CLAIMS

1. A device for determining a concentration of cells of a given size in a sample of fluid, the sample comprising a plurality of cells, comprising:

a light source (110) arranged to emit light along a central axis to illuminate the plurality of cells in the fluid sample;

a container (120, 200, 250) to contain the sample;

a detector (140) arranged to receive light at a plurality of displacements from the central axis~~,~~ the light having passed through the plurality of cells in the fluid sample, and to produce a plurality of signals, each associated with, and indicative of an intensity of the received light at, a respective one of the plurality of displacements; and

a processor (400) arranged to:

obtain a first light intensity reading at a first displacement from the central axis;

obtain a second light intensity reading at a second displacement from the central axis;

determine a difference between the first and second light intensity readings;

if the difference is more than a predefined threshold, determine, using a first method, the concentration of cells of a given size on the basis of the first and second light intensity readings and the difference therebetween and, if the difference between the first and second light intensity readings is less than the predefined threshold, determine, using a second method, the ~~determine a~~ concentration of cells of the~~a~~ given size~~,~~ on the basis of the first and second light intensity readings and the difference therebetween, wherein the first and second methods are different~~based on the plurality of signals from the detector, wherein the processor is arranged to compare the plurality of signals from the detector with one or more pre-stored thresholds or profiles, indicative of a particular concentration~~.

2. The device of claim 1 wherein the ~~processor~~ device is a diagnostic device~~is arranged to:~~

~~measure a first light intensity reading at a first displacement from the central axis and measure a second light intensity reading at a second displacement from the central axis and determine, using a first method, the concentration of cells on the basis of the first and second light intensity readings and a difference therebetween~~.

~~3. The method of claim 2 wherein if the difference between the first and second light intensity is less than a predefined threshold, then the processor is arranged to determine the concentration of cells using a second method~~

34. The device of any preceding claim ~~2 or 3~~ wherein the first and second light intensity readings are taken at displacements proximal the central axis.

~~5. The device of any preceding claim wherein the plurality of displacements are in the range of substantially 1º to 15º, measured from the central axis.~~

46. The device of any preceding claim wherein the detector comprises a plurality of photodetectors, each associated with one of the plurality of displacements.

57. The device of claim 46 wherein the plurality of photodetectors are arranged on both sides of the central axis, such that a first subset of the plurality of displacements is positioned on a first side of the central axis and a second, non-overlapping, subset of the plurality of displacements is positioned on a second side of the central axis.

6. The device of any preceding claim wherein the light source is a laser.

7. The device of claim 6 wherein the laser is a 5 mW red laser having a wavelength in the region of 650-700nm.

8. The device of any preceding claim wherein the first method uses an Area Under the Curve, AUC, method and the second method uses a Generalised Weighted Ratio, GWR, method.

9. The device of any preceding claim wherein ~~the sample is contained within a container, wherein~~ the container either contains a static sample or a dynamic, flowing, sample.

10. The device of claim 9 wherein the container is arranged such that light from the light source strikes it at an angle sufficient to reduce reflection of light back to the light source.

11. The device of any preceding claim wherein the device is arranged to provide user feedback in the form of one or more of a numerical concentration value or a warning that the concentration value exceeds a predefined threshold.

12. The device of claim 11 wherein the user feedback additionally comprises one or more of: an audible signal to the user; a visual signal to the user; and communicating with a remote device to transmit the concentration of cells to the remote device.