



### Standard Controls and Features

- Fully Condensing Ultra-High Efficiency Design
- Suitable for Variable Primary Applications
- 160 PSIG Maximum Allowable Working Pressure
- 210°F Maximum Allowable Working Temperature
- Factory Recommended Maximum Setpoint 190°F
- Direct Spark Ignition
- UV Flame Scanner
- Industrial Power Burner
- LMV3 Linkageless Burner Management System
- SKP25 Combination Gas Valve & Regulator
- Temperature Load Controller
- Low Water Cut Off Probe with Manual Reset
- High and Low Gas Pressure Switches
- NEMA 1 Enclosure and Electrical Panel
- Automatic Reset High Limit Aquastat
- Manual Reset High Limit Aquastat (200°F Max)
- Outlet Water Temperature Sensor
- Ventless Gas Train Utilizing Vent Limiters
- 120VAC Controls Circuit Transformer
- Emergency Stop (E-Stop) Contacts

### Trim Kit Items (Shipped Loose)

- ASME Safety Relief Valve (60, 100, 125, 160 PSIG Options)
- Pressure & Temperature Gauge
- Installation and Operation Manual
- Touch Up Spray Paint
- Rubber Air Intake Coupling
- Socket and Adapter (One Per Project)

### Listings & Compliance

- ASME Section IV Code, "H" Stamp
- UL-795 Certified
- CSD-1 & CSA Controls and Fuel Train
- XL GAPS Compliant, Supersedes IRI
- FM Compliant Fuel Train Components
- AHRI Certified to BTS-2000
- Control Panel Wired in a UL 508 Facility

### Factory Installed Options

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Modbus Communication Protocol | <input type="checkbox"/> Dual Fuel Natural Gas & Propane Capability | <input type="checkbox"/> General Alarm Relay           |
| <input type="checkbox"/> BACnet Integration            | <input type="checkbox"/> NFPA 85 Gas Train                          | <input type="checkbox"/> Isolation Valve Control Relay |
| <input type="checkbox"/> LonWorks Integration          | <input type="checkbox"/> Second Low Water Cut Off                   | <input type="checkbox"/> Circulator Control Relay      |
| <input type="checkbox"/> Locking Electrical Panel Door | <input type="checkbox"/> Alarm Horn and Silence Switch              | <input type="checkbox"/> Boiler Status Relay           |
|  | <input type="checkbox"/> External Device Safety Interlock           | <input type="checkbox"/> Boiler Start/Stop Relay       |

### Field Installed Options

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Multiple Boiler Condensate Drain Trap | <input type="checkbox"/> 120VAC Motorized Isolation Valve Relay for Variable Primary Systems | <input type="checkbox"/> Second Low Water Cut Off  |
| <input type="checkbox"/> Single Boiler Condensate Drain Trap   |  | <input type="checkbox"/> Fused External Disconnect |
| <input type="checkbox"/> Condensate pH Neutralization Kit      |  |  |

**Information provided in this document is based on standard boiler configurations. Alternate or custom configurations may result in deviations. Due to continuous product improvement, Fulton reserves the right to change specifications and/or dimensions without notice.**



# Technical Data

## Vantage Hydronic Condensing Boilers

Models: VTG-2000, VTG-3000, VTG-4000, VTG-5000, VTG-6000

(Applies to elevations up to 2,000 ft)

### Capacities

Vantage Model		VTG-2000	VTG-3000	VTG-4000	VTG-5000	VTG-6000
Rated Input at High Fire	BTU/hr	2,000,000	3,000,000	4,000,000	5,000,000	6,000,000
	kW	586	879	1,172	1,465	1,758
Rated Output (BTS-2000)	BTU/hr	1,918,000	2,889,000	3,876,000	4,630,000	5,640,000
	Boiler HP	57	86	116	138	168
	kW	562	847	1,136	1,357	1,653
AHRI Thermal Efficiency	%	95.7	96.3	96.9	92.6	94.0

**Note:** Capacities listed are for Standard Natural Gas. Fully modulating burner; turndown ratio up to 5:1 on Natural Gas; up to 3:1 on HD5 Propane.

