



## Burner Capacity Information, BBC 1114/2114

NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION, LOW PRESSURE ATOMIZATION

SPECIFICATIONS		OPERATIONAL INFORMATION				
<b>Capacity</b> (at 10% Excess Air)	(BTU/hr)	<b>5,360,000</b>	<b>20,600,000</b>	<b>28,520,000</b>	<b>34,650,000</b>	<b>39,810,000</b>
	(kW)	<b>1,420</b>	<b>5,450</b>	<b>7,540</b>	<b>9,160</b>	<b>10,530</b>
Secondary Air Capacity	(scfh)	40,000	198,000	280,000	343,500	397,000
	(nm <sup>3</sup> /hr)	1,072	5,304	7,501	9,202	10,635
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)	15,500	15,500	15,500	15,500	15,500
	(nm <sup>3</sup> /hr)	415	415	415	415	415
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.)	0.0	0.3	0.6	0.9	1.2
	(mbar)	0.0	0.7	1.5	2.2	3.0
Flame Length (at 10% Excess Air)	(in)	60	144	156	168	180
	(mm)	1520	3660	3960	4270	4570
Flame Diameter (at 10% Excess Air)	(in)	24	36	48	54	60
	(mm)	610	910	1220	1370	1520
Maximum Operating Excess	(Air)	100%	400%	400%	500%	500%
	(Fuel)	30%	30%	30%	30%	30%

## Burner Capacity Information, BBC 3114

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

SPECIFICATIONS		OPERATIONAL INFORMATION				
<b>Capacity</b> (at 10% Excess Air)	(BTU/hr)	<b>3,890,000</b>	<b>13,330,000</b>	<b>18,230,000</b>	<b>22,020,000</b>	<b>25,220,000</b>
	(kW)	<b>1,030</b>	<b>3,530</b>	<b>4,820</b>	<b>5,820</b>	<b>6,670</b>
Secondary Air Capacity	(scfh)	24,763	122,578	173,342	212,654	245,775
	(nm <sup>3</sup> /hr)	663	3,284	4,643	5,697	6,584
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)	15,500	15,500	15,500	15,500	15,500
	(nm <sup>3</sup> /hr)	415	415	415	415	415
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.)	0.0	0.2	0.5	0.7	0.9
	(mbar)	0.0	0.6	1.1	1.7	2.3
Flame Length (at 10% Excess Air)	(in)	45	108	117	126	135
	(mm)	1140	2740	2970	3200	3430
Flame Diameter (at 10% Excess Air)	(in)	22	32	43	49	54
	(mm)	550	820	1100	1230	1370
Maximum Operating Excess	(Air)	80%	320%	320%	400%	400%
	(Fuel)	30%	30%	30%	30%	30%

### NOTES:

1. Capacities based on Natural Gas with HHV of 1034 BTU/ft<sup>3</sup> (Standard) / LHV of 10.21 kWh/nm<sup>3</sup> (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 1114/2114

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

SPECIFICATIONS		OPERATIONAL INFORMATION				
<b>Capacity</b> (at 20% Excess Air)	(BTU/hr)	<b>5,920,000</b>	<b>19,080,000</b>	<b>25,920,000</b>	<b>31,210,000</b>	<b>35,670,000</b>
	(kW)	<b>1,570</b>	<b>5,050</b>	<b>6,860</b>	<b>8,260</b>	<b>9,430</b>
Secondary Air Capacity	(scfh)	40,000	198,000	280,000	343,500	397,000
	(nm <sup>3</sup> /hr)	1,072	5,304	7,501	9,202	10,635
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)	31,000	31,000	31,000	31,000	31,000
	(nm <sup>3</sup> /hr)	830	830	830	830	830
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)	43	138.3	187.8	226.1	258.5
	(lph)	162	344.1	467.3	562.7	643.0
Flame Length (at 20% Excess Air)	(in)	60	156	168	180	192
	(mm)	1520	3960	4270	4570	4880
Flame Diameter (at 20% Excess Air)	(in)	24	48	48	54	60
	(mm)	610	1220	1220	1370	1520
Maximum Operating Excess	(Air)	150%	500%	500%	500%	500%
	(Fuel)	30%	30%	30%	30%	30%

