

# 1 Masters Energy USA: Public Directory of Directed-Energy and Electromagnetic-Effects Companies

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## 1.1 Introduction

Directed-energy technology is moving from laboratory research and technology demonstrations toward increasingly mature defense applications. This companion resource gives visitors to MastersEnergyUSA.com a concise, source-based orientation to companies publicly associated with high-energy lasers, high-power microwaves, counter-electronics systems, and related enabling technologies.

The directory is designed to answer a limited question: **Which companies have a publicly documented connection to a named directed-energy or electromagnetic-effects program, and what does the available evidence actually establish?** It deliberately distinguishes a system manufacturer from a prime contractor, subsystem supplier, integrator, research partner, and component producer. It also distinguishes a test event or prototype from an operationally fielded capability.

This is a **conservative public-information directory**. It is intended for general education and industry orientation, not for procurement, technical evaluation, or operational decision-making. Program names, schedules, contracts, fielding claims, and company capabilities can change; readers should consult the linked primary sources before relying on a status statement.

## 1.2 Legal and safety disclaimer

This document is provided for **general informational and educational purposes only**. It is not legal advice, export-control advice, procurement advice, engineering guidance, or authorization to acquire, build, modify, test, deploy, target, or use any weapon or electronic-effect system.

Directed-energy weapons, high-power microwave equipment, EMP-related technology, military technical data, and associated components may be subject to export controls, import restrictions, procurement rules, sanctions, classification requirements, workplace-safety obligations, and other national or local laws. Laws and regulatory requirements vary by jurisdiction and may change over time. Readers are responsible for obtaining advice from qualified legal, compliance, safety, and government-authorized professionals before taking any action.

The descriptions in this directory are high-level and non-operational. They intentionally omit construction methods, circuit designs, energy levels, targeting procedures, deployment instructions, vulnerability details, and other information that could facilitate harmful or unlawful activity. Inclusion of a company or program does not constitute endorsement, verification of performance, confirmation of availability, or a representation that the company will sell or provide any system to the public.

Status terms are used literally. **Fielded** means a cited public source reports issue or fielding. **Demonstrated/tested** does not mean routinely operational. **Prototype, development, and announced** do not mean production or service entry. A company's general work in electronic warfare, radio frequency, microwave components, power electronics, or counter-UAS technology does not by itself establish that the company makes an EMP weapon.

## 1.3 Terminology

**Directed-energy weapon (DEW)** is the umbrella term used here for a weapon system that directs energy at a target rather than relying solely on a conventional projectile. The relevant categories in this directory are **high-energy laser (HEL)** and **high-power microwave (HPM)** systems. DEW is not a synonym for EMP. [1](#)

**High-power microwave (HPM)** systems use concentrated microwave or radio-frequency energy to create effects on electronics. An HPM counter-UAS system is therefore relevant to electromagnetic effects, but it does not establish a strategic, wide-area, or nuclear-EMP capability. [1](#)

**Electromagnetic warfare (EW)** is broader than HPM weapons. It includes military sensing, spectrum protection, jamming, deception, and other uses of the electromagnetic spectrum. RF denial and cyber effects should not automatically be described as HPM or EMP weapons. [29](#)

**Nuclear electromagnetic pulse (nuclear EMP)** is an electromagnetic effect associated with a nuclear detonation. It is categorically different from non-nuclear, directed HPM systems. **No company in this directory is identified as a manufacturer of a nuclear EMP weapon.**

## 1.4 Manufacturer and program directory

The profiles below use the same fields for every company so that long descriptions remain readable in both print and mobile PDF viewers.

### 1.4.1 Lockheed Martin

**Region:** United States

**Category:** HEL manufacturer/integrator; HPM developer.

**Publicly documented systems or role:** HELIOS naval laser; MORFIUS airborne HPM counter-UAS system; ATHENA, LLD, AHEL, and HELSI/IFPC-HEL laser demonstrations or subsystem work.

