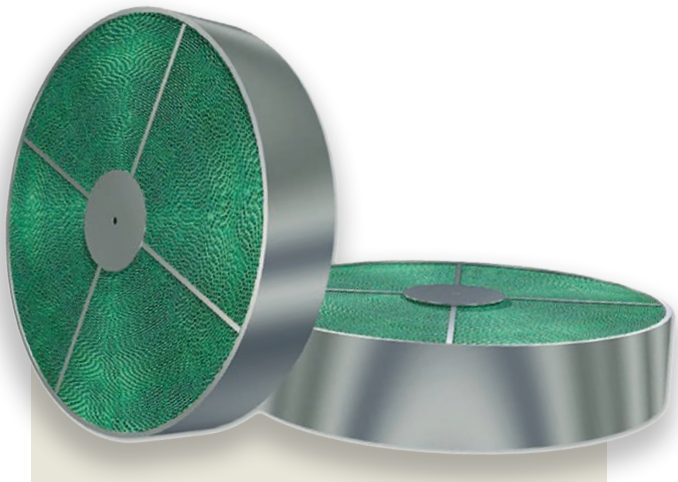
FläktGroup

SEMCO

INDOOR AIR QUALITY

ENERGY RECOVERY

UNITARY WHEEL CASSETTES



- AHRI certified and independently tested wheel performance
- Highest industry specifiable latent effectiveness and Recovery Efficiency Ratio — RER
- Reliable operation and long life expectancy backed by 40 years of proven product performance

FläktGroup SEMCO offers a wide selection of original equipment manufacturer (OEM) desiccant wheel products and systems that can increase the performance of a variety of energy recovery products. Our OEM products offer the highest performance, and maintain the lowest operating cost. The ability to recover latent energy is one of the major benefits of the SEMCO wheel technology. SEMCO wheels provide the perfect solution to *ASHRAE Standard 62, Ventilation for Acceptable Indoor Air Quality*, with airflow capacities which range from 700 CFM to 32,000 CFM.

SEMCO TECHNOLOGY OFFERS A NUMBER OF BENEFITS

Independently tested and AHRI certified superior wheel performance

Use of the AHRI Certified™ mark indicates a manufacturer's participation in the certification program. For verification of certification for individual products, go to www.ahrinet.org.

Highest latent and sensible heat transfer efficiencies

Highest Recovery Efficiency Ratios —RER— available (energy saved less energy expended to save it).

Industry Leading indoor air quality device through minimized desiccant cross contamination

Integrated purge section option

Wheel independently certified to pass NFPA 90A requirements for flame spread and smoke generation and ASTM E84 fire test method

- Proven reliable operation
- Low maintenance
- Low operating costs
- Proven long life expectancy

ENERGY RECOVERY EQUIPMENT CAN BE APPLIED TO A WIDE VARIETY OF APPLICATIONS:

- Schools, universities, dormitories
- Offices, condominiums, apartments
- Smoking lounges, casinos
- Nursing homes, day care centers
- Hotels, motels, department stores
- Breweries
- Sports arenas
- Convention centers, airports, prisons
- Bus and train maintenance facilities
- Welding, foundry, casting areas
- Printing operations
- All humidity controlled spaces

FLÄKTGROUP SEMCO ADVANTAGE

FLÄKTGROUP SEMCO ADVANTAGE

You now can have the quality and performance of a SEMCO energy recovery wheel in your existing OEM wheel application. The UWC line recovers both sensible and latent energy, and does more effectively than any competitive offerings. The UWC series provides the perfect solution to upgrade or replace the plastic disposable wheel in your ERU. These wheels can be found in AAON®, GREENHECK®, Carrier Corporation®, CLIMATEMASTER®, LENNOX®, McQuay International®, and other manufacturers' energy recovery units.

Fläktgroup SEMCO offers two different cassette options, the **Classic Cassette** and the **Cross Cassette**. Both lines feature the same quality and performance, customers have come to expect from a SEMCO wheel.

The **Classic Cassette**, which launched in the market in 2014, features narrower cassette dimensions.

The **Cross Cassette** line is offered with both 4" and 6" media depths, and the cassette dimensions are broader than the **Classic Cassette** line.

The performance edge is a result of UWC line's unique transfer core. The fluted opening design utilizes a sturdy, but lightweight, all-aluminum wheel substrate coated with a fast-acting, corrosion-resistant, proprietary desiccant. The fluted design efficiently produces maximum latent and sensible air-to-air heat transfer, but generates up to 50% less HVAC system static pressure than polymer film wheels.

The UWC line provides the perfect solution to *ASHRAE Standard 62, Ventilation for Acceptable Indoor Air Quality*. Airflow capacities range from 700 CFM to 32,000 CFM.

UWC 3A delivers the highest total energy recovery performance and recovery efficiency ratio (RER) of any certified 100 mm recovery wheel available.

SUPERIOR PERFORMANCE

Highest latent and sensible heat transfer efficiency certified media.

COMPACT DESIGN

Most compact design in the industry given any specific face velocity and efficiency.*
**Based on industry standard 400-900 feet per minute*

AHRI CERTIFIED

Independently tested in accordance with ASHRAE 84 and verified to assure the equipment will perform accurately and consistently.

MONEY SAVING

Fast adsorption of moisture, giving a high latent efficiency even at high air flow rates.

EXCEEDS SMOKE AND FLAME SPREAD SAFETY RATINGS

The UWC line is independently certified to pass NFPA 90A requirements for flame spread and smoke generation based upon ASTM E84 fire test method.

CORROSION RESISTANCE

The ceramic coating on the rotor gives extremely high corrosion protection.

UNIQUE FLUTE DESIGN

Generating the highest possible heat transfer characteristics while simultaneously reducing pressure loss parameters, resulting in a reduction of brake horsepower used and fan size.

NON-OXIDIZED COATED MEDIA

The media is made from aluminum which features a dense layer of corrosion resistant desiccant. This extends the life of the aluminum media substrate and enhances its structural integrity, perimeter and face contact seals to minimize air leakage and wheel bypass.

LOW LEAKAGE SEALS

The UWC line is supplied with hybrid brush/barrier, perimeter and face contact seals to minimize air leakage and wheel bypass, forming the ideal sealing surface.

LIGHT WEIGHT MEDIA SUPPORT

The media support members (hub, spokes and rims) are aluminum extrusions. This combines strength with precision.

EASE OF INSTALLATION

The UWC is designed to be a slide in replacement for the stacked plate, dimpled plastic wheels in most applications and can be easily installed in just a few minutes.

LIFETIME PERFORMANCE

The UWC is designed and built to provide long and reliable operation for the life of the equipment it's installed in, minimizing maintenance, labor and replacement costs. DLL performance software for integration into the selection software of OEM customers.

SOFTWARE AND SUPPORT

- Stand-alone software for product selection, analysis and sales support which provides:
  - A) Selection guidance based on airflow
  - B) Performance data for cooling and heating conditions at any selected conditions
  - C) Easy energy analysis calculations for various U.S. cities complete with graphical output suitable for providing to the clients or engineers of OEM customers
  - D) RER calculations
  - E) Performance schedules for the total energy recovery wheels
  - F) Frost alarm warnings and recommendations when variable wheel frost control is employed
  - G) Full submittal output if desired
- Numerous certifications and independent test reports on product performance
- 40 years of application knowledge and expertise

PRODUCT FEATURES:

- Industry's highest recovery performance (AHRI Certified) and Recovery Efficiency Ratios (RER)
- 100-150 mm deep transfer media
- Reduced contaminant carry-over compared to silica gel based energy wheels
- Structural sheet metal with tubular bearing support
- Structural aluminum media spoke system with extruded aluminum inner hub
- Comprehensive variable speed wheel motor (optional)

WHY SEMCO PRODUCTS
OPTIMIZE SYSTEMS

REASON 1: WE DELIVER HIGH TOTAL RECOVERY EFFECTIVENESS WITH LOW PARASITIC PRESSURE LOSS TO MINIMIZE THE INSTALLED HEATING AND COOLING CAPACITY, REDUCE FAN MOTOR SIZE WHILE MAXIMIZING OVERALL SYSTEM PERFORMANCE AND CLIENT ENERGY SAVINGS.

Energy recovery wheels that are not optimized feature low latent performance, require increased cooling capacities, need deeper coils and frost more easily during cold weather. Conversely, recovery wheels designed to operate with high air pressure losses, significantly impact fan brake horsepower requirements which erode much of the energy savings promised by the recovery device and result in lower EER ratings.

REASON 2: WE ENABLE ENERGY RECOVERY SYSTEMS TO MAINTAIN A BETTER AND MORE CONSISTENT INDOOR AIR QUALITY FOR BUILDING OCCUPANTS

All SEMCO wheels employ desiccant coatings which substantially reduce the amount of desiccant contaminant transfer when compared with other products, such as traditional silica gel wheels. Purge sections required to further limit contaminant transfer are a standard option for all SEMCO wheels.

