

Packaged Condensing Units — Danfoss Optyma Plus, Tecumseh WX and UMT/CUBO Ranges Compared

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How to shortlist a packaged condensing unit for a cold room or process cooler: temperature class (MBP/LBP), refrigerant, housed versus open frame, air- versus water-cooled, and what the Danfoss Optyma Plus, Tecumseh WLX/WMX/WMY and UMT/CUBO Smart & Aqua ranges in the catalogue each cover.

The shortlist questions

A packaged condensing unit bundles compressor, condenser, fan(s), receiver and electrics in one tested assembly. Selecting one comes down to five questions: (1) Evaporating temperature class — medium (MBP, cold rooms +5...° 5 °C room) or low (LBP, freezer rooms " 18...° 25 °C); (2) Capacity at the design evaporating/ambient point — from the maker's tables, never from the horsepower habit; (3) Refrigerant — what the site standardises on (R134a, R452A, R448A/R449A, R290); (4) Acoustics and placement — housed low-noise unit at a wall vs open frame in a plant room; (5) Heat rejection — air-cooled outdoors, or water-cooled where outdoor placement is impossible (basements, ships, city kitchens).

What each range covers

Danfoss Optyma Plus (OP-LPQM / OP-MPXM / OP-MPBM codes): housed, weatherproof, low-noise outdoor units with electronic controls, across MBP and LBP classes. The catalogue lists the common frames — e.g. OP-LPQM048NTP00E, OP-MPXM046MLP00G, OP-MPBM018AJP00G — identified by the Danfoss code (114X...). The designation's letters encode application band and equipment level; match a replacement by the full OP-code from the unit label.

Tecumseh WX range (WLX / WMX / WMY): compact units built on Tecumseh CAJ, FH and AE hermetics. Catalogue examples: WLX CAJ2464X (R452A), WMX CAJ9513X (R134a), WMY AE4450Y (R134a) — all 1 × 230 V 50 Hz, suiting cabinets, under-counter plant and small cold rooms.

UMT / CUBO series: the housed CUBO Smart air-cooled units (UMT T 045 BTDX, low temp, UMT T 067 MTDX, medium temp) and the water-cooled CUBO Aqua line (UMT WG T 045 MDTX, UMT WG T 030 BDTX). The model letter pair tells the class: BT = low temperature, MT = medium temperature, DX = direct expansion; WG/Aqua = water-cooled with a brazed-plate condenser.

Embraco-based units (UNEK/UNJ/UNT and Bioma UP) cover the light-commercial end — see the Embraco guide.

Air-cooled vs water-cooled

Air-cooled wins on simplicity wherever outdoor or well-ventilated placement exists. Water-cooled (CUBO Aqua class) wins where ducting condenser air is impractical: condensing against sea, well or tower water keeps head pressure stable year-round and removes the outdoor noise source. Water-cooled units need head-pressure-actuated water regulation — the Penn V46 family (V46AD 1" fresh water, V46BD 1" sea-water, naval bronze) modulates flow against refrigerant pressure; on seawater, bronze-bodied B-versions are mandatory.

Installation checkpoints

Clearance and recirculation: housed units need the maker's wall clearances; hot-air recirculation quietly removes 10–20 % capacity in summer.

Mounting: anti-vibration feet (Fix-It 500 mm feet, machine mounts 150–550 kg) and wall brackets sized for the unit weight.

Line sets: correctly sized suction risers, insulated per the insulation guide; pre-insulated pipe pairs cover mini-split-style runs.

Electrical: dedicated supply with the unit's specified protection; check starting current against site breakers (see the contactor/overload data in the TeSys pairing guide).

Controls: room controller and defrost regime matched to class — SmartCella-type controllers for cold rooms (Eliwell SmartCella, 1 relay).

Documentation: F-gas logbook entry with charge, refrigerant and leak-test record; on marine installs, the class survey file.

Replacement matching

Replacing like-for-like: copy the full model code from the data plate and match refrigerant, temperature class, supply voltage and physical envelope; then renew the liquid-line drier, the sight glass and the controller probe as a set. Where the old model is discontinued, select on capacity tables at the plant's actual design point rather than nominal HP, and confirm the new unit's sound power against the site constraint.

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