**Public status and classification:** HELIOS was delivered to the U.S. Navy and integrated aboard USS *Preble*, with Navy-reported at-sea testing in 2025. MORFIUS is publicly documented as an HPM counter-UAS effort, not as a fielded system. No nuclear-EMP manufacture is substantiated. [2](#) [3](#) [4](#)

### 1.4.2 RTX / Raytheon

**Region:** United States

**Category:** HEL and HPM weapon developer/manufacturer.

**Publicly documented systems or role:** CHIMERA and Phaser HPM systems; HELWS/H4 laser system; laser roles in DE M-SHORAD and the UK land-laser demonstrator.

**Public status and classification:** CHIMERA is a tested demonstrator. Phaser underwent an Air Force field assessment. RTX reports HELWS combat certification, global deployments, and four operational systems delivered to the Air Force. None of these sources establishes nuclear-EMP manufacture. [5](#) [6](#) [7](#)

### 1.4.3 Northrop Grumman

**Region:** United States

**Category:** HEL developer/integrator and component supplier.

**Publicly documented systems or role:** Navy Laser Weapon System Demonstrator (LWSD); DE M-SHORAD competing laser prototype; Phantom laser source and other HEL components.

**Public status and classification:** Northrop designed and produced the Navy LWSD demonstrator, which disabled a UAV during an at-sea test. The reviewed record does not substantiate Northrop manufacture of

an HPM or EMP weapon. Its role offering Epirus Leonidas is treated as integration/supplier activity, not manufacture of the effector. [8](#) [9](#) [28](#)

#### 1.4.4 Boeing

**Region:** United States

**Category:** HEL developer/prime/integrator; HPM program integrator.

**Publicly documented systems or role:** Compact Laser Weapon System (CLWS/CLaWS); CHAMP counter-electronics HPM demonstrator integration; HEL MD, ATL, ALTB/YAL-1, and 300-kW HEL prototype work.

**Public status and classification:** Boeing reports a completed overseas Marine Corps CLWS deployment, while government material confirms testing. CHAMP was an AFRL technology demonstration: Boeing provided the platform and system integration, while Ktech supplied the HPM source. Boeing should not be described as the CHAMP emitter manufacturer or as a general EMP-weapon maker. [10](#) [11](#) [12](#)

#### 1.4.5 BAE Systems

**Region:** United Kingdom / international

**Category:** HPM research and DE demonstrator/integration partner.

**Publicly documented systems or role:** Bofors HPM Blackout research/effects-evaluation system; industry-partner role on AFRL THOR; Project Tracey and Mk 38 laser demonstrator roles.

**Public status and classification:** HPM Blackout is publicly described as a research/evaluation system. BAE is named as a THOR industry partner. The reviewed record does not establish a fielded BAE-produced DEW or EMP weapon. [13](#) [14](#) [15](#)

#### 1.4.6 Rheinmetall

**Region:** Germany / international

**Category:** HEL developer/manufacturer and integrator.

**Publicly documented systems or role:** German Navy Laser Weapon Demonstrator with MBDA; follow-on German naval HEL development; Skyranger 30 HEL technology-sample work.

**Public status and classification:** The naval demonstrator completed shipboard trials aboard frigate *Sachsen* in 2023. A 2026 German contract covers development of a complete naval HEL system with a stated 2029 operational expectation. No HPM or EMP weapon is substantiated. [16](#) [17](#) [18](#)

#### 1.4.7 MBDA

**Region:** Europe / multinational

**Category:** HEL prime/integrator and program partner.

**Publicly documented systems or role:** DragonFire industry lead; German naval laser tracking, operator-console, and command-and-control role; Italian naval laser fire-unit memorandum of understanding.

**Public status and classification:** DragonFire has completed demonstrations and entered a UK contract for a Royal Navy minimum deployable capability from 2027. The German system remains under development. No HPM or EMP weapon manufacture is substantiated. [19](#) [20](#)

#### 1.4.8 Leonardo

**Region:** Italy / United Kingdom / United States

**Category:** HEL subsystem manufacturer and integrator.

**Publicly documented systems or role:** DragonFire beam director; Leonardo DRS vehicle integration for the C-UAS Directed Energy Stryker; laser components and RF/cyber systems.

