



**Better
Boilers**

Model SL 40-399 G3
Modulating Condensing Boiler
439 Stainless Steel version

**SUBMITTAL
SHEET**

Job Name _____

Address _____

Designer / Engineer _____

Wholesaler _____

Mechanical Contractor _____

Date _____ Quantity _____ Fuel Type: ☐ Natural Gas ☐ Propane from factory ☐ Propane field conversion

STAMPS

SL 40-399 G3, 439 version

- ASME approved pressure vessel constructed of high quality 439 Stainless Steel
- Heat exchanger performance maximized through a multi-tube, counter-flow fire-tube design
- Vertical combustion chamber and a down firing burner allow free gravity drainage of condensate from the heat exchanger
- Metal fiber knit burner
- Direct spark ignition
- Brushless DC fan
- Zero governing 24V gas valve
- Mechanical water pressure and temperature sensing (built-in Tridicator)
- 200' equivalent allowance for venting each side
- Patented Moisture Management System ensures long life of components.

Certifications

- Constructed in accord with ANSI Z21.13-2017 CSA 4.9-2017 and the ASME Boiler and Pressure Vessel Code, Section IV and bear the *H* stamp as per ASME code.
- Complies with SCAQMD Rule 1146.2 Paragraph (C)(8) for Low NO_x (<20ppm)
- SIM certified to CSA STD C22.2 #60730-2-5 and Conforming to UL STD 60730-2-5 & ANSI STD Z21.20

SIM (Safety Ignition Module)

- Provides ignition, flame proving and safety monitoring, including:
 - Electronic, probe-type Manual Reset Low Water Cut-Off
 - High Vent Temperature safety limit
 - Internal Manual Reset Electronic High limit with verification test

Boiler Control

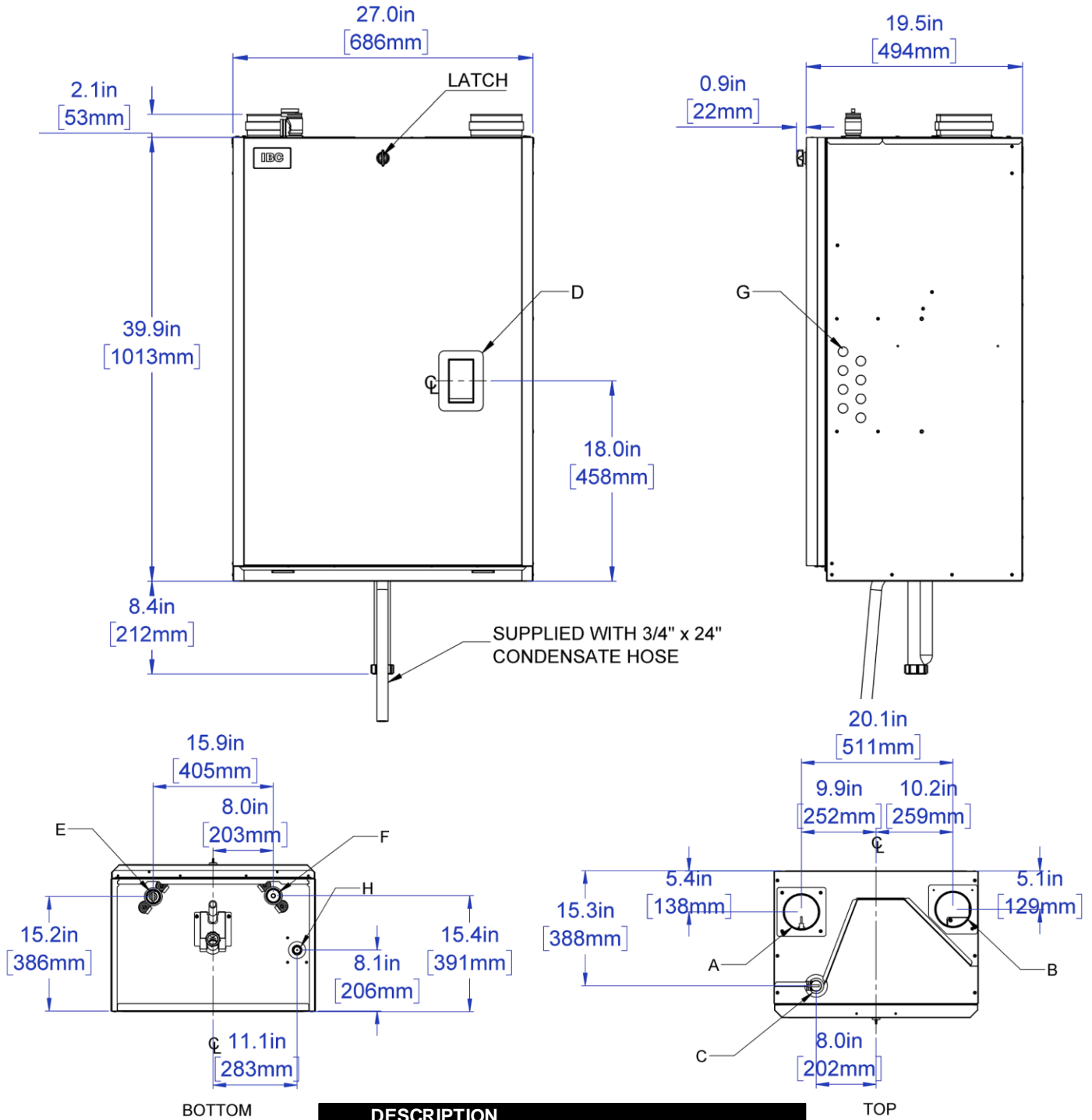
- Clear LCD display providing plain English information
- Modulates boiler water temperature to outside air temperature
- Internal multiple boiler staging and rotation control for management of up to 24 boilers
- Software upgrade by internet or by USB port
- Accepts an external 0-10 VDC or 4-20 mA input signal
- BACnet over IP compatible (see Options)
- Two Interlock connections allowing external devices to effect a boiler safety shut-down
- Automatic altitude compensation to 12,000 ft.
- Electronic water pressure sensing, for digital display of system pressure
- Alarm dry contact for connection to external device
- Multiple load control with relays for five pumps
- Prioritizes up to 4 temperature circuits electrically for maximum fuel efficiencies
- Zoning feature for control of up to four pumps under a single load
- Load combining software for simultaneous running of compatible loads
- Load configuration save and export to USB
- Error log with detailed conditions capture
- Diagnostic pages for fan operation, sensors, boiler network and flame current
- Summer shutdown programmable by load
- User-defined unoccupied mode and DHW tank temperature (when using sensor)
- Variable speed output signal for IBC air handler fan
- Express setup mode for load parameters
- Thermostat ground terminal for power-stealing thermostat wiring
- Electronic ΔT fence of 40°F (22°C) to prevent thermal stress to boiler



