



# **PROFIRE D SERIES**

**TECHNICAL DATA INFORMATION PACKET**

# Table of Contents

## **ProFire D Series Uncontrolled Emissions DG, DL, DLG**

Technical Data Sheet .....	3
Ratings Table .....	4
Dimension Table .....	5

## **ProFire D Series Uncontrolled Emissions DM, DMG**

Technical Data Sheet .....	6
Ratings Table .....	7
Dimension Table .....	8

## **ProFire D Series Uncontrolled Emissions DE, DEG**

Technical Data Sheet .....	9
Ratings Table .....	10
Dimension Table .....	11

## **ProFire D Series <30 PPM Low NOx LNDG, LNDLG**

Technical Data Sheet .....	12
Ratings Table .....	13
Dimension Table .....	14-15

# ProFire Burners

## D Series

### Technical Data Sheet

#### Uncontrolled Emissions Configuration (DG, DL, DLG)

4.2 - 42.0 MM BTU/H NG; 30 - 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), dry oven and gasket, combustion air proving switch, high fire air proving switch, 120/1/60 control circuit, burner mounted panel, hinged blast tube with right-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 (DG), #2 oil - air atomized (DL) or Combination gas/ #2 oil - air atomized (DLG).  Igniter Fuel: Natural gas and/or propane.  Fuel Changeover Switch: Combination gas/oil units only (DLG).

## Series Features

◇ Optional Feature

	D-42	D-54 to D-105	D-145	D-175 to D-210	D-252 to D-315	D-336 to D-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>Ignition</b>						
Gas/Electric Pilot and Ignition Transformer	•	•	•	•	•	•
#2 Oil Pilot (DL, DLG)	◇	◇	◇	◇	◇	◇
<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 Integral Oil/Air System	•	•	•			
Burner Mounted Oil Metering System				•	•	•
Separately Mounted Air Compressor Module				•	•	•
<b>Gas Components</b>						
Motorized Valve w/o POC & Solenoid Valve	•					
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

**Note:** A separate oil circulating pump set is required for all DL and DLG burners. The burner mounted unit is an oil input metering device only.

# ProFire Burners

## D Series

### Standard Ratings Sheet

**DG - DL - DLG: Gas, #2 Oil, Gas/Oil Configuration**

	Gas Input MBH	#2 Oil Input GPH	BHP @ 80% Eff.	Blower Motor HP "S" <sup>1</sup>	Blower Motor HP "P" <sup>2</sup>	Integral Oil/Air System Motor HP 3 Phase	Separate Compressor Module Motor HP 3 Phase	Oil Metering System Motor HP 3 Phase	Standard Gas Train Pipe Size (in.)	Gas Pressure Required ("w.c.)
<b>Model No. &amp; Frame Size</b>										
D-42-1	4,200	30	100	3	3	1	-	-	2	9.2
D-54-1	5,400	39	129	3	5	1	-	-	2	15.3
D-63-1	6,550	47	156	5	5	1	-	-	2	21.6
D-84-2	8,400	60	200	5	7 1/2	1	-	-	2 1/2	18.0
D-105-2	10,500	75	250	7 1/2	10	2	-	-	3	16.0
D-145-3	15,000	107	357	15	15	2	-	-	3	2 PSI
D-175-4	17,500	125	417	20	20	-	5	1/2	3	5 PSI
D-210-5	21,000	150	500	20	25	-	5	3/4	3	5 PSI
D-252-6	25,200	180	600	25	30	-	7 1/2	3/4	3	5 PSI
D-300-6	30,000	215	714	40	40	-	7 1/2	3/4	3	10 PSI
D-315-6	31,500	225	750	-	60	-	7 1/2	3/4	3	10 PSI
D-336-7	33,600	240	800	-	60	-	7 1/2	3/4	3	10 PSI
D-378-8	37,800	270	900	-	75	-	15	1	4	10 PSI
D-420-8	42,000	300	1,000	-	75	-	15	1	4	10 PSI

