

Commercial eF Series® Ultra High Efficiency Gas Water Heater



The eF Series® Models feature:

- **Thermal Efficiency up to 99.1%**—Ultra High Efficiency results in less fuel consumption and greater hot water recovery.
- **ICON HD™**—Intelligent proven design combines temperature control, diagnostic codes, and system ignition functions into a single control board with a digital LCD display.
- **ENERGY STAR® Models Available**—EF60T125 & EF100T (150,199,250,399) Models.
- **Factory Installed Hydrojet® Sediment Reduction System**—Cold water inlet sediment reducing device helps prevent sediment build up in the tank.
- **Direct Spark Ignition**—For improved operational dependability and durability.
- **Operation Mode**—Two different digitally displayed operation modes have the capability of adjusting the temperature setting up to 180°F (82°C), and adjusting the degree setting (°F to °C, or °C to °F).
- **Service Mode**—Eight different digitally displayed service screens can be easily cycled through by pressing the select button. There is the capability of adjusting the temperature setting up to 180°F (82°C), adjusting the degree setting (°F to °C, or °C to °F), locking the maximum temperature setting that can be adjusted in operation mode, displaying the temperature sensor reading, displaying the flame current, and displaying diagnostic codes.
- **Premix Power Burner**—A self compensating negative regulation system automatically increases or decreases fuel flow when a change in combustion air is detected. This provides the range for optimum combustion and efficiency (automatic high altitude compatibility).
- **Flexible Venting**—The eF Series® can vent vertically or horizontally with either 2", 3" or 4" (51mm, 76mm or 107mm) PVC, CPVC or ABS (not approved for Canada) vent pipe, and is approved for direct vent closed combustion applications, or those applications that require inside air for combustion. The eF Series® is also approved for unbalanced venting, which means the air intake pipe doesn't have to be vented the same distance as the exhaust.
- **Ultra Quiet Operation.**
- **A Single Exhaust Pressure Switch.**
- **1" (25mm) NPT Side Connections for Space Heating.**
- **Sanitizing Capability**—Temperature setting up to 180°F (82°C).
- **Complies with the latest ultra-low NOx requirement (14 ng/J NOx limit).**
- **ASME Code Available on All Models.**
- **NSF Construction Available.**
- **T&P Relief Valve**—Installed.
- **Low Restrictive Brass Drain Valve**—Durable tamper proof design.

Endorsed by



Photo is of
EF-60T-199E-3N

FEATURING:



3 or 5-Year Limited Tank Warranties / 1-Year Limited Warranty on Component Parts.

For more information on warranty, please visit www.bradfordwhite.com

For products installed in USA, Canada and Puerto Rico. Some states do not allow limitations on warranties. See complete copy of the warranty included with the heater.

MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 5,682,666; 7,634,976; 5,660,165; 5,954,492; 6,056,542; 6,935,280; 5,372,185; 5,485,879; 5,574,822; 7,971,560; 7,992,526; 6,684,821; 6,442,178; 7,334,419; 7,866,168; 7,270,087; 7,007,748; 5,596,952; 6,142,216; 7,699,026; 5,341,770; 7,337,517; 7,665,211; 7,665,210; 7,063,132; 7,063,133; 7,559,293; 7,900,589; 5,943,984; 8,082,888; 5,988,117; 7,621,238; 7,650,859; 5,761,379; 7,409,925; 5,277,171; 8,146,772; 7,458,341; 2,262,174. OTHER U.S. AND FOREIGN PATENT APPLICATIONS PENDING. CURRENT CANADIAN PATENTS: 2,314,845; 2,504,824; 2,108,186; 2,143,031; 2,409,271; 2,548,958; 2,112,515; 2,476,685; 2,239,007; 2,092,105; 2,107,012. eF Series®, Vitraglas® and Hydrojet® are registered trademarks of Bradford White® Corporation.

Commercial Gas High Efficiency Water Heater

eF Series® Additional Equipment Features:

Three Pass Heat Exchanger System—The three pass Heat Exchanger system keeps the hot combustion gases moving at a high velocity. The combination of high turbulence and velocity causes an enormous rate of heat transfer into the water.

