Burner Capacity Information, BBC 1110/2110

NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION, LOW PRESSURE ATOMIZATION

SPECIFICATIONS		OPERATIONAL INFORMATION				
Capacity (at 10% Excess Air)	**(BTU/hr)**	**2,750,000**	**9,990,000**	**13,750,000**	**16,840,000**	**19,640,000**
	(kW)	**730**	**2,640**	**3,640**	**4,450**	**5,190**
Secondary Air Capacity	(scfh)	23,000	98,000	137,000	169,000	198,000
	(nm^3/hr)	616	2,625	3,670	4,527	5,304
Secondary Air Inlet Pressure	(in.w.c.)	0.3	6.9	13.9	20.8	27.7
	(mbar)	0.7	17.2	34.5	51.7	68.9
Primary Air Capacity	(scfh)	5,500	5,500	5,500	5,500	5,500
	(nm^3/hr)	147	147	147	147	147
Primary Air Inlet Pressure	(in.w.c.)	6.9	6.9	6.9	6.9	6.9
	(mbar)	17.2	17.2	17.2	17.2	17.2
Gas Inlet Pressure	(in.w.c.)	0.2	4.3	8.3	10.3	13.5
	(mbar)	0.5	10.7	20.7	25.6	33.6
Flame Length (at 10% Excess Air)	(in)	60	96	120	132	144
	(mm)	1520	2440	3050	3350	3660
Flame Diameter (at 10% Excess Air	(in)	36	42	48	54	60
	(mm)	910	1070	1220	1370	1520
Maximum Operating Excess	(Air)	300%	400%	400%	500%	500%
	(Fuel)	30%	30%	30%	30%	30%

Burner Capacity Information, BBC 3110

NATURAL GAS, 900°F/482°C PREHEATED SECONDARY AIR OPERATION, LOW PRESSURE ATOMIZATION

SPECIFICATIONS		OPERATIONAL INFORMATION				
Capacity (at 10% Excess Air)	**(BTU/hr)**	**1,900,000**	**6,390,000**	**8,720,000**	**10,630,000**	**12,360,000**
	(kW)	**500**	**1,690**	**2,310**	**2,810**	**3,270**
Secondary Air Capacity	(scfh)	14,239	60,670	84,814	104,625	122,578
	(nm^3/hr)	381	1,625	2,272	2,803	3,284
Secondary Air Inlet Pressure	(in.w.c.)	0.3	6.9	13.9	20.8	27.7
	(mbar)	0.7	17.2	34.5	51.7	68.9
Primary Air Capacity	(scfh)	5,500	5,500	5,500	5,500	5,500
	(nm^3/hr)	147	147	147	147	147
Primary Air Inlet Pressure	(in.w.c.)	6.9	6.9	6.9	6.9	6.9
	(mbar)	17.2	17.2	17.2	17.2	17.2
Gas Inlet Pressure	(in.w.c.)	0.2	3.3	6.3	7.8	10.2
	(mbar)	0.4	8.1	15.7	19.4	25.5
Flame Length (at 10% Excess Air)	(in)	45	72	90	99	108
	(mm)	1140	1830	2290	2510	2740
Flame Diameter (at 10% Excess Air	(in)	32	38	43	49	54
	(mm)	820	960	1100	1230	1370
Maximum Operating Excess	(Air)	240%	320%	320%	400%	400%
	(Fuel)	30%	30%	30%	30%	30%

NOTES:

1. Capacities based on Natural Gas with HHV of 1034 BTU/ft^3 (Standard) / LHV of 10.21 kWh/nm3 (Metric), 0.59 S.G.,and a stoichiometric ratio of 9.74:1 at 10% excess air; with burner firing into chamber under no pressure.
2. Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
3. Fuel inlet pressures given for reference only and should not be used for measuring fuel flow to the burner.
4. Flame lengths measured from end of the combustion tile.
5. Flame detection via UV scanner; for detection limits refer to the Burner Operating and Ignition Window.
6. Ignition via IPG5413 gas pilot; for ignition limits refer to the Burner Operating and Ignition Window.
7. Burner is suitable for use on gaseous and liquid fuels other than those listed, and with combustion air other than ambient temperature or that listed; for further information consult Hauck.

