

Bryan "Flexible Water Tube"
CLM Series
Steam & Water Boilers

1,200,000 to 3,000,000 BTUH
Forced draft gas, oil or dual fuel fired



Water Boiler
CLM-300-W-FDG



Steam Boiler
CLM-180-S150-FDGO



BRYAN® BOILERS

Originators of the "Flexible Water Tube" design





High efficiency hot water and steam boilers for commercial and industrial applications

Bryan flexible tube boilers are ideally suited for both hot water and steam space heating systems as well as either high or low pressure process steam. In a range of sizes from 1,200,000 to 3,000,000 BTUH input, Bryan CLM series flexible tube boilers are ideal for many commercial, institutional and industrial applications. These include healthcare facilities; schools; apartments; churches; office buildings; correctional facilities; airports; sewage treatment plants; golf, tennis and fitness clubs. Hospitals, dairies, restaurants, laundries, dry cleaners, food processing, tire recapping and metal plating are just a few of the many applications.

All Bryan boilers are built in accordance with the requirements of the ASME Boiler and Pressure Vessel Code.

Efficient "Flexible Water Tube" design

The Bryan bent water tube provides rapid internal circulation—for maximum heat transfer and operating efficiency.

Easily replaceable tubes

Tubes are easily removable and replaceable without welding or rolling. Little service space is required.

No "Thermal Shock"

The flexibility of the bent water tube design eliminates all possible damage from "Thermal Shock" and from stresses caused by poor or unequal internal circulation. This is particularly important with forced hot water heating systems designed for higher temperatures and greater temperature drops.



Steam Boilers: Section IV or I

Steam release area

Large, full-size steam drum provides for dry steam and stable water level.

High or low pressure construction

Boiler is constructed as standard for 15 psi or 150 psi maximum working pressure. Also available for higher pressures to 300 psi.

Water Boilers: Section IV

High or low pressure construction

Boiler is constructed as standard for 160 psi maximum working pressure at 230°F operating temperature and 250°F design temperature. Also available for higher pressures to 250 psi, at 285°F operating temperature and 300°F design temperature.

Natural internal circulation

The water tube design and the large downcomer legs provide adequate internal circulation without concern over exterior pumping conditions. Low pressure drop through boiler.

Compact — minimum floor space

Requires less floor space than most boilers, minimum boiler room size. Since the tubes can be removed from one side, the boilers are available with right or left hand construction for common tube removal, further minimizing space needs.

Shipped completely assembled and wired. Units can also be shipped "Knocked Down" for on-site assembly.

Bryan CLM Series Boiler Specifications

BOILER MODEL ⁽¹⁾	INPUT MBH (KW)	OUTPUT @ 80% EFFICIENCY ⁽²⁾		OUTPUT @ 81.5% EFFICIENCY ⁽³⁾		STEAM OUTPUT ⁽⁴⁾ LBS/HR (KG/HR)	HTG. SURFACE SQ. FT. (M ²)	APPROX. SHIP LBS. (KG)
		MBH (KW)	HP (KW)	MBH (KW)	HP (KW)			
CLM120-W	1,200 (352)	960 (281)	29 (281)	978 (287)	29 (287)	—	145 (13.5)	2,250 (1,021)
CLM120-S	1,200 (352)	960 (281)	29 (281)	—	—	990 (449)	145 (13.5)	2,450 (1,111)
CLM150-W	1,500 (440)	1,200 (352)	36 (352)	1,223 (358)	37 (358)	—	180 (16.7)	2,675 (1,213)
CLM150-S	1,500 (440)	1,200 (352)	36 (352)	—	—	1,237 (561)	180 (16.7)	2,850 (1,293)
CLM180-W	1,800 (527)	1,440 (422)	43 (422)	1,467 (430)	44 (430)	—	215 (20.0)	2,975 (1,350)
CLM180-S	1,800 (527)	1,440 (422)	43 (422)	—	—	1,485 (674)	215 (20.0)	3,250 (1,474)
CLM210-W	2,100 (615)	1,680 (492)	50 (492)	1,712 (502)	51 (502)	—	251 (23.3)	3,475 (1,576)
CLM210-S	2,100 (615)	1,680 (492)	50 (492)	—	—	1,732 (786)	251 (23.3)	3,650 (1,656)
CLM240-W	2,400 (703)	1,920 (563)	57 (563)	1,956 (573)	58 (573)	—	287 (26.7)	3,900 (1,769)
CLM240-S	2,400 (703)	1,920 (563)	57 (563)	—	—	1,979 (898)	287 (26.7)	4,050 (1,837)
CLM270-W	2,700 (791)	2,160 (633)	64 (633)	2,201 (645)	66 (645)	—	322 (29.9)	4,400 (1,996)
CLM270-S	2,700 (791)	2,160 (633)	64 (633)	—	—	2,227 (1,010)	322 (29.9)	4,900 (2,223)
CLM300-W	3,000 (879)	2,400 (703)	72 (703)	2,445 (716)	73 (716)	—	360 (33.5)	4,800 (2,177)
CLM300-S	3,000 (879)	2,400 (703)	72 (703)	—	—	2,474 (1,122)	360 (33.5)	4,925 (2,234)

