

# G215 – G315 Cast Iron Residential Boilers

**Buderus**



## **Design Advantage — Superior Heating**

- High Efficiency - AFUEs Above 86%
- Thermostream Design Eliminates Thermal Shock
- Flexible, Corrosion Resistant GL-180M Cast Iron
- Full Swing Burner Door for Excellent Serviceability
- 134,000 to 768,000 BTU/Hr Output

**Comfortable. Efficient. Intelligent Heating.**

## Superior Design

Buderus boiler sections are assembled with beveled, surface profiled push nipples for long, trouble-free watertight operation. Flueways of Buderus boilers are sealed gas tight with tongue and groove section design and elastic high temperature resistant sealing rope. This seal is fully pressed into the groove during assembly to allow positive pressure operation. A permanent dry door gasket ensures repeated positive sealing off of the full swing burner door, producing a proven gas tight seal.

## GL-180M Gray Cast Iron

Buderus GL-180M silicone injected, gray cast iron has excellent corrosion resistance, exceptional casting characteristics, 40% greater flexibility and elasticity as well as high thermal conductivity. Buderus developed the special substances that are impregnated during the casting process to improve the mechanical properties of cast iron. The graphite precipitates into smaller, modified flakes which produce GL-180M cast iron with 40% greater elasticity and a high silicone barrier for corrosion protection. Gray cast iron obtains its superior material characteristics primarily from a high carbon (graphite) and silicone content. Additional elements further enhance the properties of the GL-180M. The graphite appears in two different forms in the microstructure: nodular form producing excellent tensile strength and great elasticity and graphite flakes producing excellent corrosion resistance against acidic combustion products.

## Residential Thermostream Boilers

These Buderus boilers can be shipped fully assembled or the G315 can be shipped knocked down. This option makes the G215 and G315 models ideal for everything from the most straightforward new-home installations to challenging refurbishments of vintage homes. To increase efficiency the boilers are designed with precision made sectional construction as well as a unique "tongue and groove" design for flue side sealing. With this distinctive construction the boilers are sealed gas tight, eliminating lost heat. This dramatic increase in boiler efficiency affects a similarly impressive decrease in your heating costs.

The attractive blue enameled jacket hides a full 3" of thermal insulation and flexible GL-180M cast iron with silicone "barrier skin." To streamline the appearance of the boilers, the supply and return connections are located at the rear of the G215 and G315 models. These boilers have minimal stack losses and increased efficiency; they are for hot water space heating use and run with either oil or gas.

Whether you heat by baseboard, panel radiators, hydro-air systems or radiant flooring, our advanced heating systems will provide many years of exceptional comfort and economy.

## Putting Energy to Work

Buderus developed a full three-pass system which increases the efficiency of the boilers. With single-pass boilers, the flue products have only one chance to heat the water. Buderus three-pass boilers triple this opportunity. The unique way heat flows through the G215 and G315 boilers allows the water to be heated three separate times. The full 3" thick thermal insulation helps to maintain a higher water temperature even after the boiler has gone into standby mode. The distinctive chamber design of the Buderus G215 and G315 also allows for nearly silent operation.

Manufactured with the patented Buderus GL-180M flexible cast iron, the sections are tightly joined together and sealed by profiled, beveled steel push nipples, ensuring a long life with no leakage.



Special compounds provide a gas-tight seal for safe and efficient operation. And, thanks to the GL-180M cast iron's amazing flexibility, this boiler resists thermal shock under conditions of rapid temperature change.

## A better way to heat your home

Buderus Thermostream boilers are designed and built to the highest industry standards. They extract and deliver more heat from every fuel dollar. Acknowledged as the leader in high-efficiency, low-emission hydronic heating, Buderus offers innovative design, quality manufacturing, exceptional efficiency and performance.

A Thermostream boiler is ideal for new installations or as a replacement for virtually any make or model of boiler. This innovative technology eliminates thermal shock, increases product reliability and lowers heating costs. The G215 and G315 are compatible with most hot water tanks and offer a variety of convenient installation options. Constructed with superior materials and designed by the industry's top engineers, a Buderus Thermostream boiler is an ideal choice for any residential installation.



## Intelligent Heating – by design

Buderus, the world leader in heating technology, manufactures the highest quality boilers based on centuries of experience. With its innovative design and quality manufacturing, a Buderus boiler will outlast and out-perform virtually any other residential hot water system in the world.

