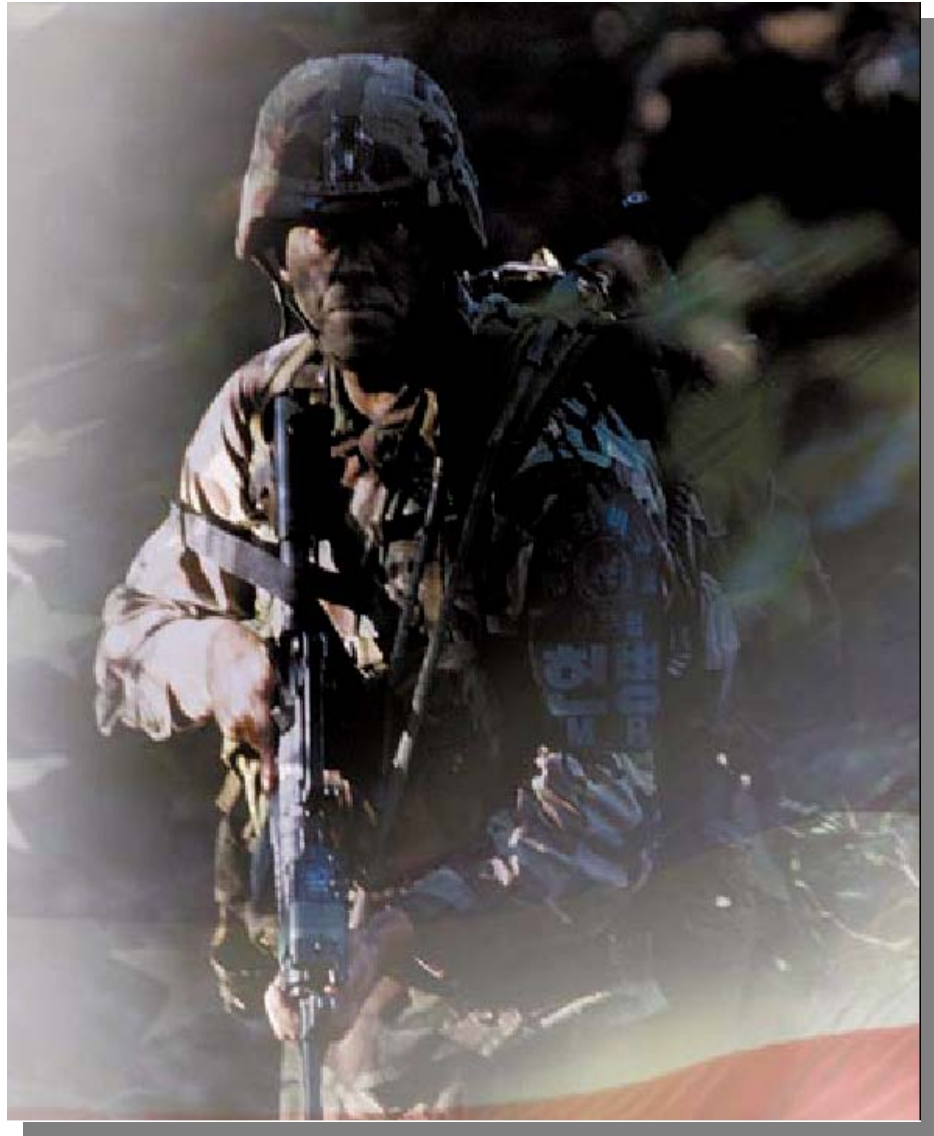


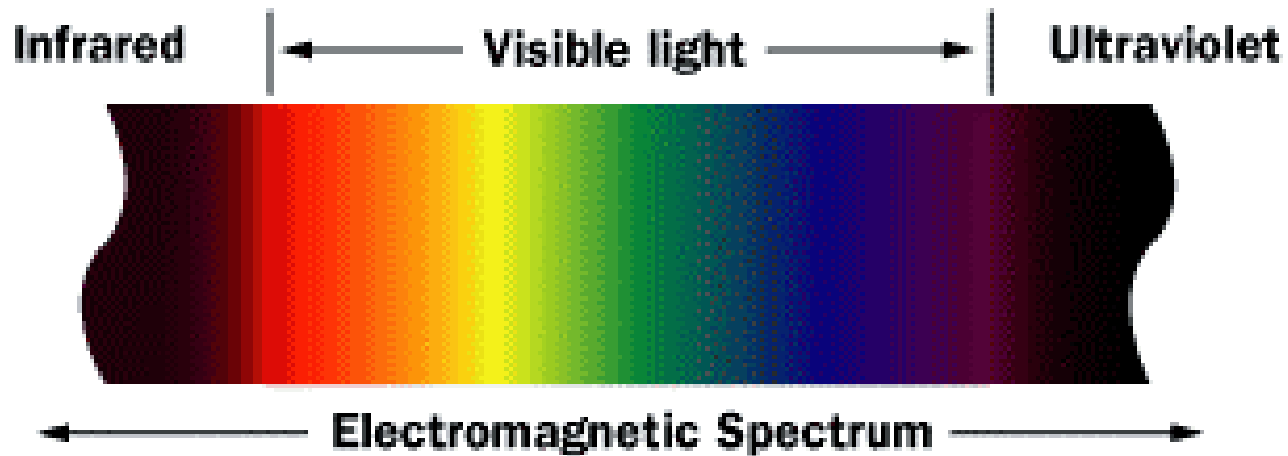
Solution Dye Cordura® Products:

