

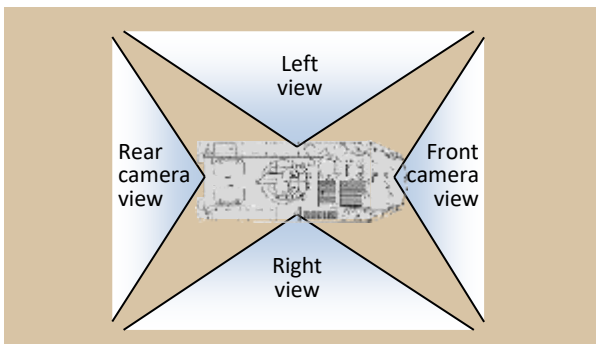


Features

- 44°, 57° or 90° horizontal Field of View
- Wide temperature range, -40°C to +70°C
- 640 x 480 resolution
- Analogue output
- Image contrast Enhancement
- Integrated adjustable mounting bracket
- 24V operating voltage (18 – 36V range)

Description

Providing increased safety for the entire vehicle crew of armoured vehicles is of prime importance in the battlefield. Mounting several wide angle cameras on strategic positions on the vehicle provide an unobstructed view over the near surroundings, with all hatches closed. Thermal cameras enable the vehicle crew to see movement outside the vehicle both day and night.



Rugged design

The Citadel Thermal is encased in a rugged IP 66 housing, designed to withstand vibration in accordance with MIL STD 810G. It provides high-performance images, even under the harshest conditions, in temperatures ranging from -40°C to +70°C.

All electrical connections go through a MIL-38999 22-pin round connector. The integrated mounting bracket allows precise elevation and azimuth alignment of the camera.

Resistant to solar damage

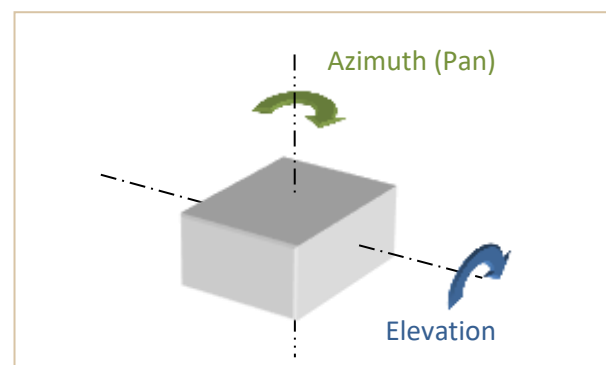
The camera utilises a VOx uncooled 17 µm pitch 640 x 480 microbolometer resistant to solar damage, and is available in many different lens variants, from a thermalized fixed focus to motorized and zoom lenses.

Superior image quality and sensitivity

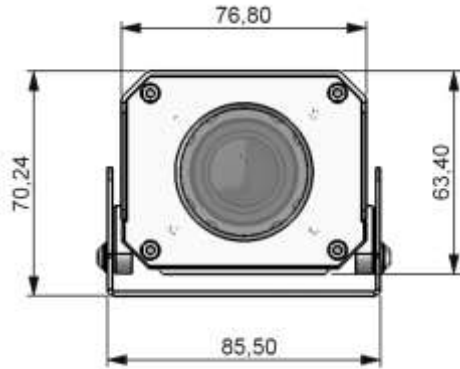
The cameras provide greater sensitivity and superior image quality regardless of lighting conditions. The image is crystal clear during day, night and at challenging environmental conditions such as smoke, dust, haze and fog.

2 degrees-of-freedom adjustment mounting bracket as option

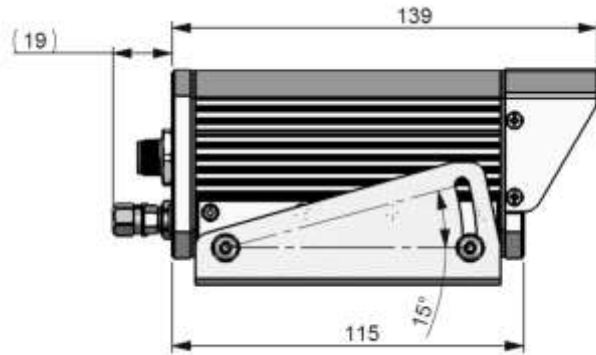
A mounting bracket is designed to fit the Citadel Thermal camera, which allows alignment of the camera within 2 degrees of freedom. Choose this mounting bracket upon ordering, if needed. See below illustration of the two degrees of adjustment opportunities the mounting bracket allows for.



