ZMC GL45AN Compressor – R134a, 1/8 HP, LBP

Category: Refrigeration
written by www.mbsm.pro | 19 January 2026



Private Picture Copyright : WWW.MBSM.PRO

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.

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.

Complete Technical Specification Table

Parameter	Value
Model	ZMC GL45AN
Utilisation (MBP/HBP/LBP)	LBP
Domaine (Freezing / Cooling)	Cooling & Light Freezing
Oil Type & Quantity	Mineral Oil – approx. 180 ml
Horsepower (HP)	1/8 HP
Refrigerant Type	R134a
Power Supply	220–240V / 50Hz / 1 Phase
Cooling Capacity (BTU/h)	~450–520 BTU/h
Motor Type	Single-Phase Induction (RSIR)
Displacement	~4.5 cm³
Winding Material	Copper
Pressure Charge	Factory nitrogen holding charge
Capillary Tube	0.031″ – 0.036″ (system dependent)
Compatible Refrigerator Models	Single-door fridge, minibar, beverage cooler
Temperature Function	−30°C to −10°C evaporating
With Fan or No	No fan
Commercial Use	Yes (light commercial)

Parameter	Value
Amperage (Running)	1.1 – 1.4 A
LRA (Locked Rotor Amps)	~6.5 A
Relay Type	PTC Relay
Capacitor	Not required (RSIR design)

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.

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°C
- High back pressure systems
- Large commercial freezer cabinets

Performance Comparison (Same Class)

Model	Refrigerant	HP	Displacement
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.

Replacement Compressors – Same Refrigerant (R134a)

1. Embraco EM2X45
2. Secop TLES4.8
3. Huayi HYE45
4. Donper GFF45AA

5. LG MA45LAEG

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.

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

Key Benefits

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

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.

Focus Keyphrase

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

---

SEO Title

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

---

Meta Description

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

SEO Slug

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

Tags

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

---

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.



Private Picture Copyright : WWW.MBSM.PRO

mbsmpro.com-ZMC GL45AN Compressor R134a 18 HP LBP (1)Download
zmc-gl45an-compressor-r134a-1-8hpDownload