

## Wall Effects in Thermal Anemometry

Frequently Asked Question #16

### Question:

We currently use your general purpose hot film (model 1210) in near wall applications (1 mm from wall). At this wall distance is it necessary to correct for wall effects or are they negligible? Any insight you may have would be much appreciated. The freestream velocity is  $\sim 3$  m/s. Thank you.

### Answer:

Typically, when the sensor is very close to the wall the heat transfer to the wall could be a factor. This quantity would be part of the total heat transfer that is interpreted as the velocity.

This effect would be more significant when the velocity is low. As the velocity increases, the percentage of the loss to the wall would decrease and the potential effect on the actual velocity measured would also decrease.

If the velocity is 3 m/sec, there is high heat transfer due to flow and hence the error is negligible (definitely negligible, if it is water flow). Of course, one needs to look at the velocity near the wall in these estimations.

In the past, some people have tried to correct for wall effects using advanced methods. These are a research topic, since no single method has been proven to be a robust and accurate solution.



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