## Burner Capacity Information, BBC 3114

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

SPECIFICATIONS		OPERATIONAL INFORMATION				
<b>Capacity</b> (at 20% Excess Air)	(BTU/hr)	<b>4,650,000</b>	<b>12,800,000</b>	<b>17,030,000</b>	<b>20,300,000</b>	<b>23,060,000</b>
	(kW)	<b>1,230</b>	<b>3,390</b>	<b>4,500</b>	<b>5,370</b>	<b>6,100</b>
Secondary Air Capacity	(scfh)	24,763	122,578	173,342	212,654	245,775
	(nm <sup>3</sup> /hr)	663	3,284	4,643	5,697	6,584
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)	31,000	31,000	31,000	31,000	31,000
	(nm <sup>3</sup> /hr)	830	830	830	830	830
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)	43	138.3	187.8	226.1	258.5
	(lph)	162	344.1	467.3	562.7	643.0
Flame Length(at 20% Excess Air)	(in)	45	117	126	135	144
	(mm)	1140	2970	3200	3430	3660
Flame Diameter(at 20% Excess Air)	(in)	22	43	43	49	54
	(mm)	550	1100	1100	1230	1370
Maximum Operating Excess	(Air)	120%	400%	400%	400%	400%
	(Fuel)	30%	30%	30%	30%	30%

### NOTES:

- 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.
- Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
- Fuel inlet pressures given for reference only and should not be used for measuring fuel flow to the burner.
- Flame lengths measured from end of the combustion tile.
- Flame detection via UV scanner; for detection limits refer to the Burner Operating and Ignition Window.
- Ignition via IPG5413 gas pilot; for ignition limits refer to the Burner Operating and Ignition Window.
- 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 1114/2114

### LIQUID PROPANE, AMBIENT COMBUSTION AIR OPERATION, LIQUID PROPANE ATOMIZATION

SPECIFICATIONS		OPERATIONAL INFORMATION				
<b>Capacity</b> (at 20% Excess Air)	(BTU/hr)	<b>6,370,000</b>	<b>20,540,000</b>	<b>27,900,000</b>	<b>33,590,000</b>	<b>38,390,000</b>
	(kW)	<b>1,680</b>	<b>5,430</b>	<b>7,380</b>	<b>8,880</b>	<b>10,150</b>
Secondary Air Capacity	(scfh)	40,000	198,000	280,000	343,500	397,000
	(nm <sup>3</sup> /hr)	1,072	5,304	7,501	9,202	10,635
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)	31,000	31,000	31,000	31,000	31,000
	(nm <sup>3</sup> /hr)	830	830	830	830	830
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)	70	225	305	367	420
	(lph)	263.5	558.6	758.6	913.5	1,044.0
Liquid Propane Inlet Pressure	(psig)	3	31	57	83	109
	(bar)	0.2	2.1	4.0	5.7	7.5
Flame Length (at 20% Excess Air)	(in)	60	144	156	168	180
	(mm)	1520	3660	3960	4270	4570
Flame Diameter(at 20% Excess Air)	(in)	24	42	48	54	60
	(mm)	610	1070	1220	1370	1520
Maximum Operating Excess	(Air)	150%	400%	400%	500%	500%
	(Fuel)	30%	30%	30%	30%	30%

