—
RPM Range	219-2190	—	217-2170	—	239-2390	—
Fan Qty/Type	1/Vane Axial	—	1/Vane Axial	—	1/Vane Axial	—
Fan Diameter (in.)	16.6	—	16.6	—	16.6	—
High Static 1 Phase						
Motor Qty/Drive Type	1/Direct	—	1/Direct	—	—	—
Max Cont BHP	1.07	—	1.53	—	—	—
RPM Range	249-2490	—	246-2460	—	—	—
Fan Qty/Type	1/Vane Axial	—	1/Vane Axial	—	—	—
Fan Diameter (in.)	16.6	—	16.6	—	—	—
Standard Static 3 Phase						
Motor Qty/Drive Type			1/Direct			
Max Cont BHP	0.44		0.72		1.06	
RPM Range	189-1890		190-1900		215-2150	
Fan Qty/Type			1/Vane Axial			
Fan Diameter (in.)			16.6			
Medium Static 3 Phase						
Motor Qty/Drive Type			1/Direct			
Max Cont BHP	0.71		1.06		1.44	
RPM Range	219-2190		217-2170		239-2390	
Fan Qty/Type			1/Vane Axial			
Fan Diameter (in.)			16.6			
High Static 3 Phase						
Motor Qty/Drive Type			1/Direct			
Max Cont BHP	1.07		1.96		2.43	
RPM Range	249-2490		266-2660		284-2836	
Fan Qty/Type			1/Vane Axial			
Fan Diameter (in.)			16.6			

RGW/RAW 3 TO 5 TON PHYSICAL DATA (cont)

RGW/RAW UNIT	RGW/ RAW*04N	RGW/ RAW*04R	RGW/ RAW*05N	RGW/ RAW*05R	RGW/ RAW*06N	RGW/ RAW*06R
CONDENSER FAN AND MOTOR						
Qty / Motor Drive Type				1 / Direct		
Motor HP/RPM	1/5 / 825/675			1/4 / 1100/900		
Fan Diameter (in.)				23		
FILTERS						
RA Filter Qty / Size (in.)		2 / 16x25x2				4 / 16x16x2
OA Inlet Screen Qty / Size (in.)			1 / 20x24x1			

LEGEND

BHP — Break Horsepower
FPI — Fins Per Inch
OA — Outdoor Air
RA — Return Air

* Base unit operating weight does not include weight of options.

Physical data (cont)

RGW 3 TO 5 TON GAS HEAT DATA — 1 PHASE UNITS

RGW UNIT	RGW036	RGW048	RGW060
GAS CONNECTION			
No. of Gas Valves	1		
Natural Gas Supply Line Pressure (in. wg)/(psig)	4-13 / 0.18-0.47		
Liquid Propane Supply Line Pressure (in. wg)/(psig)	11-13 / 0.40-0.47		
HEAT ANTICIPATOR SETTING (AMPS)			
First Stage	0.14		
Second Stage	0.14		
NATURAL GAS HEAT			
LOW			
No. of Stages / No. of Burners (total)	1 / 2		
Connection Size	1/2-in. NPT		
Rollout Switch Opens / Closes (°F)	195 / 115		
Temperature Rise (°F)	25-55	20-55	15-55
MEDIUM			
No. of Stages / No. of Burners (total)	1 / 3		
Connection Size	1/2-in. NPT		
Rollout Switch Opens / Closes (°F)	195 / 115		
Temperature Rise (°F)	45-85	30-65	25-65
HIGH			
No. of Stages / No. of Burners (total)	1 / 3		
Connection Size	1/2-in. NPT		
Rollout Switch Opens / Closes (°F)	195 / 115		
Temperature Rise (°F)	—	45-80	35-80
LIQUID PROPANE HEAT			
LOW			
No. of Stages / No. of Burners (total)	1 / 2		
Connection Size	1/2-in. NPT		
Rollout Switch Opens / Closes (°F)	195 / 115		
Temperature Rise (°F)	25-55	20-55	15-55
MEDIUM			
No. of Stages / No. of Burners (total)	1 / 3		
Connection Size	1/2-in. NPT		
Rollout Switch Opens / Closes (°F)	195 / 115		
Temperature Rise (°F)	45-85	30-65	25-65
HIGH			
No. of Stages / No. of Burners (total)	1 / 3		
Connection Size	1/2-in. NPT		
Rollout Switch Opens / Closes (°F)	195 / 115		
Temperature Rise (°F)	—	45-80	35-80
LOW NOx HEAT			
LOW			
No. of Stages / No. of Burners (total)	1 / 2		
Connection Size	1/2-in. NPT		
Rollout Switch Opens / Closes (°F)	195 / 115		
Temperature Rise (°F)	20-50		15-50

