ABSOLUTE

Built by 3I Innovative Industrial Inc.

ABS Series

CONDENSING HIGH EFFICIENCY BOILERS

ABS 750-900-1050MBH

- Cast aluminum heat exchanger
- 10 to 1 turndown ratio
- Honeywell Sola boiler control system
- Touchscreen 7'' LCD control
- Compact lightweight packaged boiler
- Three models ranging from 750 to 1050 MBH
- Low NOx design

ENGINEERED

FOR RELIABILITY

DESIGNED

FOR PERFORMANCE

CAT-ABS-MIN-09-17

3 x ABS 750 MBH Montreal School Board

TECHNOLOGY AND **PERFORMANCE**

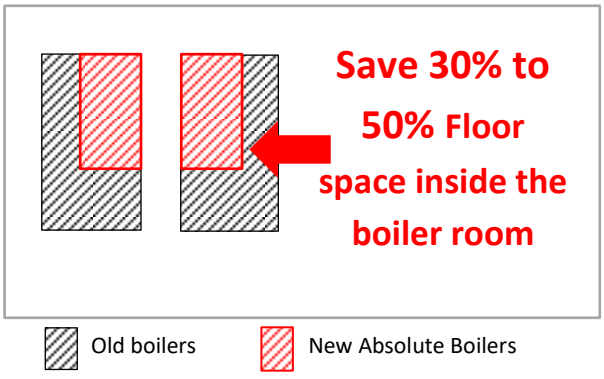
Superior design

Today's standards for high-efficiency boilers in commercial buildings are performance and durability. The ABSOLUTE "ABS SERIES" is the product of many years of experience in condensing technology. The state of the art cast aluminium heat exchanger is suitable for very low water return temperatures and can also reach high supply temperatures in extreme cold weather conditions. Because it is a cast design, our heat exchanger does not contain any welded part; therefore durability and reliability are greatly increased. The heat exchanger carries a **10-year non-prorated warranty.**

A perfect match

By combining superior heat exchanger design and the choice of material, the ABSOLUTE "ABS SERIES" offers great flexibility which is essential in condensing applications. It can withstand the large temperature swings of the heating season without fear of thermal shock. Aluminum allows for seven times more heat transfer than steel and is also more flexible than steel making it a perfect match for condensing boiler technology.

