

GONDIA AIRPORT LEADS THE WAY IN LED RUNWAY LIGHTING

“By enabling Gondia to become the first AAI airport with a fully LED-lit runway, we’re not just upgrading lights! We’re redefining India’s airfield standards with sustainable, low-maintenance, and globally compliant solutions.”

This story explores how Vardhman Airport Solutions, a Make-in-India pioneer in airfield ground lighting (AGL) systems, uses indigenous technology to drive airfield modernisation with LED runway lighting.

Gondia Airport in Maharashtra is the first of 137 Airports Authority of India (AAI) airports to have a fully LED-lit runway, marking a significant step forward in operational excellence, energy efficiency, and regulatory compliance.

A strategic leap towards LED conversion

By CAR/ICAO Annexe 14 guidelines and India’s environmental objectives, AAI transitioned from traditional halogen-based runway lighting to LED systems after realising the growing need for sustainable aviation infrastructure. Gondia Airport was chosen as a pilot for this initiative, and Vardhman Airport Solutions was tasked with delivering and commissioning an end-to-end LED airfield lighting system.

Comprehensive LED installation

Vardhman deployed a comprehensive range of regionally manufactured LED lighting products, including elevated LED runway edge lights, threshold and end lights, approach lights, taxiway edge lights, and ultra-slim LED guidance sign boards.

These systems were meticulously designed to meet the stringent standards of CAR/ICAO Annexe 14, resulting in optimal photometric performance and colour candela output. Following installation, a complete photometric test was performed to validate compliance, confirming that the lighting infrastructure met ICAO international airport guidelines.



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Operational and environmental impact

The transition from halogen to LED technology at Gondia Airport has brought several benefits. Energy consumption has dropped by an impressive 70 percent, significantly cutting operational costs, as LEDs use far less power than halogen lights. Additionally, LED fixtures boast an extended lifespan of over 50,000 hours, largely outlasting traditional halogen lamps that require replacement roughly every 1,500 hours. Safety has improved with fewer maintenance activities needed on active runways, reducing human exposure to high-risk areas. Moreover, the system’s photometric testing and design comply with CAR/ICAO Annexe 14 regulations, ensuring ongoing adherence to aviation safety standards.

Fostering Atmanirbhar Bharat in aviation

LED adoption at Gondia Airport signifies a larger trend towards independence in vital airport infrastructure, in addition to the technical and operational advantages. Vardhman manufactured all the AGL systems and signboards deployed as part of the Make in India initiative, demonstrating India’s ability to deliver world-class airside technology

solutions domestically. The initiative facilitates airports’ achieving world-class technology and faster ROI. This cost reduction can translate to lower parking charges for airlines and affordable air travel. Since LED systems require less maintenance, airports can reduce closure windows and maximise operational uptime. The initiative also reduces safety concerns, as engineers need not visit active runways frequently to replace lights.

A model of replication

Since Gondia’s success, several other Indian airports are investigating comparable LED conversion projects. The project demonstrates the pioneering impact that indigenous, intelligent airfield solutions can have on India’s aviation ecosystem.