Submerged Combustion Chamber—Submerging the combustion chamber in the center of the water storage tank minimizes radiant heat loss and improves efficiency.

Zero Inch Clearance—The eF Series® jacket is cool to the touch and is approved for zero inch clearance to combustibles for unsurpassed installation flexibility.

Vitraglas® Lining—An exclusively engineered enamel formula that provides superior tank protection from the highly corrosive effects of hot water. This formula (Vitraglas®) is fused to the steel surface by firing at a temperature of over 1600°F (871°C).

Protective Magnesium Anode Rods—Each eF Series® model has multiple anodes to provide added protection against corrosion for long trouble-free service (EF100T399 has two powered anode rods).

Factory Installed Hydrojet® Sediment Reduction System—Cold water inlet sediment reducing device helps prevent sediment build up in tank.

Water Connections—Factory-installed true dielectric fittings extend water heater life and simplify water line connections.

Hand Hole Cleanout—Allows inspection of tank interior and facilitates the removal of sediment deposits.

E.C.O.—A manual re-set Energy Cut Off (E.C.O) shuts off all gas in event of an overheat condition. The ECO is manually resettable.

Non-CFC Foam Insulation—Covers the sides and top of tank, reducing the amount of heat loss. This results in less energy consumption, improved operation efficiencies and jacket rigidity.

| 2" Vent Pipe | EF-60T-125 | | EF-60T-150 EF-100T-150 | | EF-60T-199 EF-100T-199 | |
|---------------------|-------------------|------------|---------------------------|------------|---------------------------|------------|
| | Power Direct Vent | Power Vent | Power Direct Vent | Power Vent | Power Direct Vent | Power Vent |
| Max. Intake Length | 15 ft. | N/A | 15 ft. | N/A | 15 ft. | N/A |
| Max. Exhaust Length | 15 ft. | 30 ft. | 15 ft. | 30 ft. | 15 ft. | 30 ft. |

| 3" Vent Pipe | EF-60T-125 EF-100T-150 | | EF-60T-150 EF-100T-199 | | EF-60T-199 EF-100T-250 | | EF-100T-300 | | EF-100T-399 | |
|---------------------|---------------------------|------------|---------------------------|------------|---------------------------|------------|-------------------|------------|-------------------|------------|
| | Power Direct Vent | Power Vent | Power Direct Vent | Power Vent | Power Direct Vent | Power Vent | Power Direct Vent | Power Vent | Power Direct Vent | Power Vent |
| Max. Intake Length | 60 ft. | N/A | 50 ft. | N/A | 40 ft. | N/A | 30 ft. | N/A | 25 ft. | N/A |
| Max. Exhaust Length | 60 ft. | 120 ft. | 50 ft. | 100 ft. | 40 ft. | 80 ft. | 30 ft. | 60 ft. | 25 ft. | 50 ft. |

| 4" Vent Pipe | EF-60T-125 EF-100T-150 | | EF-60T-150 EF-100T-199 | | EF-60T-199 EF-100T-250 | | EF-100T-300 | | EF-100T-399 | |
|---------------------|---------------------------|------------|---------------------------|------------|---------------------------|------------|-------------------|------------|-------------------|------------|
| | Power Direct Vent | Power Vent | Power Direct Vent | Power Vent | Power Direct Vent | Power Vent | Power Direct Vent | Power Vent | Power Direct Vent | Power Vent |
| Max. Intake Length | 85 ft. | N/A | 75 ft. | N/A | 65 ft. | N/A | 55 ft. | N/A | 50 ft. | N/A |
| Max. Exhaust Length | 85 ft. | 170 ft. | 75 ft. | 150 ft. | 65 ft. | 130 ft. | 55 ft. | 110 ft. | 50 ft. | 100 ft. |

| 6" Vent Pipe | EF-100T-399 | |
|---------------------|-------------------|------------|
| | Power Direct Vent | Power Vent |
| Max. Intake Length | 120 ft. | N/A |
| Max. Exhaust Length | 120 ft. | 240 ft. |

Air intake cannot exceed exhaust by more than 30 ft. in any venting situation. Subtract 5 ft. for each additional 90° elbow.

