

Chillventa Specialist Forums 2024

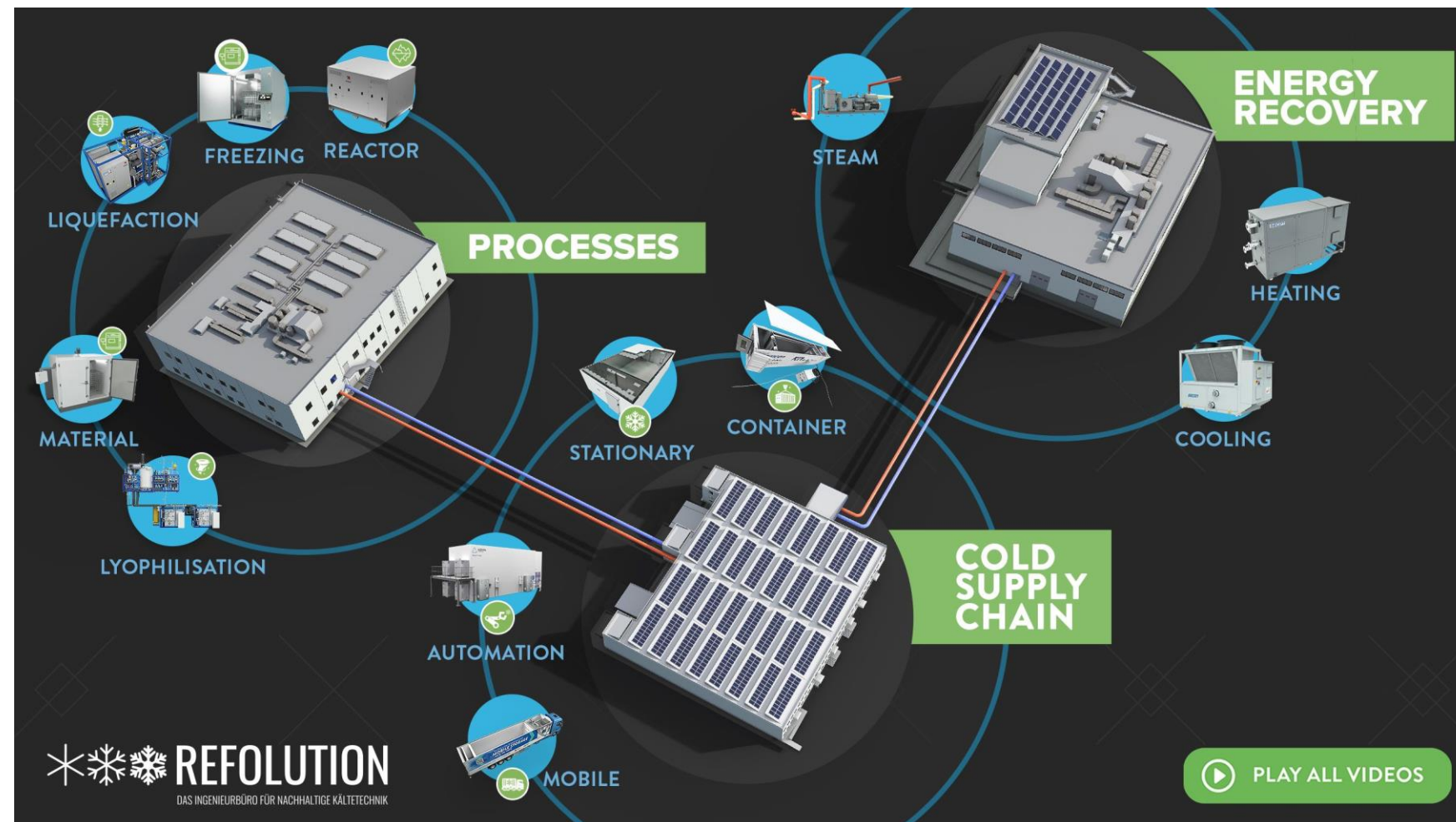
Chillventa Fachforen 2024

CONNECTING
EXPERTS.





