

# GMCC PE90HME-4 hermetic compressor

Category: Refrigeration

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**Mbsmpro.com, Compressor, PE90HME-4, 1/3 hp class, GMCC, Cooling, R134a, 265-295 W, 1.55 A, 1Ph 220-240V 50/60Hz, LBP capacity, RSCR motor, -23.3°C to -10°C**

The **GMCC PE90HME-4** is a hermetic reciprocating refrigerator compressor optimized for **R134a** and low-back-pressure applications at 220-240 V, 50/60 Hz. With a displacement of about **9.0 cm<sup>3</sup>** and catalog cooling capacities between **265 and 295 W** around freezer conditions, it sits in the 1/3 hp performance class and targets domestic and light commercial refrigerators.

## **GMCC PE90HME-4 technical identity**

The label identifies the compressor as thermally protected, RoHS-compliant and designed for R134a static-cooling appliances. It belongs to the PE series of GMCC light commercial units produced by Anhui Meizhi Compressor Co., Ltd.

### **Nameplate and catalog data**

<b>Item</b>	<b>Value / description</b>
Brand	GMCC - Anhui Meizhi Compressor Co., Ltd.
Model	<b>PE90HME-4</b>
Refrigerant	R134a, low-back-pressure (LBP) range
Voltage / frequency	220-240 V, 50/60 Hz, single-phase (1Ph)
Motor type	RSCR (resistance start, capacitor run)
Displacement	≈ 9.0 cm <sup>3</sup>
Cooling capacity	265-295 W at LBP conditions (-23.3 °C evap, 32.2 °C amb.)
Input power	≈ 1.52-1.55 A rated current at 220-240 V
Application	Static-cooling domestic and small commercial refrigerators, freezers and coolers
Protection	Internal thermal protector, RoHS environmental compliance

The RSCR motor concept means a start capacitor is used only during start while a smaller run capacitor remains in circuit, balancing starting torque, efficiency and cost for fractional-horsepower refrigeration.

# Operating envelope and performance

GMCC's reference data for the PE90H1F-4 and PE90HME-4 show nearly identical working limits, giving a clear view of the envelope in which this compressor is expected to operate. These limits are critical for system designers who must match capillary length, condenser size and evaporating temperature.

## Operating limits

Parameter	Typical PE90HME-4 values
Evaporating temperature range	–35 °C to –10 °C (LBP)
Nominal rating point	–23.3 °C evap / 32.2 °C ambient / 55 °C condensing
Voltage range	187–254 V (50 Hz)
Ambient temperature range	0–43 °C
Max condensing temperature	60–70 °C
Max discharge gas temperature	130 °C
Max winding temperature	130 °C (internal)
Max pump-down pressure	≈ 1.82 MPa

At the nominal point the compressor typically delivers around **265 W** at 1.55 A, while higher ambient or less negative evaporating temperatures move capacity closer to **295 W** but also increase power input. GMCC specifies vibration levels below 4.9 m/s<sup>2</sup> and sound levels compatible with household refrigerator noise expectations.

# Comparison with other GMCC R134a PE series models

To position the **PE90HME-4** correctly for selection and replacement, it helps to compare it with nearby models such as **PE65H1H-9** and **PE90H1F-9** from the same GMCC R134a range.

## GMCC R134a LBP models - performance comparison

Model	Displacement (cm <sup>3</sup> )	Cooling capacity at 50 Hz (W)*	HP class	Rated current (A)	Application
PE65H1H-9	6.5	190–195 W	1/4 hp	≈ 1.47–1.55	LBP domestic refrigerators
<b>PE90HME-4 9.0</b>		<b>265–295 W</b>	<b>1/3 hp class</b>	<b>≈ 1.52–1.55</b>	LBP refrigerators / freezers
PE90H1F-9	9.0	275–280 W	1/3 hp+	≈ 1.50	LBP with wide-voltage range
PE120HMH	12.0	320 W	3/8–1/2 hp	≈ 1.45	L/MBP commercial coolers

\*Capacity values taken at –23.3 °C evap / 32 °C amb., minor differences by catalog edition.

Compared with the **PE65H1H-9**, the PE90HME-4 delivers roughly **40-50% more capacity** at similar current, making it better suited to 280-400 L refrigerators or small freezers that need stronger pull-down. Against the **PE90H1F-9**, performance is very close; differences are mainly in voltage tolerance (wide-range versions) and detailed application approvals rather than raw capacity.

