

Citix Compact CI-C60

Local situation awareness camera

Built for Armoured Vehicles

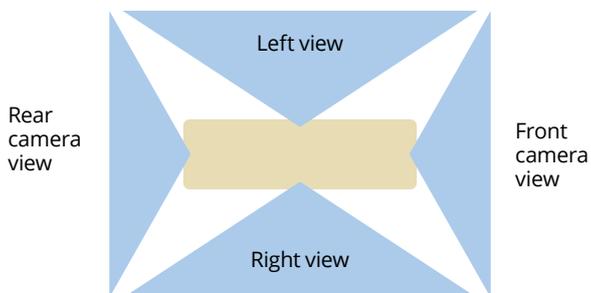


Features

- Up to 95° horizontal Field of View
- Wide temperature range, -40°C to +70°C
- Day / Extended Night modes
- Fog penetration
- Digital Noise Reduction, DNR
- Integrated adjustable mounting bracket
- 24V operating voltage (18 – 36V range)
- Heated protective window



In high-risk, or combat situations, providing increased optimal safety for the entire vehicle crew of armoured vehicles is of prime importance. Mounting several wide angle cameras at strategic positions on the vehicle provides an unobstructed view over the near surroundings, with all hatches closed.



Day/Night operation

The Citix Compact CI-C60 offers high sensitivity and automatic exposure modes, which enables operation from dawn to dusk and can even produce images in full moonlit conditions. The Extended Night Mode allows low light level operation with up to 4 seconds integration.

Improved image quality

The Citix Compact CI-C60 uses conductive cooling to remove heat from the CCD sensor. This reduces random noise in the CCD sensors, resulting in improved image quality, particularly in low-light conditions. Expanded Hi-Dynamic Range (XDR) is useful in conditions where there are large variations in brightness of the picture. For example, when there are very dark and very bright areas in a picture, the XDR amplifies the signal level in dark areas and reduces it in very bright areas, improving overall visibility of the picture.

Rugged design

The Citix Compact CI-C60 is encased in a rugged IP-66 housing, designed to withstand vibration in accordance with MIL-STD 810F. It provides high-performance images, even in the harshest weather conditions, in temperatures ranging from -40°C to +70°C.

All electrical connections go through a MIL-compliant 10-pin round connector. In addition, the camera windows are heated for condensation-free operation.

Configurable Field of View

The Citix Compact CI-C60 has a unique distortion-free wide angle lens, which can be factory configured with a field of view (FOV) ranging from 47° up to 95°, allowing easy adaptation to the various on-vehicle visualisation requirements.

Fog penetration

The fog penetration function is designed to automatically increase visibility under conditions such as fog, haze and fire smoke. The camera continuously analyses the picture and once it detects a low-contrast condition, will automatically enhance the contrast.

Digital Noise Reduction (DNR)

The Digital Noise Reduction function, based on a 2-dimensional and 3-dimensional algorithm, helps reduce noise in low-light conditions.

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Graphic Overlays

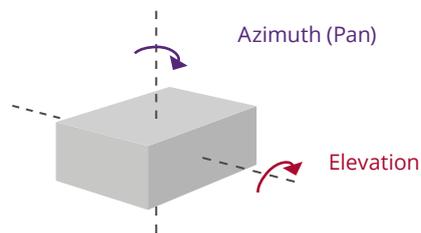
Below is a typical example of a graphic overlay:



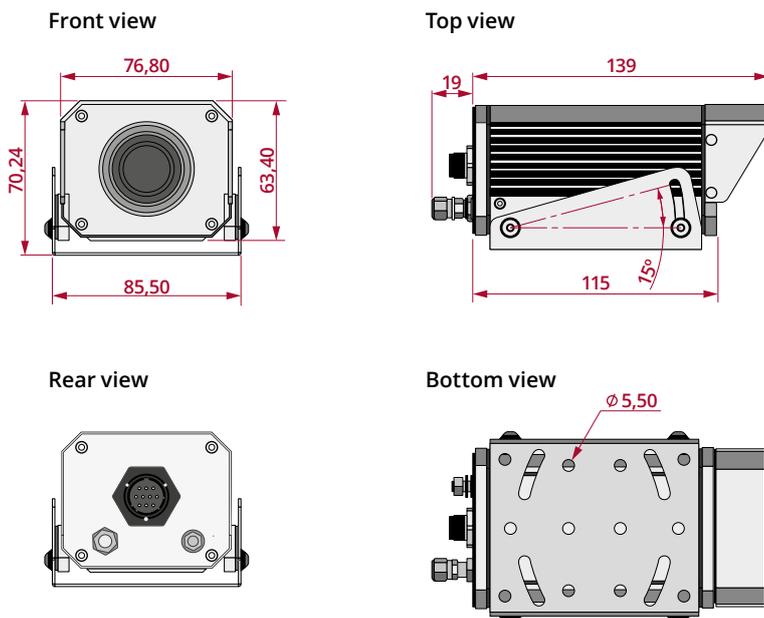
Sample image only

2 degrees-of-freedom, adjustable mounting bracket

Designed with a mounting bracket that allows alignment of the camera within 2 degrees of freedom, the Citix Compact CI-C60 can be adjusted to the contours and slopes of the vehicle body.