PharmaBlastFreeze – Bulk Freezing



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Chillventa 2024



Impact of refrigeration

Indirect CO2 emissions:

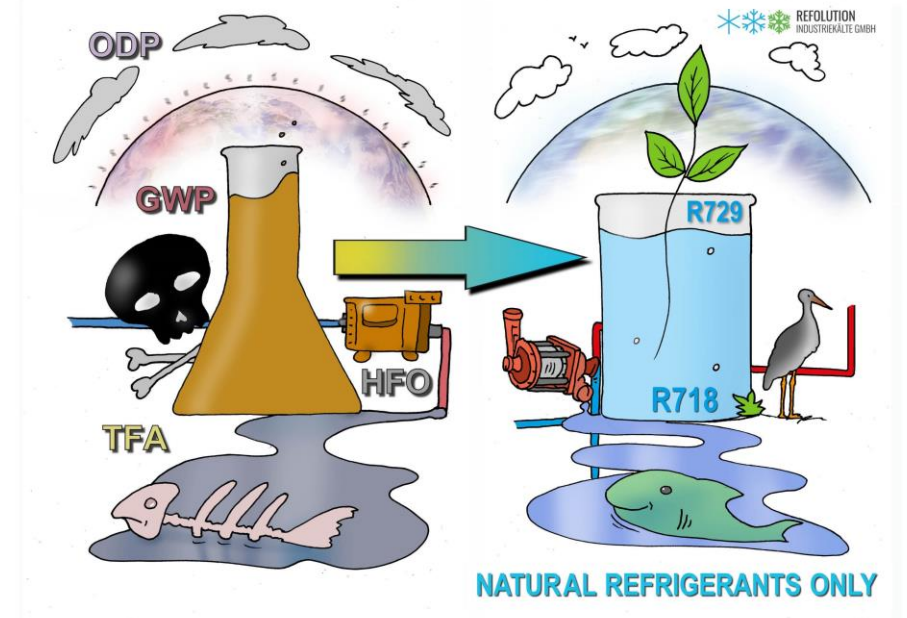
In Germany about 14% to 19% of total electrical power is used in a refrigeration process

Average life cycle is 15 years and life cycle cost is not counted

➤ Need for efficient and long-lasting solutions

Direct emissions of refrigerants:

- ODP – Ozone Depletion Potential
 - GWP – Global Warming Potential
 - PFAS/TFA – persistent pollution of the environment
- Use of natural refrigerants





Laws on refrigeration equipment

1. F-Gas-Regulation (EU) 2024/573

→ 2024



Amtsblatt
der Europäischen Union

2024/573

20.2.2024

VERORDNUNG (EU) 2024/573 DES EUROPÄISCHEN PARLAMENTS UND DES RATES

vom 7. Februar 2024

über fluorierte Treibhausgase, zur Änderung der Richtlinie (EU) 2019/1937 und zur Aufhebung der Verordnung (EU) Nr. 517/2014

2. PFAS draft for REACH

→ Maybe 2027



ANNEX XV RESTRICTION REPORT

PROPOSAL FOR A RESTRICTION

SUBSTANCE NAME(S): Per- and polyfluoroalkyl substances (PFASs)