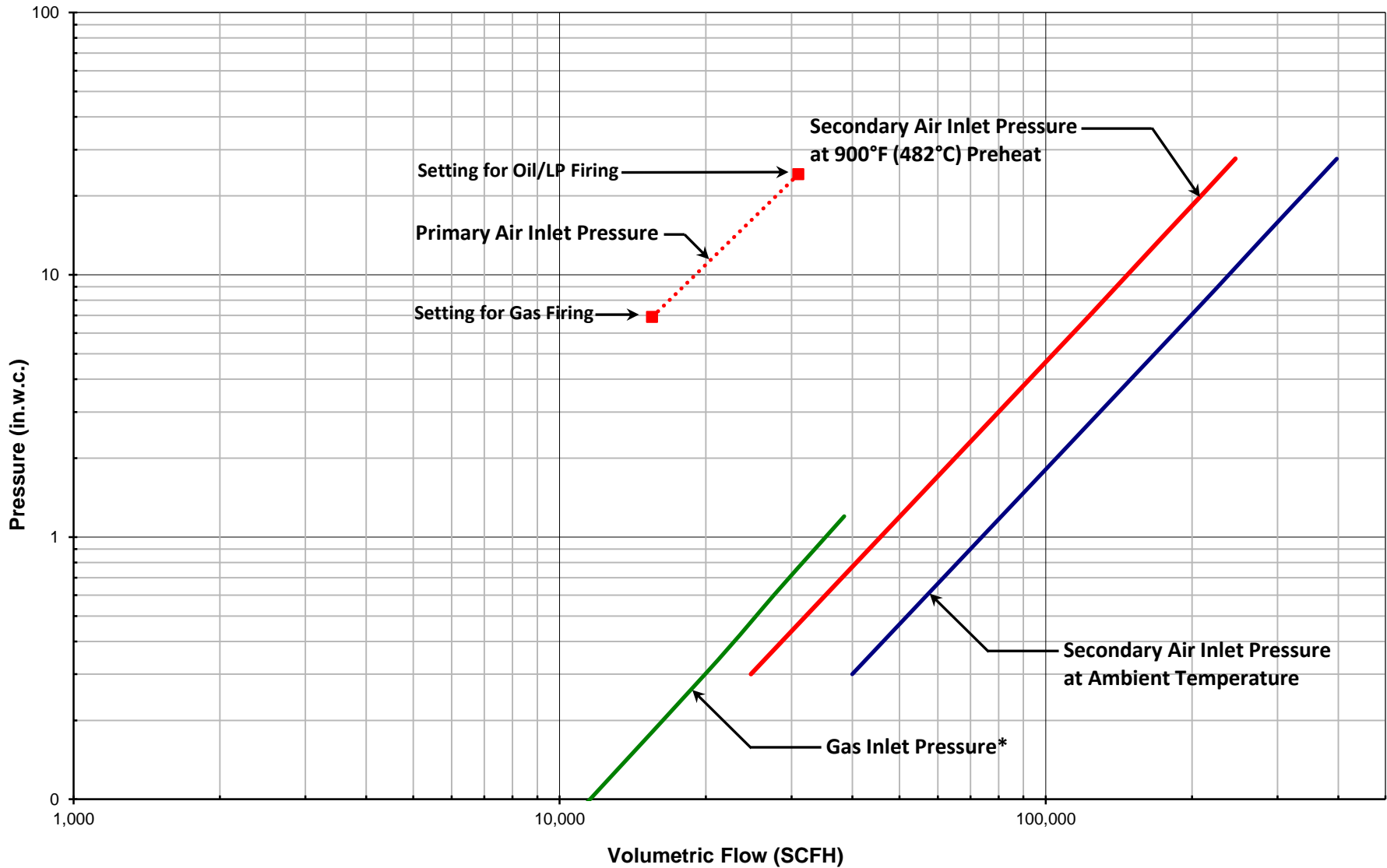
### NO. 6 FUEL OIL, AMBIENT COMBUSTION AIR OPERATION, HIGH PRESSURE ATOMIZATION

SPECIFICATIONS		OPERATIONAL INFORMATION				
<b>Capacity</b> (at 20% Excess Air)	(BTU/hr)	<b>5,330,000</b>	<b>18,820,000</b>	<b>25,830,000</b>	<b>31,270,000</b>	<b>35,840,000</b>
	(kW)	<b>1,410</b>	<b>4,980</b>	<b>6,830</b>	<b>8,270</b>	<b>9,480</b>
Secondary Air Capacity	(scfh)	40,000	198,000	280,000	343,500	397,000
	(nm <sup>3</sup> /hr)	1,072	5,304	7,501	9,202	10,635
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)	20,000	20,000	20,000	20,000	20,000
	(nm <sup>3</sup> /hr)	536	536	536	536	536
Primary Air Inlet Pressure	(in.w.c.)	2.0	2.0	2.0	2.0	2.0
	(mbar)	5.0	5.0	5.0	5.0	5.0
Atomizing Air Capacity	(scfh)	2,475	2,555	2,715	2,955	3,000
	(nm <sup>3</sup> /hr)	66	68	73	79	80
Atomizing Air Inlet Pressure	(psig)	18	25	34	40	45
	(bar)	1.2	1.7	2.3	2.8	3.1
Fuel Oil Flow	(gph)	36	130	170	210	240
	(lph)	135	492	643	795	908
Fuel Oil Inlet Pressure	(psig)	19	26	36	42	48
	(bar)	1.3	1.8	2.5	2.9	3.3
Flame Length(at 20% Excess Air)	(in)	72	120	132	144	156
	(mm)	1830	3050	3350	3660	3960
Flame Diameter(at 20% Excess Air)	(in)	24	36	36	42	48
	(mm)	610	910	910	1070	1220
Maximum Operating Excess	(Air)	150%	400%	500%	500%	600%
	(Fuel)	30%	30%	30%	30%	30%

