



# **PROFIRE E SERIES**

**TECHNICAL DATA INFORMATION PACKET**

# ProFire Burners E Series

## Technical Data Sheet

### Uncontrolled Emissions Configuration (EG, EL, ELG)

8.4 - 42.0 MM BTU/H NG; 60 - 300 GPH #2 OIL

UL listed with choice of NFPA, CSD-1, GAP, and FM for U.S. or Canadian units

Standard equipment:	Combustion Control System options:	Fuel options:
3450 RPM motor, panel signal lights (Load Demand, Low Water, Flame Failure, Fuel Valve), combustion air proving switch, high fire air proving switch, 120/1/60 control circuit, burner mounted panel, hinged blast tube with left-hand swing. <b>Gas and gas/oil units only:</b> butterfly rate control valve, high/low gas pressure switches, two gas shutoff cocks, main gas regulator, shipped loose gas train.	Parallel Positioning Combustion Control System with O <sub>2</sub> Trim and Variable Frequency Drive (VFD)	Main Fuel: Natural gas (EG), #2 oil - air atomized (EL) or Combination gas/ #2 oil - air atomized (ELG).  Igniter Fuel: Natural gas and/or propane.  Fuel Changeover Switch: Combination gas/oil units only (ELG).

## Series Features

◇ Optional Feature



	E-84 to E-105	E-126 to E-147	E-168 to E-210	E-252 to E-294	E-336 to E-378	E-420
<b>Flame Safeguard</b>						
UV Scanner	•	•	•	•	•	•
<b>Mode of Operation</b>						
Full Modulation Firing	•	•	•	•	•	•
Auto-Manual Firing Rate Control	• <sup>1</sup>	• <sup>1</sup>	• <sup>1</sup>	• <sup>1</sup>	• <sup>1</sup>	• <sup>1</sup>
<b>Refractory</b>						
Dry Oven & Gasket	◇ <sup>2</sup>	◇ <sup>2</sup>	◇ <sup>2</sup>	◇ <sup>2</sup>	◇ <sup>2</sup>	◇ <sup>2</sup>
<b>Ignition</b>						
Gas/Electric Pilot and Ignition Transformer	•	•	•	•	•	•
#2 Oil Pilot (EL, ELG)	◇	◇	◇	◇	◇	◇
<b>Oil Components</b>						
3-Way Solenoid Valve	•	•	•			
2-Way Solenoid Valve	•	•	•	•	•	•
3-Way Motorized POC Valve	◇	◇	◇	•	•	•
2-Way Motorized POC Valve	◇	◇	◇	◇	◇	◇
Atomizing Air Proving Switch	•	•	•	•	•	•
Low Oil Pressure Switch	•	•	•	•	•	•
Burner Mounted Oil Metering System	•	•	•	•	•	•
Separately Mounted Air Compressor Module	•	•	•	•	•	•
<b>Gas Components</b>						
Motorized Valve w/ POC & Solenoid Valve	•					
Motorized Valve w/ POC (2)	◇	◇	◇	◇	◇	◇
Motorized w/ POC & Motorized w/o POC	◇	•	•	•	•	•
Normally Open Vent Valve	◇	•	•	•	•	•

<sup>1</sup> Standard for full modulation; optional on select parallel positioning systems

<sup>2</sup> Refractory dry ovens are required for burner mounting, consult factory for options