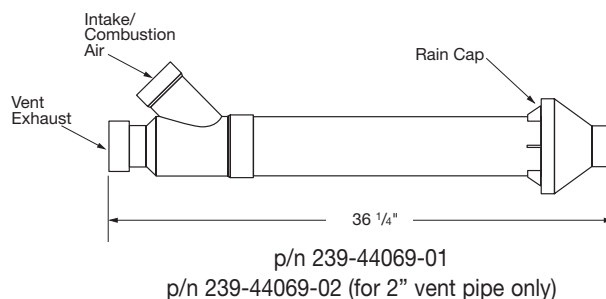
eF Series® Optional Equipment Features:

Maxitrol Gas Pressure Regulating valve—Ensures proper supply pressure to eF unit of 7" to 11" W.C. (provided incoming pressure is between 1/2 and 2 psi). This can be ordered as a separate part, or as part of the heater. For the separate part, please use p/n 243-45517-00. Part is included with EF100T399 model.

NSF Compliance Kit—p/n 265-44542-04.

Low Inlet Gas Pressure Option—Pre-assembled to allow operation with natural gas inlet pressure down to 3.5" w.c. (Not available on EF-100T-300/399E-3N(A) models or any size propane models.)

Concentric Vent Kit Termination—3" termination fitting provides for only one exit opening through wall or roof (p/n 239-44069-01).



Commercial Gas High Efficiency Water Heater

eF Series® Models

NATURAL GAS AND LIQUID PROPANE GAS

Meet or exceed ASHRAE 90.1b (current standard) C.E.C. Listed

| Model Number | Capacity | | Input | | Therm. Eff. | A Floor to Top of Heater in. | B Jacket Dia. in. | C Floor to Hot Water Conn. in. | D Floor to Cold Water Conn. in. | E Floor to Gas Conn. in. | F Floor to Vent Conn. in. | G Floor to Air Intake Conn. in. | H Floor to T&P Conn. in. | Water Conn. Dia. in. | Gas Conn. Dia. in. | Relief Valve Open in. | Approx. Shipping Weight lbs. |
|--------------------|-----------|-----------|--------------------|------------------|-------------|------------------------------|-------------------|--------------------------------|---------------------------------|--------------------------|---------------------------|---------------------------------|--------------------------|----------------------|--------------------|-----------------------|------------------------------|
| | U.S. Gal. | Imp. Gal. | Nat. BTU/Hr. Input | LP BTU/Hr. Input | | | | | | | | | | | | | |
| EF-60T-125E-3N(A) | 60 | 50 | 125,000 | 125,000 | 96.0 | 57 | 28 1/4 | 42 1/2 | 12 7/8 | 53 1/2 | 5 | 52 1/2 | 40 | 1 1/2 | 3/4 | 3/4 | 570 |
| EF-60T-150E-3N(A) | 60 | 50 | 150,000 | 150,000 | 93.0 | 57 | 28 1/4 | 42 1/2 | 12 7/8 | 53 1/2 | 5 | 52 1/2 | 40 | 1 1/2 | 3/4 | 3/4 | 570 |
| EF-60T-199E-3N(A) | 60 | 50 | 199,999 | 199,999 | 92.0 | 57 | 28 1/4 | 42 1/2 | 12 7/8 | 53 1/2 | 5 | 52 1/2 | 40 | 1 1/2 | 3/4 | 3/4 | 570 |
| EF-100T-150E-3N(A) | 100 | 83 | 150,000 | 150,000 | 99.1 | 77 5/8 | 28 1/4 | 62 1/2 | 12 7/8 | 74 3/4 | 5 | 73 1/8 | 60 | 1 1/2 | 3/4 | 3/4 | 900 |
| EF-100T-199E-3N(A) | 100 | 83 | 199,999 | 199,999 | 98.5 | 77 5/8 | 28 1/4 | 62 1/2 | 12 7/8 | 74 3/4 | 5 | 73 1/8 | 60 | 1 1/2 | 3/4 | 3/4 | 900 |
| EF-100T-250E-3N(A) | 100 | 83 | 250,000 | 250,000 | 97.0 | 77 5/8 | 28 1/4 | 62 1/2 | 12 7/8 | 74 3/4 | 5 | 73 1/8 | 60 | 1 1/2 | 3/4 | 1 | 900 |
| EF-100T-300E-3N(A) | 100 | 83 | 300,000 | 300,000 | 92.0 | 77 5/8 | 28 1/4 | 62 1/2 | 12 7/8 | 74 3/4 | 5 | 73 1/8 | 60 | 1 1/2 | 3/4 | 1 | 900 |
| EF-100T-399E-3N(A) | 100 | 83 | 399,999 | 399,999 | 94.0 | 77 5/8 | 28 1/4 | 63 | 13 | 74 1/4 | 5 | 73 1/8 | 60 | 1 1/2 | 1 | 1 | 950 |

