BRYAN "FLEXIBLE WATER TUBE"

HE-CLM SERIES WATER BOILER

900,000 TO 3,000,000 BTUH
FORCED DRAFT GAS FIRED

HE-CLM300-W-FDG

BRYAN STEAM®

Originators of the "Flexible Water Tube" design

Low initial cost, reliable operating efficiency deliver substantial return on investment

- True “flexible water tube” design guaranteed shock free
- Longer service life with better performance
- Full seven sq ft of heating surface per BHP
- Quality construction features
  - Heavy steel boiler frame, built and stamped in accordance with the appropriate ASME Boiler Code.
  - Large volume water leg downcomers promote rapid internal circulation, temperature equalization and efficient heat transfer.
  - Bryan bent water tubes are flexible, individually replaceable without welding or rolling. Never more than two tube configurations.
  - Boiler tube and furnace area access panel: heavy gauge steel casing with 2" high temperature ceramic fiber insulation, bolted and tightly sealed to boiler frame.
  - Heavy gauge steel boiler jacket with rust-resistant zinc coating and enamel finish, insulated with 1½" fiberglass to ensure exceptionally cool outer surface.
  - Water side interior accessible for cleanout and inspection, front and rear openings, upper and lower drums.
  - Steel plate boiler base with lightweight, high temperature insulating firebrick combustion chamber, designed for maximum combustion efficiency.

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Bryan HE-CLM Series Boiler Specifications

Bryan HE-CLM Series Boiler Specifications

BOILER MODEL	INPUT MBH (KW)	OUTPUT @ 85% EFFICIENCY[1]		HTG.SURFACE SQ.FT.(M^2)	APPROX. SHIP LBS. (KG)
		MBH (KW)	HP (KW)		
HE-CLM90	900 (264)	765 (224)	23 (224)	171 (15.9)	2,110 (957)
HE-CLM120	1,200 (352)	1,020 (299)	30 (298)	227 (21.1)	2,400 (1,089)
HE-CLM150	1,500 (440)	1,275 (374)	38 (374)	282 (26.2)	2,860 (1,297)
HE-CLM180	1,800 (527)	1,530 (448)	46 (448)	338 (31.4)	3,200 (1,452)
HE-CLM210	2,100 (615)	1,785 (523)	53 (523)	394 (36.6)	3,740 (1,697)
HE-CLM240	2,400 (703)	2,040 (598)	61 (598)	451 (41.9)	4,200 (1,905)
HE-CLM270	2,700 (791)	2,295 (672)	69 (672)	506 (47.0)	4,740 (2,150)
HE-CLM300	3,000 (879)	2,550 (747)	76 (747)	564 (52.4)	5,175 (2,348)

NOTES : (1) Output and horsepower based on an average natural gas combustion efficiency of 85%.

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High efficiency hot water boilers for commercial and industrial applications

- All Bryan HE-CLM Series boilers offer these operating and performance features

  - The Bryan Flexible Tube
    - Bryan's exclusive "Flexible Tube" design eliminates the possibility of damage from so-called "thermal shock." Tubes are easily removable and replaceable, without welding or rolling, eliminating long, expensive downtime should repairs ever be required.
  - Guaranteed 85% Efficiency
    - With HE-CLM Series Boilers, you get a guaranteed 85% combustion efficiency resulting from a uniquely designed integrated extended surface heat extractor.
    - HE-CLM Boilers offer high operating efficiency – at all normal operation temperatures – without the complications of condensation concerns.
  - Accessibility of Tube Area
    - Inner panel provides easy and complete access to boiler tube area. All panels are heavily insulated and sealed to boiler frame. All access is from only one side.

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High efficiency hot water boilers for commercial and industrial applications

- All Bryan HE-CLM Series boilers offer these operating and performance features
  - Compact design, minimum floor space
    - With our compact water tube design, the overall size of the unit is less than most other types of boilers, yet maintains a full seven square feet of heating surface area per HP. Needing only 24" for tube removal, and only on one side of the boiler, the HE-CLM Series boiler occupies very little space in the boiler room. This can result in considerable savings in building costs. Pressurized firing permits minimum sized breaching and vent.
  - Low furnace pressure
    - The design of the HE-CLM boiler allows for lower pressure in the furnace which allows for a smaller efficient motor on the burner and resultant energy savings.
  - Thermal blend water return
    - Bryan's unique "thermal blend" return mixes cooler return water with warmer boiler water abridging it to design operating temperatures. An injector tube directs the "mixed" water flow through the downcomer to the lower header and heating surfaces at a temperature above possible condensing conditions. This reduces the possibility of "cold spots" and damage from corrosive condensation.
  - Positive internal circulation
    - Each pass of the Bryan water tube slopes upward. This configuration, along with the large volume downcomer water legs, provides the extremely rapid natural thermal internal circulation, promoting both high efficiency of heat transfer and uniform temperature throughout the boiler. Eliminating stress damage caused by unequal temperature distribution is especially important for heating systems, particularly where intermittent or continuous low temperature water returns may be encountered.

