

Article Overview

Modular data centers in India, including IP54-rated units, typically cost between INR18,500 to INR29,200 per square foot, with capital expenditure around INR46.5 crore per MW of capacity.

Overview of Modular Data Centers in India

Modular data centers are prefabricated, scalable, and faster to deploy compared to traditional facilities. Companies like Schneider Electric offer Easy Modular Data Center All-in-One solutions, which include optimized cooling, power modules, and pre-engineered enclosures suitable for various environmental conditions, including IP54 protection against dust and water splashes. These units are ideal for Tier-2 and Tier-3 cities where edge computing and low-latency services are growing in demand.

Cost Estimates

- o Capital Expenditure (CAPEX): On average, building a data center in India costs INR46.5 crore per MW of IT load, which is lower than many global markets.
- o Per Square Foot Cost: Depending on location and scale, costs range from INR18,500 to INR29,200 per square foot.
- o Operational Considerations: Modular units reduce construction time and can lower operational costs due to pre-engineered cooling and power systems. For example, a 1 MW modular data center could require around INR46.5 crore in CAPEX, with electrical systems accounting for roughly INR20 crore and land costs around INR8 crore. Additional costs for servers, racks, and cloud infrastructure may increase total investment.

Advantages of IP54 Modular Units

- o Dust and Water Resistance: IP54 enclosures protect sensitive IT equipment from dust ingress and water splashes, making them suitable for outdoor or semi-outdoor deployment.
- o Rapid Deployment: Prefabricated modules can be installed quickly, reducing downtime and accelerating time-to-market.
- o Scalability: Modular design allows incremental expansion as demand grows, avoiding large upfront investments.
- o Energy Efficiency: Integrated cooling and power modules optimize energy use, which is critical given India's variable grid reliability.

Market Context

India's data center market is expanding rapidly due to data sovereignty mandates, 5G rollout, and AI-driven workloads. Cities like Hyderabad, Mumbai, and Chennai are major hubs, but modular IP54 units are

increasingly deployed in smaller cities to support edge computing and low-latency applications . The total installed power of India's data centers is projected to exceed 2 GW by 2026, with modular solutions playing a key role in distributed infrastructure .

Conclusion

Investing in an IP54-rated modular data center in India offers a cost-effective, scalable, and weather-resistant solution. While CAPEX per MW is around INR46.5 crore, per square foot costs vary between INR18,500 and INR29,200. Modular units provide faster deployment, energy efficiency, and protection against environmental factors, making them suitable for both urban and edge computing applications .

Data centres in India are used for information technology, submarine cable connectivity, economic output, personal data protection

In the Modular Data Center Construction industry in India, several key considerations are critical for

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Based on various announcements of big investments in new data centers in India, JM Financial estimates that the

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The India modular data center market is growing owing to rapid adoption of cloud and digital transformation by Indian companies

Schneider Electric is taking the modular concept to the next level with its new line of Easy Modular Data Center All-in-One solutions

The India Modular Data Center Infrastructure market is undergoing a profound transformation, driven by the nation's



India Cost Modular Data Center IP54

India Data Center Market to grow from 5.45 thousand MW in 2026 to 15.21 thousand MW by 2031 at a 22.79% CAGR,

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India Modular Data Center Market is projected to grow around USD 68.5 billion by 2031, at a CAGR of 18.3% during

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