Improving the
soldiers stealth



UV-VIS-NIR and Optical Enhancement

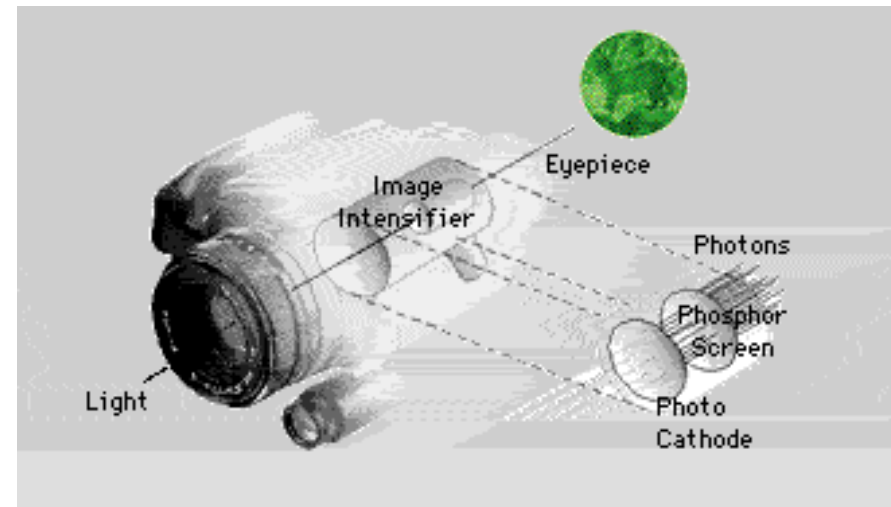
- **Image enhancement** - This works by collecting the tiny amounts of light, including the lower portion of the infrared light spectrum, that are present but may be imperceptible to our eyes, and amplifying it to the point that we can easily observe the image.



- **Near-infrared** (near-IR) - Closest to visible light, near-IR has wavelengths that range from 0.7 to 1.3 **microns**, or 700 billionths to 1,300 billionths of a meter.

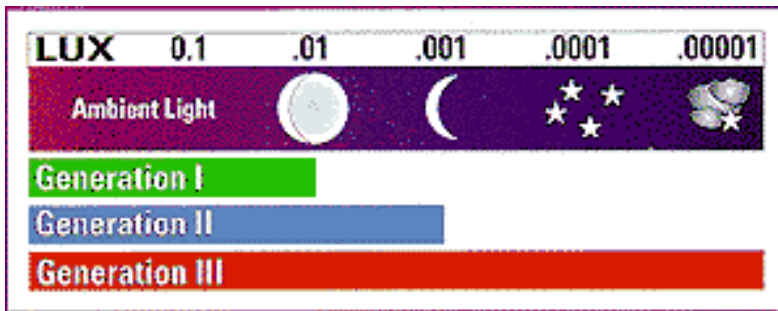
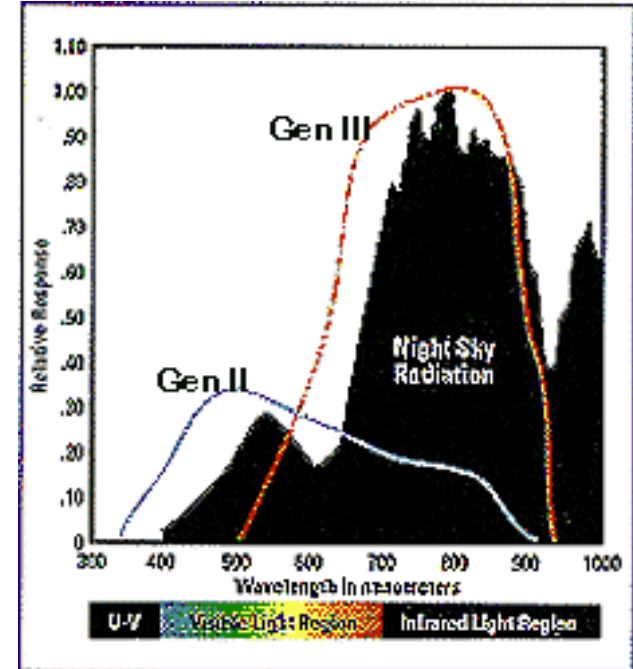
How Night Vision scopes work

- Night Vision scopes and binoculars "amplify" existing light, allowing you to see in conditions otherwise too dark for the naked eye.
- Available light (photons) is collected by the objective lens and focused on the functional heart of the device, the image intensifier.
- Inside the intensifier, a photocathode is "excited" by the light and converts the photon energy into electrons. These electrons accelerate across an electrostatic field inside the intensifier and strike a phosphor screen (like a green monochrome TV screen) which emits an image that you can see.
- It is the acceleration of electrons which provides gain and enhances the image.