<sup>1</sup> Use model "S" up to 1.5" w.c. furnace pressure

<sup>2</sup> Use model "P" up to 4.0" w.c. furnace pressure

Consult the factory for higher furnace pressures

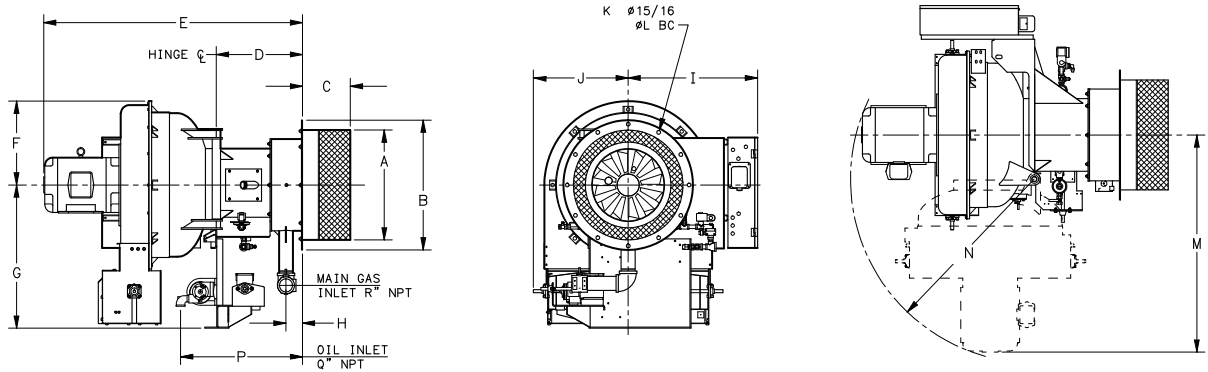
Input is based on fuel BTU content, listed furnace pressure and altitude of 2,000 feet or less. If altitude > 2,000 feet and < 8,000 feet, derate capacity 4% per 1,000 feet over 2,000. Consult factory for higher altitudes. If furnace pressure exceeds listed value, derate capacity 5% for every 0.5" w.c. 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

## D Series

### Standard Dimension Sheet

**DG - DL - DLG: Gas, #2 Oil, Gas/Oil Configuration**



Burner Frame Size & Model Number										
DIM	Size 1	Size 2	Size 3	Size 4	Size 5	Size 6	Size 7	Size 8		
	42-63	84	105	145	175	210	252-300	315	336	378-420

Burner Frame Size & Model Number											
DIM	Size 1	Size 2	Size 3	Size 4	Size 5	Size 6	Size 7	Size 8			
	42-63	84	105	145	175	210	252-300	315	336	378-420	
Length in inches											
Overall length	E	45 3/4	44 5/8	45 5/8	56 7/8	60	64 3/4	66 3/8	69 3/8	68 1/2	73 7/8
Width in inches											
Center line to right side	I	21 5/8	23 7/8	23 7/8	24 3/4	25 1/4	32 3/8	32 3/8	32 3/8	32 3/8	36 7/8
Center line to left side	J	17 7/8	17 5/8	17 5/8	21	22	23 3/4	23 3/4	23 3/4	23 3/4	28
Height in inches											
Center line to top	F	13	15	15	15	15	21	21	21	21	23
Center line to bottom	G	23 3/4	25 3/8	25 3/8	30 1/8	31 7/8	35 7/8	37 3/8	37 3/8	38 7/8	39 7/8
Dry oven dimensions in inches											
Diameter of dry oven	A	15 7/8	19	19	22	27 1/2	27 1/2	31 1/2	31 1/2	34 5/8	34 5/8
Depth of dry oven	C	9	10	10	12	12	12	15	15	18	18
Mounting flange dimensions in inches											
Diameter	B	22	24	24	27	32 1/2	32 1/2	37	37	40	42
Flange to hinge	D	18	18	18	21 1/2	21 1/2	21 1/2	22	22	22	24
Diameter of bolt circle	L	20 1/2	22	22	25	30 1/2	30 1/2	35	35	38	40
Number of mounting holes	K	8	12	12	12	12	12	12	12	12	12
Hinge swing dimensions in inches											
Center line to outer hinge clearance	M	32 3/4	35 3/8	36 3/8	45	50 5/8	54 3/8	56 7/8	59 7/8	60 5/8	69 1/8
Hinge swing radius	N	27 3/8	29	30	37 3/8	41 1/4	46	47 1/2	50 1/4	50 1/4	55 5/8
Oil inlet dimensions in inches											
Diameter of oil inlet	Q	3/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Mounting flange to oil inlet	P	17 7/8	27	27	30 1/2	30 1/2	30 1/2	31	31	30 7/5	33 3/4
Gas inlet dimensions in inches											
Diameter of gas inlet	R	2	2 1/2	2 1/2	3	3	3	4	4	4	4
Mounting flange to gas inlet	H	3 5/8	3 5/8	3 5/8	4 1/8	4 1/8	4 1/8	4 5/8	4 5/8	4 5/8	3 7/8

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

# ProFire Burners

## D Series

### Technical Data Sheet

#### Uncontrolled Emissions Configuration (DM, DMG)

4.2 - 42.0 MM BTU/H NG; 29 - 290 GPH #2-5 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), dry oven and gasket, combustion air proving switch, high fire air proving switch, 120/1/60 control circuit, burner mounted panel, hinged blast tube with right-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: #2-5 oil - Air atomized (DM) or Combination natural gas/ #2-5 oil - air atomized (DMG).  Igniter Fuel: Natural gas and/or propane.  Fuel Changeover Switch: Combination gas/oil units only (DMG).

