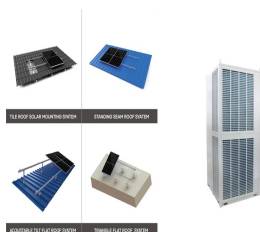
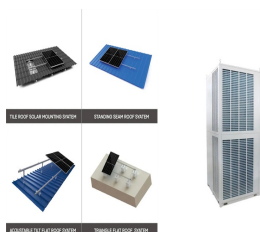


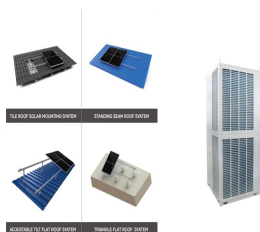
# WHAT IS THE ENERGY STORAGE SYSTEM OF IRON BEAM



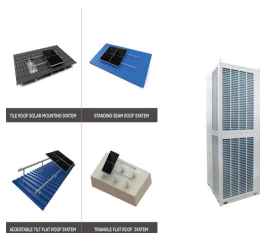
What is Israel's iron beam? Israel's Iron Beam is a cutting-edge laser-based defence system designed to intercept short-range threats like rockets, mortars, and drones. Developed by Rafael Advanced Defense Systems, Iron Beam complements Israel's Iron Dome, filling a gap in defence against smaller, quicker attacks that traditional systems find challenging.



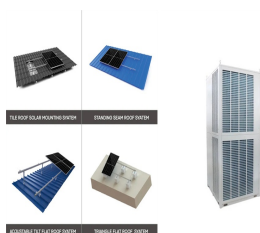
What is iron beam & how does it work? Iron Beam is designed to intercept a wide range of threats, including unmanned aerial vehicles (UAVs), Rafael says, which can be accomplished from a distance of a few hundred meters to up to several kilometers.



What is an Iron Beam battery? An Iron Beam battery is composed of an air defense radar, a command and control (C2) unit, and two HEL (high-energy laser) systems. It was intended to be mobile and to be able to be used standalone, but was later rendered non-mobile to address weight and power availability concerns and integrated into Iron Dome to reduce complexity.



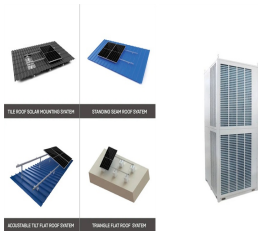
What is Lite Beam & Iron Beam? Rafael is working on two systems, Iron Beam and Lite Beam. Each system fires a different level of energy, measured in kW, to destroy aerial threats; a kW is 1,000 watts of energy. Lite Beam is a 7.5 kW class high energy laser weapon system (HEL) with a range of a few hundred meters up to 2,000 meters.



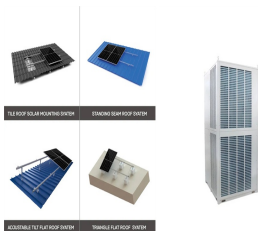
What is a naval iron beam? In May 2023, Rafael unveiled the Naval Iron Beam meant for installation on ships. The system is designed to emit 100 kW out to "several kilometers" to protect vessels against drone swarms and anti-ship missiles.



# WHAT IS THE ENERGY STORAGE SYSTEM OF IRON BEAM



Who owns the Iron Beam? The Iron Beam is under the helm of Rafael Advanced Defense Systems, the same company responsible for the Iron Dome and David's Sling, two mainstays of Israel's layered air defence.



The new laser missile system is called Iron Beam and it's touted as a "game-changer" for Israel's air defence. Bennett describes it as "the world's first energy-based weapons system that uses a laser to shoot down incoming UAVs, rockets & mortars at a distance."



The Iron Beam is a 100kW-class High-Energy Laser Weapon System by Rafael Advanced Defense System, first publicly unveiled at the 2022 iteration of AUSA symposium in October of that year. A video



"This is the world's first energy-based weapons system, that has proven to actually work. The Iron Beam's interceptions are silent, they're invisible and they only cost around \$3.50. We are turning the tables on terror," he added. Bennett announced in February that Israel would deploy the system within the year.



Das System basiert auf fünf Jahren Forschungs- und Entwicklungsarbeit im Bereich der Festkörperlaser und wurde von Rafael entwickelt, vom Verteidigungsministerium finanziert und von den Vereinigten Staaten unterstützt. Eine Iron-Beam-Batterie besteht aus einem Luftverteidigungsradar, einer Kommando- und Kontrolleinheit (C2) und zwei HEL-Systemen.



# WHAT IS THE ENERGY STORAGE SYSTEM OF IRON BEAM



Based on cost and energy density considerations, lithium iron phosphate batteries, a subset of lithium-ion batteries, are still the preferred choice for grid-scale storage. More energy-dense chemistries for lithium-ion batteries, such as a?



"Iron Beam" is the name of the latest laser missile system, which is being hailed as a "game-changer" for Israel's air defence. "The world's only energy-based weapons technology," according to Israel's Prime Minister, a?



The Iron Beam is under the helm of Rafael Advanced Defense Systems, the same company responsible for the Iron Dome and David's Sling, two mainstays of Israel's layered air defence. Rafael's CEO, Yoav Turgeman, has expressed confidence that the Iron Beam will significantly fortify Israel's air defences, which have been repeatedly tested by Iran and a?



The Iron Beam project received a significant boost with the signing of a NIS 2 billion deal by Defense Ministry Director General General (res.) Eyal Zamir to expand serial production of the laser



According to The Nativ Report on September 12, 2024, Yoav Turgeman, CEO of Rafael Advanced Defense Systems, announced that its Iron Beam High Energy Laser Weapon System (HELWS) will become operational with the Israel Defense Forces (IDF) next year. This 100kW system is intended to be a new component of Israel's air defense system, serving as a?



