

BURNER MODEL TriOx 1014

FIRING MODE

NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION

| SPECIFICATIONS | | OPERATIONAL INFORMATION | | | |
|---|-----------------------|-------------------------|--------------|--------------|--------------|
| Capacity (at 5% Excess Air) | (MMBTU/hr) | 2.9 | 9.0 | 15.0 | 20.9 |
| | (kW) | 780 | 2,370 | 3,970 | 5,540 |
| Air Capacity | (SCFH) | 29,100 | 88,600 | 148,100 | 206,900 |
| | (nm ³ /hr) | 780 | 2,370 | 3,970 | 5,540 |
| Air Pressure (Stages 1 and 2) | (in.w.c.) | 0.3 | 2.5 | 7.1 | 13.9 |
| | (mbar) | 0.7 | 6.3 | 17.7 | 34.6 |
| Air Pressure (Stage 3) | (in.w.c.) | 0.2 | 1.8 | 4.9 | 9.6 |
| | (mbar) | 0.5 | 4.4 | 12.2 | 23.9 |
| Air Pressure (Switching Valve) ⁴ | (in.w.c.) | 0.3 | 2.6 | 7.3 | 14.2 |
| | (mbar) | 0.7 | 6.5 | 18.1 | 35.3 |
| Gas Inlet Pressure | (in.w.c.) | 0.5 | 4.7 | 13.0 | 25.4 |
| | (mbar) | 1.3 | 11.6 | 32.4 | 63.2 |
| Flame Length (5% Excess Air) ⁵ | (ft) | 8.0 | 13.0 | 15.0 | 18.0 |
| | (m) | 2.4 | 4.0 | 4.6 | 5.5 |
| Flame Diameter (5% Excess Air) ⁵ | (ft) | 3.0 | 5.0 | 5.5 | 6.0 |
| | (m) | 0.9 | 1.5 | 1.7 | 1.8 |
| Maximum Excess | (Air %) | 500 | 750 | 1,000 | 1,500 |
| | (Fuel %) | +30 | +30 | +30 | +30 |

INVISIFLAME MODE⁶

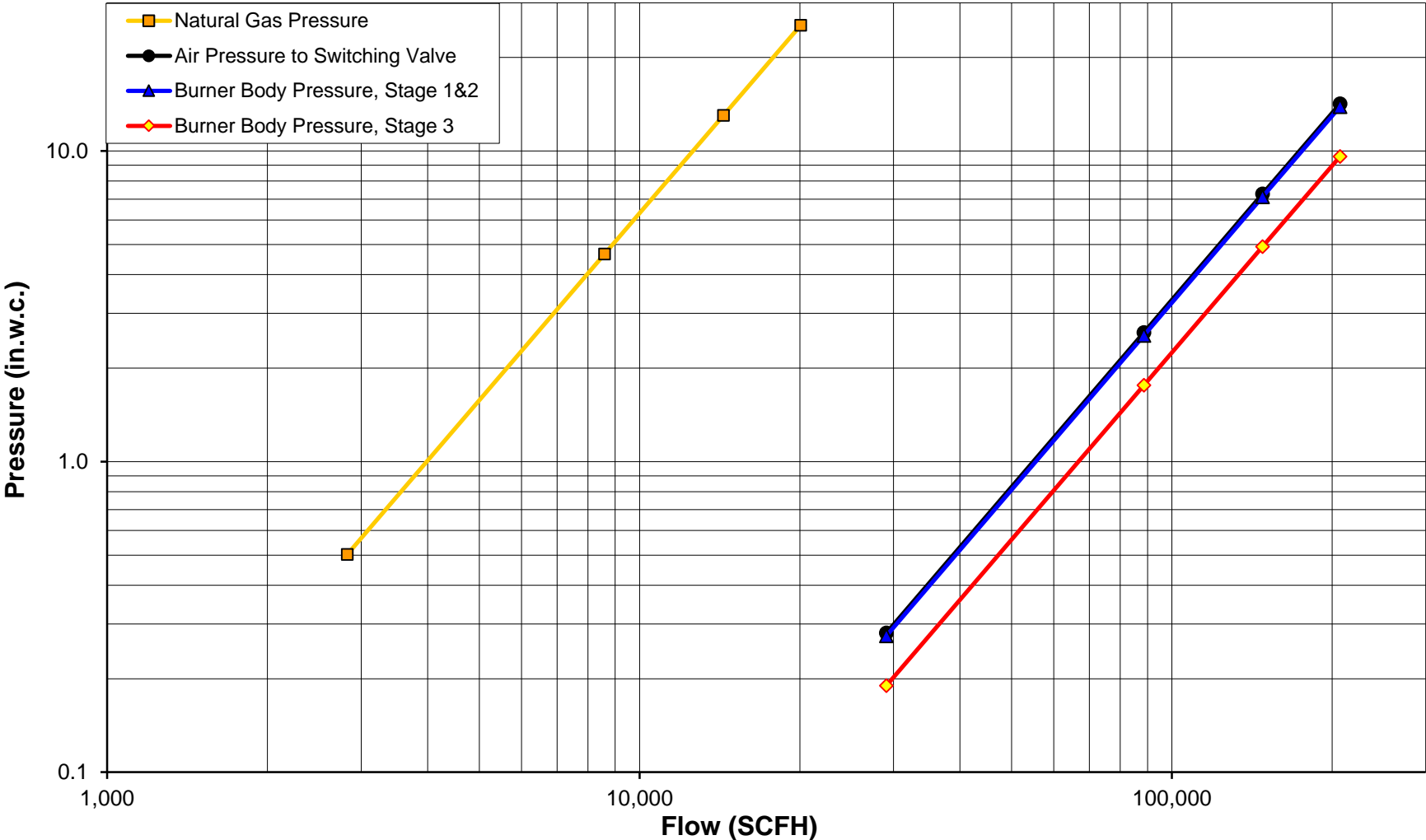
NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION

| SPECIFICATIONS | | OPERATIONAL INFORMATION | | | |
|---|-----------------------|-------------------------|--------------|--------------|--------------|
| Capacity (at 5% Excess Air) | (MMBTU/hr) | 2.9 | 9.0 | 15.0 | 20.9 |
| | (kW) | 780 | 2,370 | 3,970 | 5,540 |
| Air Capacity | (SCFH) | 29,100 | 88,600 | 148,100 | 206,900 |
| | (nm ³ /hr) | 780 | 2,370 | 3,970 | 5,540 |
| Air Pressure (Stages 1 and 2) | (in.w.c.) | 0.0 | 0.1 | 0.2 | 0.3 |
| | (mbar) | 0.0 | 0.2 | 0.4 | 0.8 |
| Air Pressure (Stage 3) | (in.w.c.) | 0.3 | 2.8 | 7.9 | 15.4 |
| | (mbar) | 0.8 | 7.0 | 19.7 | 38.4 |
| Air Pressure (Switching Valve) ⁴ | (in.w.c.) | 0.3 | 2.9 | 8.2 | 16.0 |
| | (mbar) | 0.8 | 7.3 | 20.4 | 39.8 |
| Gas Inlet Pressure | (in.w.c.) | 0.5 | 4.7 | 13.2 | 25.9 |
| | (mbar) | 1.3 | 11.8 | 33.0 | 64.3 |
| Combustion Zone Length | (ft) | 8.0 | 13.0 | 15.0 | 18.0 |
| | (m) | 2.4 | 4.0 | 4.6 | 5.5 |
| Combustion Zone Diameter | (ft) | 3.0 | 5.0 | 5.5 | 6.0 |
| | (m) | 0.9 | 1.5 | 1.7 | 1.8 |
| Maximum Excess | (Air %) | 500 | 750 | 1,000 | 1,500 |
| | (Fuel %) | +30 | +30 | +30 | +30 |

- NOTES: 1. Capacities based on Natural Gas with HHV of 1034 BTU/ft³ (Standard), and LHV of 10.21 kWh/nm³ (Metric), 0.59 S.G., and a stoichiometric ratio of 9.74:1 with burner firing into chamber under no pressure at 5% excess air.
2. Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
3. Flame detection via UV scanner in Firing Mode only.
4. For models equipped with a switching valve (valve allows burner to switch between Firing and Invisiflame Mode) this is the required combustion air supply pressure to the inlet of the valve.
5. Flame length and diameter measured from end of refractory combustion tile.
6. Invisiflame™ Mode is suitable for furnace or chamber temperatures above 1600°F or 870°C only. For temperatures less than 1600°F or 870°C the TriOx burner must be used in Firing Mode only. The combustion zone when operating in Invisiflame™ Mode is not visible unless used with preheated combustion air.