## Series Features

◊ Optional Feature

	D-42 to D-105	D-145	D-175	D-210	D-252 to D-315	D-336 to D-420
<b>Flame Safeguard</b>						
IR 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>Ignition</b>						
Gas/Electric Pilot and Ignition Transformer	•	•	•	•	•	•
#2 Oil Pilot	◊	◊	◊	◊	◊	◊
<b>Oil Components</b>						
3-Way Oil Solenoid Valve	•	•	•	•		
2-Way Oil Solenoid Valve	•	•	•	•	•	•
3-Way Motorized POC Valve	◊	◊	◊	◊	•	•
2-Way Motorized POC Valve	◊	◊	◊	◊	◊	◊
Atomizing Air Proving Switch	•	•	•	•	•	•
Low Oil Pressure Switch	◊	◊	•	•	•	•
Burner Mounted Integral Oil/Air System	•	•				
Burner Mounted Oil Metering System			•	•	•	•
Separately Mounted Air Compressor Module			•	•	•	•
Nozzle Line Heater with Cold Oil Lockout	•	•	•	•	•	•
<b>Gas Components</b>						
Motorized Valve w/o POC & Solenoid Valve	•					
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

**Note:** A separate oil circulating pump set is required for all DM and DMG burners. The burner mounted unit is an oil input metering device only.

# ProFire Burners

## D Series

### Standard Ratings Sheet

#### DM - DMG: #2-5 Oil, Gas/Oil Configuration

	Gas Input MBH	#2-5 Oil Input GPH	BHP @ 80% Eff.	Blower Motor HP "S" <sup>1</sup>	Blower Motor HP "P" <sup>2</sup>	Integral Oil/Air System Motor HP 3 Phase	Separate Compressor Module Motor HP 3 Phase	Oil Metering System Motor HP 3 Phase	Standard Gas Train Pipe Size (in.)	Gas Pressure Required ("w.c.) <sup>3</sup>	Nozzle Line Heater (kw)	
<b>Model No. &amp; Frame Size</b>												
D-42-1	4,200	29	100	3	3	1	-	-	2	9.2	3	208 / 230 / 460 / 3
D-54-1	5,400	38	129	3	5	1	-	-	2	15.3	3	
D-63-1	6,550	45	156	5	5	2	-	-	2	21.6	3	
D-84-2	8,400	58	200	5	7 1/2	2	-	-	2 1/2	18.0	5	
D-105-2	10,500	73	250	7 1/2	10	2	-	-	3	16.0	5	
D-145-3	15,000	104	357	15	15	2	-	-	3	2 PSI	5	
D-175-4	17,500	121	417	20	20	-	5	1/2	3	5 PSI	5	
D-210-5	21,000	145	500	20	25	-	5	3/4	3	5 PSI	7	230 / 460 / 3
D-252-6	25,200	174	600	25	30	-	7 1/2	3/4	3	5 PSI	10	
D-300-6	30,000	207	714	40	40	-	7 1/2	3/4	3	10 PSI	10	460 / 3
D-315-6	31,500	217	750	-	60	-	7 1/2	3/4	3	10 PSI	10	
D-336-7	33,600	232	800	-	60	-	7 1/2	3/4	3	10 PSI	10	
D-378-8	37,800	261	900	-	75	-	15	1	4	10 PSI	10	
D-420-8	42,000	290	1,000	-	75	-	15	1	4	10 PSI	10	

<sup>1</sup> Use model "S" up to 1.5" w.c. furnace pressure, consult the factory for higher pressures

<sup>2</sup> Use model "P" up to 4.0" w.c. furnace pressure, consult the factory for higher pressures

<sup>3</sup> Standard gas pressures only, consult the factory for lower gas pressures

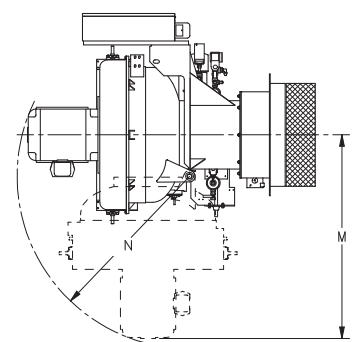
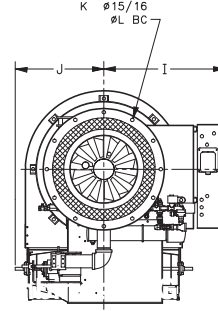
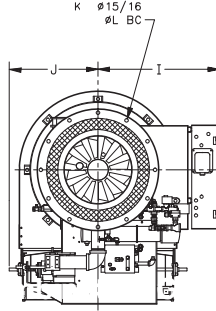
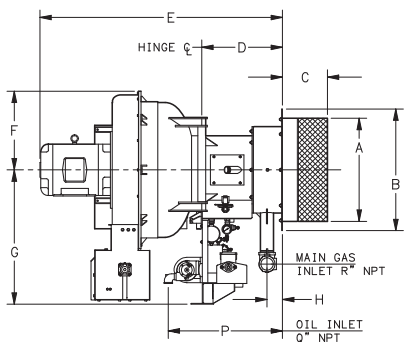
Input is based on fuel BTU content, listed furnace pressure and altitude of 2,000 feet or less. If altitude > 2,000 feet and < 8,000 feet, derate capacity 4% per 1,000 feet over 2,000. Consult factory for higher altitudes. If furnace pressure exceeds listed value, derate capacity 5% for every 0.5" w.c. 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 145,000 BTU/gal and the aforementioned conditions. Consult factory for 50 Hz. applications.

