

# NFB-C Condensing Commercial Fire Tube Boilers



Human innovation  
meets robotic precision

#### Optional LonWorks & Modbus/BACnet gateways

Navien's proprietary equipment  
data converts to LonWorks,  
BACnet MS/TP, BACnet/IP and  
Modbus TCP protocols.





# Navien NFB-C series commercial fire tube boilers

**Navien's high efficiency fire tube condensing technology makes NFB-C hard to beat and the easy choice for today's commercial boiler applications**

- Robotic and automated manufacturing technology for unmatched quality control
- In-house designed and built components, for system matched compatibility...unlike most competitors who use the same out-sourced parts to build their boilers
- Lower installation costs with our innovative engineered compact wall hung design, intuitive controls, top or bottom piping connections and flexible venting options
- Lower operating costs with the industry's leading thermal efficiency at TE 97.5%...Energy Star approved
- Best-in-class training and technical support
- One of the industry's best warranties

**TE 97.5%**

**FIRE TUBE** STAINLESS STEEL  
HEAT EXCHANGER

**TDR UP TO 15:1**

**BACNET/LONWORKS**  
BMS COMMUNICATION  
CAPABLE

**160 PSI**  
ASME  
WORKING  
PRESSURE

**TOP & BOTTOM  
PIPING**

 **APPROVED**

# Patented stainless steel fire tube heat exchanger

Navien's ASME-certified, "H" stamped stainless steel fire tube heat exchangers are in-house designed and built by the latest in robotic and automated technology, reducing high stress point weld failures common on other boilers.

**Low profile burner** removes easily and improves serviceability, unlike other's bulky cylindrical burners.

**Innovative heat exchanger design** allows water to fill to the top eliminating extra combustion chamber insulation and improving durability.

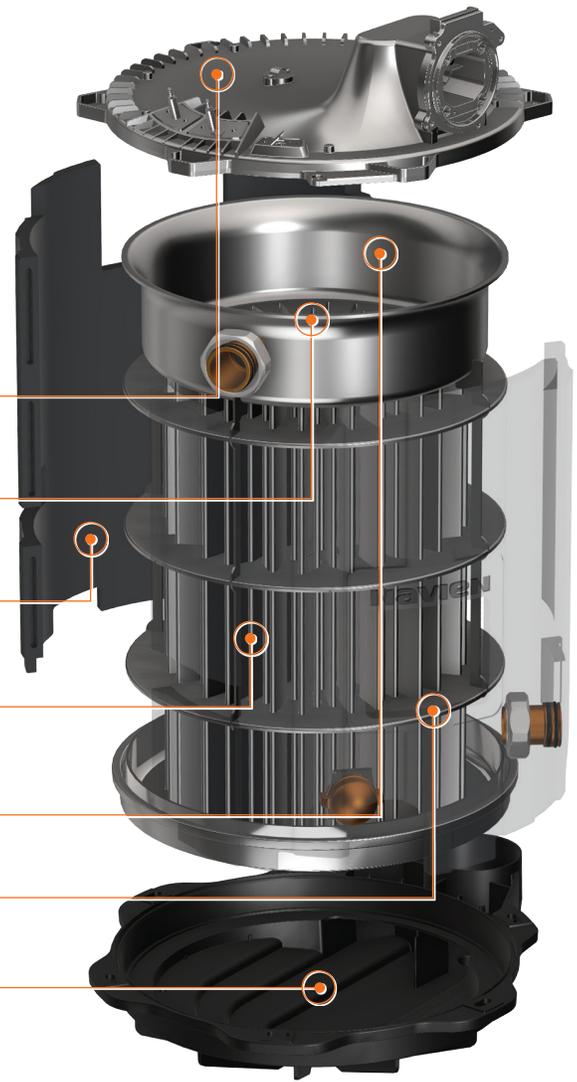
**EPP exterior insulation** reduces heat loss and increases efficiency.

**Turbulators inside the tubes** increase structural strength and create a cyclone effect of flue gases maximizing heat transfer and efficiency.

**One-piece combustion chamber** minimizes number of weld points prone to corrosion.

**New diaphragm design** optimizes water flow and improves performance.

**Non-metallic drain pan** prevents corrosion caused by acidic condensate, unlike competitor's metal pans.



## Advanced 7" touch screen controls

Easy intuitive navigation for setup, troubleshooting and operation.