TriOx 1014 / 2014 Burner Pressure Curves

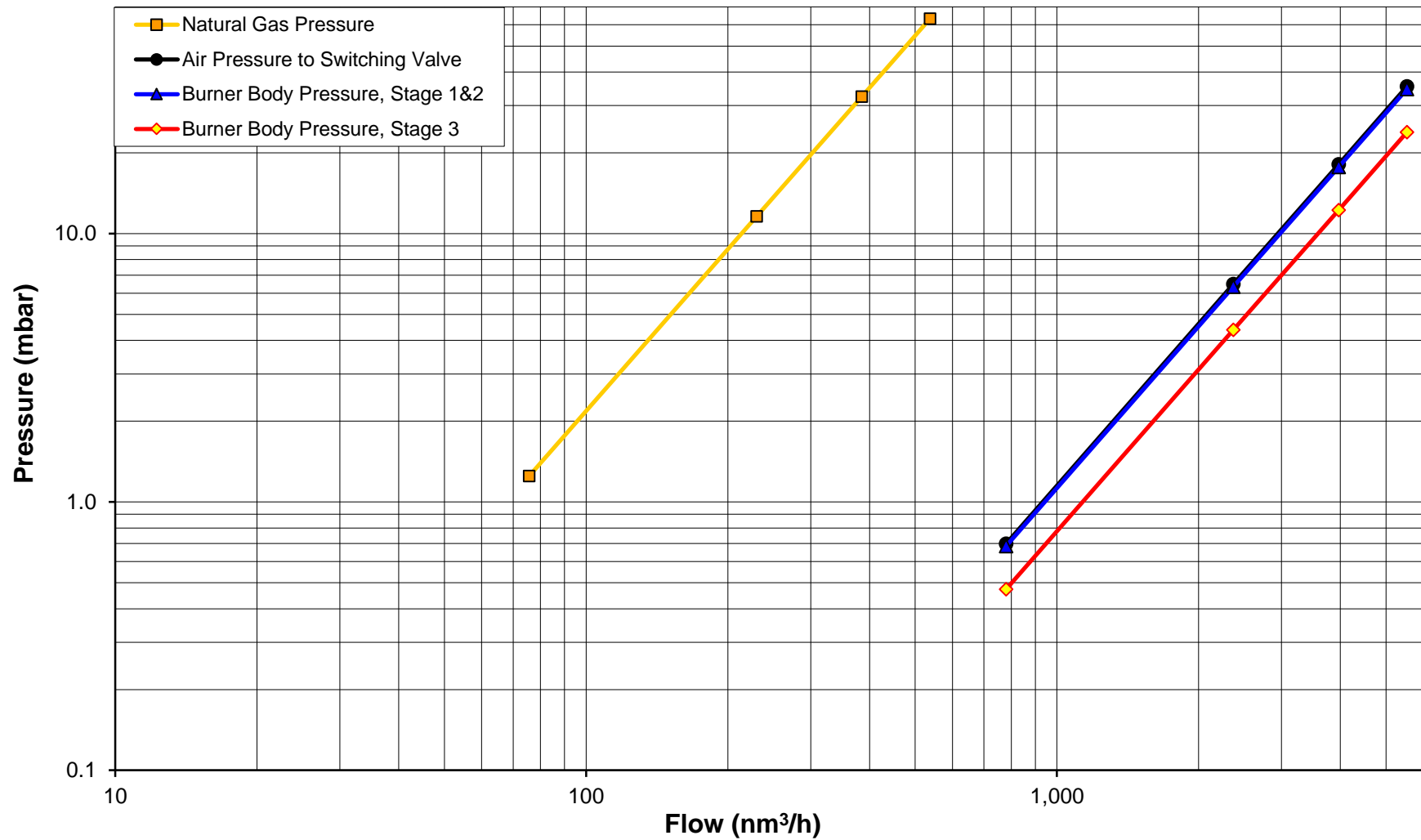
60/40 (Firing) Mode, Ambient Combustion Air
Natural Gas 1034 BTU/scf (HHV), S.G. 0.59