**NOTES:**

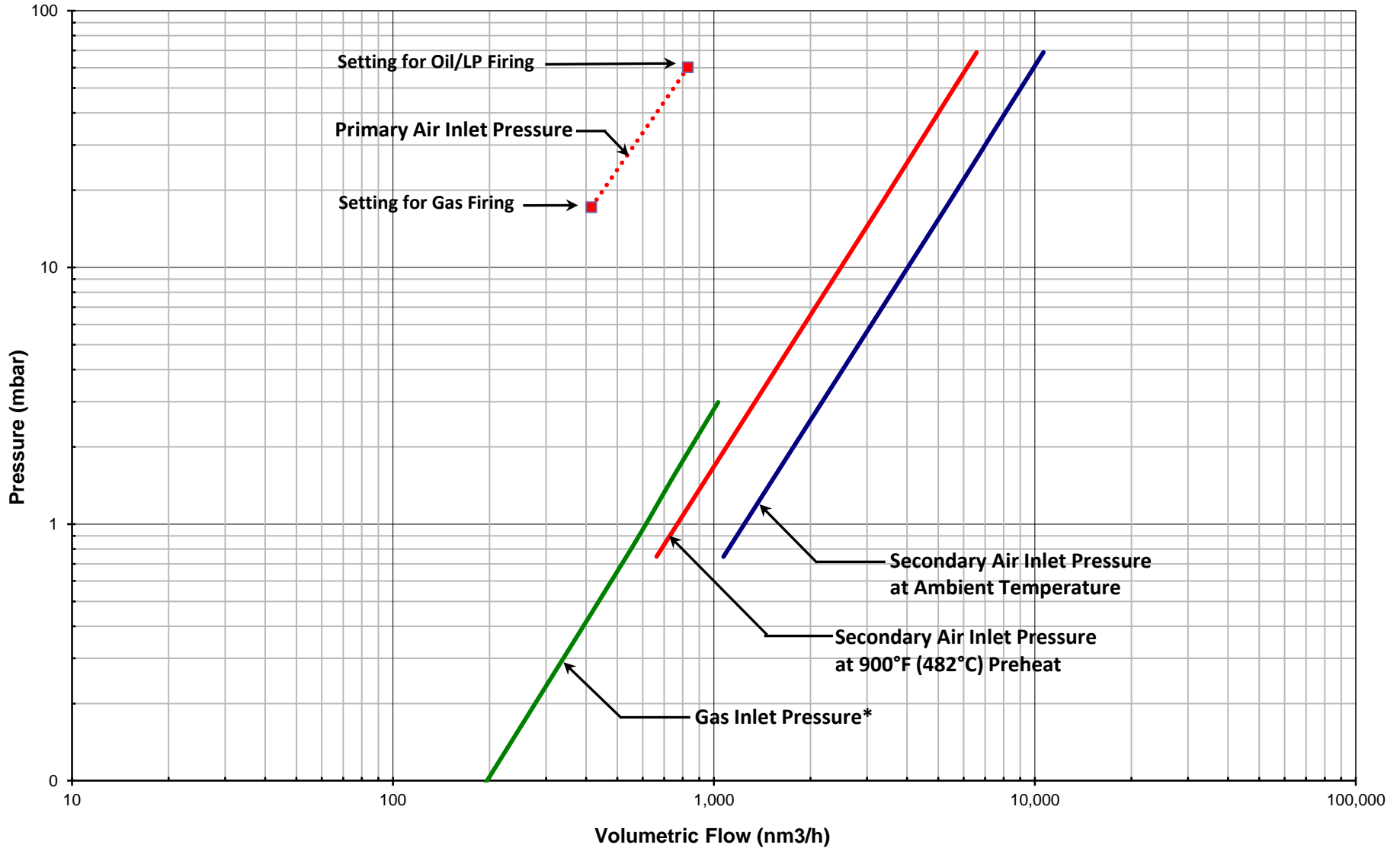
- Capacities based on 1) Liquid Propane with HHV of 91,500 BTU/gal (Standard) / LHV of 6.5 kWh/liter (Metric), 0.51 S.G., and a stoichiometric ratio of 850:1 at 20% excess air, or 2) No. 6 Fuel Oil with HHV of 150,000 BTU/USgal (Standard) / LHV of 11.2 kWh/liter (Metric), 1.02 S.G., and a stoichiometric ratio of 1465:1 at 20% excess air; all cases with burner firing into chamber under no pressure.
- Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
- Fuel inlet pressures given for reference only and should not be used for measuring fuel flow to the burner.
- Flame lengths measured from end of the combustion tile.
- Flame detection via UV scanner; for detection limits refer to the Burner Operating and Ignition Window.
- Ignition via IPG5413 gas pilot; for ignition limits refer to the Burner Operating and Ignition Window.
- 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 1114/2114/3114 Pressure Curves**  
**Natural Gas 1034 BTU/ft<sup>3</sup> (HHV Standard) / 10.21 kWh/nm<sup>3</sup> (LHV Metric), 0.59 S.G.**  
**and Ambient and Preheated Combustion Air**



