

# QuickFacts



## NCB-H Series Combi-boilers

### Ratings & Specifications

|  | Model                        |               |               |               |               |
|--|------------------------------|---------------|---------------|---------------|---------------|
|  | NCB-190/060H                 | NCB-190/080H  | NCB-240/110H  | NCB-240/130H  | NCB-250/150H  |
|  | <b>Product Approvals</b>     |               |               |               |               |
| <b>CSA</b>                             | Yes                          | Yes           | Yes           | Yes           | Yes           |
| <b>SCAQMD 1146.2</b><br>(NOx, <20 ppm) | Yes                          | Yes           | Yes           | Yes           | Yes           |
| <b>Low lead</b><br>(<0.25%, DHW only)  | Yes                          | Yes           | Yes           | Yes           | Yes           |
| <b>ASME</b>                            | Yes "H" stamp                | Yes "H" stamp | Yes "H" stamp | Yes "H" stamp | Yes "H" stamp |
| <b>AHRI Number</b>                     | 205661696                    | 205661697     | 205400817     | 205400818     | 205400819     |
| <b>Energy Star</b>                     | Yes                          | Yes           | Yes           | Yes           | Yes           |
|  | <b>Space Heating Ratings</b> |               |               |               |               |
| <b>AFUE, %</b>                         | 95.0                         | 95.0          | 95.0          | 95.0          | 95.0          |
| <b>Heating Capacity, BTU/H</b>         | 56,000                       | 74,000        | 102,000       | 120,000       | 138,000       |

### Applications

| Air Handler   | Closed Loop Hydronic Heating Systems |
|---|--------------------------------------|
| For NCB-H technical drawings of specific installations and requirements please visit <a href="http://NavienInc.com">NavienInc.com</a> |                                      |

### Heating Input Ranges

| Model        | Heating (BTU/H) | DHW (BTU/H)    |
|--------------|-----------------|----------------|
| NCB-190/060H | 11,000–60,000   | 10,700–160,000 |
| NCB-190/080H | 11,000–80,000   |                |
| NCB-240/110H | 13,000–110,000  | 13,300–199,900 |
| NCB-240/130H | 13,000–130,000  |                |
| NCB-250/150H | 14,000–150,000  | 14,000–210,000 |

### Temperature Range Settings

| Item          | Temperature Range °F (°C) | Remarks   |
|---------------|---------------------------|---|
| Space Heating | Supply 77–185 (25–85)     | Actual supply and return temperatures vary depending on the selected outdoor reset curve. |
|               | Return 68–158 (20–70)     |   |
| DHW           | 86–140 (30–60)            |   |

### Warranty

| Type           | Residential Single Family Use Only |
|----------------|------------------------------------|
| Heat exchanger | 10 year                            |
| Parts*         | 5 year                             |
| Labor          | 1 year                             |

\*Includes DHW flat plate HX.

### Product Features

DUAL SS HX FOR HEATING & SEPARATE SS HX FOR DHW

TDR UP TO 11:1 HTG 15:1 DHW

2" VENT UP TO 65 FEET & 1/2" GAS UP TO 24 FEET

NG OR LP FIELD GAS CONVERTIBLE

3 ZONES VALVES or PUMPS

ADVANCED USER INTERFACE

AFUE 95.0%

### NCB-H: The Inside Story

- 2" air intake venting (including schedule 40 PVC)
- Pressure relief valve adapter
- Heavy duty fan and motor
- Dual Venturi for easy field gas conversions from NG to LP
- Powder-coated enamel metal housing
- Negative pressure regulating gas valve

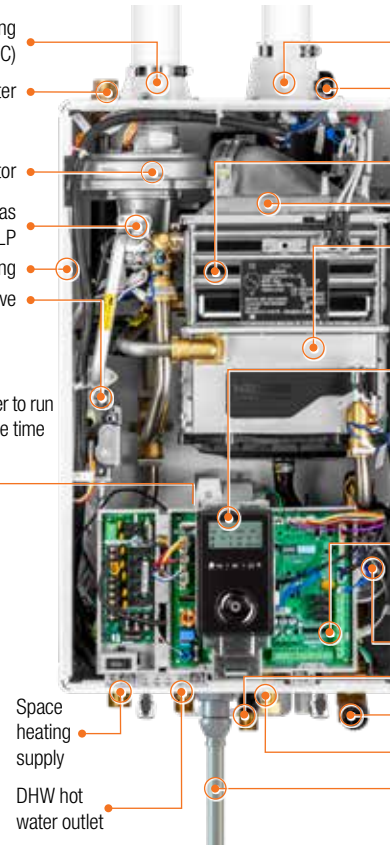
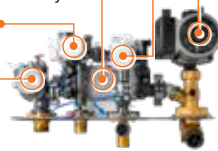
#### New built-in DHW module now with higher performance

