

PROCESSING CHLOROPHYLL SAMPLES – DIGITAL FLUOROMETER USE

PREPARATION:

- Put about 2” of room temperature Nano water in the square white styrofoam cooler – line the cooler with a garbage bag as the cooler is old and now leaks all over the place!
- Take a batch of samples from the freezer, sit them in the rack inside the cooler to let the temperature equilibrate (approx. 45 minutes), keep lid on cooler to keep samples in the dark
- Turn the fluorometer on and let it warm up for at least 60 minutes prior to use.

ENT = Main Menu, HOME = Data Display

BLANK:

Read the solid standard on both H and L and record the values on the sheet on the clipboard. THIS IS IMPORTANT – it lets us know if the electronics have gone flaky or if we’ve lost the calibration. You can get the % values from screen 3.2

Blank the fluorometer using a 90% acetone blank – fill a borosilicate glass tube with 90% acetone and cover tightly with parafilm **DO NOT USE THE FILTER BLANK TO BLANK THE FLUOROMETER**

Wipe down the tube with a kimwipe to remove all fingerprints and smudges, place tube in sample chamber on fluorometer and cap

Blank as follows:

from screen 2.0 (Calibration)

press <1> to access screen 2.1 (Blanking) then

press <1> to bring up 2.11 (Run Blank)

insert 90% acetone blank

press <0> when reading stable and time count (TC) is stable at 8 seconds.

value of blank has now been entered

note %value in comments column on log sheet

fluorescence value of blank can be read on screen <3.2> (Diagnostic Info) or HOME screen.

obtain value for blank

access screen 2.12 (Subtract Blank) and choose NOT to subtract blank

go to HOME screen and press <*> to start average

record value of blank in the Rb column

return to 2.12 and choose YES to subtract blank

Place acetone blank in correct orientation (so that you can return it to the fluorometer facing the same way) in the cooler while running the samples – the blank will be re-read at the end of sampling

FLUORESCENCE READINGS:

NEVER PRESS * UNLESS YOU'RE ON THE HOME SCREEN

Decant sample from scintillation vial into glass tube being careful to leave any particulate matter in the vial

Wipe the tube with a kimwipe to ensure there are no fingerprints or smudges

Return the fluorometer display to the HOME screen

insert sample

if >999 instrument won't display value - go to screen 3.2

if OVER, need to dilute sample

when <999, wait for TC=4 then press <*> to start pre-average delay and beep gives average

if 3.2 doesn't allow reading, need to dilute: 5ml sample, add 5ml 90% acetone

note dilution on log sheet – record volumes used for dilution

read fluor readout (Rb) and write scale and reading in log

add 2 drops 10% HCl

take Ra reading (approx. 0.5 of Rb), write scale and reading in log

Pour dregs into waste container, place scintillation vial and test tube in glass waste box, place vial cap in garbage.

FINAL BLANK:

When all samples have been run, place the tube containing the acetone blank back into the fluorometer in its proper orientation (wipe with Kimwipe) and re-read the blank value as follows:

access screen 2.12 and choose NOT to subtract blank

go to HOME screen and press <*> to start sample averaging

record value of end blank