

## High Energy Laser Directed Energy Weapon (**HEL-DEW**) **Endo-Atmospheric** Infra-Red Photon Cannon

NOTE: Principal modification of following **HEXspecs**: replace **Al** rod primer by a **Cu** rod primer, vaporized/ionized by an initial DC surge; otherwise, basic plasma-confinement concept identical (*i.e.* based upon Kapitza's gas-pressure confined, microwave-maintained/boundary-layer insulated, "free floating plasma filament" of his Nobel Prize Acceptance Speech, as improved by R.W. Bass in **US Patent US004448743**)

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## High Energy Xaser (**HEX**) Exo-Atmospheric Photon Cannon

PARAMETER	OPTIMIZED ARCHITECTURE
Range	25,000 miles
Beam Wavelength	4.4 nanometers
Beam Exit Diameter	66 cm
Beam Target Diameter	1.31 meters
Beam Target Intensity	100 kW/cm <sup>2</sup>
Dwell Time	1 second
Target Dose	1.37 GJ
Beam Power	1.37 GW
Trigger Stimulus Power	10 W
Plasma Gain	$g = 0.0023/\text{cm}$
Plasma Column Length	$L = 81.46 \text{ meters}$
Single-Pass Amplification	$\text{Exp}(g \times L) = 1.37 \times 10^8 .$
Pump Conversion Efficiency	$0.50 \times 0.65 = 0.325$
Battle Station Pump Power	4.22 GW