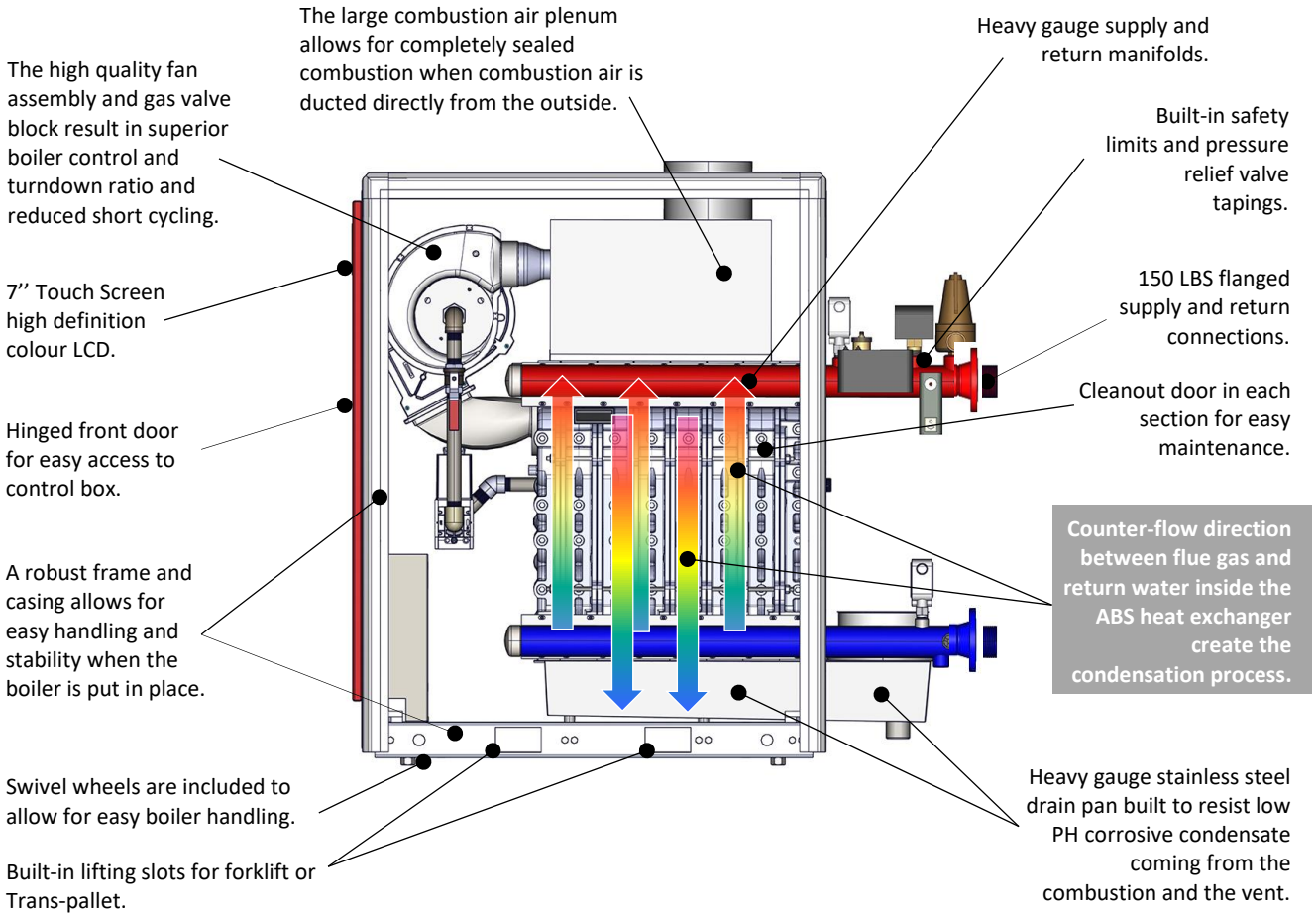
The increased heat transfer of the aluminum heat exchanger results in a more compact heating appliance and this smaller footprint allows greater flexibility when designing a new or reconfiguring an existing boiler room. The cast aluminum boiler is on average 30% smaller than a non-condensing boiler.



RELIABILITY THROUGH INNOVATION

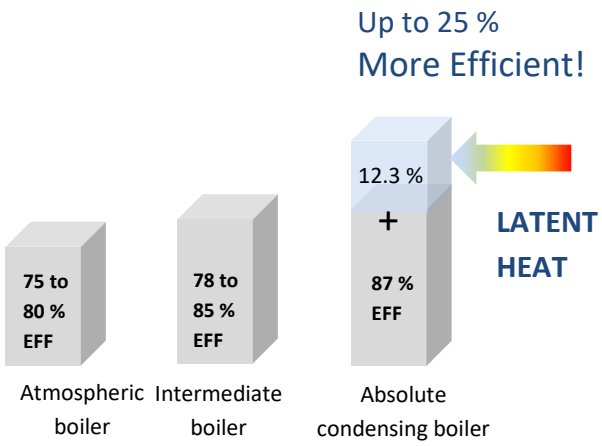
ABSOLUTE “ABS SERIES” **fully water-cooled** combustion chamber hosts a high quality knitted metal stainless steel fibre burner and premix configuration. The use of a high quality gas valve and fan assembly allows a 10:1 turn-down ratio for maximum combustion control and reduced short cycling of the boiler. With precise combustion control the ABSOLUTE “ABS SERIES” is able to meet a low CO2 level which maximizes natural gas condensation. Ultra-Low NOx and Ultra-Low CO emissions are standard with the ABSOLUTE “ABS SERIES”.