(Reference End Assembly Drawing for Connection Type)

### Connection Sizes

Vantage Model		VTG-2000	VTG-3000	VTG-4000	VTG-5000	VTG-6000
Boiler Supply Water Outlet	inches	4	4	6	6	6
	mm	101.6	101.6	152.4	152.4	152.4
Boiler Return Water Inlet	inches	4	4	6	6	6
	mm	101.6	101.6	152.4	152.4	152.4
Flue Gas Condensate Drain	inches	1	1	1	1	1
	mm	25.4	25.4	25.4	25.4	25.4
Boiler Pressure Vessel Drain	inches	2	2	2	2	2
	mm	51	51	51	51	51
Natural Gas Train Inlet	inches	1-1/2	2	2	2-1/2	2-1/2
	mm	38.1	51	51	63.5	63.5
Combustion Air Inlet (ID)	inches	8	10	12	12	12
	mm	203	254	305	305	305
Flue Gas Exhaust (ID)	inches	10	12	14	14	14
	mm	254	305	356	356	356



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**Fuel Requirements**  
(At rated input, Natural Gas)

Vantage Model		VTG-2000	VTG-3000	VTG-4000	VTG-5000	VTG-6000
Natural Gas Consumption (1,000 BTU/FT <sup>3</sup> )	SCFH	2,000	3,000	4,000	5,000	6,000
	M <sup>3</sup> /hr	56.6	85.0	113.3	141.6	170.0
Minimum Natural Gas Pressure	in W.C.	14	14	14	14	18
	kPa	3.5	3.5	3.5	3.5	4.4
Maximum Natural Gas Pressure	in W.C.	42	42	42	42	42
	kPa	10.5	10.5	10.5	10.5	10.5

**Fuel Requirements**  
(At rated input, Propane)

Vantage Model		VTG-2000	VTG-3000	VTG-4000	VTG-5000	VTG-6000
Propane Consumption (2,500 BTU/FT <sup>3</sup> )	SCFH	800	1,200	1,600	2,000	2,400
	M <sup>3</sup> /hr	22.7	34.0	45.3	56.6	68.0
Minimum Propane Pressure	in W.C.	17	17	17	17	28
	kPa	4.2	4.2	4.2	4.2	6.9
Maximum Propane Pressure	in W.C.	28	28	28	28	42
	kPa	7.0	7.0	7.0	7.0	10.5

**Note:** Vantage boilers are factory configured for fuel type. Consult your local Fulton Representative for information.

**Electrical Requirements**  
(Applies to standard configuration)

Vantage Model		VTG-2000			VTG-3000			VTG-4000			VTG-5000			VTG-6000		
Electrical Supply	volts	208	230	460	208	230	460	208	230	460	208	230	460	208	230	460
	∅	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	Hz	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Full Load Amps (FLA)	Amps	13	10	5	16	13	7	22	19	10	29	26	13	29	26	13
Blower Motor	HP	2			3			5			7.5			7.5		



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## Weights and Volume (Typical for standard equipment)

Vantage Model		VTG-2000	VTG-3000	VTG-4000	VTG-5000	VTG-6000
Dry Weight	lbs	3,800	5,300	6,600	6,900	10,800
	kg	1,724	2,404	2,994	3,130	4,899
Operating Weight	lbs	5,100	7,100	8,900	9,200	14,800
	kg	2,314	3,221	4,037	4,173	6,713
Shipping Weight	lbs	4,250	5,825	7,200	7,475	11,500
	kg	1,928	2,642	3,266	3,391	5,216
Pressure Vessel Water Volume	Gallons	147	215	275	275	480
	Liters	556	814	1,041	1,041	1,817