# WHAT IS THE ENERGY STORAGE SYSTEM OF IRON BEAM



Iron Beam system operational details. Iron Beam's air defence radar detects an incoming projectile, and a thermal camera takes over the tracking responsibilities until the projectile is concurrently engaged by two HELs. The system employs dual lasers to deliver the necessary energy required to overcome atmospheric disruptions.



The system is based on five years of research and development in solid-state lasers and is developed by Rafael, funded by the MoD, and extensively underwritten by the United States. An Iron Beam battery is mobile and composed of an air defense radar, a command and control (C2) unit, and two HEL (High Energy Laser) systems.



The system could also intercept unmanned aerial vehicles (UAVs). It has a range of up to 7 km. Iron Beam constitutes the sixth element of Israel's integrated missile defense system, in addition to Arrow 2, Arrow 3, David's Sling, and Iron Dome. Iron Beam uses a fiber laser to generate a laser beam to destroy an airborne target.



Hyderabad: With the recent drone and ballistic missiles by Iran exposing Israel's traditional air defence system, the country is now working to develop a new laser air defence system, "Iron Beam", AFP reported. The report quoting Israel's defence ministry said that on Monday, the ministry has earmarked \$530 million to accelerate development of the laser air a?|



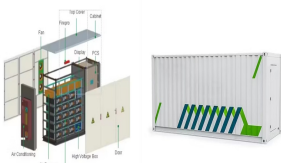
The Iron Beam is expected to integrate into Israel's multi-layered defence infrastructure and compliment the capability of the Iron Dome system. At present, the Israeli aerial defence system includes systems such as Arrow 2 and Arrow 3, David's Sling (Stunner), Iron Dome, Patriot Advanced Capability-2, PAC-3 and advanced fighter jets operated by the a?|



# WHAT IS THE ENERGY STORAGE SYSTEM OF IRON BEAM



Lockheed Martin and Rafael Advanced Defense Systems will jointly develop, test and manufacture a High Energy Laser Weapon Systems (HELWS) in the US and Israel. Both companies have signed a teaming agreement to develop a variant of Israel's Iron Beam system for the US market as well as others. Iron Beam is a 100kW-class HELWS and is expected



In praise of the Iron Beam, Rotem said, "The use of a laser is a game-changer, and the technology is simple to operate and proves to be economically viable." In development since early 2000s. However, the Iron Beam isn't an entirely new concept, and neither is the technology behind energy-based weaponry novel or futuristic.



What is the Iron Beam? Israel's Iron Beam is a cutting-edge laser-based defence system designed to intercept short-range threats like rockets, mortars, and drones. Developed by Rafael Advanced Defense a?|



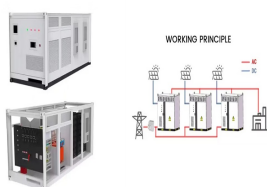
Called the Iron Beam, the system is designed to neutralize a range of incoming targets a?? including unmanned aerial systems, rockets, artillery and mortar rounds a?? using a 100-kilowatt or more directed energy weapon, a?|



THE REAL IRON BEAM. Rafael Advanced Defense Systems" Iron Beam is a 100 kiloWatt-class High Energy Laser Weapon System (HELWS) that's designed to supplement Israel's highly touted Iron Dome



# WHAT IS THE ENERGY STORAGE SYSTEM OF IRON BEAM



The Iron Beam is a laser-powered system designed to intercept missiles and drones at a lower cost than the Iron Dome, which relies on traditional rockets for interception. Reports indicate this investment aims to enhance Israel's ability to counter drones launched by Hezbollah and other resistance forces in Iraq.



RAFAEL's IRON BEAM is a 100kW class High Energy Laser Weapon System (HELWS) that will soon become the first operational system in its class. The system rapidly and effectively intercepts a wide spectrum of threats including RAM and UAVs as well as swarms of mini-UAVs with pinpoint accuracy from a range of a few hundred meters to up to several kilometers.



Iron Beam, being a directed energy system, has the potential for cost savings in the long run, with a reduced need for physical ammunition. Expert Says. The Iron Beam is anticipated to be significantly more cost-effective compared to its interceptor rocket counterpart, which commands a price tag exceeding \$50,000 per missile. In contrast, the



Flywheel energy storage devices turn surplus electrical energy into kinetic energy in the form of heavy high-velocity spinning wheels. To avoid energy losses, the wheels are kept in a frictionless vacuum by a magnetic field, allowing the spinning to be managed in a way that creates electricity when required.



What Is Iron Beam? Iron Beam is a ground-based high-power laser air defense system designed to counter aerial threats, including rockets, mortars, unmanned aerial vehicles (UAVs), and cruise missiles. The Iron Beam system is expected to cost Israel over \$500 million. This system will help Israel to engage and neutralise missiles, drones



# WHAT IS THE ENERGY STORAGE SYSTEM OF IRON BEAM



The Iron Beam, Israel's ground-based laser air defense system, was first unveiled in 2014. The New York Times described it in 2022 as a "high-powered laser gun that can intercept rockets, mortar



The Iron Beam, or light shield, is a directed-energy weapon created by an Israeli Defense contractor. It's designed to destroy short-range projectiles too close for the Iron Dome to



Iron Beam is designed to intercept a wide range of threats, including unmanned aerial vehicles (UAVs), Rafael says, which can be accomplished from a distance of a few hundred meters to up to



How will IRON BEAM be used? IRON BEAM will be used in Israel's multi-layered air defense system. The solution will be cheap and easy to use, and it will be able to protect population centers



Rafael Advanced Defense Systems is the architect of the Iron Dome system, too. According to CNN, the prototype of the Iron Beam was unveiled in 2021. How does Israel's Iron Beam work? The Iron Beam system a?|