3. Energieeffizienzgesetz - EnEfG

→ 2023



Bundesministerium
der Justiz

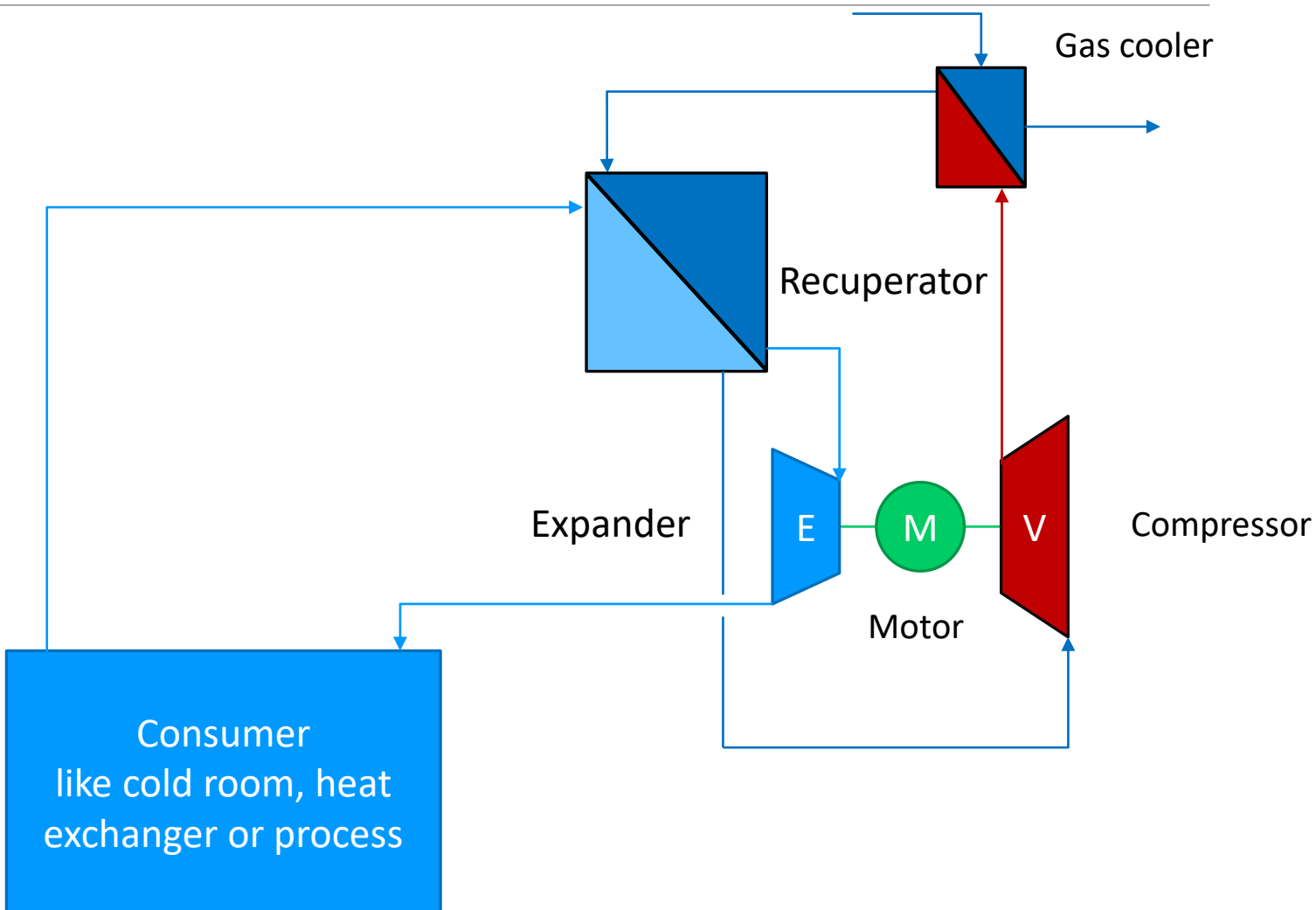
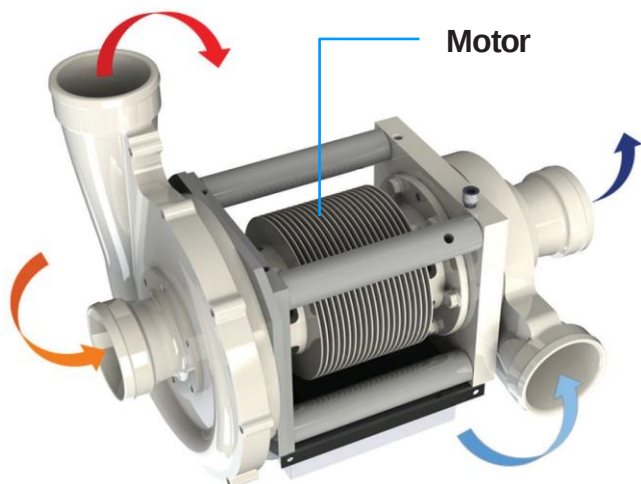
Bundesamt
für Justiz

Gesetz zur Steigerung der Energieeffizienz in Deutschland

(Energieeffizienzgesetz - EnEfG)