RGW 3 TO 6 TON GAS HEAT DATA — 3 PHASE UNITS

RGW UNIT	RGW036	RGW048	RGW060
GAS CONNECTION			
No. of Gas Valves	1		
Natural Gas Supply Line Pressure (in. wg)/(psig)	4-13 / 0.18-0.47		
Liquid Propane Supply Line Pressure (in. wg)/(psig)	11-13 / 0.40-0.47		
HEAT ANTICIPATOR SETTING (AMPS)			
First Stage	0.14		
Second Stage	0.14		
NATURAL GAS HEAT			
LOW			
No. of Stages / No. of Burners (total)	2 / 2		
Connection Size	1/2-in. NPT		
Rollout Switch Opens / Closes (°F)	195 / 115		
Temperature Rise (°F)	25-55		20-55
MEDIUM			
No. of Stages / No. of Burners (total)	2 / 3		
Connection Size	1/2-in. NPT		
Rollout Switch Opens / Closes (°F)	195 / 115		
Temperature Rise (°F)	50-85	35-65	30-65
HIGH			
No. of Stages / No. of Burners (total)	—	2 / 3	
Connection Size	—	1/2-in. NPT	
Rollout Switch Opens / Closes (°F)	—	195 / 115	
Temperature Rise (°F)	—	50-80	40-80
LIQUID PROPANE HEAT			
LOW			
No. of Stages / No. of Burners (total)	2 / 2		
Connection Size	1/2-in. NPT		
Rollout Switch Opens / Closes (°F)	195 / 115		
Temperature Rise (°F)	25-55		20-55
MEDIUM			
No. of Stages / No. of Burners (total)	2 / 3		
Connection Size	1/2-in. NPT		
Rollout Switch Opens / Closes (°F)	195 / 115		
Temperature Rise (°F)	50-85	35-65	30-65
HIGH			
No. of Stages / No. of Burners (total)	—	2 / 3	
Connection Size	—	1/2-in. NPT	
Rollout Switch Opens / Closes (°F)	—	195 / 115	
Temperature Rise (°F)	—	50-80	40-80
LOW NOx HEAT			
LOW			
No. of Stages / No. of Burners (total)	1 / 2		
Connection Size	1/2-in. NPT		
Rollout Switch Opens / Closes (°F)	195 / 115		
Temperature Rise (°F)	20-50		15-50

Options and accessories

ITEM	OPTION*	ACCESSORY†
GAS HEAT (RGW units only)		
Low, Medium or High Gas Heat — Aluminized Heat Exchanger	X	
Low, Medium or High Gas Heat — Stainless Steel Heat Exchanger	X	
Low NOx, Low Heat — Stainless Steel Heat Exchanger	X	
Propane Conversion Kit		X
High Altitude Conversion Kit		X
Flue Discharge Deflector		X
Flue Shield		X
ELECTRIC HEAT (RAW units only)		
Electric Resistance Heaters		X
Single Point Kits		X
CABINET		
Thru-the-Base electrical or gas-line connections		X
Hinged Access Panels	X	
COIL OPTIONS		
Cu/Cu indoor and/or outdoor coils ¹	X	
Pre-coated outdoor coils ¹	X	
Premium, E-coated outdoor coils ¹	X	
HUMIDITY CONTROL		
Hot Gas Re-Heat Dehumidification System ¹	X	
CONDENSER PROTECTION		
Condenser coil hail guard (louvered design) ¹	X	X
CONTROLS		
Thermostats, temperature sensors, and subbases		X
Smoke detector (supply and/or return air)	X	
Horn Strobe Annunciator ²		X
Time Guard II compressor delay control circuit		X
Phase Monitor		X
Condensate Overflow switch	X	X

ITEM	OPTION*	ACCESSORY†
ECONOMIZERS AND OUTDOOR AIR DAMPERS		
EconoMi\$er® IV for electro-mechanical controls - Non FDD (Standard air leak damper models) ^{1, 3}		X
EconoMi\$er X for electro-mechanical controls, complies with FDD (Standard and Ultra Low Leak damper models) ^{1, 3}	X	X
Motorized 2-position outdoor-air damper ¹		X
Manual outdoor-air damper (25% and 50%)		X
Barometric relief ⁴	X	X
Power exhaust - prop design		X
ECONOMIZER SENSORS AND IAQ DEVICES		
Single dry bulb temperature sensors ⁵	X	X
Differential dry bulb temperature sensors ⁵		X
Single enthalpy sensors ⁵	X	X
Differential enthalpy sensors ⁵		X
CO ₂ sensor (wall, duct, or unit mounted) ⁵	X	X
INDOOR MOTOR AND DRIVE		
Multiple motor and drive packages	X	
LOW AMBIENT CONTROL		
Winter start kit ⁶		X
Low Ambient controller to -20°F (-29°C) ⁶	X	X
POWER OPTIONS		
Convenience outlet (powered) ¹	X	
Convenience outlet (unpowered)	X	
Non-fused disconnect ⁷	X	
ROOF CURBS		
Roof curb 14-in. (356 mm)		X
Roof curb 24-in. (610 mm)		X

* Factory-installed option.