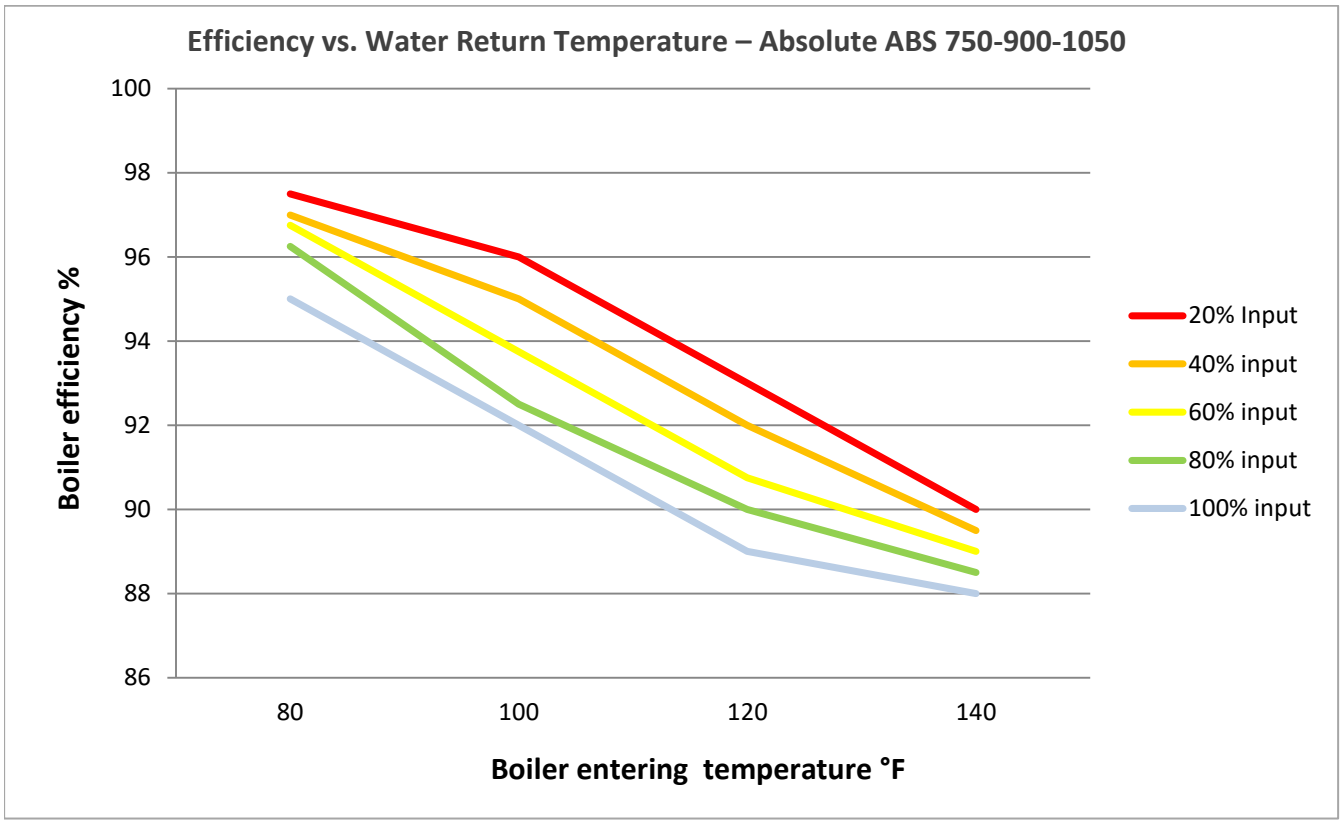
Absolute ABS SERIES 750-900-1050 Features



ENERGY SAVINGS FROM CONDENSATION

Condensing boiler technology is one of the most efficient forms of fuel heating available today. It is also one of the most environmentally friendly. The "ABSOLUTE ABS SERIES" condensing boiler essentially increases overall efficiency with the recovery of latent heat contained in the flue gases. This latent heat in a non-condensing boiler is unfortunately sent to the exterior through the chimney. All this wasted heat recovered with the "ABSOLUTE ABS SERIES" boiler can reach up to **25% increase in efficiency** compared to a non-condensing boiler. Lower fuel consumption means lower heating cost and annual savings which gives an **outstanding return on investment**. The "ABSOLUTE ABS SERIES" 750, 900 and 1050 MBH condensing boiler can reach up to 98.3% efficiency with a return temperature of 60 F (See table below).





