Starna Scientific

Starna DMV-Bio Cell

Quickstart Guide

www.starna.com

Introduction

The unique Starna Demountable Micro Volume Bio Cell is designed for accurate micro-volume measurements with the majority of UV/Vis spectrophotometers. It provides the user with high quality, repeatable measurements based on innovative technological design and exceptional accuracy.

The DMV-Bio Cell consists of two parts, one with the 'sample well' and the other with the closure window. Each part contains integral rare earth magnets, the strength and polarity of which is optimised for accurate assembly and easy disassembly.

The Starna DMV-Bio Cell is available in three different path lengths: 0.125mm, 0.2mm and 0.5mm and two 'Z' dimensions: 8.5 and 15mm.

The 'Z' height is the distance from the bottom of the instrument cell holder to the centre of the optical beam, which corresponds to the centre height of the sample well aperture.

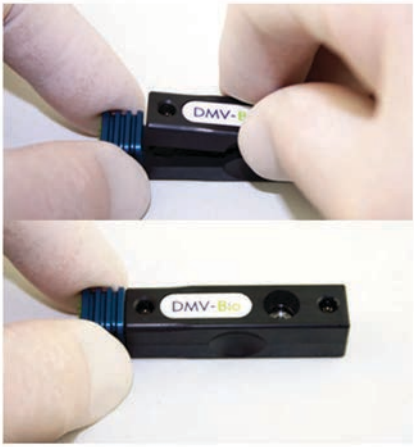
Using the Starna DMV-Bio Cell

1. Open the DMV-Bio Cell carefully by separating the two halves.

2. Place the half with the 'sample well' face up on the metal plate provided.

3. Refer to the table and note the correct volume of sample required for the path length of the cell you are using.

4. Carefully pipette the correct volume of sample to be measured into the sample well in the centre of the ring as shown.



5. Assemble the DMV-Bio Cell by holding down the sample half on the plate and carefully bring the other half in close proximity, such that the bottom of the cell touches first and then gently allows the two halves to come together, preferably without snapping shut.

6. The assembled DMV-Bio Cell is now ready for use.

7. Before putting into the spectrophotometer a check for dust or minute bubbles can be performed in the free sample viewer accessory provided.

8. Place the DMV-Bio Cell in the spectrophotometer and proceed with the analysis.

9. When measurement is complete remove the DMV-Bio Cell from the spectrophotometer.

Cleaning & Care

10. Disassemble the DMV-Bio Cell for cleaning by placing onto the metal plate and removing the top half.

Immediately after use you are advised to remove the sample by gently wiping the sample area with suitable absorbent optical surface wipes. In case there is left over sample that has dried out, fibre optic cleaning sticks (Sticklers) can be used to remove excess impurities and provide a visibly clean area. It is also possible to immerse DMV-Bio Cell in Deionised water, or a short period of time in a dilute solution of Starna CellClean or biological washing detergent to remove particularly sticky solutions such as proteins.

It is possible to retrieve the sample using a suitable pipette, however it is probable that not all of the sample will be retrievable. After such a procedure the cell should still be cleaned as suggested above.

Handling Information

DMV-Bio Cell is resistant to most chemicals and solvents. It is not recommended that the cell be soaked in solvents such as acetone as this may result in detachment of the optical window from the body of the cell. Starna Cell Clean may be used for cleaning in its diluted form as instructed. Any residue of sample material left on the window, due to evaporation, will necessitate further cleaning to maintain accurate results.

Safety

There are no bio-hazardous materials within the unit; however this unit could be used with bio-hazardous samples. Before using the DMV-Bio Cell under such circumstances the customer should have in place decontamination procedures designed to protect laboratory workers from occupationally acquired infections. It is the responsibility of the customer to ensure that the DMV-Bio Cell is used in a safe working environment.

Specifications

The Starna DMV-Bio Cell is available in 3 different pathlengths: 0.125mm, 0.2mm and 0.5mm.

Starna DMV-Bio Cell Specifications

	DMV-Bio 125	DMV-Bio 200	DMV-Bio 500
Pathlength	0.125mm	0.2mm	0.5mm
Pathlength Accuracy	± 5 microns		
Physical size	12.5mm(w) x 12.5mm(d) x 61.0mm(h)		
Beam height (z dimension)	15mm or 8.5mm versions		
Minimum sample volume	0.6µl	1.0µl	2.5µl
DNA Detection limit[1]	7.1ng/ µl	3.0ng/ µl	1.2ng/ µl
DNA maximum concentration[1]	12,000ng/ µl	9,000ng/ µl	3,500ng/ µl
DNA reproducibility at 100ng/ µl[1]	± 4ng/ µl	± 2ng/ µl	± 1ng/ µl
DNA reproducibility at 1000ng/ µl[1]	±7ng/ µl	± 6ng/ µl	± 4ng/ µl
Protein Detection limit[1 2]	0.3mg/ml	0.15mg/ml	0.06mg/ml
Protein maximum concentration[1 2]	100mg/ml		

[1] Performance measured in typical 2nm bandwidth double beam spectrophotometer with Xenon lamp

[2] BSA measured using A280 direct UV method. Maximum concentration limited by sample solubility