thermo scientific

CO_2 Incubators and Cell Factory Systems

Highlighting Technical Features

TechNotes

How does combining Thermo Scientific CO_2 incubators and Thermo Scientific Nunc Cell Factory systems allow you to efficiently extend your cell culture?

With expanding techniques for growing neuronal, immune-derived and stem cells, or production of vaccines and biological therapies, many cell culture labs, institutes and biotechnology/pharmaceutical companies are investigating scale-up of adherent cell culture. By combining technologies of Thermo Scientific™ CO_2 incubators and Thermo Scientific™ Nunc™ Cell Factory™ systems, you can extend capacity and optimize cell growth conveniently and efficiently. Thermo Scientific™ Forma™ and Heracell™ CO_2 incubators come in a wide range of sizes and features to augment your cell growth. Nunc Cell Factory systems provide a certified culturing surface, space saving flexibility, and options that are designed to adjust with your current and future needs. Together, they are increasingly adopted in cGMP environments due to Thermo Scientific product technology leadership, reliability and ease of use. Table 1 offers a convenient guide with common configurations for efficient combination.

Thermo Scientific Nunc Cell Factory System	Thermo Scientific CO_2 Incubators					
	Heracell VIOS 160i, Forma Steri-Cycle i160, Heracell 150i	Forma Water Jacket, Forma Direct Heat Models	Heracell VIOS 250i, Forma Steri-Cycle i250, Heracell 240i	Forma Steri-Cult	Forma Steri-Cult	Large Capacity Reach-In
	150-165L	184L	240-255L	232L	323L	821L
	Number of Cell Factory systems per shelf					
Cell Factory 2/ High Density Cell Factory 3	2	2	3	2	3	6
Cell Factory 4	2	2	3	2	3	6
Cell Factory 10/ High Density Cell Factory 13	2	2	3	2	3	6
	Number of Cell Factory systems per chamber					
Cell Factory 2/ High Density Cell Factory 3	8 (4 shelves)	5	10 (5 shelves)	8	12	42 (7 shelves)
Cell Factory 4	8 (4 shelves)	5	10 (5 shelves)	8	12	42 (7 shelves)
Cell Factory 10/ High Density Cell Factory 13	4	4 (2 shelves)	6 (2 shelves)	6	9	30 (5 shelves)

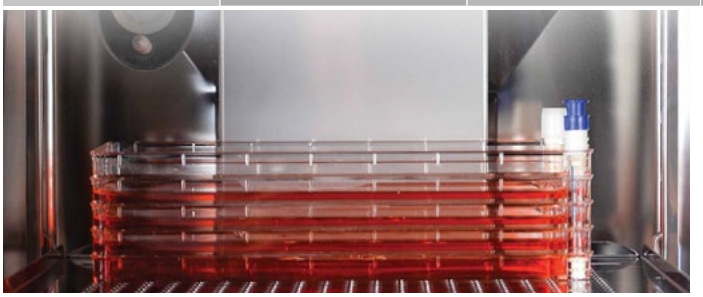


Table 1: Thermo Scientific Nunc Cell Factory systems are ideal for use in a variety of different Thermo Scientific CO_2 incubators. Shown is an estimate of the number of Cell Factory systems that will fit per shelf and per chamber in popular CO_2 incubator models.

ThermoFisher SCIENTIFIC

thermo scientific

Combine These Technologies for Maximum Benefit

Thermo Scientific Nunc Cell Factory systems are a natural fit with Thermo Scientific CO_2 incubators. The combination offers optimal cell growth and effective contamination control.

Thermo Scientific CO_2 Incubators: A History of Optimal Growth and Contamination Control

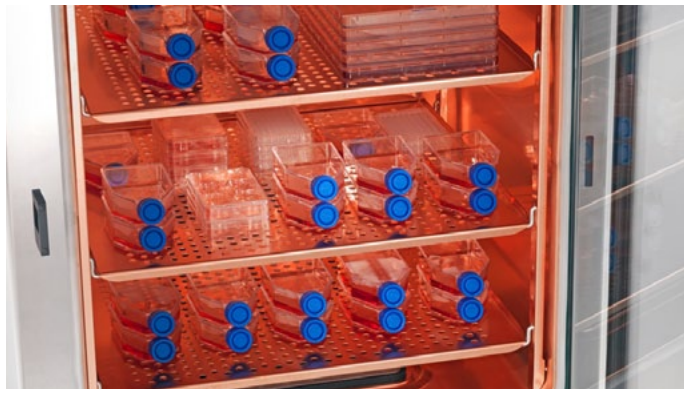
Building on more than 60 years of CO_2 incubator design, the Thermo Scientific CO_2 incubator portfolio offers different models designed to fit the needs of your lab and your project goals. Available sizes range from 40 L (1.4 ft^3) to 821 L (29 ft^3). Cell culturists around the globe acknowledge the importance of fan assisted active air circulation and in-chamber sensors for critical culturing conditions that mimic the *in vivo* environment. Standard contamination control features include proven ISO Class 5 HEPA filtration and automated high temperature sterilization cycles validated to meet international pharmacopeia requirements. Select models offer protected, integrated humidity systems, 100 % pure copper interiors, increased weight capacity and reinforced shelves to support your expanding culture goals. Cutting edge CO_2, oxygen and temperature sensors provide accurate, long lived feedback and constantly monitor and react to the same conditions your cells experience.

Thermo Scientific Nunc Cell Factory Systems: Flexibility and Consistency

Multi-layered Nunc Cell Factory systems with Thermo Scientific™ Nunclon™ Delta cell culture certification assures lot-to-lot and format-to-format performance consistency to support your research and cGMP goals. The Nunc Cell Factory system's plug and play ports eliminate common causes of contamination such as wetted filter caps, screw cap exchanges or loss of closure torque due to back off. Sizes range from the 1 layer Cell Factory system to a 52 layer, system offering surface areas of 632 up to 32,864 cm^2 in a single unit. The new Nunc High Density Cell Factory systems offer 30 % more surface area and yield in the same footprint as standard Cell Factory systems[1]. Increase capacity without consuming additional manufacturing space. Process changes are minimized with the integration of common Cell Factory system[1] design elements, including the same materials of construction. It is scalability without the challenges of changing production platform or capital investments. The new High Density Cell Factory system is available in 3, 13 and 52 layer formats.

Summary

For scale-up of leading edge cell culture applications, Thermo Scientific Nunc Cell Factory systems partnered with Thermo Scientific CO_2 incubators provide outstanding culturing environments, efficient cell growth and large capacity lab incubation platforms to power research and production goals.



[1] The increase in yield may vary depending on the type of cells cultured

Find out more at **thermofisher.com/CO2** and **thermofisher.com/cellfactory**

Australia +61 39757 4300
Austria +43 1 801 40 0
Belgium +32 53 73 42 41
China +800 810 5118 or +400 650 5118
France +33 2 2803 2180
Germany national toll free 0800 1 536 376
Germany international +49 6184 90 6000
India toll free 1800 22 8374
India +91 22 6716 2200
Italy +39 02 95059 552
Japan +81 3 5826 1616
Netherlands +31 76 579 55 55
New Zealand +64 9 980 6700
Nordic/Baltic/CIS Countries +358 10 329 2200
Russia +7 812 703 42 15
Spain/Portugal +34 93 223 09 18
Switzerland +41 44 454 12 12
UK/Ireland +44 870 609 9203
USA/Canada +1 866 984 3766
Other Asian Countries +852 2885 4613
Countries not listed: +49 6184 90 6000

ThermoFisher SCIENTIFIC

TNCO2NUNCCF 0717