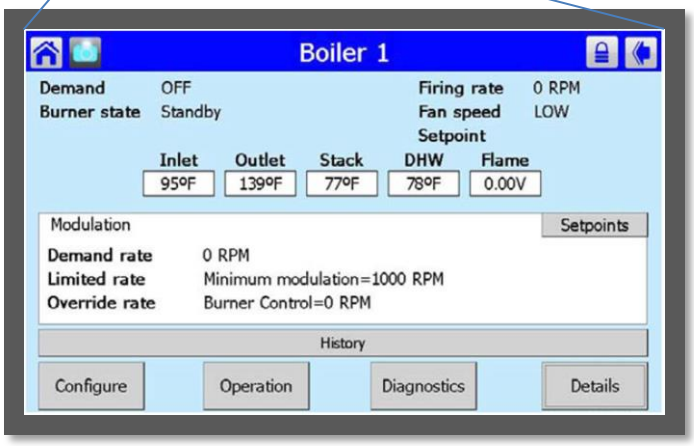
STATE OF THE ART
BOILER CONTROL

All **ABSOLUTE "ABS SERIES"** boiler models include the Honeywell Sola boiler control system. The Sola allows for **quick and easy set-up and boiler start-up**. The user-friendly touchscreen control ensures simplified monitoring and diagnostics along with: multiple boiler configuration (up to eight boilers in **LEAD/LAG sequencing**), remote monitoring, fault history, trend analysis, boiler status, communicates via 3-wire RS-485 ModBus™ protocol, DHW priority, BACnet IP, **BACnet** MS/TP via PROTONODE option for communication with a Building Management System (BMS).

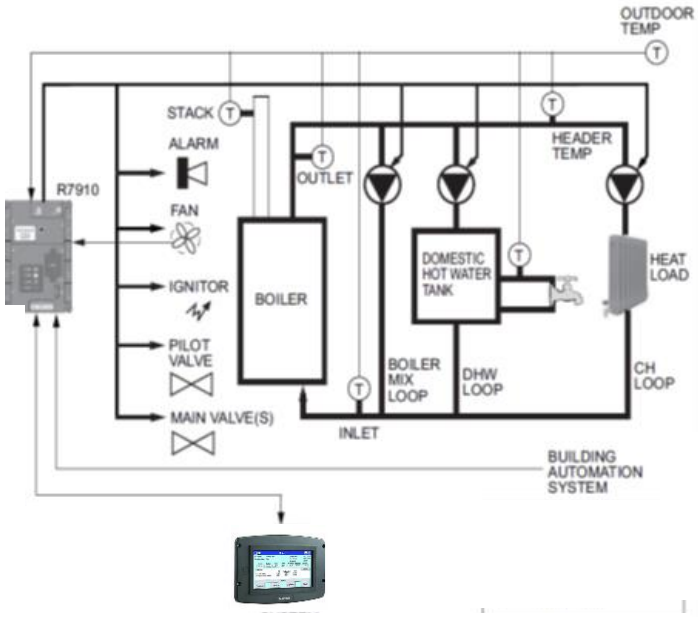
SOLA Control Features

- **Primary Flame Safe Guard**
- **P.I.D Logic control for both heating and DHW (2 loop controls)**
- **Pump control: 3 outputs, 5 different programmable features**
- **15 Item Fault and Alert Code History including equipment status at time of lockout**
- **Lead/Lag up to 8 boilers**
- **Digital inputs**
- **Digital outputs**
- **High limit control**
- **Central Heating, DHW and stack temperature monitoring.**
- **Simultaneous hard wire control connections and/or MODBUS®, LonWorks®, BACnet IP, BACnet MS/TP communication.**

Honeywell Touch Screen S7999D 1006 Large 7" High Definition colour LCD.