# ProFire Burners E Series

## Standard Ratings Sheet

EG - EL - ELG: Gas, #2 Oil, Gas/Oil Configuration

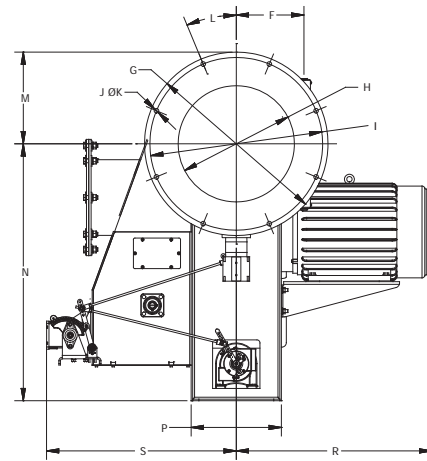
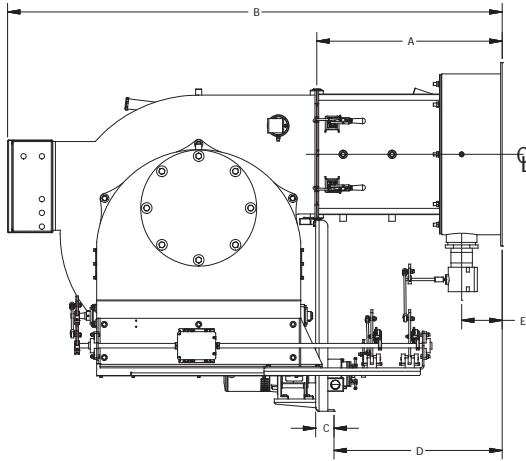
	Gas Input MBH	#2 Oil Input GPH	BHP @ 80% Eff.	Blower Motor HP	Separate Compressor Module Motor HP 3 Phase	Oil Metering System Motor HP 3 Phase	Furnace Pressure ("w.c.)	Standard Gas Train Pipe Size (in.)	Gas Pressure Required (PSI)	
<b>Model No. &amp; Frame Size</b>										
E-84-1	8,400	60	200	5	3	1/2	4	2 1/2	2.1	208 / 230 / 460 / 3
E-105-1	10,500	75	250	5	3	1/2	4	3	2.2	
E-126-1	12,600	90	300	5	3	1/2	4	3	2.5	
E-147-1	14,700	105	350	7 1/2	5	1/2	4	3	2.7	
E-168-2	16,800	120	400	10	5	1/2	4	3	3.0	
E-210-2	21,000	150	500	15	5	3/4	4	3	3.9	
E-252-2	25,200	180	600	15	7 1/2	3/4	4	3	4.3	230 / 460 / 3
E-294-3	29,400	210	700	20	7 1/2	3/4	4	3	2.6	
E-336-3	33,600	240	800	20	7 1/2	3/4	4	3	3.1	460 / 3
E-378-3	37,800	270	900	25	15	1	4	4	3.6	
E-420-3	42,000	300	1,000	30	15	1	4	4	3.7	

Input is based on fuel BTU content, listed furnace pressure 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. If furnace pressure exceeds listed value, derate capacity 5% for every 0.5" w.c. of pressure in excess of stated. Consult factory if derate exceeds 20%. 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. For total pressure at manifold, add furnace pressure. Oil input based on 140,000 BTU/gal and the aforementioned conditions. Consult factory for 50 Hz. applications.

# ProFire Burners E Series

## Standard Dimension Sheet

EG - EL - ELG: Gas, #2 Oil, Gas/Oil Configuration



DIM	Burner Frame Size & Model Number			
	Size 1	Size 2	Size 3	
Length in inches				
Overall length	B	61 1/2	77 1/4	87
Width in inches				
Center line to right side	R	18	23	32
Center line to left side	S	25 1/8	26 1/8	31 1/4
Height in inches				
Center line to top	M	10 1/2	13	15
Center line to bottom	N	28 5/8	36 1/2	42
Hinge pivot point in inches				
Mounting flange to hinge	A	26 1/4	34	36 1/4
Center line to hinge	F	8	9 1/2	11
Mounting flange dimensions in inches				
Outer diameter	G	21	26	30
Inner diameter	H	13 3/8	16	19
Diameter of bolt circle	I	19 1/4	24	28 1/4
Number of mounting holes	J	8	12	8
Diameter of bolt hole	K	3/4	3/4	3/4
Offset of bolt circle starting point	L	0	15	0
Burner support in inches				
Support length	C	2 3/4	2 3/4	3
Support width	P	9 1/2	13	14 3/4
Mounting flange to support	D	23 5/8	31 1/2	33 1/2
Gas inlet dimensions in inches				
Mounting flange to gas inlet	E	3 5/8	5	6 5/8

Accompanying dimensions, while sufficiently accurate for layout purposes, must be confirmed for construction.