† Field-installed accessory.

NOTES:

- Not available on single phase (-K voltage code) models. Use field-installed accessory where available.
- Requires a field-supplied 24v transformer for each application. See price pages for details.
- FDD (Fault Detection and Diagnostic) capability per California Title 24 section 120.2.
- Included with economizer.
- Sensors used to optimize economizer performance.
- See application data for assistance.
- Non-fused disconnect switch cannot be used when unit electrical rating exceeds:
208-230/1/60 and 208-230/3/60 = 80 amps (FLA).
480/3/60 and 575/3/60 = 80 amps (FLA).

Factory-installed options

Economizer (dry-bulb or enthalpy)

Economizers save money. They bring in fresh, outside air for ventilation and provide cool, outside air to cool your building. This is the preferred method of low-ambient cooling. When coupled to CO₂ sensors, economizers can provide even more savings by coupling the ventilation air to only that amount required.

Economizers are available, installed and tested by the factory, with either enthalpy or dry-bulb temperature inputs. Additional sensors are available as accessories to optimize the economizers. Economizers include a powered exhaust system to help equalize building pressures.

Economizers include gravity-controlled barometric relief that helps equalize building pressure and ambient air pressures. This can be a cost effective solution to prevent building pressurization. Economizers are available in Ultra Low Leak and standard low leak versions. Economizers can be factory-installed or easily field-installed.

Unit mounted CO₂ sensor

The CO₂ sensor works with the economizer to intake only the correct amount of outside air for ventilation. As occupants fill your building, the CO₂ sensor detects their presence through increasing CO₂ levels, and opens the economizer appropriately. When the occupants leave, the CO₂ levels decrease, and the sensor appropriately closes the economizer. This intelligent control of the ventilation air, called demand controlled ventilation (DCV), reduces the overall load on the rooftop, saving money. Also available as a field-installed accessory.

Smoke detector (supply and/or return air)

Trust the experts. Smoke detectors make your application safer and your job easier. ICP smoke detectors immediately shut down the rooftop unit when smoke is detected. They are available, installed by the factory, for supply air, return air, or both.

Optional Hot Gas Re-Heat dehumidification system

ICP's Hot Gas Re-Heat dehumidification system is an all-inclusive factory-installed option that can be ordered with any RGW/RAW036-060 rooftop unit, with the exception of single phase voltage (208-230/1/60) units.

This system expands the envelope of operation of ICP's rooftop products to provide unprecedented flexibility to meet year round comfort conditions.

The Hot Gas Re-Heat dehumidification system has a unique dual operational mode setting. The Hot Gas Re-Heat system provides greater dehumidification of the occupied space by two modes of dehumidification operations in addition to its normal design cooling mode.

The RGW/RAW036-060 rooftop coupled with the Hot Gas Re-Heat system is capable of operating in normal design cooling mode, sub-cooling mode, and hot gas reheat mode. Normal design cooling mode is when the unit will operate under its normal sequence of operation by cycling compressors to maintain comfort conditions.

Sub-cooling mode will operate to satisfy part load type conditions when the space requires combined sensible and a higher proportion of latent load control. Hot Gas

Reheat mode will operate when outdoor temperatures diminish and the need for latent capacity is required for sole humidity control. Hot Gas Reheat mode will provide neutral air for maximum dehumidification operation.

NOTE: Hot Gas Re-Heat system includes Low Ambient controller.

Thru-the-base connection

Thru-the-base connections, available as a factory option, are necessary to ensure proper connection and seal when routing wire and piping through the rooftop's base-pan and curb. These couplings eliminate roof penetration and should be considered for gas lines, main power lines, as well as control power.

Hinged access panels

Allows access to unit's major components with specifically designed hinged access panels. Panels are filter, control box access indoor fan motor access.

Cu/Cu (indoor) coils

Copper fins and copper tubes are mechanically bonded to copper tubes and copper tube sheets. A polymer strip prevents coil assembly from contacting the sheet metal coil pan to minimize potential for galvanic corrosion between coil and pan.

