



# COOLERS OVERVIEW

**ECO**<sup>TM</sup> heat transfer  
coolers



A11 en



# PRODUCTS GENERAL FEATURES

## GENERAL FEATURES

Our units are equipped with **highly efficient coils** that are made from special profile aluminum fins and copper tube, designed for use with new generation refrigerants. Specific solutions are also available for environmentally friendly refrigerants.

An appropriate geometry is proposed for each special application.

In order to avoid possible damage to the tubes particular attention has been given to the design of the coil end plates.

The coils are supplied clean and tested according to the conformity standards.

The **casings** of our different product ranges are designed to allow easy access to internal components and is made from a smooth finish aluminum alloy, or pre-painted galvanized steel sheet with the following characteristics:

- high corrosion and impact resistance;
- resistant to low temperatures;
- non-toxic;
- does not produce polluting debris;
- completely covered in a protective plastic film.

The **standard fan motors** are manufactured according to our specifications and are in compliance with the latest safety standards, and when possible they are fitted to the unit structure with an anti-vibration system. The elevated air throw is achieved thanks to a perfect combination of factors. All published data are the result of measurements conducted in the our Technical Lab.

For the unit coolers equipped with **standard electric defrosting**, the heat required to melt ice build-up is provided by stainless steel heater elements located in the finned pack and in the inner drip trays. The heaters are strategically positioned to ensure heat distribution even in the most critical areas of the unit. Given the high grade of thermal conductivity of the materials employed the heat diffusion is ensured to the entire unit.

The water resulting from defrosting is channeled, thanks to the inner drip trays and drain pans specifically designed to enable the water to drain freely.

The **electrical parts** and casing are connected to an earth terminal.

The **fan guards** are made from fiberglass charged polyamide or painted steel and are manufactured in compliance with strict safety standards.

The **standard wiring** is carried out in robust junction boxes with access holes equipped with tear-proof cable glands. All electrical wiring in proximity to other elements are protected from wear and tear. Materials are carefully selected in order to offer long-term reliability.

The **packaging** is made either from recyclable cardboard suitably reinforced or completely in wood. For industrial unit coolers and brine coolers the packaging is designed for time-saving and trouble-free ceiling installation (CTE excluded).

All our products are supplied with a technical manual, a declaration of conformity (inclusive of testing certificate), a PED report and for special models supplementary documentation is issued.

## REFERENCE STANDARDS

Our products are manufactured in compliance with the following reference standards:

- internal cleanliness of coils  
DIN 8964;
- electric motors, manufactured in accordance to EN 60335-1;
- fan guards in compliance to EN 294 safety standards;
- air throw measured in our technical lab according to CECOMAF GT 6-001 (final velocity = 0,25 m/s);
- 2006/42/EC Machine Directive, 2014/35/EU Low Voltage Directive and 2014/68/EU Pressure Equipment Directive;
- modified 2014/30/EU EMC Directive (Electromagnetic Compatibility).

## ErP 2015 COMPLIANT

All the fan motors fitted in “ECO Heat Transfer Coolers” branded products comply with the 2009/125/EC Directive, meet the EU energy guidelines and are CE marked as they are manufactured in accordance to the European directives in force.

The ErP directive, mandatory in all EU countries, applies to fan motors with output power between 125 W and 500 kW. This directive covers products made in the EEA (European Economic Area countries) and imported from non-EU countries. EU products exported to other countries are not subject to this directive.

The Erp directive does not apply to products used in ATEX areas, fan motors used at particularly high and low temperatures (<-40°C or >+100°C), fan motors in units for short-term emergency use or fan motors used in means of transportation for persons or goods.

Modine incorporates fan motors and other associated devices used in its products to guarantee that they are in compliance with Commission Regulation (EU) No 327/2011.

Particular attention has been addressed to the components (fan rings) so as to ensure full respect of Directive efficiency and, overall, a perfect balance between air flow performance, energy consumption and noise level emissions.