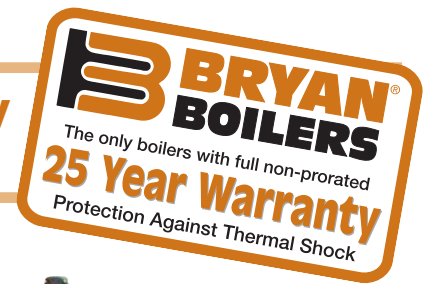
NOTES: (1) W = Water / S = Steam

(2) Output and horsepower based on boiler industry standard of 80% of input.

(3) Output and horsepower based on an average natural gas combustion efficiency of 81.5% for hot water boiler. Actual combustion efficiencies for oil will be higher.

(4) Lbs. steam per hour from and at 212°F.

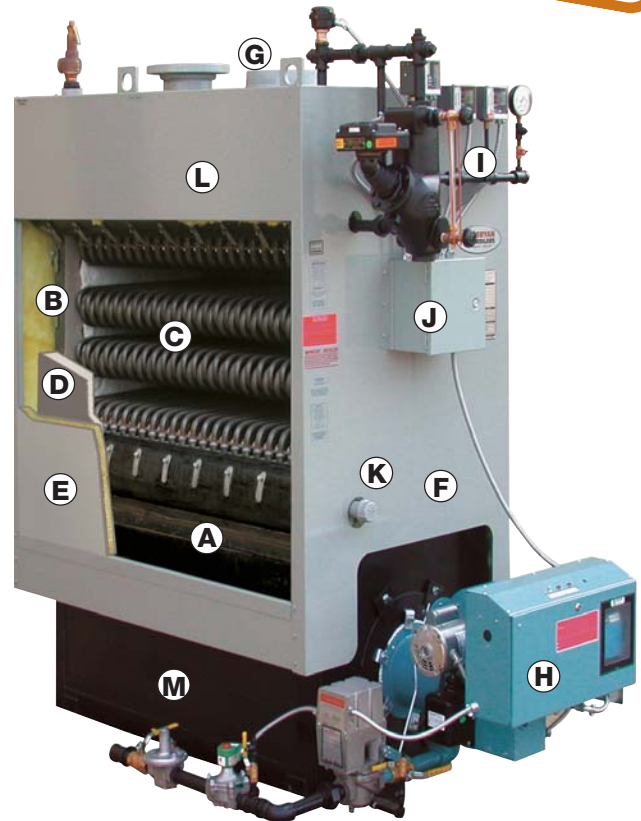
Low initial cost, high operating efficiency deliver substantial return on investment



- True “flexible water tube” design guaranteed shock free
- Longer service life with superior performance
- Full five sq ft of heating surface per BHP

Quality Construction Features

- A.** Heavy steel boiler frame, built and stamped in accordance with the appropriate ASME Boiler Code.
- B.** Large volume water leg downcomers promote rapid internal circulation, temperature equalization and efficient heat transfer.
- C.** Bryan bent water tubes are flexible, individually replaceable without welding or rolling. Never more than two tube configurations.
- D.** Boiler tube and furnace area access panel: heavy gauge steel casing with 2" high temperature ceramic fiber and insulation, bolted and tightly sealed to boiler frame.
- E.** Jacket access panels make the interior of the boiler easily accessible for service and inspection.
- F.** Heavy gauge steel boiler jacket with rust-resistant zinc coating and attractive enamel finish, insulated with 1 1/2" fiberglass to insure exceptionally cool outer surface.
- G.** Minimum sized flue vent.
- H.** Forced draft, flame retention head type burner. Efficient combustion of oil or gas, quiet operation.
- I.** All controls, gauges, relief valve(s) are factory installed and wired and easily accessible for servicing.
- J.** Electrical box: all controls installed and connected to terminal strip.
- K.** Water side or steam side interior accessible for cleanout



and inspection, front and rear openings, upper and lower drums.

