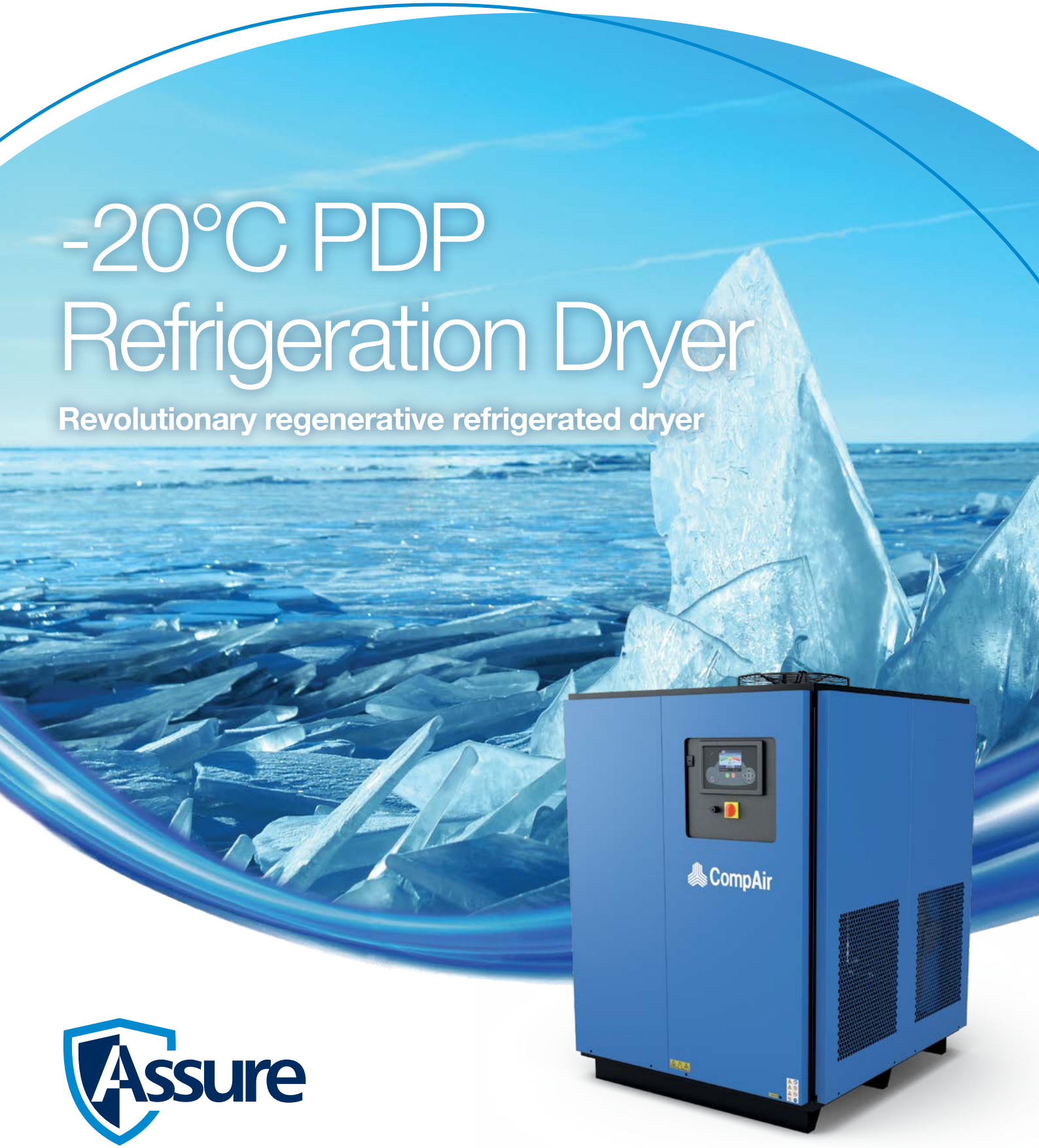
CompAir

SUSTAINABLE MANUFACTURING

-20°C PDP Refrigeration Dryer

Revolutionary regenerative refrigerated dryer



Assure

High efficiency ISO Class 3 Air

CMT Dryer Series

CompAir

Energy efficient sub zero refrigeration dryers

High quality in-house air treatment manufacturing

A modern production system and process demands increasing levels of air quality, and compressed air operators need to ensure that the downstream equipment also delivers on it 100%.