## WARRANTY

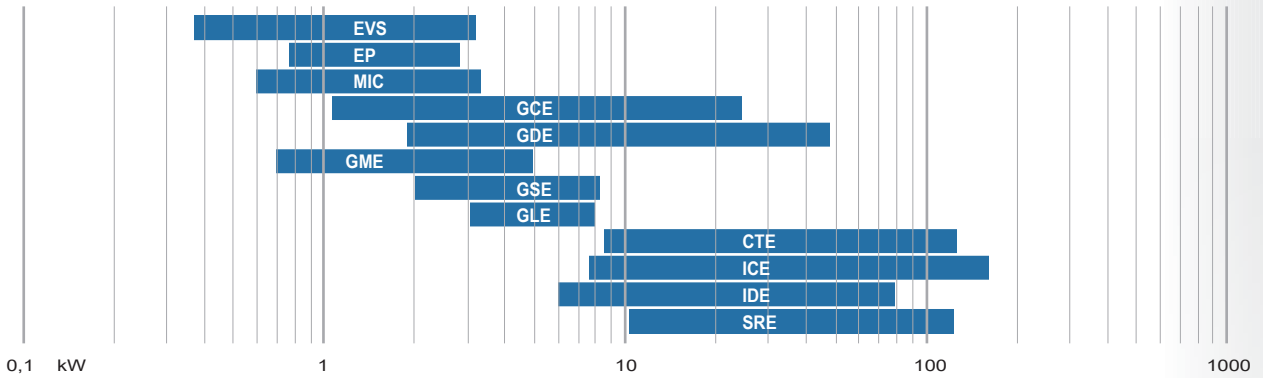
All technical information in this edition is based on tests carried out, which we deem exhaustive and reliable but which cannot be referred to all records of possible applications. Therefore, the purchaser must ascertain product suitability with regard to its intended use, undertaking all responsibility arising from its said use. Upon request by the purchaser, the seller shall be available to supply all useful information in order to use his products better. All our models have a two-year warranty with effect from the date of the said invoice. Please refer to the Legal Office of Modine CIS Italy S.r.l for more in-depth information. However, occasional failures such as those due to transport, tampering by unauthorised personnel, incorrect use and incorrect installation, which the products are subjected to, are all excluded from any form of warranty.

As a result of continuing research and design by our technical laboratories, aimed at offering top quality and innovative products, the information given in this guide may be subject to modification at any time without prior notice; it is up to the user to keep up to date on all possible modifications. No part of this publication may be reproduced or duplicated without prior permission; we decline any responsibility for possible mistakes or omissions, and we reserve the right to make amendments deemed necessary, without prior notice and at any time.