TriOx 1014 / 2014 Burner Pressure Curves

60/40 (Firing) Mode, Ambient Combustion Air

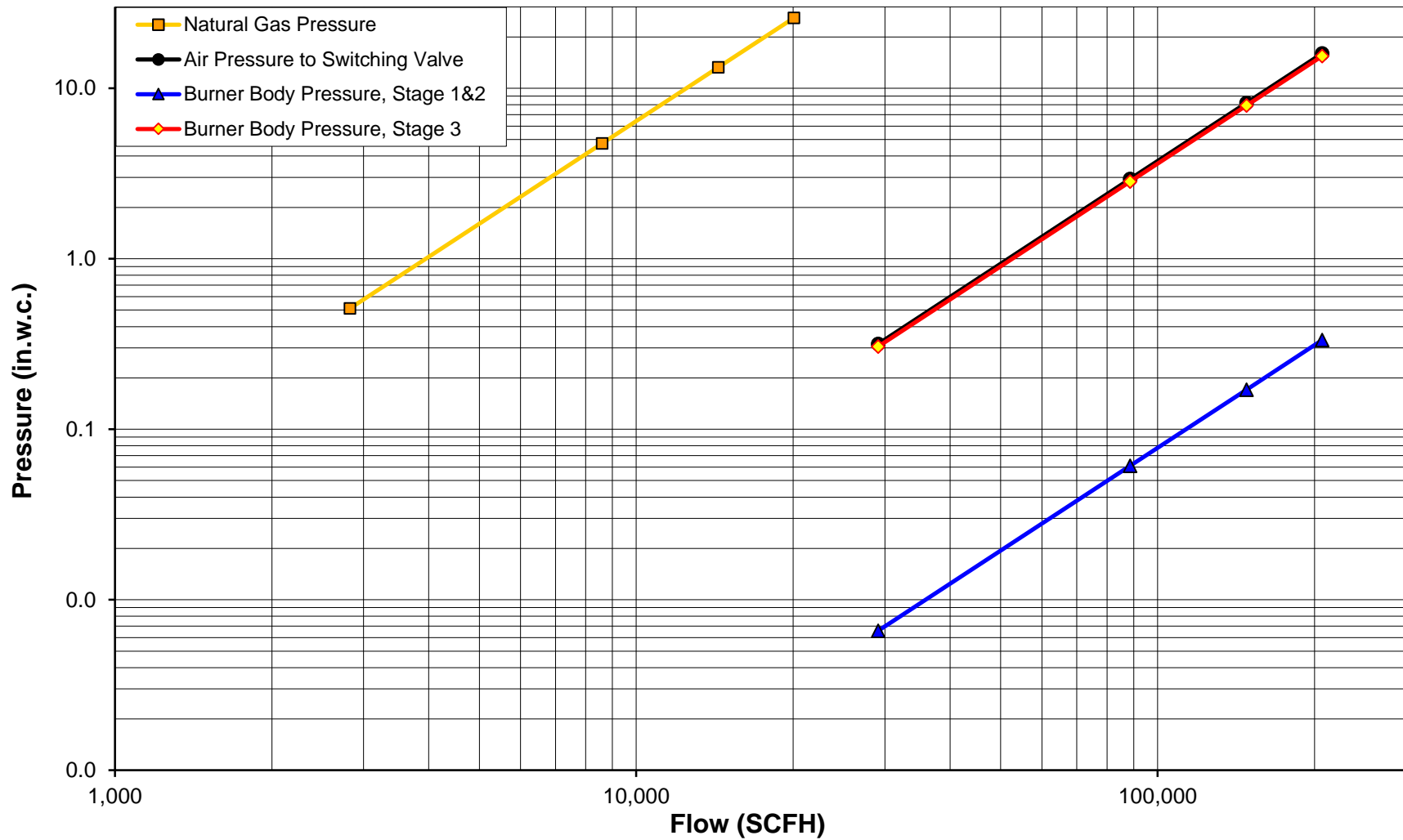
Natural Gas 10.21kWh/nm³ (LHV), S.G. 0.59