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## Practical applications and selection tips

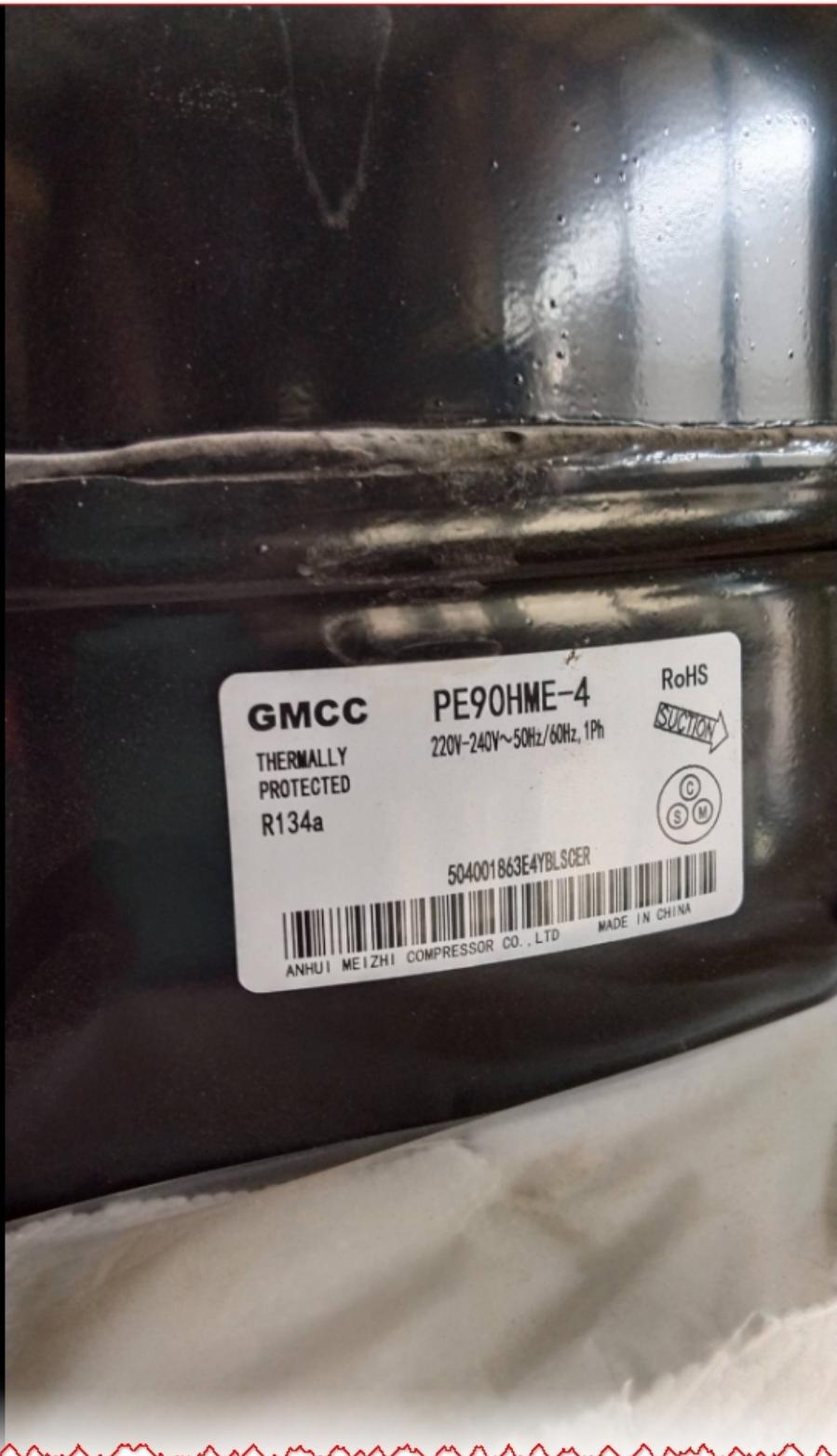
Designers and technicians usually choose the GMCC **PE90HME-4** when they need a robust, mid-size R134a compressor that balances capacity, energy efficiency and cost. It is especially attractive in markets where 220-240 V 50 Hz is standard and where appliances are exposed to high ambient temperatures.

### Typical uses

- Static-cooling household refrigerators in the 300-400 L range.
- Upright or chest freezers requiring  $-23^{\circ}\text{C}$  design evaporating temperature.
- Commercial beverage coolers and display cases using R134a and capillary expansion.

### Selection and replacement considerations

Checkpoint	Why it matters
Refrigerant	Must be R134a; conversion from R12 or R600a requires full system redesign.
Evaporating temperature	Ensure design conditions fall inside $-35$ to $-10^{\circ}\text{C}$ LBP range.
Condenser and capillary sizing	Match to 265-295 W capacity to avoid flood-back or high-head faults.
Voltage stability	Mains should remain within 187-254 V; more unstable grids may justify wide-voltage models like PE90H1F-9.
Start components	RSCR start kit (PTC + capacitor) must match GMCC's specified values to guarantee torque and reliability.



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