e·f·m

Oil-Fired Warm Air Furnaces

Made with Quality and Pride in Boyertown, Pennsylvania

Oil-Fired Warm Air Furnaces ... hand-crafted in Boyertown, PA

EFM Star Series

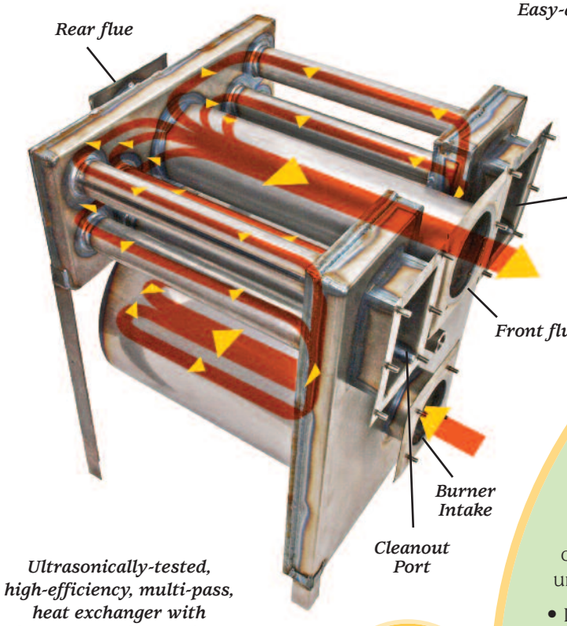
Designed for the low-profile needs of today's homes, EFM Star furnaces feature a 3-pass design (far right) with fuel efficiency of 86.2% (that may qualify for certain energy rebates[1])! Our signature front or rear flue design is ideal for today's retrofit oil furnace market.[2]

EFM Star furnaces can be installed with a Beckett, Riello, or Carlin burner, and also as a direct-vent furnace with the Riello BF3.

- Available blower motors: 3-speed Direct Drive PSC or Variable Speed ECM (See details on back page)
- Heating capacity: 60,000 BTUH's to 89,000 BTUH's with multiple firing rates
- Cooling capacity: 1-1/2 tons to 4 tons
- Available with our exclusive nrgMax 9103i control.
- Easy-access cleanout ports
- Install as a low-profile Highboy or as a Horizontal with a left or right discharge
- Chimney-vent or direct-vent capabilities
- Packed and delivered in rugged wooden crates
- Limited Lifetime Warranty, 5-Year Parts Warranty

[1] Please check with your installer on the availability of State and Federal rebates.

[2] RSM-600 model has front and rear flue.



Ultrasonically-tested, high-efficiency, multi-pass, heat exchanger with front & rear flue options

"Hybrid Synergy" ECM Blower Motors

Automatic Humidity Control

By installing an ECM Blower Motor, a humidifier, and a humidistat on your EFM Star or EFM Furnace, you can automatically control the humidity levels in your home ... and save up to 5% on your annual cooling bill! (See details on back page.) Here's why:

- To remove excess humidity from your home during the cooling season, you probably turn down your thermostat to run your air conditioner more. An ECM-powered furnace, controlled by a humidistat, will automatically extract that uncomfortable humidity as your house is being cooled.
- In the heating season, the combination of an ECM-controlled furnace and a humidifier allows you to keep the thermostat set lower, because humidified air feels warmer.

2-Stage Cooling ... 2-Stage Heat Pump Backup

Because warm air furnaces are usually sized for your 10 hottest and coldest days of the year, your ECM Blower, when installed with 2-stage cooling or 2-stage heat pump backup, will probably run on low speed 90% of the time and operate in 2nd stage only on those days when really needed. It's like having two units in one!

Improved Indoor Air Quality for Less

Because indoor air quality is an increasingly-important factor in home heating buying decisions (and constant air flow is needed for these measures to be effective) it is comforting to know that the EFM Star and EFM ECM Hybrid Synergy Systems consume much less energy in "Constant Fan Mode" than a PSC system.

FEATURING Hybrid Synergy TECHNOLOGY

EFM Series

EFM Series furnaces are built around a 10-gauge primary heat exchanger and a 14-gauge secondary heat exchanger and are lined with specialty-grade 18SR Stainless Steel for extra protection against premature failure. These reliable furnaces are also equipped with ceramic fiber combustion chambers that are completely removable for servicing.