The G215 and G315 are designed in Europe, where fuel costs are significantly higher and environmental regulations are more stringent. Established in 1731, Buderus uses state-of-the-art techniques in the design and manufacturing of its boilers. The G215 and G315 are designed to maximize the heating value of every ounce of fuel and built of the highest quality materials.

Constructed without a heat-consuming refractory or target wall, service and maintenance calls are minimized, while fuel efficiency and heat transfer is maximized. The full 3" thermal insulation around the boiler, including underneath, increases efficiency by virtually eliminating standby and stack temperature losses.

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## Thermostream Design

The Buderus developed **Thermostream** Principle for cast iron boilers, is proven to improve system reliability and increase efficiency in heating systems for any size home. Cool return water mixes internally and is preheated with supply water before being exposed to directly heated surfaces. This process eliminates the risk of damage caused by thermal shock, "hot and cold spots" developing. The **Thermostream** design allows for continuous low temperature operation under normal conditions without maintaining a minimum boiler temperature. Superb reliability through excellence in product design!



### Design Benefits:

- Eliminates "hot and cold spots" in the boiler
- Minimizes stresses normally caused by rapid temperature changes
- Operates at low return water temperatures
- Balances water flow through all boiler sections

# G215-G315

## Complete your system for added comfort to your home!

Once you have a Buderus boiler you can add a Buderus indirect fired hot water tank, an optional Buderus Logomatic control or both. The Logomatic control maximizes your comfort and fuel savings, it will also accommodate specialized heating applications such as radiant flooring. Combined, this premium heating system will provide years of exceptional comfort and economy . . . for little more than the cost of a standard replacement components.

### Domestic Hot Water Tanks



The Buderus indirect fired domestic hot water tanks are designed to fit any specialized need. To maximize space, you are able to pair the LT-tanks with the G215 stacked on top. For greater recovery rates, you have the option of pairing the boilers with vertical model tanks. These tanks

increase boiler efficiency, system longevity and minimize the need of service calls, when paired with a Buderus boiler.

The tanks are designed with many features to aid in maintenance, such as easy access ports for cleaning the tank's interior, extra thick Magnesium anode rods (or the optional electrical anode) and "Duoclean" interior tank protective coating to help protect against corrosion and aid in cleaning. To help maximize efficiency the tanks come well insulated resulting in a heat loss of literally less than a fraction of one degree Fahrenheit per hour.

### Quick-Fit™ Modular Piping System

The Quick-Fit System takes only minutes to connect and includes all the piping, valves, circulating and control elements to feed both radiant floor heating zones and conventional high-temperature heating zones. Not only will a Quick-Fit system save time and money on any boiler installation it also eliminates incorrect valve or motor installations. Additionally it ensures a clean, finished and professional installation. The Quick-Fit system consists of three main components, the Quick-Mix Mixing Station for radiant flooring applications, the Quick-Pump Station for high-temperature zones and the Quick-Header Manifold for multi-temp heating systems. The Quick-Fit System can be used to connect virtually any piping arrangement.

### Convenient Logomatic Control



The Buderus Logomatic Controls, designed to work with all Buderus boilers, significantly increase the efficiency of your heating system. The Controls maintain a comfortable environment by measuring indoor and outdoor temperatures in order to automatically and effectively regulate the temperature of the boiler. This allows the boiler to use less fuel while keeping your home exactly as warm as you want it. The Logomatic Controls also include the convenience of a setback feature for nighttime as well as a domestic hot water priority option. So, no matter how hard the heating has to work on a cold day, there will always be hot water for showers. All control functions are able to be customized by you. Additionally, the Buderus Logomatic R2107 is designed with a built-in self diagnostic system to aid in maintenance and reduce service costs.



## Energy Savings

The ENERGY STAR program recognizes products that meet or exceed an energy-efficiency level set by the EPA. Energy star ratings for boilers are based on an Annual Fuel Utilization Efficiency (AFUE) rating, which is a ratio of the heat produced to the energy consumed on an annual basis. This high efficiency translates into dollars saved as well as improved environmental quality.