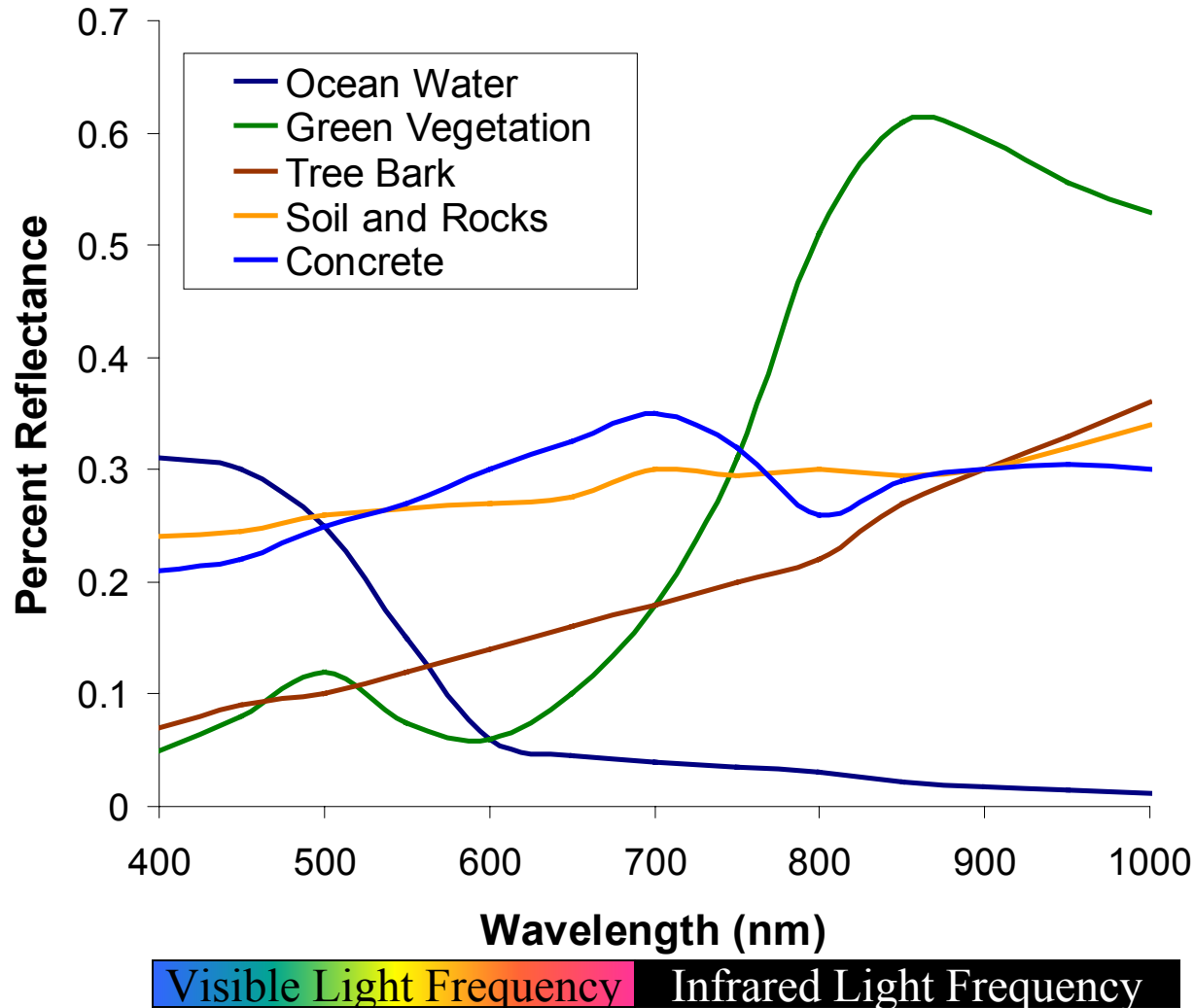


Three Generations of Night Vision Goggles

- Generation 1 - Developed in 60s only works under full moon. Considered obsolete.
- Generation 2 - Can work under partial moonlight. Has poor signal to noise ratio.
- Generation 3 - Gallium Arsenide (GaAs) photocathode sensitive to light beyond 800 nm, considered to be the critical near-infrared region where the night sky illuminance levels are the greatest