# ProFire Burners E Series

## Technical Data Sheet

**<30 PPM Low NOx Configuration (LNEG, LNELG)**

**8.4 - 42.0 MM BTU/H NG; 60 - 300 GPH #2 OIL**

**UL listed with choice of NFPA, CSD-1, GAP, and FM for U.S. or Canadian units**

Standard equipment:	Combustion Control System options:	Fuel options:
3450 RPM motor, panel signal lights (Load Demand, Low Water, Flame Failure, Fuel Valve), FGR, combustion air proving switch, high fire air proving switch, 120/1/60 control circuit, burner mounted panel, hinged blast tube with left-hand swing. <b>Gas and gas/oil units only:</b> butterfly rate control valve, high/low gas pressure switches, two gas shutoff cocks, main gas regulator, shipped loose gas train.	Parallel Positioning Combustion Control System with O <sub>2</sub> Trim and Variable Frequency Drive (VFD)	Main Fuel: Natural gas (LNEG), or Combination gas/ #2 oil - air atomized (LNELG).  Igniter Fuel: Natural gas and/or propane.  Fuel Changeover Switch: Combination gas/oil units only (LNELG).

## Series Features

◇ Optional Feature

	LNE-84 to LNE-105	LNE-126 to LNE-147	LNE-168 to LNE-210	LNE-252 to LNE-284	LNE-336 to LNE-378	LNE-420
<b>Flame Safeguard</b>						
UV Scanner	•	•	•	•	•	•
<b>Mode of Operation</b>						
Full Modulation Firing	•	•	•	•	•	•
Auto-Manual Firing Rate Control	• <sup>1</sup>	• <sup>1</sup>	• <sup>1</sup>	• <sup>1</sup>	• <sup>1</sup>	• <sup>1</sup>
<b>Refractory</b>						
Dry Oven & Gasket	◇ <sup>2</sup>	◇ <sup>2</sup>	◇ <sup>2</sup>	◇ <sup>2</sup>	◇ <sup>2</sup>	◇ <sup>2</sup>
<b>Ignition</b>						
Gas/Electric Pilot and Ignition Transformer	•	•	•	•	•	•
<b>Oil Components</b>						
3-Way Solenoid Valve	•	•	•			
2-Way Solenoid Valve	•	•	•	•	•	•
3-Way Motorized POC Valve	◇	◇	◇	•	•	•
2-Way Motorized POC Valve	◇	◇	◇	◇	◇	◇
Atomizing Air Proving Switch	•	•	•	•	•	•
Low Oil Pressure Switch	•	•	•	•	•	•
Burner Mounted Oil Metering System	•	•	•	•	•	•
Separately Mounted Air Compressor Module	•	•	•	•	•	•
<b>Gas Components</b>						
Motorized Valve w/ POC & Solenoid Valve	•					
Motorized Valve w/ POC (2)	◇	◇	◇	◇	◇	◇
Motorized w/ POC & Motorized w/o POC	◇	•	•	•	•	•
Normally Open Vent Valve	◇	•	•	•	•	•

<sup>1</sup> Standard for full modulation; optional on select parallel positioning systems

<sup>2</sup> Refractory dry ovens are required for burner mounting, consult factory for options