L. Steam boilers with extra large drum with high steam release area ensure stable water level and dry steam.

M. Steel plate boiler base with lightweight, high temperature insulating firebrick combustion chamber, designed for maximum combustion efficiency.

Bryan CLM Series Boilers Standard and Optional Equipment

STANDARD EQUIPMENT FURNISHED

Water Boiler

Combination thermometer and pressure gauge, ASME-rated boiler relief valve, water temperature control (240°F max std.), high limit control, probe LWCO.

Steam Boiler

Steam pressure gauge, steam pressure control, combination low water cutoff and pump control, auxiliary low water cutoff, high limit pressure control, ASME-rated boiler relief valve, water glass set.

Straight gas fired unit

Electronic combustion safety control, automatic operating gas valve, safety gas valve, pilot solenoid valve, pilot ignition assembly, main manual gas shut-off valve, pilot cock, pilot and main gas pressure regulators, air safety

switch, control panel, all controls installed and wired.

Straight oil fired unit

Electronic combustion safety control, dual oil valves, oil ignition transformer, two-stage fuel unit, direct spark ignition of oil, oil nozzle assembly, control panel, all controls installed and wired.

Combination gas-oil unit

Electronic combustion safety control, automatic operating gas valve, safety gas valve, pilot solenoid valve, pilot ignition assembly, main manual gas shut-off valve, pilot cock, pilot and main gas pressure regulators, air safety switch, manual fuel selector switch, dual oil valves, gas pilot for both fuels, two-stage fuel unit, nozzle assembly, control panel, all controls installed and wired.

OPTIONAL EQUIPMENT:

1. Manual reset high limit control
2. Manual reset low water cutoff
3. Auxiliary low water cutoff
4. Combination low water cutoff and feeder
5. Alarm bells or horns
6. UL, CUL, CSD-1, FM, IRI or other insurance approved control systems
7. Control panel mounted on boiler
8. Indicating lights, as desired
9. Lead-lag systems for two or more boilers with or without outdoor reset control
10. Draft control system
11. Special construction: left hand, Knocked Down.

OPTIONAL CONSTRUCTION: Steam boiler

Optional construction to ASME Power Boiler Code requirements for pressure exceeding 150 psi to maximum of 300 psi design pressure.

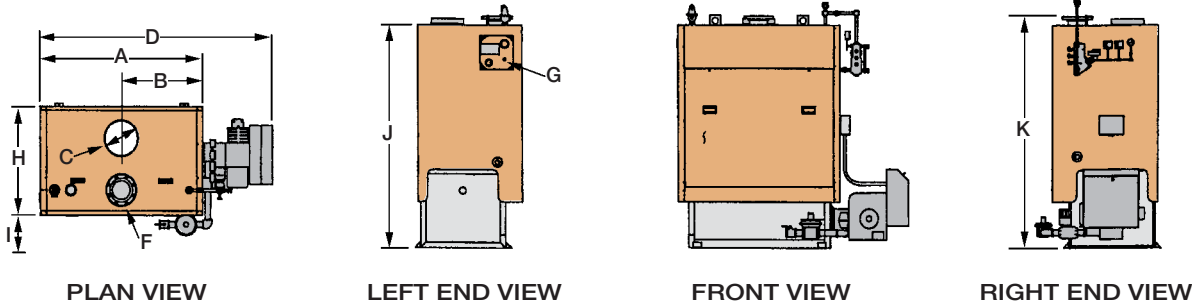
Hot water boiler

Optional construction to ASME Power Boiler Code requirements for temperatures exceeding 240° F and/or pressure exceeding 160 psi to maximum of 285° F operating and 300° F design temperature and 250 psi.