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Guaranteed efficiency and easy maintenance assure low cost operation

- All Bryan HE-CLM Series boilers offer enhanced burner controls and performance options
  - Linkageless Burner Air Fuel Ratio Control Systems
    - Require minimal adjustments unlike mechanically linked systems resulting in maximum combustion efficiency.
    - Independent fuel curves on dual fuel boilers for maximum efficiency on both fuels.
    - Offers increased turndown to prevent short cycling and maximum fuel efficiency.
    - Can combine with VFD blower motor control option to maximize energy savings.
  - Enhanced Communications To Building Management Systems
    - The Bryan Universal Communications Gateway (UCG) provides the protocol interface between the boiler/burner package and the building management system. UCG and boilers are preconfigured at the factory for the specified protocol.
    - Supports Modbus RTU, BACnet MSTP, BACnet IP, Metasys N2 Modbus TCP and LonWorks protocols.

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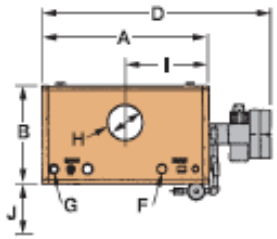
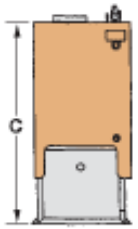
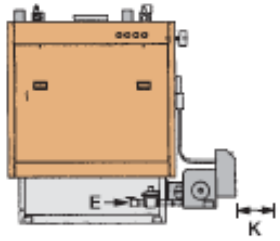
Water Boiler Dimensions & Data



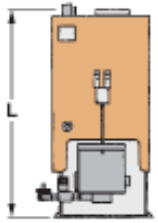
PLAN VIEW



REAR VIEW



LEFT SIDE VIEW



FRONT VIEW

	BOILER DIMENSIONS in inches (cm)											
	A	B	C	D	E*	F	G	H	I	J	K	L
BOILER MODEL NUMBER	Length Of Jacket	Width Outside Jacket	Height Over Jacket	Overall Length	Gas Train Connection	Supply Nozzle	Return Nozzle	Flue Size	Flue Location	Min. Tube Removal Clearance	Clearance for Servicing Burner	Floor to Flow Nozzle
HE-CLM90-W	41 7/16 (105.24)	34 5/8 (87.94)	72 1/16 (180.03)	69 7/16 (176.98)	1 NPT (2.54)	3 NPT (7.62)	3 NPT (7.62)	10 (25.40)	20 11/16 (52.54)	30 (76.2)	36 (91.44)	76 3/16 (193.51)
HE-CLM120-W	50 11/16 (128.74)	34 5/8 (87.94)	72 1/16 (180.03)	78 11/16 (199.86)	1¼ NPT (3.18)	3 NPT (7.62)	3 NPT (7.62)	10 (25.40)	25 5/16 (64.29)	30 (76.2)	36 (91.44)	76 3/16 (193.51)
HE-CLM150-W	59 11/16 (151.60)	34 5/8 (87.94)	72 1/16 (180.03)	87 11/16 (212.72)	1½ NPT (3.81)	3 NPT (7.62)	3 NPT (7.62)	12 (30.48)	29 13/16 (75.72)	30 (76.2)	36 (91.44)	76 3/16 (193.51)
HE-CLM180-W	69 1/8 (175.57)	34 5/8 (87.94)	72 1/16 (180.03)	97 1/8 (246.69)	2 NPT (5.08)	3 NPT (7.62)	3 NPT (7.62)	14 (35.56)	34 9/16 (87.78)	30 (76.2)	36 (91.44)	76 3/16 (193.51)
HE-CLM210-W	78 3/8 (199.07)	34 5/8 (87.94)	72 1/16 (180.03)	106 3/8 (270.19)	2 NPT (5.08)	3 NPT (7.62)	3 NPT (7.62)	14 (35.56)	39 3/16 (99.53)	30 (76.2)	36 (91.44)	76 3/16 (193.51)
HE-CLM240-W	88 (223.52)	34 5/8 (87.94)	72 1/16 (180.03)	116 (294.64)	2 NPT (5.08)	3 NPT (7.62)	3 NPT (7.62)	16 (40.64)	44 (111.76)	30 (76.2)	36 (91.44)	76 3/16 (193.51)
HE-CLM270-W	97 (246.38)	34 5/8 (87.94)	72 1/16 (180.03)	125 (317.50)	2 NPT (5.08)	3 NPT (7.62)	3 NPT (7.62)	16 (40.64)	48 1/2 (123.19)	30 (76.2)	36 (91.44)	76 3/16 (193.51)
HE-CLM300-W	106 5/8 (270.82)	34 5/8 (87.94)	72 1/16 (180.03)	134 5/8 (341.91)	2 1/2 NPT (6.35)	3 NPT (7.62)	3 NPT (7.62)	16 (40.64)	53 3/16 (40.64)	30 (76.2)	36 (91.44)	76 3/16 (193.51)