The new Air Treatment portfolio manufactured by CompAir utilising the latest technology provides an energy efficient solution at lowest life cycle costs. The same quality, performance, and efficiency standards delivered by the compressors can now be enjoyed from the Air Treatment range.

Investment in the design and manufacture of our product range, in addition to delivering a strong support structure, ensures that compressed air operators don't need to worry about the quality of their compressed air – quality that is key to ensuring maximum production efficiency and investment protection.

Why choose a sub zero refrigeration dryer?

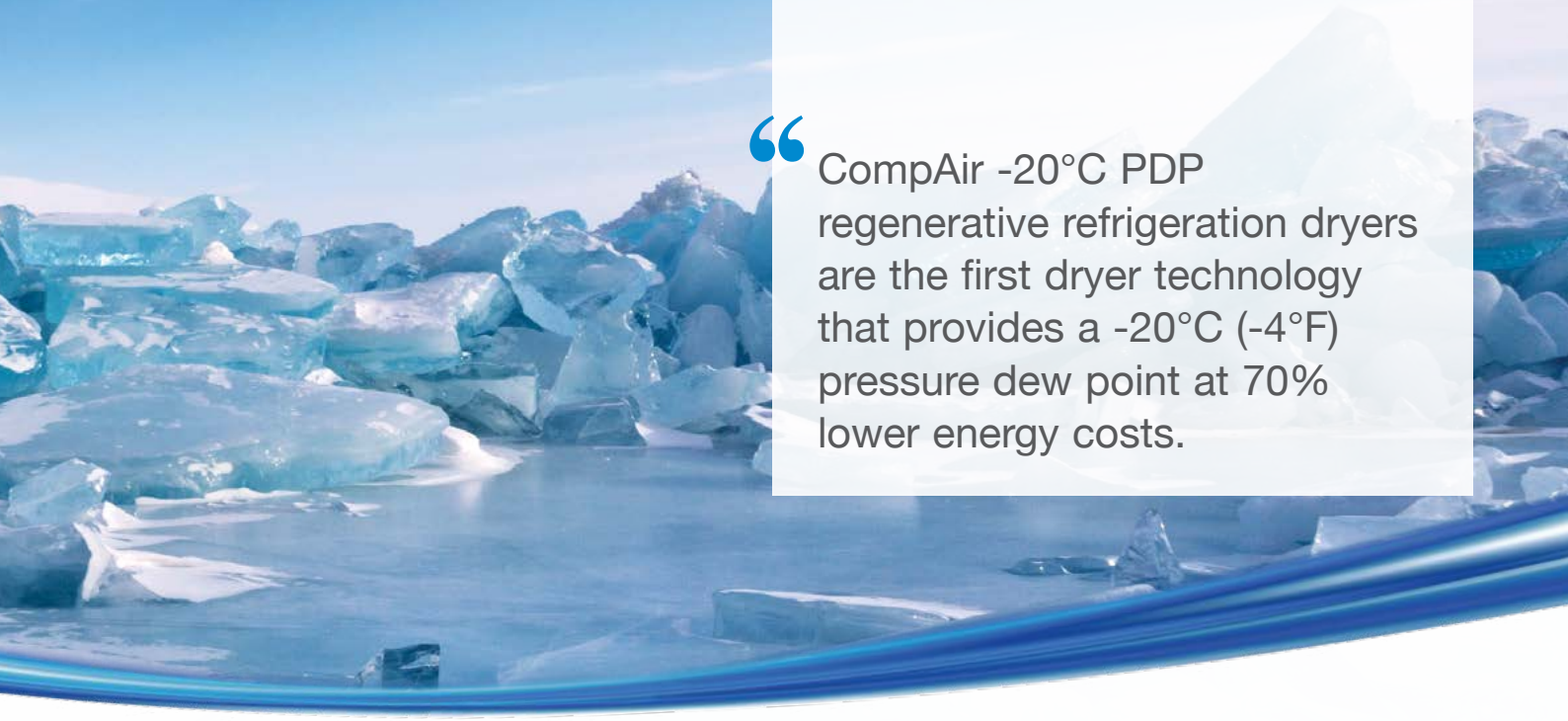
The revolutionary CMT dryer is the only regenerative refrigerant dryer available in the compressed air market today. It combines the sub zero pressure dew point (PDP) of a typical regenerative desiccant dryer, with the low operating and energy costs of a refrigerant dryer, to provide an extremely low total cost of ownership (TCO).