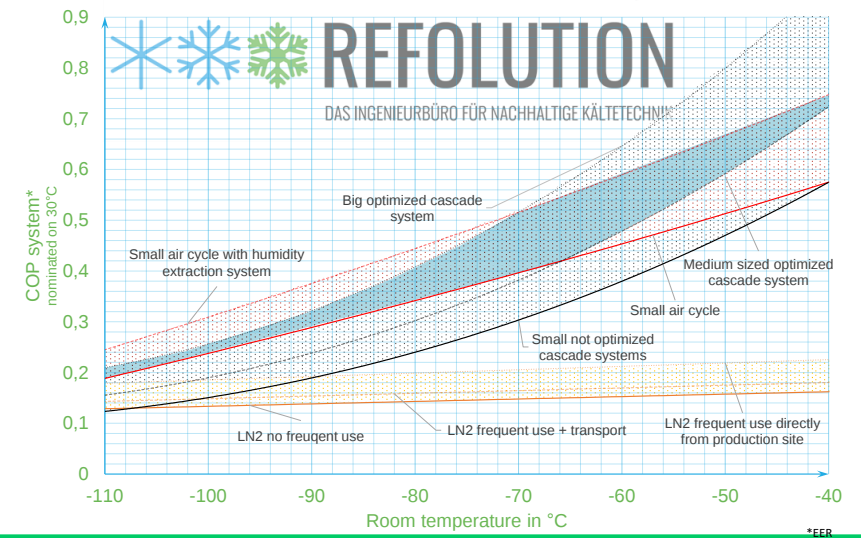
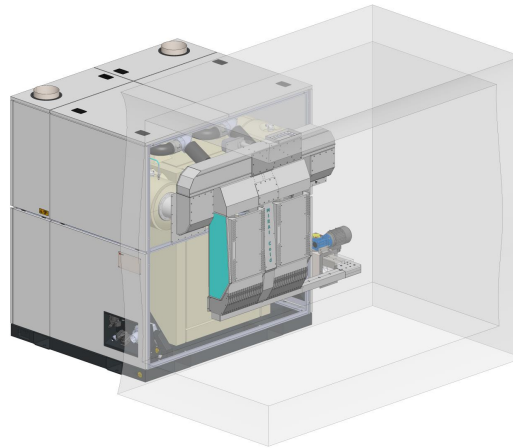
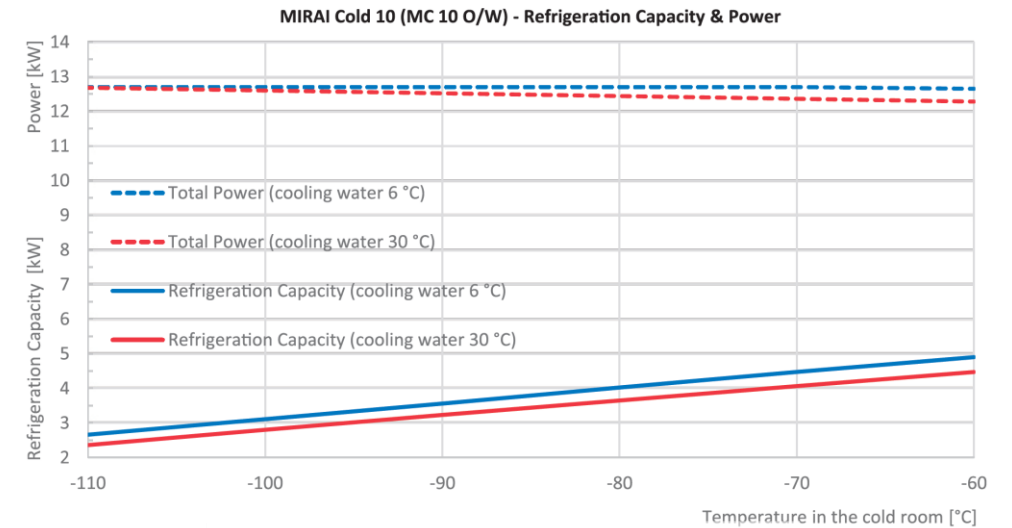
Air refrigeration – Mirai Intex machine





Air refrigeration machines from Mirai Intex

- Future-proof
- Environmentally friendly
- Long lifetime
- Fail-Safe
- Safe for humans
- Maintenance-friendly
- Flexible
- Efficient