# ProFire Burners

## D Series

### Standard Dimension Sheet

#### DM - DMG: #2-5 Oil, Gas/Oil Configuration



**Models 42 - 145**

**Models 175 - 420**

Burner Frame Size & Model Number											
DIM	Size 1	Size 2	Size 3	Size 4	Size 5	Size 6	Size 7	Size 8			
	42-63	84	105	145	175	210	252-300	315	336	378-420	
Length in inches											
Overall length	E	45 3/4	44 5/8	45 5/8	56 7/8	60	64 3/4	66 3/8	69 3/8	68 1/2	73 7/8
Width in inches											
Center line to right side	I	21 5/8	23 7/8	23 7/8	24 3/4	25 1/4	32 3/8	32 3/8	32 3/8	32 3/8	36 7/8
Center line to left side	J	17 7/8	17 5/8	17 5/8	21	22	23 3/4	23 3/4	23 3/4	23 3/4	28
Height in inches											
Center line to top	F	13	15	15	15	15	21	21	21	21	23
Center line to bottom	G	23 3/4	25 3/8	25 3/8	30 1/8	31 7/8	35 7/8	37 3/8	37 3/8	38 7/8	39 7/8
Dry oven dimensions in inches											
Diameter of dry oven	A	15 7/8	19	19	22	27 1/2	27 1/2	31 1/2	31 1/2	34 5/8	34 5/8
Depth of dry oven	C	9	10	10	12	12	12	15	15	18	18
Mounting flange dimensions in inches											
Diameter	B	22	24	24	27	32 1/2	32 1/2	37	37	40	42
Flange to hinge	D	18	18	18	21 1/2	21 1/2	21 1/2	22	22	22	24
Diameter of bolt circle	L	20 1/2	22	22	25	30 1/2	30 1/2	35	35	38	40
Number of mounting holes	K	8	12	12	12	12	12	12	12	12	12
Hinge swing dimensions in inches											
Center line to outer hinge clearance	M	32 3/4	35 3/8	36 3/8	45	50 5/8	54 3/8	56 7/8	59 7/8	60 5/8	69 1/8
Hinge swing radius	N	27 3/8	29	30	37 3/8	41 1/4	46	47 1/2	50 1/4	50 1/4	55 5/8
Oil inlet dimensions in inches											
Diameter of oil inlet	Q	3/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Mounting flange to oil inlet	P	17 7/8	27	27	30 1/2	30 1/2	30 1/2	31	31	30 7/8	33 3/4
Gas inlet dimensions in inches											
Diameter of gas inlet	R	2	2 1/2	2 1/2	3	3	3	4	4	4	4
Mounting flange to gas inlet	H	3 5/8	3 5/8	3 5/8	4 1/8	4 1/8	4 1/8	4 5/8	4 5/8	4 5/8	3 7/8

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

# ProFire Burners

## D Series

### Technical Data Sheet

#### Uncontrolled Emissions Configuration (DE, DEG)

4.2 - 42.0 MM BTU/H NG; 28 - 280 GPH #2-6 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), dry oven and gasket, combustion air proving switch, high fire air proving switch, 120/1/60 control circuit, burner mounted panel, hinged blast tube with right-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: #6 oil - air atomized (DE) or Combination natural gas/ #6 oil - air atomized (DEG).  Igniter Fuel: Natural gas and/or propane.  Fuel Changeover Switch: Combination gas/oil units only (DEG).

## Series Features

◊ Optional Feature



Flame Safeguard	D-42 to D-105	D-145	D-175	D-210	D-252 to D-315	D-336 to D-420
IR 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>Ignition</b>						
Gas/Electric Pilot and Ignition Transformer	•	•	•	•	•	•
#2 Oil Pilot	◊	◊	◊	◊	◊	◊
<b>Oil Components</b>						
3-Way Oil Solenoid Valve	•	•	•	•	•	•
2-Way Oil 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	•	•	•	•	•	•
Nozzle Line Heater with Cold Oil Lockout	•	•	•	•	•	•
<b>Gas Components</b>						
Motorized Valve w/o POC & Solenoid Valve	•					
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

**Note:** A separate oil circulating pump set is required for all DE and DEG burners. The burner mounted unit is an oil input metering device only.