Sub zero air dryers take clean, dry air to new levels of cost-efficiency across a broad spectrum of operating conditions.

We have further expanded our proven technology to include the latest CMT266 model, offering best-in-class total cost of ownership in PDP sub-freezing applications.

iConn

Proactive real-time monitoring protects your compressed air system for absolute security.



> CompAir -20°C PDP regenerative refrigeration dryers are the first dryer technology that provides a -20°C (-4°F) pressure dew point at 70% lower energy costs.

Why class 3 **air quality is critical**

Saturated air, aerosols, and water can compromise efficiency and raise maintenance costs. Class 3 air helps protect against:

- Corroded air storage and distribution systems
- Damaged valves, cylinders, tools and production equipment
- Ruined products or packaging
- Bacterial growth

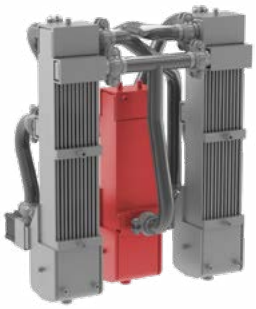
Sub zero **technology**

CompAir CMT dryers are the first dryer technology that provides a -20°C (-4°F) pressure dew point at 70% lower energy costs, combining multiple technology solutions into one machine, the ground-breaking CMT dryer provides amazing results with the lowest TCO compared to every other dryer on the market.

Optimised for Class 3 air quality

Many applications require very dry, high-quality air with sub zero dew points. CompAir's desiccant dryers are the best option for the most stringent requirements – ISO Class 1-2 with a pressure dew point (PDP) as low as -70°C (-94°F). However, ISO Class 3 air, with a PDP of -20°C (-4°F), is sufficient for a large portion of the market. For applications that only require Class 3 air, we've expanded our family of high-quality air dryers with our CMT dryers. They combine the ease of maintenance and operation of a refrigerated dryer with the sub zero pressure dew points typically associated with a desiccant dryer.

Maximise Air-Air Drying – **Minimise Energy Cost**



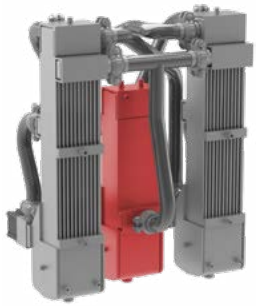
Common Pre-cooler - removes 85% of the moisture from the air.

Air heat energy regenerate the chamber and as the defrost occurs the air temperature is also lowered and further dried.

Air enters the drying chamber and Air-Air heat exchange drops the air temperature below freezing (frosting occurs)

Sub Zero Deposition chamber at -20°PDP (refrigerant-air heat exchanger)

Air-Air heat exchange! Reheating the air while maintaining -20 degC PDP Dryness



The air exits the dryer dried to -20 C PDP and a temperature of +25 C

CompAir

Innovative design, **efficient operation**

Lower maintenance costs

The CMT dryer has no costly consumables that require periodic replacement such as drum wheels or desiccant beads. Also, no external heaters or blowers are required for regeneration – normally required for inlet temperatures below 20°C – reducing the need for high-maintenance equipment.

Increases **productivity**

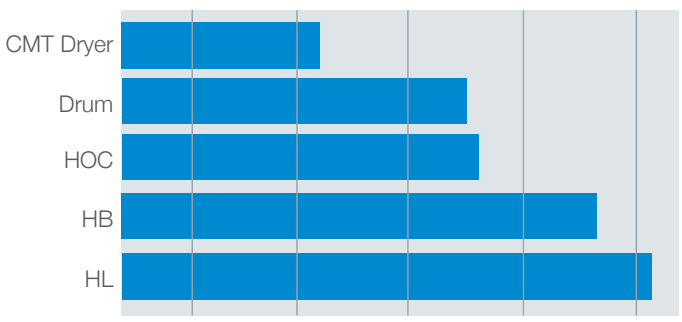
Decrease downtime and increase plant productivity as the CMT dryer is designed for optimised inspection and maintenance with removable side panels. Plus, the advanced controller permits remote viewing of critical parameters.

