



PROFIRE® XL SERIES BURNERS

37.8 TO 92.4 MMBTU/HR

**High turndown burner for large firetube and
watertube applications.**

Innovative Technology.

Superior performance a technician can trust.

The ProFire XL series, suitable for large firetube and watertube applications, is offered in two standard configurations; vertical and horizontal. It's unique and precise air metering system permits accurate air-to-fuel ratios for maximum combustion efficiency. Through the use of innovative technology, the XL series offers high turndown on natural gas and light oil.



Precise Oil Metering

A unique design feature on ProFire XL series air atomizing oil burners, a V-port oil flow control valve is used for maximum capacity and precise oil control.

Air & Steam Atomization

A remote air compressor module provides air atomization. The module includes C-B's rotary vane, pressure lubricated air compressor, air/oil lubricating reservoir, oil level indicator, inlet air filter, air pressure adjusting valve and air pressure gauge. Plant air and steam atomization are also available.

Parallel Positioning

Unlike the single point control, parallel positioning systems use independent actuators for precise and repeatable metering of fuel and combustion air, properly proportioning firing cycle rate, which maintains combustion efficiency and saves energy.

Hinged Rear Door

Provides easy access to the nozzle, scanner, pilot and diffuser for inspection or removal. No disconnection of fuel or power lines required.

High Turndown

Up to 10:1 turndown with natural gas and 8:1 with the low NOx option. High turndown allows for reduced heat loss due to short cycling, faster response times to meet load demands and less mechanical cycling.

Low Blower Motor HP

Cleaver-Brooks utilizes an air fan with an air foil blade design which increases blower efficiency and lowers the blower motor horsepower, thereby increasing year-round electrical utility savings.



Low-NOx Configurations

The ProFire XL series is offered in two standard configurations; vertical and horizontal. Vertical configurations support capacities ranging from 37.8 to 63.0 MMBTU, and horizontal configurations support capacities from 67.2 to 92.4 MMBTU. The standard and low-NOx vertical and horizontal configurations are capable of burning natural gas, propane gas, air atomized No. 2 oil, as well as combination gas/No. 2 oil. Full modulation operation is standard and a parallel positioning system is required for burner management and combustion control.

XL/ LNXL Burner



Available to <30 PPM NOx (LNXL)

1800/3600 RPM Combustion Fan

motor horsepower is based on NOx and capacity requirement

Air atomizing low pressure oil nozzle (steam atomization optional)

V-port oil flow control valve is used for maximum capacity and precise oil flow control

Parallel Positioning required for optimal control throughout the firing range

Hinged Rear Door and Access Panels for easy access to internal components

Gas Manifold on oil burners standard for easy upgrade to combination units

Combustion Air Fan efficient airfoil blade design smoothly lifts airflow over the entire blade, resulting in less motor horsepower requirement and significant noise reduction when compared to standard force draft fans

No. 2 Oil capability for back-up fuel (LNXL)

Emissions	Frame	Model Range	Boiler HP	Capacities		Mode of Operation	Fuel	Parallel Positioning
				MBH	GPH			
Uncontrolled	Size 1 - 3	378 - 924	900 - 2,200	37,800 - 92,400	270 - 660	Full Modulation	Gas, Oil, Comb.	Required
<30 PPM	Size 1 - 3	378 - 924	900 - 2,200	37,800 - 92,400	270 - 660	Full Modulation	Gas & Comb.	Required

Note: A parallel positioning system is required for burner management and combustion control, consult factory for options.

Capacities and Ratings

Uncontrolled Emissions Configuration (XLL, XLG, XLLG)

Burner Model Number & Frame Size	378-1	420-1	462-1	504-1	546-2	588-2	630-2	672-3	756-3	840-3	924-3
Gas Input (MBtu/hr)	37,800	42,000	46,200	50,400	54,600	58,800	63,000	67,200	75,600	84,000	92,400
Oil Input (US gph)	270	300	330	360	390	420	450	480	540	600	660
Boiler HP @ 80% Eff.	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,800	2,000	2,200
Blower Motor HP	30	40	50	60	60	75	75	75	100	100	100
Separate Compressor Motor HP	15	15	15	15	15	15	15	15	15	15	15
Furnace Pressure ("w.c.)	6	6	6	6	6	6	6	6	6	6	6
Standard Gas Train Pipe Size (in.)	3	3	3	3	3	4	4	4	4	4	4
Gas Pressure Required (PSI)	10	10	10	10	10	10	10	10	10	10	10

<30 PPM Low NOx Configuration (LNXLG, LNXLLG)

Burner Model Number & Frame Size	378-1	420-1	462-1	504-1	546-2	588-2	630-2	672-3	756-3	840-3	924-3
Gas Input (MBtu/hr)	37,800	42,000	46,200	50,400	54,600	58,800	63,000	67,200	75,600	84,000	92,400
Oil Input (US gph)	270	300	330	360	390	420	450	480	540	600	660
Boiler HP @ 80% Eff.	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,800	2,000	2,200
Blower Motor HP	40	50	60	75	75	75	100	100	125	125	150
Separate Compressor Motor HP	15	15	15	15	15	15	15	15	15	15	15
Furnace Pressure ("w.c.)	6	6	6	6	6	6	6	6	6	6	6
Standard Gas Train Pipe Size (in.)	3	3	3	3	3	4	4	4	4	4	4
Gas Pressure Required (PSI)	10	10	10	10	10	10	10	10	10	10	10
FGR Line Piping (in.)	14	14	14	16	16	16	16	18	18	20	20

Input is based on fuel Btu content and altitude of 2,000 feet or less. If altitude > 2,000 feet and < 8,000 feet, derate capacity 4% per 1,000 feet over 2,000. Consult factory for higher altitudes. Gas input is based on natural gas with 1,000 Btu/cu.ft., 0.60 gravity, 0" w.c. furnace pressure and the aforementioned conditions. Oil input based on 140,000 Btu/gal and the aforementioned conditions. Consult factory for 50Hz. applications. Contact the factory for shipping weight estimation.