| Model Number | Capacity | | Input | | Therm. Eff. | A Floor to Top of Heater mm. | B Jacket Dia. mm. | C Floor to Hot Water Conn. mm. | D Floor to Cold Water Conn. mm. | E Floor to Gas Conn. mm. | F Floor to Vent Conn. mm. | G Floor to Air Intake Conn. mm. | H Floor to T&P Conn. mm. | Water Conn. Dia. mm. | Gas Conn. Dia. mm. | Relief Valve Open mm. | Approx. Shipping Weight kgs. |
|--------------------|----------|--|-------------------|-----------------|-------------|------------------------------|-------------------|--------------------------------|---------------------------------|--------------------------|---------------------------|---------------------------------|--------------------------|----------------------|--------------------|-----------------------|------------------------------|
| | Liters | | Nat. kW/Hr. Input | LP kW/Hr. Input | | | | | | | | | | | | | |
| EF-60T-125E-3N(A) | 227 | | 36.6 | 36.6 | 96.0 | 1448 | 718 | 1087 | 327 | 1359 | 127 | 1334 | 1016 | 38 | 19 | 19 | 259 |
| EF-60T-150E-3N(A) | 227 | | 43.9 | 43.9 | 93.0 | 1448 | 718 | 1087 | 327 | 1359 | 127 | 1334 | 1016 | 38 | 19 | 19 | 259 |
| EF-60T-199E-3N(A) | 227 | | 58.6 | 58.6 | 92.0 | 1448 | 718 | 1087 | 327 | 1359 | 127 | 1334 | 1016 | 38 | 19 | 19 | 259 |
| EF-100T-150E-3N(A) | 379 | | 43.9 | 43.9 | 99.1 | 1972 | 718 | 1588 | 327 | 1899 | 127 | 1857 | 1524 | 38 | 19 | 19 | 408 |
| EF-100T-199E-3N(A) | 379 | | 58.6 | 58.6 | 98.5 | 1972 | 718 | 1588 | 327 | 1899 | 127 | 1857 | 1524 | 38 | 19 | 19 | 408 |
| EF-100T-250E-3N(A) | 379 | | 73.2 | 73.2 | 97.0 | 1972 | 718 | 1588 | 327 | 1899 | 127 | 1857 | 1524 | 38 | 19 | 25 | 408 |
| EF-100T-300E-3N(A) | 379 | | 87.9 | 87.9 | 92.0 | 1972 | 718 | 1588 | 327 | 1899 | 127 | 1857 | 1524 | 38 | 19 | 25 | 408 |
| EF-100T-399E-3N(A) | 379 | | 117.2 | 117.2 | 94.0 | 1972 | 718 | 1600 | 330 | 1861 | 127 | 1857 | 1524 | 38 | 25 | 25 | 431 |

For propane gas models change suffix "N" to "X" and remove "E" from the model number. **Example: EF-100T-150-3X**