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BOTTOM

TOP

BOILER HEAD LOSS SL 40 399 G3						
Flow rate (gpm)	20	25	30	35	40	45
Head Loss (Ft.)	1	1.5	2	3	4	6

DESCRIPTION		
A	Exhaust outlet	4" Schedule 40
B	Combustion air	4" Schedule 40
C	Safety relief valve & air vent	3/4" NPT - F
D	Touchscreen display	2 1/4" X 4"
E	Water outlet	1 1/2" NPT - M
F	Water inlet	1 1/2" NPT - M
G	Knock-outs (8)	1/2"
H	Gas inlet	3/4" NPT - F
I	Condensate outlet	3/4" hose

RECOMMENDED MINIMUM CLEARANCES	
Left side	1"
Right side	4"
Front	24"
Top	12"
Bottom	12"
Back	0"

**DESIGN AND PERFORMANCE DATA**

Energy input of boiler (NG and LP)	40 to 399 MBH 11.7 to 17 kW
Output of boiler (NG and LP)	38.46 to 383 MBH 11.2 to 112 kW
Thermal Efficiency	96%
Min gas pressure (NG or Propane) - inch w.c.	4" w.c.
Max gas pressure (NG or Propane) - inch w.c.	14" w.c.
Ambient Temperature – Low / High	32°F (0°C) / 122°F (50°C)
Maximum relative humidity (non-condensing)	90%
Minimum water temperature	34°F (1°C)
Maximum water temperature	190°F (88°C)
Maximum ΔT supply / return (electronic fence)	40°F (22°C)
Maximum water temperature lockout limit	201°F (94°C)
Power use (120Vac/60Hz) @ full fire	190 Watts (less pumps)
Weight (empty)	240 lbs (110 Kg)
Heating Surface Area	36.56 sq. ft. (3.40 m ²)
Pressure vessel water content	6.66 USg (25.2 L)
Maximum boiler flow rate	45 Usgpm (2.8 L/sec)
Minimum boiler flow rate	20 Usgpm (1.3 L/sec)
Maximum operating water pressure*	80 psig (552 kPa)
Minimum water pressure	8 psig (55 kPa)
Manufacturer's approved installation altitude	0-12,000 ft (0-3658 m)
Approved Venting Materials	4" PVC, CPVC, PP, SS
Maximum equivalent venting run each side	200' (61 m)
CRN (as of Aug. 2018)	W0028.2C

Options

- ☐ Propane Conversion Kit, IBC part P-303B
- ☐ BACnet activation, IBC part 700-002A1
- ☐ Secondary Loop Sensor with stainless steel well kit, IBC part P-216
- ☐ Air Vent Piping kit, IBC part P-195C, with compression fitting for venting to drain
- ☐ Intake Air Filter kit, IBC part P-172
- ☐ Condensate Neutralization Tank, IBC part 180-048
- ☐ Boiler Network Wiring kit (1 required per link), IBC part P-255
- ☐ Flow Switch, IBC part 180-079
- ☐ Alternate Pressure Relief Valves *(boiler ships with 30 psi relief)
 - 45 psi relief valve, IBC part 180-076
 - 50 psi relief valve, IBC part 180-155
 - 60 psi relief valve, IBC part 180-077
 - 75 psi relief valve, IBC part 180-078
 - 80 psi relief valve, IBC part 180-092