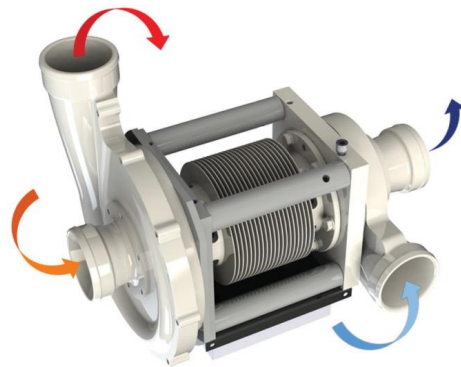




Freez and thaw unit with air refrigeration

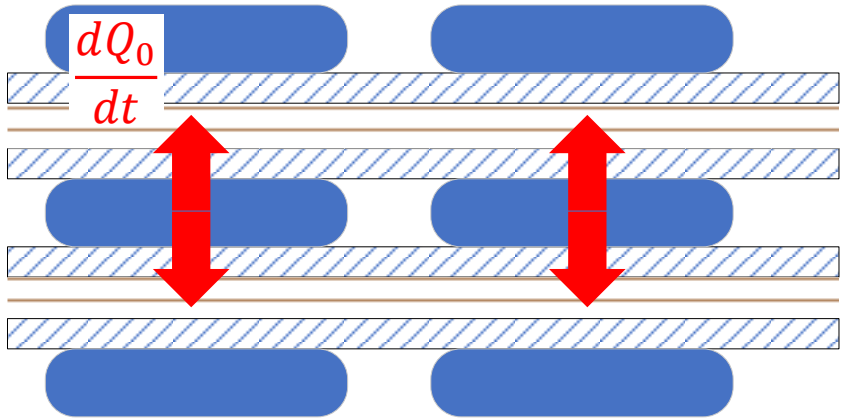
Blood plasma freezing and thawing unit

Compact - Integrated air refrigeration machine with PCM load tank