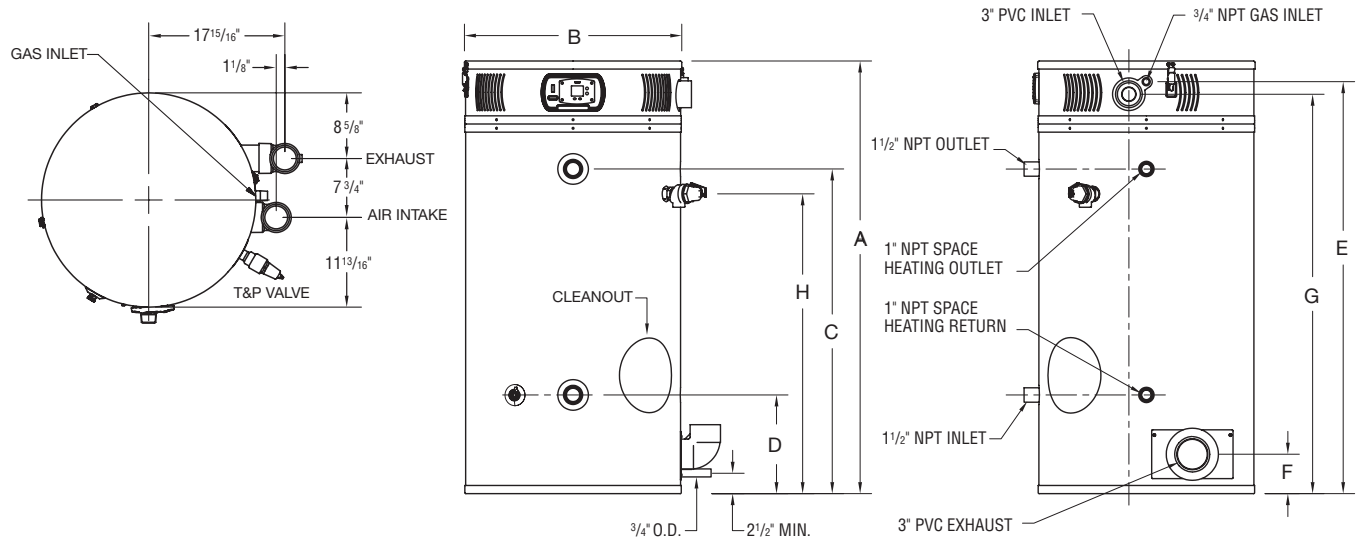
(A) ASME - All models are available with ASME construction. To order ASME construction add the (A) to the end of the model number.

Example: EF-60T-125E-3NA

Note: The weight is the same for both ASME and Non-ASME models.

All models comply with the latest ultra-low NOx requirements of 14 ng/J or less.

14.0" w.c. maximum static, 4.5" w.c. minimum running (recommend 7.0" w.c. minimum running)



Note: Diagrams are for both 60 and 100 gallon models.

Recovery Data

| Model Number | GPH Recovery at Degree Rise* | | | | | | | | | | | | | | LPH Recovery at Degree Rise* | | | | | | | | | | | |
|--------------------|------------------------------|------|------|------|------|------|------|-------|-------|-------|-------|-------|------|------|------------------------------|------|------|------|------|------|------|------|------|------|--|--|
| | 30°F | 40°F | 50°F | 60°F | 70°F | 80°F | 90°F | 100°F | 110°F | 120°F | 130°F | 140°F | 17°C | 22°C | 28°C | 33°C | 39°C | 44°C | 50°C | 56°C | 61°C | 67°C | 72°C | 78°C | | |
| EF-60T-125E-3N(A) | 485 | 364 | 291 | 242 | 208 | 182 | 162 | 145 | 132 | 121 | 112 | 104 | 1836 | 1378 | 1102 | 916 | 787 | 689 | 613 | 549 | 500 | 458 | 424 | 394 | | |
| EF-60T-150E-3N(A) | 564 | 423 | 338 | 282 | 242 | 211 | 188 | 169 | 154 | 141 | 130 | 121 | 2135 | 1601 | 1279 | 1067 | 916 | 799 | 712 | 640 | 583 | 534 | 492 | 458 | | |
| EF-60T-199E-3N(A) | 740 | 558 | 444 | 370 | 317 | 277 | 247 | 223 | 202 | 185 | 171 | 159 | 2801 | 2112 | 1681 | 1401 | 1200 | 1049 | 935 | 844 | 765 | 700 | 647 | 602 | | |
| EF-100T-150E-3N(A) | 601 | 450 | 360 | 300 | 257 | 225 | 200 | 180 | 164 | 150 | 139 | 129 | 2275 | 1703 | 1363 | 1136 | 973 | 852 | 757 | 681 | 621 | 568 | 526 | 488 | | |
| EF-100T-199E-3N(A) | 792 | 597 | 475 | 396 | 339 | 297 | 264 | 239 | 216 | 198 | 183 | 170 | 2998 | 2260 | 1798 | 1499 | 1283 | 1124 | 999 | 905 | 818 | 750 | 693 | 644 | | |
| EF-100T-250E-3N(A) | 980 | 735 | 588 | 490 | 420 | 367 | 327 | 294 | 267 | 245 | 226 | 210 | 3710 | 2782 | 2226 | 1855 | 1590 | 1389 | 1238 | 1113 | 1011 | 927 | 856 | 795 | | |
| EF-100T-300E-3N(A) | 1115 | 836 | 669 | 558 | 478 | 418 | 372 | 335 | 304 | 279 | 257 | 239 | 4221 | 3165 | 2532 | 2112 | 1809 | 1582 | 1408 | 1268 | 1151 | 1056 | 973 | 905 | | |
| EF-100T-399E-3N(A) | 1519 | 1127 | 912 | 760 | 651 | 570 | 506 | 451 | 414 | 380 | 351 | 326 | 5750 | 4266 | 3452 | 2877 | 2464 | 2158 | 1915 | 1707 | 1567 | 1438 | 1329 | 1234 | | |