SEMCO recovery wheels employ fluted aluminum media for true laminar flow and require minimal maintenance. They effectively operate with low efficiency filters without impacting the long-term performance of the recovery device. Recovery wheels that plug or require MERV 8 filters to protect against plugging negatively impact IAQ as increased internal static pressures diminish system airflows, especially with systems incorporating forward curve fans. Frequent and substantial reduction in the outdoor airflow is not in compliance with design codes and standards.

REASON 3: ALLOWS COMPLIANCE WITH ASHRAE 90.1 2013 FAN LIMITATIONS AND ECONOMIZER REQUIREMENTS

ASHRAE 90.1 2013 places strict limitations on the amount of fan horsepower that can be allocated to an energy recovery system. It also requires the economizer airflow capability to equal 100% of the supply design airflow. The low pressure losses offered by the SEMCO wheels greatly simplifies the challenge of satisfying *ASHRAE 90.1 2013* fan horsepower limitations and allows substantially more outdoor airflow to be delivered through a given size wheel during economizer mode.

REASON 4: INCREASE THE AIRFLOW CAPABILITY AND/OR THE EXTERNAL STATIC PRESSURE CAPABILITY FROM AN EXISTING ERV

Upgrading your ERV wheel with a SEMCO wheel, will provide immediate increased external static pressure capability and/or increased system airflow capacity. In many cases, smaller fan motor sizes can be installed while maintaining current product airflow capabilities and reducing the cost of electrical service. This lowers the manufacturing cost and increases product performance.

REASON 5: SAFETY FIRST – BEATS NFPA 90A COMPLIANCE STANDARDS REQUIRING MINIMAL FLAME AND SMOKE GENERATION BY THE RECOVERY WHEEL MEDIA

The SEMCO wheel media has been tested in accordance with *ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials or ANSI/UL 723* and shown to have a flame spread and a smoke generation of 0 and 0, well below the allowable limits of 25 and 50 respectively for all duct-mounted devices complying with NFPA 90A. SEMCO wheel products have also been tested for smoke generation and combustibility in accordance with UL-900, surpassing full compliance with results that were well below the criteria allowed.

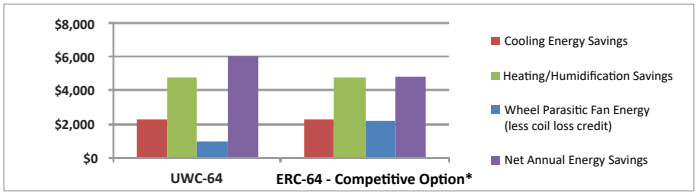
REASON 6: INCREASED RELIABILITY AND REDUCED MAINTENANCE

SEMCO wheels have industrial duty gear motors with adjustable link belting to ensure a trouble free drive system. All wheels are relatively maintenance free, due to the self-cleaning media which resists plugging. This also prolongs the life of the wheel.

SEMCO VS. COMPETITION

SEMCO CLASSIC CASSETTE

ENERGY SAVINGS COMPARISON



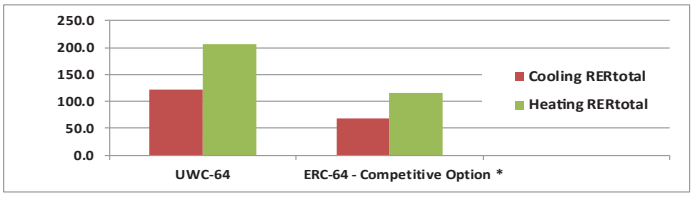
Comparison for SEMCO UWC 64 vs AirXchange® ERC-64 using Atlanta weather conditions, $.10 for electricity and $5.00 per million BYU for gas 8,000 cfm supply and return airflows, continuous operation

Plant Capacity Savings	UWC-64	ERC-64 - Competitive Option *
Total Effectiveness	64.5%	64.5%
Supply Air Pressure Loss	0.51 inwg	0.94 inwg
Return Air Pressure Loss	0.51 inwg	0.94 inwg

Here is the difference in performance values between the two products based on AHRI listings

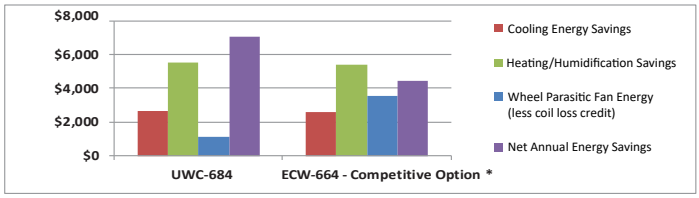
RER COMPARISON

RER_{total} Comparison	UWC-64	ERC-64 - Competitive Option *
Cooling RER_{total}	121.4	67.9
Heating RER_{total}	206.1	115.2



SEMCO CROSS CASSETTE 4

ENERGY SAVINGS COMPARISON



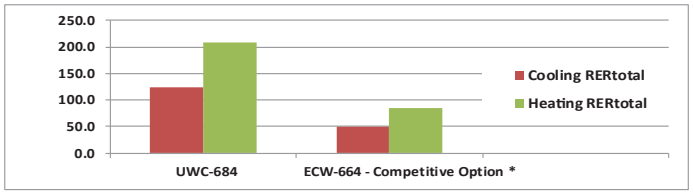
Comparison for SEMCO UWC-684 vs NovelAire® ECW-664, using Atlanta weather conditions, $.10 for electricity and $5.00 per million BYU for gas 8,000 cfm supply and return airflows, continuous operation

Plant Capacity Savings	UWC-684	ECW-664 - Competitive Option *
Total Effectiveness	64.6%	63.0%
Supply Air Pressure Loss	0.51 inwg	1.25 inwg
Return Air Pressure Loss	0.51 inwg	1.25 inwg

Here is the difference in performance values between the two products based on AHRI listings

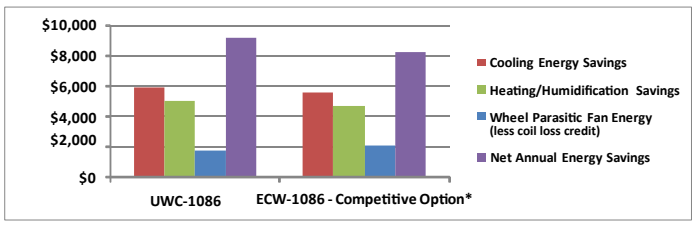
RER COMPARISON

RER_{total} Comparison	UWC-684	ECW-664 - Competitive Option *
Cooling RER_{total}	123.1	50.1
Heating RER_{total}	208.9	85.0



SEMCO CROSS CASSETTE 6

ENERGY SAVINGS COMPARISON



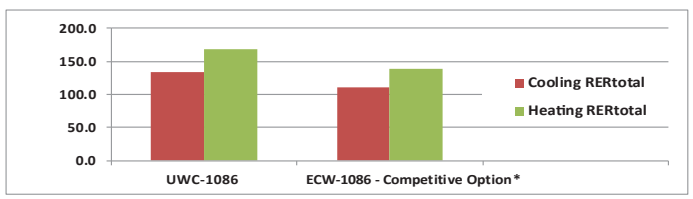
Comparison for SEMCO UWC-1086 vs Novelaire® ECW-1086 using Atlanta weather conditions, $.10 for electricity and $5.00 per million BYU for gas 10,700 cfm supply and return airflows

Plant Capacity Savings	UWC-1086	ECW-1086 - Competitive Option*
Total Effectiveness	71.0%	67.0%
Supply Air Pressure Loss	0.61 inwg	0.70 inwg
Return Air Pressure Loss	0.61 inwg	0.70 inwg

Here is the difference in performance values between the two products based on AHRI listings

RER COMPARISON

RER_{total} Comparison	UWC-1086	ECW-1086 - Competitive Option*
Cooling RER_{total}	133.3	110.1
Heating RER_{total}	169.0	139.5



CLASSIC CASSETTE
PERFORMANCE DATA AND DIMENSIONS

CLASSIC CASSETTE DATA

VELOCITY (SFPM)	EFFECTIVENESS			PRESSURE LOSS (INWG)
	SENSIBLE	LATENT	TOTAL	
200	75	76	75	0.16
300	73	73	73	0.20
400	72	70	71	0.25
500	70	67	69	0.31
600	68	64	67	0.39
700	66	61	65	0.47
800	64	58	62	0.56
900	62	55	60	0.65
1000	59	52	57	0.74

Classic Cassette media employs a larger flute size, resulting in lower pressure loss and performance at the lowest product cost.