TriOx 1014 / 2014 Burner Pressure Curves

90/10 (InvisiFlame) Mode, Ambient Combustion Air

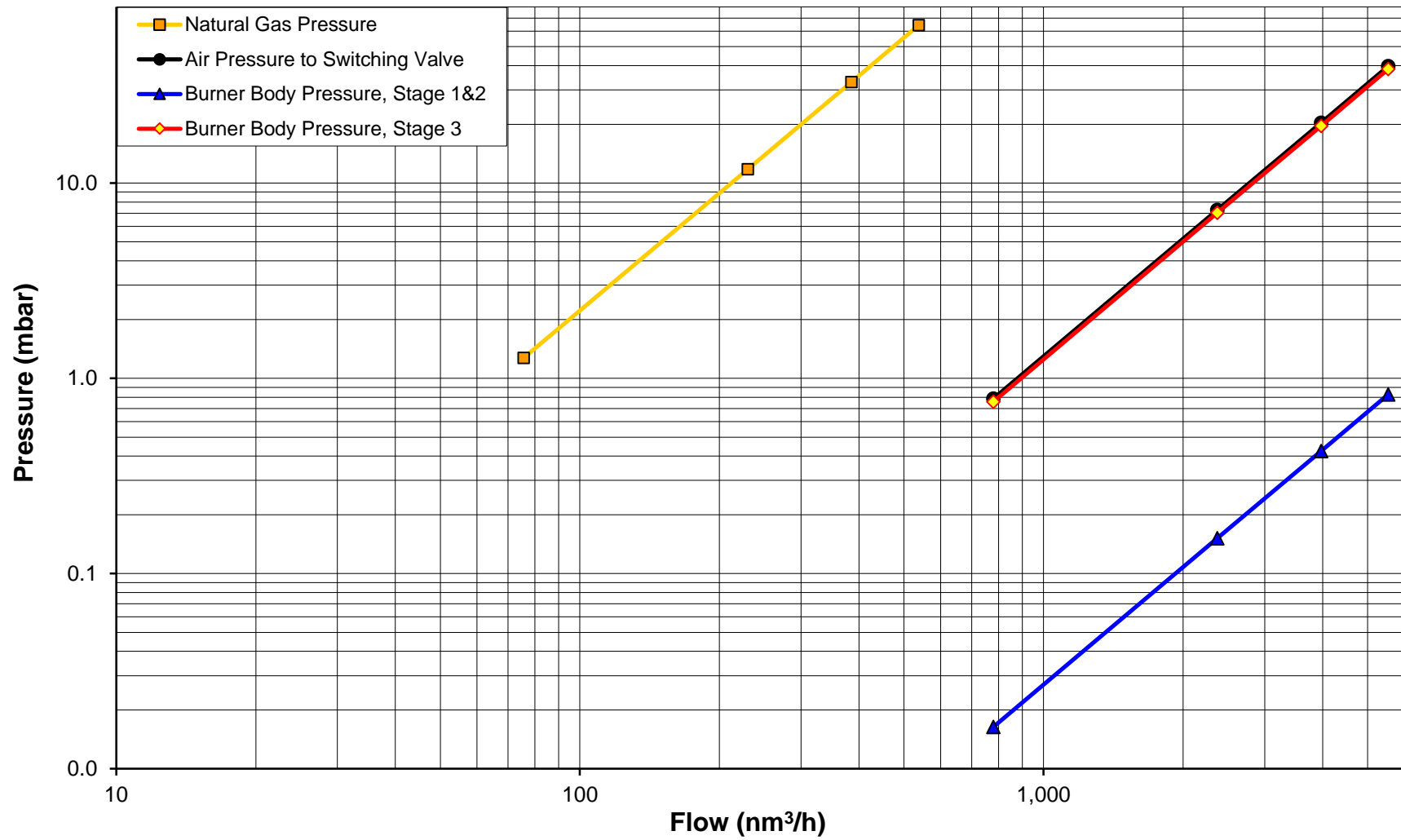
Natural Gas 1034 BTU/scf (HHV), S.G. 0.59



TriOx 1014 / 2014 Burner Pressure Curves

90/10 (InvisiFlame) Mode, Ambient Combustion Air

Natural Gas 10.21kWh/nm³ (LHV), S.G. 0.59



TriOx 1014/2014 Operating Window

Natural Gas 1034 BTU/scf (10.21 kWh/nm3), S.G. 0.59