Not only are the Buderus G215 and G315 boilers energy efficient, but they also include the following installation and maintenance features:

- Rear tapings and flue connection to streamline appearance
- Baffles and clips for adjusting stack temperatures
- Heavy gauge blue enameled jacket for durability and attractiveness
- Full swing burner door hinged on either the left or right allowing for easy access
- Front access plugs permit flushing of the boiler's interior

These features allow for easy installation and thorough, proper cleaning in a fraction of the time it takes with a conventional boiler.

**AFUE's 86% & Higher**

## Maintenance and Service Convenience

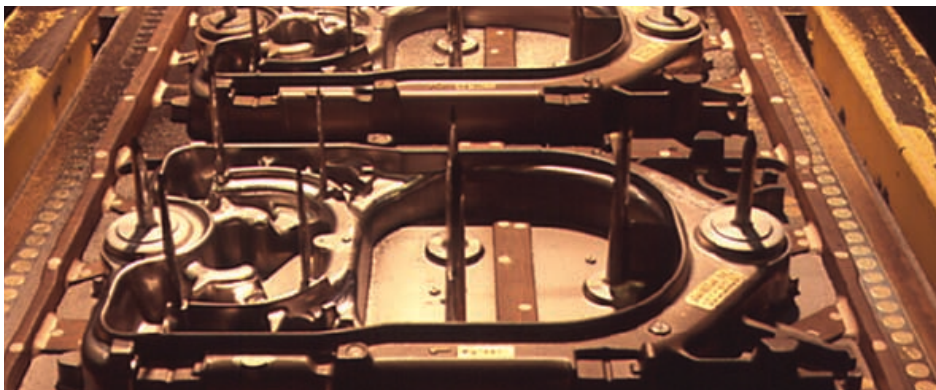
Stack temperature is easily adjustable with the removable baffles. A full swing reversible burner door allows maximum accessibility, and allows the boiler to be located almost anywhere. Buderus boilers are designed to be fully serviced from the front without disassembly and thus can be serviced in half the time of competitor's boilers. The Buderus GL-180 cast iron breaching ensures a long, problem-free life.



## A Tradition of Excellence

Buderus has been working with cast iron since 1731. In fact, Buderus produced the world's first low-temperature hydronic heating systems. Today, Buderus products are acknowledged as the world standard in high-efficiency, low emissions hydronic heating. All Buderus products are designed to meet strict safety and environmental regulations.

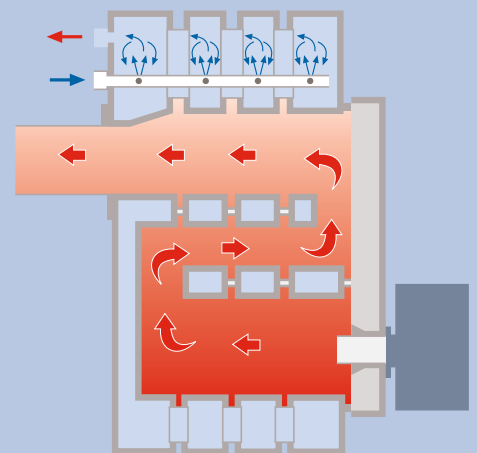
Buderus boilers are quickly and easily installed, are compatible with most hot water tanks, will outlast and outperform virtually any other residential hot water heating system and will add to your home's attractiveness and value.



## The Three-Pass Boiler

### The Three-Pass Boiler is Designed for:

- Optimized combustion with positive pressure-fired boilers and tailored chamber geometry — no need for a heat-consuming refractory or target wall eliminating the need for costly repairs.
- Minimal stack losses with the modified three-pass flue design's large heat transfer areas.
- Low standby losses with a full 3" jacket of thermal insulation around the entire block — even underneath the boiler!



### How it works.

The flame fires into the first chamber. Then the flue products flow through the second pass to the front of the boiler. From there they reverse direction again — moving through the third pass to the back, and finally exiting via the flue connection into the chimney. Because the gases are held in the boiler longer this allows the cast iron to absorb the maximum amount of heat, resulting in a lower stack temperature and a higher efficiency.