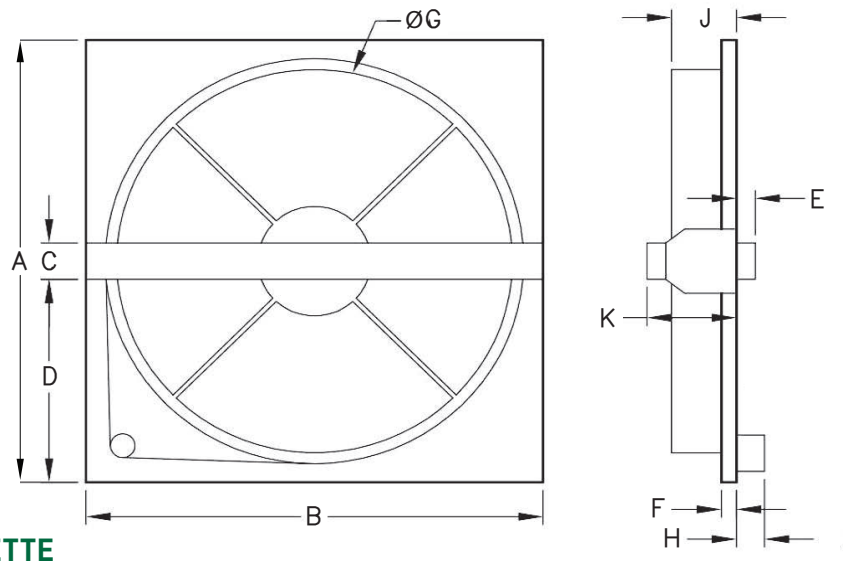
CLASSIC HIGH EFFICIENCY CASSETTE DATA

VELOCITY (SFPM)	EFFECTIVENESS			PRESSURE LOSS (INWG)
	SENSIBLE	LATENT	TOTAL	
200	79	80	79	0.24
300	78	77	78	0.29
400	77	75	76	0.36
500	75	72	74	0.46
600	73	69	72	0.57
700	71	66	70	0.69
800	69	63	67	0.82
900	67	60	65	0.94
1000	65	57	63	1.05

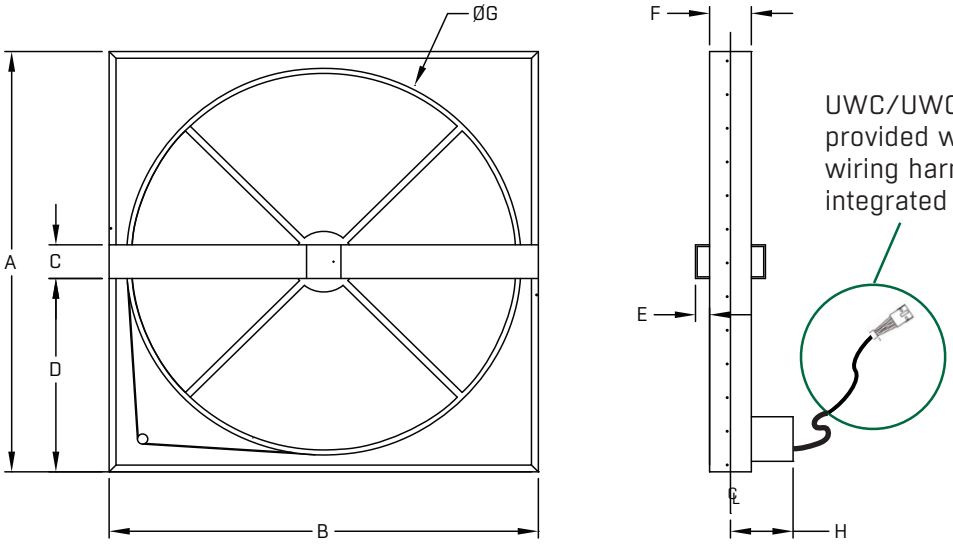
Classic High Efficiency Cassette media employs a smaller flute size, resulting in higher recovery performance at a slightly higher pressure loss and product cost.

VELOCITY (SFPM)	CLASSIC CASSETTE OR CLASSIC HIGH EFFICIENCY CASSETTE MODEL NUMBER											
	UWC-25	UWC-30	UWC-36	UWC-41	UWC-46	UWC-52	UWC-58	UWC-64	UWC-68	UWC-74	UWC-78	UWC-84
	AIRFLOW (SCFM)											
200	300	400	600	820	1,040	1,420	1,840	2,140	2,500	2,960	3,240	3,770
300	450	600	900	1,230	1,560	2,130	2,760	3,210	3,750	4,440	4,860	5,650
400	600	800	1,200	1,640	2,080	2,840	3,680	4,280	5,000	5,920	6,480	7,530
500	745	1,000	1,500	2,050	2,600	3,550	4,600	5,350	6,250	7,400	8,100	9,410
600	890	1,200	1,800	2,460	3,120	4,260	5,520	6,420	7,500	8,880	9,720	11,300
700	1040	1,400	2,100	2,870	3,640	4,970	6,440	7,490	8,750	10,360	11,340	13,180
800	1190	1,600	2,400	3,280	4,160	5,680	7,360	8,560	10,000	11,840	12,960	15,060
900	1340	1,800	2,700	3,690	4,680	6,390	8,280	9,630	11,250	13,320	14,580	16,940
1000	1490	2,000	3,000	4,100	5,200	7,100	9,200	10,700	12,500	14,800	N/A	N/A

CLASSIC CASSETTE AND CLASSIC HIGH EFFICIENCY CASSETTE DIMENSION: 25



CLASSIC CASSETTE AND CLASSIC HIGH EFFICIENCY CASSETTE DIMENSIONS: 30 AND LARGER



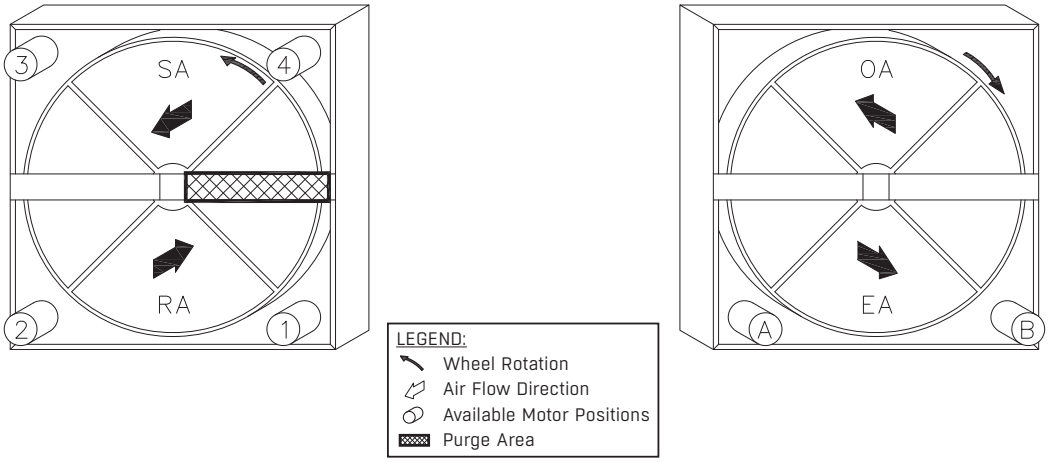
UWC/UWCH wheels are provided with a prewired motor wiring harness including an integrated connector.

MODEL #	DIMENSIONS (INCHES)											UWC NET WEIGHT (LBS)	UWCH NET WEIGHT (LBS)
	A	B	C	D	E	F	G	H (NOTE 1)	J	K	TOTAL WIDTH		
UWC-25	28.92	28.92	1.25	13.84	0.81	0.79	25	4.80	3.66	4.80	9.60	65	68
UWC-30	34.0	34.0	2.04	15.98	1.31	4.36	30	5.5	N/A	N/A	8.99	105	111
UWC-36	39.80	39.80	2.82	18.40	1.31	4.36	36	5.5 [1]	N/A	N/A	8.99	130	138
UWC-41	44.00	44.00	3.10	20.50	1.58	4.36	41	5.5 [1]	N/A	N/A	9.26	158	168
UWC-46	50.00	50.00	3.10	23.50	1.58	4.36	46	5.5 [1]	N/A	N/A	9.26	177	189
UWC-52	56.19	56.19	3.10	26.50	1.58	4.36	52	5.5 [1]	N/A	N/A	9.26	201	216
UWC-58	62.42	62.42	3.10	29.70	2.05	4.36	58	7.5	N/A	N/A	14.04	238	257
UWC-64	68.00	68.00	5.00	31.50	2.05	6.07	64	7.5	N/A	N/A	12.59	247	270
UWC-68	72.00	72.00	6.00	33.00	2.05	7.07	68	7.5	N/A	N/A	13.09	262	288
UWC-74	78.00	78.00	6.00	36.00	2.05	7.07	74	7.5	N/A	N/A	13.09	285	316
UWC-78	85.00	85.00	6.00	39.5	2.14	7.07	78	10.5	N/A	N/A	16.18	617	652
UWC-84	91.00	91.00	7.00	42.0	2.99	10.0	84	10.5	N/A	N/A	18.49	715	750

Note 1: Add 2" to "H Dimension" for the following applications: Constant Speed - 220V/1PH or 575V/3PH, Variable Speed - 460V/3PH or 575V/3PH

CLASSIC CASSETTE MOTORS

POSITION



BUILDING SIDE MOTOR POSITION
(Four motor positions available)

WEATHER SIDE MOTOR POSITION
(Two motor positions available)

OA = Outdoor Air **SA** = Supply Air **RA** = Return Air **EA** = Exhausted Air

- The crosshatch section shown on the bearing support bar drawing is the location of the optional purge section
- The optional purge is always positioned on the building side of the wheel.
- Available motor positions are fixed as indicated on the drawings. For example, If the wheel is rotated 180° such that supply is on the bottom, motor position 1 is now located at the top left corner.
- Motor positions 1, 2, 3, and 4 are on the building side of the wheel. Motor position A and B are on the weather side of the wheel (opposite of 1 and 2 respectively)

CLASSIC CASSETTE AND CLASSIC HIGH EFFICIENCY CASSETTE CONFIGURATIONS AND MOTOR POSITIONS

The **Classic and Classic High Efficiency Cassettes** are offered to fit most configurations required by the OEM customer. The simple yet flexible design allows the OEM customer to rotate the wheel drawing on page into the appropriate orientation, then select the desired motor position from the options shown. To ensure proper performance, the **Classic and Classic High Efficiency Cassettes**, must be installed such that the wheel sections labeled as Supply Air and Outdoor Air are in the appropriate sections within the energy recovery unit — ERU — and the wheel rotation direction must be confirmed.