## Water/Flow Requirements (Specifications apply to 100% water systems)

Vantage Model		VTG-2000	VTG-3000	VTG-4000	VTG-5000	VTG-6000
Typical Flow Rate at Rated Output 20°F ΔT	GPM	192	289	387	463	564
	LPM	727	1,094	1,465	1,753	2,135
Water Side Pressure Drop at Rated Output 20°F ΔT	PSI	0.9	1.0	2.6	4.8	5.6
	kPa	6.2	6.9	17.9	33.1	38.6
Maximum Delta-T	°F	100	100	100	100	100
	°C	44.4	44.4	44.4	44.4	44.4
Minimum Flow Rate (See Note)	GPM	N/A	N/A	N/A	N/A	N/A
	LPM	N/A	N/A	N/A	N/A	N/A
Maximum Flow Rate (See Note)	GPM	N/A	N/A	N/A	N/A	N/A
	LPM	N/A	N/A	N/A	N/A	N/A

**Note:** A low or zero flow situation will not harm the heat exchanger or pressure vessel, however the system will require proper flow to heat the building and prevent nuisance high limit trips at the boiler.



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Vantage Model		VTG-2000	VTG-3000	VTG-4000	VTG-5000	VTG-6000	
<b>Venting Requirements</b>	Combustion Air Intake Flow Rate	SCFM	391	587	782	978	1,173
	Flue Gas Exhaust Flow Rate	SCFM	424	636	848	1,060	1,272
		ACFM	563	838	1,117	1,407	1,688
	Minimum Allowable Draft Pressure	in WC	-0.04	-0.04	-0.04	-0.04	-0.04
		kPa	-0.010	-0.010	-0.010	-0.010	-0.010
	Maximum Allowable Draft Pressure	in WC	+0.35	+0.35	+0.35	+0.35	+0.35
kPa		+0.087	+0.087	+0.087	+0.087	+0.087	

**Note:** Reference the Installation and Operation Manual for complete venting requirements including certifications, temperatures, materials, common combustion air intake, and common flue gas exhaust requirements. Data based on Natural Gas operation.

Vantage Model		VTG-2000	VTG-3000	VTG-4000	VTG-5000	VTG-6000	
<b>Emissions</b>	NO <sub>x</sub>	ppm	< 100	< 100	< 100	< 100	< 30
	CO <sub>2</sub>	%	8.0 - 10	8.0 - 10	8.0 - 10	8.0 - 10	8.0 - 10
	Volatile Organic Compounds (VOCs)	lb/hr	0.0110	0.0165	0.0220	0.0275	0.0330
		kg/hr	0.0050	0.0075	0.0100	0.0125	0.0150
	CO	ppm	< 50	< 50	< 50	< 50	< 50

- Notes:**
- NO<sub>x</sub> and CO are stated at a 3% O<sub>2</sub> correction.
  - Will vary based on site specific factors and operating parameters.
  - Calculations based on EPA PM10 AP42 standard.
  - Emissions data is typical for standard natural gas operation. Emissions are not guaranteed on fuels other than standard natural gas.
  - Site specific conditions will determine the appropriate CO<sub>2</sub> settings for each application.
  - Jacket losses: 0.2% of output at maximum capacity, IAW ASHRAE Standard 103-2007.



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**Minimum Clearances**  
 (Local codes may supersede Fulton requirements)

Vantage Model		VTG-2000	VTG-3000	VTG-4000	VTG-5000	VTG-6000
<b>Front</b> (Required)	<b>inches</b>	<b>36</b>	<b>36</b>	<b>36</b>	<b>36</b>	<b>36</b>
	<i>mm</i>	<i>914</i>	<i>914</i>	<i>914</i>	<i>914</i>	<i>914</i>
<b>Rear</b> (Recommended)	<b>inches</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>
	<i>mm</i>	<i>610</i>	<i>610</i>	<i>610</i>	<i>610</i>	<i>610</i>
<b>Top</b> (Recommended)	<b>inches</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>
	<i>mm</i>	<i>610</i>	<i>610</i>	<i>610</i>	<i>610</i>	<i>610</i>
<b>Sides</b> (Required)	<b>inches</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>8</b>	<b>1</b>
	<i>mm</i>	<i>25</i>	<i>25</i>	<i>25</i>	<i>203</i>	<i>25</i>