Dunkirk Boilers Royal Series

COMMERCIAL CONDENSING BOILERS

The **Royal Boiler Series** includes 3 gas-fired commercial models with max inputs from 299 - 470 MBH.

CH-299 | CH-399 | CH-499

- DUO Power Stainless Steel Water-Tube Heat Exchanger
- Intuitive Programmable Control
- Cascade up to 16 boilers
- Energy Efficient with over 95% AFUE/Thermal Efficiency
- Advanced Safety Features for Peace-of-Mind
- Sturdy, Wall Hung Design with Removable Side Panels for Easy Service
- Natural Gas - Easily Converted to Propane(LP)
- 8 Year Heat Exchanger Limited Warranty
  3 Year Parts Limited Warranty

Dunkirk®

ECO Friendly

ENERGY STAR

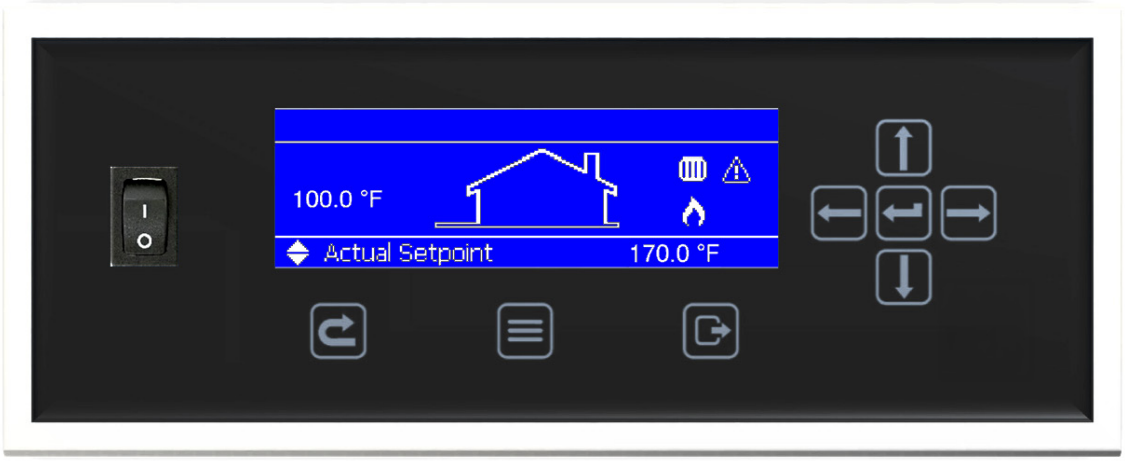
Innovative. Efficient. Dependable. Dunkirk.

www.dunkirk.com

PN 240013862 Rev. [10/01/26]

Leading Innovation For Modern Heating Systems

- **State-of-the-art** technology and materials are used for durability, superior heating, corrosion resistance and quiet operation. Modbus connection standard.
- **Advanced Combustion Design** provides high efficiency and the stainless steel pre-mix burner ensures efficient and cleaner combustion. Extremely low NOx emission.
- **Flexible Installation** with adjustable 3 in 1 vent connector to adapt to different vent materials. (CPVC, PVC, Stainless Steel, Polypropylene) Wall hung design. Natural Gas - easily field converted to propane (LP). Optional floor stand available.
- **Excellent Serviceability** with removable side panels and flip down control.



Control Features

The control modulates the gas input to ensure the highest optimization of the boiler's combustion. This results in less energy consumption and safe, reliable operation. The control display can be set to one of 18 different languages. Cascade up to 16 boilers with the built-in control*.

Full text and graphical interface
Error logging with time and date stamp
Built in cascade control - up to 16 boilers
Anti-cycling time helps prevent short cycling
Outdoor reset option
Circulator exercising every 24 hours
Frost and flue temperature protection
Indirect hot water heater control

Additional Connections:

- On/Off thermostat or modulating thermostat
- 0-10 VDC remote flow temperature (set point) control
- 0-10 VDC remote boiler input control
- Outdoor temperature sensor
- External indirect tank circulator or diverter valve
- Boiler circulator
- System circulator
- External flow switch or external safety device
- Modbus
- External system sensor
- DHW indirect sensor or aquastat

*Cascading units requires a system flow temperature sensor, sold separately.