# ProFire Burners E Series

## <30 PPM Low NOx Ratings Sheet

### LNEG - LNELG: Gas, Gas/Oil Configuration

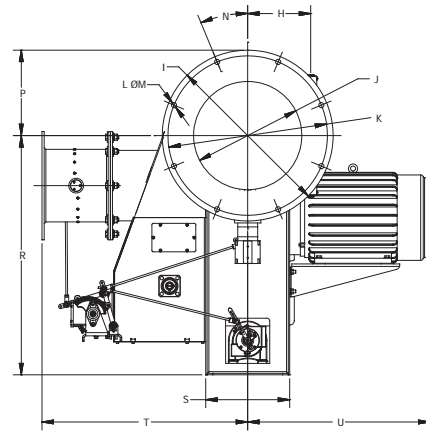
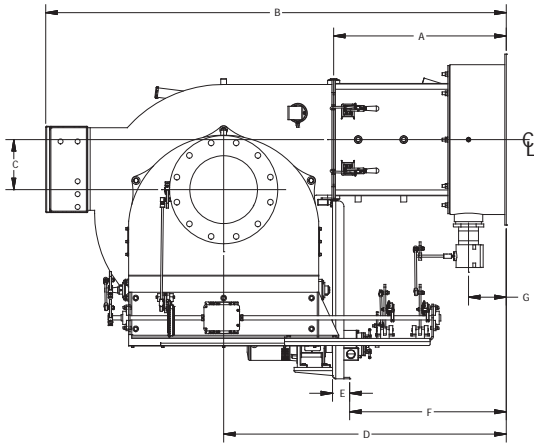
	Gas Input MBH	#2 Oil Input GPH	BHP @ 80% Eff.	Blower Motor HP	Separate Compressor Module Motor HP 3 Phase	Oil Metering System Motor HP 3 Phase	Furnace Pressure ("w.c.)	Standard Gas Train Pipe Size (in.)	Gas Pressure Required (PSI)	FGR Line Piping Size
<b>Model No. &amp; Frame Size</b>										
LNE-84-1	8,400	60	200	5	3	1/2	4	2 1/2	2.1	6
LNE-105-1	10,500	75	250	5	3	1/2	4	3	2.2	6
LNE-126-1	12,600	90	300	7 1/2	3	1/2	4	3	2.5	6
LNE-147-1	14,700	105	350	10	5	1/2	4	3	2.7	6
LNE-168-2	16,800	120	400	15	5	1/2	4	3	3.0	8
LNE-210-2	21,000	150	500	20	5	3/4	4	3	3.9	8
LNE-252-2	25,200	180	600	25	7 1/2	3/4	4	3	4.3	8
LNE-294-3	29,400	210	700	30	7 1/2	3/4	4	3	2.6	10
LNE-336-3	33,600	240	800	30	7 1/2	3/4	4	3	3.1	10
LNE-378-3	37,800	270	900	40	15	1	4	3	3.6	10
LNE-420-3	42,000	300	1,000	50	15	1	4	4	3.7	10

Input is based on fuel BTU content, listed furnace pressure 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. If furnace pressure exceeds listed value, derate capacity 5% for every 0.5" w.c. of pressure in excess of stated. Consult factory if derate exceeds 20%. 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. For total pressure at manifold, add furnace pressure. Oil input based on 140,000 BTU/gal and the aforementioned conditions. Consult factory for 50 Hz. applications.

# ProFire Burners E Series

## <30 PPM Low NOx Dimension Sheet

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Hinge pivot point in inches				
Mounting flange to hinge	A	26 1/4	34	36 1/4
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Diameter of bolt circle	K	19 1/4	24	28 1/4
Number of mounting holes	L	8	12	8
Diameter of bolt hole	M	3/4	3/4	3/4
Offset of bolt circle starting point	N	0	15	0
Burner support in inches				
Support length	E	2 3/4	2 3/4	3
Support width	S	9 1/2	13	14 3/4
Mounting flange to support	F	23 5/8	31 1/2	33 1/2
Gas inlet dimensions in inches				
Mounting flange to gas inlet	G	3 5/8	5	6 5/8
FGR dimensions in inches				
Center line to center line of FGR	C	1 7/8	6	8 3/4
Mounting flange to center line of FGR	D	39 3/8	50	55 5/8

Accompanying dimensions, while sufficiently accurate for layout purposes, must be confirmed for construction.



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