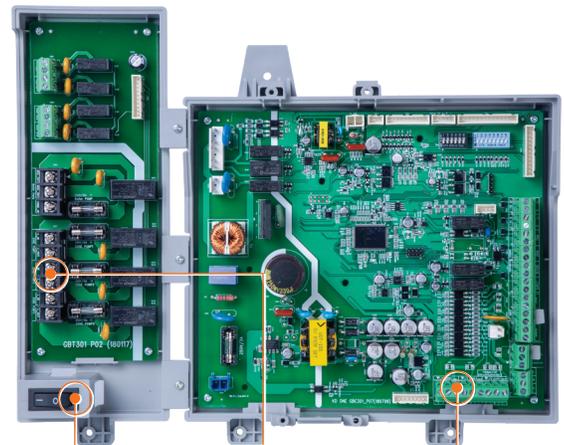
## Built-in USB port

Download boiler data and settings. Upload software updates and boiler settings.



## Built-in hardware connects boiler pump & 3 zone pumps

All integrated into the NFB-C circuit board. Also includes a DHW priority zone.



Easy access on/off power switch.

Dry contact relays for boiler pump and 3 zone pumps.

Low voltage terminal for up to 3 thermostats.

# NFB-C: the inside story

3" PVC, CPVC, PP (rigid and flexible) and stainless steel up to 60' for intake and exhaust. 4" venting up to 150'

PRV and air vent connection (optional heating supply)

Inlet air filter

Fully modulating metal fiber pre-mix burner

Stainless steel fire tube heat exchanger

ASME certification plate

Terminal block

Power switch

Heating supply

Optional heating return

Fan and motor assembly

Dual Venturi

Negative pressure regulating gas valve

Air intake pipe

Air pressure sensor

Gas pipe

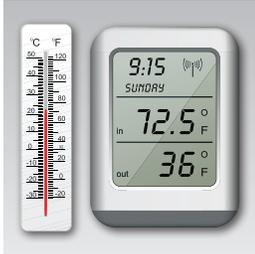
Front panel

Printed circuit board

Condensate trap (siphon)

Heating return

# Compare these advantages to other boilers



## 15:1 industry leading turndown ratio

The sophisticated gas flow control system provides a high turn down ratio which reduces energy waste and excessive boiler cycling while also enhancing temperature control for DHW.



## Space saving

The sleek wall-hung design uses much less space than traditional floor standing boilers, making installations a lot easier.



## Advanced controls

All system setup, operations and troubleshooting available at your fingertips with the 7" color display panel. Intuitive text information makes everything easier.



## Multiple venting options

Low exhaust gas temperatures allow use of PVC, CPVC, polypropylene (rigid and flexible) and stainless steel venting reducing installation time and costs. System can use 3" venting for up to 60', or up to 150' with 4" venting.



## Dual Venturi and field gas convertibility

Dual Venturi system creates better combustion control and turn down ratio. Orifice for easy field gas convertibility from NG to LP. Conversion kits included with every NFB-C series boiler.



## Air intake filter

This heavy duty inlet air filter has easy access for cleaning and filter replacement.



## Top and bottom piping

Easy pipe connections for floor or wall hung installations.



## Low gas pressure operation

Negative pressure regulating gas valve ensures maximum performance all the way down to 3.5" of water column on natural gas and 8" of water column on propane gas.



# Cascading & common venting

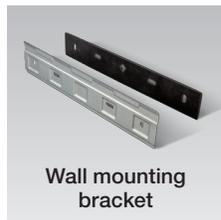
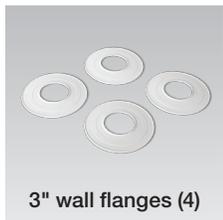
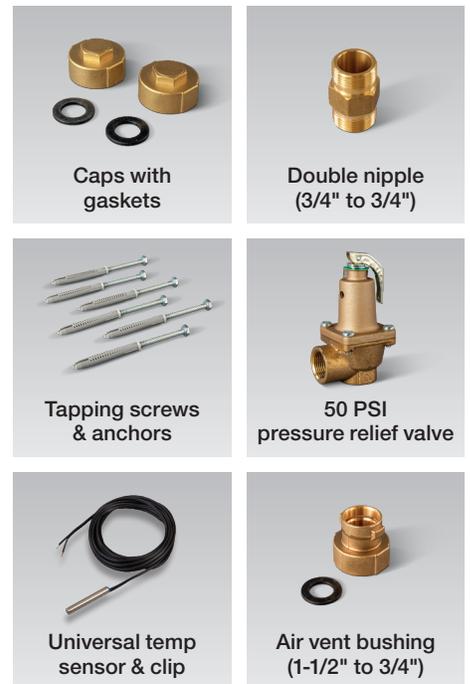
## Cascade up to 32 units and common vent up to 4 units

