

HT4[®] Multispectral Stealth Redefined

Complete protection across UV, VIS, IR, and radar bands.
Lightweight, adaptive, and field-proven for modern warfare.



TAIGA

Camouflage and Signature Management

In today's operational environments, remaining undetected is critical to mission success. Operational units, their equipment, and assets must be prepared to operate discreetly against increasingly sophisticated sensors and complex threats.

With extensive expertise in visual and infrared camouflage, we deliver proven solutions that reduce exposure and strengthen operational security. Taiga now integrate thermal protection and radar signature reduction to provide comprehensive multi-spectral concealment across visual, IR, thermal, and radar domains, ensuring mission success.



The growing sophistication of sensors demands advanced signature management across every layer, from uniforms to specialised gear. In collaboration with leading suppliers, we've developed patented technologies that deliver industry-leading multispectral camouflage. Our fabrics reduce signatures across UV, VIS, IR, and TIR spectra, ensuring superior concealment in diverse environments.

Building on this expertise, we now provide integrated thermal protection and radar-signature reduction for comprehensive defence against modern detection systems. Taiga offers versatile camouflage solutions and on-demand printing of custom patterns or national designs, tailored to any mission profile.



TCIP™ **Taiga Concealed IR Printing**

VIS TCIP™ This technology is designed for operations requiring a less conspicuous military appearance. To the naked eye, the colour appears as a solid fabric. Colours can be chosen for reduced detectability or to reflect a specific occupational identity.

IR TCIP™ camouflage uses technology to control the IRR curve within the NIR wavelength range, approximately 0.75–1.2 µm. The print features four large surface areas with varying levels of IRR reflection, providing better protection against detection through image intensifiers.



TIR™ **Thermal IR**

UV TIR™ includes Ultraviolet (UV) protection to improve concealment in UV-filtered environments.

VIS TIR™ products can be configured as a single layer or as a double layer with a 3-D leaf effect on one side.

IR TIR™ camouflage uses technology to control the IRR curve within the NIR and SWIR wavelength range, approximately 0.75–3 µm. The print features five large surface areas (aligned with the visible camouflage pattern), each with distinct IRR reflection levels to minimise detection by image intensifiers and thermal sensors.

TIR In addition, TIR™ provides protection against thermal imaging optics. TIR operates within the electromagnetic spectrum MWIR (3–8 µm), LWIR (8–15 µm), and FIR (sub-band 15–1000 µm).

RADAR TIR™ provides radar signature reduction. Radar uses radio waves at microwave frequencies (>1,000 µm) to detect objects, measure distance, and determine speed.



TMTP® **Taiga Multi Terrain Pattern**

VIS TMTP® is a multi-terrain camouflage with patterns and colors carefully designed to reduce visibility across diverse environments.

IR TMTP® camouflage uses technology to control the IRR curve within the NIR wavelength range, approximately 0.75–1.2 µm. The print features five large surface areas (aligned with the visible camouflage pattern), each with distinct IRR reflection levels, providing enhanced protection against detection through image intensifiers.



TSUP® **Taiga Snow UV Pattern**

UV Ultraviolet light has shorter wavelengths than visible light and cannot be seen by the human eye. TSUP® camouflage features high UV reflectance, allowing it to blend effectively into arctic environments—even when viewed through optics equipped with UV filters.

VIS The visual pattern is carefully designed to minimise visibility in arctic environments.

IR TSUP® camouflage incorporates technology that controls the IRR curve within the NIR wavelength range of approximately 0.75–1.2 µm. In frozen arctic conditions, large contrasting IRR areas are essential for effective concealment.



HT4[®] Multispectral Stealth Technology

HT4[®] represents a revolutionary advancement in military concealment technology, delivering multispectral stealth capabilities in lightweight textile form. This proprietary fabric provides full-spectrum protection (UV, VIS, NIR, SWIR, MWIR, LWIR, FIR, and radar), rendering personnel, vehicles, and installations extremely difficult to detect with advanced sensor systems—all without compromising flexibility, comfort, or durability.



Modern warfare has transformed battlefield conditions, introducing new and complex challenges for military operations:

CONSTANT SURVEILLANCE. Reconnaissance drones equipped with electro-optical, thermal, and infrared sensors render traditional concealment and camouflage virtually ineffective.

