

soloTI™

The fire helmet that has it all.

The ultimate fire helmet with breathing apparatus mask built-in as standard, integrated thermal imaging and outstanding communications ability.

Providing head protection, respiratory protection and a great communications interface in one system is a huge benefit. When you couple that with being able to see through the densest of smoke then it's a must have in fire fighting safety. The Solo TI™ features a fully integrated thermal imaging camera, which displays the image inside the face mask using augmented reality viewing optics. The ergonomic design gives clean lines to the outside of the helmet which can be donned within a few seconds giving the firefighter a quicker reaction time and also the ability to use both hands in any hazardous situations.

Thermal Image System

Manufacturing our own core enables us to ensure that we have the best optics possible. The clarity of the image displayed inside the face mask is paramount for the user, especially in the environments where the Solo TI™ is deployed. It is also important that it does not impede sight when there is no smoke present. The eye line remains the same whatever the conditions, the thermal image is used as a reference when needed.

A battery indicator is displayed in the augmented reality viewing optics. The battery is mounted inside the helmet with an operating ON/OFF switch mounted on the side of the helmet. These parameters have been optimised to provide enhanced image performance with longer battery life. Video output is provided by a miniature BNC socket on the battery housing. Combining this product with a wireless transmitter and receiver unit, enables both operator and incident commander to have an overview of the fire ground.



- ✓ Fire retardant resin and Kevlar® fibre composite shell
- ✓ Crystal clear Comms with your existing radio
- ✓ Head-Up thermal imaging camera
- ✓ Can be used in conjunction with Dräger, Scott, MSA and other BA-manufacturers
- ✓ Fully-approved, with MED, SOLAS and CE marking
- ✓ Complete head, face and neck protection

Head-Up thermal imaging camera

The shell withstands a flashover of up to 1,000°C for 10 seconds



Crystal clear Comms with existing radio, conforms to BS EN 352-3



SOLTI™

Technical Specifications

Mechanical Data

Helmet Dims (HxWxD)	350mm x 285mm x 390mm
Helmet Weight	2.9Kg
Shell Material	Fire retardant resin and Kevlar® fibre composite shell
Shell Lining	Plastazote Foam
Strap Material	Kevlar + Nomex
Neck Skirt Material	Quilted Nomex
Face Seal	Neoprene
Face Mask Material	Lexan Polycarbonate (hard coated and anti fog screened)
Face Mask Thickness	4mm

Compliance Data

Certificates	PPE CE 1719
EC Approved	European Standards EN443 (2008), EN136 (1998) including AC (2003), EN137 (2006)
MED	EC Type examination (Module D and Module B)
SOLAS	SOLAS Approved

Optical Data

Sensor Type	Uncooled Microbolometer with Digital Processing, Pixel Smoothing
Resolution	160 x 120 array
Sensing Material	Amorphous Silicon (aSi)
Spectral Response	7.5 - 14 Microns
Thermal Stabilization	-40°F to 175°F (-40°C to 85°C)
Update Rate	30HZ
Video Output	NTSC
Thermal Sensitivity	<50mK / <0.05°C
Dynamique Range	1100°F (600°C) Nominal
Pixel Size	30µm
Thermal Time	Constant 10ms
Video Polarity	White-Hot, Black-Hot Selectable
Relative Heat Indicator	Sliding Bar Scale, temperature to colour relationship and temperature readout
Super Red Hot	Colour above 500°F / 260°C

Lens

Lens Material	Germanium – Diamond hard high effective anti reflection coating
Focal Length	1m to infinity, optimised at 4m (3ft to infinity, optimised at 13ft)
Lens Size	16mm
Field Of View	37.5° Vertical x 50°H Horizontal
Focus Fixed	3 feet (1 metre) to infinity
Aperture	f / 1.0

Electrical Data

Power Consumption	3.7V 1750mAh
Start Up Time	5 Seconds Typical
Battery Type	LiPo Rechargeable Battery
Std Battery Life	3 Hours @ ambient temperatures (22°C, 72°F)
Std Battery Charge Time	Less than 2 hours
Std Battery Charging Temp	5°C to 40°C (41°F to 104°F)
Charger Input Voltage	DC4.2V ±0.05V 300mA ± 50mA
Charger Operating Temp	0°C to 40 °C (32°F to 104°F)
Battery Rechargeable Cycles	Over 1000 charge cycles
Switch Cycle Test	1,000,000 cycles
Battery Weight	0.2 pounds each

Display

Type	Augmented Reality Viewing Optics
Size	Image displayed is virtual at 2m away, 52" diagonal twin 0.6" LCD displays
Dot Pitch	188mm (V) x 160mm (H)
Dot Format	384 x 234 Dots
Pixels	180,000 Prismatic optics giving an indirect virtual image
Pixel Configuration	R-B-G Delta Configuration
Display Method	NTSC
Back Light	LED
Brightness	400 cd/m ²
Viewing Angle	50° x 37°
Zoom	None as standard

Environmental Data

Thermal Conditions	The camera has been designed to operate: Continuously between -20°C (-4°) and 85°C (185°F) or 150°C (300°F) for 15 minutes 260°C (500°F) for 7 minutes
Sealing	IP67, will withstand short-term immersion in water
Storage	It is recommended that for maximum effective operational life, the storage temperature is kept between -20°C (-4°F) and +40°C (104°F)
Warranty	24 month warranty as standard (exclusions apply)