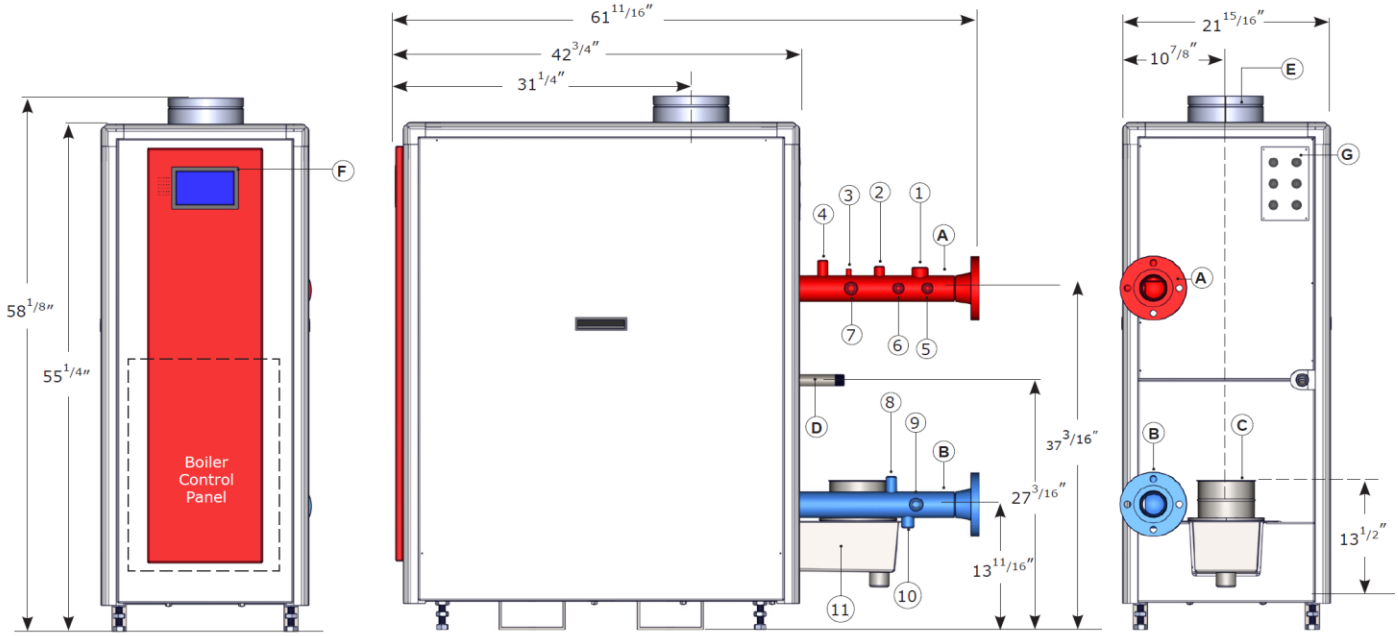
ABSOLUTE "ABS SERIES" boiler info screen allows quick analysis and diagnostic of boiler and DHW information and status.



Heating and Indirect DHW loop and pump control.

MODBUS® is a registered trademark of Schneider Automation Inc. LonWorks® is a registered trademark of Echelon Corporation.

