

# ZMC GL45AN Compressor - R134a, 1/8 HP, LBP

**Site:** Mbsmpro

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**Mbsmpro.com | ZMC GL45AN**

**Compressor - R134a, 1/8 HP, LBP**

**Cooling & Freezing Applications**

## Professional Overview

The **ZMC GL45AN** is a **hermetic refrigeration compressor** designed for **domestic and light commercial refrigeration systems** operating with **R134a refrigerant**. This model belongs to the **LBP (Low Back Pressure)** category and is widely used in **refrigerators, beverage coolers, small freezers, and under-counter cooling equipment**.

Engineered for reliability, low noise, and stable thermal performance, the GL45AN is well adapted for **continuous duty cycles** in temperature ranges typically found in **cooling and light freezing systems**. Its compact displacement and efficient motor design make it a common replacement compressor in service and maintenance operations.

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## Technical Identity & Operating Principle

The GL45AN operates using a **single-phase RSIR motor system**, optimized for energy efficiency and smooth start-up. It is oil-lubricated with **mineral oil compatible with R134a**, ensuring proper lubrication and long service life.

This compressor is designed to work **without an external cooling fan**, relying instead on natural air convection around the shell, which simplifies installation and reduces failure points.

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## Complete Technical Specification Table

Parameter	Value
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<b>Model</b>	ZMC GL45AN
<b>Utilisation (MBP/HBP/LBP)</b>	LBP
<b>Domaine (Freezing / Cooling)</b>	Cooling & Light Freezing
<b>Oil Type &amp; Quantity</b>	Mineral Oil - approx. 180 ml
<b>Horsepower (HP)</b>	1/8 HP
<b>Refrigerant Type</b>	R134a
<b>Power Supply</b>	220-240V / 50Hz / 1 Phase
<b>Cooling Capacity (BTU/h)</b>	~450-520 BTU/h
<b>Motor Type</b>	Single-Phase Induction (RSIR)
<b>Displacement</b>	~4.5 cm <sup>3</sup>
<b>Winding Material</b>	Copper
<b>Pressure Charge</b>	Factory nitrogen holding charge
<b>Capillary Tube</b>	0.031" - 0.036" (system dependent)
<b>Compatible Refrigerator Models</b>	Single-door fridge, minibar, beverage cooler
<b>Temperature Function</b>	-30°C to -10°C evaporating
<b>With Fan or No</b>	No fan
<b>Commercial Use</b>	Yes (light commercial)
<b>Amperage (Running)</b>	1.1 - 1.4 A
<b>LRA (Locked Rotor Amps)</b>	~6.5 A
<b>Relay Type</b>	PTC Relay
<b>Capacitor</b>	Not required (RSIR design)

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## Electrical Configuration (RSIR System)

The GL45AN uses a **Resistance Start Induction Run** configuration:

- Start winding activated via **PTC relay**
- No run capacitor required
- Thermal overload protection integrated
- Designed for stable voltage environments

This configuration reduces component count and improves long-term reliability.

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## Application Examples

This compressor is suitable for:

- Domestic refrigerators (single door)
- Hotel minibars
- Beverage display coolers
- Small medical refrigerators
- Undercounter cooling units

It is **not recommended** for:

- Deep freezing below  $-35^{\circ}\text{C}$
  - High back pressure systems
  - Large commercial freezer cabinets
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## Performance Comparison (Same Class)

<b>Model</b>	<b>Refrigerant</b>	<b>HP Displacement</b>
ZMC GL45AN	R134a	1/8 4.5 cc
Secop TLES5.7	R134a	1/6 5.7 cc
Embraco EM2X60	R134a	1/6 6.0 cc
Huayi HYE45	R134a	1/8 4.5 cc

The GL45AN offers **lower energy consumption** compared to higher-displacement compressors, making it ideal where **efficiency and compact size** are required.

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## **Replacement Compressors - Same Refrigerant (R134a)**

1. Embraco EM2X45
  2. Secop TLES4.8
  3. Huayi HYE45
  4. Donper GFF45AA
  5. LG MA45LAEG
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## **Replacement Compressors - Other Refrigerants (With System Modification)**

1. Embraco EGX70 (R600a)
2. Secop TLY5.7 (R600a)
3. Huayi HYB45 (R600a)
4. Donper GHF50 (R600a)
5. LG MA53LAG (R600a)

*System oil, capillary, and dryer must be adapted.*

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## **Engineering Advice & Best Practices**

- Always replace the **filter dryer** when installing
  - Evacuate system to **below 500 microns**
  - Maintain condenser airflow clearance
  - Match capillary length precisely
  - Avoid overcharging; R134a is sensitive to charge quantity
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## **Key Benefits**

- Low vibration & quiet operation
  - Proven durability in field use
  - Easy replacement compatibility
  - Stable cooling under voltage fluctuation
  - Widely available service parts
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## **Frequently Asked Question**

### **Can the ZMC GL45AN be used in a freezer?**

Yes, it can operate in **light freezing applications** down to approximately **-30°C evaporating temperature**, provided the system is correctly sized and ventilated.

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## **Focus Keyphrase**

ZMC GL45AN compressor R134a 1/8 HP LBP refrigeration compressor for refrigerator cooling and light freezing applications replacement guide

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## **SEO Title**

ZMC GL45AN Compressor R134a 1/8 HP | Technical Specs & Replacement Guide

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## **Meta Description**

Professional guide to the ZMC GL45AN compressor: R134a, 1/8 HP, LBP refrigeration use, specifications, replacements, applications, and expert installation advice.

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## **SEO Slug**

zmc-gl45an-compressor-r134a-1-8hp

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## **Tags**

ZMC GL45AN, Compressor R134a, 1/8 HP Compressor, Refrigerator Compressor, Mbsmgroup, Mbsm.pro, mbsmpro.com, mbsm, GL45AN replacement, Embraco replacement, Secop replacement

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## **Excerpt**

The ZMC GL45AN is a hermetic refrigeration compressor designed for R134a systems in cooling and light freezing applications. With a 1/8 HP motor, LBP operation, and RSIR electrical design, it delivers stable performance, low noise, and high reliability for domestic and light commercial refrigeration equipment.



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