

BAC'S EXPERTISE

From plume prediction to solution



What is visible plume?

The **condensation of warm discharge air** is the visible plume that often can be seen rising above evaporative cooling equipment during the winter season. This water vapour contains droplets of pure water and is **harmless**.

However in certain locations plume should be avoided because of the **safety problems** it could create. Sight restrictions or ice formation on the ground could create life threatening situations. It could also mistakenly be seen as smoke from a fire. Therefore it is of utmost importance to take appropriate measures to minimize or ideally eliminate the formation of plume.



Solutions

Running at **full fan speed** is an easy way to minimize plume. However this will generally not eliminate plume and operating at full speed in winter may be critical.

Sensible heat exchangers can be used to heat up the humid discharge air by means of an external heat source or by using the cooling fluid as heat source. The external heat source will create best results with respect to plume reduction.

Hydraulic and/or aerodynamic controls can further reduce the plume visibility, but even the most expensive solution is not necessarily a guarantee for plume-free operation during the entire year.

Baltimore Aircoil has developed different plume abatement options and our experience learns us that to select the best solution it is necessary to carry out a thorough **plume analysis** during the design phase.

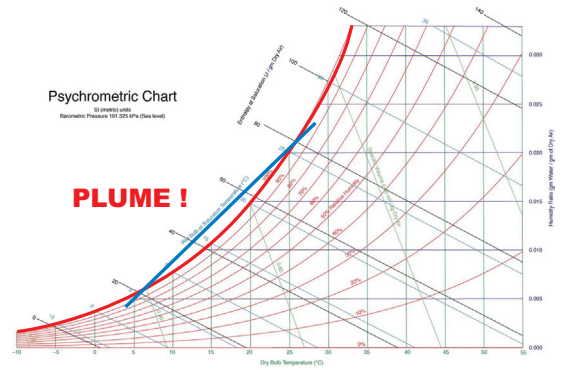


Plume analysis

Since many parameters have to be taken into consideration, a plume analysis has to be done on a job to job basis and a **psychrometric diagram** is not sufficient to answer typical questions customers have:



- What will be the shape of the plume?
- How far and how high will it reach?
- Will the plume column affect my neighbour?



BAC can give the answers.

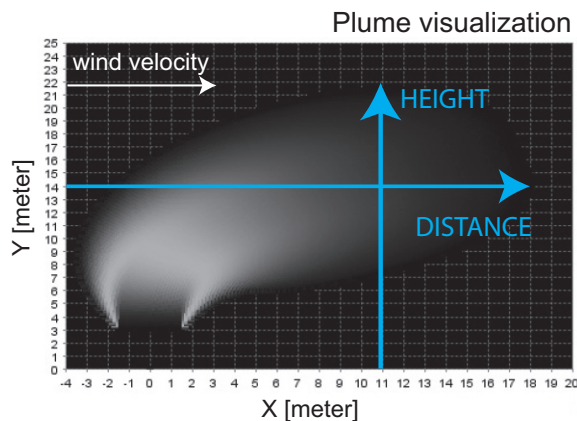
We want to fully support our customers and to do so we have combined all our experience in our plume visualization software.

BAC's plume visualization software

This unique state of the art plume visualization program gives customers a clear picture of how their equipment will plume. As of now you can expect clear answers.



- Plume height !
- Plume distance !
- Plume shape !



Contact your BAC representative and for a fraction of the cost of a CFD analysis we can provide an in depth plume analysis of your cooling tower project. A custom plume risk analysis will provide you with clear insights and allows you to choose the best and most cost effective plume abatement solution for your installation.

Our capabilities will bring you the optimal solution.

For more information contact:
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