Burner Capacity Information, BBC 1110/2110

NO. 2 FUEL OIL, AMBIENT COMBUSTION AIR OPERATION, LOW PRESSURE ATOMIZATION

SPECIFICATIONS		OPERATIONAL INFORMATION				
Capacity (at 20% Excess Air)	**(BTU/hr)**	**2,830,000**	**9,080,000**	**12,330,000**	**15,000,000**	**17,420,000**
	(kW)	**750**	**2,400**	**3,260**	**3,970**	**4,610**
Secondary Air Capacity	(scfh)	23,000	98,000	137,000	169,000	198,000
	(nm^3/hr)	616	2,625	3,670	4,527	5,304
Secondary Air Inlet Pressure	(in.w.c.)	0.3	6.9	13.9	20.8	27.7
	(mbar)	0.7	17.2	34.5	51.7	68.9
Primary Air Capacity	(scfh)	11,000	11,000	11,000	11,000	11,000
	(nm^3/hr)	295	295	295	295	295
Primary Air Inlet Pressure	(in.w.c.)	24.2	24.2	24.2	24.2	24.2
	(mbar)	60.2	60.2	60.2	60.2	60.2
Fuel Oil Flow(at 20% Excess Air)	(gph)	21	66	89	109	126
	(lph)	78	249	338	411	478
Flame Length (at 20% Excess Air)	(in)	84	108	120	132	144
	(mm)	2130	2740	3050	3350	3660
Flame Diameter (at 20% Excess Air	(in)	24	36	36	42	48
	(mm)	610	910	910	1070	1220
Maximum Operating Excess	(Air)	500%	750%	1000%	1000%	1000%
	(Fuel)	30%	30%	30%	30%	30%

Burner Capacity Information, BBC 3110

NO. 2 FUEL OIL, 900°F/482°C PREHEATED SECONDARY AIR OPERATION, LOW PRESSURE ATOMIZATION

SPECIFICATIONS		OPERATIONAL INFORMATION				
Capacity (at 20% Excess Air)	**(BTU/hr)**	**2,100,000**	**5,970,000**	**7,980,000**	**9,640,000**	**11,130,000**
	(kW)	**560**	**1,580**	**2,110**	**2,550**	**2,940**
Secondary Air Capacity	(scfh)	14,239	60,670	84,814	104,625	122,578
	(nm^3/hr)	381	1,625	2,272	2,803	3,284
Secondary Air Inlet Pressure	(in.w.c.)	0.3	6.9	13.9	20.8	27.7
	(mbar)	0.7	17.2	34.5	51.7	68.9
Primary Air Capacity	(scfh)	11,000	11,000	11,000	11,000	11,000
	(nm^3/hr)	295	295	295	295	295
Primary Air Inlet Pressure	(in.w.c.)	24.2	24.2	24.2	24.2	24.2
	(mbar)	60.2	60.2	60.2	60.2	60.2
Fuel Oil Flow(at 20% Excess Air)	(gph)	15	43	58	70	81
	(lph)	58	164	219	264	305
Flame Length(at 20% Excess Air)	(in)	63	81	90	99	108
	(mm)	1600	2060	2290	2510	2740
Flame Diameter(at 20% Excess Air)	(in)	22	32	32	38	43
	(mm)	550	820	820	960	1100
Maximum Operating Excess	(Air)	400%	600%	800%	800%	800%
	(Fuel)	30%	30%	30%	30%	30%

NOTES:

1. Capacities based on No. 2 Fuel Oil with HHV of 138,000 BTU/USgal (Standard) / LHV of 10.3 kWh/liter (Metric), 0.87 S.G., and a stoichiometric ratio of 1380:1 at 20% excess air; with burner firing into chamber under no pressure.
2. Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
3. Fuel inlet pressures given for reference only and should not be used for measuring fuel flow to the burner.
4. Flame lengths measured from end of the combustion tile.
5. Flame detection via UV scanner; for detection limits refer to the Burner Operating and Ignition Window.
6. Ignition via IPG5413 gas pilot; for ignition limits refer to the Burner Operating and Ignition Window.
7. Burner is suitable for use on gaseous and liquid fuels other than those listed, and with combustion air other than ambient temperature or that listed; for further information consult Hauck.