# G215

Model	G215/3	G215/4	G215/5	G215/6	G215/7
<b>Performance Data</b>					
D.O.E Heating Capacity (MBH)	134	171	207	256	294 <sup>†</sup>
Net IBR Rating (MBH)	117	149	180	223	256
Oil Firing Rate (GPH)	1.1	1.4	1.7	2.1	2.5
AFUE (%)	86.3	86.2	86.1	86.0	86.7 <sup>†</sup>
Number of Sections	3	4	5	6	7
<b>Piping Connections</b>					
Vent Connection Size	6"	6"	6"	6"	6"
Supply	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
Return	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
<b>Physical Dimensions</b>					
Overall Boiler Length (L)	26 1/4"	31"	35 3/4"	40 1/2"	45 1/2"
Boiler Block Length (L <sub>K</sub> )	22"	26 3/4"	31 1/2"	36 1/4"	41"
Minimum Boiler Block Width	18"	18"	18"	18"	18"
Boiler Width	23 1/2"	23 1/2"	23 1/2"	23 1/2"	23 1/2"
Minimum Boiler Height	33 1/2"	33 1/2"	33 1/2"	33 1/2"	33 1/2"
Boiler Height	34 1/2"	34 1/2"	34 1/2"	34 1/2"	34 1/2"
Boiler Feet Spacing	13 1/4"	18"	22 1/2"	27 1/4"	32"
Fire Box Depth (T)	16 3/4"	21 1/2"	36 1/4"	31"	35 3/4"
Fire Box Volume (cu. ft.)	1.35	1.73	2.10	2.48	2.86
Dry Weight (lbs.)	400	500	600	700	800
Approx. Water Content (gal.)	12.9	16.1	19.3	22.5	25.6
<b>Recommended Clearances for Ease of Serviceability</b>					
Side	15"	15"	15"	15"	15"
Rear	20"	20"	20"	20"	20"

<sup>†</sup> IBR Gross Output Combustion Rating

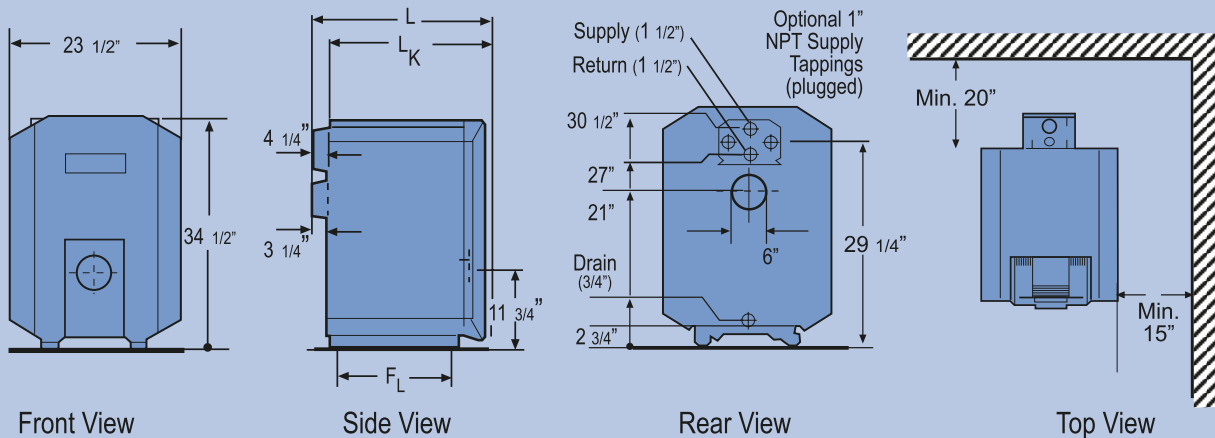
Tank Model	Volume	G215/3	G215/4	G215/5	G215/6	G215/7
LT160	42 Gallon	■	■			
LT200	53 Gallon	■	■	■		
LT300	79 Gallon	■	■	■	■	

**Approval Numbers**

**MEA 463-99-E**

**CRN No# 6248.7C**

Mounting hardware to secure G215 Boilers on top of LT Tanks, must be purchased separately.