# ProFire Burners

## D Series

### Standard Ratings Sheet

#### DE - DEG: #2-6 Oil, Gas/Oil Configuration

	Gas Input MBH	#2-6 Oil Input GPH	BHP @ 80% Eff.	Blower Motor HP "S" <sup>1</sup>	Blower Motor HP "P" <sup>2</sup>	Separate Compressor Module Motor HP 3 PH.	Oil Metering System Motor HP 3 PH.	Standard Gas Train Pipe Size (in.)	Gas Pressure Required ("w.c.) <sup>3</sup>	Nozzle Line Heater (kw)	
<b>Model No. &amp; Frame Size</b>											
D-42-1	4,200	28	100	3	3	3	1/2	2	9.2	3	208 / 230 / 460 / 3
D-54-1	5,400	36	129	3	5	3	1/2	2	15.3	3	
D-63-1	6,550	44	156	5	5	3	1/2	2	21.6	3	
D-84-2	8,400	56	200	5	7 1/2	3	1/2	2 1/2	18.0	5	
D-105-2	10,500	70	250	7 1/2	10	3	1/2	3	16.0	5	
D-145-3	15,000	100	357	15	15	3	1/2	3	2 PSI	5	
D-175-4	17,500	114	417	20	20	5	1/2	3	5 PSI	5	
D-210-5	21,000	140	500	20	25	5	3/4	3	5 PSI	7	230 / 460 / 3
D-252-6	25,200	168	600	25	30	7 1/2	3/4	3	5 PSI	10	
D-300-6	30,000	200	714	40	40	7 1/2	3/4	3	10 PSI	10	460 / 3
D-315-6	31,500	210	750	-	60	7 1/2	3/4	3	10 PSI	10	
D-336-7	33,600	224	800	-	60	7 1/2	3/4	3	10 PSI	10	
D-378-8	37,800	252	900	-	75	15	1	4	10 PSI	10	
D-420-8	42,000	280	1,000	-	75	15	1	4	10 PSI	10	

<sup>1</sup> Use model "S" up to 1.5" w.c. furnace pressure, consult the factory for higher pressures

<sup>2</sup> Use model "P" up to 4.0" w.c. furnace pressure, consult the factory for higher pressures

<sup>3</sup> Standard gas pressures only, consult the factory for lower gas pressures

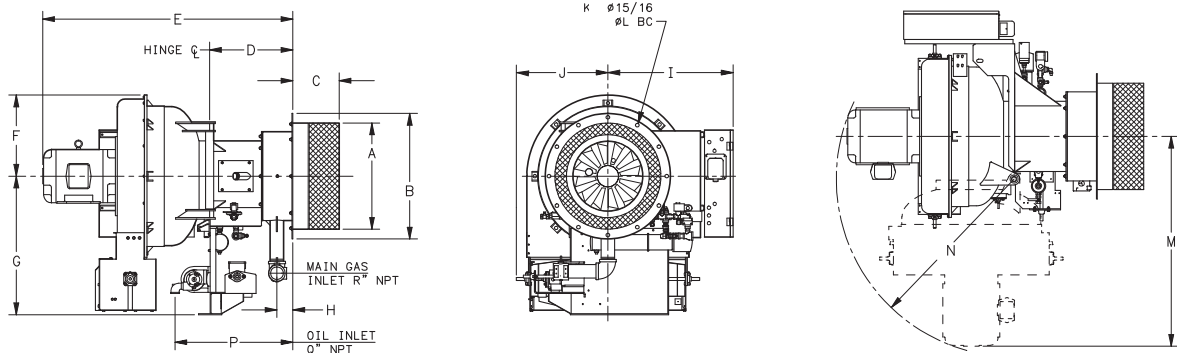
Input is based on fuel BTU content, listed furnace pressure and altitude of 2,000 feet or less. If altitude > 2,000 feet and < 8,000 feet, derate capacity 4% per 1,000 feet over 2,000. Consult factory for higher altitudes. If furnace pressure exceeds listed value, derate capacity 5% for every 0.5" w.c. 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 150,000 BTU/gal and the aforementioned conditions. Consult factory for 50 Hz. applications.