With our cascading technology, when a unit gets up to 80% capacity the next unit will start to help meet the hydronic heating requirements. This boiler sequence will continue until all units are generating the needed hydronic heat. The Navien cascading system also balances out the workload of each unit for longer life.



## NFB-C included extras

When you open the box, you will find these components included with every NFB-C boiler



# NFB-C series optional boiler accessories



## NaviLink™ Wi-Fi control

This add-on accessory will enable customers with smartphones and tablets to control temperatures remotely, access usage data and receive diagnostic notifications on all Navien products (NPE-A2, NPE-S2, NCB-H, NFC-H, NFB-H, NFB-C, NHB).

PBCM-AS-001



## Pressure relief valves

**75 PSI**

GXXX001931

**150 PSI**

GXXX001946



## Lg. Commercial neutralizer

Designed to neutralize the condensate of up to: 11 units NFB-301C; 9 units NFB-399C  
GXXX002367

## Replacement media for large commercial neutralizer

GXXX002369



## Commercial neutralizer

Designed to neutralize the condensate of up to: 3 units NFB-301C; 2 units NFB-399C  
GXXX002366

## Replacement media for commercial neutralizer

GXXX002368



## Ready-Link® communication cable

Required to cascade and common vent multiple NFB-C units.

GXXX000546



## SmartZone+ pump controller

Zone pump controller designed to work with NFB-C series units allowing control from 2 to 6 zone pumps. Adding the SmartZone control will also allow expansion of the built in NFB zoning

2 Zones: PFMZ-02P-001

3 Zones: PFMZ-03P-001

4 Zones: PFMZ-04P-001

6 Zones: PFMZ-06P-001



## Universal temperature sensor

GXXX001769



## NFB-C common vent collar kit

Required for common vent installations with NFB-C.

30022799A

Includes cascade cable (GXXX000546) and common vent collar damper.



## Modbus/BACnet gateway & power adaptor

Converts proprietary equipment data to BACnet MS/TP, BACnet/IP and Modbus TCP building automation protocols. Built-in Wi-Fi capability allows connection without accessing facility's LAN network. Includes gateway, power supply, connectors and set up instructions.

GXXX001932



## LonWorks gateway & power adaptor

Converts proprietary equipment data to LonWork protocol. Includes gateway, power supply, connectors and set up instructions.

GXXX001933



## Ready-Link® commercial rack system

Base and add-on will include pipe support brackets.