Mechanical outline and dimensions



Citix Family

Comparison of key parameters for the CITIX family of local situational awareness cameras, built for armoured vehicles



Parameter	CI-C60 Citix Compact	CI-T90 Citix Thermal	CI-P170 Citix Panoramic	Citadel Dual Rotation	Citadel Dual Camera
Horizontal FOV	47° to 95°, fixed (Factory default setting 60°)	44° or 90°	170°	57.3° (180° with rotation function)	57.3°
Resolution (effective pixels in PAL)	976 × 582	640 × 480	976 × 582 (×2 sensors)	CCD: 976 × 582 Thermal: 640 × 480	
Image sensor	CCD, 1/3" colour	Uncooled VOx micro bolometer	CCD, 1/3" colour	CCD, 1/3" colour and thermal uncooled VOx	
Video output	Composite video	Composite video	Composite video	Composite video	
Sensitivity	0.007 lux (25% video @ f/1.6, AGC on)	NETD <50mK	0.007 lux (25% video @ f/1.6, AGC on)	0.007 lux (25% video @ f/1.6, AGC on) and 50 mK	
Spectral response	Visible (400-700nm. Optional is 400-950nm)	Thermal / LWIR (8-14 μm)	Visible (400-700nm)	Visible and Thermal / LWIR (400-700nm and 8-14 μm)	
Setup and control	RS-422 or CAN-BUS serial interface (Fibrenetix protocol)	RS-422 serial interface (Fibrenetix protocol)	RS-422 or CAN-BUS serial interface (Fibrenetix protocol)	RS-422 serial interface (Fibrenetix protocol)	
Dimensions – mm (W×H×L) excluding connectors	77 × 63.4 × 139 (excluding mounting bracket)	77 × 63.4 × 139 (excluding mounting bracket)	200 × 78 × 134	256 × 185 × 250	256 × 137 × 250

Common features:

- Designed for use on wheeled and tracked vehicles
- Dusk-to-dawn operation, with colour video output (except the CITIX Thermal cameras)
- Extended night-mode imaging, with full moon illumination
- Low profile, rugged design
- -40°C to +70°C operating temperature range

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Technical Specifications

	PAL	NTSC
Image system		
Sensor	High sensitivity 1/3" colour CCD with complementary mosaic	
Lens	Configurable Field of View (FOV), IR-corrected, f/1.6	
Effective pixels (H × V), per camera	976 × 582 (4:3 image format)	976 × 494 (4:3 image format)
Horizontal FOV	Configurable from 47° to 95° FOV (factory setting) (Note 1)	
Vertical FOV	Configurable from 35° to 71° FOV (factory setting)	
Horizontal frequency	15.625 kHz	15.734 kHz
Vertical frequency	50 Hz	59.94 Hz
Electrical specifications and functions		
Video output	Composite VBS, 1 Vpp, 75 ohm	
Horizontal resolution	> 600 TVL	
Sensitivity	0.007 lx, 25% video @ f/1.6, AGC on	
Spectral response	400-700nm. Optional 400-950nm (Note 2)	
Signal to noise ratio	> 52 dB, AGC Off	
Electronic shutter, fixed	1/50 to 1/10,000 sec.	1/60 to 1/10,000 sec.
Gamma correction	0.45 / 1.0	
Automatic gain control range	0 to +36 dB and 6dB digital gain	
Extended night mode	Integration making it sensitive down to 0.0001 lx	
Extended night mode control	Automatic or manual	
Fog penetration	Off, Low, Mid, High	
White balance	Automatic, Tracking	
Noise reduction	2D and 3D digital noise reduction, 2 levels	
Heat haze reduction	On and off function	
Image mirroring	Horizontal and Vertical image flip	
Configuration, serial interface	RS-422, Fibrenetix protocol. CAN-BUS is optional with Fibrenetix protocol. (Note 3)	
Heat haze reduction		
Overall dimensions – mm (W x H x L)	76.8 × 63.4 × 139 (With sun visor. Excluding connectors and mounting bracket)	
Mounting bracket footprint	100 × 85.5 mm	
Net weight	0.9kg	
Housing material	Aluminium with corrosion protection coating	
Mounting bracket alignment	2 degrees of freedom: Elevation and azimuth (pan) (Note 4)	
Protective housing integrity	IP-66, back-filled with dry nitrogen	
Camera window	Glass with AR-coating and heated (Note 5)	
Connector (power, data, control)	10-pin round connector, aluminium (MIL-DTL-26482 series 1)	
Environmental		
Operating voltage	18 – 36 V DC (Galvanic separation from housing)	
Over voltage protection	MIL-STD-1275-D	
Current consumption	Maximum 8 watts with heater. Maximum 2.5 watts without heater in window	
Operating temperature	-40°C to +70°C	
Storage temperature	-40°C to +70°C	
Vibration	Tracked vehicle MIL-STD 810G , method 514.6 – 6.25grms	
Shock	Transportation: 3 shocks in each direction, 25G @ 11ms	
EMC	MIL-STD 461F RS103 and RE102	
MTBF	30,000 hours (MIL-HDBK-217-F) Ground mobile	

*Specifications are subject to change, without prior notice.