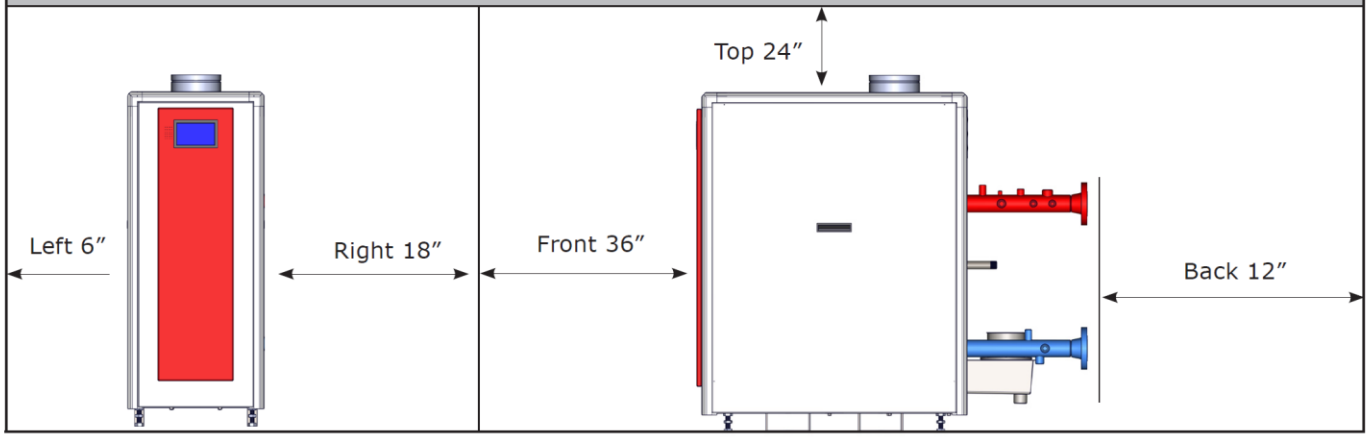
Physical Dimensions
Absolute ABS Series 750-900-1050



A	Boiler Water Supply	2 1/2″F	D	Gas Connection (NPT male)	1″	G	Wiring Junction	1/2″
B	Boiler Water Return	2 1/2″ F	E	Combustion Air Inlet	6″ ID	F	Honeywell Touch Screen	7″
C	Boiler Exhaust Connection (ABS1050)	8″ ID	C	Boiler Exhaust Connection (ABS750/ABS900)				6″ ID

Ref.	Description	Size	Ref.	Description	Size
1	Pressure Relief Valve	1″	7	Aquastat (Manual Reset)	1/2″
2	Flow Switch	3/4″	8	NTC Temperature Sensor (Return Water)	1/2″
3	Air Vent	1/4″	9	Spare	1/2″
4	NTC Temperature Sensor (Supply Water)	1/2″	10	Boiler Drain	3/4″
5	Temperature and Pressure Gauge	1/2″	11	Condensate Drain	1 1/4″
6	Low Water Cut Off (Manual Reset)	3/4″			