- Available blower motors: 4-speed Direct Drive PSC or Variable Speed ECM (See details on back page)
- Enclosed vestibule
- Multiple firing rates
- Accessible cleanout ports
- Highboy and Lowboy models
- Your choice of burner: Beckett, Riello, or Carlin, plus Carlin EZ-H2L 2-Stage
- Packed and delivered in rugged wooden crates
- Limited Lifetime Warranty, 5-Year Parts Warranty

Ultrasonically-tested heavy-gauge Primary and Secondary Heat Exchangers

2-Stage Oil Heating

Our answer to the gas industry! The EFM REH-750 and REL-750 front and rear flue is available with the Carlin EZ-H2L Burner, so you have the capacity of 2-stage oil heating, 2-stage heat pump, and 2-stage air conditioning[3]. The Carlin EZ-H2L gives you a 50% turndown ability. This burner must be installed with the EFM ECM blower option (See back page).

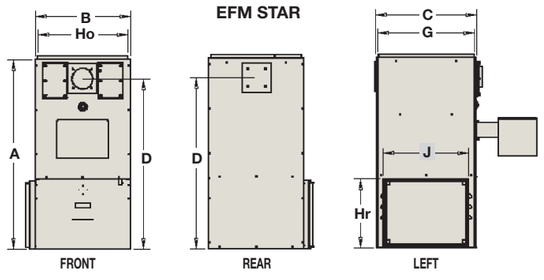
Carlin EZ-H2L burner

[3] This furnace must be installed with an ECM blower assembly and the proper heat pump and air conditioning equipment to achieve 2-stage oil heating, 2-stage heat pump, and 2-stage air conditioning.

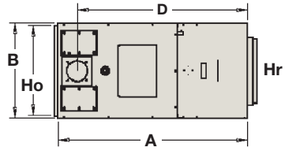
Ceramic fiber combustion chamber

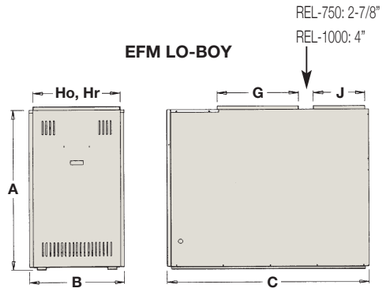
... hand-crafted in Boyertown, PA

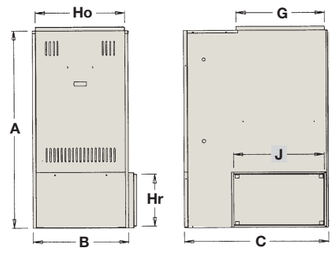
Dimensions and Specifications



The EFM Star can be installed as a low-profile highboy or as a horizontal with a left or right discharge (below).







