LG BMG110NHMV Inverter Compressor

Category: Refrigeration
written by www.mbsmpro.com | December 31, 2025

Mbsmpro.com, Compressor, BMG110NHMV, 1/4 hp, LG inverter, Cooling & Freezing, R600a, 220-240V 50/60Hz, LBP capacity, BLDC, −29°C to −10°C

The **LG BMG110NHMV** is a variable-speed **BLDC inverter compressor** for R600a refrigerators and freezers, working on 220–240 V, 50/60 Hz in low-back-pressure applications. With a nominal rating close to **1/4 hp** and a speed range from **1200 to 4500 rpm**, it delivers flexible capacity and high efficiency for modern domestic appliances.

BMG110NHMV technical profile

LG's catalog lists the BMG110NHMV in the **BMG inverter R600a series**, designed for high-efficiency household refrigerators. The nameplate confirms R600a refrigerant, thermal protection and 220–240 V supply.

Main data and operating point

Parameter	BMG110NHMV value
Manufacturer	LG Electronics / LG Compressor & Motor
Series	BMG inverter R600a
Model	**BMG110NHMV**
Refrigerant	R600a (isobutane)
Motor type	BLDC inverter, variable speed
Supply	220–240 V, 50/60 Hz (inverter-driven, 60–225 Hz)
Application	LBP domestic refrigerator / freezer
Speed range	1200–4500 rpm
Test condition	Evap −23.3 °C / Cond 54.4 °C / ambient 32 °C
Nominal capacity at 4500 rpm	≈ 262 W (894 Btu/h)
Input power at 4500 rpm	≈ 146 W
COP at 4500 rpm	≈ 1.79 W/W (≈ 6.11 Btu/W·h)

At lower speeds like 1500–1800 rpm, capacity drops to around 102–125 W while COP remains near 1.74–1.75, allowing the compressor to modulate for part-load efficiency.

Capacity table across speeds

The inverter control lets the same compressor cover a wide load range without cycling, which is reflected in LG’s performance table.

Cooling capacity vs power – BMG110NHMV (R600a LBP)

Speed (rpm)	Capacity (kcal/h)	Capacity (W)	Capacity (Btu/h)	Power (W)	COP (W/W)	EER (Btu/W·h)
4500	225	262	894	146	1.79	6.11
3000	172	200	683	108	1.85	6.32
1800	108	125	427	72	1.75	5.97
1500	88	102	349	59	1.74	5.95
1200	70	82	279	48	1.72	5.87

These values show how the inverter platform lets manufacturers tune energy labels by operating much of the time at lower speeds, while still having 262 W on tap for rapid pull-down.

Comparison with other LG inverter R600a models

LG’s catalog groups the BMG110NHMV with BMG110NAMV and BMG089 series models, all R600a BLDC compressors for LBP applications. Comparing their data helps installers and designers choose the right size.

LG R600a BLDC inverter comparison

Model	Series	Nominal hp class	Capacity at 4500 rpm (W)	Power (W)	COP (W/W)	Typical cabinet volume*
BMG089NAMV	BMG	≈ 3/16 hp	217 W	119 W	1.83	200–260 L refrigerators
BMG089NHMV	BMG	≈ 3/16 hp	217 W	126 W	1.72	high-efficiency 200–260 L
BMG110NAMV	BMG	**1/4 hp class**	262 W	144 W	1.82	280–350 L fridges/freezers
BMG110NHMV	**BMG**	**1/4 hp class**	**262 W**	**146 W**	**1.79**	**280–350 L refrigerators / freezers**

*Cabinet volume estimates are typical ranges inferred from inverter R600a design practice, not explicit catalog values.

The BMG110NHMV thus occupies a sweet spot between the smaller BMG089 series and larger BMK/BMA models, ideal for mid-size no-frost or multi-door refrigerators where load fluctuates strongly.

Comparison with fixed-speed R600a compressors

To highlight the benefit of inverter technology, it is useful to compare BMG110NHMV with a typical constant-speed R600a compressor of similar hp rating. LG's own reciprocating catalog and third-party suppliers show 1/4 hp fixed-speed R600a models with similar cooling capacity but higher average power consumption.

Inverter vs fixed-speed R600a – indicative comparison

Feature	BMG110NHMV (inverter)	Typical 1/4 hp fixed-speed R600a compressor
Speed control	1200–4500 rpm via BLDC inverter	Single speed (≈ 3000 rpm)
Nominal capacity	≈ 262 W at −23.3 °C	≈ 250–270 W at similar point
Input power	146 W at full speed, 48–108 W at reduced speed	≈ 180–200 W constant
COP / EER	Up to ≈ 1.85 W/W (6.3 Btu/W·h)	Typically 1.5–1.6 W/W (5.1–5.5 Btu/W·h)
Temperature control	Smooth, low-noise modulation	On/off cycling, higher noise and temperature swing
Energy label impact	Enables A+/A++ energy classes in many markets	Usually lower efficiency class

This comparison explains why OEMs increasingly specify BMG-series compressors in premium, energy-efficient refrigerators.

Safety and application notes for R600a systems

Because BMG110NHMV uses **R600a**, a flammable hydrocarbon, system design and service procedures must follow IEC and manufacturer guidelines.

- Charge quantities in household refrigerators are limited, typically below 150 g, to remain within safety limits.
- Electrical components near the compressor must be sealed or spark-free, and any repair involving brazing requires full refrigerant recovery and ventilation.

These constraints do not reduce performance; they simply require disciplined handling, especially when replacing the compressor or modifying pipework.

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