Burner Capacity Information, BBC 1110/2110

LIQUID PROPANE, AMBIENT COMBUSTION AIR OPERATION, LIQUID PROPANE ATOMIZATION

SPECIFICATIONS		OPERATIONAL INFORMATION				
Capacity (at 20% Excess Air)	**(BTU/hr)**	**3,050,000**	**9,780,000**	**13,280,000**	**16,150,000**	**18,750,000**
	(kW)	**810**	**2,590**	**3,510**	**4,270**	**4,960**
Secondary Air Capacity	(scfh)	23,000	98,000	137,000	169,000	198,000
	(nm^3/hr)	616	2,625	3,670	4,527	5,304
Secondary Air Inlet Pressure	(in.w.c.)	0.3	6.9	13.9	20.8	27.7
	(mbar)	0.7	17.2	34.5	51.7	68.9
Primary Air Capacity	(scfh)	11,000	11,000	11,000	11,000	11,000
	(nm^3/hr)	295	295	295	295	295
Primary Air Inlet Pressure	(in.w.c.)	24.2	24.2	24.2	24.2	24.2
	(mbar)	60.2	60.2	60.2	60.2	60.2
Liquid Propane Flow	(gph)	33	107	145	176	205
	(lph)	126	404	549	668	776
Liquid Propane Inlet Pressure	(psig)	1	15	28	41	56
	(bar)	0.1	1.0	1.9	2.8	3.8
Flame Length (at 20% Excess Air)	(in)	84	108	120	132	144
	(mm)	2130	2740	3050	3350	3660
Flame Diameter (at 20% Excess Air)	(in)	24	36	36	48	48
	(mm)	610	910	910	1220	1220
Maximum Operating Excess	(Air)	300%	400%	400%	500%	500%
	(Fuel)	30%	30%	30%	30%	30%

