

ICS Series:

ICS-60

60 HP

Vertical Tubeless Steam Boiler



Fulton's Classic ICS boiler has been a reliable choice for steam applications for more than 70 years. The ICS features a highly efficient 2-pass design, which uses a downward cyclonic flame. The high velocity flue gases travel over a cylindrical grid of heat convection fins, transferring additional heat evenly to the water in the vessel. This contributes to high efficiencies while still maintaining a durable pressure vessel design, making the ICS a dependable boiler for a variety of applications.

STANDARD FEATURES:

- Vertical heat exchanger
- Thick wall construction
- Never needs re-tubing
- 150 PSIG maximum allowable working pressure
- Can be trimmed 15-150 PSIG
- Compact footprint
- Fully Modulating 2:1 turndown burner
- Fuels available: natural gas, propane, #2 oil
- Full factory fire test and control programming
- Operating and high pressure limit switches
- Two (2) low water cut off probes,
 - (1) with auto reset,
 - (1) with manual reset
- NEMA 1 enclosure with locking electrical panel
- CSD-1/CSA gas train
- Emergency-stop contacts
- 5 year pressure vessel warranty expandable up to 10 years**
- 1 year burner warranty

OPTIONS:

- Stainless steel jacket
- Conductivity based surface blowdown
- Timer based bottom blowdown
- Control panel with non-fused disconnect
- High water overflow protection
- Reflex type sight glass
- Boiler alarm package
- Boiler gauge kit
- Remote E-stop
- MM-150 ALWCO
- MM-157 PWLCO and pump control
- MM-193-7B PWLCO modulating level control
- On/off motorized FW valve & 3-valve bypass
- On/off FW solenoid valve
- Differential pressure level control
- Modbus integration gateway
- BACnet integration gateway
- Night setback/low pressure control
- FM compliant fuel train components
- High pressure gas train
- Up to 300 psig design pressure
- 3-phase pump motor starter

PROJECT DETAILS:

Project Name	
Date Submitted	
Fulton Representative	

City, State (Province)	
Engineer of Record	
Contractor	

LISTINGS & COMPLIANCE:

- ASME Section I
- UL approved to UL-795 (Gas) or UL-726 (#2 Oil)
- CSD-1 and CSA Controls and Fuel Train
- GAPS Compliant; Supersedes IRI

TRIM KIT ITEMS:

- ASME Safety Relief Valve
- Pressure Gauge
- Installation, Operation and Maintenance Manual
- Gauge Glass and Protector Rods
- Touch-up Spray Paint

NOTE:

Information provided in this document is based on standard boiler configurations only. Custom configurations may result in deviations.

** With engineering system per Fulton Warranty Statement

CAPACITIES: STANDARD NATURAL GAS: APPLIES TO ELEVATIONS UP TO 2,000 FT

ICS		ICS-60
Rated Input at High Fire	BTU/hr	2,511,000
	<i>kWh</i>	736
Rated Output (At 0 psig operating pressure and 212F feedwater temperature)	BTU/hr	2,009,000
	Boiler HP	60
	lbs/hr	2,070
	kg/hr	939
	<i>kWh</i>	589

CONNECTION SIZES:

ICS		ICS-60
Steam Outlet Operating at >75 psig	inches	4
	<i>mm</i>	102
Steam Outlet Operating at ≤75 psig	inches	4
	<i>mm</i>	102
Feedwater Inlet	inches	1
	<i>mm</i>	25
Bottom Blowdown	inches	1 1/2
	<i>mm</i>	38
High Water Protection	inches	3/4
	<i>mm</i>	19
Natural Gas Train Inlet	inches	2
	<i>mm</i>	51
Stack Connection	inches	12
	<i>mm</i>	305
Water Column Drain	inches	1
	<i>mm</i>	25
Surface Blowdown	inches	3/4
	<i>mm</i>	19
Sight Glass Drain	inches	1/4
	<i>mm</i>	6
Safety Valve Inlet x Outlet 15 psi trim	inches	(Qty 2) 1 1/2 x 2
	<i>mm</i>	
Safety Valve Inlet x Outlet 150 psi trim	inches	1 x 1 1/4
	<i>mm</i>	25 x 32