# CAPACITY RANGE

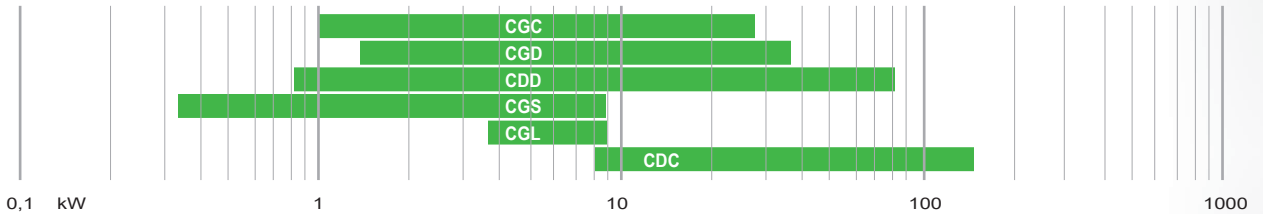


## UNIT COOLERS



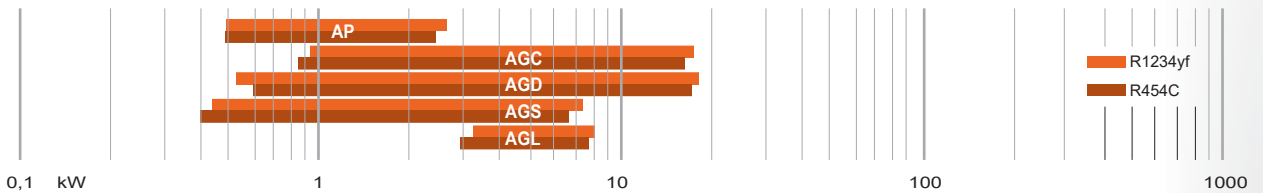
Nominal capacity: assessed in practical operating ambient, i.e. in wet conditions; R404A refrigerant; air inlet temperature 0 °C; evaporating temperature –8 °C; TD 8 K.

## UNIT COOLERS FOR CO<sub>2</sub>



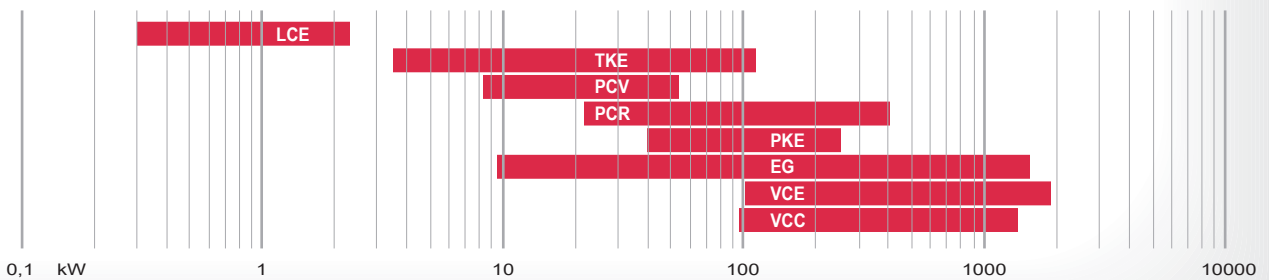
Nominal capacity: Assessed in practical operating ambient, i.e. in wet conditions, in direct expansion application.  
Norms and conditions applied for the calculation of the published capacities: please contact our Technical dept.

## UNIT COOLERS FOR A2L



Nominal capacity: Assessed in practical operating ambient, i.e. in wet conditions, in direct expansion application, air inlet temperature 0 °C; evaporating temperature –8 °C; TD 8 K; Mid Point.

## AIR COOLED CONDENSERS



The stated capacity is assessed based on ambient temperature 25 °C; and condensing temperature 40 °C with R404A.



# UNIT COOLERS AND BRINE COOLERS

EVS



**Slanted coolers and brine coolers for cabinets and/or small cold rooms**

- Fan motors: diameter 200 mm
- Fin spacing: 3,5/7 mm or 4,5/9 mm
- 20 customizable models
- Capacity from 0,37 to 3,29 kW

EP



**Wall unit coolers and brine coolers for cabinets and/or small cold rooms**

- Fan motors: diameter 230 mm
- Fin spacing: 3,5/7 mm
- 5 customizable models
- Capacity from 0,75 to 2,76 kW

MIC



**Dual discharge unit coolers and brine coolers for cabinets and/or small cold rooms**

- Fan motors: diameter 230 mm
- Fin spacing: 4,5/9 mm
- 8 customizable models
- Capacity from 0,59 to 4,29 kW

GCE



**Cubic unit coolers and brine coolers for commercial cold rooms**

- Fan motors: diameter 250; 315 or 350 mm
- Fin spacing: 4; 6 or 8 mm
- 105 customizable models
- Capacity from 1,07 to 24,28 kW

GDE



**Dual discharge unit coolers and brine coolers for commercial cold rooms**

- Fan motors: diameter 315 or 350 mm
- Fin spacing: 3; 4 or 7 mm
- 48 customizable models
- Capacity from 1,7 to 24 kW

