

CELLdisc

COMPARISON OF INCUBATOR SPACE USAGE BETWEEN GREINER BIO-ONE CELLdisc AND RECTANGULAR MULTILAYER DEVICES

The aim of mass cell culture is to produce large quantities of cells mostly used for industrial or clinical applications. Users can choose from a variety of different disposables and concepts. To reduce the cost of the scale up process to a minimum, different factors need to be considered and evaluated.

If multilayer devices such as the Greiner Bio-One CELLdisc are to be used, not only growth area and the number of cells per device should be taken into account but also how effectively incubator space is utilised by them.

The innovative CELLdisc with its round and ergonomic design stands out from existing rectangular devices. The cuboid nature of these alternatives would, at first glance, imply an optimal use of space within an incubator that is itself cuboid in design. However, in reality, the length and width of such systems do not correspond ideally to the dimensions of standard incubators and leave a lot of space unused. Additionally such devices cannot be positioned next to each other as this could compromise consistent thermal distribution, because when units touch each other so access to the temperature environment of the incubator is compromised.

CELLdisc however, thanks to the cylindrical nature of the design, can be placed directly next to one another and still receive uniform exposure to the optimum temperature of the incubator. Due to this fact and the 40% higher surface volume/ratio CELLdisc offers over standard competitive systems, utilisation of incubator space is far more efficient when using CELLdisc than rectangular devices. (See Table 1)

	CELLdisc 16 layers	Competitor A 10 layers, rectangular form	Competitor B 10 layers, rectangular form (high density version)
Dimensions (L x W x H incl. cap)	ø 20 cm, H 22 cm	33 cm x 20 cm x 20.5 cm	33 cm x 23 cm x 21 cm
Growth surface (device)	4.000 cm ²	6.360 cm ²	8.216 cm ²
Max. devices / shelf	6	2	2
Max. devices / incubator	12	4	4
Growth surface (incubator load)	12 x 4.000 = 48.000 cm ²	4 x 6.360 = 25.440 cm ²	4 x 8.216 = 32.864 cm ²
Utilisation	100 %	53 %	68.47 %

Table 1: Utilisation of incubator space - exemplary calculation of multilayer devices with comparable dimensions



Fig. 1a: Front view of the incubator:
1) Top shelf: Cuboid multilayer devices
2) Lower shelf: CELLdisc

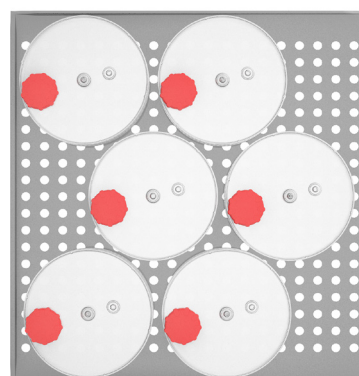


Fig. 1b: Cross section of the incubator.
Optimal positioning of CELLdisc and utilisation
of incubator space.

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CELLdisc

PRODUCT OVERVIEW

CELLdisc

Ø: 200 mm, Raw material: PS, Cap design: Screw cap, Sterile

Item No.	Layers	Height	Growth area	Surface treatment	Cap colour	Working volume	Qty .inner/ outer
678101	1	61 mm	250 cm ²	TC	● red	15 ml - 50 ml	1 / 8
678104	4	93 mm	1,000 cm ²	TC	● red	60 ml - 200 ml	1 / 4
678108	8	135 mm	2,000 cm ²	TC	● red	120 ml - 400 ml	1 / 3
678112	12	177 mm	3,000 cm ²	TC	● red	180 ml - 600 ml	1 / 2
678116	16	220 mm	4,000 cm ²	TC	● red	240 ml - 800 ml	1 / 2
678124	24	304 mm	6,000 cm ²	TC	● red	360 ml - 1,200 ml	1 / 2
678140	40	474 mm	10,000 cm ²	TC	● red	600 ml - 2,000 ml	- / 1
678904	4	93 mm	1,000 cm ²	Advanced TC	● blue	60 ml - 200 ml	1 / 4
678908	8	135 mm	2,000 cm ²	Advanced TC	● blue	120 ml - 400 ml	1 / 3
678912	12	177 mm	3,000 cm ²	Advanced TC	● blue	180 ml - 600 ml	1 / 2
678916	16	220 mm	4,000 cm ²	Advanced TC	● blue	240 ml - 800 ml	1 / 2
678924	24	304 mm	6,000 cm ²	Advanced TC	● blue	360 ml - 1,200 ml	1 / 2
678940	40	474 mm	10,000 cm ²	Advanced TC	● blue	600 ml - 2,000 ml	- / 1

CELLdisc with external filter

Ø: 200 mm, Raw material: PS, Cap design: screw cap, Sterile

Item No.	Layers	Height	Growth area	Surface treatment	Cap colour	Working volume	Qty .inner/ outer
678101-EXF	1	61 mm	250 cm ²	TC	● red	15 ml - 50 ml	1 / 8
678104-EXF	4	93 mm	1,000 cm ²	TC	● red	60 ml - 200 ml	1 / 4
678108-EXF	8	135 mm	2,000 cm ²	TC	● red	120 ml - 400 ml	1 / 3
678112-EXF	12	177 mm	3,000 cm ²	TC	● red	180 ml - 600 ml	1 / 2
678116-EXF	16	220 mm	4,000 cm ²	TC	● red	240 ml - 800 ml	1 / 2
678124-EXF	24	304 mm	6,000 cm ²	TC	● red	360 ml - 1,200 ml	1 / 2
678140-EXF	40	474 mm	10,000 cm ²	TC	● red	600 ml - 2,000 ml	- / 1

/ Assembled product is triple packed and sterilised (SAL⁻⁶)