

# Copeland ZB50KCE Scroll Compressor

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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	<b>7 hp</b>
Nominal capacity	<b>11.9 kW</b> cooling ( $\approx 11\,900$ W)
Electrical power input	$\approx 7.5$ – $7.9$ kW depending on conditions
Displacement	19.8 m <sup>3</sup> /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	$\approx 100$ A
Oil type	POE (e.g. RL32-3MAF)
Oil quantity	2.6–2.7 l
Sound level	$\approx 64$ dBA at 1 m
Net weight	$\approx 59$ 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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