Service Clearance



Technical Specifications

Absolute ABS Series 750-900-1050

ABS Model		750	900	1050
Performance Data	**unit**			
Maximum gas input	MBH (KW)	750(230)	900(264)	1050(308)
Minimum gas input	MBH (KW)	75(23)	90(26)	105(31)
AHRI Rated heat output	MBH (KW)	698(205)	838(246)	977(287)
Minimum Heat Output	MBH (KW)	70(21)	84(25)	98(29)
Gross output at 104°F supply / 86 °return (40°C /30°C)	MBH (KW)	709(208)	850(249)	992(291)
Gross output at 176°F supply / 140 °return (80°C /60°C)	MBH (KW)	660(193)	792(232)	924(271)
Boiler horsepower	H.P.	21.7	26.1	30.4
Natural gas combustion efficiency	%	94.5	94.5	94.5
Natural gas thermal efficiency(net)	%	94	94	94
Firing sequence - turndown ratio	Full modulation	10:1	10:1	10:1
General Data				
Heating surface area - water side	ft²(m²)	18.35(1.705)	22.02(2.05)	25.69(2.39)
Maximum allowable working pressure MAWP	PSIG (Bar)	80(5.5)	80(5.5)	80(5.5)
Water content	Gallons(Liters)	5.9(22.3)	6.6(24.9)	7.3(27.6)
Weight dry	Lbs.(KG)	650(295)	700(318)	750(341)
Shipping weight	Lbs.(KG)	670(304)	720(327)	770(350)
Operating weight	Lbs.(KG)	700(318)	755(343)	810(368)
Boiler operating control		Honeywell Sola R910A		
Touch screen		Honeywell 7" S7999D1006		
Operational Data				
Water Pressure drop at 20°F ΔT	FT. H20 (mbar)	9.75(291.4)	9.65(288.5)	10.80(322.8)
Water Pressure drop at 30°F ΔT	FT. H20 (mbar)	4.33(129.4)	4.39(131.2)	4.87(145.6)
Water Pressure drop at 40°F ΔT	FT. H20 (mbar)	2.436(72.8)	2.413(72.1)	2.718(81.2)
Nominal flow rate 20°F ΔT	GPM (LPM)	75(284)	90(340.5)	105(397.5)
Nominal flow rate 30°F ΔT	GPM (LPM)	48(182)	58(219)	67(253.6)
Nominal flow rate 40°F ΔT	GPM (LPM)	37.5(142)	45(170)	52.5(198.7)
Maximum flow rate	GPM (LPM)	87(326)	104(391)	121(458)
Minimum flow rate at ignition	GPM (LPM)	16.5(62.4)	20(75.7)	23(87)
Maximum supply temperature at 22 PSI minimum	°F (°C)	200(95)		
Normal operating temperature range	°F (°C)	68(20)-194(90)		
Maximum negative draft pressure CAT II	Inch W.C.(mbar)	-0.10(0.25)		
Maximum positive draft pressure CAT IV	Inch W.C.(mbar)	+0.2(0.5)		
Vent / Gas Connections Sizes				
Flue gas vent diameter	Inches(mm)	6"	6"	8"
Combustion air inlet diameter	Inches(mm)	6"	6"	6"
Required combustion air CSA B-149- Forced draft	CFM(LPS)	119(56)	143(67.5)	167(78.8)
Gas inlet diameter	Inches(mm)	1"(25)	1"(25)	1"(25)
Gas inlet pressure range	Inch W.C.(mbar)	3.5-14"(8.8-34.9)	3.5-14"(8.8-34.9)	3.5-14"(8.8-34.9)
Gas inlet pressure range	psi	0.13-0.51	0.13-0.51	0.13-0.51
Venting category		II, IV		
Venting material		Approved UL 1978/ULC 636 - AL-294C, Polypropylene, CPVC		
Electrical data				
Power consumption	Watts	480	600	1200
Electrical main supply	V/P/H	120/1/60- 15A Maximum		
IP-IEC NEMA protection	Rating	IP20 – NEMA Type I		

Accessories and Optional equipment

☐ **Combustion air filter**	Installed on Absolute model air inlet to protect from dust and other particles.	
☐ **BACnet Gateway**	Modbus RTU to BACnet Gateway. Supports BACnet/IP, BACnet MS/TP, LonWorks, and Johnson Controls Metasys N2 systems.	
☐ **Outdoor Sensor**	Senses outdoor temperature for reset curve adjustment.	
☐ **DWH Sensor with well**	Sensor for Domestic Hot Water supply from the boiler to a buffer tank or indirect water heater.	

☐ **Local/Remote switch**	Easy selection from locally controlled boiler to the BMS remotely controlled system.	
☐ **Condensate Neutralizing Kit**	Controls condensate PH from the boiler and the vent before it is directed to the floor drain.	
☐ **Automatic reset LWCO**	Automatically completes the circuit when water level is normal	
☐ **Stack Sensor with well included with boiler**	Sensor monitors stack temperature and allows quick diagnosis for maintenance or service	

About Absolute

Absolute boilers are built by 3I Innovative Industrial Inc.

Located in the proximity of Toronto, Ontario, 3I Innovative Industrial Inc. is the manufacturer of Absolute and Enerpro boilers and water heaters. 3I is a market leader and major producer of heat transfer equipment. Our boilers and water heaters are installed in commercial, institutional and industrial building applications such as offices, schools, apartment complexes, hotels, hospitals as well as dairy and food and beverage applications. Our experienced and creative team of specialist combine many years of experience in boiler and water heater design.

Our vast network of authorized representatives across North America will provide you with professional advice, engineered solutions, sales, product support and customer service.

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Please consult your local sales representative for details.

www.absoluteboilers.com