When ordering, please specify:

1. Boiler size
2. Supply and return temperatures required
3. Boiler relief valve setting
4. Type of fuel: natural, LP, or other gas and/or No. 2 oil
5. If gas, type, BTU content, specific gravity and pressure available
6. Electric power voltage, phase and frequency
7. Optional extra equipment or construction
8. Special approvals required (UL, CUL, CSD-1, FM, or IRI)
9. Altitude

Bryan CLM Series Steam & Hot Water Boilers



PLAN VIEW

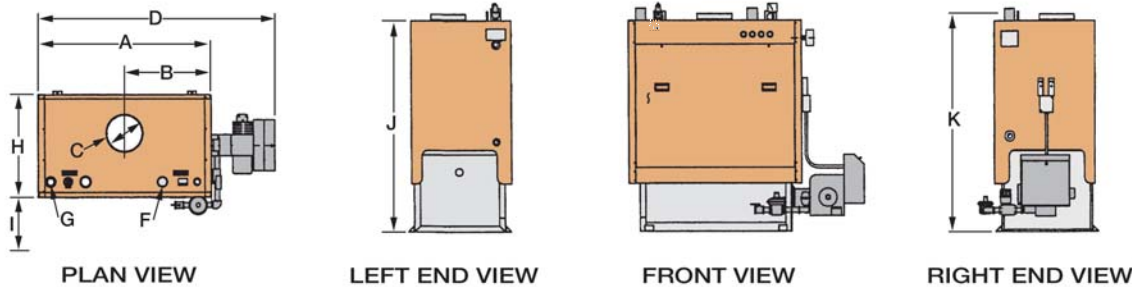
LEFT END VIEW

FRONT VIEW

RIGHT END VIEW

STEAM BOILER DIMENSIONS in inches (cm)

Boiler Model Number	A	B	C	D	E	F		G	H	I	J	K
	Length of Jacket	Flue Location	Flue Size	Overall Length	Gas Train Connection (Approx.)	Supply Nozzle 15 psi	Supply Nozzle 150 psi	Feed Conn.	Width Outside Jacket	Min. Tube Removal Clearance	Height Over Jacket	Floor to Flow Nozzle
CLM-120-S	50 ^{11/16} (128.74)	25 ^{11/32} (64.37)	10 (25.40)	78 ^{11/16} (199.86)	1 ^{1/4} NPT (3.18)	6 FLG (15.24)	3 NPT (7.62)	1 ^{1/2} NPT (3.81)	38 ^{3/8} (97.47)	30 (76.2)	79 ^{7/16} (201.76)	82 ^{5/8} (209.86)
CLM-150-S	59 ^{11/16} (151.60)	29 ^{27/32} (75.80)	12 (30.48)	87 ^{11/16} (222.72)	1 ^{1/2} NPT (3.81)	6 FLG (15.24)	3 NPT (7.62)	1 ^{1/2} NPT (3.81)	38 ^{3/8} (97.47)	30 (76.2)	79 ^{7/16} (201.76)	82 ^{5/8} (209.86)
CLM-180-S	69 ^{1/8} (175.57)	34 ^{9/16} (87.78)	14 (35.56)	97 ^{1/8} (246.69)	2 NPT (5.08)	6 FLG (15.24)	3 NPT (7.62)	1 ^{1/2} NPT (3.81)	38 ^{3/8} (97.47)	30 (76.2)	79 ^{7/16} (201.76)	82 ^{5/8} (209.86)
CLM-210-S	78 ^{3/8} (199.07)	39 ^{3/16} (99.53)	14 (35.56)	106 ^{3/8} (270.19)	2 NPT (5.08)	6 FLG (15.24)	3 NPT (7.62)	1 ^{1/2} NPT (3.81)	38 ^{3/8} (97.47)	30 (76.2)	79 ^{7/16} (201.76)	82 ^{5/8} (209.86)
CLM-240-S	88 (223.52)	44 (111.76)	16 (40.64)	116 (294.64)	2 NPT (5.08)	6 FLG (15.24)	3 NPT (7.62)	1 ^{1/2} NPT (3.81)	38 ^{3/8} (97.47)	30 (76.2)	79 ^{7/16} (201.76)	82 ^{5/8} (209.86)
CLM-270-S	97 (246.38)	48 ^{1/2} (123.19)	16 (40.64)	125 (317.50)	2 NPT (5.08)	6 FLG (15.24)	3 NPT (7.62)	1 ^{1/2} NPT (3.81)	38 ^{3/8} (97.47)	30 (76.2)	79 ^{7/16} (201.76)	82 ^{5/8} (209.86)
CLM-300-S	106 ^{5/8} (270.82)	53 ^{3/16} (135.41)	16 (40.64)	134 ^{5/8} (341.94)	2 ^{1/2} NPT (6.35)	6 FLG (15.24)	3 NPT (7.62)	1 ^{1/2} NPT (3.81)	38 ^{3/8} (97.47)	30 (76.2)	79 ^{7/16} (201.76)	82 ^{5/8} (209.86)



