

memmert

trust the best



ICO

Sterile. Safe. Reliable.

ICO | THE IDEAL BREEDING PROCESS

1. Optimal temperature distribution
2. Ideal relative humidity
3. Ideal CO₂ concentration

} Ideal Cell Growth



ICO | WHAT CHARACTERIZES THE OPTIMAL CO₂ INCUBATOR?

Temperature consistency and stability throughout the whole chamber.

- Direct heating over six sides with isolating jacket.
- Heated inner glass door and door sealings.
- Fast heating up times and short recovery times after opening door.
- Ideal breeding temperature equals the human's body temperature of 37 °C.



ICO | WHAT CHARACTERIZES THE OPTIMAL CO₂ INCUBATOR?

Fast achieving and ensuring of relative humidity as well as avoiding uncontrolled condensation.

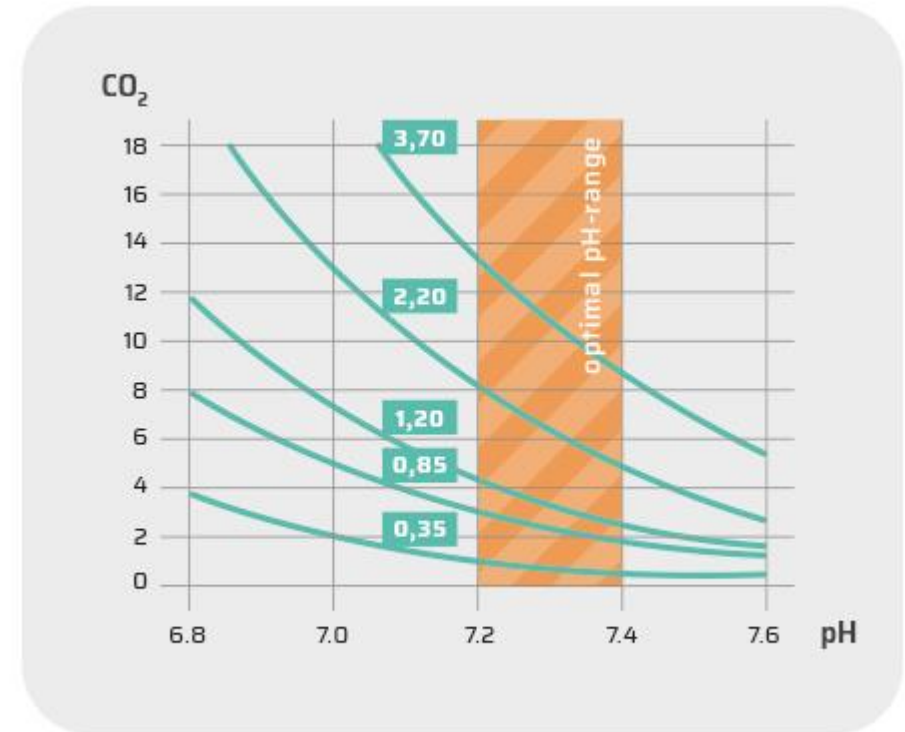
- To prevent the cultures from drying out, the relative humidity should ideally be above 80 %.
- If it also needs to be investigated, which influence e.g. infections have on the water balance, the relative humidity must be actively controllable.



ICO | WHAT CHARACTERIZES THE OPTIMAL CO₂ INCUBATOR?

Continuous CO₂-concentration and thus maintenance of the optimal physiological pH value.

- Buffer solutions are added to the vast majority of nutrient media. Simultaneous gassing with CO₂ keeps the pH value in the medium, which is important for biochemical reactions in the cell.
- Depending on the cultural medium, the CO₂ value is between 5 and 10 %.
- The optimal pH range for the growth of mammal cells is between 7.2 and 7.4. The choice of the cell culture medium influences which CO₂ concentration is necessary to obtain this pH range.






IC050 / IC050med
56 l

IC0105 / IC0105med
107 l

IC0150 / IC0150med
156 l

IC0240 / IC0240med
241 l

Model sizes/ Article descriptions	50	105	150	240
Working temperature range (°C)		at least 5 above ambient up to +50		
Setting temperature range (°C)		+18 up to +50		
Setting humidity range with active humidity(% rh) (with option K7)		40 up to 97 and rh-off		
Setting range CO ₂ (% CO ₂)		0 up to 20		
Setting range O ₂ (% O ₂) (with option T6)		1 up to 20		
Temperature uniformity in chamber at +37 °C		± 0,3 K		
Temperature variation in time at +37 °C		± 0,1 K		

ICO | MEDICAL DEVICE ICOfed

All medical devices are subject to seamless, consistent quality assurance during manufacturing and operating.