LONG-RANGE PRECISION ATTACKS. Commercial drones and loitering munitions can detect and engage targets at ranges beyond 5 kilometers—day or night.

THERMAL SIGNATURE EXPOSURE. Standard military fabrics emit 60–70% of body heat as radiation, making personnel easily detectable by thermal imaging systems.

HT4[®] is engineered using advanced processes that transform textiles into high-performance materials delivering genuine multispectral stealth. **Core functional principles are:**

1. ADAPTIVE LOW-EMISSIVITY TECHNOLOGY

- **Dynamic thermal regulation** – The fabric automatically equilibrates with ambient temperature for optimal thermal signature control.
- **Absorption-reflection mechanism** – Precisely engineered response across the electromagnetic spectrum, from radio waves to ultraviolet, to minimise detectability.
- **Environmental adaptation** – Autonomous adjustment to surrounding conditions without user intervention, ensuring consistent performance in dynamic operational environments.

2. COMPREHENSIVE SPECTRAL COVERAGE

HT4[®] provides verified protection across the complete electromagnetic detection spectrum. **Refer to the electromagnetic spectrum diagram on page 6.**

3. MISSION-ADAPTIVE PERFORMANCE LEVELS

HT4[®] offers optimised configurations for diverse operational environments:

PERFORMANCE LEVEL	OPTIMAL TEMPERATURE RANGE	PRIMARY APPLICATIONS
Level II-III	20 °C–60 °C	Desert operations, hot-climate deployments
Level IV-V	0 °C–40 °C	Temperate zones, general operational environments
Level VI-VIII	-40 °C–20 °C	Arctic operations, cold-climate missions

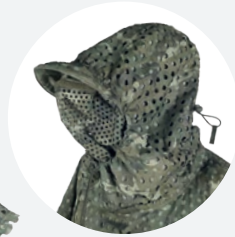
Next-Level Camouflage for Modern Operations

TAIGA'S TIR PRODUCTS provide advanced protection against detection by image intensifiers (II) and thermal imagers (TI). Designed to perform across the electromagnetic spectrum, the fabric interacts with radiation in the UV, VIS, NIR, SWIR, MWIR, LWIR, FIR, and radar bands, delivering superior multispectral concealment even in the most demanding environments.

The HT4® fabric technology incorporates zones with optimised reflectance levels to blend seamlessly into surrounding terrain, while offering exceptional durability, low weight, breathability, and compact packability. Combined with Taiga's expertise in signature management, these solutions set a new standard for operational effectiveness and next-level camouflage.