EFM HI-BOY

Model	Cabinet Height (A)	Cabinet Width (B)	Cabinet Depth (C)	Centerline-Flue to Floor (D)	Centerline-Flue to Side	Warm Air Supply Depth (G)	Warm Air Supply Width (Ho)	Return Air Supply Width (Hr)	Return Air Supply Depth (J)	Filter Size	Flue Size	Blower Size	Shipping Weight	B.T.U.H. Input	B.T.U.H. Output	Beckett AFG Nozzle	Riello 40 Nozzle	Carlin EZ-1 Nozzle	AFUE Seasonal Efficiency
EFM STAR																			
RSH-600 and ECM RSH-600	44-1/2"	22-1/4"	23-3/8"	40"	11-1/8"	22-3/8"	21-1/16"	15-1/16"	18-7/8"	16" x 20"	5"	100-10T	215 lbs.	70,000	60,000	.40 x 60° W[1]	.40 x 80° A[3]	.40 x 60° A[1]	86.5%
														84,000	72,000	.50 x 60° B[2]	.50 x 80° A[3]	.50 x 60° A[3]	86.2%
														105,000	89,000	.60 x 60° B[2]	.60 x 80° A[3]	.60 x 60° A[3]	85.1%
RSM-600 and ECM RSM-600	44-1/2"	22-1/4"	23-3/8"	40"	11-1/8"	22-3/8"	21-1/16"	15-1/16"	18-7/8"	16" x 20"	5"	100-10T	215 lbs.	70,000	60,000	.40 x 60° W[1]	.40 x 80° A[3]	.40 x 60° A[1]	86.5%*
														84,000	72,000	.50 x 60° B[2]	.50 x 80° A[3]	.50 x 60° A[3]	86.2%*
														105,000	89,000	.60 x 60° B[2]	.60 x 80° A[3]	.60 x 60° A[3]	85.1%
EFM																			
Lo-Boy* REL-750	40"	20-1/4"	47-1/2"	31-1/4"	10-1/8"	17-1/2"	18-1/4"	18-1/4"	14"	16" x 20" (2)	6"	100-10T	323 lbs.	84,000	71,000	.60 x 80° A[4]	.50 x 60° A[2]	.60 x 70° A[4]	85.9%
														105,000	88,000	.75 x 80° B[4]	.60 x 60° A[2]	.75 x 70° A[4]	85.4%
														119,000	99,000	.85 x 80° B[4]	.65 x 60° A[2]	.85 x 70° A[4]	85.0%
Lo-Boy* REL-1000	46"	25-1/8"	53-5/8"	38-1/2"	12-1/2"	21-1/2"	22-7/8"	22-7/8"	13-5/8"	16" x 20" (2)	6"	100-10T	362 lbs.	140,000	116,000	1.00 x 80° B[4]	.85 x 80° B[2]	1.00 x 60° SS[4]	85.0%
														175,000	143,000	1.25 x 80° B[4]	1.00 x 80° B[2]	1.25 x 60° SS[4]	83.2%
Hi-Boy REH-750	53-5/8"	22-1/4"	33-1/8"	49-1/8"	11-1/8"	19-3/4"	20-1/2"	15"	23-5/8"	16" x 25"	6"	100-10T	298 lbs.	84,000	71,000	.60 x 80° A[4]	.50 x 60° A[2]	.60 x 70° A[4]	85.9%
														105,000	88,000	.75 x 80° B[4]	.60 x 60° A[2]	.75 x 70° A[4]	85.4%
														119,000	99,000	.85 x 80° B[4]	.65 x 60° A[2]	.85 x 70° A[4]	85.0%
Hi-Boy REH-1000	56-1/2"	25-1/2"	38"	52-5/8"	12-3/4"	23-3/8"	23-3/4"	15"	23-5/8"	16" x 25"	6"	100-10T	347 lbs.	140,000	116,000	1.00 x 80° B[4]	.85 x 80° B[2]	1.00 x 60° SS[4]	85.0%
														175,000	143,000	1.25 x 80° B[4]	1.00 x 80° B[2]	1.25 x 60° SS[4]	83.2%

* Specify front or rear flue on Lo-Boy models

400 CFM = 1 ton. Additional specifications available on request.

Due to ongoing engineering, specifications are subject to change.

1 Pump pressure175 psi
2 Pump pressure150 psi
3 Pump pressure165 psi
4 Pump pressure100 psi

* The EFM ECM RSM-500 and ECM RSM-600 furnaces equipped with ECM Variable-Speed Blower Motors have achieved "Energy Star" status under Version 4.0 ENERGY STAR Furnace specifications:

- Annual Fuel Utilization Efficiency (AFUE) greater than 85.0%
- Fan Efficiency ("e") ≤ 2.0%
- Air Leakage ("Qleak") ≤ 2.0%

FEATURING Hybrid Synergy TECHNOLOGY

ECM or PSC Blower Motor?

Airflow control is one of the most important factors in maintaining your home's comfort level and managing energy consumption. By eliminating those sudden bursts of air when your furnace turns on, the ECM blower assembly gives you more balanced heating and cooling and allows you to easily and efficiently operate your furnace in "Constant Fan Mode", which typically uses only 50-75 watts of power.

Using these ECM vs. PSC tables below and right, discuss your up-front vs. long-term costs with your HVAC expert to decide which blower technology will work best for you:

HEATING ELECTRICAL CONSUMPTION COMPARISON

COST PER KW	ECM	ECM COST	PSC	PSC COST	NET
$0.12	377 KW	$45	820 KW	$98	$53
$0.14	377 KW	$53	820 KW	$115	$62
$0.16	377 KW	$60	820 KW	$131	$71

"CONSTANT FAN" ELECTRICITY CONSUMPTION

COST PER KW	ECM	PSC	SAVINGS	SAVINGS/HR
$0.12	200 watts	900 watts	700 watts	$0.08
$0.14	200 watts	900 watts	700 watts	$0.10
$0.16	200 watts	900 watts	700 watts	$0.11

ANNUAL ENERGY SAVINGS*

REGION	COST PER KWH	HEATING SAVINGS	COOLING SAVINGS	CONSTANT FAN SAVINGS	TOTAL SAVINGS
CT, MA, ME, NH, NY, RI, VT,	$0.16	$71	$36	$458	**$565**
DC, DE, MD, NC, NJ, PA, SC, VA	$0.12	$53	$35	$333	**$421**

* The amount of your electrical savings will depend on your motor use.