CLASSIC CASSETTE
MOTOR MATRIX

CLASSIC CASSETTE MOTOR MATRIX		CONSTANT SPEED OPERATION				INVERTER DRIVEN VARIABLE SPEED OPERATION[1]		
MODEL #	MOTOR DETAILS	220V/1PH	208-230V/3PH	460V/3PH	575V/3PH	208-230/3PH	460V/3PH	575V/3PH [2]
UWC-25	Motor Model Horsepower Amps	GF15N005-BMRE5C 1/20 0.31 amps	GF15N005-BMRF2C 1/15 0.38 amps	GF15N005-BMRF3C 1/15 0.17 amps	N/A	GF15N005-BMRF2C 1/15 0.38 amps	N/A	N/A
UWC-30	Motor Model Horsepower Amps	GF15N005-BMRE5C 1/20 0.31 amps	GF15N005-BMRF2C 1/15 0.38 amps	GF15N005-BMRF3C 1/15 0.17 amps	N/A	GF15N005-BMRF2C 1/15 0.38 amps	N/A	N/A
UWC-36	Motor Model Horsepower Amps	GF18N005-BMYJ5C 1/6 0.85 amps	GF15N005-BMRF2C 1/15 0.38 amps	GF15N005-BMRF3C 1/15 0.17 amps	G3K18N005-BMH8A 1/8 0.20 amps	GF15N005-BMRF2C 1/15 0.38 amps	G3K18N005-BMH4A 1/8 0.29 amps	G3K18N005-BMH4A 1/8 0.29 amps
UWC-41	Motor Model Horsepower Amps	GF18N005-BMYJ5C 1/6 0.85 amps	GF15N005-BMRF2C 1/15 0.38 amps	GF15N005-BMRF3C 1/15 0.17 amps	G3K18N005-BMH8A 1/8 0.20 amps	GF15N005-BMRF2C 1/15 0.38 amps	G3K18N005-BMH4A 1/8 0.29 amps	G3K18N005-BMH4A 1/8 0.29 amps
UWC-46	Motor Model Horsepower Amps	GF18N005-BMYJ5C 1/6 0.85 amps	GF15N005-BMRF2C 1/15 0.38 amps	GF15N005-BMRF3C 1/15 0.17 amps	G3K18N005-BMH8A 1/8 0.20 amps	GF15N005-BMRF2C 1/15 0.38 amps	G3K18N005-BMH4A 1/8 0.29 amps	G3K18N005-BMH4A 1/8 0.29 amps
UWC-52	Motor Model Horsepower Amps	GF18N005-BMYJ5C 1/6 0.85 amps	GF15N005-BMRF2C 1/15 0.38 amps	GF15N005-BMRF3C 1/15 0.17 amps	G3K18N005-BMH8A 1/8 0.20 amps	GF15N005-BMRF2C 1/15 0.38 amps	G3K18N005-BMH4A 1/8 0.29 amps	G3K18N005-BMH4A 1/8 0.29 amps
UWC-58	Motor Model Horsepower Amps	N/A	GF18N005-BMYJ2C 1/6 0.64 amps	GF18N005-BMYJ3C 1/6 0.31 amps	G3K18N005-BMH8A 1/8 0.20 amps	GF18N005-BMYJ2C 1/6 0.64 amps	G3K18N005-BMH4A 1/8 0.29 amps	G3K18N005-BMH4A 1/8 0.29 amps
UWC-64	Motor Model Horsepower Amps	N/A	GF18N005-BMYJ2C 1/6 0.64 amps	GF18N005-BMYJ3C 1/6 0.31 amps	G3K18N005-BMH8A 1/8 0.20 amps	GF18N005-BMYJ2C 1/6 0.64 amps	G3K18N005-BMH4A 1/8 0.29 amps	G3K18N005-BMH4A 1/8 0.29 amps
UWC-68	Motor Model Horsepower Amps	N/A	GF18N005-BMYJ2C 1/6 0.64 amps	GF18N005-BMYJ3C 1/6 0.31 amps	G3K18N005-BMH8A 1/8 0.20 amps	GF18N005-BMYJ2C 1/6 0.64 amps	G3K18N005-BMH4A 1/8 0.29 amps	G3K18N005-BMH4A 1/8 0.29 amps
UWC-74	Motor Model Horsepower Amps	N/A	GF18N005-BMYJ2C 1/6 0.64 amps	GF18N005-BMYJ3C 1/6 0.31 amps	G3K18N005-BMH8A 1/8 0.20 amps	GF18N005-BMYJ2C 1/6 0.64 amps	G3K18N005-BMH4A 1/8 0.29 amps	G3K18N005-BMH4A 1/8 0.29 amps
UWC-78	Motor Model Horsepower Amps	N/A	G3K22N5-MF4AENTZ 1/2 1.8 amps	G3K22N5-MF4AENTZ 1/2 0.9 amps	N/A	G3K22N5-MF4AENTZ 1/2 1.8 amps	G3K22N5-MF4AENTZ 1/2 0.9 amps	N/A
UWC-84	Motor Model Horsepower Amps	N/A	G3K22N5-MF4AENTZ 1/2 1.8 amps	G3K22N5-MF4AENTZ 1/2 0.9 amps	N/A	G3K22N5-MF4AENTZ 1/2 1.8 amps	G3K22N5-MF4AENTZ 1/2 0.9 amps	N/A

Note 1: Proper motor class and inverter setup parameters are critical for proper variable speed motor operation. Preconfigured inverter from SEMCO recommended. For details please see page 20.

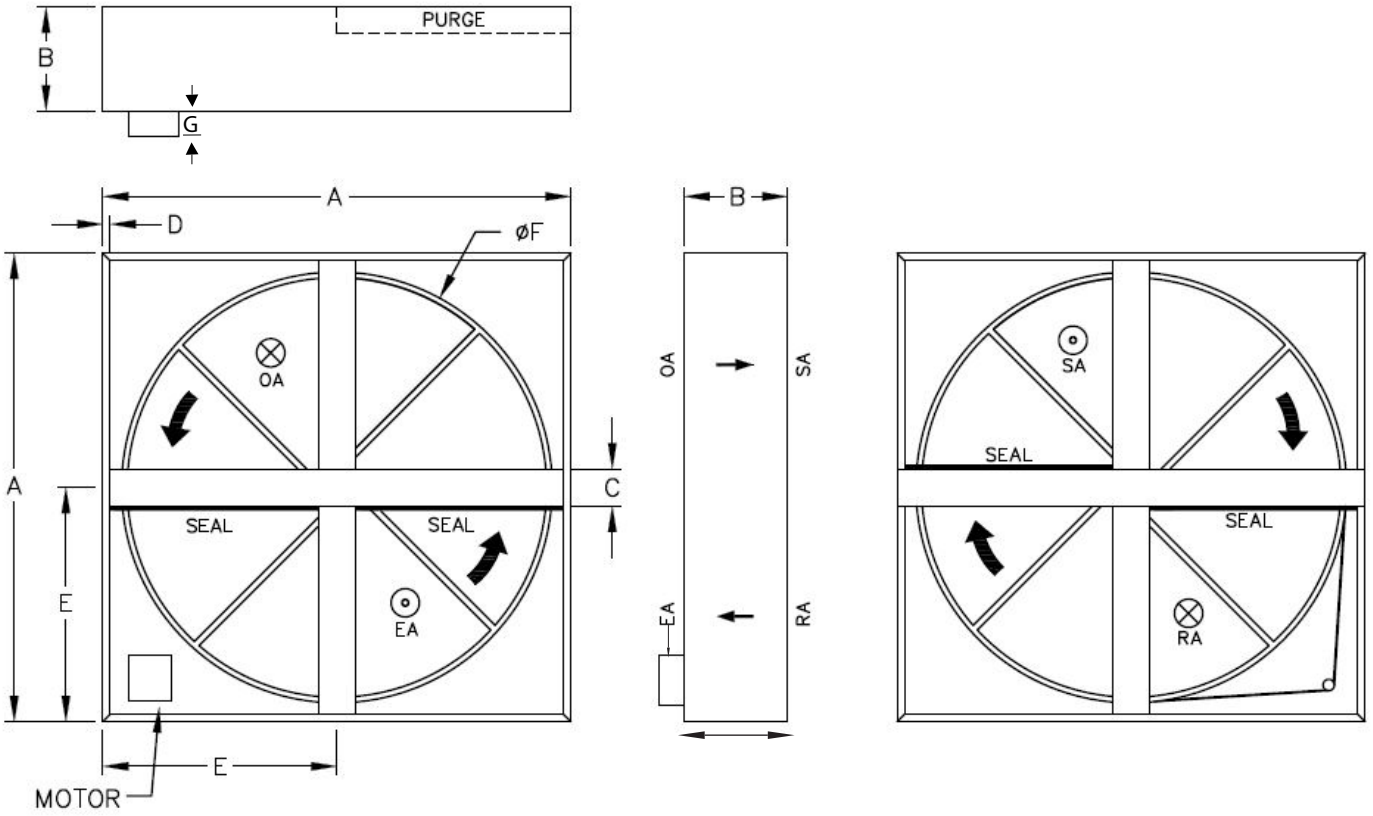
Note 2: Use 575V inverter. Program inverter for max 460 volts output.