Navien's NCB-H can generate enough hot water to run up to 3 showers and a dishwasher at the same time

DHW module is easily accessible behind circuitry/control panel

- Integrated boiler pump
- Flow adjustment valve
- DHW stainless steel heat exchanger. Up to 5.4 GPM @ 70°F temp. rise. The highest flow rate in the industry

- Mixing valve
- 3-way valve



- 2" venting up to 65' (including schedule 40 PVC)
- Vent Installation Detector (VID)

- Primary stainless steel heat exchanger
- Fully modulating metal fiber premix burner
- Secondary stainless steel heat exchanger

#### Advanced user interface with Setup Wizard

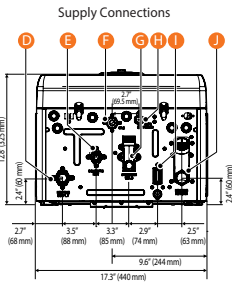
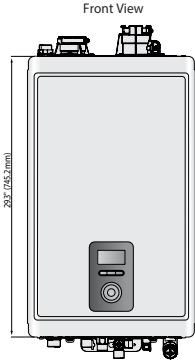
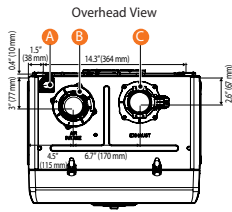
Navien's new backlit control panel is simple and intuitive to use with its plain text display and an innovative click wheel that improves usability for all information input

#### Built-in control for 3-zone pumps or 3-zone valves

Connections are powered, not just dry contact relays. The supplied power by PCB board is 120VAC for zone pumps and 24VAC for zone valves

- Integrated boiler pump
- DHW cold water inlet
- Space heating return
- Auto feeder inlet (make-up water)
- 1/2" gas pipe capable up to 24'

## Dimensions



- Connection Size**
- A Pressure Relief Valve Adapter  $\varnothing$  3/4"
  - B Air Intake  $\varnothing$  2"
  - C Exhaust  $\varnothing$  2"
  - D Heating Supply  $\varnothing$  1"
  - E DHW Hot Water Outlet  $\varnothing$  3/4"
  - F Gas Supply Inlet  $\varnothing$  3/4"
  - G DHW Cold Water Inlet  $\varnothing$  3/4"
  - H Auto Feeder Inlet (Make-up Water)  $\varnothing$  1/2"
  - I Condensate Outlet  $\varnothing$  1/2"
  - J Heating Return  $\varnothing$  1"

## Ratings & Specifications

| Model Number <sup>1</sup> | Navien Condensing Boiler Space Heating Ratings |         |                                       |  | Other Specifications  |                |  |
|---------------------------|--|---------|---------------------------------------|--|-----------------------|----------------|--|
|                           | Heating Input (BTU/H)                          |         | Heating Capacity <sup>2</sup> (BTU/H) | Net AHRI Rating Water <sup>3</sup> (BTU/H) | AFUE <sup>2</sup> (%) | Water Pressure | Water Connection Size (Supply, Return) |
|                           | Min  | Max     |                                       |  |                       |                |  |
| NCB-190/060H              | 11,000   | 60,000  | 56,000                                | 49,000                                     | 95.0                  | 12-30 psi      | 1" NPT                                 |
| NCB-190/080H              | 11,000   | 80,000  | 74,000                                | 64,000                                     |                       |                |  |
| NCB-240/110H              | 13,000   | 110,000 | 102,000                               | 89,000                                     |                       |                |  |
| NCB-240/130H              | 13,000   | 130,000 | 120,000                               | 104,000                                    |                       |                |  |
| NCB-250/150H              | 14,000   | 150,000 | 138,000                               | 120,000                                    |                       |                |  |

<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.