- Certified according to **ISO 13485**.
- Certified according to ISO 9001.
- Memmert distributes medical devices of class IIa according to MDD 93/42/EWG until May 26th, 2024 according to transitional provisions by (EU) 2017/745 - article 120 (2).

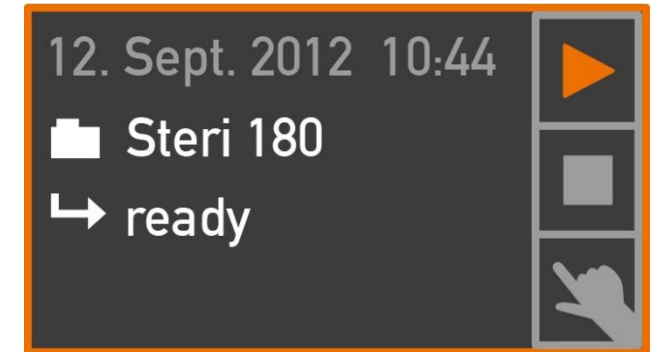
EU-MDR ✓

Intended purpose: The appliance is intended for the creation and maintenance of constant environmental conditions for application in the field of in vitro fertilization (IVF).

The full, detailed intended purpose can be found at www.memmert.com/medical-devices/intended-use/.

ICO | STANDARD CONFIGURATION

- ✓ Stainless steel shelves
- ✓ Stainless steel water tray
- ✓ CO₂ connection set
- ✓ Sterilization program (including all internals and sensors):
60 minutes at +180 °C
- ✓ Heated inner glass door
- ✓ Visible and audible alarm in case of exceeding/ undershooting
individually selectable parameters: temperature, CO₂,
O₂ (with option T6), humidity (with option K7)



ICO | OPTIONS & ACCESSORIES

- **C2** battery-buffered ControlCOCKPIT
- **T1** two gas connections with quick release connectors for automatic switch of gas cylinders
- **T2** electropolished interior
- **K7** active microprocessor control for humidification
- **T6** control of O₂ by N₂ inlet; setting range 1-20 % O₂; setting accuracy 0,1 % (requires option K7). incl. N₂ connection set.
- **K6** capacitive humidity sensor for measuring and displaying the relative humidity
- **K4** heated inner glass door with partitioned glass doors
- **C3/ C4** MobileAlert
- **B49800** HEPA filter for chamber, class 14 according to EN 1822
- **B39698** HEPA filter set of 3 pcs



ICO | PASSIVE HUMIDITY LIMITATION

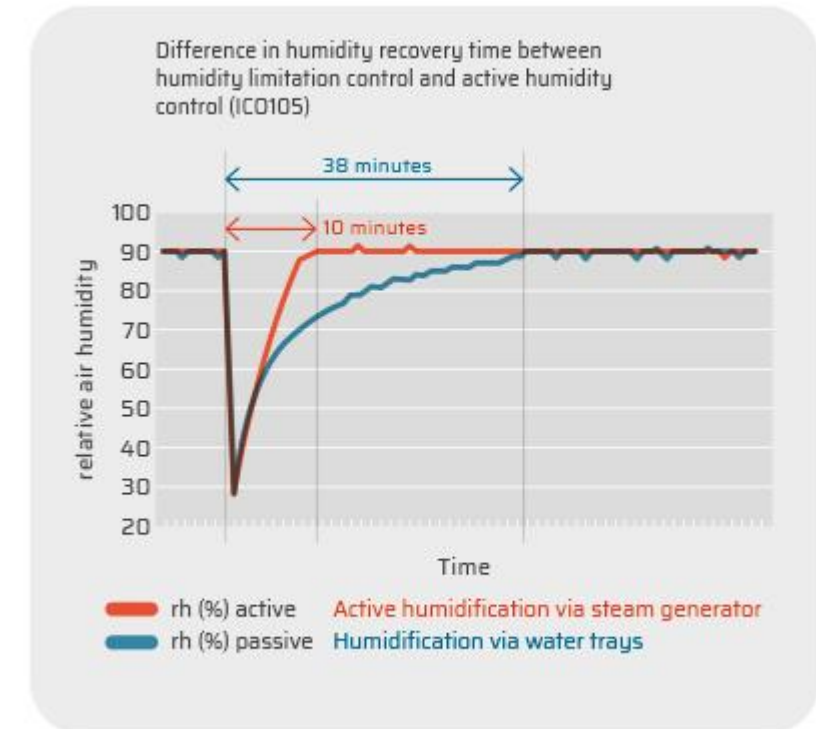
- Air inside the chamber is moisturized through the evaporation from a water tray.
- Humidity is limited to 93 % rh ($\pm 2,5$ % rh) via Peltier humidity trap in the backwall by keeping the temperature slightly below the dew point.
- Thus, condensation is generated in a targeted manner. Condensate flows back into the water tray through a rubber lip and the evaporation process starts again.
- Optional humidity sensor (option K6) to measure humidity limitation.