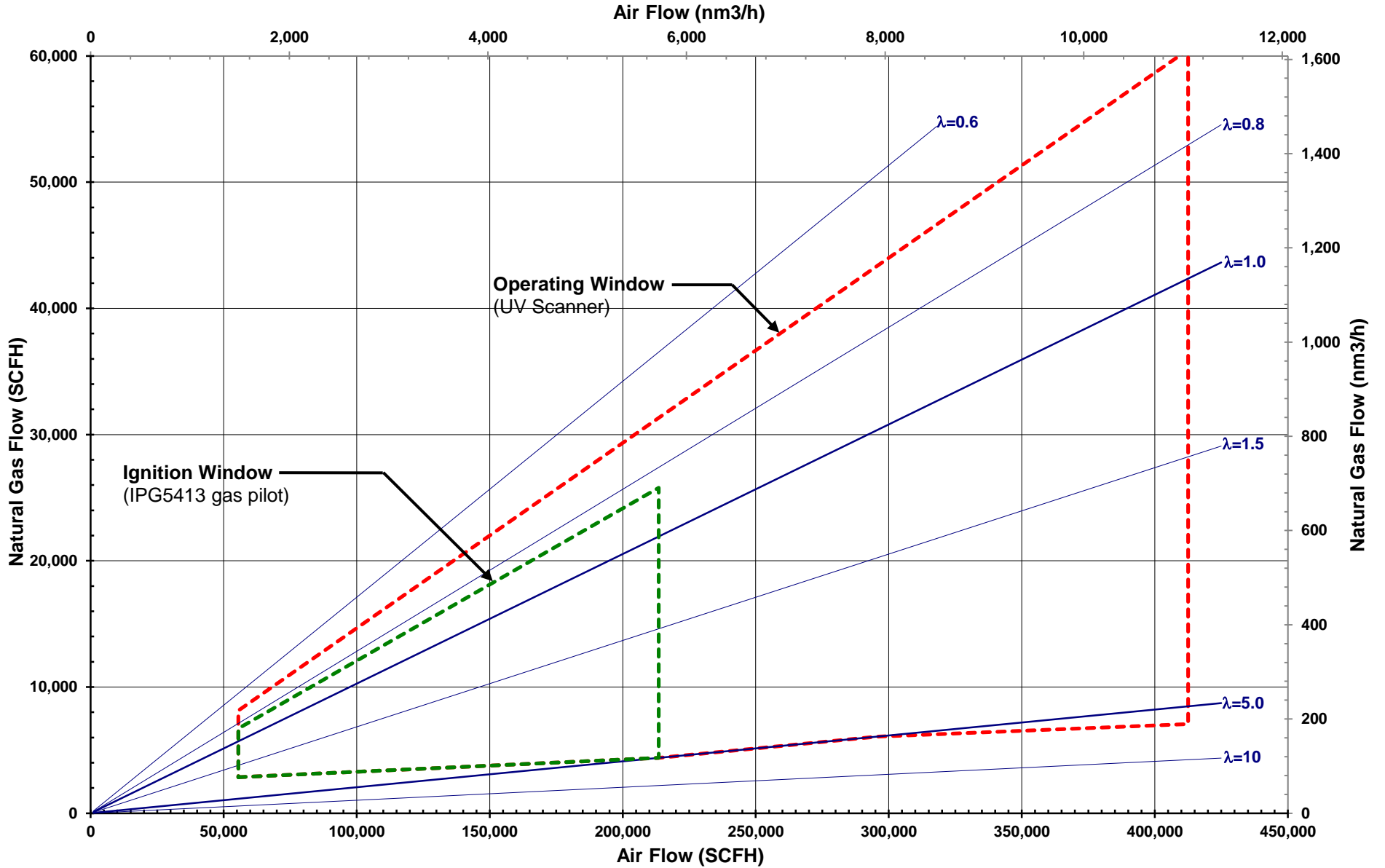
\*Note: Gas Inlet Pressure for BBC burner is not suitable for fuel flow measurement and is given for component sizing and reference only

**BBC 1114/2114/3114 Pressure Curves**  
**Natural Gas 1034 BTU/ft<sup>3</sup> (HHV Standard) / 10.21 kWh/nm<sup>3</sup> (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 1114/2114/3114 Operating and Ignition Window**  
**Natural Gas 1034 BTU/ft<sup>3</sup> (HHV Standard) / 10.21 kWh/nm<sup>3</sup> (LHV Metric), 0.59 S.G.**  
**and Ambient Combustion Air**



# BBC 1114/2114/3114 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