Improved **efficiency**

Typical desiccant dryers use upwards of 15% purge air for regeneration, which equates to 15% of the energy cost of the compressor. The CMT dryer does not require purge air, eliminating this wasted energy cost.

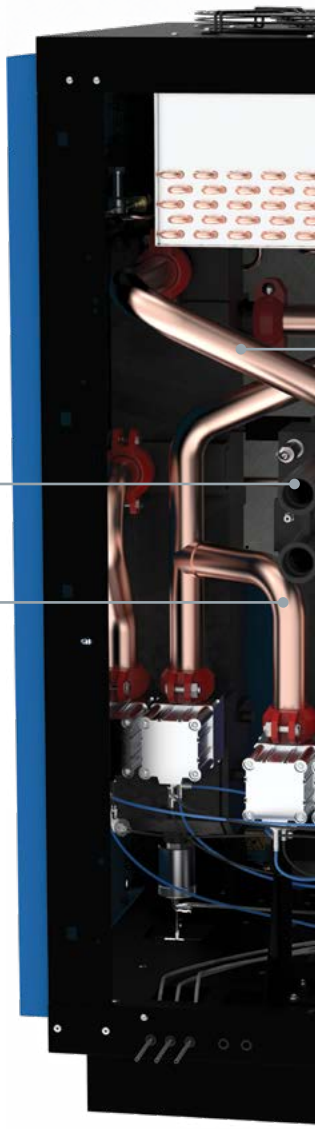
Smart solenoid drain valves are actuated based on the condensate level to ensure complete drainage removal during each cycle without wasting compressed air.

CMT Dryers **Reduce Cost of Ownership**



The CMT Dryer offers a lower total cost of ownership compared to other dryer technologies. Typical TCO profile illustrated based on 5 years. Our latest CMT266 offers best-in-class TCO in PDP sub-freezing applications.