Note 3: All wheels are equipped with 16" motor wiring lead with male Amp connector. The single phase, three wire, wire colors are black (3), green (2), and white (1). The three phase, four wire, wire colors are black (4), white (3), red (2), and green (1).

CROSS CASSETTE 4
PERFORMANCE DATA AND DIMENSIONS

PERFORMANCE DATA FOR CROSS CASSETTE 4

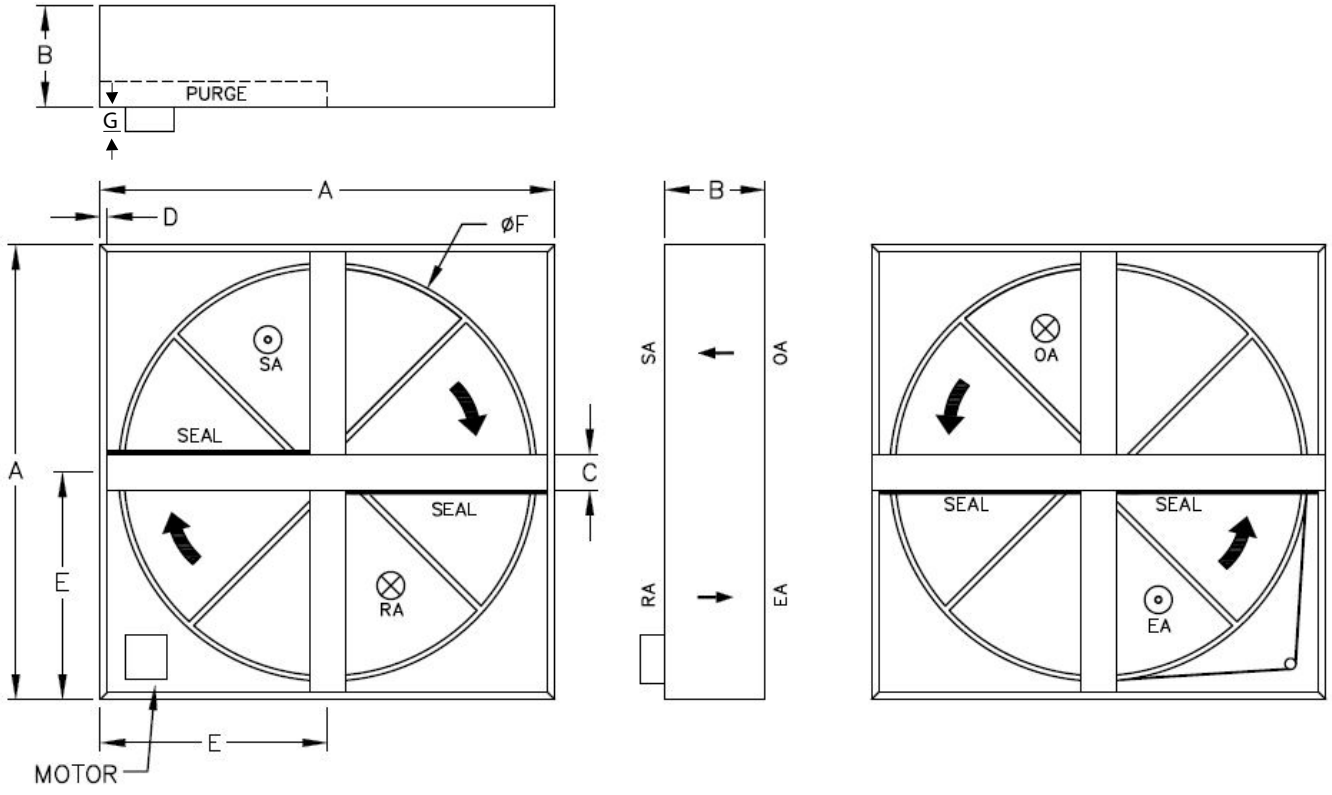
VELOCITY FPM	EFFECTIVENESS %	PRESS. DROP IN.WG	Air Flow Rate (in cfm) →	MODEL NUMBER						
				UWC-254	UWC-304	UWC-364	UWC-414	UWC-464	UWC-524	UWC-584
200	75	0.16		309	450	670	870	1,100	1,420	1,780
300	73	0.20		460	680	1000	1,310	1,660	2,130	2,660
400	71	0.25		620	910	1,330	1,740	2,210	2,840	3,550
500	69	0.31		770	1,140	1,660	2,180	2,760	3,550	4,440
600	67	0.39		930	1,360	2,000	2,610	3,310	4,260	5,320
700	65	0.47		1,080	1,590	2,330	3,050	3,860	4,970	6,210
800	62	0.56		1,240	1,820	2,660	3,480	4,420	5,680	7,100
900	60	0.65		1,390	2,050	2,990	3,920	4,970	6,390	7,980
1000	57	0.74		1,550	2,270	3,330	4,350	5,520	7,100	8,870



MODEL #	DIMENSIONS (INCHES)							NET WT. (LBS.)	NOMINAL CFM
	A	B	C	D	E	F	G		
UWC-254	34.00”	7.00”	2.00”	1.00”	17.00”	25.00”	2.5"	70	1100
UWC-304	39.00”	7.00”	2.00”	1.00”	19.50”	30.00”	2.5"	98	1600
UWC-364	44.00”	7.00”	2.50”	1.00”	22.00”	36.00”	6.3"	138	2300
UWC-414	48.00”	7.00”	2.50”	1.00”	24.00”	41.00”	6.3"	176	3000
UWC-464	54.00”	8.00”	2.75”	2.00”	27.00”	46.00”	5.8"	224	3900
UWC-524	60.00”	8.00”	2.75”	2.00”	30.00”	52.00”	5.8"	282	5000
UWC-584	66.00"	8.00"	2.75"	2.00"	33.00"	58.00"	5.8"	347	6200

PERFORMANCE DATA FOR CROSS CASSETTE 4

VELOCITY FPM	EFFECTIVENESS %	PRESS. DROP IN.WG	Air Flow Rate (in cfm)	WHEEL SIZE			
				UWC-684	UWC-744	UWC-784	UWC-844
200	75	0.16		2,450	2,910	3,240	3,760
300	73	0.20		3,670	4,370	4,850	5,640
400	71	0.25		4,900	5,820	6,470	7,520
500	69	0.31		6,120	7,280	8,090	9,400
600	67	0.39		7,350	8,730	9,710	11,280
700	65	0.47		8,570	10,190	11,330	13,160
800	62	0.56		9,800	11,650	12,950	15,040
900	60	0.65		11,020	13,100	14,560	16,920
1000	57	0.74		12,240	14,560	16,180	18,800



MODEL #	DIMENSIONS (INCHES)							NET WT. (LBS.)	NOMINAL CFM
	A	B	C	D	E	F	G		
UWC-684	72.00”	9.00”	4.00”	2.00”	36.00”	68.00”	5.3"	472	8600
UWC-744	78.00”	9.00”	4.00”	2.00”	39.00”	74.00”	5.3"	555	10200
UWC-784	84.00”	9.50”	5.00”	2.00”	42.00”	78.00”	4.9"	620	11300
UWC-844	90.00”	9.50”	5.00”	2.00”	45.00”	84.00”	4.9"	715	13200