NO. 6 FUEL OIL, AMBIENT COMBUSTION AIR OPERATION, HIGH PRESSURE ATOMIZATION

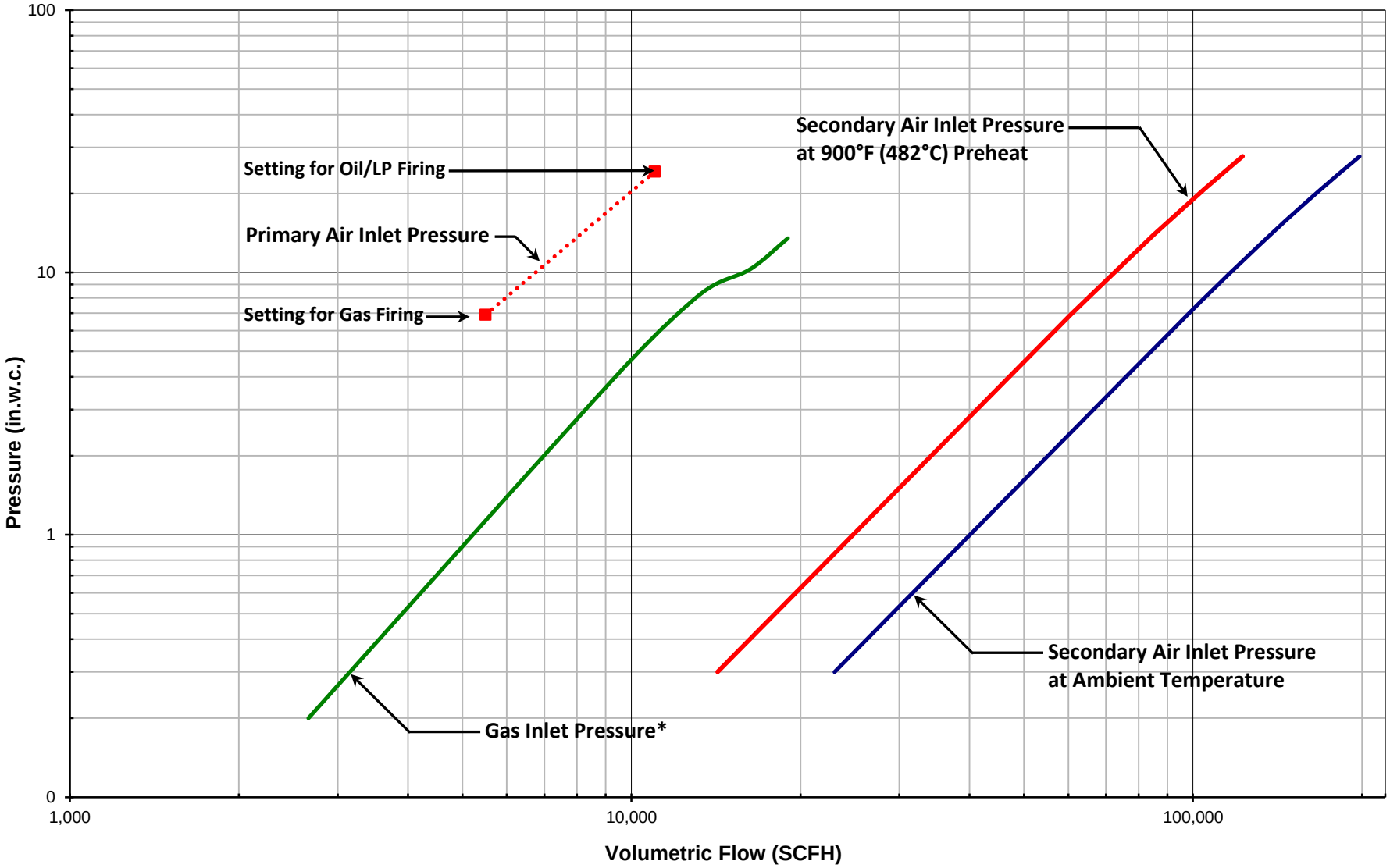
SPECIFICATIONS		OPERATIONAL INFORMATION				
Capacity (at 20% Excess Air)	**(BTU/hr)**	**2,740,000**	**9,200,000**	**12,530,000**	**15,270,000**	**17,750,000**
	(kW)	**720**	**2,430**	**3,310**	**4,040**	**4,690**
Secondary Air Capacity	(scfh)	23,000	98,000	137,000	169,000	198,000
	(nm^3/hr)	616	2,625	3,670	4,527	5,304
Secondary Air Inlet Pressure	(in.w.c.)	0.3	6.9	13.9	20.8	27.7
	(mbar)	0.7	17.2	34.5	51.7	68.9
Primary Air Capacity	(scfh)	8,000	8,000	8,000	8,000	8,000
	(nm^3/hr)	214	214	214	214	214
Primary Air Inlet Pressure	(in.w.c.)	4.0	4.0	4.0	4.0	4.0
	(mbar)	10.0	10.0	10.0	10.0	10.0
Atomizing Air Capacity	(scfh)	1,142	1,795	1,877	1,958	2,000
	(nm^3/hr)	31	48	50	52	54
Atomizing Air Inlet Pressure	(psig)	32	60	72	76	80
	(bar)	2.2	4.1	5.0	5.2	5.5
Fuel Oil Flow	(gph)	18	61	84	102	118
	(lph)	69	231	318	386	447
Fuel Oil Inlet Pressure	(psig)	35	64	80	86	90
	(bar)	2.4	4.4	5.5	5.9	6.2
Flame Length (at 20% Excess Air)	(in)	72	108	120	132	144
	(mm)	1830	2740	3050	3350	3660
Flame Diameter (at 20% Excess Air)	(in)	24	36	36	42	48
	(mm)	610	910	910	1070	1220
Maximum Operating Excess	(Air)	100%	300%	400%	400%	400%
	(Fuel)	30%	30%	30%	30%	30%

NOTES:

1. Capacities based on 1) Liquid Propane with HHV of 91,500 BTU/gal (Standard) / LHV of 6.5 kWh/liter (Metric), 0.51 S.G.,and a stoichiometric ratio of 850:1 at 20% excess air, or 2) No. 6 Fuel Oil with HHV of 150,000 BTU/USgal (Standard) / LHV of 11.2 kWh/liter (Metric), 1.02 S.G., and a stoichiometric ratio of 1465:1 at 20% excess air; all cases with burner firing into chamber under no pressure.
2. Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
3. Fuel inlet pressures given for reference only and should not be used for measuring fuel flow to the burner.
4. Flame lengths measured from end of the combustion tile.
5. Flame detection via UV scanner; for detection limits refer to the Burner Operating and Ignition Window.
6. Ignition via IPG5413 gas pilot; for ignition limits refer to the Burner Operating and Ignition Window.
7. Burner is suitable for use on gaseous and liquid fuels other than those listed, and with combustion air other than ambient temperature or that listed; for further information consult Hauck.

