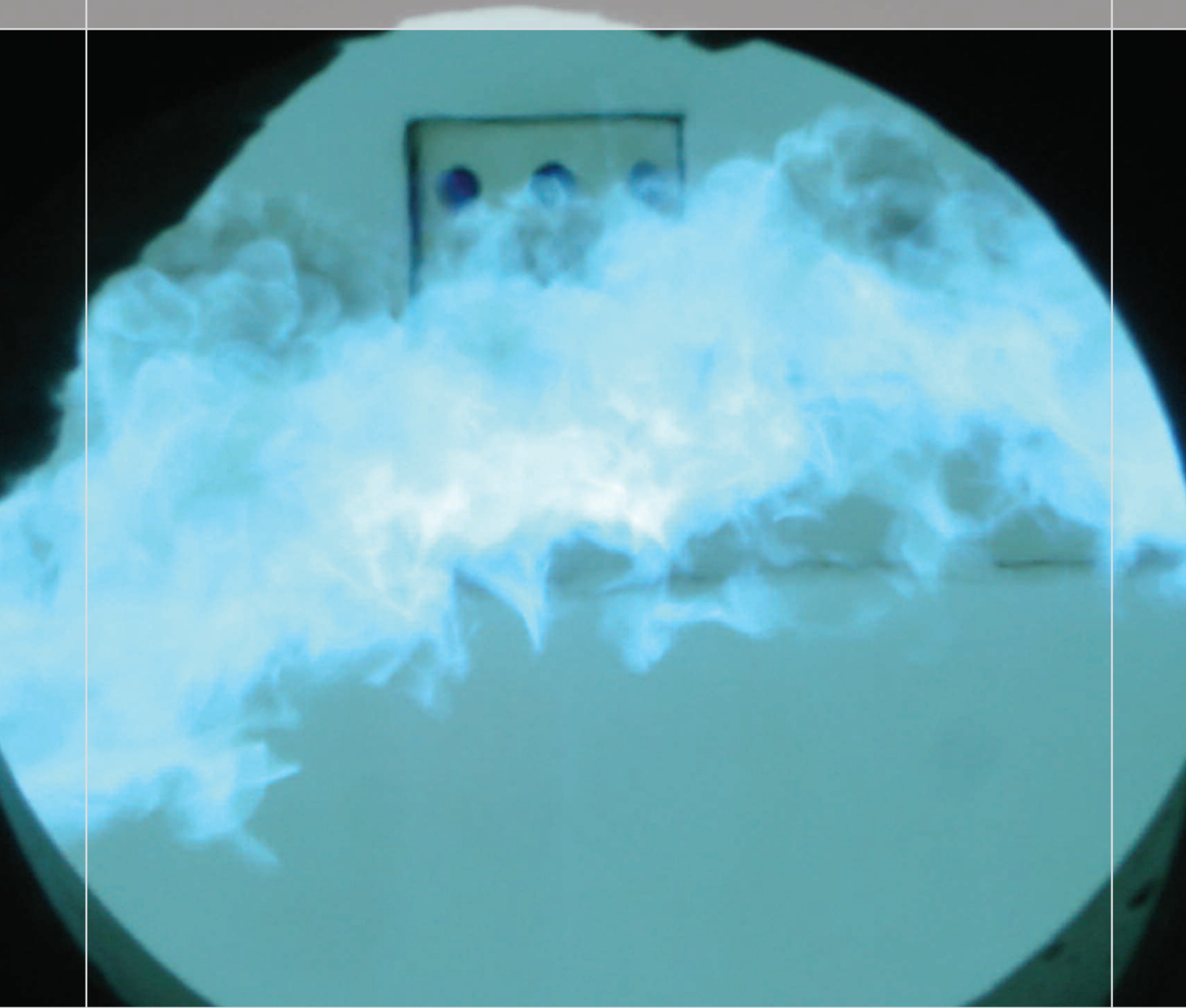


DOC–WideFlame Burner (DOC-WFB)



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 **PRAXAIR**[®]
Making our planet more productive[™]

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Looking for a proven oxy-fuel burner with wide flame coverage, low NO_x and low maintenance? Praxair's patented DOC-WideFlame burner (WFB) has been successfully implemented in glass melting furnaces. It features a staged combustion process that provides high flame luminosity and low momentum, allowing optimum heat transfer during the melting process and preventing hot spots.

The burner generates a wide flame pattern that covers up to 200% more glass surface than conventional oxy-fuel burners.



A variety of flame shape configurations can be promoted, including a "half-flame" for use near end-walls or for other process reasons. This flexibility allows the burner to be incorporated in any location in any type of furnace.

Economic, environmental and production benefits can include:

- Low momentum flames that result in reduced volatilization off the glass melt
- Up to 50% NO_x reduction compared to conventional oxy-fuel burners
- Complete flame coverage across the furnace
- No burner cooling required
- Minimal maintenance required

Flame Characteristics

The DOC-WFB generates a soft flame with geometrical characteristics as shown in Figure 1:

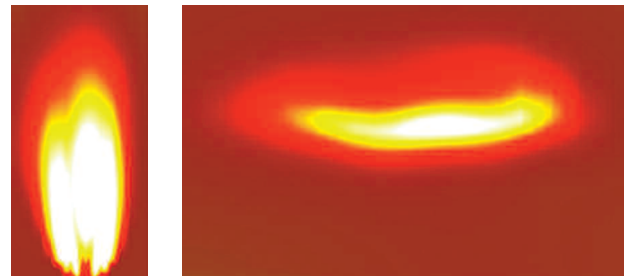


Figure 1. DOC-WFB flame views: top(left) and front (right). Note: Images not to scale

Flame dimensions for typical design conditions are summarized in the following figure:

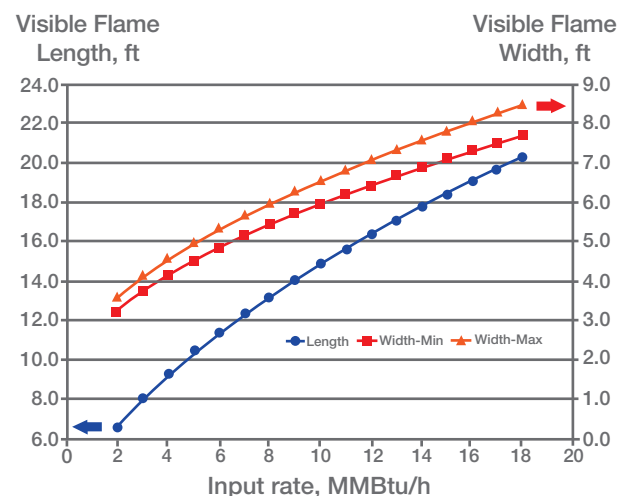


Figure 2. DOC-WFB flame length and width as a function of firing rate

Praxair understands the impact of oxygen supply parameters (including pressure and purity) on combustion system design, performance, and cost. As your oxygen supplier, we are uniquely positioned to work with your engineers and procurement specialists to design an integrated package for your specific oxy-fuel combustion application.

*(US Patents 5267850, 5411395, 5449286, 5601425, 5814125, 5823762, 5931654, 6096261, 6125133, 6139310, 6132204, 6142764, 6394790, 6171544)