FUEL REQUIREMENTS: PRESSURE REQUIREMENTS AT RATED INPUT

ICS		ICS-60
Fuel Usage at Rated Input (Natural Gas)*	SCFH <i>m³/hr</i>	2,511 71.1
Fuel Usage at Rated Input (Propane)**	SCFH <i>m³/hr</i>	1,005 28.5
Fuel Usage at Rated Input (#2 Oil)***	GPH <i>lph</i>	17.9 67.8
Maximum Gas Pressure Propane	in W.C. <i>kPa</i>	13.8 3.4
Minimum Gas Pressure Propane	in W.C. <i>kPa</i>	11 2.7
Maximum Gas Pressure Natural Gas	in W.C. <i>kPa</i>	13.8 3.4
Minimum Gas Pressure Natural Gas	in W.C. <i>kPa</i>	7 1.7

*SCFH based on 1,000 BTU/ft³**SCFH based on 2,500 BTU/ft³

***GPH based on 140,000 BTU/gallon

ELECTRICAL REQUIREMENTS GAS: APPLIES TO STANDARD BLOWER MOTOR AND CONTROL OPTION * Does not include feed pump starter *

ICS		ICS-60					
Electrical Supply	Volts	120	240	208	240	480	575
	Ø	1	1	3	3	3	3
	Hz	60	60	60	60	60	60
Short Circuit Current Rating	Amps	5,000	5,000	5,000	5,000	5,000	5,000
NEMA Rating		1	1	1	1	1	1
Full Load Amps (FLA)	Amps	26	16	11.4	9.3	4.6	3.7

ELECTRICAL REQUIREMENTS OIL: APPLIES TO STANDARD BLOWER MOTOR AND CONTROL OPTION * Does not include feed pump starter *

ICS		ICS-60					
Electrical Supply	Volts	120	240	208	240	480	575
	Ø	1	1	3	3	3	3
	Hz	60	60	60	60	60	60
Short Circuit Current Rating	Amps	5,000	5,000	5,000	5,000	5,000	5,000
NEMA Rating		1	1	1	1	1	1
Full Load Amps (FLA)	Amps	26	16	11.4	9.3	4.6	3.7

WEIGHTS AND VOLUMES:

ICS		ICS-60
Dry Weight	lbs	8,260
	<i>kg</i>	<i>3,747</i>
Operating Weight at Normal Working Level	lbs	10,512
	<i>kg</i>	<i>4,768</i>
Water Volume at Normal Working Level	gallons	270
	<i>liters</i>	<i>1,022</i>

VENTING REQUIREMENTS:

ICS		ICS-60
Typical Combustion Air Intake Flow Rate	SCFM	491
	<i>m³/hr</i>	<i>835</i>
Flue Gas Exhaust Flow Rate	SCFM	532
	<i>m³/hr</i>	<i>904</i>
Minimum Allowable Draft Pressure	in W.C.	-0.04
	<i>kPa</i>	<i>-0.01</i>
Maximum Allowable Draft Pressure	in W.C.	-0.02
	<i>kPa</i>	<i>-0.005</i>

MINIMUM CLEARANCES: LOCAL CODES MAY SUPERSEDE FULTON REQUIREMENTS

ICS		ICS-60
Side Clearance from Boiler Jacket:	in	24
	<i>mm</i>	<i>609</i>
Total Installed Height Required for Burner Removal:	in	124
	<i>mm</i>	<i>3,150</i>

SOUND DATA: MEASUREMENTS TAKEN FROM FIVE FOOT FROM THE FRONT OF THE BOILER

ICS		ICS-60
Sound Level at High Fire	dBa	71

DIMENSIONS:

Refer to the Product Data Submittal Drawing for dimensions.