

SBIR 06.2 PHASE I - AWARD DETAILS	
ORGANIZATION	SMDC
TOPIC NUMBER	A06-208
CONTRACT NUMBER	
YEAR OF AWARD	
AWARD START DATE	
AWARD COMPLETION DATE	
PROPOSAL NUMBER	A062-208-0671
TITLE	Fiber Laser Beam Combining for High Efficiency and Light-Weight HEL Systems
PROJECT MANAGER	Thomas H. Loftus (425) 482-1100 tom.loftus@aculight.com
COMPANY	Aculight Corporation 11805 North Creek Parkway S. Suite 113 Bothell WA 98011 Minority Owned: No Veteran Owned: No Number of Employees: 78
KEYWORDS	High Average Power Directed Energy Weapons, High Average Power Military Lasers, High Average Power Fiber Lasers, Fiber Laser Beam Combining, Hybrid Fiber Laser Beam Combining
ABSTRACT	Aculight proposes a fiber beam combining approach that provides the efficiency, thermal management, power-independent beam quality and ruggedness of fiber lasers with a system architecture scaleable to 10 kW and beyond. The approach is scaleable to 100+kW for military directed energy applications such as defense against rockets, artillery and mortars (RAM). The proposed work leverages Aculight's extensive experience in beam combining, and the ongoing development of high power, narrow line width, polarized fiber amplifiers. The project plan builds on proof-of-principle experiments already completed by Aculight and includes an experimental demonstration of the key concept in the Phase I, a 1 kW system demonstration in the Phase II, and a 10+kW system to be developed in Phase III.
BENEFITS	Aculight's experience in high power fiber lasers and beam combining techniques positions us to be a leader in both beam combining and the production of high power lasers and sub-assemblies. High power lasers are extensively used in materials processing and the market continues to demand improvements in cost of ownership, beam quality, reliability and ruggedness. The modular approach possible with beam combining provides an opportunity to drive manufacturing costs down while providing a range of powers to meet the needs of specific processes and industrial environments. The combination of applications in both the military and commercial world provides a unique chance to drive costs down through increased manufacturing volume, while addressing the high performance needs of both markets.