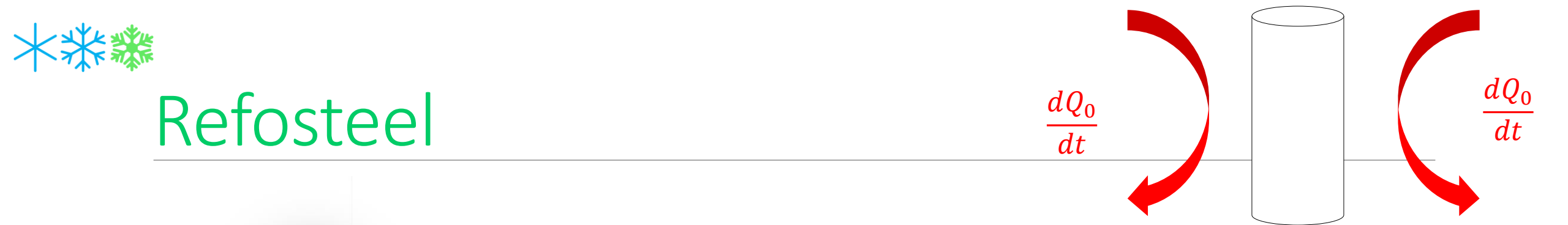


Freeze and thaw unit - FTU



- Direct cooling with conduction over the plate
- High cooling rates however not flexibel on the packaging





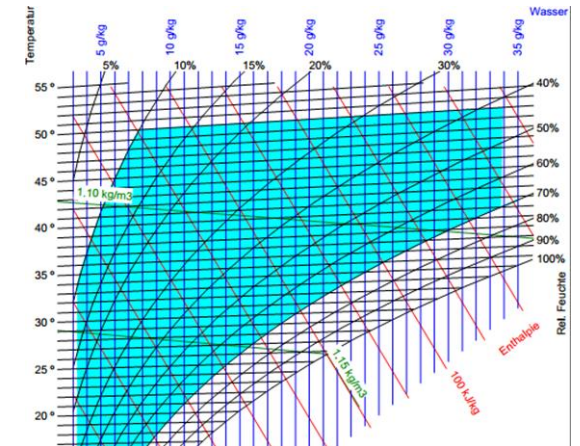
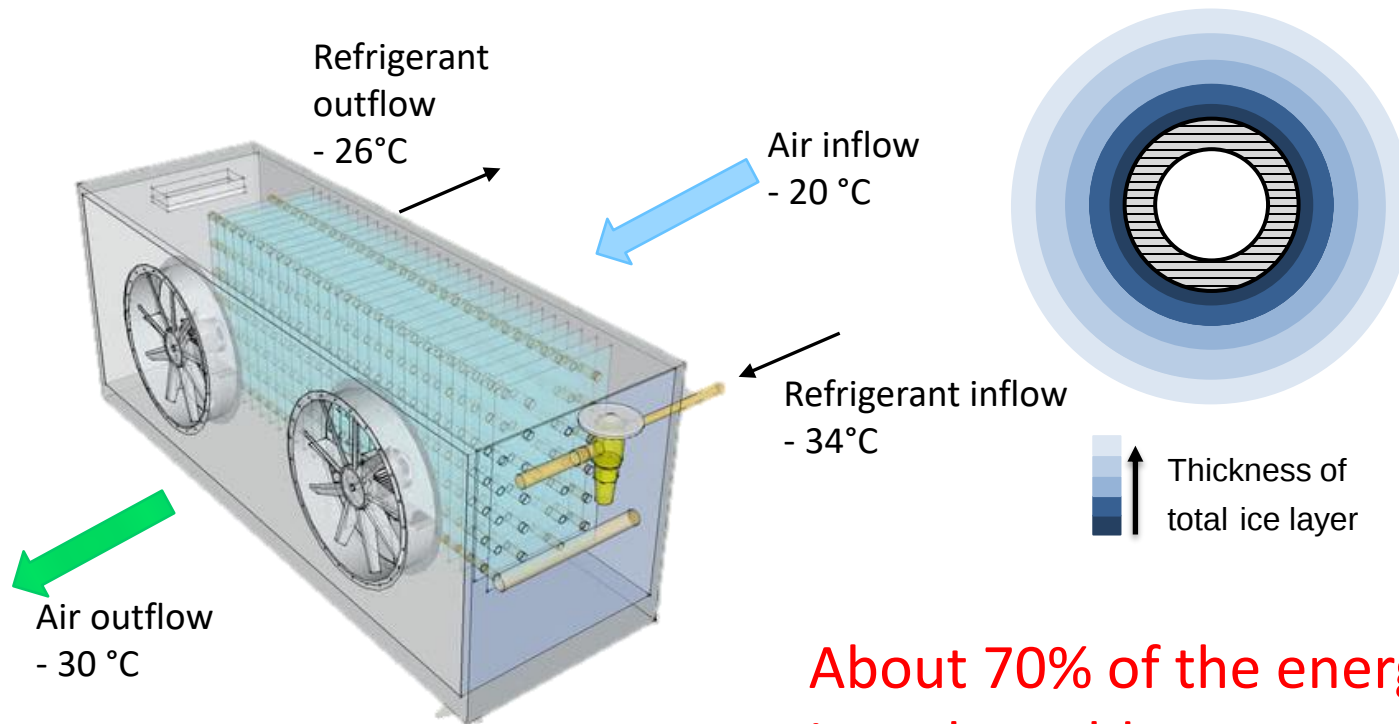
Refosteel