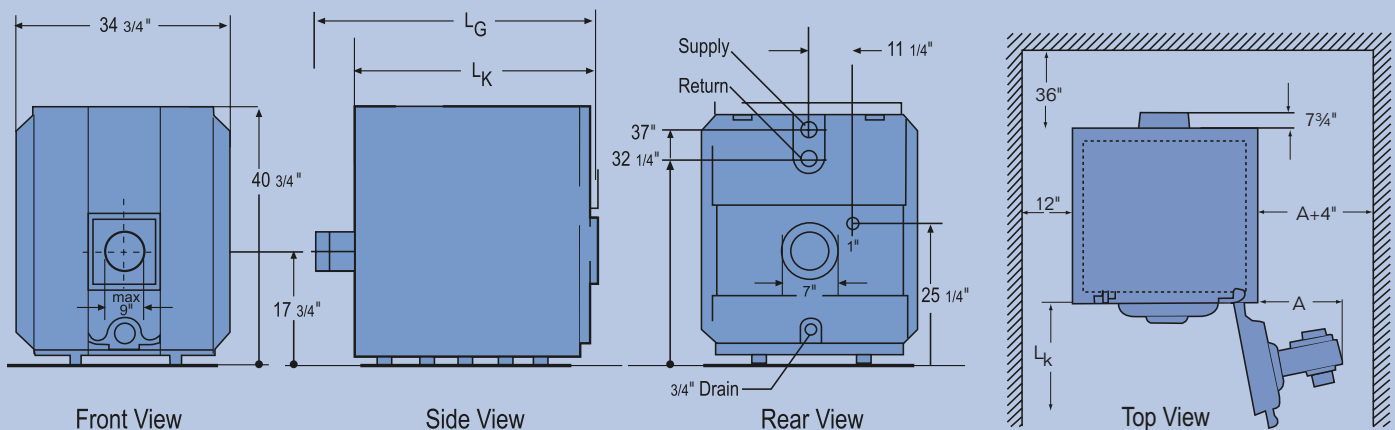
Model	G315/5	G315/6	G315/7	G315/8	G315/9
<b>Performance Data</b>					
Gross Output (MBH)	350	454	559	663	768
Max Input Gas (MBH)	433	556	678	801	924
Max Input Oil (GPH)	3.0	3.85	4.7	5.6	6.4
Net IBR Rating (MBH)	304	395	486	577	668
Boiler HP	10.4	13.6	16.6	19.8	22.9
Max Operating Pressure (psi)	87	87	87	87	87
Combustion Efficiency Oil (%)	86.8	86.9	87	87.1	87.1
Combustion Efficiency Gas (%)	84.2	84.3	84.4	84.4	84.4
Number of Sections	5	6	7	8	9
<b>Piping Connections</b>					
Vent Connection Size	7"	7"	7"	7"	7"
Supply	3"	3"	3"	3"	3"
Return	3"	3"	3"	3"	3"
<b>Physical Dimensions</b>					
Overall Boiler Length (LG)	44 1/4"	50 1/2"	56 3/4"	63 1/4"	69 1/2"
Boiler Block Length (LK)	38 1/4"	44 1/2"	50 3/4"	57"	63 1/2"
Boiler Door Thickness	5"	5"	5"	5"	5"
Minimum Boiler Width (BE)	28"	28"	28"	28"	28"
Fire Box Depth (LF)	31"	37 1/2"	43 3/4"	50"	56 1/4"
Fire Box Diameter	15 3/4"	15 3/4"	15 3/4"	15 3/4"	15 3/4"
Fire Box Volume (cu. ft.)	5.19	6.39	7.59	8.79	9.99
Dry Weight (lbs)	1,197	1,131	1,585	1,779	1,973
Water Content (gal)	37.8	45.2	52.6	60	67.4
Operating Weight (lbs)	1,512	1,768	2,024	2,280	2,545

## Operational Requirements of the G315

- The boiler must be placed on a smooth, level concrete base, 33 1/2" wide.
- Cement in the base (or place on its top) either 4" x 1/4" flat steel plates or 4" x 2" x 1/4" angle irons for boiler support.
- Set boiler high limits above 122 °F (149 °F for modulating gas burner) for safe boiler operation.
- Low fire setting must be at least 60% of full fire for a LHL burner.
- Maintain minimum of 158 °F in the boiler in case of ice water return temperatures.
- Buderus recommends the use of customized Beckett or Riello F series burners when firing the G315 with oil. (Available from Buderus.)
- Use Power Flame or Riello for gas firing. (Available from Buderus.)

## Approval Numbers

**MEA 356-98-E**  
**CRN No# 616.TC**



# G215 – G315

## Cast Iron Residential Boilers



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