NOTE: * Gas train and control location dimensions will vary depending on job specifications and conditions.

Dimensions and specifications are subject to change without notice. Consult factory for certified dimensions.

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Water Boiler Vessel Pictures

HE-CLM On Left With Extended Heating Surface

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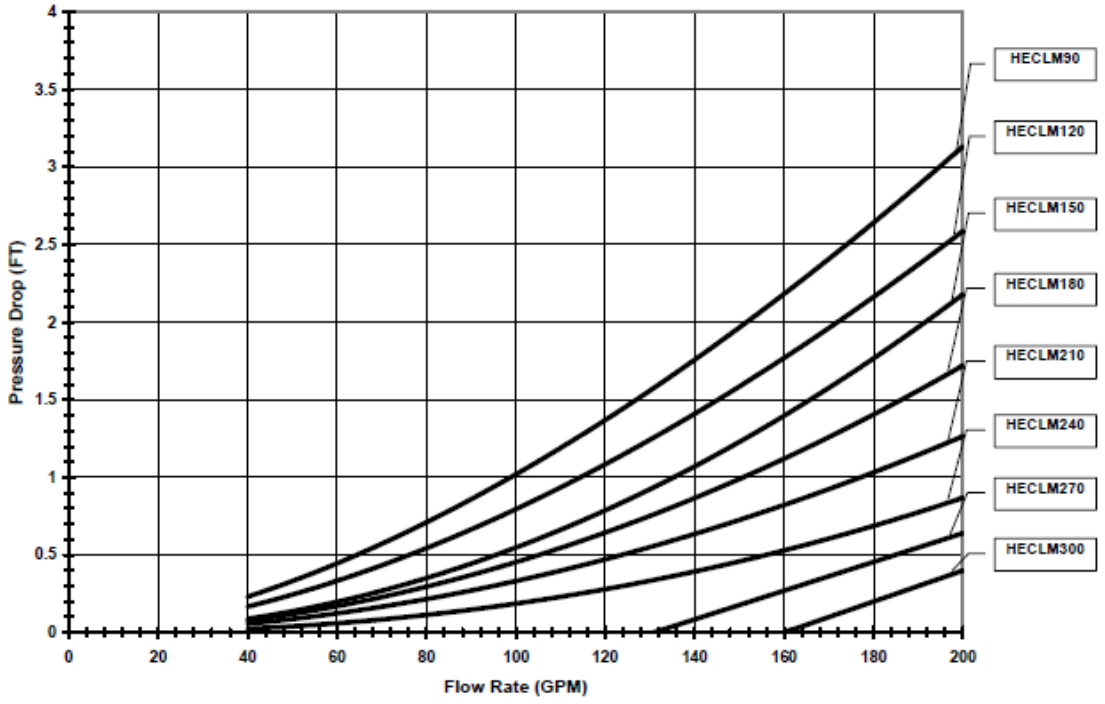
HE-CLM Pressure Drop Data

Bryan Steam, LLC
Engineering Section

HECLM Series
Pressure Drop Curves

Form 2268
1/14/2005



Notes: GPM = Boiler Output / (500 x delta T)

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