Modify for pharmaceutical needs



Evaporator in common refrigeration



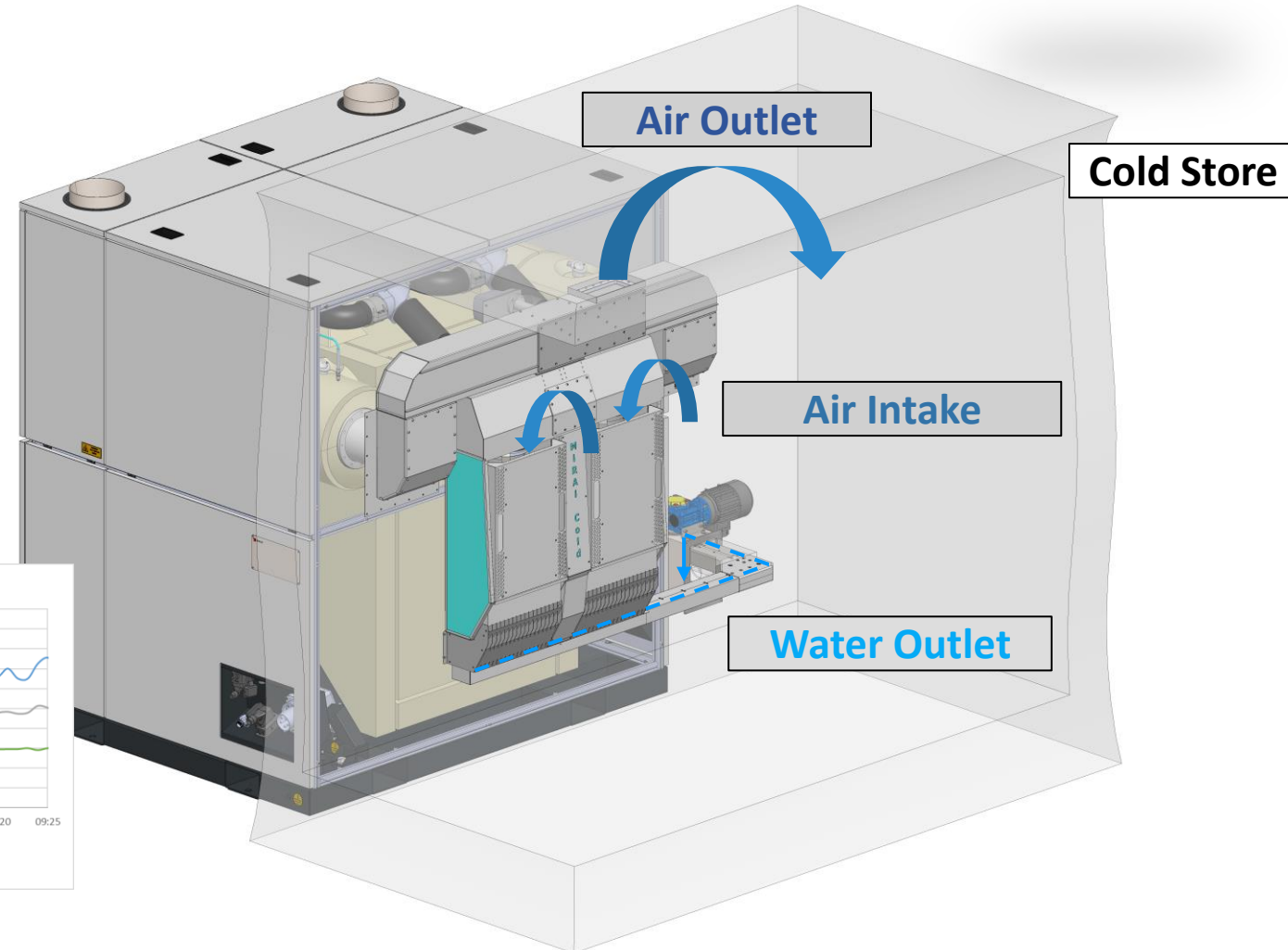
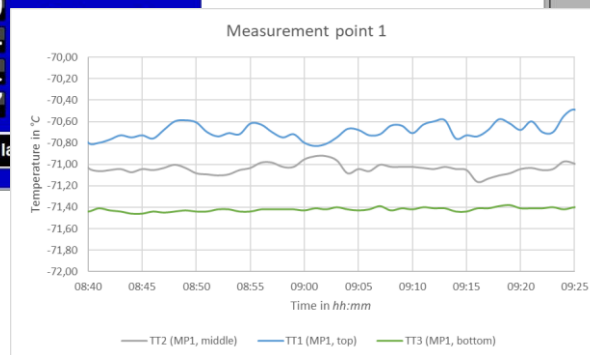
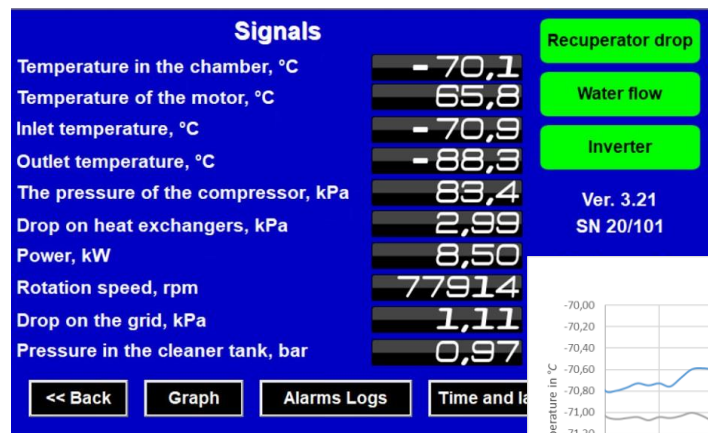
About 70% of the energy for defrosting goes into the cold room



Humidity extraction device - No Evaporator



- ✓ Constant temperature (no defrost)
- ✓ No heat from ventilators and heaters
- ✓ Automated efficient de-icing
- ✓ Low Dewpoint