GME



**Slanted unit coolers and brine coolers for small commercial cold rooms**

- Fan motors: diameter 250 mm
- Fin spacing: 4 or 7 mm
- 18 customizable models
- Capacity from 0,69 to 3,97 kW

GSE



**Slanted unit coolers and brine coolers for commercial cold rooms**

- Fan motors: diameter 315 mm
- Fin spacing: 4 or 7 mm
- 8 customizable models
- Capacity from 2 to 8,2 kW

GLE



**Dual discharge unit coolers and brine coolers for work rooms and cold rooms with reduced ventilation**

- Fan motors: diameter 250 or 315 mm
- Fin spacing: 5 mm
- 5 customizable models
- Capacity from 3,1 to 8 kW

CTE



**Cubic unit coolers and brine coolers for commercial and industrial cold rooms**

- Fan motors: diameter 500 or 630 mm
- Fin spacing: 4; 6 or 8,5 mm
- 69 customizable models
- Capacity from 8,4 to 126 kW

ICE



**Cubic unit coolers and brine coolers for refrigerated warehouses and industrial cold rooms**

- Dual speed fan motors: diameter 450; 560 or 630 mm
- Fin spacing: 6; 8; 10 or 12 mm
- 104 customizable models
- Capacity from 7,6 to 162 kW

IDE



**Dual discharge unit coolers and brine coolers for refrigerated warehouses and industrial cold rooms**

- Dual speed fan motors: diameter 450 or 560 mm
- Fin spacing: 4,5; 7 or 10 mm
- 36 customizable models
- Capacity from 6 to 78,6 kW

SRE



**Floor standing unit coolers and brine coolers for blast chiller tunnels and blast freezer rooms**

- Fan motors: diameter 500; 560 or 630 mm
- Fin spacing: 7; 10 or 12 mm
- 79 customizable models
- Capacity from 10,3 to 123 kW



## UNIT COOLERS FOR CO<sub>2</sub>

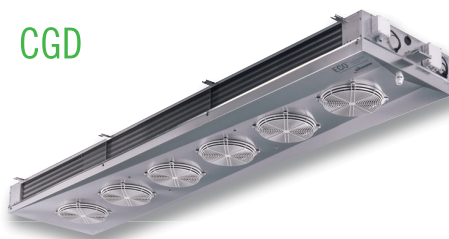
### CGC



#### Cubic unit coolers (CO<sub>2</sub>) for commercial cold rooms

- Fan motors: diameter 250; 315 or 350 mm
- Fin spacing: 4; 6 or 8 mm
- 105 customizable models
- Capacity from 1 to 27,2 kW

### CGD



#### Dual discharge unit coolers (CO<sub>2</sub>) for commercial cold rooms

- Fan motors: diameter 315 or 350 mm
- Fin spacing: 3; 4 or 7 mm
- 48 customizable models
- Capacity from 1,3 to 35 kW

### CDD



#### Dual discharge unit coolers (CO<sub>2</sub>) for commercial and industrial cold rooms

- Fan motors: diameter 230; 450 or 560 mm
- Fin spacing: 4; 4,5/9 or 10 mm
- 52 customizable models
- Capacity from 0,82 to 81,5 kW

### CGS



#### Slanted unit coolers (CO<sub>2</sub>) for commercial cold rooms

- Fan motors: diameter 200; 250 or 315 mm
- Fin spacing: 3,5/7; 4; 4,5/9 or 7 mm
- 46 customizable models
- Capacity from 0,24 to 8,9 kW

### CGL



#### Dual discharge unit coolers (CO<sub>2</sub>) for commercial working rooms

- Fan motors: diameter 250 or 315 mm
- Fin spacing: 5 mm
- 5 customizable models
- Capacity from 3,4 to 8,8 kW

### CDC



#### Cubic unit coolers (CO<sub>2</sub>) for commercial and industrial cold rooms

- Fan motors: diameter 500 or 630 mm
- Fin spacing: 4; 6 or 8,5 mm
- 69 customizable models
- Capacity from 8,2 to 149 kW

## F-Gas ready!



In order to address and challenge the adverse effects of climate change, the European Commission has started a program to promote the establishment of a more sustainable and efficient economy.