PLAN VIEW

LEFT END VIEW

FRONT VIEW

RIGHT END VIEW

WATER BOILER DIMENSIONS in inches (cm)

Boiler Model Number	A	B	C	D	E	F	G	H	I	J	K
	Length of Jacket	Flue Location	Flue Size	Overall Length	Gas Train Connection	Supply Nozzle	Return Nozzle	Width Outside Jacket	Min. Tube Removal Clearance	Height Over Jacket	Floor to Flow Nozzle
CLM-120-W	50 ^{11/16} (128.74)	25 ^{5/16} (64.29)	10 (25.40)	78 ^{11/16} (199.86)	1 ^{1/4} NPT (3.18)	3 NPT (7.62)	3 NPT (7.62)	34 ^{5/8} (87.94)	30 (76.2)	72 ^{1/16} (180.03)	76 ^{3/16} (193.51)
CLM-150-W	59 ^{11/16} (151.60)	29 ^{3/16} (75.72)	12 (30.48)	87 ^{11/16} (212.72)	1 ^{1/2} NPT (3.81)	3 NPT (7.62)	3 NPT (7.62)	34 ^{5/8} (87.94)	30 (76.2)	72 ^{1/16} (180.03)	76 ^{3/16} (193.51)
CLM-180-W	69 ^{1/8} (175.57)	34 ^{9/16} (87.78)	14 (35.56)	97 ^{1/8} (246.69)	2 NPT (5.08)	3 NPT (7.62)	3 NPT (7.62)	34 ^{5/8} (87.94)	30 (76.2)	72 ^{1/16} (180.03)	76 ^{3/16} (193.51)
CLM-210-W	78 ^{3/8} (199.07)	39 ^{3/16} (99.53)	14 (35.56)	106 ^{3/8} (270.19)	2 NPT (5.08)	3 NPT (7.62)	3 NPT (7.62)	34 ^{5/8} (87.94)	30 (76.2)	72 ^{1/16} (180.03)	76 ^{3/16} (193.51)
CLM-240-W	88 (223.52)	44 (111.76)	16 (40.64)	116 (294.64)	2 NPT (5.08)	3 NPT (7.62)	3 NPT (7.62)	34 ^{5/8} (87.94)	30 (76.2)	72 ^{1/16} (180.03)	76 ^{3/16} (193.51)
CLM-270-W	97 (246.38)	48 ^{1/2} (123.19)	16 (40.64)	125 (317.50)	2 NPT (5.08)	3 NPT (7.62)	3 NPT (7.62)	34 ^{5/8} (87.94)	30 (76.2)	72 ^{1/16} (180.03)	76 ^{3/16} (193.51)
CLM-300-W	106 ^{5/8} (270.82)	53 ^{3/16} (135.41)	16 (40.64)	134 ^{5/8} (341.91)	2 ^{1/2} NPT (6.35)	3 NPT (7.62)	3 NPT (7.62)	34 ^{5/8} (87.94)	30 (76.2)	72 ^{1/16} (180.03)	76 ^{3/16} (193.51)

Specifications subject to change without notice. Consult factory to consult on other boiler options.



Bryan Steam LLC — Leaders Since 1916

783 N. Chili Ave., Peru, Indiana 46970 U.S.A.

Phone: 765-473-6651 • Internet: www.bryanboilers.com

Fax: 765-473-3074 • E-mail: bryanboilers@iquest.net