CROSS CASSETTE 4
MOTOR MATRIX

CROSS CASSETTE 4 MOTOR MATRIX		CONSTANT SPEED OPERATION				INVERTER DRIVEN VARIABLE SPEED OPERATION[1]		
MODEL #	MOTOR DETAILS	220V/1PH	208-230V/3PH	460V/3PH	575V/3PH	208-230/3PH	460V/3PH	575V/3PH [2]
UWC-254	Motor Model Horsepower Amps	GF15N005-BMRE5C 1/20 0.31 amps	GF15N005-BMRF2C 1/15 0.38 amps	GF15N005-BMRF3C 1/15 0.17 amps	N/A	GF15N005-BMRF2C 1/15 0.38 amps	N/A	N/A
UWC-304	Motor Model Horsepower Amps	GF15N005-BMRE5C 1/20 0.31 amps	GF15N005-BMRF2C 1/15 0.38 amps	GF15N005-BMRF3C 1/15 0.17 amps	N/A	GF15N005-BMRF2C 1/15 0.38 amps	N/A	N/A
UWC-364	Motor Model Horsepower Amps	GF18N005-BMRE5C 1/20 0.31 amps	GF15N005-BMRF2C 1/15 0.38 amps	GF15N005-BMRF3C 1/15 0.17 amps	GF18N005-BMH8A 1/8 0.20 amps	GF15N005-BMRF2C 1/15 0.38 amps	G3K18N5-MF1AENXTZ 1/8 0.29 amps	G3K18N005-BMH8A 1/8 0.20 amps
UWC-414	Motor Model Horsepower Amps	GF18N005-BMYJ5C 1/6 0.85 amps	GF15N005-BMRF2C 1/15 0.38 amps	GF15N005-BMRF3C 1/15 0.17 amps	GF18N005-BMH8A 1/8 0.20 amps	GF15N005-BMRF2C 1/15 0.38 amps	G3K18N5-MF1AENXTZ 1/8 0.29 amps	G3K18N005-BMH8A 1/8 0.20 amps
UWC-464	Motor Model Horsepower Amps	GF18N005-BMYJ5C 1/6 0.85 amps	GF15N005-BMRF2C 1/15 0.38 amps	GF15N005-BMRF3C 1/15 0.17 amps	GF18N005-BMH8A 1/8 0.20 amps	GF15N005-BMRF2C 1/15 0.38 amps	G3K18N5-MF1AENXTZ 1/8 0.29 amps	G3K18N005-BMH8A 1/8 0.20 amps
UWC-524	Motor Model Horsepower Amps	GF18N005-BMYJ5C 1/6 0.85 amps	GF15N005-BMRF2C 1/15 0.38 amps	GF15N005-BMRF3C 1/15 0.17 amps	GF18N005-BMH8A 1/8 0.20 amps	GF15N005-BMRF2C 1/15 0.38 amps	G3K18N5-MF1AENXTZ 1/8 0.29 amps	G3K18N005-BMH8A 1/8 0.20 amps
UWC-584	Motor Model Horsepower Amps	N/A	GF18N005-BMYJ2C 1/6 0.64 amps	GF18N005-BMYJ3C 1/6 0.31 amps	G3K18N005-BMH8A 1/8 0.20 amps	GF18N005-BMYJ2C 1/6 0.64 amps	G3K18N5-MF1AENXTZ 1/8 0.29 amps	G3K18N005-BMH8A 1/8 0.20 amps
UWC-684	Motor Model Horsepower Amps	N/A	GF18N005-BMYJ2C 1/6 0.64 amps	GF18N005-BMYJ3C 1/6 0.31 amps	GF18N005-BMH8A 1/8 0.20 amps	GF18N005-BMYJ2C 1/6 0.64 amps	G3K18N5-MF1AENXTZ 1/8 0.29 amps	G3K18N005-BMH8A 1/8 0.20 amps
UWC-744	Motor Model Horsepower Amps	N/A	GF18N005-BMYJ2C 1/6 0.64 amps	GF18N005-BMYJ3C 1/6 0.31 amps	GF18N005-BMH8A 1/8 0.20 amps	GF18N005-BMYJ2C 1/6 0.64 amps	G3K18N5-MF1AENXTZ 1/8 0.29 amps	G3K18N005-BMH8A 1/8 0.20 amps
UWC-784	Motor Model Horsepower Amps	N/A	G3K18N5-MF2AENTZ 1/4 1.0 amps	G3K18N5-MF2AENTZ 1/4 0.5 amps	N/A	G3K18N5-MF2AENTZ 1/4 1.0 amps	G3K18N5-MF2AENTZ 1/4 0.5 amps	N/A
UWC-844	Motor Model Horsepower Amps	N/A	G3K18N5-MF2AENTZ 1/4 1.0 amps	G3K18N5-MF2AENTZ 1/4 0.5 amps	N/A	G3K18N5-MF2AENTZ 1/4 1.0 amps	G3K18N5-MF2AENTZ 1/4 0.5 amps	N/A

Note 1: Proper motor class and inverter setup parameters are critical for proper variable speed motor operation. Preconfigured inverter from SEMCO recommended. For details please see page 20.

Note 2: Use 575V inverter. Program inverter for max 460 volts output.

Note 3: All wheels are equipped with 16" motor wiring lead with male Amp connector. The single phase, three wire, wire colors are black (3), green (2), and white (1). The three phase, four wire, wire colors are black (4), white (3), red (2), and green (1).

CROSS CASSETTE 6
MOTOR MATRIX

CROSS CASSETTE 6 MOTOR MATRIX		CONSTANT SPEED OPERATION			INVERTER DRIVEN VARIABLE SPEED OPERATION[1]	
MODEL #	MOTOR DETAILS	220V/1PH	208-230V/3PH	460V/3PH	208-230/3PH	460V/3PH
UWC-466	Motor Model Horsepower Amps	GF18N005-BMYJ5C 1/6 0.85 amps	GF18N005-BMYJ2C 1/6 0.64 amps	GF18N005-BMY3C 1/6 0.31 amps	GF15N005-BMRF2C 1/15 0.38 amps	G3K18N005-BMH8A 1/8 0.20 amps
UWC-526	Motor Model Horsepower Amps	GF18N005-BMYJ5C 1/6 0.85 amps	GF18N005-BMYJ2C 1/6 0.64 amps	GF18N005-BMYJ3C 1/6 0.31 amps	GF15N005-BMRF2C 1/15 0.38 amps	G3K18N005-BMH8A 1/8 0.20 amps
UWC-586	Motor Model Horsepower Amps	N/A	GF18N005-BMYJ2C 1/6 0.64 amps	GF18N005-BMYJ3C 1/6 0.31 amps	GF18N005-BMYJ2C 1/6 0.64 amps	G3K18N005-BMH8A 1/8 0.20 amps
UWC-686	Motor Model Horsepower Amps	N/A	G3K18N5-MF2AENTZ 1/4 1.0 amp	GK18N5-MF2AENTZ 1/4 0.5 amps	G3K18N5-MF2AENTZ 1/4 1 amp	G3K18N5-MF2AENTZ 1/4 0.5 amps
UWC-746	Motor Model Horsepower Amps	N/A	G3K18N5-MF2AENTZ 1/4 1 amp	G3K18N5-MF2AENTZ 1/4 0.5 amps	GF18N5-MF2AENTZ 1/4 1.0 amp	G3K18N5-MF2AENTZ 1/4 0.5 amps
UWC-786	Motor Model Horsepower Amps	N/A	G3K18N5-MF2AENTZ 1/4 1.0 amp	G3K18N5-MF2AENTZ 1/4 0.5 amps	G3K18N5-MF2AENTZ 1/4 1.0 amps	G3K18N5-MF2AENTZ 1/4 0.5 amps
UWC-846	Motor Model Horsepower Amps	N/A	G3K18N5-MF2AENTZ 1/4 1.0 amp	G3K18N5-MF2AENTZ 1/4 0.5 amps	G3K18N5-MF2AENTZ 1/4 1.0 amp	G3K18N5-MF2AENTZ 1/4 0.5 amps
UWC-906	Motor Model Horsepower Amps	N/A	G3K18N5-MF2AENTZ 1/4 1.0 amp	G3K18N5-MF2AENTZ 1/4 0.5 amps	G3K18N5-MF2AENTZ 1/4 1.0 amp	G3K18N5-MF2AENTZ 1/4 0.5 amps
UWC-966	Motor Model Horsepower Amps	N/A	G3K18N5-MF2AENTZ 1/4 1.0 amp	G3K18N5-MF2AENTZ 1/4 0.5 amps	G3K18N5-MF2AENTZ 1/4 1.0 amp	G3K18N5-MF2AENTZ 1/4 0.5 amps
UWC-1026	Motor Model Horsepower Amps	N/A	G3K18N5-MF2AENTZ 1/4 1.0 amp	G3K18N5-MF2AENTZ 1/4 0.5 amps	G3K18N5-MF2AENTZ 1/4 1.0 amp	G3K18N5-MF2AENTZ 1/4 0.5 amps
UWC-1086	Motor Model Horsepower Amps	N/A	G3K18N5-MF2AENTZ 1/4 1.0 amp	G3K18N5-MF2AENTZ 1/4 0.5 amps	G3K18N5-MF2AENTZ 1/4 1.0 amp	G3K18N5-MF2AENTZ 1/4 0.5 amps

Note 1: Proper motor class and inverter setup parameters are critical for proper variable speed motor operation. Preconfigured inverter from SEMCO recommended. For details please see page 20.