# ProFire Burners

## D Series

### Standard Dimension Sheet

#### DE - DEG: #2-6 Oil, Gas/Oil Configuration



		Burner Frame Size & Model Number									
		Size 1	Size 2		Size 3	Size 4	Size 5	Size 6		Size 7	Size 8
DIM		42-63	84	105	145	175	210	252-300	315	336	378-420
Length in inches											
Overall length	E	45 3/4	44 5/8	45 5/8	56 7/8	60	64 3/4	66 3/8	69 3/8	68 1/2	73 7/8
Width in inches											
Center line to right side	I	21 5/8	23 7/8	23 7/8	24 3/4	25 1/4	32 3/8	32 3/8	32 3/8	32 3/8	36 7/8
Center line to left side	J	17 7/8	17 5/8	17 5/8	21	22	23 3/4	23 3/4	23 3/4	23 3/4	28
Height in inches											
Center line to top	F	13	15	15	15	15	21	21	21	21	23
Center line to bottom	G	23 3/4	25 3/8	25 3/8	30 1/8	31 7/8	35 7/8	37 3/8	37 3/8	38 7/8	39 7/8
Dry oven dimensions in inches											
Diameter of dry oven	A	15 7/8	19	19	22	27 1/2	27 1/2	31 1/2	31 1/2	34 5/8	34 5/8
Depth of dry oven	C	9	10	10	12	12	12	15	15	18	18
Mounting flange dimensions in inches											
Diameter	B	22	24	24	27	32 1/2	32 1/2	37	37	40	42
Flange to hinge	D	18	18	18	21 1/2	21 1/2	21 1/2	22	22	22	24
Diameter of bolt circle	L	20 1/2	22	22	25	30 1/2	30 1/2	35	35	38	40
Number of mounting holes	K	8	12	12	12	12	12	12	12	12	12
Hinge swing dimensions in inches											
Center line to outer hinge clearance	M	32 3/4	35 3/8	36 3/8	45	50 5/8	54 3/8	56 7/8	59 7/8	60 5/8	69 1/8
Hinge swing radius	N	27 3/8	29	30	37 3/8	41 1/4	46	47 1/2	50 1/4	50 1/4	55 5/8
Oil inlet dimensions in inches											
Diameter of oil inlet	Q	3/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Mounting flange to oil inlet	P	17 7/8	27	27	30 1/2	30 1/2	30 1/2	31	31	30 7/8	33 3/4
Gas inlet dimensions in inches											
Diameter of gas inlet	R	2	2 1/2	2 1/2	3	3	3	4	4	4	4
Mounting flange to gas inlet	H	3 5/8	3 5/8	3 5/8	4 1/8	4 1/8	4 1/8	4 5/8	4 5/8	4 5/8	3 7/8

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

# ProFire Burners D Series

## Technical Data Sheet

**<30 PPM Low NOx Configuration (LNDG, LNDLG)**

**3.36 - 37.8 MM BTU/H NG; 24 - 270 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, dry oven and gasket, combustion air proving switch, high fire air proving switch, 120/1/60 control circuit, burner mounted panel, hinged blast tube with right-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 (LNDG), or Combination gas/ #2 oil - air atomized (LNDLG).  Igniter Fuel: Natural gas and/or propane.  Fuel Changeover Switch: Combination gas/oil units only (LNDLG).

## Series Features

◇ Optional Feature

	LND-42 to LND-63	LND-84 to LND-105	LND-145	LND-175	LND-210	LND-252 to LND-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>Ignition</b>						
Gas/Electric Pilot and Ignition Transformer	•	•	•	•	•	•
<b>Oil Components</b>						
Oil Solenoid Valve	•	•	•	•	•	
3-Way Motorized POC Valve	◇	◇	◇	◇	◇	•
Atomizing Air Proving Switch	•	•	•	•	•	•
Low Oil Pressure Switch	◇	◇	•	•	•	•
Burner Mounted Integral Oil/Air System	•	•	•			
Burner Mounted Oil Metering System				•	•	•
Separately Mounted Air Compressor Module				•	•	•
<b>Gas Components</b>						
Motorized Valve w/o POC & Solenoid Valve	•					
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

**Note:** A separate oil circulating pump set is required for all LNDLG burners. The burner mounted unit is an oil input metering device only.

# ProFire Burners D Series

## <30 PPM Low NOx Ratings Sheet

### LNDG - LNDLG: Gas, Gas/Oil Configuration

	Gas Input MBH	#2 Oil Input GPH	BHP @ 80% Eff.	Blower Motor HP "S"	Blower Motor HP "P"	Integral Oil/Air System Motor HP 3 Phase	Separate Compressor Module Motor HP 3 Phase	Oil Metering System Motor HP 3 Phase	Standard Gas Train Pipe Size (in.)	Gas Pressure Required ("w.c.) <sup>3</sup>	FGR Line Piping (in.)
<b>Model No. &amp; Frame Size</b>											
LND-42-1	3,360	24	80	-	3	1	-	-	1 1/2	19.86	6
LND-54-1	4,200	30	100	-	5	1	-	-	2	15.82	6
LND-63-1	5,250	38	125	-	5	1	-	-	2	2 PSI	6
LND-84S-2	6,300	45	150	5	-	1	-	-	2 1/2	14.87	6
LND-84P-2	7,350	53	175	-	7 1/2	1	-	-	2 1/2	20.71	6
LND-105-2	8,400	60	200	-	10	1	-	-	3	2 PSI	6
LND-145S-3	10,500	75	250	15	-	2	-	-	3	19.56	6
LND-145P-3	12,600	90	300	-	15	2	-	-	3	2 PSI	8
LND-175-4	14,700	105	350	-	20	-	5	1/2	3	2 PSI	8
LND-210-5	16,800	120	400	-	25	-	5	1/2	3	3 PSI	8
LND-252-6	21,000	150	500	-	30	-	5	3/4	3	3 PSI	8
LND-300-6	25,200	180	600	-	40	-	7 1/2	3/4	3	10 PSI	10
LND-315-6	30,000	215	714	-	60	-	7 1/2	3/4	3	10 PSI	10
LND-336-7	31,500	225	750	-	60	-	7 1/2	3/4	3	10 PSI	10
LND-378-8	33,600	240	800	-	75	-	15	1	3	10 PSI	10
LND-420-8	37,800	270	900	-	75	-	15	1	4	10 PSI	10