E-coated (outdoor and indoor) coils

A flexible epoxy polymer coating uniformly applied to all coil surface areas without material bridging between fins. Coating process shall ensure complete coil encapsulation of tubes, fins and headers.

Pre-coated outdoor coils

A durable epoxy-phenolic coating to provide protection in mildly corrosive coastal environments. The coating minimizes galvanic action between dissimilar metals. Coating is applied to the aluminum fin stock prior to the fin stamping process to create an inert barrier between the aluminum fin and copper tube.

Condenser coil hail guard

Sleek, louvered panels protect the condenser coil from hail damage, foreign objects, and incidental contact.

Single enthalpy sensor

Prevents the wheel from rotating if the outside air conditions are acceptable for free cooling. Both exhaust and supply blowers will remain on.

Stainless steel heat exchanger (RGW units only)

The stainless steel heat exchanger option provides the tubular heat exchanger be made out of a minimum 20 gage type 409 stainless steel for applications where the mixed air to the heat exchanger is expected to drop below 45°F (7°C). Stainless steel may be specified on applications where the presence of airborne contaminants require its use (applications such as paper mills) or in area with very high outdoor humidity that may result in severe condensation in the heat exchanger during cooling operation.

Convenience outlet (powered or un-powered)

Reduce service and/or installation costs by including a convenience outlet in your specification. ICP will install

Options and accessories (cont)

this service feature at our factory. Provides a convenient, 15 amp, 115v GFCI receptacle with “Wet in Use” cover. The “powered” option allows the installer to power the outlet from the line side of the disconnect or load side as required by code. The “unpowered” option is to be powered from a separate 115/120v power source.

The unpowered convenience outlet is available as a 15 amp factory-installed option or a 20 amp field-installed accessory.

Non-fused disconnect

This OSHA-compliant, factory-installed, safety switch allows a service technician to locally secure power to the rooftop. When selecting a factory-installed non-fused disconnect, note they are sized for the unit as ordered from the factory. The sizing of these do not accommodate field-installed items such as power exhaust devices, etc. If field installing electric heat with factory-installed non-fused disconnect switch, a single point kit may or may not be required.

Condensate overflow switch

This sensor and related controller monitors the condensate level in the drain pan and shuts down compression operation when overflow conditions occur. It includes:

- Indicator light – solid red (more than 10 seconds on water contact – compressors disabled), blinking red (sensor disconnected)
- 10 second delay to break – eliminates nuisance trips from splashing or waves in pan (sensor needs 10 seconds of constant water contact before tripping)
- Disables the compressor(s) operation when condensate plug is detected, but still allows fans to run for economizer.

Low ambient controller

The low ambient controller is a head pressure controller kit that is designed to maintain the unit's condenser head pressure during periods of low ambient cooling operation. This device should be used as an alternative to economizer free cooling when economizer usage is either not appropriate or desired. The low ambient controller will either cycle the outdoor fan motors or operate them at reduced speed to maintain the unit operation, depending on the model. This controller allows cooling operation down to -20°F (-29°C) ambient conditions.

Field-installed accessories

Filter maintenance indicator

When the optional factory-installed filter maintenance indicator is used, a factory-installed differential pressure switch measures pressure drop across the outside air filter and activates a field-supplied dry contact indicator when the pressure differential exceeds the adjustable switch setpoint.

Condenser coil hail guard

Sleek, louvered panels protect the condenser coil from hail damage, foreign objects, and incidental contact. This can be purchased as a factory-installed option or as a field-installed accessory.

Differential enthalpy sensor

The differential enthalpy sensor is comprised of an outdoor and return air enthalpy sensors to provide differential enthalpy control. The sensor allows the unit to determine if outside air is suitable for free cooling.

Wall or duct mounted CO₂ sensor

The IAQ sensor shall be available in duct or wall mount. The sensor provides demand ventilation indoor air quality (IAQ) control.

Propane conversion kit (RGW units only)

Convert your gas heat rooftop from standard natural gas operation to propane using this field-installed kit.

High altitude conversion kit (RGW units only)

High altitudes have less oxygen, which affects the fuel/air mixture in heat exchangers. In order to maintain a proper fuel/air mixture, heat exchangers operating in altitudes above 2000 ft (610 m) require different orifices. To select the correct burner orifices or determine the heat capacity for a high altitude application, use either the selection software, or the unit's service manual. High altitudes have less oxygen, which means heat exchangers need less fuel. The new gas orifices in this field-installed kit make the necessary adjustment for high altitude applications. They restore the optimal fuel to air mixture and maintain healthy combustion on altitudes above 2000 ft (610 m).