| Navien Condensing Boiler Domestic Hot Water Ratings |                       |         | Other Domestic Hot Water Specifications |                             |   |                     |          |
|---|-----------------------|---------|---|-----------------------------|---|---------------------|----------|
| Model Number  | Input Ratings (BTU/H) |         | Water Pressure PSI                      | Minimum Flow Rate GPM (L/m) | Flow Rate 45°F (25°C) Temp Rise GPM (L/m) | DHW Connection Size |          |
|   | Min                   | Max     |   |                             |   | Inlet               | Outlet   |
| NCB-190/060H  | 10,700                | 160,000 | 15-150                                  | 0.5 (1.9)                   | 6.4 (24.2)                                | 3/4" NPT            | 3/4" NPT |
| NCB-190/080H  |                       |         |   |                             |   |                     |          |
| NCB-240/110H  | 13,300                | 199,900 |   |                             | 7.9 (30.0)                                |                     |          |
| NCB-240/130H  |                       |         |   |                             |   |                     |          |
| NCB-250/150H  | 14,000                | 210,000 |   |                             | 8.4 (31.8)                                |                     |          |

| Item                                      | Specifications   |  |                        |  |
|---|--|--|------------------------|--|
|   | NCB-190/060H<br>NCB-190/080H   | NCB-240/110H<br>NCB-240/130H   | NCB-250/150H           |  |
| Dimensions                                | 17.3" W x 29.3" H x 12.8" D  |  |                        |  |
| Boiler weight                             | Empty  | 87 lbs (40 kg)   | 96 lbs (44 kg)         |  |
|   | With water   | 93 lbs (42 kg)   | 102 lbs (46 kg)        |  |
| Installation type                         | Indoor wall-hung   |  |                        |  |
| Venting type                              | Forced draft direct vent   |  |                        |  |
| 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             | -0.01" WC to -0.31" WC   | -0.06" WC to -0.24" WC   | -0.06" WC to -0.26" WC |  |
| Propane gas manifold pressure             | -0.04" WC to -0.33" WC   | -0.06" WC to -0.26" WC   | -0.06" WC to -0.28" WC |  |
| Gas connection size                       | 3/4" NPT   |  |                        |  |
| Power supply                              | Main supply  | 120V AC, 60Hz  |                        |  |
|   | Maximum power consumption  | Up to 15 amperes   |                        |  |
| Materials                                 | Casing   | Cold-rolled carbon steel   |                        |  |
|   | Heat exchangers  | Stainless steel  |                        |  |
| Venting                                   | Exhaust  | 2" or 3" PVC, CPVC, approved polypropylene<br>2" or 3" special gas vent type BH (Class III, A/B/C)<br>2" or 3" stainless steel |                        |  |
|   | Intake   | 2" or 3" PVC, CPVC, polypropylene<br>2" or 3" special gas vent type BH (Class III, A/B/C)<br>2" or 3" stainless steel          |                        |  |
|   | Vent clearance   | 0" to combustibles   |                        |  |
| Safety devices                            | Flame Rod, APS, Ignition operation detector, water temperature high limit switch, exhaust temperature high limit sensor, water pressure sensor, burner high limit fuse, vent installation detector |  |                        |  |

| DHW Temp Rise °F (°C) | DHW Flow Rates GPM (L/m)     |                              |              |  |
|-----------------------|------------------------------|------------------------------|--------------|--|
|                       | NCB-190/060H<br>NCB-190/080H | NCB-240/110H<br>NCB-240/130H | NCB-250/150H |  |
| 35 (19)               | 8.2 (31.1)                   | 10.4 (39.5)                  | 10.8 (40.9)  |  |
| 40 (22)               | 7.2 (27.3)                   | 9.0 (34.1)                   | 9.5 (35.8)   |  |
| 45 (25)               | 6.4 (24.2)                   | 7.9 (30.0)                   | 8.4 (31.8)   |  |
| 50 (28)               | 5.8 (21.8)                   | 7.2 (27.3)                   | 7.6 (28.6)   |  |
| 55 (31)               | 5.2 (19.8)                   | 6.6 (25.0)                   | 6.9 (26.0)   |  |
| 60 (33)               | 4.8 (18.2)                   | 6.0 (22.7)                   | 6.3 (23.8)   |  |
| 67 (37)               | 4.3 (16.3)                   | 5.4 (20.4)                   | 5.6 (21.4)   |  |
| 70 (39)               | 4.1 (15.6)                   | 5.1 (19.3)                   | 5.4 (20.4)   |  |
| 77 (43)               | 3.7 (14.2)                   | 4.7 (17.8)                   | 4.9 (18.6)   |  |
| 80 (44)               | 3.6 (13.6)                   | 4.5 (17.0)                   | 4.7 (17.9)   |  |
| 85 (47)               | 3.4 (12.8)                   | 4.2 (15.9)                   | 4.4 (16.8)   |  |
| 90 (50)               | 3.2 (12.1)                   | 4.0 (15.1)                   | 4.2 (15.9)   |  |
| 100 (56)              | 2.9 (10.9)                   | 3.6 (13.6)                   | 3.8 (14.3)   |  |