208 / 230 / 460 / 3

230 / 460 / 3

460 / 3

<sup>1</sup> Use model "S" up to 1.5" w.c. furnace pressure, consult the factory for higher pressures

<sup>2</sup> Use model "P" up to 4.0" w.c. furnace pressure, consult the factory for higher pressures

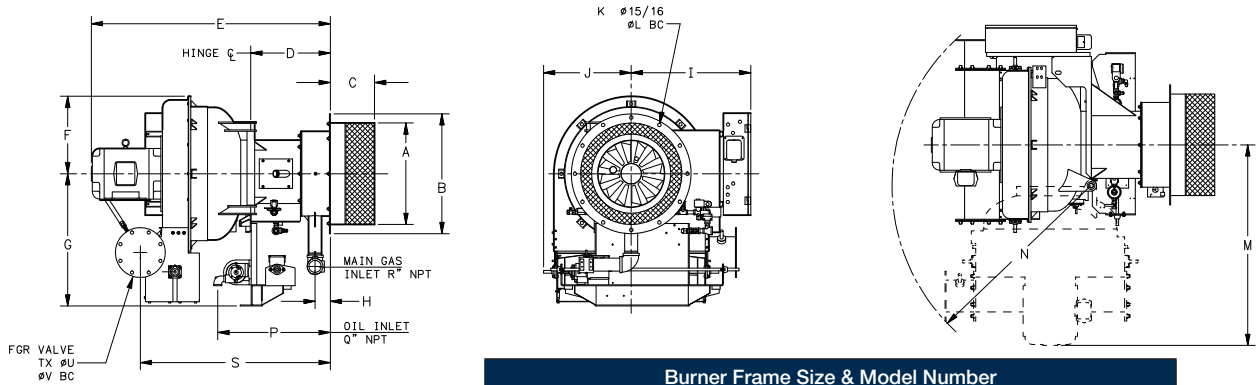
<sup>3</sup> Standard gas pressures only, consult the factory for lower gas pressures

