

COMBUSTOR

Developed by Accord, this dynamic process simulation model allows oil and gas operators to calculate combustion efficiency to monitor and improve the efficiency of their flaring operations — thereby reducing their overall CO₂e emissions.

Powered by CHARM, Combustor predicts the flare gas properties required to calculate combustion efficiency accurately. The efficiency calculation is transparent, peer-reviewed and referenced in OGMP 2.0 and the OGUK Methane Action Plan.

It can be easily integrated into existing monitoring and control systems, and provides significantly improved data on methane and overall CO₂e emissions without the need for on-site physical installations or additional metering.

Find out more at accord-esl.com/products/combustor

RESEARCH BACKED

Combustor was developed based on pioneering work done by research specialists at the University of Alberta, Canada.

NET ZERO TARGETED

Working with operators to help them reduce and control emissions and meet Net Zero goals, Combustor is also supported by the Net Zero Technology Centre (NZTC).

INTEGRATION-READY

Based on CHARM architecture, Combustor adheres to industry standards, with easily-maintained XML-based interfaces to ensure ongoing compatibility.

The University of Alberta Algorithm

$$\text{Combustion Efficiency} = 1 - 0.001066e^{\left(\frac{0.317 \cdot \text{Windspeed}}{(\text{ExitVel} \cdot g \cdot \text{Dia})^{0.33}}\right)} \left(\frac{\text{LHV}_{\text{CH}_4}}{\text{LHV}_{\text{Flare}}}\right)^3$$

Windspeed at the flare tip

Exit velocity of flare gas at the flare tip

Characteristic diameter of the flare

Literature value for Lower Heating Value (LHV) of Methane in Mass terms

Lower Heating Value (LHV) of the flare gas immediately prior to combustion in Mass terms

Combustor calculates (every minute):

- Combustion Efficiency (CE)
- Emission rates and summed totals for:
 - Carbon Dioxide (CO₂),
 - Methane
 - Carbon Dioxide equivalent (CO₂e)
- Uncertainty in Combustion Efficiency

Example Combustor Dashboards