ICO | ACTIVE HUMIDITY CONTROL

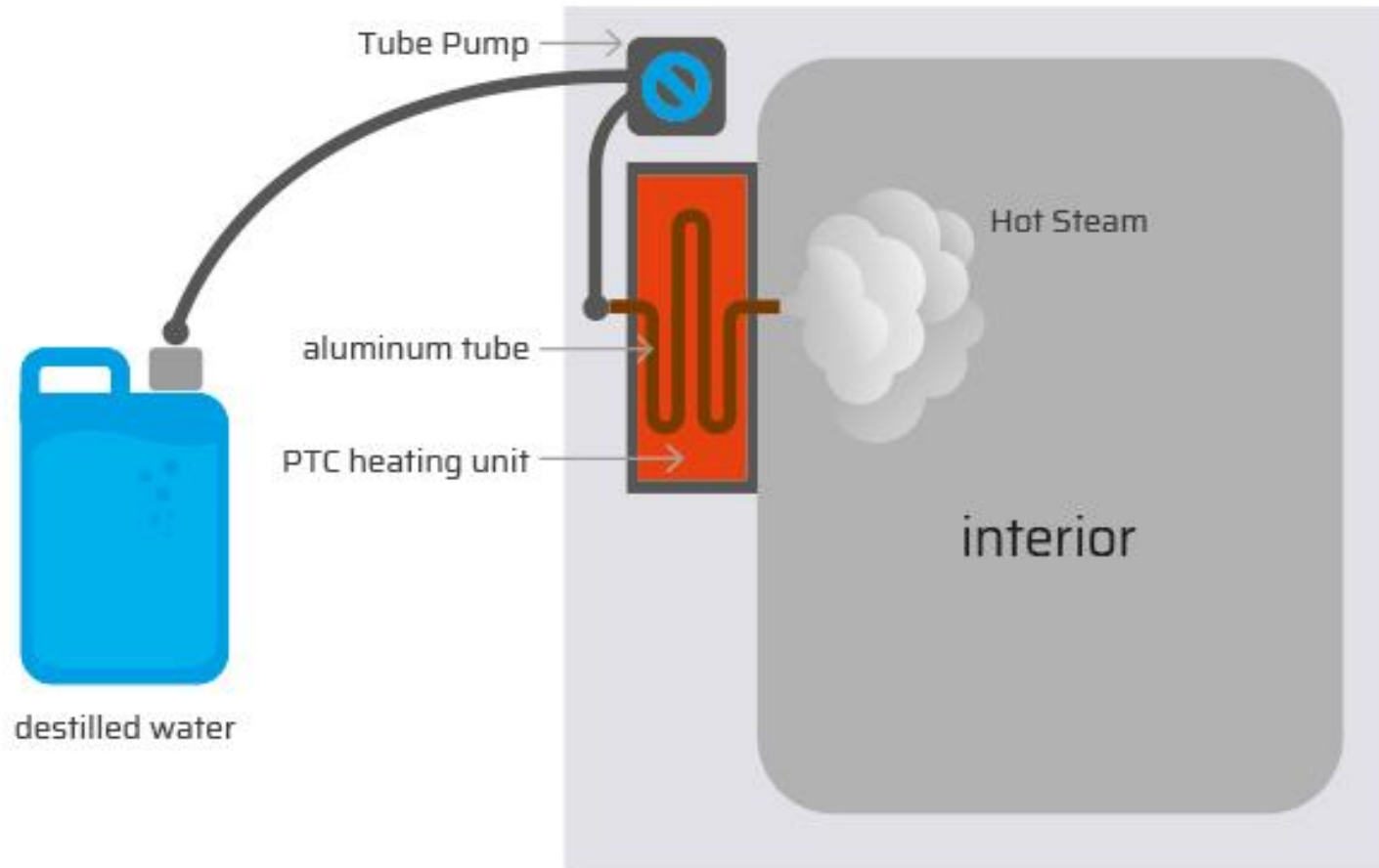
The humidity rising time as well as recovery time after having opened the door are significantly lower than with passive humidity limitation.

