



PTIMUM
Data Cooling Ltd

High-Capacity, Flexible Chillers for Medium and Expanding Data Centre Loads

The OPT Large Mid-Range series delivers efficient, reliable chilled-water cooling for growing small-to-medium data centres, multi-room IT environments, and edge-to-core transition sites. Available in 150 kW, 250 kW, and 500 kW capacities, these air-cooled inverter chillers support higher IT loads while retaining the control precision, part-load efficiency, and integration flexibility needed for modern data centre operation.

They are suitable for primary cooling, N+1 redundancy, or modular plant designs where capacity needs to scale with rack density and future expansion. The range prioritises continuous duty, energy efficiency, and compact installation relative to larger process equipment.

Key Benefits for Medium Data Centre Applications

- Scalable capacities that match growing IT loads without oversizing
 - High part-load efficiency to control energy consumption and PUE
 - Precise temperature and capacity control for stable IT environments
 - Robust design for 24/7 continuous operation
 - Compact footprint options and low-noise configurations for restricted or urban sites
 - Easy BMS integration, Master/Slave capability, and redundancy support
 - Low-GWP refrigerant options for lower environmental impact
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Shared Features Across the Range

- Full inverter compressor technology (scroll or screw depending on size)
 - High-efficiency heat exchangers (brazed plate or shell-and-tube)
 - EC or high-efficiency axial fans
 - Advanced controls with electronic expansion valves
 - Master/Slave and full BMS connectivity options
 - Cooling-only configuration optimised for process and data centre duty
 - Optional free-cooling enhancements, high-temperature kits, and hydronic packages
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Quick Comparison Table

Model	Nominal Cooling Capacity	Approx. Power Input	EER (up to)	SEER (up to)	Refrigerant	Approx. Sound Pressure	Typical Application
OPT150	150 kW	~48–52 kW	2.9–3.1	5.1–5.3	R-32	Low-noise design	Medium small data centres, multi-rack facilities
OPT250	250 kW	~80–86 kW	2.9–3.0	5.0–5.2	R-32	Optimised low noise	Growing data centres, higher-density IT rooms
OPT500	500 kW	~160–175 kW	2.8–3.0	4.9–5.1	R-32	Low-noise configuration	Larger small/medium data centres, modular plants

Performance figures are indicative (based on typical ambient 35°C and standard water conditions). Actual values depend on exact configuration, operating conditions, and options.

OPT150 – 150 kW

Flexible capacity for expanding medium data centres

The OPT150 provides a practical step up for facilities that require more cooling than smaller mid-range units while remaining efficient and controllable. Inverter technology delivers smooth modulation and strong seasonal performance for variable IT loads.

Key Specifications

- Nominal cooling capacity: 150 kW
- Power input (nominal): ~48–52 kW
- EER: up to ~2.9–3.1
- SEER: up to ~5.1–5.3
- Refrigerant: R-32
- Capacity control: Full inverter (smooth modulation)
- Layout: Optimised multi-circuit design
- Sound levels: Low-noise design suitable for data centre sites
- Connectivity: BMS-ready with Master/Slave capability
- Operating flexibility: Wide ambient range; options for higher leaving water temperatures

Best for: Medium small data centres, multi-rack or multi-room facilities, primary or redundant cooling for sites in the 100–180 kW IT range.

OPT250 – 250 kW

Scalable solution for higher-density and growing data centres

The OPT250 balances substantial cooling capacity with the efficiency and control features required for continuous data centre duty. It supports modular plant designs and can be paired for redundancy or future expansion.

Key Specifications

- Nominal cooling capacity: 250 kW
- Power input (nominal): ~80–86 kW
- EER: up to ~2.9–3.0
- SEER: up to ~5.0–5.2
- Refrigerant: R-32
- Capacity control: Full inverter technology for precise load matching
- Layout: Efficient multi-circuit configuration
- Sound levels: Optimised low-noise package
- Connectivity: Advanced BMS integration and optional remote monitoring
- Options: Free-cooling enhancements, high-temperature kit, inverter pump packages

Best for: Growing data centres with higher rack density, multi-room IT environments, or modular installations approaching 200–300 kW IT load.

OPT500 – 500 kW

High-capacity modular cooling for larger small-to-medium data centres

The OPT500 delivers significant cooling capacity in a design focused on efficiency, reliability, and flexibility. It is well suited to modular plant strategies, N+1 redundancy, or sites that anticipate continued growth while maintaining strong part-load performance.

Key Specifications

- Nominal cooling capacity: 500 kW
- Power input (nominal): ~160–175 kW
- EER: up to ~2.8–3.0
- SEER: up to ~4.9–5.1
- Refrigerant: R-32
- Capacity control: Full inverter (scroll or screw platform) for precise modulation
- Layout: Optimised multi-circuit design for reliability and serviceability
- Sound levels: Low-noise configuration available
- Connectivity: Full BMS integration, Master/Slave, optional advanced monitoring
- Options: Free-cooling packages, high leaving-water-temperature kits, hydronic modules

Best for: Larger small-to-medium data centres, multi-hall or higher-density facilities, modular chilled-water plants, or primary cooling for sites in the 400–600 kW IT range.

Why Choose the OPT Large Mid-Range for Data Centres?

These units provide right-sized capacity for growing facilities without the inefficiency of oversized plant. They deliver:

- Strong part-load efficiency that helps manage operating costs
- Reliable continuous operation designed for data centre duty
- Flexible configurations that support redundancy and future expansion
- Compact and low-noise options that ease installation constraints
- Straightforward integration with chilled-water systems and BMS platforms

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