

# Copeland R290 solutions

*For integral display cases.*



# ***Copeland solutions for integral display cases with R290***

Many end-users and equipment manufacturers are investigating ways to minimize their impact on the environment while adapting and improving their system architecture. The F-Gas Regulation is accelerating the commercial refrigeration market transition to future-proof refrigerants and improved new system architectures.

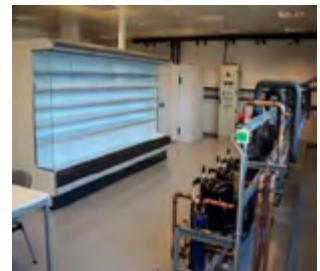
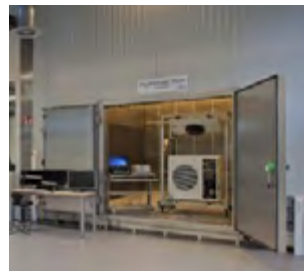
R290 (Propane) is one of the most-discussed refrigerants which has long been known for its good performance. R290 is a future-proof refrigerant with excellent thermodynamic properties and it is becoming an attractive natural refrigerant choice for distributed system architectures such as Integral display cases.

Copeland is investing in research and development activities in order to pro-actively support and guide the customers to go through the F-Gas transition phase. With already several tens-of-thousands of integral display case solutions installed in retail stores all over the world, Copeland is leading the way in providing the advanced technology solutions to the customers for R290 integral display cases.

## ***Key benefits of Copeland R290 solutions***

### ***Solution provider***

- Application & engineering experts team with in-depth know-how and experience
- Full technical support during development and possibility for customized solutions development
- Solution centre with system performance, sound & vibration, EMC testing and analytical engineering capabilities
- Proven pre-defined solutions for faster implementation and short time to market for OEMs



### ***Safety and regulatory compliance***

- Reduce complexity of regulations by providing state-of-the-art "pre-compliant" solution
- Allow easy & fast certification/compliance of the system according to relevant application standards
- Safety compliance – EN60335-2-89 / EN60079



## ***Technology options for flexibility***

- Solutions for multiple circuit and single circuit applications for cabinets with and without doors
- Fixed speed and variable speed modulation
- Parametric and programmable controller for customisation



## ***Intelligent electronics***

- Advanced control features with Defrost synchronization schemes and Demand Defrost for higher system efficiency
- Variable speed compressor & system management
- Enable preventive maintenance & enhanced services with compressor & system data
- Deliver added value at system, facility and enterprise level



***R290 variable speed solutions***

For single circuit cabinet with high refrigerant charge



## Copeland solution benefits

1

### Efficient capacity modulation

- Improved system seasonal performance
- Noise reduction at part load
- Compact compressor design (<200mm height)
- Versatile platform: MT & LT;  
from 1 to 7kW MT capacity and  
0.5 to 2.5kW LT capacity
- Plug & play inverter drive with large modulation range



2

### Programmable controller

- Scalable electronic platform
- Pre-set compressor & drive parameters  
and envelopes
- Validated case management, compressor  
& superheat control
- Built-in diagnostic & alarm management
- Fault detection enabled by inverter data
- Envelope protection for reliability & efficiency



