APPLICATION NOTE

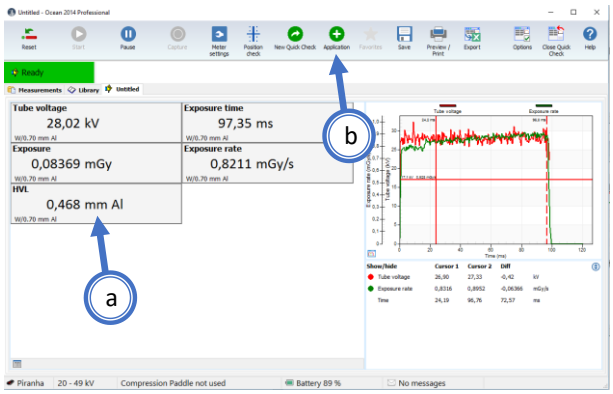
Traditional HVL in Mammography using Ocean Quick Check

This Application Note describes the use use of Applications in Ocean Quick Check to preform a traditional HVL measurement using layers of Aluminium sheets. However RTI recommends to use the buit-in Quick HVL, one-shot-HVL, for Black Piranha and Red Piranhas that has the support for Quick HVL.

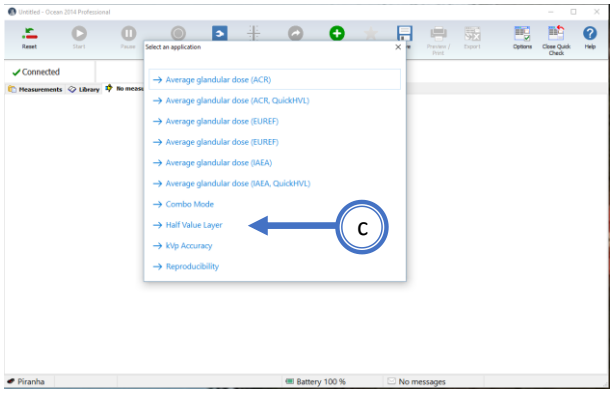
Introduction

Using layers of Aluminium sheets for HVL measurements with the Piranha requires that the dose reading with the Piranha is energy compensated. This can be achieved by using the built-in HVL Application in Ocean Quick Check, or using an HVL template from the Ocean Library.
This application note will describe the use of the HVL Application in Ocean Quick Check.

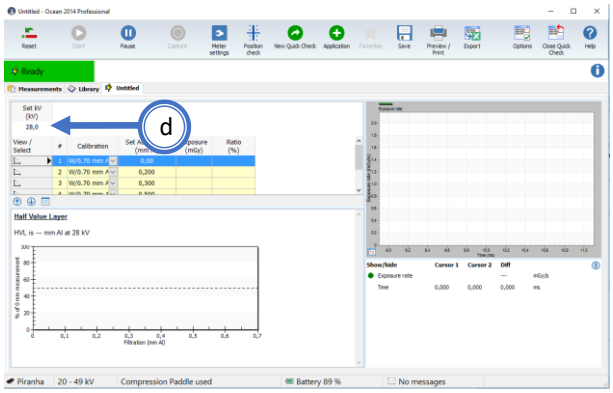
The instruction below assumes that Ocean Quick Check is running with the proper calibration selected, and that the compression paddle is in place with an air-gap between the compression paddle and the Piranha.
Recommeded position of the compression paddle is as close to 50 % of focus to detector distance as the physical geometry allows.



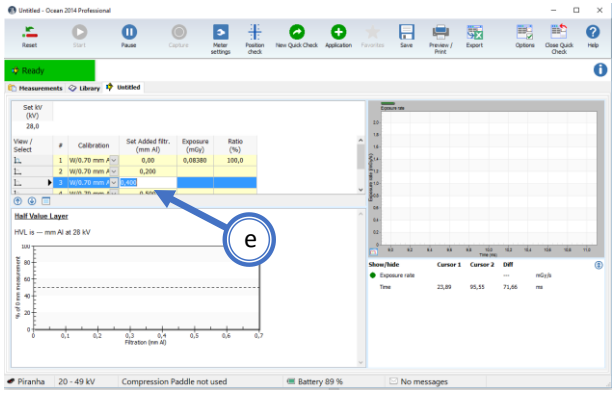
1. The Quick Check display shows a measurement with compression paddle in use at 28 kV. Note the measured HVL of 0.468 mm Al (a).
   To get to the application for HVL using layers of Al filters press the ***Application*** button (b).



2. Select (click) the application, ***Half Value Layer*** (c).



3. Make sure that correct set value for kV is selected. In this case 28 kV (d). Change if needed. Make the first exposure without any added filtration.



4. If necessary, change value for first layer of added filtration (e), and make the exposure.

Note that onle the layer just before and just after 50% decrease in signal have to be measured, since only these have any influence on the calculatons.

5. Add next layer of aluminium. Make sure the proper value is entered as set value (f), and make the exposure.
Now Ocean Quick Check presents the calculated HVL value. In this example, 0.456 mm Al (g).

HVL template in Ocean Real-Time-Diplay or in Sessions

The same fuctionality as described above is supported in the Ocean Real-Time-Display, and in Seissions using Ocean Proffessional. The major difference is that you can build your templates where you can store your individual settings. After your first use, you then do not have to make any changes in set values again.

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