What our surroundings look like in the NIR region

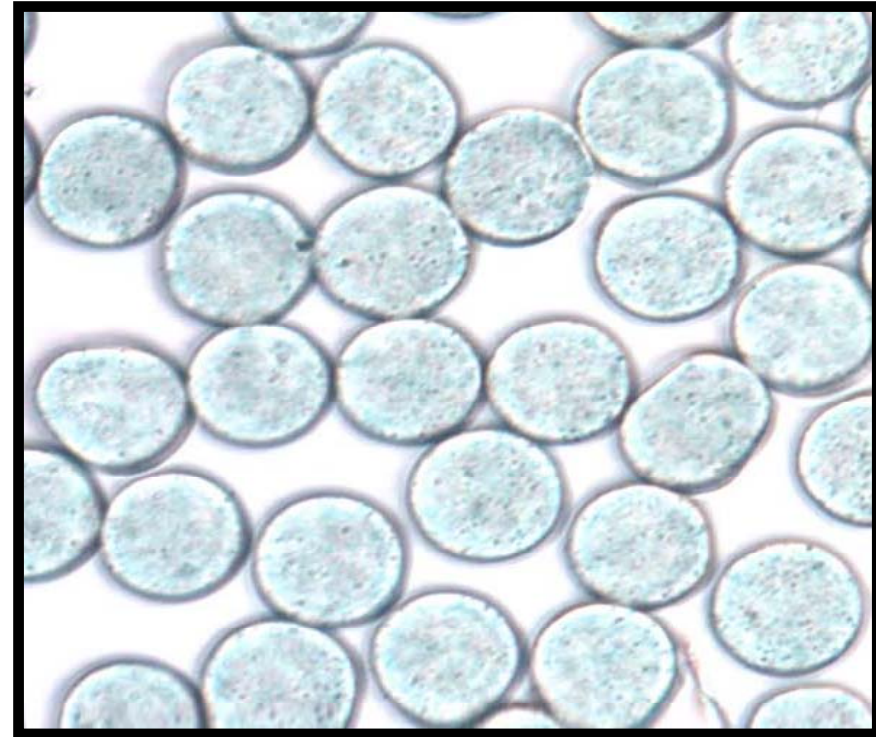


How far can I see a six foot man on grass without protection?

	Full Moon	Half Moon	Quarter Moon	Starlight	Overcast
Gen III	890 yards	890 yards	850 yards	580 yards	220 yards
Gen II	690 yards	690 yards	650 yards	430 yards	160 yards
Human	250 yards	150 yards	50 yards	NM	NM

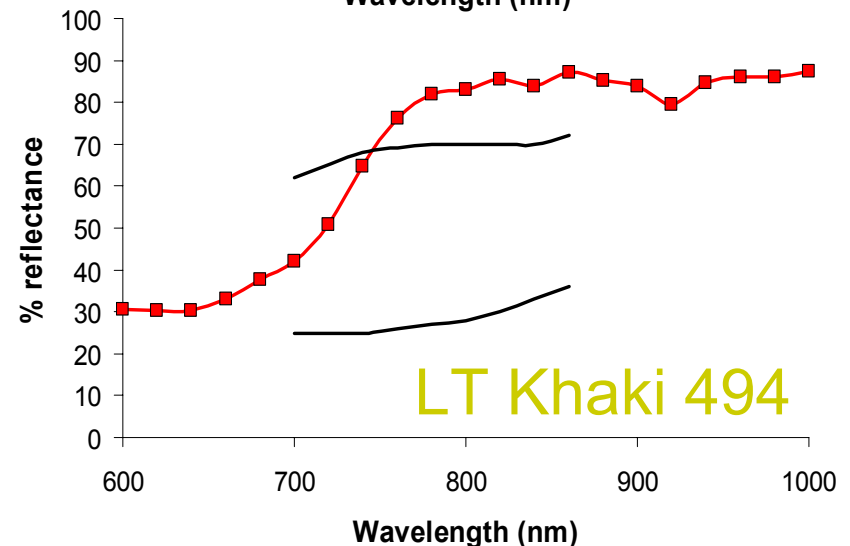
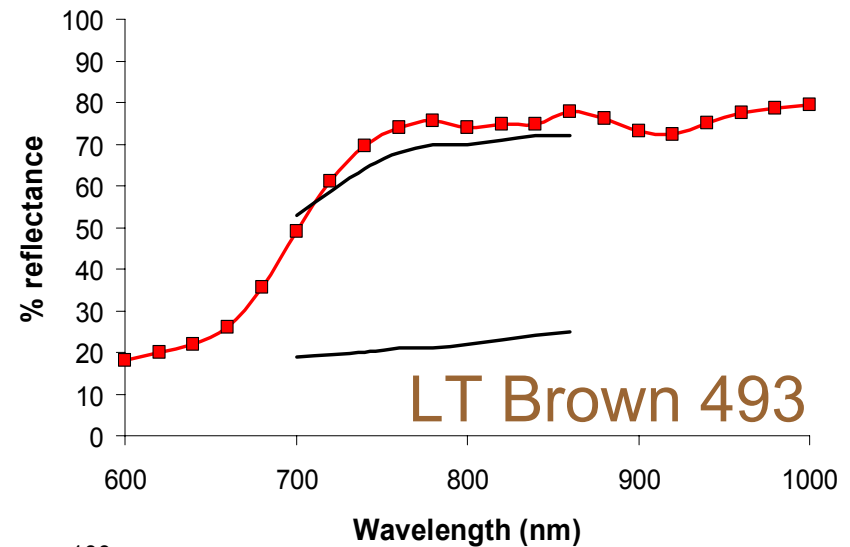
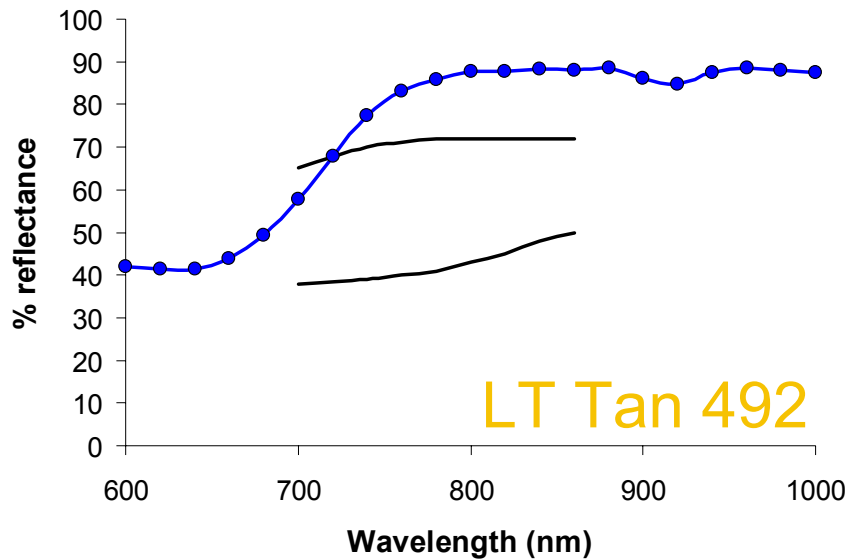
Solution: How to stay unseen

