Copeland ZB50KCE Scroll Compressor

Category: Refrigeration
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Copeland ZB50KCE Scroll Compressor Nameplate: How to Read the Label and Choose the Right Polyester Oil

The photo shows the damaged nameplate of a Copeland **ZB50KCE** scroll compressor, factory-charged with polyester (POE) oil for medium-temperature refrigeration. Correctly interpreting this label helps technicians confirm oil, power, voltage and safety limits during service or replacement.

Compressor identification

The model belongs to the Copeland ZB series, used in commercial cold rooms and process cooling for refrigerants such as R404A, R134a and R22 alternatives. Depending on voltage code (TFD-551, TFD-950, etc.), it is sold as a 7 hp medium-temperature compressor with around 11.9 kW nominal capacity.

- Model code example: **ZB50KCE-TFD-551** or **ZB50KCE-TFD-950**.
- Technology: Hermetic scroll, part of the Summit series designed for higher seasonal efficiency.

Polyester oil (POE) on the label

The upper part of the label still shows *POLYESTER OIL*, confirming that the compressor is charged with POE lubricant. Catalogues list oil charges of about 2.6–2.7 l using approved POE types such as RL32-3MAF or Mobil EAL Arctic 22 CC, depending on the variant.

- POE oil absorbs moisture quickly, so systems must be evacuated deeply and fitted with quality filter-driers.
- Only compatible POE grades should be added; mixing with mineral or alkylbenzene oil is not permitted.

Technical data with hp and W

The following table compiles typical data for a Copeland ZB50KCE-TFD-551 running as a medium-temperature refrigeration compressor; values may vary slightly by refrigerant and exact model.

Parameter	Typical value for ZB50KCE*
Nominal power	**7 hp**
Nominal capacity	**11.9 kW** cooling (≈11 900 W)
Electrical power input	≈7.5–7.9 kW depending on conditions
Displacement	19.8 m³/h
Supply voltage	380–420 V/3/50 Hz and 460 V/3/60 Hz (TFD code)
Maximum operating current	14.6 A
Locked-rotor current	≈100 A
Oil type	POE (e.g. RL32-3MAF)
Oil quantity	2.6–2.7 l
Sound level	≈64 dBA at 1 m
Net weight	≈59 kg (TFD-551)

*Always confirm with the exact data sheet for your compressor code.

Voltage and operating limits on the sticker

On the lower part of the photographed label, remnants of “Volt 1 380 … Volt 2 460” can be identified, matching the dual-voltage three-phase motor used in TFD models. Another line mentions maximum current around 14.6 A, which is the value used to size breakers, contactors and cables.

- The TFD motor code indicates 380–420 V/3/50 Hz and 460 V/3/60 Hz with internal motor protection.

- Respecting these limits and using proper overload protection prevents overheating and nuisance trips in commercial installations.

Practical maintenance notes

For technicians such as those in **Mbsmgroup** and **Mbsm.pro**, a faded nameplate is common on older units, but the combination of model code and official catalogue restores all critical information. Creating a new service label with hp, kW, voltage, POE oil type and charge simplifies future troubleshooting and reduces the risk of mistakes during oil changes or retrofits.

- When replacing or topping up oil, always isolate the compressor, recover refrigerant and work under clean, dry conditions.
- If in doubt about capacity or application limits, refer to the Copeland ZB range catalogue and selection software before approving a replacement.

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