3

### Pre-compliant solution

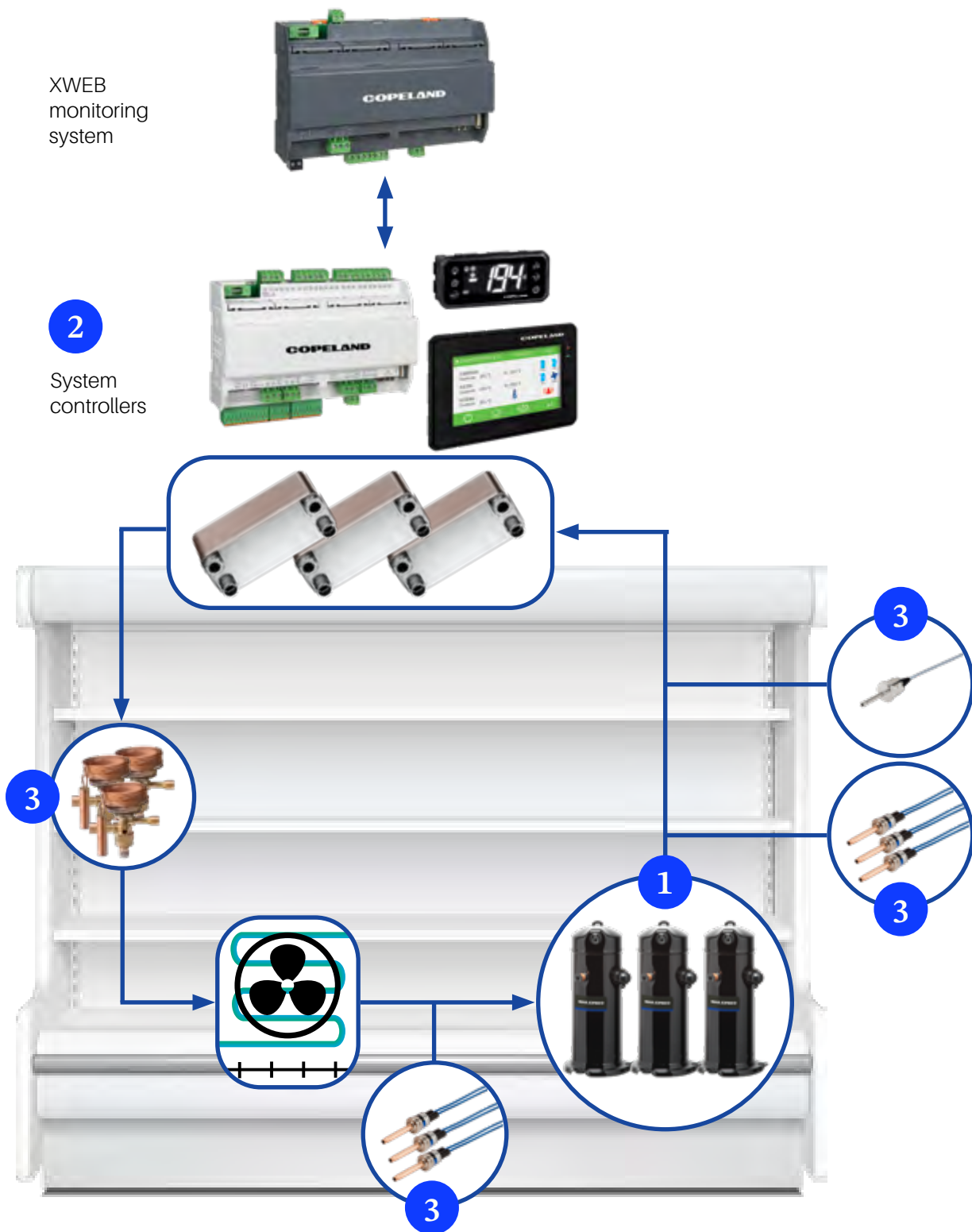
- EN603335-2-89 or ATEX ready components
- Safety compliant sensors & switches
- Electronic expansion valves qualified per  
EN60335-2-89
- Pre-matched compressor-drive package according  
to EN60335-2-34 & EN55014
- Reduced complexity allowing easy & fast certification





## R290 fixed speed solutions

### For multiple circuit cabinet with low refrigerant charge



# Copeland solution benefits

1

## ***Optimized medium temperature scroll design***

- High scroll efficiency with tailored application envelope
- Reduced inner volume & oil quantity
- Dedicated design for lower refrigerant charge below 150g
- Fully hermetic design - safe compressor for R290 refrigerant
- Compact 3-foot fully hermetic design
- Molded plug option for easy service



2

## ***System management electronics***

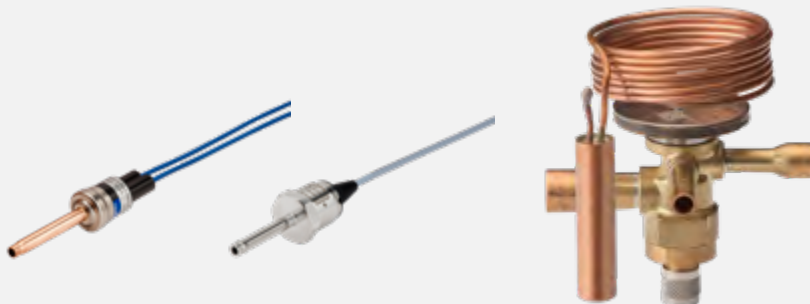
- Temperature control
- Lights & fans management
- Case safety & protection
- VDE & UL ready design
- User display
- Defrost optimization
- Alarm management and enhanced communication



3

## ***R290 ready flow controls***

- Best-in-class controls
- Safety compliant sensors & switches
- Optimized expansion valves





### *About Copeland*

Copeland is a global leader in sustainable heating, cooling, refrigeration and industrial solutions. We help commercial, industrial, refrigeration and residential customers reduce their carbon emissions and improve energy efficiency. We address issues like climate change, growing populations, electricity demands and complex global supply chains with innovations that advance the energy transition, accelerate the adoption of climate friendly low GWP (Global Warming Potential) and natural refrigerants, and safeguard the world's most critical goods through an efficient and sustainable cold chain. We have over 18,000 employees, with feet on the ground in 50 countries - a global presence that makes it possible to serve customers wherever they are in the world and meet challenges with scale and speed. Our industry-leading brands and diversified portfolio deliver innovation and technology proven in over 200 million installations worldwide. Together, we create sustainable solutions that improve lives and protect the planet today and for future generations.

For more details, see [copeland.com/en-gb](https://copeland.com/en-gb)

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