Product Specifications

Commercial Condensing Gas-fired Water Boiler

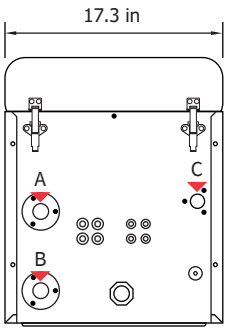
MODELS	INPUT MBH[1]		AHRI RATINGS			DIMENSIONS		CONNECTIONS		
	CH Mode MIN	CH Mode MAX	Heating Capacity MBH[1][2]	Net Water MBH[1][3]	Efficiency: AFUE[2] Thermal (T)	H x W x D Inches	Weight lbs.	Flue Inches	Supply/Return Inches	Gas Inches
CH-299*	46	299	284	247	95.1% AFUE	33.3 x 17.3 x 21.2	184	4	1 1/2 NPT (A / B)	1 NPT (C)
CH-399	72	399	381	331	95.5% (T)		193	4		
CH-499	83	470	449	390	95.6% (T)		198	6		

(1) 1000 Btu/h (British Thermal Units Per Hour)
(2) Heating capacity and AFUE (Annual Fuel Utilization Efficiency) are based on DOE (Department of Energy) test procedures.
(3) Net AHRI Ratings based on piping and pickup allowance of 1.15. Consult manufacturer before selecting boiler for installations having unusual piping and pickup requirements, such as intermittent system operation, extensive piping systems, etc.
Electrical: 120 V ac, 60 hertz, 1 phase, 12 amp minimum size circuit (15 amp recommended)
* ENERGY STAR® Certified Models

Maximum Exhaust Length / Maximum Combustion Air Intake Length (Twin Pipe)				
Vent Size[4]	CH-299	CH-399	CH-499	Venting Materials [5]
3”	60’ / 60’	30’ / 30’	N/A	Polypropylene CPVC PVC Stainless Steel
4”	200’ / 200’	121’ / 121’	73’ / 73’	
5”			200’ / 200’	
6”			200’ / 200’	

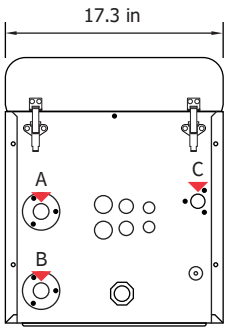
Minimum venting length for all boilers: two feet (2 ft)
(4) If a reduction of the flue gas pipe is needed, a reducer is required to make it fit.
(5) All vent and air-inlet materials installed on gas fired appliances must meet fire code venting system standards. Consult IOM for full venting specifications.

CH-299

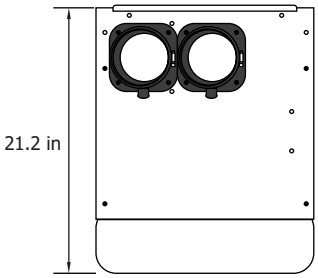


Bottom

CH-399 / CH-499

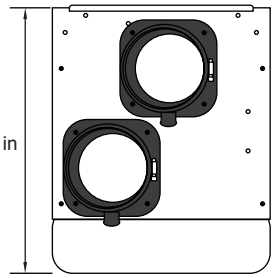


CH-299 / CH-399

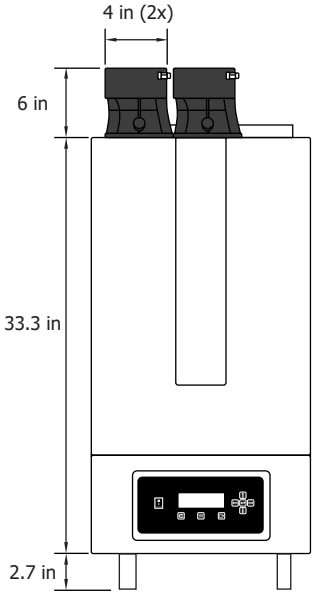


Top

CH-499

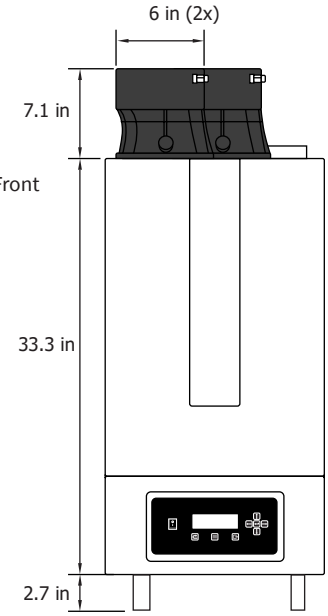


CH-299 / CH-399



Front

CH-499



ECR international

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All specifications subject to change without notice.
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