This program covers the main economic sectors, including the refrigeration industry. In fact, it comprises the F-Gas Regulation (EU – No. 517/2014) which aims to significantly reduce the emissions of high GWP (Global Warming Potential) fluorinated refrigerants (HFCs).

The F-Gas regulation enforces the gradual ban of HFCs.

The refrigeration industry is responding to this significant change by developing and introducing new technologies and innovative designs for refrigeration installations.

The entire sector is rapidly evolving: from HFC producers, product plant

# UNIT COOLERS FOR A2L

**New A2L  
range!**

AP



## Wall unit coolers for cabinets and small cold rooms

- Fan motors: diameter 230 mm
- Fin spacing: 3,5/7 mm
- 5 customizable models
- Capacity R1234yf: from 0,49 to 2,42 kW
- Capacity R454C: from 0,45 to 2,21 kW

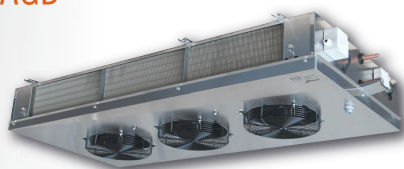
AGC



## Cubic unit coolers for commercial cold rooms

- Fan motors: diameter 250, 315 or 350 mm
- Fin spacing: 4; 6 or 8 mm
- 57 customizable models
- Capacity R1234yf: from 0,93 to 15,06 kW
- Capacity R454C: from 0,85 to 13,8 kW

AGD



## Dual discharge unit coolers for work rooms and commercial cold rooms

- Fan motors: diameter 230, 315 or 350 mm
- Fin spacing: 3, 4, 4,5/9 or 7 mm
- 50 customizable models
- Capacity R1234yf: from 0,52 to 16,16 kW
- Capacity R454C: from 0,48 to 14,82 kW

AGS



## Slanted unit coolers for cabinets and commercial cold rooms

- Fan motors: diameter 200, 250 or 315 mm
- Fin spacing: 3,5/7, 4,5/9, 4 or 7 mm
- 46 customizable models
- Capacity R1234yf: from 0,33 to 7,17 kW
- Capacity R454C: from 0,3 to 6,57 kW

AGL



## Dual discharge unit coolers for work rooms and cold rooms in which reduced air circulation is required

- Fan motors: diameter 250 or 315 mm
- Fin spacing: 5 mm
- 5 customizable models
- Capacity R1234yf: from 3,1 to 8 kW
- Capacity R454C: from 2,9 to 7,4 kW

management to maintenance operators.

The evolution of our products is ongoing and prompted by current regulations.

We even anticipate the future by developing and launching innovative product ranges.

Today our product portfolio includes models with smaller internal volumes, that ensure higher efficiency with a substantial reduction of the amount of refrigerant employed.

We have also designed a comprehensive range of CO<sub>2</sub> models (GWP=1) that can run at higher operating pressures. These units can now also be used in regions that are characterized with climates with higher temperatures; thanks to options and technical solutions that guarantee optimum performance and reduced energy consumption.

## F-gas prohibitions

**1 January 2022**

“Refrigerators and freezers for commercial use (hermetically sealed equipment) that contain HFCs with GWP of 150 or more”

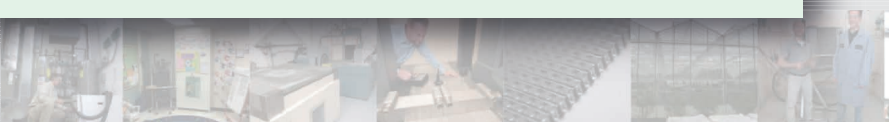
“Multipack centralised refrigeration systems for commercial use with a rated capacity of 40 KW or more that contain, or the functioning of which relies upon, fluorinated greenhouse gases with GWP of 150 or more. Except in the primary refrigerant circuit of cascade systems where fluorinated greenhouse gases with a GWP of less than 1500 may be used”

Also A2L refrigerants are one of the new options with low GWP.