- An enhanced polymer technology has been developed that is tailored to meet the near-infrared environment. The polymer fiber uses micron size particles that absorb the wavelengths in the same manner as its surroundings.
- This new and innovated polymer is engineered to work in fibers in daylight and night.



500X magnification

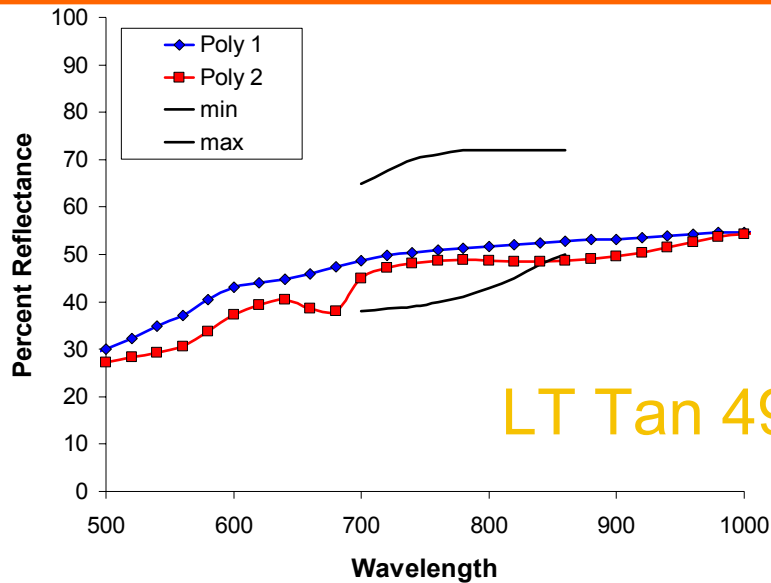
NIR Performance - Current US Army Printed 3-Day Desert Camouflage Fabric using standard nylon fibers



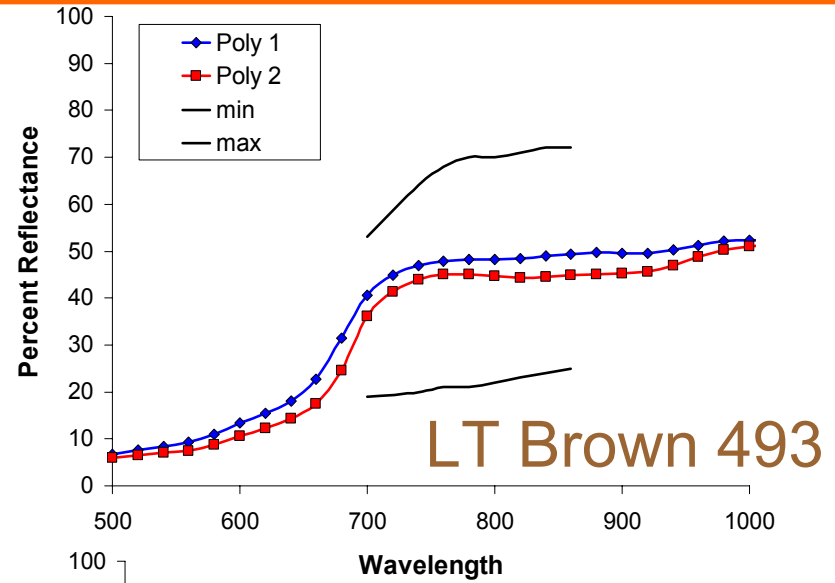
Using standard Nylon Cordura® fabrics it is nearly impossible for dye houses to reduce the NIR reflectance to match the desert environment.