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 D Series

## <30 PPM Low NOx Dimension Sheet

### LNDG - LNDLG: Gas, Gas/Oil Size 1 - 4 Configuration



Burner Frame Size & Model Number

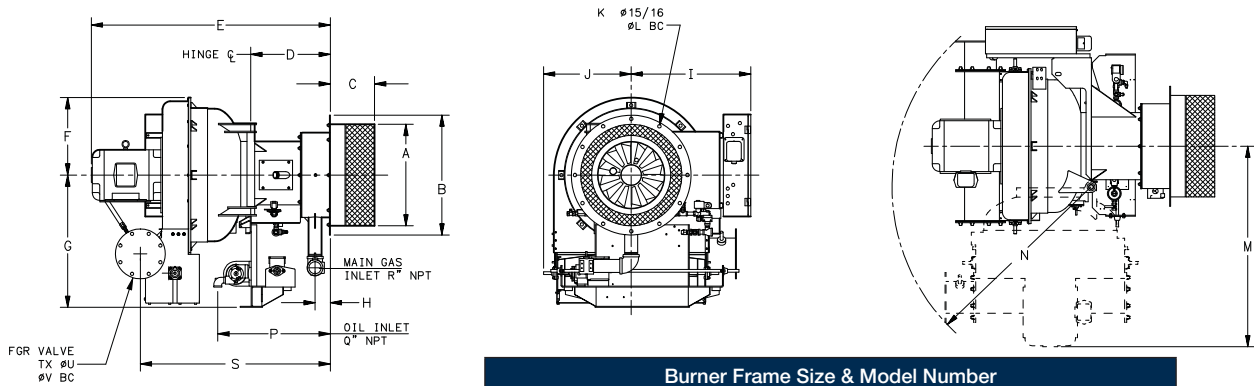
DIM	Burner Frame Size & Model Number							
	Size 1	Size 2	Size 3	Size 4	Size 1	Size 2	Size 3	Size 4
	42	54	63	84 - 105	145	175		
Length in inches								
Overall length	E	46 5/8	46 5/8	46 5/8	48 1/4	56 7/8	60	
Width in inches								
Center line to right side	I	21 5/8	21 5/8	21 5/8	23 7/8	24 3/4	25 1/4	
Center line to left side	J	17 7/8	17 7/8	17 7/8	17 7/8	20 5/8	21 5/8	
Height in inches								
Center line to top	F	13 5/8	13 5/8	13 5/8	15	15	15	
Center line to bottom	G	24 5/8	24 5/8	24 5/8	25 3/8	30 1/8	31 7/8	
Dry oven dimensions in inches								
Diameter of dry oven	A	15 7/8	15 7/8	15 7/8	19	22	27 1/2	
Depth of dry oven	C	9	9	9	10	12	12	
Mounting flange dimensions in inches								
Diameter	B	22	22	22	24	27	32 1/2	
Flange to hinge	D	18	18	18	18	21 1/2	21 1/2	
Diameter of bolt circle	L	20 1/2	20 1/2	20 1/2	22	25	30 1/2	
Number of mounting holes	K	8	8	8	12	12	12	
Hinge swing dimensions in inches								
Center line to outer hinge clearance	M	36 1/8	36 1/8	36 1/8	38 5/8	45	50 5/8	
Hinge swing radius	N	36 7/8	36 7/8	36 7/8	39 1/4	47 3/8	49 5/8	
Oil inlet dimensions in inches								
Diameter of oil inlet	Q	3/4	3/4	3/4	1 1/4	1 1/4	1 1/4	
Mounting flange to oil inlet	P	17 7/8	17 7/8	17 7/8	27	30 1/2	30 1/2	
Gas inlet dimensions in inches								
Diameter of gas inlet	R	2	2	2	2 1/2	3	3	
Mounting flange to gas inlet	H	3 7/8	3 7/8	3 7/8	3 5/8	4 1/8	4 1/8	
Flue gas recirculation (FGR) in inches								
Center line of FGR to mounting flange	S	41 1/2	41 1/2	41 1/2	42 3/4	47 7/8	50	
Number of mounting holes	T	16	16	16	16	16	16	
Bolt hole diameter	U	3/4	3/4	7/8	7/8	7/8	7/8	
Bolt circle diameter	V	7 1/2	7 1/2	9 1/2	9 1/2	9 1/2	11 3/4	

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

# ProFire Burners D Series

## <30 PPM Low NOx Dimension Sheet

### LNDG - LNDLG: Gas, Gas/Oil Size 5 - 8 Configuration



		Burner Frame Size & Model Number					
		Size 5	Size 6		Size 7	Size 8	
DIM		210	252	300	315	336	378 - 420
Length in inches							
Overall length	E	64 3/4	66 3/8	66 3/8	69 3/8	68 1/2	73 7/8
Width in inches							
Center line to right side	I	32 3/8	32 3/8	32 3/8	32 3/8	32 3/8	36 7/8
Center line to left side	J	23 3/4	23 3/4	23 3/4	23 3/4	23 3/4	28
Height in inches							
Center line to top	F	21	21	21	21	21	23
Center line to bottom	G	35 7/8	37 3/8	37 3/8	37 3/8	38 7/8	39 7/8
Dry oven dimensions in inches							
Diameter of dry oven	A	27 1/2	31 1/2	31 1/2	31 1/2	34 5/8	34 5/8
Depth of dry oven	C	12	15	15	15	18	18
Mounting flange dimensions in inches							
Diameter	B	32 1/2	37	37	37	40	42
Flange to hinge	D	21 1/2	22	22	22	22	24
Diameter of bolt circle	L	30 1/2	35	35	35	38	40
Number of mounting holes	K	12	12	12	12	12	12
Hinge swing dimensions in inches							
Center line to outer hinge clearance	M	54 3/8	56 7/8	56 7/8	59 7/8	60 5/8	69 1/8
Hinge swing radius	N	54	58	58	59	59 5/8	68 5/8
Oil inlet dimensions in inches							
Diameter of oil inlet	Q	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Mounting flange to oil inlet	P	30 1/2	31	31	31	30 7/8	33 3/4
Gas inlet dimensions in inches							
Diameter of gas inlet	R	3	4	4	4	4	4
Mounting flange to gas inlet	H	4 1/8	4 5/8	4 5/8	4 5/8	4 5/8	3 7/8
Flue gas recirculation (FGR) in inches							
Center line of FGR to mounting flange	S	51 1/2	51 5/8	52 7/8	54 3/8	53 1/2	63
Number of mounting holes	T	16	16	24	24	24	24
Bolt hole diameter	U	7/8	7/8	1	1	1	1
Bolt circle diameter	V	11 3/4	11 3/4	14 1/4	14 1/4	14 1/4	14 1/4

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



Packaged Burner Systems  
351 21st Street, Monroe, WI 53566 USA  
608.325.3141 · info@cleaverbrooks.com  
cleaverbrooks.com