To safely use A2L refrigerants, we have designed a new range of Unit Coolers that benefit from high reliable standard components and a dedicated electrical defrost system option that can operate at temperatures below the A2L ignition point.

To check the performances with new generation low-GWP synthetic or natural refrigerants our “**Scelte**” selection software is at your disposal, at [www.modineselect.com](http://www.modineselect.com)

This tool is constantly updated with all the latest and most significant innovations on the market.





# CONDENSERS, LIQUID COOLERS AND GAS COOLERS

LCE



## Air cooled condensers for small condensing units

- Fan motors: diameter 170; 200; 230; 250 or 300 mm
- Fin spacing: 3 mm
- 16 customizable models
- Capacity from 0,3 to 2,3 kW

TKE



## Air cooled condensers for commercial applications

- Fan motors: diameter 350 or 450 mm
- Fin spacing: 2,1 mm
- 69 customizable models
- Capacity from 3,5 to 112,3 kW

PCV



## Air cooled condensers and gas coolers with integrated housing for commercial applications

- Fan motors: diameter 450; 500; 630 and 710 mm
- Fin spacing: 2,1 mm
- 60 customizable models
- Capacity from 8,3 to 53,8 kW

PCR



## Air cooled condensers, dry coolers and gas coolers with EC radial fan motors for commercial and industrial applications

- Fan motors: diameter 400; 500 or 630 mm
- Fin spacing: 2,1 mm
- 11 customizable models
- Capacity from 21,7 to 402 kW

PKE



## Air cooled condensers, dry coolers and gas coolers with sound-proof housing for commercial and industrial applications

- Dual speed fan motors: diameter 630 mm
- Fin spacing: 2,1 mm
- 34 customizable models
- Capacity from 39,7 to 253 kW

EG(K)



## Air cooled condensers for commercial and industrial applications

- Dual speed fan motors: diameter 500; 630; 710; 800; 910 and 1000 mm
- Fin spacing: 2,1 mm
- 6651 customizable models, capacity from 9,7 to 1516 kW

VCE



## Air cooled condensers, dry coolers and gas coolers two coils with V configuration for industrial applications

- Dual speed fan motors: diam. 800; 910 mm
- Fin spacing: 2,1 mm
- 208 customizable models
- Capacity from 101 to 1882 kW

VCC



## Air cooled condensers, dry coolers and gas coolers two coils with V configuration for industrial applications, suitable for container transportation

- Dual speed fan motors: diameter 800 mm
- Fin spacing: 2,1 mm
- 112 customizable models
- Capacity from 96 to 1379 kW

*We have been developing and improving our products in response to your most rigorous requirements and needs.*

*With the objective of offering top quality products and service, Modine has taken up ISO 9001, ISO 14000 control standards and also the standards proposed by the most influential international certification associations.*

*The wealth of experience that we have acquired in many years of continuous, intense work is now at your complete disposal.*

*For all supplementary information our team is at your complete disposal.*

**ECO<sup>TM</sup>** heat transfer coolers



# Scelte

SELECTION SOFTWARE

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RELIABLE  
QUICK  
EASY  
UPDATED!**

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#### About Modine

Modine specializes in thermal management systems and components, bringing highly engineered heating and cooling components, original equipment products, and systems to diversified global markets through its four complementary segments: BHVAC, CIS, HDE, and Automotive. Modine is a global company headquartered in Racine, Wisconsin (USA), with operations in North America, South America, Europe and Asia.

*Cover photo: food refrigerated depot (Bologna) - Italy  
Courtesy of "Colfrigor"*

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