



2.2.4 Ultra-Micro Cell

An **ultra-micro cell** is a rectangular cell. Its interior is designed so that with a 10 mm light path a measuring chamber volume of less than 160 μl results. These cells are further divided into various types:

Ultra-Micro Cells Types 105.200 - 105.204

At times when working with DNA or RNA, for instance one difficulty is that only very small amounts of sample are available for photometric measurements in biochemical analysis. Additionally, such samples often have a very low specific absorption and the light path cannot be reduced beyond a certain point. Ultra-micro cells have been specifically designed for situations in which measurements of smaller sample volumes (down to 50 μl) are required. These cells fit into any standard cell holder just the same. The top section is constructed so that capillary action is prevented. Due to this only an additional 20 μl is required, for example, to completely fill the measuring chamber of a 50 μl cell. The cells are constructed so that filling and emptying can easily be accomplished with commonly available pipette tips.



Ultra-micro cell with a pipette tip

Ultra-Micro Cell Types 105.210 and 105.211

These cells are designed for spectral photometrical measurements of extremely small volumes. Despite the extremely small measuring chamber volume, the chamber aperture is large enough for correct positioning in the light path. To ensure correct centring in the light path it is necessary to specify the centre height when ordering these cells.

Filling and Emptying of Ultra-Micro Cells

Filling and emptying of cells of the types 105.210 and 105.211 is accomplished through short funnel-shaped openings which end in the measuring chamber channel directly behind the windows. To fill the cells, pipette tips are inserted into the openings and 10 μl (or 5 μl) are injected into the cell using a suitable pipette. Best results are obtained by using tips for extremely small volumes, such as the "Eurotips" made by Eppendorf, where the conical shape of the tip exactly matches the angle of the funnel-shaped openings. The use of tips which do not match the shape of the openings can result in sample loss or the appearance of air bubbles in the measuring chamber.

2.2.4 Ultra-Micro Cells with stoppers made of PE

Catalogue Number	Window Material	Light Path mm	Centre Height mm	Outside Dim. H x W x D mm	Aperture H x W mm	Chamber Volume μ l	Filling Volume μ l	Number of Windows
105.200-QS	Quartz SUPRASIL	10	15	45 x 12.5 x 12.5	8 x 2	160	180	2
		10	8.5	45 x 12.5 x 12.5	8 x 2	160	180	2
105.201-QS	Quartz SUPRASIL	10	15	45 x 12.5 x 12.5	5 x 2	100	120	2
		10	8.5	45 x 12.5 x 12.5	5 x 2	100	120	2
105.202-QS	Quartz SUPRASIL	10	15	45 x 12.5 x 12.5	2.5 x 2	50	70	2
		10	8.5	45 x 12.5 x 12.5	2.5 x 2	50	70	2
105.203-QS	Quartz SUPRASIL	10	15	45 x 12.5 x 12.5	\varnothing 2.5	50	70	2
		10	8.5	45 x 12.5 x 12.5	\varnothing 2.5	50	70	2
105.204-QS	Quartz SUPRASIL	10	15	45 x 12.5 x 12.5	\varnothing 1.5	20	40	2
		10	8.5	45 x 12.5 x 12.5	\varnothing 1.5	20	40	2
105.020-QS	Quartz SUPRASIL	10	4.5	8.1 x 12.6 x 12.6	6 x 2		100	2
105.025-QS	Quartz SUPRASIL	10	4.5	12 x 12.5 x 12.5	5 x 2		80	2



with pipette tips

105.210-QS	Quartz SUPRASIL	5	15	40 x 12.5 x 12.5	\varnothing 0.8	2.5	5	2
		5	8.5	40 x 12.5 x 12.5	\varnothing 0.8	2.5	5	2
		10	15	40 x 12.5 x 12.5	\varnothing 0.8	5	10	2
		10	8.5	40 x 12.5 x 12.5	\varnothing 0.8	5	10	2
105.211-QS	Quartz SUPRASIL	1	15	40 x 12.5 x 12.5	1 x 5	5	10	2
		1	8.5	40 x 12.5 x 12.5	1 x 5	5	10	2

