Panasonic QB110C25CAX0 1/3 HP Compressor Specifications and Replacement

Category: Refrigeration
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The Panasonic QB110C25CAX0 stands as a heavyweight in the world of domestic and light commercial refrigeration. Specifically engineered for Low Back Pressure (LBP) applications, this reciprocating compressor is the heart of many high-capacity household refrigerators and deep freezers. Operating on R134a refrigerant, it balances environmental standards with the robust cooling performance required for tropical climates.

The “QB” series by Panasonic is renowned for its durability. With a displacement of 11.0 cm^3, this model provides the necessary “punch” to pull down temperatures quickly in units ranging from 400 to 600 liters. Its design focuses on thermal

protection and energy efficiency, ensuring that the motor remains cool even during extended run cycles in demanding environments.

Technical Specifications and Performance Data

Feature	Specification
Model	QB110C25CAX0
Utilization	LBP (Low Back Pressure)
Application Domain	Freezing / Cooling
Cooling Wattage (-23.3°C)	280 W
Cubic Feet Capacity	18 – 22 cu.ft
Liters Capacity	500 – 620 L
Cooling Capacity (Kcal/h)	241 Kcal/h
Oil Type & Quantity	POE or Mineral (250ml – 280ml)
Horsepower (HP)	1/3 HP
Refrigerant Type	R134a
Power Supply	220V-240V / 50-60Hz / 1PH
Cooling Capacity (BTU/h)	955 BTU/h
Motor Type	RSIR (Resistive Start-Inductive Run)
Displacement	11.0 cm^3
Winding Material	Copper
Amperage (RLA)	1.4 A – 1.6 A
LRA (Locked Rotor Amps)	12.0 A
Relay Type	PTC / Electromagnetic
Capacitor	Generally not required (RSIR), optional for CSIR
Fan Requirement	Static cooling (Natural) / Fan cooling recommended for tropics
Commercial Status	Semi-Commercial / Heavy Domestic
Country of Origin	Malaysia

Efficiency Metrics (COP) & Performance Curve

Evaporating Temp (°C)	Cooling Capacity (Watts)	Power Consumption (Watts)	COP (W/W)
-30	185	170	1.09
-25	255	195	1.31
-23.3 (Standard)	**280**	**205**	**1.37**
-20	340	225	1.51
-15	445	250	1.78
-10	570	280	2.04

Replacement Cross-Reference

1. Same Refrigerant (R134a) – 1/3 HP Substitutes

- **Embraco:** FFI10HBX or FG100HAK
- **Secop (Danfoss):** TLES10KK.3
- **Tecumseh:** AE1390Y / AE4440Y
- **LG:** MA110LBJG
- **Jiaxipera:** N1114GZ

2. Alternative Refrigerant (R600a/R12/R22 Conversions)

- **Embraco (R600a):** VEMZ 9C (Inverter tech required)
- **Panasonic (R600a):** QB110G Series (Check displacement compatibility)
- **Secop (R600a):** BD110F
- **Tecumseh (R12 Old):** AE1390AS (Requires system flush)
- **Samsung (R134a):** MK190C-L2U

Engineering Insight: Why Choose the QB110?

When comparing the **QB110 (1/3 HP)** to its smaller sibling, the **QB77 (1/5+ HP)**, the difference in volumetric efficiency is striking. While the QB77 is perfect for standard kitchen fridges, the QB110 is designed for “chest” freezers or large side-by-side units.