| Model Transition   |  |
|--|--|
| Discontinued NCB-E   | New NCB-H  |
| <b>NCB-150E</b><br>DHW: 12,000–120,000 BTU/H<br>HTG: 60,000 BTU/H  | <b>NCB-190/060H</b><br>DHW: 10,700–160,000 BTU/H<br>HTG: 60,000 BTU/H  |
| <b>NCB-180E</b><br>DHW: 14,000–150,000 BTU/H<br>HTG: 80,000 BTU/H  | <b>NCB-190/080H</b><br>DHW: 10,700–160,000 BTU/H<br>HTG: 80,000 BTU/H  |
| <b>NCB-210E</b><br>DHW: 18,000–180,000 BTU/H<br>HTG: 100,000 BTU/H | <b>NCB-240/110H</b><br>DHW: 13,300–199,900 BTU/H<br>HTG: 110,000 BTU/H |
| <b>NCB-240E</b><br>DHW: 18,000–199,900 BTU/H<br>HTG: 120,000 BTU/H | <b>NCB-240/130H</b><br>DHW: 13,300–199,900 BTU/H<br>HTG: 130,000 BTU/H |
| <b>AN INDUSTRY FIRST</b>   |  |
|  | <b>NCB-250/150H</b><br>DHW: 14,000–210,000 BTU/H<br>HTG: 150,000 BTU/H |

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.

## Accessories

|  |  |   |  |  |  |                                |   |  |  |   |   |
|--|--|---|--|--|--|--------------------------------|---|--|--|---|---|
|  |  |   |  |  |  |                                |   |  |  |   |   |
| NaviLink™<br>Wi-Fi Control<br>PBCM-AS-001<br>NaviLink™<br>Cable<br>GXXX001659<br>NaviLink Lite<br>Wi-Fi Control<br>1 unit<br>PBCM-AS-002 | Combi-boiler<br>Primary<br>Manifold Kit<br>30026576B | Residential<br>Neutralizer<br>(V2)<br>(1 unit)<br>GXXX002212<br>Residential<br>Replacement<br>Media<br>GXXX001323 | Light<br>Commercial<br>Neutralizer<br>(up to 6 units)<br>GXXX001324<br>Light<br>Commercial<br>Replacement<br>Media<br>GXXX001328 | PeakFlow S<br>Scale Prevention<br>System<br>GPWC110001AC001<br>PeakFlow S<br>Replacement Media<br>GWFC110GD001 | NaviCirc™<br>Recirculation<br>Valve<br>NaviCirc™<br>PFFW-<br>SXX-001<br>NaviCirc™ Kit<br>30022965A | Cascade<br>Cable<br>GXXX000546 | Zone Pump<br>Controller<br>2 Zones<br>PFMZ-02P-001<br>3 Zones<br>PFMZ-03P-001<br>4 Zones<br>PFMZ-04P-001<br>6 Zones<br>PFMZ-06P-001 | Universal<br>Temperature<br>Sensor<br>GXXX001769 | Common Vent<br>Collar Kit<br>30014367B<br>Includes<br>cascade cable<br>(GXXX000546),<br>common vent<br>collar damper and<br>VID jumper cable | NaviClean™<br>Magnetic<br>Filter for<br>Boilers<br>GXXX001727 | Ready-Link® Rack<br>Base (V3) and<br>Add-on Rack(s)<br>Base (V3)<br>GFFMKDIZUS-005<br>Add-on (V3)<br>GFFMKDIZUS-006 |



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