BBC 1110/2110/3110 Pressure Curves

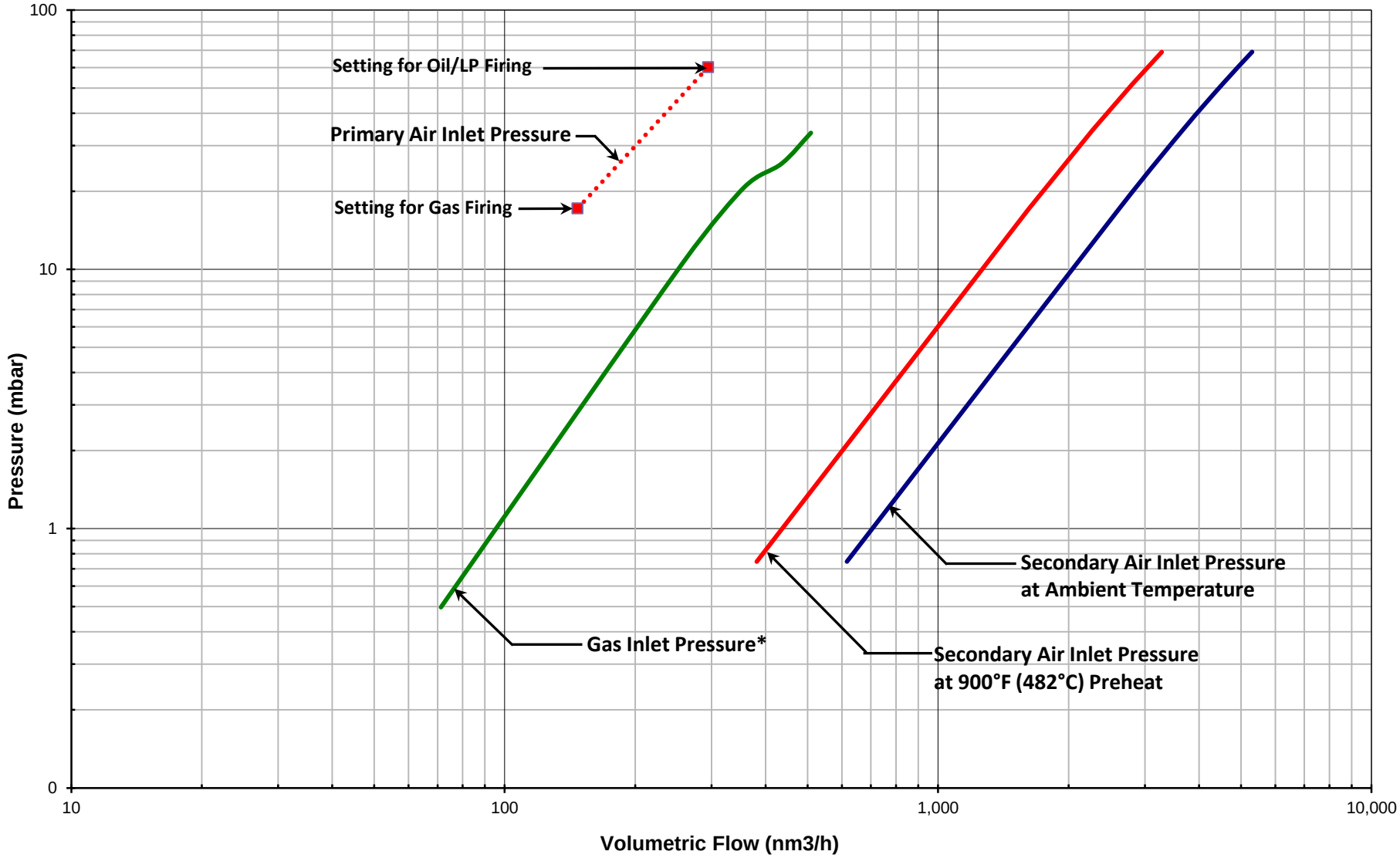
Natural Gas 1034 BTU/ft³ (HHV Standard) / 10.21 kWh/nm³ (LHV Metric), 0.59 S.G. and Ambient and Preheated Combustion Air



*Note: Gas Inlet Pressure for BBC burner is not suitable for fuel flow measurement and is given for component sizing and reference only