NOTE: Typical natural gas heating value ranges from 975 to 1050 Btu/ft³ at sea level nationally. The heating value goes down approximately 1.7% per every thousand feet elevation. Standard factory orifices can typically be used up to 2000 ft (610 m) elevation without any operational issues.

Flue discharge deflector (RGW units only)

The flue discharge deflector is a useful accessory when flue gas recirculation is a concern. By venting the flue discharge upwards, the deflector minimizes the chance for a neighboring unit to intake the flue exhaust.

Winter start kit

The winter start kit by ICP extends the low ambient limit of your rooftop to 25°F (–4°C). The kit bypasses the low

pressure switch, preventing nuisance tripping of the low pressure switch. Other low ambient precautions may still be prudent.

Low Ambient controller

The Low Ambient controller is a head pressure controller kit that is designed to maintain the unit's condenser head pressure during periods of low ambient cooling operation. This device should be used as an alternative to economizer free cooling not when economizer usage is either not appropriate or desired. The low ambient controller will either cycle the outdoor-fan motors or operate them at reduced speed to maintain the unit operation, depending on the model. This controller allows cooling operation down to –20°F (–29°C) ambient conditions.

Roof curb (14-in./356 mm or 24-in./610 mm)

Full perimeter roof curb with exhaust capability provides separate air streams for energy recovery from the exhaust air without supply air contamination.

Filter status indicator accessory

Monitors static pressure across supply and exhaust filters and provides indication when filters become clogged.

Manual OA Damper

Manual outdoor air dampers are an economical way to bring in ventilation air. The dampers are available in 25% and 50% versions.

Motorized 2-Position Damper

The ICP 2-position, motorized outdoor air damper admits up to 100% outside air. Using reliable, gear-driven technology, the 2-position damper opens to allow ventilation air and closes when the rooftop stops, stopping unwanted infiltration.

Time Guard II control circuit

This accessory protects your compressor by preventing short-cycling in the event of some other failure, prevents the compressor from restarting for 30 seconds after stopping. Not required with authorized commercial thermostats.

Power exhaust

Superior internal building pressure control. This field-installed accessory may eliminate the need for costly, external pressure control fans.

Phase monitor protection

The Phase Monitor Control will monitor the sequence of three phase electrical system to provide a phase reversal protection; and monitor the three phase voltage inputs to provide a phase loss protection for the three phase device. It will work on either a Delta or Wye power connection.

Electric Heaters (RAW units only)

ICP offers a full-line of field-installed accessory heaters. The heaters are very easy to use, install and are all pre-engineered and certified.

Options and accessories (cont)

OPTIONS AND ACCESSORY WEIGHTS

OPTION / ACCESSORY NAME	RGW/RAW UNIT WEIGHT					
	036		048		060	
	lb	kg	lb	kg	lb	kg
Hot Gas Re-Heat System*	15	7	15	7	24	11
Power Exhaust - vertical	51	23	51	23	51	23
Power Exhaust - horizontal	39	18	39	18	39	18
EconoMiSer® (X or IV)	35	16	35	16	35	16
2-Position Damper	39	18	39	18	39	18
Manual Damper	12	5	12	5	12	5
Medium Gas Heat (RGW units only)	9	4	9	4	9	4
High Gas Heat (RGW units only)	—	—	63	29	63	29
Hail Guard (louvered)	13	6	13	6	17	8
Cu/Cu Condenser Coil	37	17	74	34	90	41
Cu/Cu Condenser and Evaporator Coils	75	34	112	51	160	73
Roof Curb (14-in. curb)	95	43	95	43	95	43
Roof Curb (24-in. curb)	150	68	150	68	150	68
CO ₂ sensor	2	1	2	1	2	1
Flue Discharge Deflector	7	3	7	3	7	3
Optional Indoor Motor/Drive	10	5	10	5	10	5
Low Ambient Controller	9	4	9	4	9	4
Winter Start Kit	5	2	5	2	5	2
Return Air Smoke Detector	7	3	7	3	7	3
Supply Air Smoke Detector	7	3	7	3	7	3
Fan Filter Switch	2	1	2	1	2	1
Non-Fused Disconnect	15	7	15	7	15	7
Powered Convenience Outlet	36	16	36	16	36	16
Unpowered Convenience Outlet	4	2	4	2	4	2
Enthalpy Sensor	2	1	2	1	2	1
Differential Enthalpy Sensor	3	1	3	1	3	1

LEGEND

—Not Available

*For Hot Gas Re-Heat system, add Low Ambient controller weight.

NOTE: Where multiple variations are available, the heaviest combination is listed.