Zanussi 16 Cubic Feet Refrigerator Compressor GL90AA – 1/4 HP R134a

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A 16 cubic feet Zanussi refrigerator typically relies on the GL90AA hermetic compressor, a compact piston unit designed for R134a and low back pressure applications in domestic cooling. This 1/4 HP motor delivers cooling capacities from roughly 165 W up to around 346 W depending on evaporating conditions, which is enough to keep a family-size fridge and freezer stable even in hot kitchens.

Technical profile of the GL90AA

The GL90AA is manufactured under the ZMC/Cubigel/Electrolux ZEM family and built specifically for 220–240 V, 50 Hz single-phase supply used in markets such as North Africa and Europe. It operates in a low back pressure range from about −35 °C to −10 °C evaporating temperature, making it suitable for the freezer section and the fresh-food evaporator in combined refrigerators.

Inside its welded shell, a single-cylinder piston with a displacement of about 9.08–9.09 cm³ compresses the R134a, driven by an RSIR motor controlled by a start relay and overload protector. Static shell cooling, ester oil lubrication (ISO VG 19 or ISO VG 32 depending on version) and a 43 °C maximum ambient rating help the compressor maintain performance and reliability in warm climates where kitchen temperatures can be high.

Main specifications table

Parameter	Typical GL90AA value	Practical meaning
Application	Low Back Pressure, R134a.	Designed for household fridges and freezers.
Nominal power	**1/4 HP**.	Common rating for 14–16 ft³ refrigerators.
Cooling capacity	≈165–224 W at low evaporating temps; up to ≈330–346 W near −10 °C; some catalogs give 407 W at −10 °C in optimized conditions.	Covers the needs of a 16 ft³ Zanussi fridge-freezer.
Displacement	9.08–9.09 cm³.	Defines the volume of gas compressed each stroke.
Voltage / frequency	220–240 V, 50 Hz; voltage range about 187–264 V.	Compatible with residential grids in Tunisia, Egypt and Europe.
Motor type	RSIR (some GLY90 variants CSIR).	Uses start relay and overload protector.
Max ambient	43 °C.	Important for hot-climate kitchens and workshops.
Oil type / charge	Ester oil, about 295–345 cm³.	Requires clean, dry circuit without mineral oil.

Why Zanussi chooses the GL90AA for 16 ft³

A 16 ft³ Zanussi refrigerator, usually in the 370–425 liter range, combines a generous fresh-food compartment with a freezer designed to reach well below −18 °C. To maintain those temperatures under frequent door openings, the system needs a compressor that can provide solid capacity at low evaporating temperatures without excessive energy consumption or noise, especially in small apartments and family homes.

With its 1/4 HP rating, 9 cm³ displacement, and low back pressure characteristics, the GL90AA matches the thermodynamic design of these cabinets, particularly when paired with a correctly sized capillary tube, condenser and evaporator set. Spare-parts distributors across Europe and the MENA region list GL90AA explicitly as original or equivalent equipment for many Electrolux–Zanussi refrigerator models, confirming its position as a standard solution for this capacity segment.

Application matching table

Appliance feature	Requirement for Zanussi 16 ft³	How GL90AA fits
Net volume	Around 370–425 L (≈14–16 ft³).	Cooling capacity up to ≈346–407 W covers this volume in R134a systems.
Refrigerant	R134a sealed system.	GL90AA is optimized and rated only for R134a.

Appliance feature	Requirement for Zanussi 16 ft³	How GL90AA fits
Ambient class	Up to about 43 °C.	Compressor carries a 43 °C max ambient rating.
Energy and noise	Domestic, continuous duty.	RSIR design and static cooling balance efficiency and cost.

Installation and service considerations

Technicians replacing a Zanussi 16 ft³ compressor with a GL90AA must observe best practices to protect the new unit and the customer’s investment. The old R134a charge should be fully recovered, and the filter-drier replaced with a compatible R134a/POE model to keep moisture and acids under control. Tubes should be cut and brazed under a small nitrogen flow to prevent oxide formation inside the lines, and suction/discharge diameters given in the technical sheet (about 6.5 mm suction, 4.9 mm discharge) should be respected to maintain design capacity and good oil return.

Because the GL90AA uses ester oil, any contamination with mineral oil from previous generations of compressors must be avoided; if the old system contained mineral oil, thorough flushing or component replacement is recommended. After brazing, the circuit needs a pressure test, deep evacuation to below roughly 500 microns, and precise charging with the mass of R134a specified by Zanussi to secure low noise, correct suction superheat and long compressor life.



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