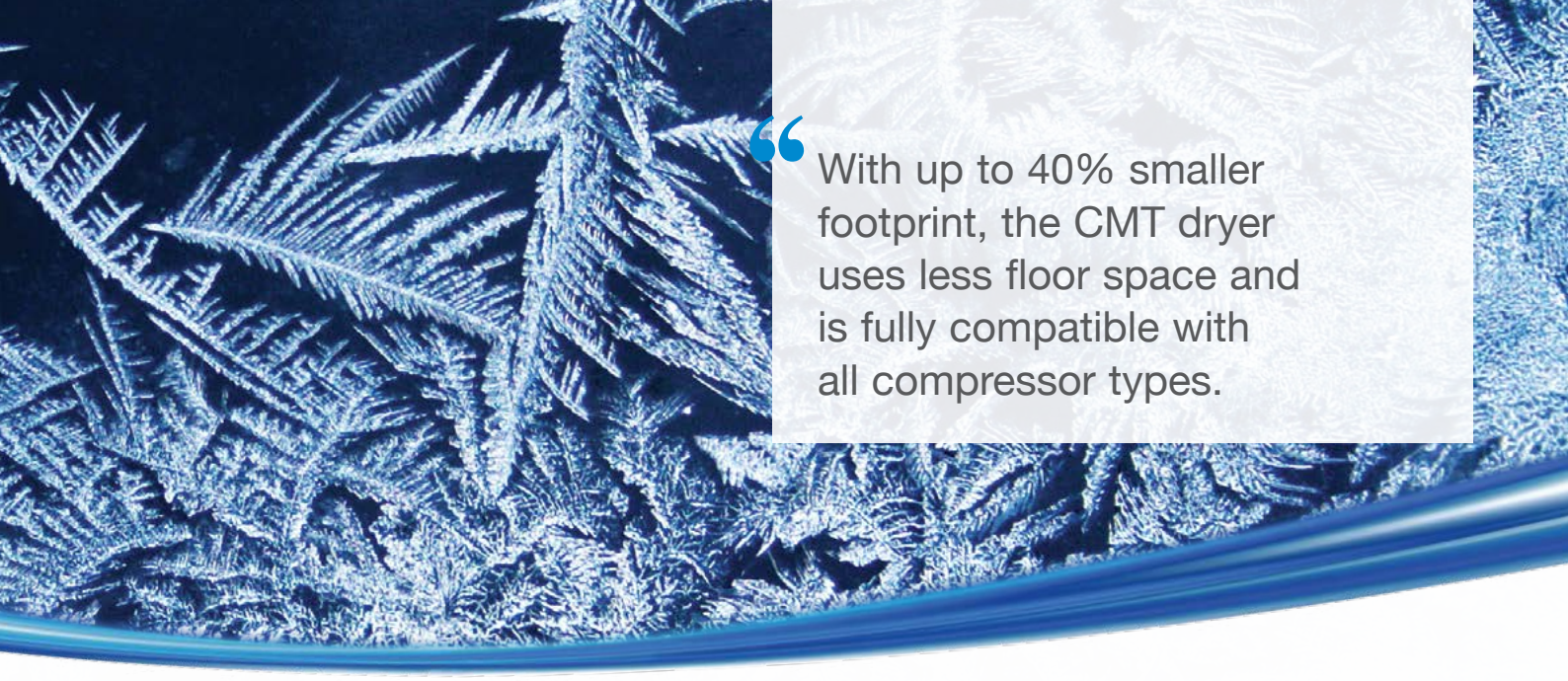
How -20°C PDP refrigeration dryers work



PRE-COOLING: Air enters the dryer through the pre-cooler/re-heater, where it is cooled and dried to 15°C (59°F) PDP, removing 85% of the moisture content in the air.

REGENERATION: Leaving the pre-cooler/re-heater, the air enters the first heat exchanger for regeneration by removing a thin layer of frost that has accumulated on the inner walls during the previous drying cycle. Simultaneously, the air is cooled and dried to 3°C (37°F) PDP.

High-performance, low-maintenance switching pneumatic valves reliably control the drying and regeneration cycles. Victaulic connections ensure leak-free and eliminate thermal stress during operation.



> With up to 40% smaller footprint, the CMT dryer uses less floor space and is fully compatible with all compressor types.

DRYING: With only 15% of the of the moisture remaining, the air now enters the sub zero dryer heat exchanger where it is cooled and dried to -20°C (-4°F) PDP. The removed moisture begins to form a thin layer of frost on the inner walls of the heat exchanger.

REHEATING: The air dried to -20°C (-4°F) PDP is reheated before exiting the dryer in two steps. First, the air re-enters the upper part of the second heat exchanger and is heated by the incoming air to -5°C (23°F) while still maintaining a -20°C (-4°F) PDP.

REHEATING: Next, the air re-enters the common pre-cooler/re-heater unit where the air is heated to 25°C (77°F) from the incoming air. The air exits the dryer with a -20°C (-4°F) PDP.

Reduced equipment / **operating costs**

Since the CMT dryer does not consume purge air, 100% of the air supplied by the compressor is available downstream to the dryer. This eliminates the need to upsize the compressor to compensate for the dryer's purge requirements, saving both equipment and operating costs.

Installation **made easy**

With up to 40% smaller footprint, the CMT dryer uses less floor space and is fully compatible with all compressor types (both oil-flooded and oil-free) without requiring any costly modifications to the air compressor or downstream particulate filtration.

Applications & industries:

- Air agitation
- Air bearings
- Air gauging
- Conveying granular products
- Food & beverages (non-direct air contact)
- Instrument air
- Sand blasting
- Piping exposed to below freezing ambients

The CMT dryer **advantage**

iConn Industry 4.0 solution

iConn is the smart, proactive real-time monitoring service that delivers in-depth and real-time knowledge on the system to compressed air users.