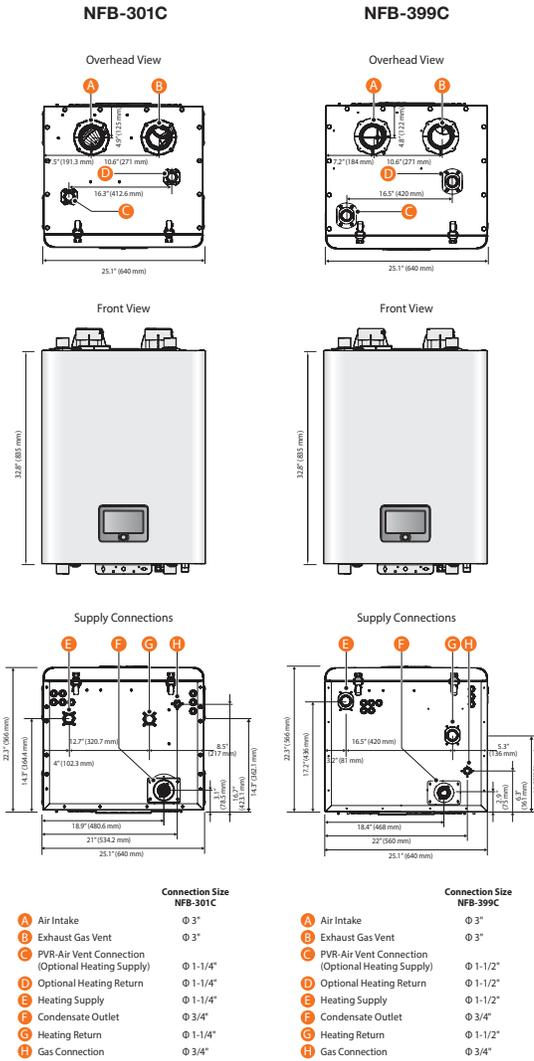
**Base**

GFFM-KDIZUS-007

**Add-on**

GFFM-KDIZUS-008

# Dimensions



# Ratings & specifications

Navien Commercial Condensing Boiler Space Heating Ratings						Other Specifications		
Model Number <sup>1</sup>	Heating Input (MBH)		Heating Capacity <sup>2</sup> (MBH)	Net AHRI Rating Water <sup>3</sup> (MBH)	Thermal Efficiency <sup>2</sup> (%)	Boiler Water Content (Gallons)	Water Pressure (PSI)	Water Connection Size (Supply, Return)
	Min	Max						
NFB-301C	20	301	293	255	97.5	7.6	12-160	1-1/4" NPT
NFB-399C	26	399	389	338	97.5	9.6		1-1/2" NPT

<sup>1</sup> Ratings are the same for Natural Gas models converted to Propane use.  
<sup>2</sup> Based on U.S. Department of Energy (DOE) test procedures.  
<sup>3</sup> The NET AHRI Water Ratings shown are based on a piping and pickup allowance of 1.15. Consult Navien before selecting a boiler for installations having unusual piping and pickup requirements, such as intermittent system operation, extensive piping systems, etc.

Item	Model	
	NFB-301C	NFB-399C
Dimensions	25.1" W x 22.3" D x 32.8" H	
Boiler weight	Empty	243 lb (110 kg)
	With water	307 lb (139 kg)
Installation type	Indoor wall-hung	
Venting type	Forced draft direct vent and non-direct vent (single pipe)	
Ignition	Electronic ignition	
Natural Gas supply pressure (from source)	3.5" to 10.5" WC	
Propane Gas supply pressure (from source)	8.0" to 13.5" WC	
Natural Gas manifold pressure	-0.06" to -0.87" WC	-0.03" to -1.85" WC
Propane Gas manifold pressure	-0.01" to -0.92" WC	-0.01" to -0.90" WC
Gas connection size	3/4" NPT	
Power supply	Main supply	120V AC, 60Hz
	Maximum power consumption	Less than 12 amperes
Materials	Casing	Cold-rolled carbon steel
	Heat exchangers	Stainless steel
Venting	Exhaust	3" or 4" PVC, CPVC, PP and SS 3" or 4" special gas vent type BH (Class III, A/B/C)
	Intake	3" or 4" PVC, CPVC, PP and SS 3" or 4" special gas vent type BH (Class III, A/B/C)
	Vent clearance	0" to combustibles
Safety devices	Flame Rod, APS, LWCO, Water Temperature High Limit Switch, Exhaust Temperature High Limit Sensor, Water Pressure Sensor	

Navien reserves the right to change specifications at any time without prior notice. Please refer to [www.NavienInc.com](http://www.NavienInc.com) to verify you have the most current information.

# Gas input ranges

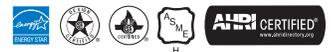
Model	Heating (MBH)	TDR
NFB-301C	20-301	15:1*
NFB-399C	26-399	15:1*

\*15:1 single boiler;  
10:1 individual boilers when cascaded.

# Warranty

Type	Residential applications	Commercial applications
Heat Exchanger	15 years limited*	10 years
Parts	5 years	3 years
Labor	1 year	1 year

\*12 years full plus 3 years prorated.  
For complete details please refer to the full warranty at [Navieninc.com](http://Navieninc.com).



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 Navien Canada, Inc. 555 Hanlan Rd., Unit 7 Vaughan, ON L4L 4R8 800-519-8794 [navieninc.ca](http://navieninc.ca)