- Digital control of humidity (option K7).
- Permanent control and feedback via measurement data of the integrated capacitive humidity sensor.
- Interior dehumidification is achieved by metered fresh air supply via a sterile filter.



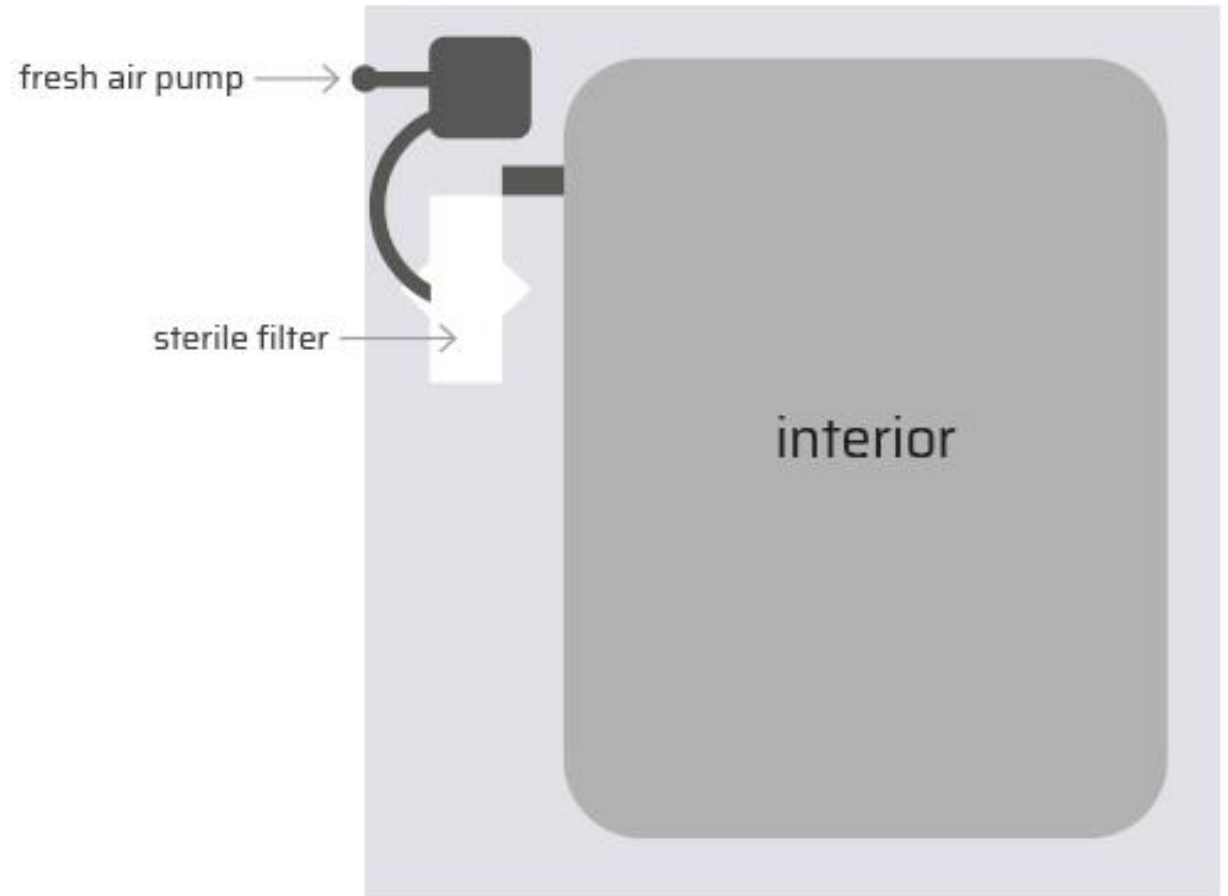
ICO | ACTIVE HUMIDITY CONTROL

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ICO | DEHUMIDIFICATION BY FRESH AIR PUMP

Activated pump conveys fresh air through a sterile filter into the interior, reducing relative humidity.



ICO | APPLICATIONS

- Carrying out bioassays
- Anaerobe breeding (with O₂-Modul)
- Quality assurance of drinking water
- Cell cultivation in stem cell research
- Gene expression experiments
- In vitro fertilization