*Current specification from CO/PD 00-02A

NIR Performance - New US Army Printed 3-Day Desert Camouflage Fabric using Enhanced Polymer Technology

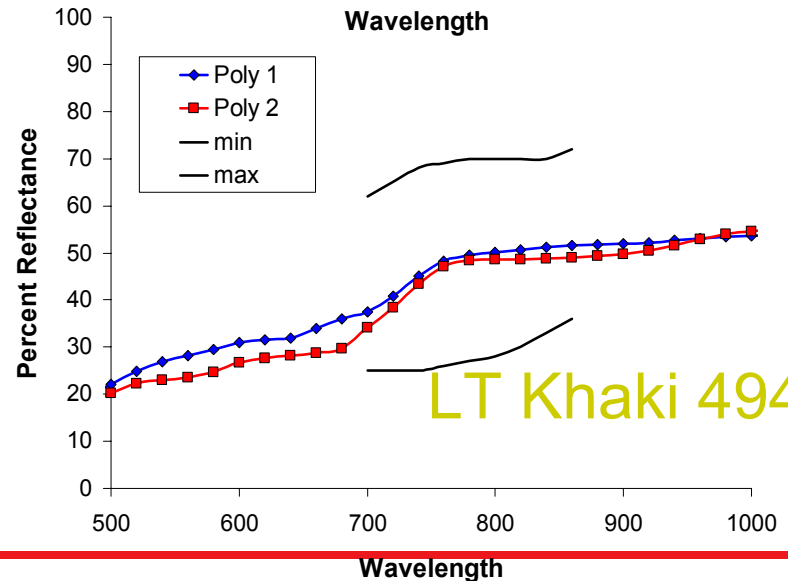


LT Tan 492



LT Brown 493

New developments in polymer technology have allowed dye houses to reduce the NIR reflectance to match the desert environment.



LT Khaki 494

*Current specification from CO/PD 00-02A

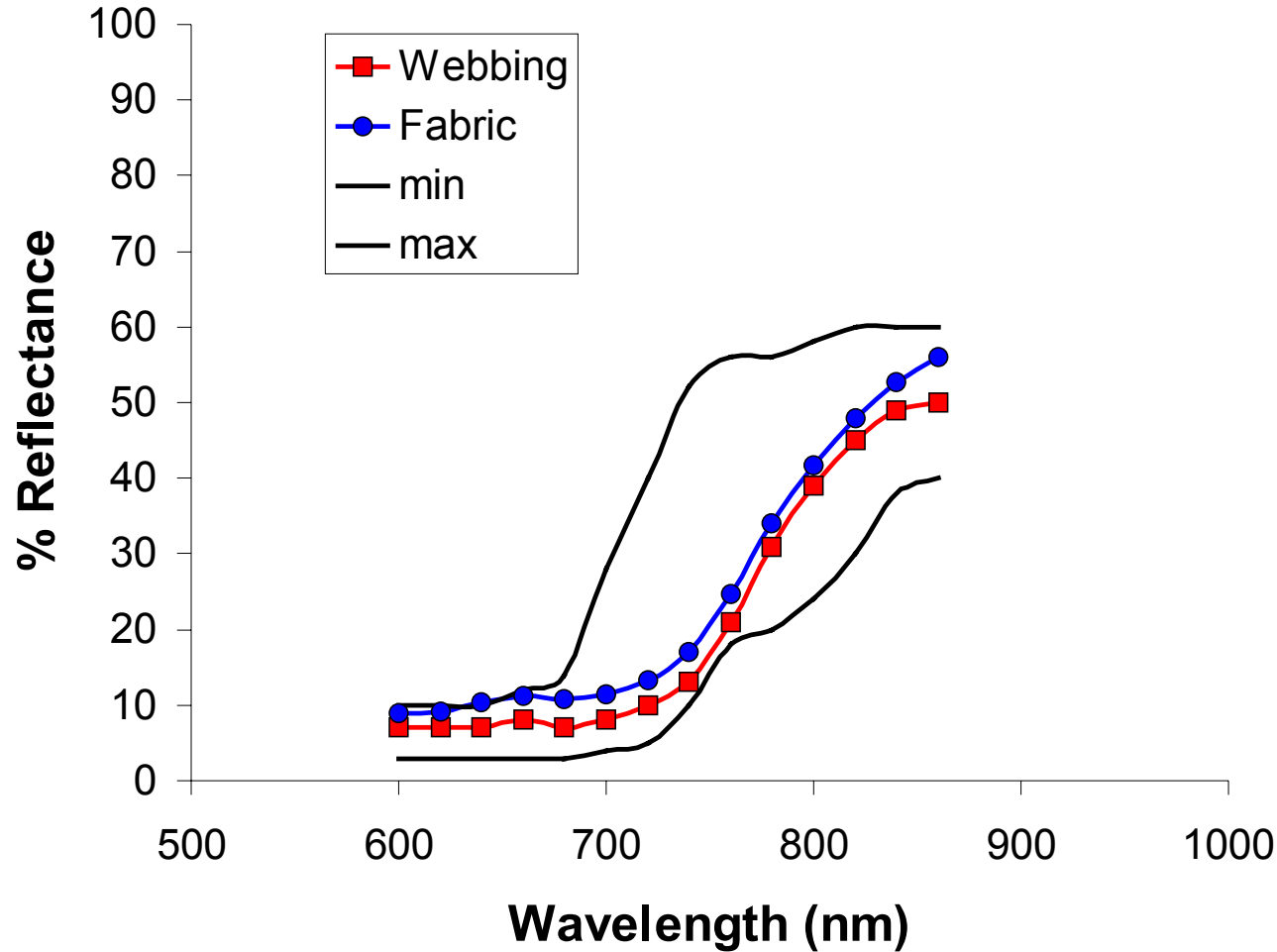
Wavelength

Invista Proprietary - Developed at Private Expense

Camo Green 483 NIR Curve

In both the Fabric and Webbing form Solution Dye Cordura® Green 483 meets IR specified by the U.S. Military

