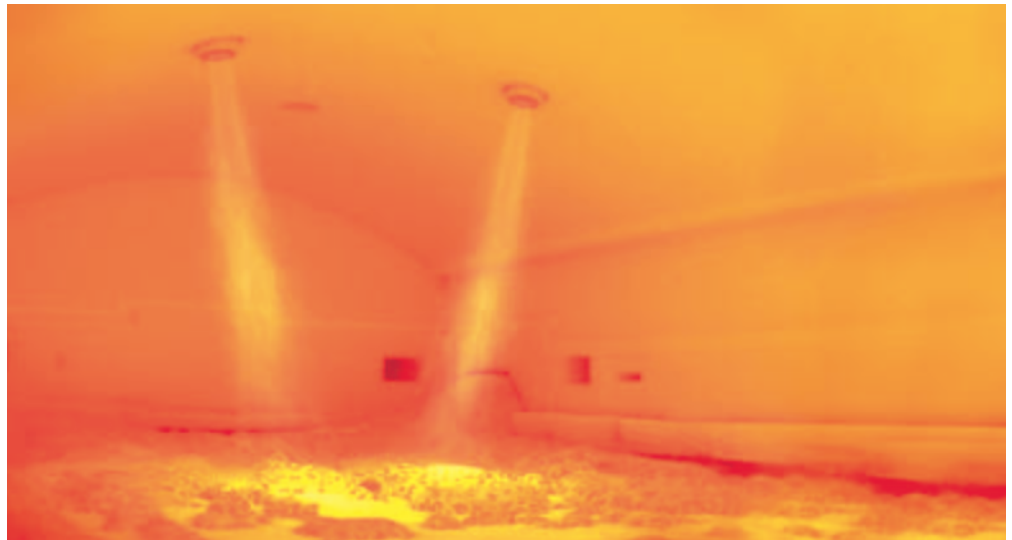


## Oxy-fuel boosting for maximum productivity

### Enhanced heat transfer with COROX®-CGM



#### Challenge

Glass manufacturers are constantly under pressure to enhance production, improve quality and meet increasingly strict emission regulations. To overcome these challenges, they are looking for new ways to increase the pull rate, improve product quality and, in some instances, extend furnace life (to combat or prevent regenerator plugging).

#### Solution

Linde developed an innovative Convective Glass Melting (CGM™) solution to address these challenges – COROX®-CGM. This unique oxy-fuel boosting technology transfers more energy to the glass melt by positioning the burner vertically instead of horizontally. This enhances heat transfer by adding convection to the regular radiant transfer.

#### Technology

The Linde Gas Division of Linde AG concluded a licensing agreement with the BOC Group to cover the marketing of BOC CGM™ technology. Under the registered trademark COROX®-CGM, Linde offers this new technology to the glass industry worldwide. It is already patent-protected and additional patents have been filed.

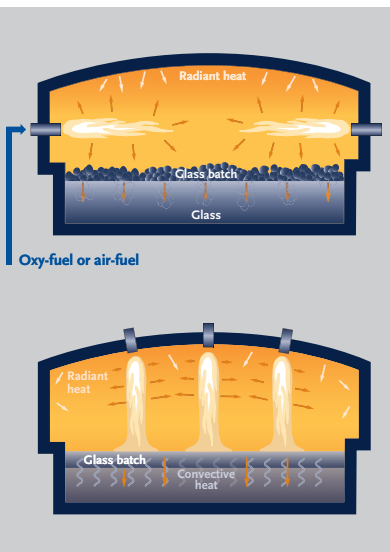
CGM™ technology has been proven to optimize both air-fuel and oxy-fuel operations. It has already been successfully implemented in 20 furnaces across all market segments (float, container and specialty glass).

CGM™ technology changes the burner from a horizontal to a vertical position. The effective heat transferred is the sum of both the radiant and convective processes. The gas velocity for horizontal burners close to the batch/glass surface is very low. By comparison, the gas velocity for COROX®-CGM burners is high, resulting in a significantly greater heat transfer coefficient.

COROX®-CGM burners are designed to create an intense flame flowing over the surface of the glass bath or batch beneath the burner. This results in extremely high temperatures in the proximity of the surface, a factor that further intensifies both the convective and radiant processes.

Tests have shown that the combined effect of radiant heat transfer and enhanced convective transfer almost doubles the heat transfer rates of conventional burners.

CGM™ is a trademark of the BOC Group.



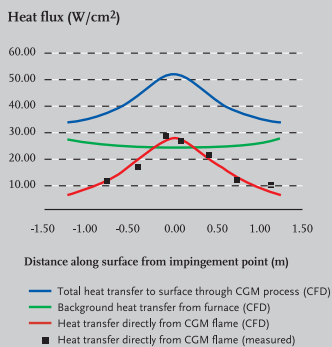
Conventional burners vs. COROX®-CGM burners installed vertically in the crown

## Benefits

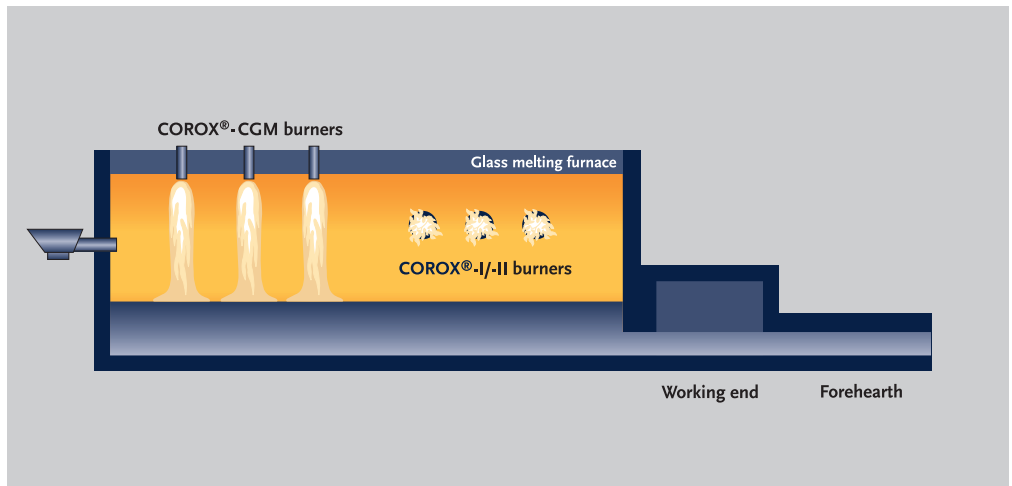
- Increased melting capacity
- Improved glass quality
- Extended furnace life
- Freedom to select desired number of burners (burners not restricted by breast wall space limitations)
- Proven technology, successfully deployed by companies such as Owens-Corning, a world leader in advanced glass systems
- Adaptable to air-fuel furnace or 100% oxy-fuel

## Features

- Vertical burner position in the crown of the glass melting furnace
- Heat transfer approximately twice that of conventional burners thanks to combined effect of radiant heat transfer and enhanced convective transfer



Heat transfer to the batch from impinging CGM™ flame



COROX®-CGM burners over unmelted batch

## Contact details

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COROX® is a registered trademark of the Linde Group