- ✓ Advanced remote analysis
- ✓ Predictive – evaluates historic data
- ✓ Maximises energy efficiency
- ✓ Optimises compressor performance
- ✓ Reduces downtime
- ✓ Works as an open standard
- ✓ Free on new compressors – can be retrofitted
- ✓ Proactive maintenance

Precision control for **optimised performance**

Delivering Class 3 air quality cost-effectively requires advanced logic integrated with precise timing. The Xe-90 controller manages drying efficiency and air quality automatically. It monitors up-to-the-second operating conditions and provides precise control over continuous drying and regenerating cycles to ensure a constant -20°C (-4°F) PDP, regardless of changes to compressed air demand or ambient temperatures. Advanced real-time monitoring of the air system ensures air quality and efficiency with full integration with the plant system.

Delivering **amazing benefits** to customers

Feature / Attribute	HOC	Drum	Desiccant	Sub Zero
Delivers Class 3 air quality dry air at -20°C (-4°F) PDP	✓	✓	✓	✓
Protects pipes from freezing when they are exposed to low ambient temperatures	✓	✓	✓	✓
Compatible with all compressor types (oil-flooded and oil-free)	X	X	✓	✓
Provides 100% compressed air availability over the full range of compressor utilisation (20-100%)	✓	✓	X	✓
Operates without drying agents that require particulate filtering	X	X	X	✓
Low maintenance costs	X	X	X	✓
No additional cost required for compressor modifications	X	X	✓	✓
Low pressure drop (max 0.2 barg)	X	X	X	✓
No post filter required	X	X	X	✓

The CompAir **Assure Service and Warranty agreements**

Cover the airend for up to 10 years.

Standard features include:

- Removable panels for easy service access
- IP42 electrical protection
- Solenoid no-loss drain with electronic feedback to the controller
- Xe90D programmable controller
- Victaulic® connections for easy maintenance
- R452A refrigerant (R449A optional)
- Modbus Connectivity
- Remote monitoring iConn connectivity
- Integrated heaters for low load (below 20% flow and low ambient temperature)

Optional features include:

- Low temperature kit (ambient and/or inlet)
- Outdoor modification/IP54 protection
- Air Cooled and Water Cooled (available for CMT266)

Technical **Data**

CMT Dryer Series

Model	Capacity		Operating power	Dimensions [mm]			Dimensions [in]			Weight	
	[m³/hr]	[SCFM]	[kW]	Length	Width	Height	Length	Width	Height	[kg]	[lb]
CMT60	360	212	1.46	1063	899	1767	41.8	35.4	69.6	352	776
CMT70	420	247	1.78	1063	899	1670	41.8	35.4	65.7	352	776
CMT266	1600	941.7	5.75	1500	1400	1898	59.0	55.0	75.0	750	1653

* Performances refer to air suction of FAD 20°C (68°F), 1 bar (14.5 psig), and the following operating conditions: 7 bar (100 psig) working pressure, -20°C (- 4°F) pressure dewpoint, 25°C (77°F) ambient temperature, 35°C (95°F) compressed air inlet temperature.

CompAir

Innovation & Engineering Excellence

A leading global manufacturer of a wide range of world-class compressed air solutions, CompAir is dedicated to providing a complete solution for our industry partners. From the latest advances in oil-free and oil-lubricated technologies to a complete range of downstream equipment, air treatment and accessories.

An extensive network of dedicated CompAir sales companies and premium partners across all continents provide global expertise with a truly local service, ensuring our advanced technology is backed up with the right support.

CompAir has consistently been at the forefront of compressed air systems development, culminating in some of the most energy efficient and low environmental impact compressors on the market today, helping customers achieve or surpass their sustainability targets.

CompAir compressed air product range

Advanced Compressor Technology

Lubricated

- Rotary Screw
  - > Fixed and Regulated Speed
- Portable
- Vane

Oil-Free

- Water Injected Screw
  - > Fixed and Regulated Speed
- Two Stage Screw
  - > Fixed and Regulated Speed
- Rotary Scroll
- Ultima®

Complete Air Treatment Range

- Filter
- Refrigerant and Desiccant Dryer
- Condensate Management
- Heat of Compression Dryer
- Nitrogen Generator

Modern Control Systems

- CompAir DELCOS Controllers
- SmartAir Master Plus Sequencer
- iConn - Smart Compressor Service

Value Added Services

- Professional Air Audit
- Performance Reporting
- Leak Detection

Leading Customer Support

- Custom Engineered Solutions
- Local Service Centres
- Genuine CompAir Parts and Lubricants

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