

HAFFMANS CO₂ / O₂ GEHALTEMETER BOXING CAT BREWERY, SHANGHAI, CHINA

CASE STUDY

“WE SUCCEEDED IN LOWERING DO LEVELS SUBSTANTIALLY”

Founded in 2008 in Shanghai, Boxing Cat is one of the most popular and internationally recognized microbreweries in China. Boxing Cat has three brewpub locations, a central production site in Minhang, Shanghai area, and employs approximately 200 people.



Continuing the tradition of craft beer and combining it with an excellent cuisine, provides the foundation for the brewery's success. To date, Boxing Cat produces 30 varieties of premium craft beer, including year-round, seasonal and specialty release beers.

Balancing growth and quality, while brewing the best beer possible was a decisive factor when Boxing Cat approached Pentair. “Although we do not bottle our beer, we were aware of the importance of oxygen pick-up and its impact on beer stability,” said Brewmaster Michael Jordan. “We wanted to collect dissolved oxygen data and see if there was room for improvement with our in-house processes to minimize oxygen ingress during beer transfers, dry hopping or keging.”

In 2015, Boxing Cat started a pilot trial with Pentair Haffmans portable CO₂ / O₂ Gehaltemeter, type c-DGM. The instrument is used at-line and combines the determination of the dissolved CO₂ content based on Henry's Law with a highly accurate optical dissolved O₂ (DO) measurement.

“We used the c-DGM at several locations during our brewing process,” Jordan explained. “Carbon dioxide and oxygen levels were measured at the end of fermentation, prior to dry hopping, post dry hopping, prior to tank transfer, after tank transfer, and after adjusting the carbon dioxide content in the Bright Beer Tanks.”

The c-DGM's O₂ measuring range is 0 to 2,000 ppb in liquids, the CO₂ measuring range is 2.0 to 10.0 g/l. The insights provided by the instrument allowed Boxing Cat to significantly improve its production process.



Michael Jordan, Brewmaster at Boxing Cat

“We found out that our DO levels were higher than expected, which led us to adjust our processes of line purging and tank purging. We also saw increases in DO on several occasions after adjusting carbonation levels. The most important outcome of this pilot trial is that the c-DGM enabled us to identify that we have a high variability of CO₂ purity, which resulted in the decision to switch our CO₂ supplier,” Jordan said.



Pentair Haffmans Gehaltemeter, type c-DGM for CO₂/O₂ Measurement

Overall, the brewery succeeded in lowering DO levels substantially. “The c-DGM is very precise, and also provides the possibility for quantitative recordings, which is important as our brewery grows, and we look toward the future, where we might bottle beer or consider filtration. I think, the c-DGM is a very valuable tool for craft brewers to use.”

HAFFMANS BV

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