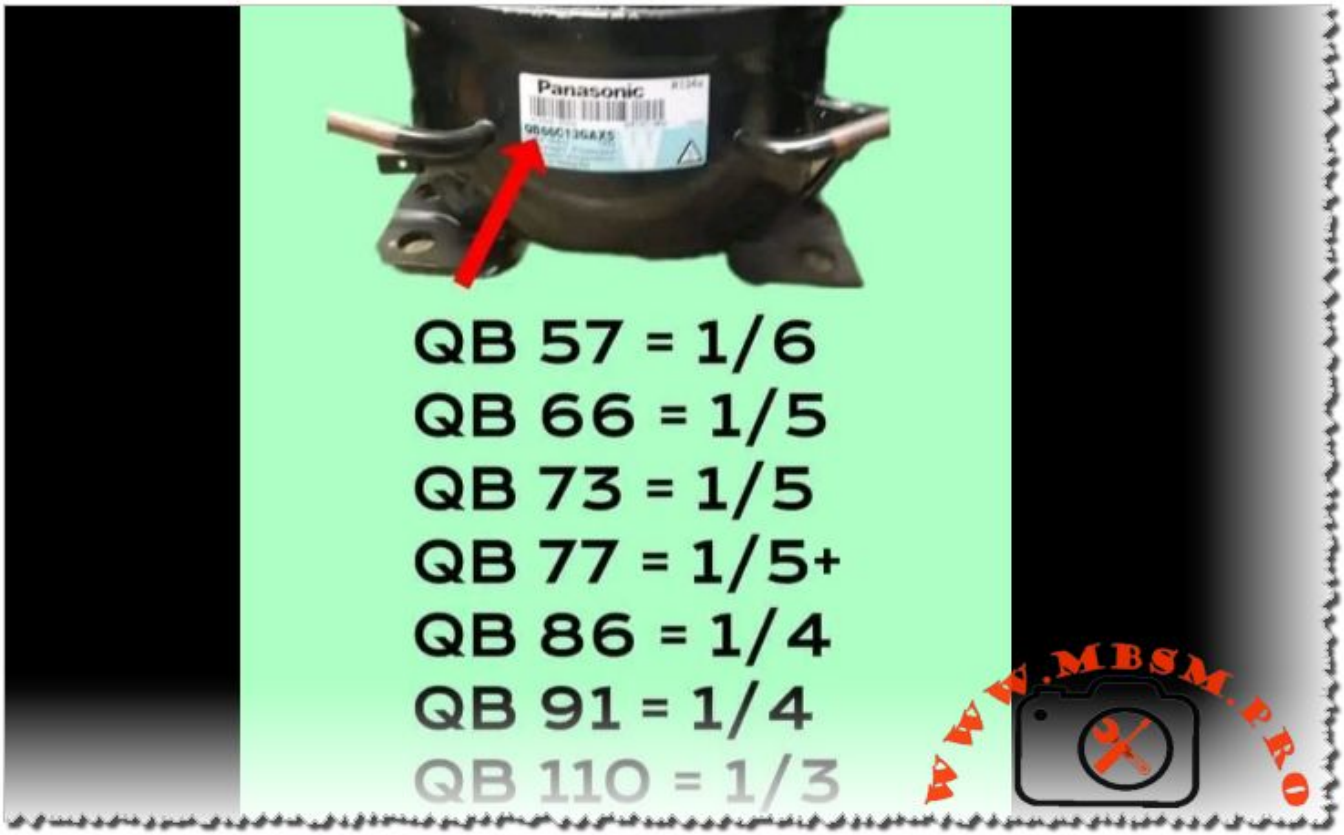
Pro Tip for Technicians:
Always ensure the capillary tube is sized correctly for a 1/3 HP load. For an LBP R134a setup with this compressor, a capillary of **0.036 ID** is generally the starting point. Using a 1/5 HP capillary on this motor will cause high head pressure and premature compressor failure.

> *Maintenance Notice: Since this is an R134a system, moisture is your greatest enemy. Always replace the filter drier and pull a vacuum below 500 microns before charging.*

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LG MA110, Compressor Cross Reference.

Excerpt: The Panasonic QB110C25CAX0 is a high-performance 1/3 HP reciprocating compressor designed for Low Back Pressure (LBP) applications. Operating on R134a refrigerant, it delivers 280W of cooling capacity at -23.3°C, making it ideal for large domestic freezers and commercial coolers. This guide provides technical data, COP efficiency tables, and compatible replacement models for technicians.



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