



# TECHNICAL SPECIFICATIONS

# **M1**MELBOURNE

## About **M1**MELBOURNE

M1 Melbourne showcases innovations in a data centre not previously seen. As the first data centre in Australia to have achieved 4.5 NABERS rating for data centre environmental efficiency, M1 was the first data centre in Asia-Pacific to employ solar power as a renewable energy source.

Delivering 16MW of critical power to Melbourne customers, M1's prime location sees it located less than 3km from Melbourne's CBD and is the largest independent data centre in the city with 6,000m<sup>2</sup> of high-density technical space. M1 is certified to a minimum Uptime Institute Tier III standard, ensuring that it is highly available. With dual redundancy, our business critical systems will operate at 100% uptime, delivering customers a 100% no break guarantee, in turn ensuring their business stay powered, secured and connected 24/7, 365 days a year.

As Australia's first AWS Direct Connect POP outside of Sydney, M1 is a hub for critical connectivity for our customers, providing seamless, highly secure access to our partner ecosystem consisting of over 500 partners and the world's largest cloud platforms including AWS, Microsoft Azure, Google Cloud, IBM Cloud, Oracle Cloud and Alibaba Cloud through AXON.

### BUILDING OVERVIEW

- Two storey 17,500m<sup>2</sup> building.
- Total technical space approximately 6,000m<sup>2</sup>.
- 3,000 rack capacity.
- Average 1,000m<sup>2</sup> per data hall.
- Office and common areas approximately 1,200m<sup>2</sup>.
- 100% concrete construction for walls and roof of all data halls.
- 900mm raised floors in data halls and service corridors.
- Floor is reinforced concrete with 14.4kPa floor live load capacity.



## POWER

- Available power of 22.5MVA.
- Minimum server heat load is 2,000W/m<sup>2</sup>.
- IT load capacity of approximately 15MW.
- Minimum N+1 redundancy on power supply.
- Multiple power distribution units with minimum N+N redundancy.
- Harmonic distortion controlled and monitored by UPS systems.
- Full N+1 main electrical infrastructure extending to N+N at power rail level.
- Ultimate 16+1 Pillar 1670kVA Diesel Rotary UPS [DRUPS] units on an Isolated Parallel bus for 100% no break IT and mechanical power.
- Three 7.5MVA main feeders delivered at 11kV.
- Minimum 24 hours' onsite fuel supply.

## COOLING

- N+1 high efficiency water-cooled chillers, cooling towers and pumps.
- Dual primary pipework header and distribution system.
- Secondary pipework distribution serving data hall equipment valved and looped providing dual path.
- Multiple redundant water pump and compressor configuration.
- Leak detection system for critical plant areas.
- Server heat load approximately 2000W/m<sup>2</sup>.
- N+2 Computer Room Air Conditioning (CRAC) units per data suite.
- CRAC units fitted with supply temperature control and floor pressure control.
- All CRAC units are located in secured plant corridors outside the data suites.
- Hot and cold aisle containment systems: halls 4, 5 and 6 cold aisle; halls 1, 2 and 3 hot aisle.
- Average cold aisle temperature of 22 +/-2 degrees.
- Average cold aisle relative humidity of 50% +/- 15%.

## FIRE SUPPRESSION AND MONITORING

- Inert gas fire suppression system.
- Leak detection systems.
- Emergency warning systems throughout the building.
- Water mist suppression system in DRUPS enclosures.
- Distributed fire alarm controls equipment to avoid single point of failure.
- Full addressable analogue fire alarm system comprising Fire Indicator Panel (FIP), mimic panels, heat detection and MASDs systems.

## SECURITY

- Individual credential checks prior to authorisation.
- 24/7 onsite security personnel.
- Biometric fingerprint security for data centre access.
- Anti-cloning access card encryption.
- Secure lifts between floors.
- Intruder-resistant glass, steel mesh and solid concrete walls.
- Secure loading dock for deliveries.
- Extensive coverage by motion sensitive CCTV cameras.
- Remote monitoring and control of rack access via ONEDC®.
- Monitoring of news and weather for external security risks.
- Designed with advice from ASIO T4 accredited consultants and in consideration of ASIO levels of security and the future requirements of the Protective Security Policy framework (PSPF).

## SUSTAINABILITY

- Water-cooled chiller technology with variable speed compressors.
- Indirect water-side free cooling.
- Rain water is available for cooling towers.
- Australia's largest privately owned rooftop PV solar array.
- Dedicated area for potential future installation of onsite generation plant (such as tri-gen or other technologies) to significantly reduce CO<sub>2</sub> emissions.
- Energy efficient lighting (fluoro or LED) meeting AS1680.2.2 standard.
- External walls insulated to reduce heat transmission.
- Low volatile organic compound (VOC) materials and paint.
- Target PUE for full final design IT load is 1.35.

## TELECOMMUNICATIONS

- Diverse connectivity and underground cable pathways to the building.
- Dedicated interconnect rooms for cable connections.
- Access to choice of 50+ carrier networks.

## CUSTOMER SERVICES

- Dedicated office space for long-term private use.
- Sound-proof boardroom.
- Chill-out room equipped with kitchen facilities and Nespresso machine, TV, lounge, massage chairs and Foxtel.
- Equipment staging room.
- 2 four tonne lifts.
- Customer carpark.
- Spare parts vending machine.
- Guest Wi-Fi.

## CERTIFICATIONS