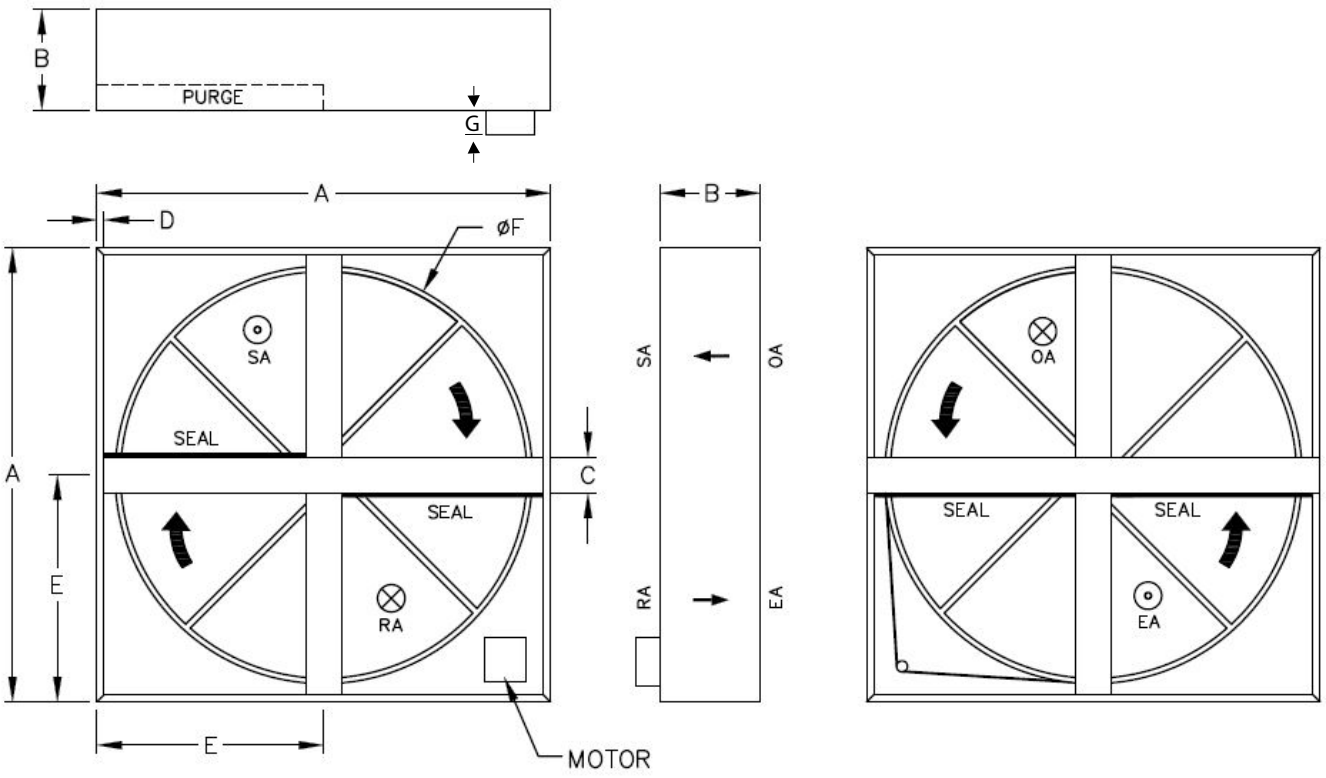
Note 2: Use 575V inverter. Program inverter for max 460 volts output.

Note 3: All wheels are equipped with 16" motor wiring lead with male Amp connector. The single phase, three wire, wire colors are black (3), green (2), and white (1). The three phase, four wire, wire colors are black (4), white (3), red (2), and green (1).

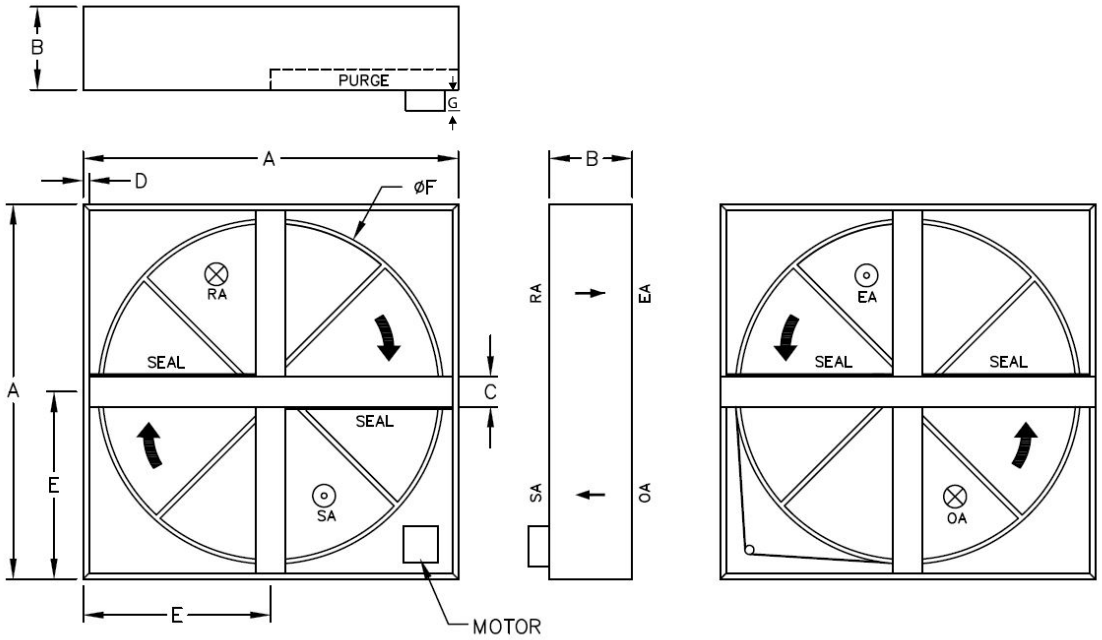
CROSS CASSETTE 6
PERFORMANCE DATA AND DIMENSIONS

PERFORMANCE DATA FOR THE CROSS CASSETTE 6

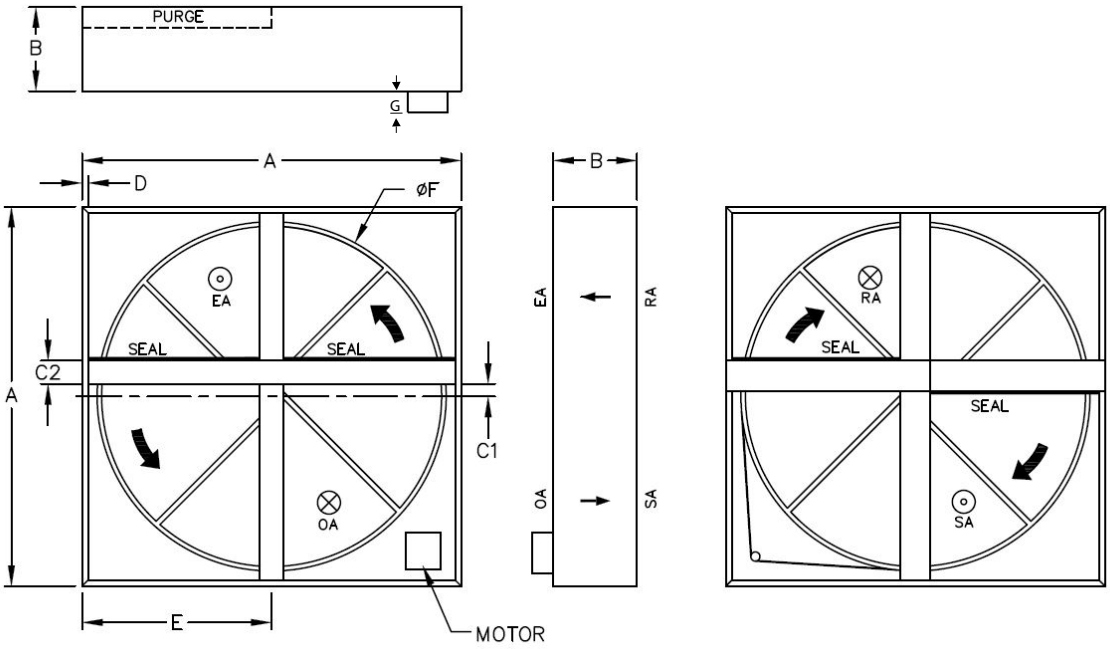
VELOCITY FPM	EFFECTIVENESS %	PRESS. DROP IN.WG	Air Flow Rate (in cfm)	MODEL NUMBER										
				UWC-466	UWC-526	UWC-586	UWC-686	UWC-746	UWC-786	UWC-846	UWC-906	UWC-966	UWC-1026	UWC-1086
200	81	0.18		1,080	1,390	1,740	2,420	2,870	3,200	3,720	4,270	4,870	5,510	7,070
300	79	0.27		1,620	2,090	2,610	3,620	4,300	4,790	5,580	6,410	7,310	8,270	10,600
400	76	0.36		2,160	2,780	3,490	4,830	5,740	6,390	7,440	8,550	9,750	11,030	14,140
500	74	0.45		2,700	3,480	4,360	6,040	7,170	7,990	9,300	10,690	12,180	13,780	17,670
600	72	0.54		3,240	4,170	5,230	7,250	8,610	9,590	11,150	12,820	14,620	16,540	21,200
700	70	0.63		3,780	4,870	6,100	8,450	10,040	11,190	13,010	14,960	17,060	19,300	24,740
800	68	0.72		4,310	5,560	6,970	9,660	11,480	12,790	14,870	17,100	19,490	22,050	28,270
900	65	0.81		4,850	6,260	7,840	10,870	12,910	14,380	16,730	19,230	21,930	24,810	31,800
1000	63	0.90		5,390	6,960	8,710	12,080	14,350	15,980	18,590	21,370	N/A	N/A	N/A