BBC 1110/2110/3110 Pressure Curves

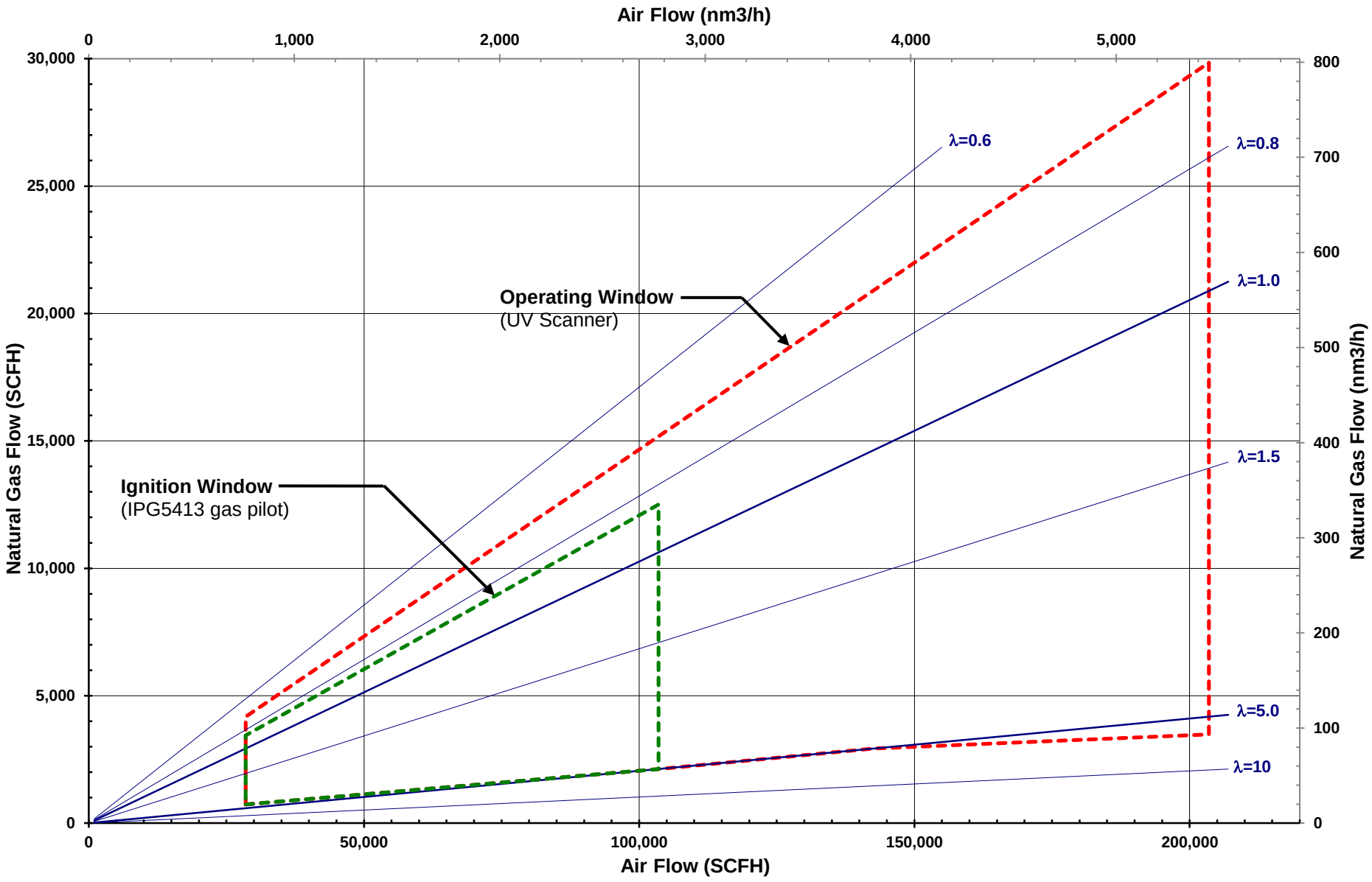
Natural Gas 1034 BTU/ft³ (HHV Standard) / 10.21 kWh/nm³ (LHV Metric), 0.59 S.G. and Ambient and Preheated Combustion Air



*Note: Gas Inlet Pressure for BBC burner is not suitable for fuel flow measurement and is given for component sizing and reference only

BBC 1110/2110/3110 Operating and Ignition Window

Natural Gas 1034 BTU/ft3 (HHV Standard) / 10.21 kWh/nm3 (LHV Metric), 0.59 S.G. and Ambient Combustion Air



BBC 1110/2110/3110 Operating and Ignition Window

No. 2 Fuel Oil 138,000 BTU/gal (HHV Standard) / 10.3 kWh/liter (LHV Metric), 0.87 S.G. and Ambient Combustion Air