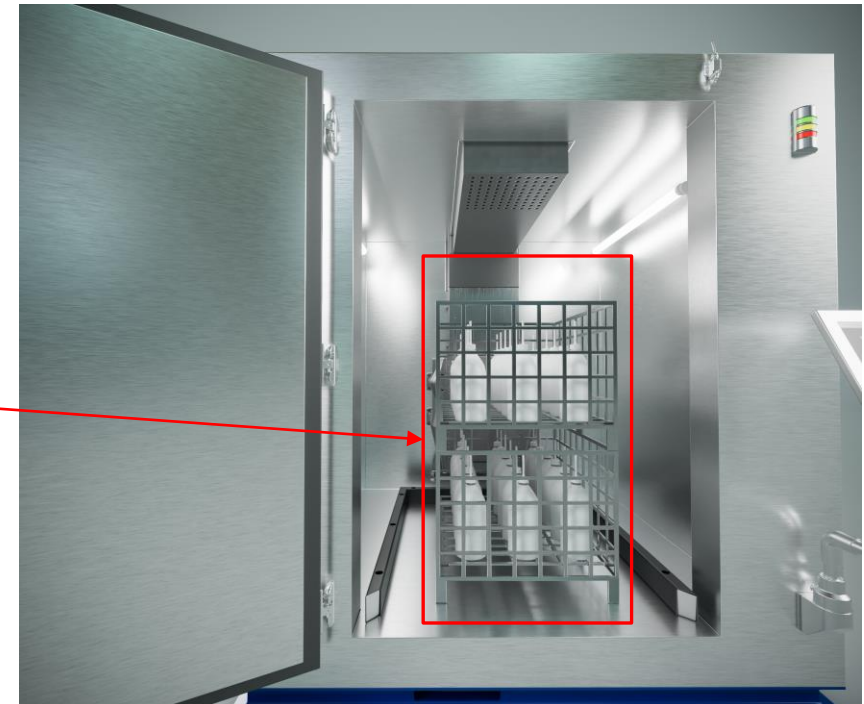
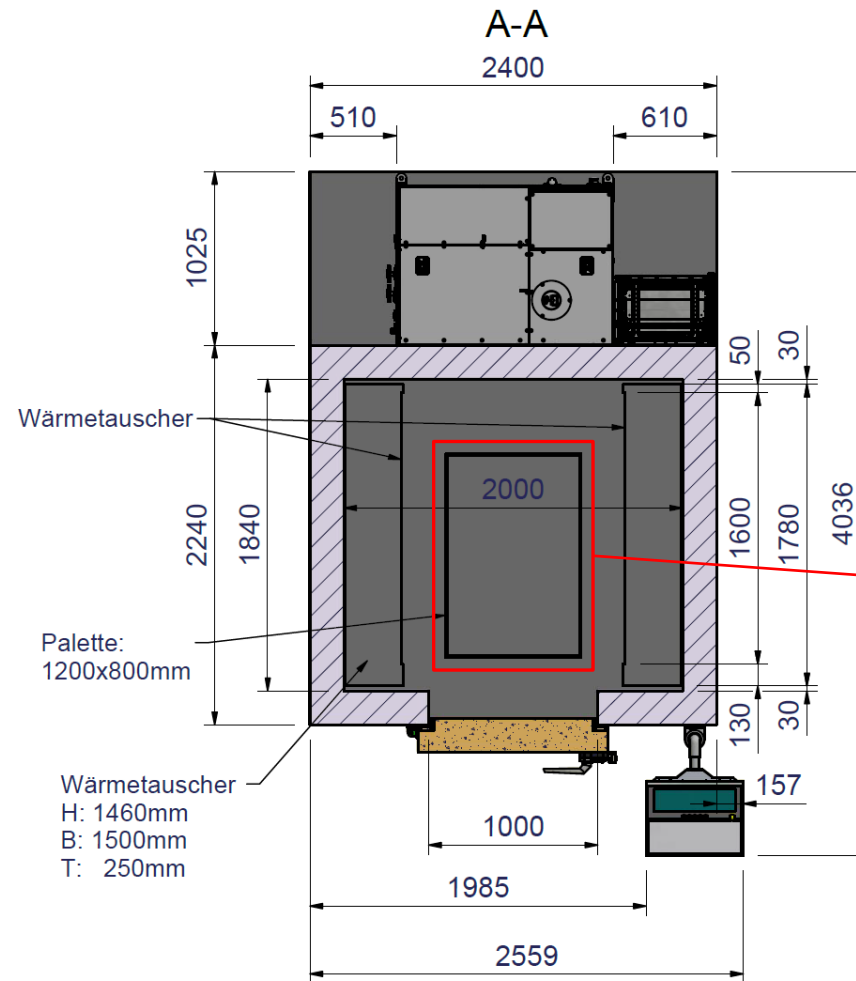
Product handling



Direct batch freezing



Horde wagon



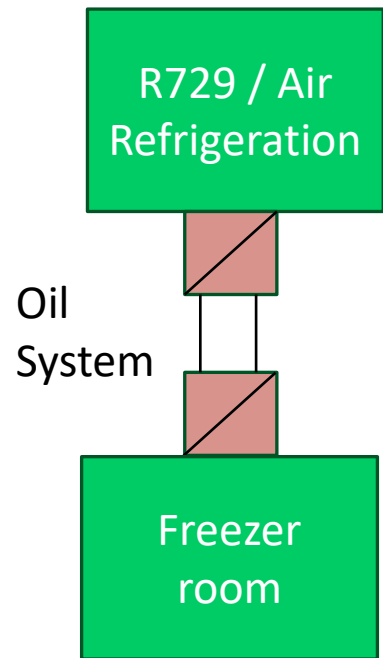


PharmaBlastFreeze ECO





PharmaBlastFreeze Clean Room





It's time for your questions



Chillventa Hall 9, Stand 9-215e

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