Commercial Gas High Efficiency Water Heater

Sample Specification

The water heater shall be a Bradford White model EF-_____ with a rated storage capacity of not less than _____ gallons/ liters, a minimum gas input of _____ BTU/hr., a minimum recovery of _____ GPH/LPH at 100°F (56°C) temperature rise, and a Thermal Efficiency Rating of ____%. It shall be design certified by CSA International (formerly AGA and CGA) for 180°F (82°C) application, either with or without a separate storage tank. The tank shall be lined with Vitraglas® vitreous enamel and shall have a bolted hand hole cleanout. The tank shall have four extruded magnesium anode rods installed in separate head couplings. This water heater shall be equipped with stainless steel cold water inlet, Hydrojet® Sediment Reduction System. The heater shall be insulated with Non-CFC foam. This water heater shall be equipped with an electronic ignition system, an ASME rated T&P relief valve and a premix closed combustion system for direct venting using either 3" (76mm) or 4" (102mm) PVC, CPVC or ABS vent pipe. (115V AC required). The water heater shall be factory assembled and tested. The water heater shall be approved for zero inch clearance to combustibles. A digital LCD display shall be integrated into the front and be an adjustable electronic thermostat to any temperature up to 180°F. A recycling Energy Cut Off (E.C.O.) shuts off all gas in the event of an overheat condition. The entire installation shall be made in compliance with state and local codes and ordinances.

General

All gas water heaters are certified at 300 PSI test pressure (2068 kPa) and 150 PSI working pressure (1034 kPa). All models are design certified by CSA International (formerly AGA/CGA), ANSI standard Z-21.10.3, for up to 180°F (82°C) application as an Automatic Storage Heater. As an Automatic Storage Heater, all models are complete, self-contained water heating systems. It needs no separate storage tank, pump, wiring or elaborate piping network. When equipped with a mixing valve, it will supply 180°F (82°C) sanitizing and lower temperature general purpose hot water simultaneously. These models can be used either as a single unit or in multiples connected in series or parallel (recommended).

Dimensions and specifications subject to change without notice in accordance with our policy of continuous product improvement.



Ambler, PA

For U.S. and Canada field service, contact your professional installer or local Bradford White sales representative.

Sales 800-523-2931 • Fax 215-641-1670 / Technical Support 800-334-3393 • Fax 269-795-1089 • Warranty 800-531-2111 • Fax 269-795-1089

International: Telephone 215-641-9400 • Telefax 215-641-9750 / www.bradfordwhite.com

 **BRADFORD WHITE-CANADA** INC. Sales / Technical Support 866-690-0961 / 905-238-0100 • Fax 905-238-0105 / www.bradfordwhite.com

Built to be the Best™

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