TIR PONCHO



TIR LC PONCHO



TIR TARP



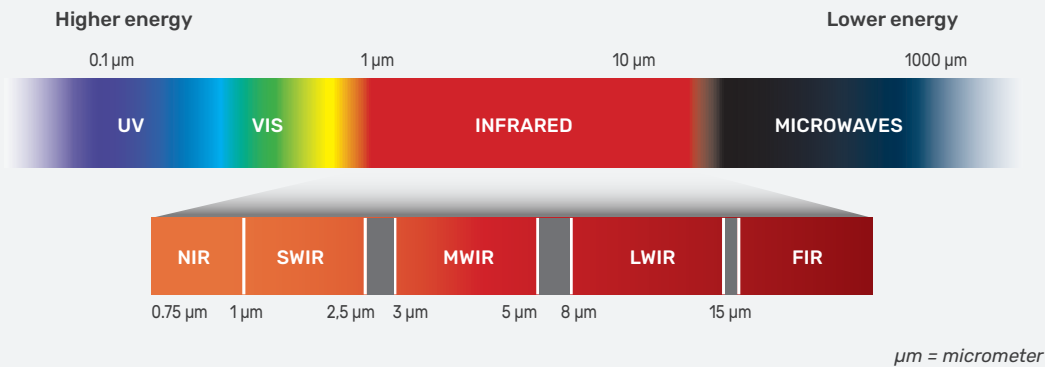
TIR LC TARP

MATERIAL PROPERTIES

- Lightweight
- Breathable
- Foldable and easy to carry
- Long service life

” *Adaptable to varied environments – one solution for multiple conditions.*

Electromagnetic Spectrum



SPECTRUM BAND	WAVELENGTH RANGE	DETECTION TECHNOLOGY
UV Ultraviolet	0.1–0.4 μm	Night vision technology with UV filter
VIS Visible	0.4–0.75 μm	Human eye
NIR Near Infrared	0.75–1.4 μm	Night vision technology
SWIR Shortwave Infrared	1.4–3 μm	Night vision and Thermal infrared technologies
MWIR Midwave Infrared	3–8 μm	Thermal infrared technology
LWIR Longwave Infrared	8–15 μm	Thermal infrared technology
FIR Far Infrared	15–1000 μm	Thermal infrared technology
RADIO WAVES	15,000–300,000,000 μm (≈ 1 MHz–20 GHz)	Microwave radar technology

Types of Infrared Radiation

NIR – Near Infrared: Enhances ambient light and converts NIR light into visible light (e.g., image intensifiers). Penetrates glass and clouds.

SWIR – Shortwave Infrared: Detects light reflected or absorbed by objects. Penetrates glass and clouds. Commonly used in fiber-optic communication systems.

MWIR – Midwave Infrared: Detects thermal radiation emitted by objects. Performance is reduced in smoke, dust, fog, and air pollution. Capable of detecting a human at several kilometers. Offers high contrast and sensitivity. Used in heat-seeking missiles, long-range surveillance, and airborne platforms. Typically requires sensor cooling, making systems larger and more expensive than LWIR.

LWIR – Longwave Infrared: Detects thermal radiation emitted by objects. Can partially see through foliage and thin materials such as plastic bags. Generally performs better than MWIR in smoke, dust, fog, etc. Used in thermal sights and thermal cameras.

FIR – Far Infrared: Detects long-wavelength thermal radiation beyond LWIR (approx. 15 μm). Used in specialized thermal imaging and advanced camouflage to reduce detection by high-end sensors.

TIR – Visibility to Sensors

Wavelength LWIR 8–15 μm / Distance 50 meters / Daytime



TIR LC PONCHO. OBJECTS: Person 1 in BDU, combat vest, helmet, and TIR LC Poncho. Person 2 in BDU.



TIR LC TARP. OBJECTS: Person in BDU standing behind TIR LC Tarp.

Date: 2025-10-24

Temperature: 11°C

Weather: Cloudy with intermittent rain.

Sensor: Hicmicro FQ50

Wavelength LWIR 8–15 μm / Distance 150 meters / Daytime



TIR LC PONCHO. OBJECTS: Person 1 in BDU, combat vest, helmet, and TIR LC Poncho. Person 2 in BDU.



TIR LC TARP. OBJECTS: Person in BDU standing behind TIR LC Tarp.

Date: 2025-10-24

Temperature: 11°C

Weather: Cloudy with intermittent rain.

Sensor: Hicmicro FQ50

Images taken after 30 minutes.

TIR – Visibility to Sensors

PERSONNEL SIGNATURE REDUCTION



TIR LC PONCHO. Person 1 and 2 in BDU. Person 3 in BDU, combat vest and helmet, covered with a TIR LC Poncho.

OBJECT SIGNATURE REDUCTION



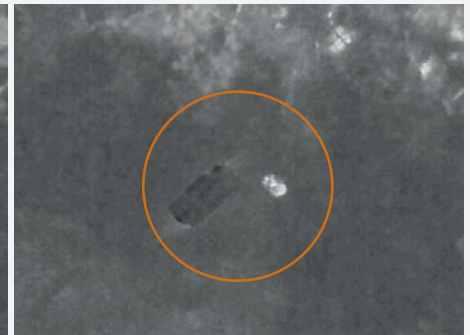
TIR LC TARP. Person in BDU next to a vehicle covered with a TIR LC tarp.



Person in BDU next to a shelter.



Person in BDU next to a shelter.



TIR LC TARP. Person in BDU next to a shelter covered with a TIR LC Tarp.

NOTE:

HT4® technology is exclusively intended for legitimate defense and security applications. Product availability is subject to export regulations and end-user certificate requirements. Technical demonstrations and detailed specifications are provided upon request to qualified military and defense organizations.

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