Ultra-Low-NOx Configuration

The ProFire NTXL was designed and developed with a Flue Gas Recirculation system which has been proven to be the benchmark in the industry. Emissions reduction, fuel savings, performance, and reliability make the ProFire NTXL an excellent choice. The Cleaver-Brooks ProFire NTXL series burner offers natural gas, propane air mix, air atomized #2 oil, and combination gas and oil fuel options from 37.8 to 92.4 MMBTU per hour, with full modulation operation and parallel positioning for greater efficiency and cost savings. The ProFire NTXL is an ultra-low-NOx burner capable of less than 9 ppm NOx emissions.

ProFire NTXL



1800/3600 RPM Combustion Fan

motor horsepower is based on NOx and capacity requirement

Air atomizing low pressure oil nozzle (steam atomization optional)

V-port oil flow control valve is used for maximum capacity and precise oil flow control

Parallel Positioning required for optimal control throughout the firing range

Hinged Rear Door and Access Panels

for easy access to internal components

Gas Manifold on oil burners standard for easy upgrade to combination units

Combustion Air Fan efficient airfoil blade design smoothly lifts airflow over the entire blade, resulting in less motor horsepower requirement and significant noise reduction when compared to standard force draft fans

Available to <9 PPM NOx

No. 2 Oil capability for back-up fuel

Frame	Model Range	Boiler HP	Capacities		Mode of Operation	Fuel	Parallel Positioning
			MBH	GPH			
Size 1 - 3	378 - 924	900 - 2,200	37,800 - 92,400	270 - 660	Full Modulation	Gas, Comb.	Required

Note: A parallel positioning system is required for burner management and combustion control, consult factory for options.

Capacities and Ratings

Uncontrolled Emissions Configuration (XLL, XLG, XLLG)

Burner Model Number & Frame Size	378-1	420-1	462-1	504-1	546-2	588-2	630-2	672-3	756-3	840-3	924-3
Gas Input (MBtu/hr)	37,800	42,000	46,200	50,400	54,600	58,800	63,000	67,200	75,600	84,000	92,400
Oil Input (US gph)	270	300	330	360	390	420	450	480	540	600	660
Boiler HP @ 80% Eff.	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,800	2,000	2,200
Blower Motor HP	30	40	50	60	60	75	75	75	100	100	100
Separate Compressor Motor HP	15	15	15	15	15	15	15	15	15	15	15
Furnace Pressure ("w.c.)	6	6	6	6	6	6	6	6	6	6	6
Standard Gas Train Pipe Size (in.)	3	3	3	3	3	4	4	4	4	4	4
Gas Pressure Required (PSI)	10	10	10	10	10	10	10	10	10	10	10

Less than 30 ppm Low NOx Configuration (LNXLG, LNXLLG)

Burner Model Number & Frame Size	378-1	420-1	462-1	504-1	546-2	588-2	630-2	672-3	756-3	840-3	924-3
Gas Input (MBtu/hr)	37,800	42,000	46,200	50,400	54,600	58,800	63,000	67,200	75,600	84,000	92,400
Oil Input (US gph)	270	300	330	360	390	420	450	480	540	600	660
Boiler HP @ 80% Eff.	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,800	2,000	2,200
Blower Motor HP	40	50	60	75	75	75	100	100	125	125	150
Separate Compressor Motor HP	15	15	15	15	15	15	15	15	15	15	15
Furnace Pressure ("w.c.)	6	6	6	6	6	6	6	6	6	6	6
Standard Gas Train Pipe Size (in.)	3	3	3	3	3	4	4	4	4	4	4
Gas Pressure Required (PSI)	10	10	10	10	10	10	10	10	10	10	10
FGR Line Piping (in.)	14	14	14	16	16	16	16	18	18	20	20

Less than 15 ppm and less than 9 ppm Ultra-Low-NOx Configuration (NTXLG, NTXLLG)

Burner Model Number & Frame Size	378-1	420-1	462-1	504-1	546-2	588-2	630-2	672-3	756-3	840-3	924-3
Gas Input (MBtu/hr)	37,800	42,000	46,200	50,400	54,600	58,800	63,000	67,200	75,600	84,000	92,400
Oil Input (US gph)	270	300	330	360	390	420	450	480	540	600	660
Boiler HP @ 80% Eff.	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,800	2,000	2,200
Blower Motor HP	50	50	75	100	100	100	125	150	150	200	200
Separate Compressor Motor HP	15	15	15	15	15	15	15	15	15	15	15
Furnace Pressure ("w.c.)	6.8	8.3	8.7	8.9	9.3	9.6	11.1	9.5	9.5	10.0	10.1
Standard Gas Train Pipe Size (in.)	3	3	3	3	3	4	4	4	4	4	4
Gas Pressure Required (PSI)	10	10	10	10	10	10	10	10	10	10	10
FGR Line Piping (in.)	14	14	14	16	16	16	16	18	18	20	20

Input is based on fuel Btu content and altitude of 2,000 feet or less. If altitude > 2,000 feet and < 8,000 feet, derate capacity 4% per 1,000 feet over 2,000. Consult factory for higher altitudes. Gas input is based on natural gas with 1,000 Btu/cu.ft., 0.60 gravity, 0" w.c. furnace pressure and the aforementioned conditions. Oil input based on 140,000 Btu/gal and the aforementioned conditions. Consult factory for 50Hz. applications. Contact the factory for shipping weight estimation.



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