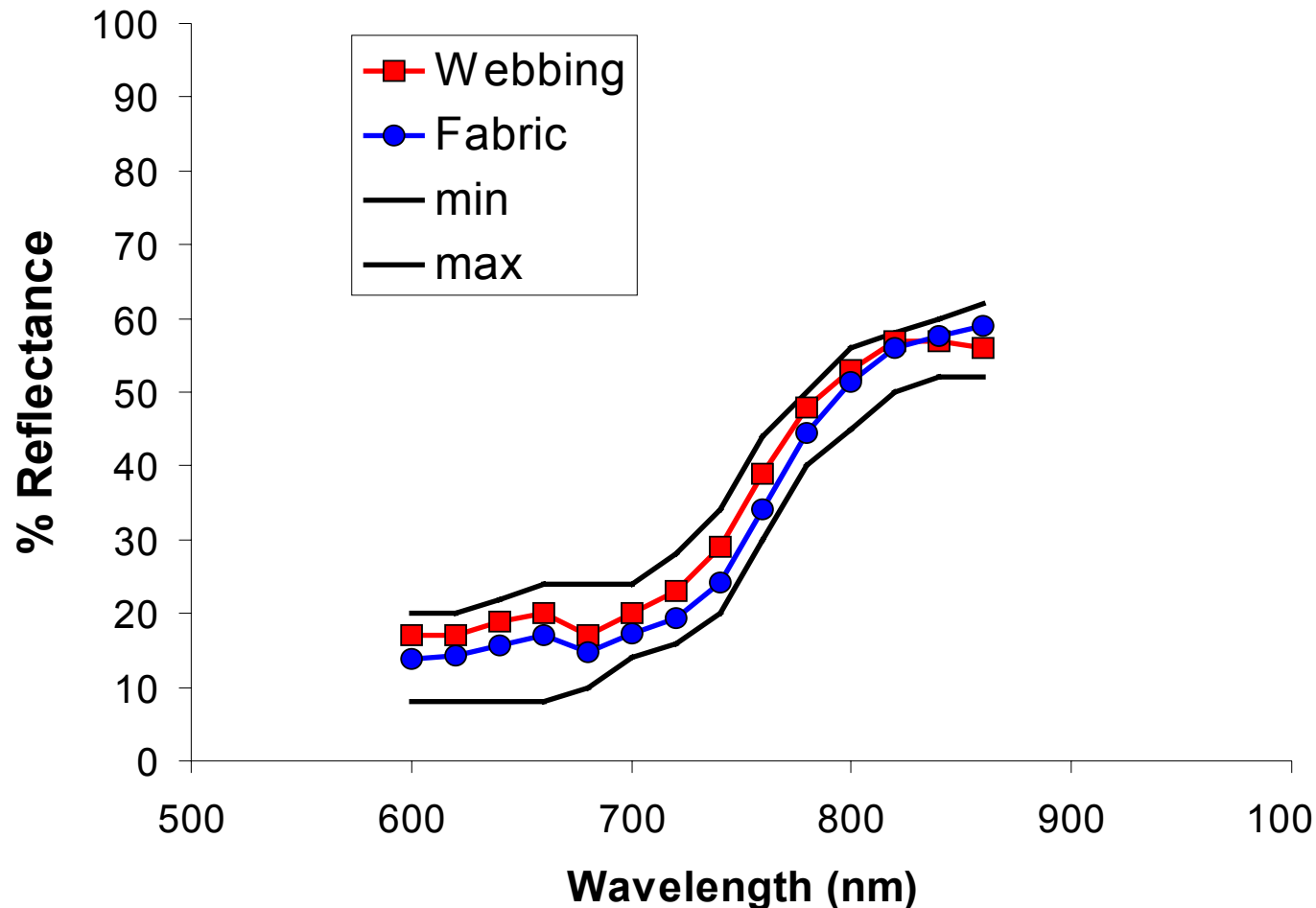
Specified U.S. Army Woodland Interceptor and Equipment Belt



U.S. Marine Corps. Coyote 498

In both the Fabric and Webbing form Solution Dye Cordura® Coyote meets IR specified by the U.S. Military