MODEL #	DIMENSIONS (INCHES)							NET WT. (LBS.)	NOMINAL CFM
	A	B	C	D	E	F	G		
UWC-466	54.00”	10.00”	2.75”	2.00”	27.00”	46.00”	2.9"	203	3,800
UWC-526	60.00”	10.00”	2.75”	2.00”	30.00”	52.00”	2.9"	256	4,900
UWC-586	66.00”	10.00”	2.75”	2.00”	33.00”	58.00”	2.9"	316	6,100

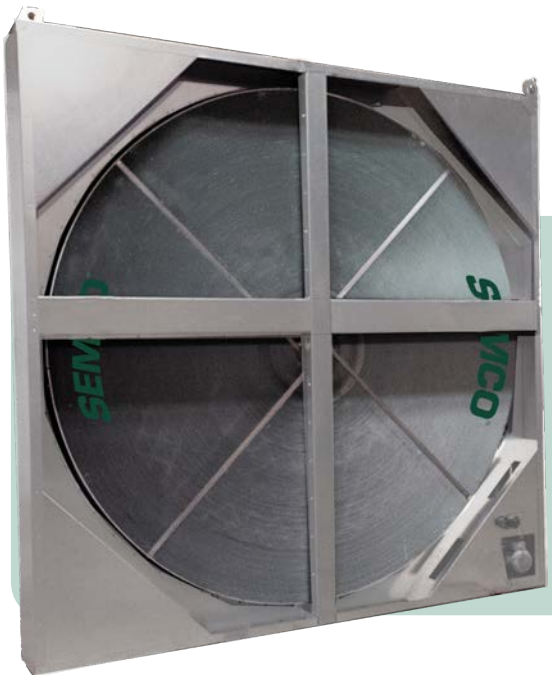


MODEL #	DIMENSIONS (INCHES)							NET WT. (LBS.)	NOMINAL CFM
	A	B	C	D	E	F	G		
UWC-686	72”	11.00”	4.00”	2.00”	36.00”	68.00”	4.1"	431	8,500
UWC-746	78”	11.00”	4.00”	2.00”	39.00”	74.00”	4.1"	508	10,000
UWC-786	84”	12.00”	5.00”	2.00”	42.00”	78.00”	3.6"	566	11,200
UWC-846	90”	12.00”	5.00”	2.00”	45.00”	84.00”	3.6"	655	13,000
UWC-906	96”	12.00”	6.00”	2.00”	48.00”	90.00”	3.6"	750	15,000
UWC-966	102”	12.00”	6.00”	2.00”	51.00”	96.00”	3.6"	852	17,100
UWC-1026	108”	12.00”	6.00”	2.00”	54.00”	102.00”	3.6"	962	19,300



MODEL #	DIMENSIONS (INCHES)								NET WT. (LBS.)	NOMINAL CFM
	A	B	C1	C2	D	E	F	G		
UWC-1086	116.25”	14.63”	6.87”	2.75”	2.00”	58.13”	108”	2.3"	1078	24,700

SEMCO CONVERSION CHART



Whether you already have a SEMCO air handling unit, and need a replacement, or have one of our competitor's units, and want to upgrade your UWC to the best in the industry, we have a wheel that meets your needs. Check the reference chart below, to find the perfect wheel for your air handling unit.

SEMCO CONVERSION CHART					
Classic Cassette Series	AirXChange ®	Cross Cassette 4 Series	NovelAire® 4”	Cross Cassette 6 Series	NovelAire® 6”
UWC-25	ERC-25	UWC-254	ECW-244	UWC-466	ECW-486
UWC-30	ERC-30	UWC-304	ECW-324	UWC-526	ECW-546
UWC-36	ERC-36	UWC-364	ECW-364	UWC-586	ECW-606
UWC-41	ERC-41	UWC-414	ECW-424	UWC-686	ECW-666
UWC-46	ERC-46	UWC-464	ECW-484	UWC-746	ECW-726
UWC-52	ERC-52	UWC-524	ECW-544	UWC-786	ECW-786
UWC-58	ERC-58	UWC-584	ECW-604	UWC-846	ECW-846
UWC-64	ERC-64	UWC-684	ECW-664	UWC-906	ECW-906
UWC-68	ERC-68	UWC-744	ECW-784	UWC-966	ECW-966
UWC-74	ERC-74	UWC-784	UWC-784	UWC-1026	ECW-1026
UWC-78	ERC-81	UWC-844	ECW-844	UWC-1086	ECW-1086
UWC-84	ERC-86	N/A	N/A	N/A	N/A

PRODUCT SPECIFICATION

TOTAL ENERGY RECOVERY WHEEL

The rotor media must be made of aluminum which is formed into a fluted, honeycomb matrix which and coated to prohibit corrosion; paper, fibrous or plastic medias are not acceptable. All surfaces must be coated with a non-migrating zeolite desiccant composite designed to maximize latent recovery while reducing the transfer of airborne contaminants, which are often times abundant in silica gel or oxidized aluminum recovery wheels. The wheel media shall be a permanent component with an estimated 20 year life and not a "throw away" item. The component should be suitable for integration within units incorporating heating sources of all types without damage and designed to accommodate operating conditions up to 180°F.

The recovery wheel product performance must be AHRI certified. Submitted data must be based upon this certified data, meeting or exceeding the temperature and latent efficiencies scheduled. The wheel pressure loss data must not exceed that scheduled for the supply and return air streams. The product performance must also meet or exceed the design heating and cooling RER (recovery efficiency ratio) values listed within the schedule.

The recovery media must have been independently tested by a recognized laboratory to show compliance with UL-900 requirements with regard to smoke generation and combustibility. A full copy of the UL-900 test report must be provided for review with submittals.

The recovery wheel media can be cleaned with low temperature steam, hot water or light detergent without degrading the latent recovery.

PURGE SECTOR

The unit must be available with a purge sector designed to limit cross-contamination of the exhaust air stream concentration when operated under appropriate design conditions.

ROTOR SEALS

The rotor shall be supplied with pre-adjusted low leakage hybrid brush seals to separate the two air streams

ROTOR SUPPORT SYSTEM

The rotor media must be re-enforced with an aluminum structural spoke system, extruded central hub and shaft sized to limit deflection and to ensure long-term structural integrity.

UNIT HOUSING

The rotor housing must be designed to limit deflection of the rotor due to air pressure loss. The sheet metal panels shall be made of galvanized steel to prevent corrosion. The rotor shall be supported by internal sealed bearings that are permanently lubricated to reduce maintenance requirements.

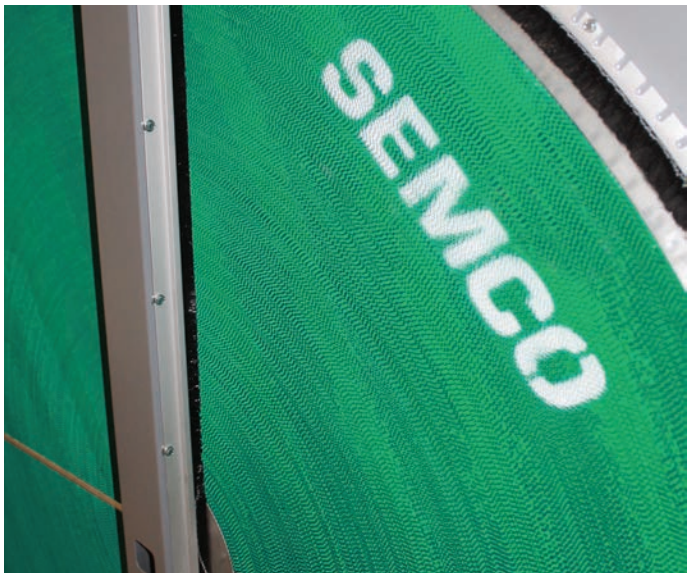
DRIVE SYSTEM

The drive system, must be driven by a reinforced, industrial grade adjustable link belt system. Plastic stretch belts are not acceptable. An A/C gear motor specifically designed for high torque, low speed operation is utilized for constant and variable speed applications.

The 460 volt motors supplied for inverter duty have been specifically designed for achieving long life in inverter driven applications, are NEMA MG1 Section IV Part 31 compliant and have UL/CSA/CE/RoHS certifications.

SOLE AND EXCLUSIVE WARRANTY

Please see the terms and conditions for your order or contact service.semco@flaktgroup.com.



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