**Public status and classification:** Leonardo produces DragonFire’s beam director. The DRS Stryker was a prototype using BlueHalo’s LOCUST laser. Leonardo’s microwave components and Falcon Shield RF/cyber systems are not, by themselves, evidence of HPM or EMP weapon manufacture. [21](#) [22](#) [29](#)

#### 1.4.9 Epirus

**Region:** United States

**Category:** HPM directed-energy counter-electronics manufacturer/developer.

**Publicly documented systems or role:** Leonidas / Army IFPC-HPM Generation I and II; ExDECS; H2O; Stryker Leonidas; Leonidas Pod.

**Public status and classification:** Four IFPC-HPM Generation I systems were delivered to the U.S. Army, and Army Pacific reported fielding and exercise use. Generation II, ExDECS, H2O, Stryker, and Pod are development or prototype efforts. A 2020 supplier announcement explicitly used the phrase “EMP C-UAS system” for Leonidas, but the technically narrower modern classification is HPM. No strategic or nuclear EMP capability is substantiated. [23](#) [24](#) [25](#) [28](#)

#### 1.4.10 MZA Associates

**Region:** United States

**Category:** HEL developer/integrator and enabling-subsystem specialist.

**Publicly documented systems or role:** U.S. Navy compact C-UAS HELWS development; HARDROC airborne beam-director demonstrator; beam-control, atmospheric-effects, and modeling work.

**Public status and classification:** The Navy contract covered design, development, integration, testing, and demonstration of a compact C-UAS HELWS. HARDROC completed low-power beam-director flight testing. No fielded MZA weapon or HPM/EMP weapon is substantiated. [26](#) [27](#)

### 1.5 EMP and electromagnetic-effects index

**Direct HPM weapon-system activity — Lockheed Martin, RTX/Raytheon, and Epirus.** These companies have named, publicly documented HPM systems intended to create directed electromagnetic effects. This does not mean nuclear EMP capability or broad-area EMP manufacture. [4](#) [5](#) [6](#) [23](#)

**HPM research, demonstrator, or partner role — BAE Systems.** Bofors HPM Blackout and BAE’s THOR partner role support an HPM research/development classification, not a fielded BAE HPM weapon classification. [13](#) [14](#)

**HPM integration or platform role — Boeing and Northrop Grumman.** Boeing’s CHAMP role and Northrop’s Epirus supplier relationship are program or integration roles. They do not establish manufacture of the HPM emitter. [10](#) [28](#)

**Historical “EMP C-UAS” wording — Epirus, with Northrop Grumman as the announced offering/supplier partner.** The 2020 announcement is direct evidence that “EMP” was used publicly for Leonidas. In current visitor-facing copy, “HPM counter-electronics system” is the more precise description. [28](#)

**RF/cyber spectrum effects distinct from HPM/EMP — Leonardo.** Falcon Shield is described as an RF/cyber counter-UAS system. RF denial is an electromagnetic effect, but it is not automatically an HPM or EMP weapon. [29](#)

## 1.6 Editorial limits and exclusions

**No nuclear-EMP manufacturer designation.** No reviewed public record substantiates that any listed company manufactures a nuclear EMP weapon.

**Components are not automatically weapons.** RF amplifiers, microwave tubes, GaN devices, jammers, radiation-survivability services, and power-electronics products are excluded from HPM/EMP manufacturer classifications unless a source directly connects them to a named weapon system.

**Integrators are not necessarily effector manufacturers.** Boeing's CHAMP role does not establish manufacture of its HPM source. Northrop's offer of Epirus Leonidas does not establish Northrop manufacture of the weapon. Leonardo DRS integration of the Stryker does not establish manufacture of BlueHalo's LOCUST laser.

**Demonstration is not operational fielding.** Test firings, prototypes, factory delivery, demonstration contracts, and future service plans are not described as deployed operational weapons. Program schedules and procurement outcomes can change.