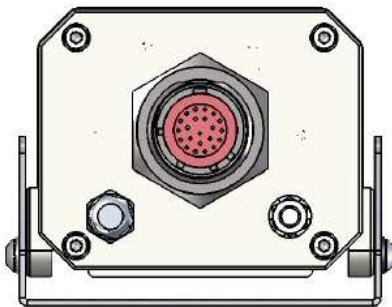
Mechanical outline and dimensions



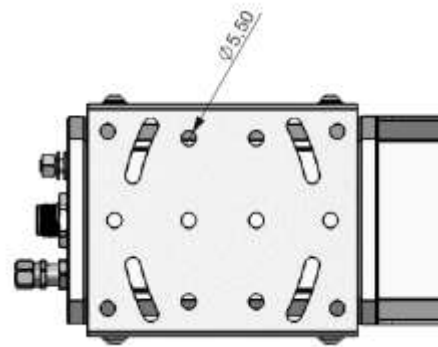
Front view



Side view (left side)



Rear view



Bottom view

Mount options



Option 01: 2D bracket
(standard mount).



Option 02: Side mount (rail)



Option 03: Bottom plate

Specifications

	Thermal
Image system	
Sensor	Uncooled VOx microbolometer
Lens FOV.	44°, 57° or 90° horizontal field of view
Effective pixels (H x V)	640 x 480 (4:3 image format)
Detector pitch	17 µm
Image control	Image contrast enhancement
	Image Polarity: Black Hot / White Hot
	Orientation: Invert / revert
Symbology	User selectable options include: Zoom, polarity and shutter notification
Electrical specifications and functions	
Video output	Analoge: NTSC 30 Hz or PAL 25 Hz
Thermal sensitivity	NETD <50mK
Automatic Gain and level	User defined, persistent through power cycles
Spectral response	8 -14 µm
Digital zoom and pan	Region of interest; E-zoom from 1X-4X
Picture inversion	Positive / negative
Image Mirroring	Horizontal and vertical image flip
Non-conformity correction	1 point with shutter or through lens
Configuration, serial interface	CAN-BUS, CST protocol. RS-422 is optional with CST protocol
Start-up time	<2.5 seconds
Mechanical	
Overall dimensions (W x H x L)	76.8 x 63.4 x 149 mm (With sunshield, not incl. connector)
Net weight	App. 1 kg
Housing material	Aluminium with corrosion protection coating
Mounting bracket alignment	2 degrees of freedom: elevation and azimuth (pan)
Protective housing integrity	IP 66, back-filled with dry nitrogen
Camera window	Hard Carbon coated lens
Connector	D38999/23 YC 35PN Jam nut M
Environmental	
Operating voltage	18 – 36 VDC (Galvanic separation from housing)
Over voltage protection	MIL-STD-1275-D
Current consumption	Max. 5 W
Operating temperature	-40°C to +70°C (solar load)
Storage temperature	-40°C to +70°C
Vibration	Tracked vehicle MIL-STD 810G , method 514.6 – 6.25grms
Shock	3 shocks in each direction, 30G @ 11ms
EMC	MIL STD 461F RS103 and RE102
MTBF	30 000 hours (MIL-HDBK-217-F) Ground mobile

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Available options

Please inquire with CST for other options / customizations.

Options available to the customer. Please inquire with CST for other options / customizations.	
Parameter	Options available
Video signal	01: PAL 02: NTSC
Serial Interface	01: RS-422 (price increase may apply) 02: CAN-BUS (default) 03: RS-232
HFOV	44°, 57° or 90° horizontal field of view
Mount	01: 2D bracket (default) 02: Side mount (rail) 03: Bottom plate
Sunshield	01: No sunshield (short sunshield) 02: With sunshield
Color	00: 00: No color (Surface treated only (MIL-DTL-5541, type 2, class I)) 01: Sand (RAL 1019) 02: Dark Green (FMV 326H) 03: White (RAL 9010) 04: Haze grey (FS595_Code26270) 05: Black Semi-Gloss (FS-585_code27038) 06: Customer specific colors and naval grade paint available upon request

DRI calculation

44° HFOV	Man target (0.5 x 1.8 m)	Vehicle target (2.3 x 2.3 m)
Detection	640 m	1480 m
Recognition	180 m	310 m
Identification	90 m	240 m

57° HFOV	Man target (0.5 x 1.8 m)	Vehicle target (2.3 x 2.3 m)
Detection	450 m	980 m
Recognition	150 m	330 m
Identification	65 m	165 m

90° HFOV	Man target (0.5 x 1.8 m)	Vehicle target (2.3 x 2.3 m)
Detection	210 m	535 m
Recognition	70 m	175 m
Identification	30 m	95 m

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