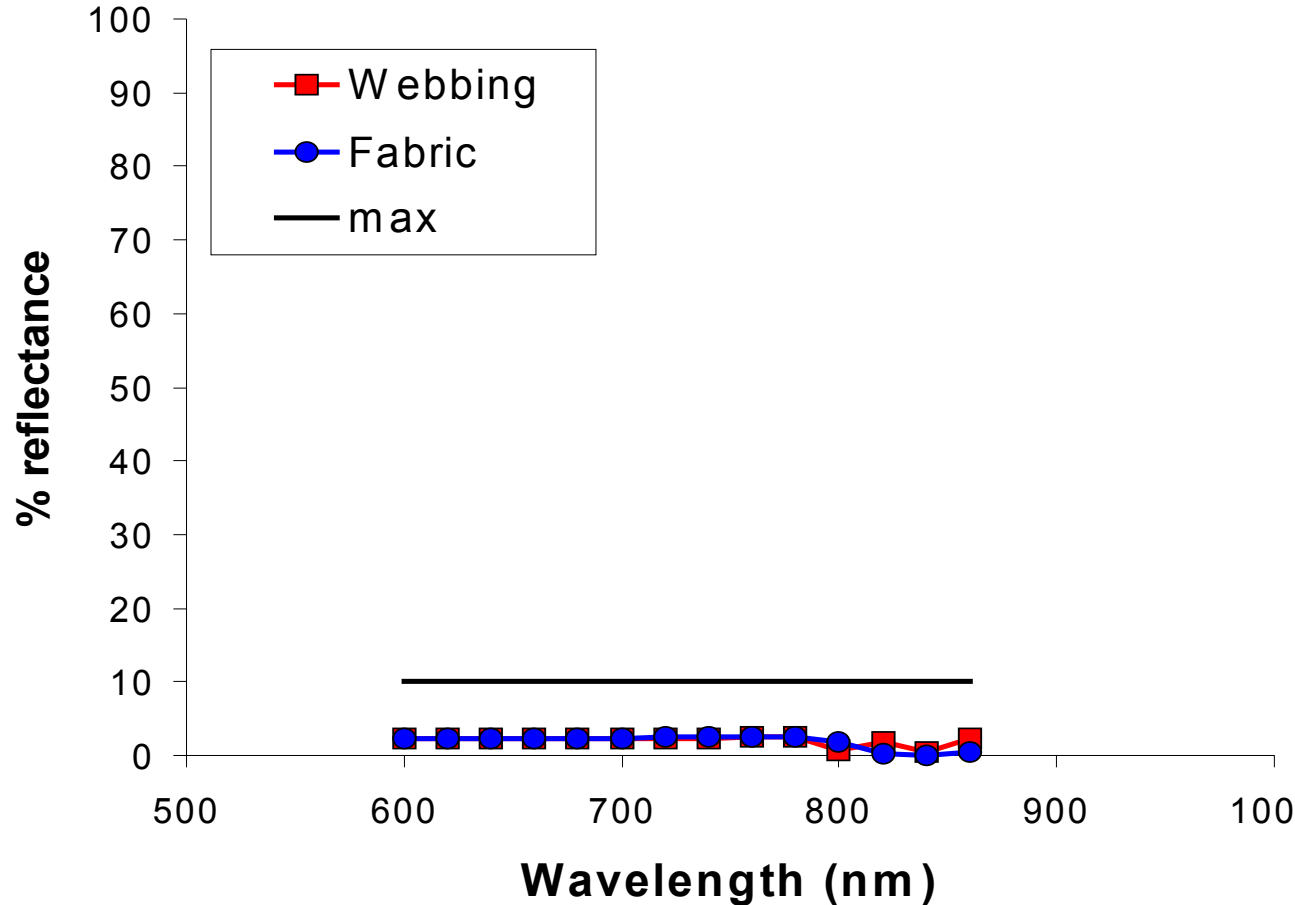
Specified by U.S. Marine Corps in Interceptor Vest and Webbing for ILBE.



Black

In Fabric and Webbing
Solution Dye
Cordura® Black meets
IR specified
by the U.S. Military.

Specified by U.S. Navy
Seals for Personnel
Floatation Device
(PFD).



Marine Corp ILBE Assault Pack

Cordura® 725d MARPAT Fabric / Coyote Webbing / ITW-GhillieTEX™ Buckle



Visible Illumination against Snow Background

Gen-II NIR Illumination against Snow Background



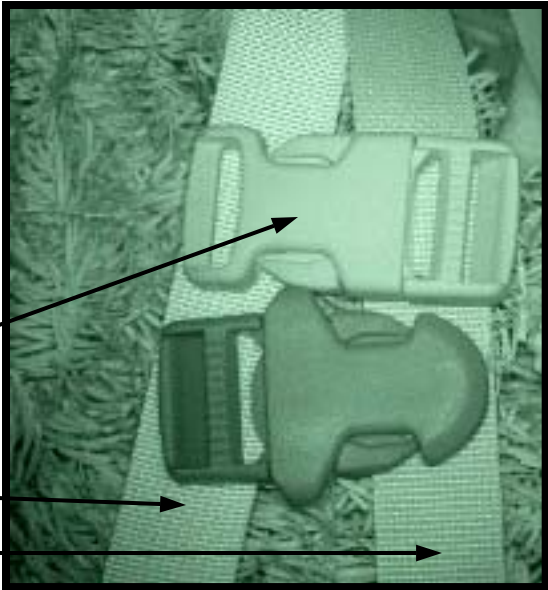
MIL Spec Webbing

Cordura® Solution Dyed Webbing / ITW-GhillieTEX™ Buckle against Vegetation



Visible Illumination Webbing + Buckle

Gen-II NIR Illumination Webbing + Buckle



ITW-GhillieTEX™ Buckle

Piece Dye Coyote Webbing

Cordura® SDN Coyote Webbing