

North American 4/6131 BURNER Capacities, Flame Characteristics, Pressures

Engineering Supplement 6131-1

Table 1
4/5/6131 Burner, Blower, and Motor Capacities

Burner Frame designation	Nominal capacity Btu/hr	Blower volume cfh	Developed pressure "wc	Motor hp - rpm	Sound level, dBA ^②	
					w/o silencer	with silencer
A	4 200 000	50 000	6.3	1½ - 3450	84	76
B	6 300 000	76 000	4.8	3 - 3450	85	76
C	12 300 000 ^①	141 000	7.4	5 - 3450	85	76
D	18 000 000 ^③	216 000	7.4	7½ - 1750	85	77
E	25 200 000	300 000	7.6	10 - 1750	86	78
FA	30 000 000	360 000	13.0	20 - 3450	87	79

- ① Nominal capacity for a "C" frame burner when using heavy oil is 8 400 000 Btu/hr.
- ② With sound level instrument located at the same elevation as the burner centerline and 5' away at 45° to the blower inlet-motor centerline.
- ③ Nominal capacity for a "D" frame burner when using heavy oil is 16 800 000 Btu/hr.

Table 2
Flame Characteristics^④

Burner Frame	% Excess Air	Flame size, dia. (ft.) × length (ft.)		
		GAS	LIGHT OIL	HEAVY OIL
A	0	3 × 8	⑤	⑤
	20	2½ × 5	2½ × 5	2½ × 5
	190	1½ × 2	1½ × 3	1½ × 3
	250	1 × 1	⑤	⑤
B	0	3 × 11	⑤	⑤
	20	3 × 7	3 × 7	3 × 7
	50	1½ × 5	2 × 7	2 × 7
	100	1½ × 2	1½ × 6	1½ × 6
	170	1½ × 1½	1½ × 5	⑤
	200	1 × 1	⑤	⑤
C	320	1 × ½	⑤	⑤
	0	4½ × 12	⑤	⑤
	20	3½ × 12	3½ × 12	3½ × 12
	50	2½ × 9	3 × 12	3 × 12
	100	2 × 6	3 × 9	3 × 9
	150	1½ × 4	2½ × 6	2½ × 6
	200	1½ × 3	2 × 5	⑤
270	1 × 2	1 × 4	⑤	
D	0	4½ × 12	⑤	⑤
	20	4 × 12	4 × 12	4 × 12
	290	1½ × 3½	1 × 6	1 × 6
E	20	4 × 12	4 × 12	4 × 12
FA	20	4 × 18	4 × 18	4 × 18

- ④ Flame characteristics based on firing in a chamber with free air available at atmosphere pressure and without a pilot. With flame supervisory equipment, signal strengths were acceptable over the stability ranges of the burners.
- ⑤ The burner using this fuel at this excess air rate is not recommended.

Table 3
Natural Gas Pressures^⑥

Burner Frame	Outlet Regulator pressure "wc	Manifold pressure "wc
A	2.2	1.6
B	2.5	1.6
C	2.8	1.5
D	4.1	1.0
E	3.0	2.4
FA	6.0	5.1

Table 4
Light Oil Pressures and Atomizing Medium Requirements

Burner Frame	Atomizing Mediums ^⑦			Oil pressures ^⑧ psig
	Comp. air flow scfm	Steam flow lb/hr	Pressure psig	
A	4	30	50	120
B	4	50	35	90
C	4	91	35	85
D	7	130	25	50
E	14	182	30	55
FA	23	200	40	100

Table 5
Heavy Oil Pressures and Atomizing Medium Requirements

Burner Frame	Atomizing Mediums ^⑦			Oil pressures ^⑧ psig
	Comp. air flow scfm	Steam flow lb/hr	Pressure psig	
A	4	30	50	70
B	4	50	50	65
C	7	91	25	70
D	20	130	30	60
E	26	168	30	70
FA	26	200	30	75

- ⑥ Gas burners are intended for use with natural gas or propane. Listed pressures are for natural gas--consult Fives for propane pressures. Pressures listed are minimum values and are for system sizing only. **They are not for ratio adjustment.**
- ⑦ Oil and Dual-Fuel™ burners require an accessory package for the atomizing medium. Pressures required at the inlet of that package are 75-100 psi for air and 50-125 psi for steam.
- ⑧ Oil and Dual-Fuel™ burners require oil delivered to oil regulator inlet at a viscosity below 100 SSU and at pressures listed above. If a liquid fuel other than commercial fuel oil is to be used, consult North American for recommendations of pressure and flow requirements.

WARNING: Situations dangerous to personnel and property may exist with the operation and maintenance of any combustion equipment. The presence of fuels, oxidants, hot and cold combustion products, hot surfaces, electrical power in control and ignition circuits, etc., are inherent with any combustion application. Parts of this product may exceed 160F in operation and present a contact hazard. Fives North American Combustion, Inc. urges compliance with National Safety Standards and Insurance Underwriters' recommendations, and care in operation.



CONTACT US:
Fives North American Combustion, Inc.
 4455 East 71st Street - Cleveland, OH 44105 - USA
 Tel: +1 216 271 6000 - Fax: +1 216 373 4237
 Email: fna.sales@fivesgroup.com

www.fivesgroup.com