ECM BLOWER MOTOR

Furnace Series	Model	Blower Type	B.T.U.H. Input	B.T.U.H. Output	Heating CFM	Cooling CFM @ Tons					
						1.5*	2.0	2.5	3.0	4.0	5.0
EFM	LO-BOY REL-750 ECM	3/4 HP Variable Speed	84,000	71,000	875	–	800	1000	1200	1600	2000
			105,000	88,000	1050	–	800	1000	1200	1600	2000
			119,000	99,000	1175	–	800	1000	1200	1600	2000
	LO-BOY REL-1000 ECM	3/4 HP Variable Speed	140,000	116,000	1475	–	N/A	1000	1200	1600	2000
			175,000	143,000	1850	–	N/A	1000	1200	1600	2000
	HI-BOY REH-750 ECM	3/4 HP Variable Speed	84,000	71,000	875	–	800	1000	1200	1600	2000
			105,000	88,000	1050	–	800	1000	1200	1600	2000
			119,000	99,000	1175	–	800	1000	1200	1600	2000
	HI-BOY REH-1000 ECM	3/4 HP Variable Speed	140,000	116,000	1475	–	N/A	1000	1200	1600	2000
			175,000	143,000	1850	–	N/A	1000	1200	1600	2000
EFM Star	ECM RSH-600	3/4 HP Variable Speed	70,000	60,000	850	600	800	1000	1200	1600	–
			84,000	72,000	1100	600	800	1000	1200	1600	–
			105,000	89,000	1325	600	800	1000	1200	1600	–
	ECM RSM-600	3/4 HP Variable Speed	70,000	60,000	850	600	800	1000	1200	1600	–
			84,000	72,000	1100	600	800	1000	1200	1600	–
			105,000	89,000	1325	600	800	1000	1200	1600	–

* Please consult factory for settings

PSC BLOWER MOTOR

Furnace Series	Model	Blower Type	B.T.U.H. Input	B.T.U.H. Output	Static Pressure (W.C.)	Cooling Speed (CFM)			
						High	Medium High	Medium Low	Low
EFM	LO-BOY REL-750 PSC	3/4 HP 4-Speed	84,000	71,000	0.2	1903	1711	1547	1399
					0.5	1661	1485	1355	1227
			105,000	88,000	0.2	1903	1711	1547	1399
					0.5	1661	1485	1355	1227
			119,000	99,000	0.2	1903	1711	1547	1399
					0.5	1661	1485	1355	1227
	LO-BOY REL-1000 PSC	3/4 HP 4-Speed	140,000	116,000	0.2	2466	2150	1839	1600
					0.5	2072	1859	1610	N/A
			175,000	143,000	0.2	2466	2150	1839	N/A
					0.5	2072	1859	N/A	N/A
	HI-BOY REH-750 PSC	3/4 HP 4-Speed	84,000	71,000	0.2	1745	1550	1376	1250
					0.5	1480	1343	1175	1043
			105,000	88,000	0.2	1745	1550	1376	1250
					0.5	1480	1343	1175	N/A
			119,000	99,000	0.2	1745	1550	1376	1250
					0.5	1480	1343	N/A	N/A
	HI-BOY REH-1000 PSC	3/4 HP 4-Speed	140,000	116,000	0.2	2283	2130	1901	1717
					0.5	2007	1832	1644	1501
			175,000	143,000	0.2	2283	2130	1901	N/A
					0.5	2007	1832	N/A	N/A
EFM Star	RSH-600 and RSM-600	3/4 HP 3-Speed	70,000	60,000	0.2	1616	1425		1193
					0.5	1470	1256		1125
					0.7	1309	1118		1053
			84,000	72,000	0.2	1616	1425		1193
					0.5	1470	1256		1125
					0.7	1309	1118		1053
			105,000	89,000	0.2	1616	1425		1193
					0.5	1470	1256		1125
					0.7	1309	1118		1053

BOYERTOWN
BOILERS • FURNACES • CONTROLS

BOYERTOWN FURNACE COMPANY, P. O. Box 100, 156 Holly Road, Boyertown, PA 19512, Phone 610-369-1450, Fax 610-367-6800, **www.boyertownfurnace.com**

REG4-2.5m-11/12-??