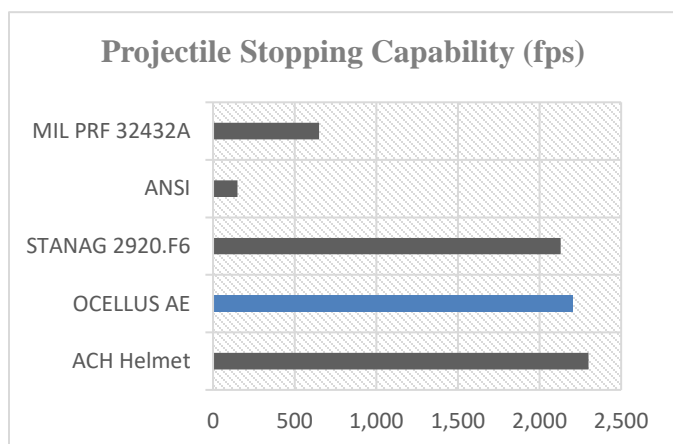




Technological advances in materials have proven to save lives of warfighters and mitigate injuries; however, eye protection has had limited advancement since polycarbonate lenses entered the market decades ago. While the Advanced Combat Helmet provides light and comfortable head protection, shrapnel and IEDs cause serious eye injuries, requiring the DOD to spend over \$2.3 billion annually to treat. **Tardigrade Industries** is developing the **OCELLUS™** - a lightweight goggle providing fragment projectile protection nearly equal to that provided by a full helmet or body armor.

While the Army's current eyewear protection standard (MIL-PRF 32432A) has increased in recent years, improvements have only been marginal because they are all based solely on polycarbonate lenses. While evolving threats in theatre operations pose serious risk, polycarbonate lenses do not provide adequate fragment protection. Innovative new materials, technologies, and manufacturing processes are needed to significantly increase protection while meeting weight limits and allowing good optical clarity and a wide range of visibility.



Tardigrade Industries' solution is to use new materials, such as sapphire and fused silica glass, due to their unmatched ballistic and scratch-resistant properties. Combined with other materials in an innovative design, early prototype testing has shown this new technology to provide *fifteen times the ballistic threat protection while maintaining the weight standard of current issued eyewear.*

The adjacent graph depicts the magnitude of this advancement. The current Army eyewear standard (MIL PRF 32432A) stops a 17-grain fragment simulated projectile at a velocity of 650 feet per second (fps); only marginally better than protection offered by common sunglasses meeting the ANSI standard. The OCELLUS stopped the same projectile at up to 2,200 fps, comparable to the NATO standard for hard body armor (STANAG 2920.F6), and almost equal to the protection offered by Advanced Combat Helmets and visors of bomb disposal EOD helmets that are likely 1.25 to 1.75 inches thick. ***The OCELLUS accomplishes this level of protection in a flat, 1/4-inch panel configuration weighing less than 5 ounces for the frames and lenses combined.***

Tardigrade Industries is continuing R&D to maximize eye protection from fragment projectiles traveling at high speed while offering solutions for mission-specific applications where weight is critical. The ability to maintain the current accepted goggle weight of 5 ounces, while meeting all current standard requirements, will allow for elite forces to safely execute missions while maximizing their mobility and protection.

Tardigrade Industries was founded in Maine by Kris McKenna, a retired 16-year veteran of law enforcement, and Tom Ackerman, an avid outdoorsman and former manager for hunting and fishing products at L.L. Bean. Together, they bring extensive experience in field equipment, business planning, sales and marketing, sourcing, and entrepreneurial ventures. With private investment and support from the Maine Technology Institute, the company will complete material sourcing and manufacturing of market-ready prototypes in late 2019, followed immediately by extensive ballistics, optical clarity, and environmental exposure testing.